

ESTIMATED GAS SAVINGS

ThermWise® Appliance Rebates

SINGLE FAMILY		
Measure	Annual Savings	Source
Natural Gas Furnace - 95% AFUE	11.77 Dth/unit	2017 Nexant Energy Model Estimate
Natural Gas Furnace - 98% AFUE	13.85 Dth/unit	2017 Nexant Energy Model Estimate
Gas Storage Water Heater	2.86 Dth/unit	2010 Deemed savings reduced by realization rate*
Tankless Gas Water Heater	9.37 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Condensing Gas Storage Water Heater	8.68 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Hybrid Gas Water Heater	8.68 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Gas Boiler Tier 1	18.7 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Gas Boiler Tier 2	25.2 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Solar Assisted Gas Water Heating (domestic)	17.5 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Solar Assisted Gas Water Heating (pool)	68.9 Dth/unit	2012 PEGI Energy Model Estimate
Direct Vent Gas Fireplace	10.8 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Smart Thermostat	8.6 Dth/unit	2014 PEGI Energy Model Estimate
Boiler Reset Control	5.4 Dth/unit	2017 Nexant Energy Model Estimate
Combined Space and Hot Water	19.0 Dth/unit	2017 Nexant Energy Model Estimate
Smart Water Heater Controller	2.5 Dth/unit	2019 Nexant Energy Model Estimate
MULTIFAMILY		
Measure	Annual Savings	Source
Natural Gas Furnace - 95% AFUE	8.8 Dth/unit	2017 Nexant Energy Model Estimate
Natural Gas Furnace - 98% AFUE	10.4 Dth/unit	2017 Nexant Energy Model Estimate
Gas Storage Water Heater	2.15 Dth/unit	2010 Deemed savings reduced by realization rate*
Tankless Gas Water Heater	6.0 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Condensing Gas Storage Water Heater	5.4 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Hybrid Gas Water Heater	5.4 Dth/unit	PECI Energy Model (REM/Design v. 12.61)

*See Cadmus Phase II Evaluation

Gas Boiler Tier 1	12.08 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Gas Boiler Tier 2	16.11 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Solar Assisted Gas Water Heating (domestic)	17.5 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Solar Assisted Gas Water Heating (pool)	68.9 Dth/unit	2012 PECI Energy Model Estimate
Direct Vent Gas Fireplace	4.1 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Smart Thermostat	4.0 Dth/unit	2014 PECI Energy Model Estimate
Combined Space and Hot Water	14.1 Dth/unit	2017 Nexant Energy Model Estimate
Smart Water Heater Controller	1.75 Dth/unit	2019 Nexant Energy Model Estimate
ThermWise® Business Rebates		
Measure	Annual Savings	Source
Gas Storage Water Heater	3.03 Dth/unit	2019 Illinois Statewide Technical Reference Manual v7
Gas Storage Water Heater (>75 kBtu)	0.29 Dth/unit	
Tankless Gas Water Heater	0.14 Dth/unit	2019 Illinois Statewide Technical Reference Manual v7
Commercial Tankless Water Heater >200kBtu 90%	0.250 Dth/unit	
Commercial Clothes Washer	6.5 Dth/unit	Assume 14 pound capacity – Illinois TRM v6
Low Flow Pre-Rinse Spray Valve	10.8 Dth/unit	California Energy Wise Pre-Rinse Spray Valve Tool 2019 methodology, Assuming 3 gpm existing valve replaced with 1.25 gpm unit.
Natural Gas Furnace - 95% AFUE	17.60 Dth/unit	2019 Illinois Statewide Technical Reference Manual v7
Natural Gas Furnace - 98% AFUE	21.10 Dth/unit	2019 Illinois Statewide Technical Reference Manual v7
Gas Boiler (Hot Water) Tier 1	0.13 Dth/unit	2019 Illinois Statewide Technical Reference Manual v7
Gas Boiler (Hot Water) Tier 2 ≥ 300,000 < 2,500,000	0.160 Dth/unit	2019 Illinois Statewide Technical Reference Manual v7
Gas Boiler (Hot Water) Tier 3 ≥ 300,000 < 2,500,000 95%+	0.244 Dth/unit	2019 Illinois Statewide Technical Reference Manual v7

