



## Appendix 2

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### Utah Cost Effectiveness

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## Portfolio and Sector Level Cost Effectiveness

The overall energy efficiency and peak reduction portfolio and component sectors were all cost effective on a PacifiCorp Total Resource Cost Test (PTRC), Total Resource Cost Test (TRC), Utility Cost Test (UCT), Ratepayer Impact Test (RIM) and Participant Cost Test (PCT) basis.

Decrement values are considered confidential on load control programs. Cost effectiveness ratios and inputs will be available under a protective agreement. A “Pass” designation equates to a benefit to cost ratio of 1 or better.

The following table provides the results of all five cost effectiveness tests.

<b>2012 Portfolio and Sector Cost Effectiveness Summary</b>	<b>PTRC</b>	<b>TRC</b>	<b>UCT</b>	<b>RIM</b>	<b>PCT</b>
Total Portfolio including Portfolio Costs, and Load Control	2.32	2.11	2.16	1.12	3.16
Energy Efficiency Portfolio Including Portfolio Costs	2.20	2.00	3.14	0.84	2.82
C & I Energy Efficiency Portfolio	2.19	1.99	3.84	0.91	2.32
Residential Energy Efficiency Portfolio	2.49	2.62	2.51	0.74	4.33
Load Control Portfolio <sup>1</sup>	Pass	Pass	Pass	Pass	NA

### Sector and Program Level Cost Effectiveness Summaries:

The cost effectiveness results for the sector level are aggregations of the costs and benefits from the component programs. The inputs and assumptions that support these results are contained in the program level cost effectiveness results.

**Table 1: Common Inputs**

Parameter	Value
Discount Rate	7.17%
Residential Line Loss	9.32%
Commercial Line Loss	8.71%
Industrial Line Loss	5.85%
Residential Energy Rate (\$/kWh) (2012 base rate)	\$0.0998
Commercial Energy Rate (\$/kWh) (2012 base rate)	\$0.0785
Industrial Energy Rate (including Irrigation) (\$/kWh) (2012 base rate) <sup>2</sup>	\$0.0538

<sup>1</sup> Decrement values or avoided costs are considered confidential on load control programs. Cost effectiveness ratios and inputs will be available under a protective agreement. A “Pass” designation equates to a benefit to cost ratio of 1 or better.

<sup>2</sup> Future rates determined using a 1.8% annual escalator.

**Table 2: Portfolio Level Costs**

Program	Value
Outreach and Communication Campaign	\$1,830,065
U of U Ambassador Sponsorship	\$7,796
Prior/New Programs	(\$29,522)
Portfolio Technical Reference Library	\$47,600
Total	\$1,855,938

**Table 3: 2012 Total Portfolio Including Portfolio Costs, and Load Control**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	NA	\$118,070,091	\$274,449,238	\$156,379,147	2.324
Total Resource Cost Test (TRC) No Adder	NA	\$118,070,091	\$249,499,308	\$131,429,217	2.113
Utility Cost Test (UCT)	NA	\$115,385,651	\$249,499,308	\$134,113,656	2.162
Rate Impact Test (RIM)		\$223,408,978	\$249,499,308	\$26,090,330	1.117
Participant Cost Test (PCT)		\$57,005,312	\$180,214,881	\$123,209,569	3.161
Lifecycle Revenue Impacts (\$/kWh)				(\$0.000054602)	

**Table 4: 2012 Energy Efficiency Portfolio Including Portfolio Costs**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0462	\$61,753,067	\$136,100,459	\$74,347,392	2.204
Total Resource Cost Test (TRC) No Adder	0.0462	\$61,753,067	\$123,727,690	\$61,974,623	2.004
Utility Cost Test (UCT)	0.0295	\$39,452,587	\$123,727,690	\$84,275,102	3.136
Rate Impact Test (RIM)		\$147,475,914	\$123,727,690	(\$23,748,224)	0.839
Participant Cost Test (PCT)		\$57,005,312	\$160,598,841	\$103,593,529	2.817
Lifecycle Revenue Impacts (\$/kWh)				\$0.000049700	

**Table 5: 2012 C&I Energy Efficiency Portfolio**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0445	\$42,796,324	\$93,557,237	\$50,760,913	2.186
Total Resource Cost Test (TRC) No Adder	0.0445	\$42,796,324	\$85,052,034	\$42,255,710	1.987
Utility Cost Test (UCT)	0.0231	\$22,172,736	\$85,052,034	\$62,879,298	3.836
Rate Impact Test (RIM)		\$93,299,502	\$85,052,034	(\$8,247,468)	0.912
Participant Cost Test (PCT)		\$42,932,189	\$99,607,113	\$56,674,925	2.320
Lifecycle Revenue Impacts (\$/kWh)				\$0.000029520	

**Table 6: 2012 Residential Energy Efficiency Portfolio**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0455	\$17,100,804	\$42,543,221	\$25,442,417	2.488
Total Resource Cost Test (TRC) No Adder	0.0455	\$17,100,804	\$38,675,656	\$21,574,851	2.262
Utility Cost Test (UCT)	0.0410	\$15,423,913	\$38,675,656	\$23,251,743	2.508
Rate Impact Test (RIM)		\$52,320,474	\$38,675,656	(\$13,644,818)	0.739
Participant Cost Test (PCT)		\$14,073,124	\$60,991,728	\$46,918,604	4.334
Lifecycle Revenue Impacts (\$/kWh)				\$0.000028556	

## Program Level Cost Effectiveness

### Cool Cash – Schedule 113

The tables below present the cost-effectiveness findings of the Utah Cool Cash program based on Rocky Mountain Power’s 2012 costs and savings estimates. The utility discount rate is from the 2011 PacifiCorp Integrated Resource Plan.

Cost-effectiveness was tested using the 2011 IRP 10% load factor east residential cooling decrement. Table 1 lists modeling inputs.

The program is cost-effective from the PTRC, TRC, UCT, and PCT perspectives.

**Table 1: Cool Cash Inputs**

Parameter	Value
Discount Rate	7.17%
Line Loss	9.32%
Residential Energy Rate (\$/kWh) (2012 base rate) <sup>3</sup>	\$0.0998

**Table 2: Cool Cash Annual Program Costs**

	Program Costs	Utility Admin	Evaluation	Incentives	Total Utility Costs	Net Participant Incremental Cost
Evaporative Cooler - Permanently Installed	\$41,192	\$1,790	\$5,282	\$82,050	\$130,314	(\$419,476)
Evaporative Cooler - Premium	\$100,385	\$4,363	\$12,873	\$395,750	\$513,371	(\$797,086)
Evaporative Cooler - Premium Ducted	\$4,216	\$183	\$541	\$32,000	\$36,940	(\$33,480)
Evaporative Cooler - Replacement	\$78,167	\$3,397	\$10,024	\$58,425	\$150,013	(\$617,958)
Central Air Conditioner Best Practice Installation	\$14,183	\$616	\$1,819	\$148,950	\$165,568	\$0
Central Air Conditioner Equipment	\$68,563	\$2,980	\$8,792	\$202,800	\$283,135	\$921,132
Central Air Conditioner Proper Sizing	\$34,359	\$1,493	\$4,406	\$72,675	\$112,934	\$0
Total	\$341,067	\$14,823	\$43,736	\$992,650	\$1,392,276	(\$946,868)

<sup>3</sup> Future rates determined using a 1.8% annual escalator.