*See Cadmus Phase II Evaluation

Gas Boiler (Hot Water) ≥ 2,500,000 BTU/h	0.159 Dth/unit	2019 Illinois Statewide Technical Reference Manual v7
Gas Boiler (Hot Water) ≥ 2,500,000 BTU/h	0.206 Dth/unit	2019 Illinois Statewide Technical Reference Manual v7
Gas Boiler (steam)	0.163 Dth/unit	2019 Illinois Statewide Technical Reference Manual v7
Gas Boiler(Steam) (Except Natural Draft) ≥ 300,000 Btu/h	0.07 Dth/unit	2019 Illinois Statewide Technical Reference Manual v7
Gas Boiler (Steam) (Natural Draft) ≥ 300,000 Btu/h	0.12 Dth/unit	2019 Illinois Statewide Technical Reference Manual v7
Direct Contact Gas Water Heater	0.23 Dth/unit	2019 Illinois Statewide Technical Reference Manual v7
Direct Fired Heater	0.83 Dth/unit	2017 Nexant Energy Model Estimate
Condensing Gas Water Heater	10.2 Dth/unit	2018 Nexant Energy Model Estimate
Hybrid Water Heater	10.2 Dth/unit	2019 Illinois Statewide Technical Reference Manual v7
Combined Space / Water Heater	18.7 Dth/unit	2019 Illinois Statewide Technical Reference Manual v7
Unit Heater (NonCondensing)	0.06 Dth/unit	2018 Nexant Energy Model Estimate
Unit Heater (Condensing)	0.17 Dth/unit	
Green Certified New Buildings	0.0070 Dth/unit	2018 Nexant Energy Model Estimate
Infrared Heating System	0.48 Dth/system	2014 Nexant Engineering Estimate
Modulating Infrared Heaters (NC or Replacing Non IR)	.55 Dth/unit	2014 Nexant Engineering Estimate
Modulating Infrared Heaters (Replacing Non IR)	.07 Dth/unit	2014 Nexant Engineering Estimate
Condensing RTU's	.41 Dth/unit	2014 Nexant Engineering Estimate
Gas Boiler Outside Air Reset Control	74.1 Dth/unit	2018 Nexant Energy Model Estimate
Gas Boiler Tune-up – Tier 1	19.60 Dth/unit	2018 Nexant Energy Model Estimate
Gas Boiler Tune-up – Tier 2	48.86 Dth/unit	2018 Nexant Energy Model Estimate
Gas Boiler Tune-up – Tier 3	72.0 Dth/unit	2018 Nexant Energy Model Estimate

*See Cadmus Phase II Evaluation

Smart Thermostat	.007 Dth/sq. ft.	2016 Nexant Energy Model Estimate
Gas Commercial Fryer	40.4 Dth/unit	ENERGY STAR® Gas Fryer Calculator
Gas Commercial Fryer (Used)	40.4 Dth/unit	2018 Nexant Energy Model Estimate
Gas Steam Cooker	88.30 Dth/unit	Illinois TRM V6 – savings, Case Studies: Restaurant Energy Efficiency PG&E – incremental cost
Gas Steam Cooker (Used)	35.30 Dth /unit	Illinois TRM V6 – savings, Case Studies: Restaurant Energy Efficiency PG&E – incremental cost
Gas Convection Oven	35.20 Dth/per vat	Illinois TRM V6
Gas Convection Oven (Used)	16.15	Illinois TRM V6
Gas Combination Oven	40.3 Dth/unit	State of Minnesota TRM 2019 v3
Gas Combination Oven (Used)	40.3 Dth/unit	State of Minnesota TRM 2019 v3
Gas Griddle	14.9 Dth/unit	Illinois TRM V6 – savings, ACEEE “Baseline Market Conditions for Efficient Commercial and Industrial Gas Technologies” – incremental cost
Gas Griddle (Used)	8.8 Dth/unit	Illinois TRM V6 – savings, ACEEE “Baseline Market Conditions for Efficient Commercial and Industrial Gas Technologies” – incremental cost
Wall Insulation (retrofit)	0.004 Dth/ sq. ft.	DOE-2 modeling against ASHRAE 90.1-2004 Baseline
Roof Insulation (retrofit)	0.0023 Dth/ sq. ft.	2017 Nexant Energy Model Estimate
Charbroiler	75 Dth/unit	2015 Nexant Energy Model Estimate
Charbroiler (Used)	75 Dth/unit	2018 Nexant Energy Model Estimate
Conveyor Oven	88.40 Dth/unit	2015 Nexant Energy Model Estimate
Conveyor Oven (Used)	88.40 Dth/unit	2018 Nexant Energy Model Estimate
Gas Dryer Moisture Sensor	11.20 Dth/unit	2015 Nexant Energy Model Estimate
Modulating Gas Dryer	32 Dth/unit	2015 Nexant Energy Model Estimate
Solar Water Heater – Pool (business)	68.90 Dth/unit	2015 Nexant Energy Model Estimate
Demand Control Ventilation Tier 2	.0068 Dth/CFM	2017 Nexant Energy Model Estimate
Demand Control Ventilation Tier 1	27.2 Dth/unit	2017 Nexant Energy Model Estimate
Custom Measures	1,000 Dth/project	2014 Nexant Engineering Estimate

*See Cadmus Phase II Evaluation

Pipe Insulation (Hot Water)	.84 Dth/ sq. ft.	2017 Nexant Energy Model Estimate
Pipe Insulation (Steam)	3.13 Dth/ sq. ft.	2017 Nexant Energy Model Estimate
Prescriptive ERV	9.1 Dth/unit	2018 Nexant Energy Model Estimate
ThermWise® Builder Rebates		
SINGLE FAMILY		
Measure	Annual Savings	Source
Pay for Performance	20.00 Dth/unit	2019 Nexant Energy Model Estimate
ENERGY STAR® 3.0 Bonus	22.78 Dth/unit	2019 Nexant Energy Model Estimate
DOE Zero Energy Ready Bonus	23.78 Dth/unit	2019 Nexant Energy Model Estimate
Natural Gas Furnace - 95% AFUE	10.13 Dth/unit	2017 Nexant Energy Model Estimate
Natural Gas Furnace - 98% AFUE	12.15 Dth/unit	2017 Nexant Energy Model Estimate
Gas Storage Water Heater	2.86 Dth/unit	2010 Deemed savings reduced by realization rate*
Tankless Gas Water Heater	8.56 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Gas Condensing Storage Water Heater	8.68 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Hybrid Gas Water Heater	8.68 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Gas Boiler Tier 1	9.06 Dth/unit	2017 Nexant Energy Model Estimate
Gas Boiler Tier 2	16.11 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Solar Assisted Gas Water Heating (domestic)	17.5 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Solar Assisted Gas Water Heating (pool)	68.9 Dth/unit	2012 PECI Engineering Estimate
2X6 R-23 Walls	5.4 Dth/unit	2016 CLEAResult Energy Model Estimate
Windows R-5	0.029 Dth/per sq. ft.	PECI Energy Model (REM/Design v. 12.61)
Smart Thermostat	4.3 Dth/unit	2014 PECI Energy Model Estimate
Combined Space and Hot Water	18.3	2017 Nexant Energy Model Estimate
Smart Water Heater Controller	2.50 Dth/unit	2019 Nexant Energy Model Estimate
MULTIFAMILY		
Measure	Annual Savings	Source
Pay for Performance	10.00 Dth/unit	2019 Nexant Energy Model Estimate

*See Cadmus Phase II Evaluation

ENERGY STAR® 3.0 Bonus	11.13 Dth/unit	2019 Nexant Energy Model Estimate
DOE Zero Energy Ready Bonus	12.26 Dth/unit	2019 Nexant Energy Model Estimate
Natural Gas Furnace - 95% AFUE	7.6 Dth/unit	2017 Nexant Energy Model Estimate
Natural Gas Furnace - 98% AFUE	9.1 Dth/unit	2017 Nexant Energy Model Estimate
Gas Storage Water Heater	1.39 Dth/unit	2010 Deemed savings reduced by realization rate*
Tankless Gas Water Heater	5.4 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Condensing Gas Storage Water Heater	5.4 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Hybrid Gas Water Heater	5.4 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Gas Boiler Tier 1	9.06 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Gas Boiler Tier 2	16.11 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Solar Assisted Gas Water Heating (domestic)	17.5 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Solar Assisted Gas Water Heating (pool)	68.9 Dth/unit	2012 PECI Engineering Estimate
Windows R-5	0.021 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Smart Thermostat	1.7 Dth/unit	2014 PECI Energy Model Estimate
Combined Space and Hot Water	12.0 Dth/unit	2017 Nexant Energy Model Estimate
Smart Water Heater Controller	1.75 Dth/unit	2019 Nexant Energy Model Estimate
Energy Star High Rise	1.13	2017 Nexant Energy Model Estimate
ThermWise® Home Energy Plan		
Measure	Annual Savings	Source
Kitchen Sink Aerator	1.32 Dth/unit	2010 Nexant Engineering Calculation
Pipe Insulation	1.4 Dth/system	DOE Rebuild America Reenergize Energy Efficiency Guidebook
Faucet Aerator	0.44 Dth/unit	DOE Rebuild America Reenergize Energy Efficiency Guidebook
Low Flow Shower Head	5.79 Dth/unit	Nexant 2006 Market Study Report
ThermWise® Weatherization Rebates		
SINGLE FAMILY		
Measure	Annual Savings	Source

*See Cadmus Phase II Evaluation

Windows – R-5	0.0698 Dth/ sq. ft.	Nexant 2011 Engineering Calculation
Wall Insulation	0.0053 Dth/ sq. ft.	2010 Deemed savings reduced by realization rate*
Attic Insulation Tier 1	0.0053 Dth/ sq. ft.	2010 Deemed savings reduced by realization rate*
Attic Insulation Tier 2	0.0013 Dth/ sq. ft.	2010 Deemed savings reduced by realization rate*
Floor Insulation	0.0068 Dth/ sq. ft.	2010 Deemed savings reduced by realization rate*
Duct Sealing & Duct Insulation	0.29 Dth/ System	2019 Nexant Energy Model Estimate
Air Sealing	0.0028 Dth/system	2019 Nexant Energy Model Estimate
Pipe Insulation	0.19 Dth/ sq.ft.	2017 Nexant Energy Model Estimate
ICAST pilot	12.5 Dth/system	2017 Nexant Energy Model Estimate
MULTIFAMILY		
Measure	Annual Savings	Source
Windows – R-5	0.0698 Dth/ sq. ft.	Nexant 2011 Engineering Calculation
Wall Insulation	0.0053 Dth/ sq. ft.	2010 Deemed savings reduced by realization rate*
Attic Insulation Tier 1	0.0053 Dth/ sq. ft.	2010 Deemed savings reduced by realization rate*
Attic Insulation Tier 2	0.0013 Dth/ sq. ft.	2010 Deemed savings reduced by realization rate*
Floor Insulation	0.0068 Dth/ sq. ft.	2010 Deemed savings reduced by realization rate*
Duct Sealing & Duct Insulation	0.29 Dth/ system	2019 Nexant Energy Model Estimate
Low Income Assistance Program		
Measure	Annual Savings	Source
Natural Gas Furnace - 95% AFUE	11.77 Dth/unit	PECI Energy Model (REM/Design v. 12.61)
Natural Gas Furnace - 98% AFUE	13.85 Dth/unit	2015 PECI Energy Model Estimate

*See Cadmus Phase II Evaluation

Smart Thermostat	8.6 Dth/unit	2018 Nexant Energy Model Estimate
Note: An approved non-profit or governmental organization may apply for rebates under the ThermWise® Appliance and Weatherization programs for qualifying measures listed in sections 2.10 and 2.14 of the Tariff.		