**Table 3: Cool Cash Savings by Measure Type**

	Gross kWh Savings	Realization Rate	Adjusted Gross Savings	Net to Gross Percentage	Net kWh Savings	Measure Life
Evaporative Cooler - Permanently Installed	307,848	126%	387,888	76%	294,795	15
Evaporative Cooling - Premium	750,228	127%	952,790	79%	752,704	15
Evaporative Cooler - Premium Ducted	31,512	133%	41,911	79%	33,110	15
Evaporative Cooling - Replacements	584,184	121%	706,863	59%	417,049	15
Central Air Conditioner Best Practice Installation	105,999	90%	95,399	74%	70,595	15
Central Air Conditioner Equipment	512,408	90%	461,167	74%	341,264	10
Central Air Conditioner Proper Sizing	256,785	90%	231,107	74%	171,019	15
Total	2,548,964		2,877,124		2,080,535	

**Table 4: Cool Cash Program Level Cost-Effectiveness**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	-	(\$547,242)	\$3,481,794	\$4,029,036	-
Total Resource Cost Test (TRC) No Adder	-	(\$547,242)	\$3,165,267	\$3,712,510	-
Utility Cost Test (UCT)	0.0658	\$1,392,276	\$3,165,267	\$1,772,991	2.273
Rate Impact Test (RIM)		\$3,527,433	\$3,165,267	(\$362,166)	0.897
Participant Cost Test (PCT)		(\$1,405,905)	\$3,948,214	\$5,354,119	-
Lifecycle Revenue Impacts (\$/kWh)				\$0.000001230	
Discounted Participant Payback (years)				NA	

**Table 5: Evaporative Cooling - Permanently Installed**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	-	(\$371,212)	\$516,099	\$887,311	-
Total Resource Cost Test (TRC) No Adder	-	(\$371,212)	\$469,181	\$840,393	-
Utility Cost Test (UCT)	0.0419	\$130,314	\$469,181	\$338,867	3.600
Rate Impact Test (RIM)		\$445,904	\$469,181	\$23,277	1.052
Participant Cost Test (PCT)		(\$551,942)	\$497,300	\$1,049,242	-
Lifecycle Revenue Impacts (\$/kWh)				(\$0.000000079)	
Discounted Participant Payback (years)				NA	

**Table 6: Evaporative Cooling - Premium**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	-	(\$679,466)	\$1,317,762	\$1,997,227	-
Total Resource Cost Test (TRC) No Adder	-	(\$679,466)	\$1,197,965	\$1,877,431	-
Utility Cost Test (UCT)	0.0646	\$513,371	\$1,197,965	\$684,595	2.334
Rate Impact Test (RIM)		\$1,319,169	\$1,197,965	(\$121,204)	0.908
Participant Cost Test (PCT)		(\$1,008,970)	\$1,415,748	\$2,424,718	-
Lifecycle Revenue Impacts (\$/kWh)				\$0.000000412	
Discounted Participant Payback (years)				NA	

**Table 7: Evaporative Cooling - Premium Ducted**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	-	(\$28,540)	\$57,965	\$86,505	-
Total Resource Cost Test (TRC) No Adder	-	(\$28,540)	\$52,696	\$81,235	-
Utility Cost Test (UCT)	0.1057	\$36,940	\$52,696	\$15,755	1.427
Rate Impact Test (RIM)		\$72,386	\$52,696	(\$19,690)	0.728
Participant Cost Test (PCT)		(\$42,380)	\$76,867	\$119,247	-
Lifecycle Revenue Impacts (\$/kWh)				\$0.000000067	
Discounted Participant Payback (years)				NA	

**Table 8: Evaporative Cooling - Replacement**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	-	(\$526,370)	\$730,129	\$1,256,499	-
Total Resource Cost Test (TRC) No Adder	-	(\$526,370)	\$663,754	\$1,190,123	-
Utility Cost Test (UCT)	0.0341	\$150,013	\$663,754	\$513,741	4.425
Rate Impact Test (RIM)		\$596,480	\$663,754	\$67,274	1.113
Participant Cost Test (PCT)		(\$1,047,386)	\$815,149	\$1,862,535	-
Lifecycle Revenue Impacts (\$/kWh)				(\$0.000000228)	
Discounted Participant Payback (years)				NA	



**Table 9: Central Air Conditioning - Best Practice Installation**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0223	\$16,618	\$123,592	\$106,973	7.437
Total Resource Cost Test (TRC) No Adder	0.0223	\$16,618	\$112,356	\$95,737	6.761
Utility Cost Test (UCT)	0.2222	\$165,568	\$112,356	(\$53,213)	0.679
Rate Impact Test (RIM)		\$241,144	\$112,356	(\$128,788)	0.466
Participant Cost Test (PCT)		\$0	\$251,078	\$251,078	-
Lifecycle Revenue Impacts (\$/kWh)				\$0.000000437	
Discounted Participant Payback (years)				NA	

**Table 10: Central Air Conditioning - Equipment**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.3594	\$1,001,467	\$436,844	(\$564,623)	0.436
Total Resource Cost Test (TRC) No Adder	0.3594	\$1,001,467	\$397,131	(\$604,336)	0.397
Utility Cost Test (UCT)	0.1016	\$283,135	\$397,131	\$113,995	1.403
Rate Impact Test (RIM)		\$556,335	\$397,131	(\$159,204)	0.714
Participant Cost Test (PCT)		\$1,244,773	\$571,988	(\$672,784)	0.460
Lifecycle Revenue Impacts (\$/kWh)				\$0.000000746	
Discounted Participant Payback (years)				NA	

**Table 11: Central Air Conditioning – Proper Sizing**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0223	\$40,259	\$299,403	\$259,145	7.437
Total Resource Cost Test (TRC) No Adder	0.0223	\$40,259	\$272,185	\$231,926	6.761
Utility Cost Test (UCT)	0.0626	\$112,934	\$272,185	\$159,251	2.410
Rate Impact Test (RIM)		\$296,016	\$272,185	(\$23,831)	0.919
Participant Cost Test (PCT)		\$0	\$320,083	\$320,083	-
Lifecycle Revenue Impacts (\$/kWh)				\$0.000000081	
Discounted Participant Payback (years)				NA	

## Home Energy Savings Program – Schedule 111

The tables below present the cost-effectiveness findings of the Utah Home Energy Savings program based on Rocky Mountain Power’s 2012 costs and savings estimates. The Utility discount rate is from the 2011 Integrated Resource Plan (IRP).

Cost-effectiveness was tested using the 2011 load factor east residential decrements. Table 1 lists modeling inputs.

The program is cost-effective from the PTRC, TRC, UCT and PCT perspectives.