ThermWise® Energy Comparison Report		
Measure	Annual Savings	Source
Energy Comparison Report	1.21 Dth/report	2019 Nexant Energy Model Estimate

MEASURE LIFE

ThermWise® Appliance Rebates		
SINGLE FAMILY		
Measure	Lifetime	Source
Natural Gas Furnace - 95% AFUE	20	2019 Nexant Energy Model Estimate
Natural Gas Furnace - 98% AFUE	20	2018 Nexant Energy Model Estimate
Gas Storage Water Heater	13	2011 PECEI estimate
Tankless Gas Water Heater	20	2011 PECEI estimate
Condensing Gas Storage Water Heater	13	2011 PECEI estimate
Hybrid Gas Water Heater	15	2011 PECEI estimate
Gas Boilers	20	2011 PECEI estimate
Solar Assisted Gas Water Heaters	20	2011 PECEI estimate
Direct Vent Natural Gas Fireplace	20	2011 PECEI estimate
Smart Thermostat	15	2014 PECEI estimate
Boiler Reset Control	18	2017 Nexant Energy Model Estimate
Combined Space and Hot Water	15	2017 Nexant Energy Model Estimate
Smart Water Heater Controller	10	2019 Nexant Energy Model Estimate

*See Cadmus Phase II Evaluation

MULTIFAMILY		
Measure	Lifetime	Source
Natural Gas Furnace - 95% AFUE	20	2019 Nexant Energy Model Estimate
Natural Gas Furnace - 98% AFUE	20	2018 Nexant Energy Model Estimate
Gas Storage Water Heaters	13	2011 PECl estimate
Tankless Gas Water Heaters	20	2011 PECl estimate
Condensing Gas Storage Water Heater	13	2011 PECl estimate
Hybrid Gas Water Heater	15	2011 PECl estimate
Gas Boilers	20	2011 PECl estimate
Solar Assisted Gas Water Heaters	20	2011 PECl estimate
Direct Vent Natural Gas Fireplace	20	2011 PECl estimate
Smart Thermostat	15	2014 PECl estimate
Combined Space and Hot Water	15	2017 Nexant Energy Model Estimate
Smart Water Heater Controller	10	2019 Nexant Energy Model Estimate
ThermWise® Business Rebates		
Measure	Lifetime	Source
Gas Storage Water Heater	15	Database for Energy Efficiency Resources (DEER) Estimated Useful Life Tables
Tankless Gas Water Heater	15	Database for Energy Efficiency Resources (DEER) Estimated Useful Life Tables
Commercial Tankless Water Heater >200kBTU 90%	15	
Commercial Clothes Washer	10	Database for Energy Efficiency Resources (DEER) Estimated Useful Life Tables
Low Flow Pre-Rinse Spray Valve	5	California Energy Wise 2019
Natural Gas Furnace - 95% AFUE	20	Database for Energy Efficiency Resources (DEER) Estimated Useful Life Tables

*See Cadmus Phase II Evaluation

Natural Gas Furnace - 98% AFUE	20	Database for Energy Efficiency Resources (DEER) Estimated Useful Life Tables
Gas Boiler (hot water)	20	Database for Energy Efficiency Resources (DEER) Estimated Useful Life Tables
Gas Boiler (hot water) ≥ 2,500,000 Btu/h	20	Database for Energy Efficiency Resources (DEER) Estimated Useful Life Tables
Gas Boiler (hot water) ≥ 300,000 < 2,500,000 95%+	20	
Gas Boiler (hot water) ≥ 2,500,000 Btu/h 95%+	20	
Gas Boiler (steam)	15	Database for Energy Efficiency Resources (DEER) Estimated Useful Life Tables
Gas Boiler (Steam) Except Natural Draft	15	Database for Energy Efficiency Resources (DEER) Estimated Useful Life Tables
Gas Boiler (Steam) Natural Draft	15	Database for Energy Efficiency Resources (DEER) Estimated Useful Life Tables
Direct Contact Gas Water Heater	20	Database for Energy Efficiency Resources (DEER) Estimated Useful Life Tables
Direct Fired Heater	15	2018 Nexant Energy Model Estimate
Condensing Gas Water Heater	15	Database for Energy Efficiency Resources (DEER) Estimated Useful Life Tables
Hybrid Gas Water Heater	15	Database for Energy Efficiency Resources (DEER) Estimated Useful Life Tables
Combined Space / Water Heater	15	Energy Trust of Oregon
Unit Heaters	18	Energy Trust of Oregon
Infrared Heating System	17	2014 Nexant estimate
Modulating Infrared Heaters (NC or Replacing Non IR)	17	2014 Nexant estimate
Modulating Infrared Heaters (Replacing Non IR)	17	2014 Nexant estimate
Condensing RTU's	15	2014 Nexant estimate
Boiler Outside Air Reset Control	20	2019 Illinois Statewide Technical Reference Manual v7
Boiler Tune-up (tiers 1, 2, & 3)	3	2019 Illinois Statewide Technical Reference Manual v7
Smart Thermostat	15	2014 PECL estimate

*See Cadmus Phase II Evaluation

Gas Commercial Fryer	8	State of Minnesota TRM 2019 v3
Gas Commercial Fryer (Used)	5	2018 Nexant Energy Model Estimate
Steam Cooker	10	2019 Illinois Statewide Technical Reference Manual v7
Steam Cooker (Used)	7	2018 Nexant Energy Model Estimate
Convection Oven	12	State of Minnesota TRM 2019 v3
Convection Oven (Used)	9	2018 Nexant Energy Model Estimate
Combination Oven	12	State of Minnesota TRM 2019 v3
Combination Oven (Used)	9	2018 Nexant Energy Model Estimate
Griddle	12	State of Minnesota TRM 2019 v3
Griddle (Used)	9	2018 Nexant Energy Model Estimate
Wall Insulation (retrofit)	35	Energy Trust of Oregon
Roof Insulation (retrofit)	35	Energy Trust of Oregon
Charbroiler	10	2019 Illinois Statewide Technical Reference Manual v7
Charbroiler (Used)	7	2018 Nexant Energy Model Estimate
Conveyor Oven	12	2019 Illinois Statewide Technical Reference Manual v7
Conveyor Oven (Used)	9	2018 Nexant Energy Model Estimate
Gas Dryer Moisture Sensor	10	2019 Illinois Statewide Technical Reference Manual v7
Modulating Gas Dryer	10	2019 Illinois Statewide Technical Reference Manual v7
Solar Water Heater – Pool (business)	20	2015 PECL Energy Model Estimate
Demand Control Ventilation Tier 2	10	2019 Illinois Statewide Technical Reference Manual v7
Demand Control Ventilation Tier 1	10	2019 Illinois Statewide Technical Reference Manual v7
Pipe Insulation (Hot Water)	10	Database for Energy Efficiency Resources (DEER) Estimated Useful Life Tables
Pipe Insulation (Steam)	10	Database for Energy Efficiency Resources (DEER) Estimated Useful Life Tables
Prescriptive ERV	15	2018 Nexant Energy Model Estimate
Green Certified New Buildings	25	2018 Nexant Energy Model Estimate
ThermWise® Builder Rebates		

*See Cadmus Phase II Evaluation

SINGLE FAMILY		
Measure	Lifetime	Source
Pay for Performance	30	2019 Nexant Energy Model Estimate
ENERGY STAR® 3.0 Bonus	30	2019 Nexant Energy Model Estimate
DOE Zero Energy Ready Bonus	30	2019 Nexant Energy Model Estimate
Natural Gas Furnace - 95% AFUE	20	2019 Nexant Energy Model Estimate
Natural Gas Furnace - 98% AFUE	20	2018 Nexant Energy Model Estimate
Gas Storage Water Heater	13	2011 PECEI estimate
Tankless Gas Water Heater	20	2011 PECEI estimate
Condensing Gas Storage Water Heater	13	2011 PECEI estimate
Hybrid Water Heater	15	2011 PECEI estimate
Residential Gas Boiler	20	2011 PECEI estimate
Solar Assisted Gas Water Heater	20	2011 PECEI estimate
2X6 R-23 Walls	30	2011 PECEI estimate
Windows – R-5	30	2011 Nexant estimate
Smart Thermostat	15	2014 PECEI estimate
Combined Space and Hot Water	15	2017 Nexant Energy Model Estimate
Smart Water Heater Controller	10	2019 Nexant Energy Model Estimate
MULTIFAMILY		
Measure	Lifetime	Source
Pay for Performance	30	2019 Nexant Energy Model Estimate
ENERGY STAR® 3.0 Bonus	30	2019 Nexant Energy Model Estimate
DOE Zero Energy Ready Bonus	30	2019 Nexant Energy Model Estimate
Natural Gas Furnace - 95% AFUE	20	2019 Nexant Energy Model Estimate
Natural Gas Furnace - 98% AFUE	20	Measure Life – Illinois TRM V6, incremental cost – Nexant Estimate 2018
Gas Storage Water Heater	13	2011 PECEI estimate
Tankless Gas Water Heater	20	2011 PECEI estimate
Condensing Gas Storage Water Heater	13	2011 PECEI estimate
Hybrid Gas Water Heater	20	2011 PECEI estimate
Gas Boiler	20	2011 PECEI estimate

*See Cadmus Phase II Evaluation

Solar Assisted Gas Water Heaters	20	2011 PECE estimate
Windows – R-5	30	2011 Nexant estimate
Smart Thermostat	15	2014 PECE estimate
Combined Space and Hot Water	15	2017 Nexant Energy Model Estimate
Smart Water Heater Controller	10	2019 Nexant Energy Model Estimate
Energy Star High Rise	30	2017 Nexant Energy Model Estimate
ThermWise® Home Energy Plan		
Measure	Lifetime	Source
Kitchen Sink Aerator	10	DOE Rebuild America Reenergize Energy Efficiency Guidebook
Pipe Insulation	10	DOE Rebuild America Reenergize Energy Efficiency Guidebook
Faucet Aerator	10	DOE Rebuild America Reenergize Energy Efficiency Guidebook
Low Flow Shower Head	10	Nexant 2006 Market Study Report
ThermWise® Weatherization Rebates		
SINGLE FAMILY		
Measure	Lifetime	Source
Windows – R-5	30	2011 Nexant estimate
Wall Insulation	35	RMP Home Energy Savings Program Filing 2006
Attic Insulation	35	RMP Home Energy Savings Program Filing 2006
Floor Insulation	35	RMP Home Energy Savings Program Filing 2006
Duct Sealing & Duct Insulation	35	2019 Nexant Energy Model Estimate
Air Sealing	35	2019 Nexant Energy Model Estimate
Pipe Insulation	10	2017 Nexant Energy Model Estimate
ICAST pilot	18	2017 Nexant Energy Model Estimate
MULTIFAMILY		
Measure	Lifetime	Source
Windows – R-5	30	2011 Nexant estimate
Wall Insulation	35	RMP Home Energy Savings Program Filing 2006
Attic Insulation	35	RMP Home Energy Savings Program Filing 2006
Floor Insulation	35	RMP Home Energy Savings Program Filing 2006
Duct Sealing & Duct Insulation	35	2019 Nexant Energy Model Estimate
Low Income Assistance Program		