**Table 1: Home Energy Savings Inputs**

Parameter	Value
Discount Rate	7.17%
Residential Line Loss	9.32%
Residential Energy Rate (\$/kWh) (2012 base rate) <sup>4</sup>	\$0.0998

**Table 2: Home Energy Savings Annual Program Costs**

	Program Costs	Utility Admin	Incentives	Total Utility Costs	Net Participant Incremental Cost
HVAC	\$1,176,258	\$136,226	\$710,735	\$2,023,219	\$1,183,801
Appliance	\$592,823	\$68,656	\$510,197	\$1,171,676	\$591,202
Weatherization	\$1,188,502	\$137,644	\$1,932,615	\$3,258,761	\$3,193,837
Lighting	\$239,337	\$27,718	\$3,007,509	\$3,274,564	\$4,946,919
Total	\$3,196,920	\$370,244	\$6,161,056	\$9,728,220	\$9,915,759

**Table 3: Home Energy Savings by Measure Type**

	Gross kWh Savings	Realization Rate	Adjusted Gross Savings	Net to Gross Percentage	Net kWh Savings	Measure Life
HVAC	2,514,762	0.85	2,137,547	88%	1,881,042	20
Appliance	1,267,415	1.63	2,065,886	88%	1,817,980	15
Weatherization	2,540,938	1.62	4,116,320	88%	3,622,362	30
Lighting	59,635,688	0.99	59,039,331	58%	34,242,812	5
Total	65,958,803		67,359,085		41,564,195	

<sup>4</sup> Future rates determined using a 1.8% annual escalator.

**Table 4: Home Energy Savings Program Cost-Effectiveness Results**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0523	\$13,482,923	\$29,826,271	\$16,343,349	2.212
Total Resource Cost Test (TRC) No Adder	0.0523	\$13,482,923	\$27,114,792	\$13,631,870	2.011
Utility Cost Test (UCT)	0.0377	\$9,728,220	\$27,114,792	\$17,386,573	2.787
Rate Impact Test (RIM)		\$35,234,098	\$27,114,792	(\$8,119,305)	0.770
Participant Cost Test (PCT)		\$14,175,580	\$44,231,090	\$30,055,510	3.120
Lifecycle Revenue Impacts (\$/kWh)				\$0.000016992	
Discounted Participant Payback (years)				1.20	

**Table 5: HVAC (2011 IRP East Residential Cooling 10% Medium LF Decrement)**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.1084	\$2,496,285	\$4,010,377	\$1,514,093	1.607
Total Resource Cost Test (TRC) No Adder	0.1084	\$2,496,285	\$3,645,798	\$1,149,513	1.460
Utility Cost Test (UCT)	0.0878	\$2,023,219	\$3,645,798	\$1,622,579	1.802
Rate Impact Test (RIM)		\$4,428,705	\$3,645,798	(\$782,907)	0.823
Participant Cost Test (PCT)		\$1,345,228	\$3,444,241	\$2,099,013	2.560
Lifecycle Revenue Impacts (\$/kWh)				\$0.000002156	
Discounted Participant Payback (years)				3.14	

**Table 6: Appliance (2011 IRP East Residential Whole House 35% Medium LF Decrement)**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0646	\$1,252,680	\$1,930,883	\$678,203	1.541
Total Resource Cost Test (TRC) No Adder	0.0646	\$1,252,680	\$1,755,348	\$502,668	1.401
Utility Cost Test (UCT)	0.0604	\$1,171,676	\$1,755,348	\$583,672	1.498
Rate Impact Test (RIM)		\$3,142,191	\$1,755,348	(\$1,386,842)	0.559
Participant Cost Test (PCT)		\$671,820	\$2,749,418	\$2,077,598	4.092
Lifecycle Revenue Impacts (\$/kWh)				\$0.000004486	
Discounted Participant Payback (years)				0.94	

**Table 7: Weatherization (2011 IRP East Residential Cooling 10% Medium LF Decrement)**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0873	\$4,519,983	\$9,768,423	\$5,248,440	2.161
Total Resource Cost Test (TRC) No Adder	0.0873	\$4,519,983	\$8,880,384	\$4,360,401	1.965
Utility Cost Test (UCT)	0.0629	\$3,258,761	\$8,880,384	\$5,621,624	2.725
Rate Impact Test (RIM)		\$8,930,184	\$8,880,384	(\$49,800)	0.994
Participant Cost Test (PCT)		\$3,629,361	\$8,377,414	\$4,748,054	2.308
Lifecycle Revenue Impacts (\$/kWh)				\$0.000000104	
Discounted Participant Payback (years)				4.52	

**Table 8: Lighting (2011 IRP East Residential Lighting 48% Medium LF Decrement)**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0318	\$5,213,975	\$14,116,589	\$8,902,614	2.707
Total Resource Cost Test (TRC) No Adder	0.0318	\$5,213,975	\$12,833,262	\$7,619,288	2.461
Utility Cost Test (UCT)	0.0200	\$3,274,564	\$12,833,262	\$9,558,698	3.919
Rate Impact Test (RIM)		\$18,733,018	\$12,833,262	(\$5,899,756)	0.685
Participant Cost Test (PCT)		\$8,529,171	\$29,660,016	\$21,130,845	3.477
Lifecycle Revenue Impacts (\$/kWh)				\$0.000050138	
Discounted Participant Payback (years)				0.96	

## Refrigerator Recycling (See ya later, refrigerator®) – Schedule 117

The tables below present the cost-effectiveness findings of the See ya later, refrigerator® program based on Rocky Mountain Power’s 2012 costs and savings estimates. The Utility discount rate is from the 2011 Integrated Resource Plan (IRP).

Cost-effectiveness was tested using the 2011 IRP 35% load factor east residential whole house decrement. Table 1 lists modeling inputs.

The program is cost-effective from the PTRC, TRC, UCT, and PCT perspectives.

**Table 1: See-Ya-Later Refrigerator Inputs**

Parameter	Value
Discount Rate	7.17%
Residential Line Loss	9.32%
Residential Energy Rate (\$/kWh) (2012 base rate) <sup>5</sup>	\$0.0998

**Table 2: See-Ya-Later Refrigerator Annual Program Costs**

	Program Costs	Utility Admin	Evaluation	Incentives	Total Utility Costs
Refrigerators	\$933,676	\$56,666	(\$64,293)	\$285,150	\$1,211,198
Freezers	\$163,009	\$9,893	(\$11,225)	\$68,580	\$230,258
Kits	\$71,975	\$4,368	(\$4,956)	\$65,248	\$136,634
Total	\$1,168,660	\$70,927	(\$80,474)	\$418,978	\$1,578,090

**Table 3: See-Ya-Later Refrigerator Savings by Measure Type**

	Gross kWh Savings	Realization Rate	Adjusted Gross Savings	Net to Gross Percentage	Net kWh Savings	Measure Life
Refrigerators	11,548,575	100%	11,548,575	78%	9,054,083	6
Freezers	2,016,252	100%	2,016,252	66%	1,336,775	9
Kits	890,251	100%	890,251	100%	890,251	5
Total	14,455,078		14,455,078		11,281,109	

<sup>5</sup> Future rates determined using a 1.8% annual escalator.