*See Cadmus Phase II Evaluation

Measure	Lifetime	Source
Natural Gas Furnace - 95% AFUE	20	2019 Nexant Energy Model Estimate
Natural Gas Furnace - 98% AFUE	20	2018 Nexant Energy Model Estimate
Duct Sealing & Insulation	20	2018 Nexant Energy Model Estimate
Smart Thermostat	15	2018 Nexant Energy Model Estimate
ThermWise® Energy Comparison Report		
Measure	Lifetime	Source
Program Measures	1	2018 Dominion Energy Report estimate

INCREMENTAL COST

ThermWise® Appliance Rebates		
SINGLE FAMILY		
Measure	Incremental Cost	Source
Natural Gas Furnace - 95% AFUE	\$182/unit	2014 PECEI estimate
Natural Gas Furnace - 98% AFUE	\$683/unit	2018 Nexant Energy Model Estimate
Gas Storage Water Heater	\$161/unit	2014 PECEI estimate
Tankless Gas Water Heater	\$517/unit	2014 PECEI estimate
Condensing Gas Storage Water Heater	\$685/unit	Illinois TRM V6
Hybrid Gas Water Heater	\$878/unit	2018 Nexant Energy Model Estimate
Gas Boiler Tier 1	\$452/unit	2014 PECEI estimate
Gas Boiler Tier 2	\$1,123/unit	2014 PECEI estimate

*See Cadmus Phase II Evaluation

Solar Assisted Gas Water Heating (domestic)	\$4,500/unit	2014 PECEI estimate
Solar Assisted Gas Water Heating (pool)	\$2,250/unit	2014 PECEI estimate
Direct Vent natural gas fireplace	\$500/unit	2014 PECEI estimate
Smart Thermostat	\$170/unit	2014 PECEI estimate
Boiler Reset Control	\$500/unit	2017 Nexant Energy Model Estimate
Combined Space and Hot Water	\$1,722/unit	2017 Nexant Energy Model Estimate
Smart Water Heater Controller	\$150/unit	2019 Nexant Energy Model Estimate
MULTIFAMILY		
Measure	Incremental Cost	Source
Natural Gas Furnace - 95% AFUE	\$182/unit	2014 PECEI estimate
Natural Gas Furnace - 98% AFUE	\$683/unit	2018 Nexant Energy Model Estimate
Gas Storage Water Heater	\$161/unit	2014 PECEI estimate
Tankless Gas Water Heater	\$517/unit	2014 PECEI estimate
Condensing Gas Storage Water Heater	\$1,082/unit	2014 PECEI estimate
Hybrid Gas Water Heater	\$1,413/unit	2014 PECEI estimate
Gas Boiler Tier 1	\$452/unit	2014 PECEI estimate
Gas Boiler Tier 2	\$1,123/unit	2014 PECEI estimate
Solar Assisted Gas Water Heating (domestic)	\$4,500/unit	2014 PECEI estimate
Solar Assisted Gas Water Heating (pool)	\$2,250/unit	2014 PECEI estimate
Direct Vent natural gas fireplace	\$500/unit	2014 PECEI estimate
Smart Thermostat	\$170/unit	2014 PECEI estimate
Combined Space and Hot Water	\$1,722/unit	2017 Nexant Energy Model Estimate
Smart Water Heater Controller	\$150/unit	2019 Nexant Energy Model Estimate
ThermWise® Business Rebates		
Measure	Incremental Cost	Source
Gas Storage Water Heater	\$400/unit	2019 Illinois Statewide Technical Reference Manual v7
Gas Storage Water Heater	\$6.78/kBtu	2019 Illinois Statewide Technical Reference Manual v7