**Table 4: See-Ya-Later Refrigerator Program Cost-Effectiveness Results**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0179	\$1,159,112	\$5,753,153	\$4,594,041	4.963
Total Resource Cost Test (TRC) No Adder	0.0179	\$1,159,112	\$5,230,140	\$4,071,027	4.512
Utility Cost Test (UCT)	0.0244	\$1,578,090	\$5,230,140	\$3,652,050	3.314
Rate Impact Test (RIM)		\$7,752,411	\$5,230,140	(\$2,522,271)	0.675
Participant Cost Test (PCT)		\$0	\$8,413,231	\$8,413,231	-
Lifecycle Revenue Impacts (\$/kWh)				\$0.000012892	
Discounted Participant Payback (years)				NA	

**Table 5: See-Ya-Later Refrigerator - Refrigerators Cost-Effectiveness Results**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0184	\$926,048	\$4,441,528	\$3,515,480	4.796
Total Resource Cost Test (TRC) No Adder	0.0184	\$926,048	\$4,037,753	\$3,111,704	4.360
Utility Cost Test (UCT)	0.0241	\$1,211,198	\$4,037,753	\$2,826,554	3.334
Rate Impact Test (RIM)		\$5,997,443	\$4,037,753	(\$1,959,690)	0.673
Participant Cost Test (PCT)		\$0	\$6,390,054	\$6,390,054	-
Lifecycle Revenue Impacts (\$/kWh)				\$0.000014176	
Discounted Participant Payback (years)				NA	

**Table 6: See-Ya-Later Refrigerator – Freezers Cost-Effectiveness Results**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0160	\$161,677	\$937,276	\$775,599	5.797
Total Resource Cost Test (TRC) No Adder	0.0160	\$161,677	\$852,069	\$690,392	5.270
Utility Cost Test (UCT)	0.0227	\$230,257	\$852,069	\$621,812	3.701
Rate Impact Test (RIM)		\$1,216,442	\$852,069	(\$364,373)	0.700
Participant Cost Test (PCT)		\$0	\$1,556,038	\$1,556,038	-
Lifecycle Revenue Impacts (\$/kWh)				\$0.000001862	
Discounted Participant Payback (years)				NA	

**Table 7: See-Ya-Later Refrigerator - Kits Cost-Effectiveness Results**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0168	\$71,387	\$374,349	\$302,962	5.244
Total Resource Cost Test (TRC) No Adder	0.0168	\$71,387	\$340,318	\$268,931	4.767
Utility Cost Test (UCT)	0.0321	\$136,634	\$340,318	\$203,683	2.491
Rate Impact Test (RIM)		\$538,526	\$340,318	(\$198,209)	0.632
Participant Cost Test (PCT)		\$0	\$467,139	\$467,139	-
Lifecycle Revenue Impacts (\$/kWh)				\$0.000001684	
Discounted Participant Payback (years)				NA	



## New Homes – Schedule 110

The tables below present the cost-effectiveness findings of the Utah New Homes program based on Rocky Mountain Power’s 2012 costs and savings estimates. The utility discount rate is from the 2011 PacifiCorp Integrated Resource Plan. Tables 1-3 list the modeling inputs.

Cost-effectiveness was tested on four scenarios.

1. Option 1: 2011 IRP 35% load factor east residential whole house decrement (Table 4).
2. Option 1: 2007 IRP 46% load factor east residential whole house decrement (Table 5).
3. Option 2: 2011 IRP 35% load factor east residential whole house decrement (Table 6).
4. Option 2: 2007 IRP 46% load factor east residential whole house decrement (Table 7).

For scenarios 1,2, and 4, the program is cost-effective from the PCT perspective only. For scenario 3, the program is cost-effective from the PTRC, UCT, and PCT perspectives.

**Table 1: New Homes Inputs**

Parameter	Value
Discount Rate	7.17%
Residential Line Loss	9.32%
Residential Energy Rate (\$/kWh) (2012 base rate) <sup>6</sup>	\$0.0998

**Table 2: New Homes Annual Program Costs**

	Program Costs	Utility Admin	Evaluation	Incentives	Total Utility Costs	Net Participant Incremental Cost
Option 1	\$999,085	\$54,571	\$198,662	\$762,075	\$2,014,394	\$1,042,759
Option 2	\$950,097	\$43,014	\$2,065	\$762,075	\$1,757,251	\$1,042,759

<sup>6</sup> Future rates determined using a 1.8% annual escalator.

**Table 3: New Homes Savings by Measure Type**

	Gross kWh Savings	Realization Rate	Adjusted Gross Savings	Net to Gross Percentage	Net kWh Savings	Measure Life
Option 1	2,964,656	90%	2,668,190	80%	2,134,552	10
Option 2	2,964,656	90%	2,668,190	80%	2,134,552	10

**Table 4: New Homes Option 1 with 2011 IRP 35% Load Factor Decrement**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.1329	\$2,295,078	\$2,213,626	(\$81,452)	0.965
Total Resource Cost Test (TRC) No Adder	0.1329	\$2,295,078	\$2,012,387	(\$282,691)	0.877
Utility Cost Test (UCT)	0.1167	\$2,014,394	\$2,012,387	(\$2,007)	0.999
Rate Impact Test (RIM)		\$3,706,180	\$2,012,387	(\$1,693,793)	0.543
Participant Cost Test (PCT)		\$1,303,449	\$2,876,808	\$1,573,359	2.207
Lifecycle Revenue Impacts (\$/kWh)				\$0.000007932	
Discounted Participant Payback (years)				2.09	

**Table 5: New Homes Option 1 with 2007 IRP 46% Load Factor Decrement**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.1329	\$2,295,078	\$1,827,052	(\$468,026)	0.796
Total Resource Cost Test (TRC) No Adder	0.1329	\$2,295,078	\$1,660,957	(\$634,121)	0.724
Utility Cost Test (UCT)	0.1167	\$2,014,394	\$1,660,957	(\$353,437)	0.825
Rate Impact Test (RIM)		\$3,706,180	\$1,660,957	(\$2,045,224)	0.448
Participant Cost Test (PCT)		\$1,303,449	\$2,876,808	\$1,573,359	2.207
Lifecycle Revenue Impacts (\$/kWh)				\$0.000009578	
Discounted Participant Payback (years)				2.09	

**Table 6: New Homes Option 2 with 2011 IRP 35% Load Factor Decrement**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.1180	\$2,037,935	\$2,213,626	\$175,690	1.086
Total Resource Cost Test (TRC) No Adder	0.1180	\$2,037,935	\$2,012,387	(\$25,548)	0.987
Utility Cost Test (UCT)	0.1018	\$1,757,251	\$2,012,387	\$255,136	1.145
Rate Impact Test (RIM)		\$3,449,038	\$2,012,387	(\$1,436,651)	0.583
Participant Cost Test (PCT)		\$1,303,449	\$2,876,808	\$1,573,359	2.207
Lifecycle Revenue Impacts (\$/kWh)				\$0.000006728	
Discounted Participant Payback (years)				2.09	

**Table 7: New Homes Option 2 with 2007 IRP 46% Load Factor Decrement**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.1180	\$2,037,935	\$1,827,052	(\$210,883)	0.897
Total Resource Cost Test (TRC) No Adder	0.1180	\$2,037,935	\$1,660,957	(\$376,979)	0.815
Utility Cost Test (UCT)	0.1018	\$1,757,251	\$1,660,957	(\$96,294)	0.945
Rate Impact Test (RIM)		\$3,449,038	\$1,660,957	(\$1,788,081)	0.482
Participant Cost Test (PCT)		\$1,303,449	\$2,876,808	\$1,573,359	2.207
Lifecycle Revenue Impacts (\$/kWh)				\$0.000008374	
Discounted Participant Payback (years)				2.09	

## Home Energy Reports

The tables below present the cost-effectiveness findings of the Utah Home Energy Reports program based on Rocky Mountain Power's 2012 costs and savings estimates. The utility discount rate is from the 2011 PacifiCorp Integrated Resource Plan.