*See Cadmus Phase II Evaluation

(>75 kBtu)		
Tankless Gas Water Heater	\$4.24/kBtu	2014 Nexant Engineering Estimate
Commercial Tankless Water Heater >200kBTU 90%	\$5.22/kBTU	
Commercial Clothes Washer	\$136/unit	Assume 14 pound capacity – Illinois TRM V6
Low Flow Pre-Rinse Spray Valve	\$32/unit	AM Conservation Market Cost
Natural Gas Furnace - 95% AFUE	\$182/unit	2018 Nexant Contractor Survey
Natural Gas Furnace - 98% AFUE	\$683/unit	2018 Nexant Contractor Survey
Boiler (steam)	\$4.22/kBTU	2014 Nexant Engineering Estimate
	\$5.39/kBTU	
Boiler (hot water)	\$6.50/kBTU	2019 Nexant Engineering Estimate
Gas Boiler (hot water) ≥ 300,000 < 2,500,000 95%+	\$8.00/kBTU	2019 Nexant Engineering Estimate
Gas Boiler (hot water) ≥ 2,500,000 Btu/h 95%+	\$8.00/kBTU	2019 Nexant Engineering Estimate
Direct Contact Gas Water Heater	\$2.17/kBTU	2014 Nexant Engineering Estimate
Direct Fired Heater	\$8/kBTU	2018 Nexant Contractor Survey
Condensing Gas Storage Water Heater	\$685/unit	2019 Illinois Statewide Technical Reference Manual v7
Hybrid Gas Water Heater	\$878/unit	2018 Nexant Engineering Estimate
Combined Space / Water Heater	\$1,722/unit	2014 Nexant Engineering Estimate
Unit Heater (Non Condensing)	\$2.50/kBTU	2014 Nexant Engineering Estimate
Unit Heater (Condensing)	\$12.00/kBTU	
Infrared Heating System	\$11.43/kBTU	2014 Nexant Contractor Survey
Modulating Infrared	\$10.01/unit	2014 Nexant Contractor Survey
	\$21.44/unit	
Condensing RTU's	\$25/unit	2014 Nexant Engineering Estimate
Boiler Outside Air Reset Control	\$835/unit	2014 Nexant Engineering Estimate
Boiler Tune-up – Tier 1	\$169	2018 Nexant Contractor Survey
Boiler Tune-up – Tier 2	\$309	2018 Nexant Contractor Survey

*See Cadmus Phase II Evaluation

Boiler Tune-up – Tier 3	\$607	2018 Nexant Contractor Survey
Smart Thermostat	\$0.23/sq. ft.	2014 Nexant Engineering Estimate
Gas Commercial Fryer	\$1,219/unit	2019 Illinois Statewide Technical Reference Manual v7
Gas Commercial Fryer (Used)	\$610	2018 Nexant Engineering Estimate
Gas Steam Cooker	\$2,500/unit	Illinois TRM V6 – savings, Case Studies: Restaurant Energy Efficiency PG&E – incremental cost
Gas Steam Cooker (Used)	\$1,250	2018 Nexant Energy Model Estimate
Gas Convection Oven	\$1,572/per vat	2014 Nexant Engineering Estimate
Gas Convection Oven (Used)	\$786	2018 Nexant Engineering Estimate
Gas Combination Oven	\$5,717/unit	State of Minnesota TRM 2019 v3
Gas Combination Oven (Used)	\$2,859	2018 Nexant Engineering Estimate
Gas Griddle	\$902/unit	Illinois TRM V6 – savings, ACEEE “Baseline Market Conditions for Efficient Commercial and Industrial Gas Technologies” – incremental cost
Gas Griddle (Used)	\$451	2018 Nexant Energy Model Estimate
Gas Charbroiler	\$7,500	2016 Nexant Contractor Survey
Gas Charbroiler (Used)	\$3,250	2018 Nexant Energy Model Estimate
Gas Conveyor Oven	\$7,500	2017 Nexant Engineering Estimate
Gas Conveyor Oven (Used)	\$3,750	2018 Nexant Energy Model Estimate
Gas Dryer Moisture Sensor	\$199	Gas Technology Institute (GTI) - Technology Snapshot TS-C17
Modulating Gas Dryer	\$525	Gas Technology Institute (GTI) - Technology Snapshot TS-C11
Solar Water Heater – Pool (business)	\$2,250	2015 PECEI Energy Model Estimate
Wall Insulation (retrofit)	\$0.64 sq. ft.	Database for Energy Efficient Resources (DEER), California Energy Commission (CEC), and California Public Utilities Commission (CPUC). 2006
Roof Insulation (retrofit)	\$0.20 sq. ft.	Database for Energy Efficient Resources (DEER), California Energy Commission (CEC), and California Public Utilities Commission (CPUC). 2006
Demand Control Ventilation Tier 2	\$0.19 CFM	2019 Nexant Contractor Survey
Demand Control Ventilation	\$1,500 unit	2017 Nexant Energy Model Estimate

*See Cadmus Phase II Evaluation

Tier 1		
Custom Measures	\$8,000/project	2018 Nexant Contractor Survey
Pipe Insulation (Hot Water)	\$8.50/sq. ft.	2017 Nexant Energy Model Estimate
Pipe Insulation (Steam)	13.35/sq. ft.	2017 Nexant Energy Model Estimate
Prescriptive ERV	\$300	2018 Nexant Energy Model Estimate
Green Certified New Buildings	\$6	2018 Nexant Energy Model Estimate
ThermWise® Builder Rebates		
SINGLE FAMILY		
Measure	Incremental Cost	Source
Pay for Performance	\$1,080/unit	2019 Nexant Energy Model Estimate
ENERGY STAR® 3.0 Bonus	\$1,209/unit	2019 Nexant Energy Model Estimate
DOE Zero Energy Ready Bonus	\$1,309/unit	2019 Nexant Energy Model Estimate
Natural Gas Furnace - 95% AFUE	\$182/unit	2014 PECl estimate
Natural Gas Furnace - 98% AFUE	\$683/unit	2018 Nexant Energy Model Estimate
Gas Storage Water Heater	\$161/unit	2014 PECl estimate
Tankless Gas Water Heater	\$517/unit	2014 PECl estimate
Condensing Gas Storage Water Heater	\$685/unit	Illinois TRM V6
Hybrid Gas Water Heater	\$878/unit	2018 Nexant Energy Model Estimate
Gas Boiler Tier 1	\$452/unit	2014 PECl estimate
Gas Boiler Tier 2	\$1,123/unit	2014 PECl estimate
Solar Assisted Gas Water Heating (domestic)	\$4,500/unit	2011 PECl estimate
Solar Assisted Gas Water Heating (pool)	\$2,250/unit	2012 PECl estimate
2X6 R-23 Walls	\$1,000/unit	2016 CLEAResult Energy Model Estimate
Windows – R-5	\$3.50/ sq. ft.	Incremental cost – DOE – Cost-Effective Triple Pane and Low E Storm Windows
Smart Thermostat	\$170/unit	2014 Nexant estimate