Cost-effectiveness was tested using the 2011 IRP 35% load factor east residential whole house decrement. Table 1 lists modeling inputs.

The program is cost-effective from the PTRC, TRC, UCT, and PCT perspectives.

**Table 1: Home Energy Reports Inputs**

Parameter	Value
Discount Rate	7.17%
Residential Line Loss	9.32%
Residential Energy Rate (\$/kWh) (2012 base rate) <sup>7</sup>	\$0.0998

**Table 2: Home Energy Reports Annual Program Costs**

	Program Costs	Utility Admin	Evaluation	Incentives	Total Utility Costs
Home Energy Reports	\$363,560	\$35,859	\$134,687	\$0	\$534,106

**Table 3: Home Energy Reports Savings by Measure Type**

	Gross kWh Savings	Realization Rate	Adjusted Gross Savings	Net to Gross Percentage	Net kWh Savings	Measure Life
Home Energy Reports	7,859,888	100%	7,859,888	100%	7,859,888	1

<sup>7</sup> Future rates determined using a 1.8% annual escalator.

**Table 4: Home Energy Reports Cost-Effectiveness Results**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0622	\$534,106	\$671,187	\$137,080	1.257
Total Resource Cost Test (TRC) No Adder	0.0622	\$534,106	\$610,170	\$76,063	1.142
Utility Cost Test (UCT)	0.0622	\$534,106	\$610,170	\$76,063	1.142
Rate Impact Test (RIM)		\$1,318,523	\$610,170	(\$708,353)	0.463
Participant Cost Test (PCT)		\$0	\$784,417	\$784,417	-
Lifecycle Revenue Impacts (\$/kWh)				\$0.000027711	
Discounted Participant Payback (years)				NA	

## Low Income – Schedule 118

The tables below present the cost-effectiveness findings of the Utah Low Income Weatherization program based on Rocky Mountain Power’s 2012 costs and savings estimates. The utility discount rate is from the 2011 PacifiCorp Integrated Resource Plan.

Cost-effectiveness was tested using the 2011 IRP 35% load factor east residential whole house decrement. Table 1 lists modeling inputs.

The program is cost-effective from the PTRC, TRC, UCT, and PCT perspectives.

**Table 1: Low Income Weatherization Inputs**

Parameter	Value
Discount Rate	7.17%
Residential Line Loss	9.32%
Residential Energy Rate (\$/kWh) (2012 base rate) <sup>8</sup>	\$0.0998

**Table 2: Low Income Weatherization Annual Program Costs**

	Program Costs	Utility Admin	Evaluation	Incentives	Total Utility Costs
Low Income Weatherization	\$11,234	\$18,869	\$13,759	\$132,966	\$176,828

**Table 3: Low Income Weatherization Savings by Measure Type**

	Gross kWh Savings	Realization Rate	Adjusted Gross Savings	Net to Gross Percentage	Net kWh Savings	Measure Life
Low Income Weatherization	840,349	80%	672,279	100%	672,279	11.7

**Table 4: Low Income Weatherization Cost-Effectiveness Results**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0290	\$176,828	\$597,190	\$420,363	3.377
Total Resource Cost Test (TRC) No Adder	0.0290	\$176,828	\$542,900	\$366,073	3.070
Utility Cost Test (UCT)	0.0290	\$176,828	\$542,900	\$366,073	3.070
Rate Impact Test (RIM)		\$781,829	\$542,900	(\$238,929)	0.694
Participant Cost Test (PCT)		\$0	\$737,968	\$737,968	NA
Lifecycle Revenue Impacts (\$/kWh)				\$0.000000965	
Discounted Participant Payback (years)				NA	

<sup>8</sup> Future rates determined using a 1.8% annual escalator.

## FinAnswer Express – Schedule 115

The tables below present the cost-effectiveness findings of the Utah FinAnswer Express program based on Rocky Mountain Power’s 2012 costs and savings estimates. The utility discount rate is from the 2011 PacifiCorp Integrated Resource Plan.

Cost-effectiveness was tested using the 2011 IRP 69% load factor east system decrement. Table 1 lists modeling inputs.

The program is cost-effective from PTRC, TRC, UTC and PCT perspectives.

**Table 1: FinAnswer Express Inputs**

Parameter	Value
Discount Rate	7.17%
Commercial Line Loss	8.71%
Industrial Line Loss	5.85%
Commercial Energy Rate (\$/kWh) (2012 base rate)	\$0.0785
Industrial Energy Rate—including Irrigation (\$/kWh) (2012 base rate) <sup>9</sup>	\$0.0538

**Table 2: FinAnswer Express Annual Program Costs**

	Marketing	Program Costs	Utility Admin	Engineering Costs	Incentives	Total Utility Costs	Net Participant Incremental Cost
Building Shell	\$5,687	\$20,779	\$4,242	\$9,938	\$130,647	\$171,292	\$360,756
Compressed Air	\$514	\$1,879	\$384	\$898	\$6,647	\$10,322	\$19,050
Controls	\$16	\$59	\$12	\$28	\$150	\$265	\$435
Dairy Farm Equipment	\$140	\$511	\$104	\$244	\$1,827	\$2,826	\$4,732
Food Service	\$2,422	\$8,849	\$1,807	\$4,232	\$18,495	\$35,804	\$191,630
HVAC	\$41,645	\$152,170	\$31,065	\$72,775	\$431,558	\$729,212	\$1,047,606
Irrigation	\$2,586	\$9,448	\$1,929	\$4,519	\$17,675	\$36,156	\$56,979
Lighting	\$416,337	\$1,521,301	\$310,570	\$727,558	\$3,703,624	\$6,679,389	\$12,364,957
Motors	\$3,016	\$11,020	\$2,250	\$5,270	\$24,671	\$46,227	\$54,662
Office	\$9	\$34	\$7	\$16	\$120	\$186	\$126
Total	\$472,371	\$1,726,049	\$352,369	\$825,478	\$4,335,413	\$7,711,680	\$14,100,935

<sup>9</sup> Future rates determined using a 1.8% annual escalator.

**Table 3: FinAnswer Express Savings by Measure Type**

	Gross kWh Savings	Realization Rate	Adjusted Gross Savings	Net to Gross Percentage	Net kWh Savings	Measure Life
Building Shell	431,154	100%	431,154	79%	340,612	14
Compressed Air	44,806	87%	38,981	79%	30,795	14
Controls	1,400	87%	1,218	79%	962	14
Dairy Farm Equipment	12,180	87%	10,597	79%	8,371	14
Food Service	211,049	87%	183,613	79%	145,054	14
HVAC	4,783,975	66%	3,157,424	79%	2,494,365	14
Irrigation	225,337	87%	196,043	79%	154,874	14
Lighting	35,870,410	88%	31,565,961	79%	24,937,109	14
Motors	278,857	82%	228,663	79%	180,644	14
Office	800	87%	696	79%	550	14
Total	41,859,968		35,814,349		28,293,335	

**Table 4: FinAnswer Express Program Level Cost-Effectiveness Results**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0615	\$17,477,201	\$29,029,891	\$11,552,690	1.661
Total Resource Cost Test (TRC) No Adder	0.0615	\$17,477,201	\$26,390,810	\$8,913,609	1.510
Utility Cost Test (UCT)	0.0271	\$7,711,680	\$26,390,810	\$18,679,131	3.422
Rate Impact Test (RIM)		\$29,473,970	\$26,390,810	(\$3,083,159)	0.895
Participant Cost Test (PCT)		\$17,849,284	\$31,882,616	\$14,033,331	1.786
Lifecycle Revenue Impacts (\$/kWh)				\$0.000011035	
Discounted Participant Payback (years)				5.65	

**Table 5: Building Shell**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.1173	\$401,402	\$346,248	(\$55,153)	0.863
Total Resource Cost Test (TRC) No Adder	0.1173	\$401,402	\$314,771	(\$86,630)	0.784
Utility Cost Test (UCT)	0.0500	\$171,292	\$314,771	\$143,479	1.838
Rate Impact Test (RIM)		\$433,279	\$314,771	(\$118,508)	0.726
Participant Cost Test (PCT)		\$456,653	\$462,276	\$5,623	1.012
Lifecycle Revenue Impacts (\$/kWh)				\$0.000000424	
Discounted Participant Payback (years)				13.66	



**Table 6: Compressed Air**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0734	\$22,725	\$27,709	\$4,984	1.219
Total Resource Cost Test (TRC) No Adder	0.0734	\$22,725	\$25,190	\$2,465	1.108
Utility Cost Test (UCT)	0.0334	\$10,322	\$25,190	\$14,867	2.440
Rate Impact Test (RIM)		\$34,009	\$25,190	(\$8,819)	0.741
Participant Cost Test (PCT)		\$24,114	\$36,630	\$12,516	1.519
Lifecycle Revenue Impacts (\$/kWh)				\$0.000000032	
Discounted Participant Payback (years)				6.91	

**Table 7: Controls**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0568	\$549	\$866	\$316	1.576
Total Resource Cost Test (TRC) No Adder	0.0568	\$549	\$787	\$238	1.433
Utility Cost Test (UCT)	0.0274	\$265	\$787	\$522	2.972
Rate Impact Test (RIM)		\$1,005	\$787	(\$218)	0.783
Participant Cost Test (PCT)		\$550	\$1,087	\$537	1.976
Lifecycle Revenue Impacts (\$/kWh)				\$0.000000001	
Discounted Participant Payback (years)				4.81	

**Table 8: Dairy Farm Equipment**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0681	\$5,731	\$7,532	\$1,801	1.314
Total Resource Cost Test (TRC) No Adder	0.0681	\$5,731	\$6,847	\$1,116	1.195
Utility Cost Test (UCT)	0.0336	\$2,826	\$6,847	\$4,022	2.423
Rate Impact Test (RIM)		\$9,265	\$6,847	(\$2,417)	0.739
Participant Cost Test (PCT)		\$5,991	\$9,978	\$3,987	1.666
Lifecycle Revenue Impacts (\$/kWh)				\$0.000000009	
Discounted Participant Payback (years)				5.91	

**Table 9: Food Service**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.1433	\$208,940	\$141,126	(\$67,814)	0.675
Total Resource Cost Test (TRC) No Adder	0.1433	\$208,940	\$128,296	(\$80,644)	0.614
Utility Cost Test (UCT)	0.0246	\$35,804	\$128,296	\$92,492	3.583
Rate Impact Test (RIM)		\$147,375	\$128,296	(\$19,079)	0.871
Participant Cost Test (PCT)		\$242,570	\$159,724	(\$82,847)	0.658
Lifecycle Revenue Impacts (\$/kWh)				\$0.000000068	
Discounted Participant Payback (years)				NA	

**Table 10: HVAC**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0537	\$1,345,261	\$2,535,643	\$1,190,383	1.885
Total Resource Cost Test (TRC) No Adder	0.0537	\$1,345,261	\$2,305,130	\$959,870	1.714
Utility Cost Test (UCT)	0.0291	\$729,212	\$2,305,130	\$1,575,918	3.161
Rate Impact Test (RIM)		\$2,647,794	\$2,305,130	(\$342,664)	0.871
Participant Cost Test (PCT)		\$1,326,084	\$2,860,142	\$1,534,059	2.157
Lifecycle Revenue Impacts (\$/kWh)				\$0.000001226	
Discounted Participant Payback (years)				4.08	

**Table 11: Irrigation**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0485	\$75,460	\$155,850	\$80,390	2.065
Total Resource Cost Test (TRC) No Adder	0.0485	\$75,460	\$141,682	\$66,222	1.878
Utility Cost Test (UCT)	0.0232	\$36,156	\$141,682	\$105,526	3.919
Rate Impact Test (RIM)		\$155,280	\$141,682	(\$13,598)	0.912
Participant Cost Test (PCT)		\$72,125	\$168,465	\$96,340	2.336
Lifecycle Revenue Impacts (\$/kWh)				\$0.000000049	
Discounted Participant Payback (years)				3.99	

**Table 12: Lighting**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0612	\$15,340,723	\$25,651,841	\$10,311,118	1.672
Total Resource Cost Test (TRC) No Adder	0.0612	\$15,340,723	\$23,319,855	\$7,979,133	1.520
Utility Cost Test (UCT)	0.0267	\$6,679,389	\$23,319,855	\$16,640,467	3.491
Rate Impact Test (RIM)		\$25,860,181	\$23,319,855	(\$2,540,326)	0.902
Participant Cost Test (PCT)		\$15,651,845	\$27,983,108	\$12,331,263	1.788
Lifecycle Revenue Impacts (\$/kWh)				\$0.000009092	
Discounted Participant Payback (years)				5.67	

**Table 13: Motors**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0420	\$76,219	\$162,537	\$86,318	2.133
Total Resource Cost Test (TRC) No Adder	0.0420	\$76,219	\$147,761	\$71,542	1.939
Utility Cost Test (UCT)	0.0255	\$46,227	\$147,761	\$101,534	3.196
Rate Impact Test (RIM)		\$185,172	\$147,761	(\$37,411)	0.798
Participant Cost Test (PCT)		\$69,193	\$200,551	\$131,358	2.898
Lifecycle Revenue Impacts (\$/kWh)				\$0.000000134	
Discounted Participant Payback (years)				2.71	

**Table 14: Office**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0347	\$192	\$539	\$347	2.806
Total Resource Cost Test (TRC) No Adder	0.0347	\$192	\$490	\$298	2.551
Utility Cost Test (UCT)	0.0336	\$186	\$490	\$304	2.639
Rate Impact Test (RIM)		\$609	\$490	(\$119)	0.805
Participant Cost Test (PCT)		\$160	\$655	\$495	4.096
Lifecycle Revenue Impacts (\$/kWh)				\$0.000000000	
Discounted Participant Payback (years)				0.93	

## Energy FinAnswer - Schedule 125

The tables below present the cost-effectiveness findings of the Utah Energy FinAnswer program based on Rocky Mountain Power's 2012 costs and savings estimates. The utility discount rate is from the 2011 PacifiCorp Integrated Resource Plan.