*See Cadmus Phase II Evaluation

Combined Space and Hot Water	\$1,722/unit	2017 Nexant Energy Model Estimate
Smart Water Heater Controller	\$150/unit	2019 Nexant Energy Model Estimate
MULTIFAMILY		
Measure	Incremental Cost	Source
Pay for Performance	\$480/unit	2019 Nexant Energy Model Estimate
ENERGY STAR® 3.0 Bonus	\$550/unit	2019 Nexant Energy Model Estimate
DOE Zero Energy Ready Bonus	\$650/unit	2019 Nexant Energy Model Estimate
Natural Gas Furnace - 95% AFUE	\$182/unit	2014 PECl Estimate
Natural Gas Furnace - 98% AFUE	\$683/unit	Measure Life – Illinois TRM V6, incremental cost – Nexant Estimate 2018
Gas Storage Water Heater	\$161/unit	2014 PECl Estimate
Tankless Gas Water Heater	\$517/unit	2014 PECl Estimate
Condensing Gas Storage Water Heater	\$1,082/unit	2014 PECl estimate
Hybrid Gas Water Heater	\$878/unit	2018 Nexant Energy Model Estimate
Gas Boiler Tier 1	\$452/unit	2014 PECl estimate
Gas Boiler Tier 2	\$1,123/unit	2014 PECl estimate
Solar Assisted Gas Water Heating (domestic)	\$4,500/unit	2011 PECl estimate
Solar Assisted Gas Water Heating (pool)	\$2,250/unit	2012 PECl estimate
Windows – R-5	\$3.50/ sq. ft.	Incremental cost – DOE – Cost-Effective Triple Pane and Low E Storm Windows
Smart Thermostat	\$170/unit	2014 PECl estimate
Combined Space and Hot Water	\$1,722/unit	2017 Nexant Energy Model Estimate
Smart Water Heater Controller	\$150/unit	2019 Nexant Energy Model Estimate
Energy Star High Rise	\$170/unit	2017 Nexant Energy Model Estimate

*See Cadmus Phase II Evaluation

ThermWise® Home Energy Plan		
Measure	Incremental Cost	Source
Kitchen Sink Aerator	\$2.65/unit	Niagara Conservation
Pipe Insulation	\$3.35/unit	US Department of Energy's Rebuild America Reenergize Energy Efficiency Guidebook
Faucet Aerator	\$2.75/unit	Niagara Conservation
Low Flow Shower Head	\$4/unit	Nexant 2006 Market Study Report
ThermWise® Weatherization Rebates		
SINGLE FAMILY		
Measure	Incremental Cost	Source
Windows – R-5	\$3.52/sq.ft.	2011 Nexant estimate
Wall Insulation	\$0.64/sq.ft .	RMP Home Energy Savings Program Filing 1
Attic Insulation	Tier 1 - \$0.30/sq.ft .	2017 Nexant Energy Model Estimate
	Tier 2 - \$0.09/sq.ft.	
Floor Insulation	\$0.42/sq.ft.	RMP Home Energy Savings Program Filing 1
Duct Sealing & Duct Insulation	\$14/ln.ft.	2019 Nexant Energy Model Estimate
Air Sealing	\$0.25/sq.ft.	2011 Nexant estimate
Pipe Insulation	\$2.61/unit	2017 Nexant Energy Model Estimate
ICAST pilot	\$450/unit	2018 Nexant Energy Model Estimate
MULTIFAMILY		
Measure	Incremental Cost	Source
Windows – R-5	\$3.52/sq.ft.	2011 Nexant estimate
Wall Insulation	\$0.64/sq.ft.	RMP Home Energy Savings Program Filing 1
Attic Insulation	Tier 1 - \$0.34/sq.ft.	2009 Weatherization Participant Data and Insulation Vendor Estimates
	Tier 2 - \$0.11/sq.ft.	
Floor Insulation	\$0.42/sq.ft.	RMP Home Energy Savings Program Filing 1
Duct Sealing & Duct Insulation	\$14/ln.ft	2019 Nexant Energy Model Estimate
Low Income Assistance Program		
Measure	Incremental Cost	Source
Natural Gas Furnace - 95% AFUE	\$182/unit	2013 Questar Gas furnace survey
Natural Gas Furnace - 98% AFUE	\$1,105/unit	2015 PECEI Energy Model Estimate

*See Cadmus Phase II Evaluation

Duct Sealing & Insulation	\$657/system	2018 Nexant Energy Model Estimate
Smart Thermostat	\$170/unit	2018 Nexant Energy Model Estimate
ThermWise[®] Energy Comparison Report		
Measure	Incremental Cost	Source
Program Measures	\$1.99/project	2018 Dominion Energy Report estimate

*See Cadmus Phase II Evaluation