Cost-effectiveness was tested using the 2011 IRP 69% load factor east system decrement. Table 1 lists modeling inputs.

The program is cost-effective from PTRC, TRC, UTC and PCT perspectives.

**Table 1: Energy FinAnswer Inputs**

Parameter	Value
Discount Rate	7.17%
Commercial Line Loss	8.71%
Industrial Line Loss	5.85%
Commercial Energy Rate (\$/kWh) (2012 base rate) <sup>10</sup>	\$0.0785
Industrial Energy Rate (including Irrigation) (\$/kWh) (2012 base rate) <sup>1</sup>	\$0.0538

**Table 2: Energy FinAnswer Annual Program Costs**

	Program Costs	Utility Admin	Engineering Costs	Incentives	Total Utility Costs	Net Participant Incremental Cost
Additional Measures	\$26,401	\$24,142	\$58,839	\$342,108	\$451,491	\$2,346,920
Building Shell	\$11,450	\$10,471	\$25,518	\$154,122	\$201,561	\$944,620
Compressed Air	\$173,159	\$158,345	\$385,913	\$2,222,348	\$2,939,765	\$3,859,500
Controls	\$1,253	\$1,146	\$2,793	\$13,942	\$19,134	\$10,032
Hot Water	\$614	\$562	\$1,369	\$8,634	\$11,178	\$33,373
HVAC	\$223,665	\$204,529	\$498,474	\$2,929,447	\$3,856,115	\$7,200,965
Irrigation	\$557	\$509	\$1,241	\$7,904	\$10,211	\$24,314
Lighting	\$53,344	\$48,780	\$118,886	\$819,421	\$1,040,430	\$1,374,723
Motors	\$60,509	\$55,332	\$134,855	\$440,547	\$691,243	\$972,376
Refrigeration	\$40,914	\$37,413	\$91,183	\$456,977	\$626,487	\$1,104,338
Total	\$591,866	\$541,229	\$1,319,071	\$7,395,449	\$9,847,615	\$17,871,161

<sup>10</sup> Future rates determined using a 1.8% annual escalator.

**Table 3: Energy FinAnswer Savings by Measure Type**

	Gross kWh Savings	Realization Rate	Adjusted Gross Savings	Net to Gross Percentage	Net kWh Savings	Measure Life
Additional Measures	2,751,127	101%	2,778,638	87%	2,417,415	14
Building Shell	1,205,089	100%	1,205,089	87%	1,048,427	14
Compressed Air	18,596,394	98%	18,224,466	87%	15,855,286	14
Controls	112,722	117%	131,885	87%	114,740	14
How Water	65,283	99%	64,630	87%	56,228	14
HVAC	23,777,838	99%	23,540,060	87%	20,479,852	14
Irrigation	59,202	99%	58,610	87%	50,991	14
Lighting	6,605,034	85%	5,614,279	87%	4,884,423	14
Motors	6,774,905	94%	6,368,411	87%	5,540,517	14
Refrigeration	4,263,404	101%	4,306,038	87%	3,746,253	14
Total	64,210,998		62,292,106		54,194,132	

**Table 4: Energy FinAnswer Program Level Cost-Effectiveness Results**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0374	\$20,323,327	\$51,656,612	\$31,333,285	2.542
Total Resource Cost Test (TRC) No Adder	0.0374	\$20,323,327	\$46,960,557	\$26,637,230	2.311
Utility Cost Test (UCT)	0.0181	\$9,847,615	\$46,960,557	\$37,112,941	4.769
Rate Impact Test (RIM)		\$50,150,605	\$46,960,557	(\$3,190,048)	0.936
Participant Cost Test (PCT)		\$20,541,564	\$53,720,724	\$33,179,160	2.615
Lifecycle Revenue Impacts (\$/kWh)				\$0.000011418	
Discounted Participant Payback (years)				3.06	

**Table 5: Additional Measures**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.1014	\$2,456,303	\$2,169,311	(\$286,992)	0.883
Total Resource Cost Test (TRC) No Adder	0.1014	\$2,456,303	\$1,972,101	(\$484,202)	0.803
Utility Cost Test (UCT)	0.0186	\$451,491	\$1,972,101	\$1,520,610	4.368
Rate Impact Test (RIM)		\$2,249,270	\$1,972,101	(\$277,169)	0.877
Participant Cost Test (PCT)		\$2,697,609	\$2,408,521	(\$289,089)	0.893
Lifecycle Revenue Impacts (\$/kWh)				\$0.000000992	
Discounted Participant Payback (years)				NA	

**Table 6: Building Shell**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0944	\$992,059	\$940,825	(\$51,234)	0.948
Total Resource Cost Test (TRC) No Adder	0.0944	\$992,059	\$855,296	(\$136,763)	0.862
Utility Cost Test (UCT)	0.0192	\$201,561	\$855,296	\$653,735	4.243
Rate Impact Test (RIM)		\$981,253	\$855,296	(\$125,958)	0.872
Participant Cost Test (PCT)		\$1,085,770	\$1,050,320	(\$35,450)	0.967
Lifecycle Revenue Impacts (\$/kWh)				\$0.000000451	
Discounted Participant Payback (years)				NA	

**Table 7: Compressed Air**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0288	\$4,576,917	\$14,228,026	\$9,651,109	3.109
Total Resource Cost Test (TRC) No Adder	0.0288	\$4,576,917	\$12,934,569	\$8,357,652	2.826
Utility Cost Test (UCT)	0.0185	\$2,939,765	\$12,934,569	\$9,994,804	4.400
Rate Impact Test (RIM)		\$14,730,994	\$12,934,569	(\$1,796,425)	0.878
Participant Cost Test (PCT)		\$4,436,207	\$15,775,485	\$11,339,278	3.556
Lifecycle Revenue Impacts (\$/kWh)				\$0.000006430	
Discounted Participant Payback (years)				1.71	

**Table 8: Controls**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0132	\$15,224	\$102,964	\$87,740	6.763
Total Resource Cost Test (TRC) No Adder	0.0132	\$15,224	\$93,603	\$78,380	6.149
Utility Cost Test (UCT)	0.0166	\$19,134	\$93,603	\$74,470	4.892
Rate Impact Test (RIM)		\$104,463	\$93,603	(\$10,860)	0.896
Participant Cost Test (PCT)		\$11,531	\$112,022	\$100,491	9.715
Lifecycle Revenue Impacts (\$/kWh)				\$0.000000039	
Discounted Participant Payback (years)				0.49	

**Table 9: Hot Water**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0637	\$35,917	\$56,405	\$20,487	1.570
Total Resource Cost Test (TRC) No Adder	0.0637	\$35,917	\$51,277	\$15,360	1.428
Utility Cost Test (UCT)	0.0198	\$11,178	\$51,277	\$40,099	4.587
Rate Impact Test (RIM)		\$52,994	\$51,277	(\$1,717)	0.968
Participant Cost Test (PCT)		\$38,360	\$56,698	\$18,338	1.478
Lifecycle Revenue Impacts (\$/kWh)				\$0.000000006	
Discounted Participant Payback (years)				7.43	

**Table 10: HVAC**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0396	\$8,127,633	\$20,763,240	\$12,635,606	2.555
Total Resource Cost Test (TRC) No Adder	0.0396	\$8,127,633	\$18,875,673	\$10,748,039	2.322
Utility Cost Test (UCT)	0.0188	\$3,856,115	\$18,875,673	\$15,019,557	4.895
Rate Impact Test (RIM)		\$19,086,533	\$18,875,673	(\$210,860)	0.989
Participant Cost Test (PCT)		\$8,276,971	\$20,435,673	\$12,158,702	2.469
Lifecycle Revenue Impacts (\$/kWh)				\$0.000000755	
Discounted Participant Payback (years)				3.32	

**Table 11: Irrigation**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0521	\$26,621	\$51,175	\$24,554	1.922
Total Resource Cost Test (TRC) No Adder	0.0521	\$26,621	\$46,523	\$19,902	1.748
Utility Cost Test (UCT)	0.0200	\$10,211	\$46,523	\$36,312	4.556
Rate Impact Test (RIM)		\$48,132	\$46,523	(\$1,609)	0.967
Participant Cost Test (PCT)		\$27,947	\$51,491	\$23,544	1.842
Lifecycle Revenue Impacts (\$/kWh)				\$0.000000006	
Discounted Participant Payback (years)				5.24	



**Table 12: Lighting**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0326	\$1,595,732	\$5,011,015	\$3,415,283	3.140
Total Resource Cost Test (TRC) No Adder	0.0326	\$1,595,732	\$4,555,468	\$2,959,736	2.855
Utility Cost Test (UCT)	0.0213	\$1,040,430	\$4,555,468	\$3,515,038	4.378
Rate Impact Test (RIM)		\$4,672,868	\$4,555,468	(\$117,400)	0.975
Participant Cost Test (PCT)		\$1,580,141	\$4,994,637	\$3,414,496	3.161
Lifecycle Revenue Impacts (\$/kWh)				\$0.000000420	
Discounted Participant Payback (years)				1.91	

**Table 13: Motors**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0220	\$1,223,073	\$4,971,883	\$3,748,810	4.065
Total Resource Cost Test (TRC) No Adder	0.0220	\$1,223,073	\$4,519,894	\$3,296,821	3.696
Utility Cost Test (UCT)	0.0124	\$691,243	\$4,519,894	\$3,828,650	6.539
Rate Impact Test (RIM)		\$4,811,605	\$4,519,894	(\$291,711)	0.939
Participant Cost Test (PCT)		\$1,117,674	\$5,176,595	\$4,058,921	4.632
Lifecycle Revenue Impacts (\$/kWh)				\$0.000001044	
Discounted Participant Payback (years)				1.49	

**Table 14: Refrigeration**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0339	\$1,273,848	\$3,361,768	\$2,087,920	2.639
Total Resource Cost Test (TRC) No Adder	0.0339	\$1,273,848	\$3,056,152	\$1,782,305	2.399
Utility Cost Test (UCT)	0.0167	\$626,487	\$3,056,152	\$2,429,666	4.878
Rate Impact Test (RIM)		\$3,412,493	\$3,056,152	(\$356,341)	0.896
Participant Cost Test (PCT)		\$1,269,354	\$3,659,283	\$2,389,929	2.883
Lifecycle Revenue Impacts (\$/kWh)				\$0.000001275	
Discounted Participant Payback (years)				2.72	

## Recommissioning – Schedule 126

The tables below present the cost-effectiveness findings of the Utah Recommissioning program based on 2012 costs and savings estimates provided by PacifiCorp in a spreadsheet entitled “UT 2012 tables and charts FINAL CE inputs 04\_11\_2013 v2.xlsx”. The utility discount rate is from the 2011 PacifiCorp Integrated Resource Plan.

Cost-effectiveness was tested using the 2011 IRP 20% load factor east commercial cooling decrement. Table 1 lists modeling inputs.

The program is cost-effective from PTRC, TRP, UCT and PCT perspectives.

**Table 1: Recommissioning Inputs**

Parameter	Value
Discount Rate	7.17%
Commercial Line Loss	8.71%
Industrial Line Loss	5.85%
Commercial Energy Rate (\$/kWh) (2012 base rate)	\$0.0785
Industrial Energy Rate—including Irrigation (\$/kWh) (2012 base rate) <sup>11</sup>	\$0.0538

**Table 2: Recommissioning Annual Program Costs and Savings**

	Program Costs	Engineering	Utility Admin	Marketing	Incentives	Total Utility Costs	Net Participant Incremental Cost
Total	\$130,345	\$28,522	\$20,042	\$260,395	\$12,627	\$451,930	\$46,710.72

**Table 3: Recommissioning Savings by Measure Type**

	Gross kWh Savings	Realization Rate	Adjusted Gross Savings	Net to Gross Percentage	Net kWh Savings	Measure Life
Total	1,333,095	98%	1,306,433	84%	1,097,404	7

<sup>11</sup> Future rates determined using a 1.8% annual escalator.

**Table 4: Recommissioning Cost-Effectiveness Results**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0710	\$486,014	\$824,236	\$338,222	1.696
Total Resource Cost Test (TRC) No Adder	0.0710	\$486,014	\$749,306	\$263,292	1.542
Utility Cost Test (UCT)	0.0660	\$451,930	\$749,306	\$297,375	1.658
Rate Impact Test (RIM)		\$971,508	\$749,306	(\$222,202)	0.771
Participant Cost Test (PCT)		\$55,608	\$631,172	\$575,564	11.350
Lifecycle Revenue Impacts (\$/kWh)				\$0.000001406	
Discounted Participant Payback (years)				0.48	

## Self Direction – Schedule 192

The tables below present the cost-effectiveness findings of the Utah Self Direction program based on Rocky Mountain Power’s 2012 costs and savings estimates. The utility discount rate is from the 2011 PacifiCorp Integrated Resource Plan.

Cost-effectiveness was tested using the 2011 IRP 69% load factor east system decrement. Table 1 lists modeling inputs.

The program is cost-effective from PTRC, TRC, UTC and PCT perspectives.

**Table 1: Self Direction Inputs**

Parameter	Value
Discount Rate	7.17%
Commercial Line Loss	8.71%
Industrial Line Loss	5.85%
Commercial Energy Rate (\$/kWh) (2012 base rate)	\$0.0785
Industrial Energy Rate—including Irrigation (\$/kWh) (2012 base rate) <sup>12</sup>	\$0.0538

**Table 2: Self Direction Annual Program Costs**

	Marketing	Utility Admin	Engineering Costs	Program Costs	Total Utility Costs	Customer Bill Credits	Net Participant Incremental Cost
Commercial	\$20,820	\$26,730	\$34,049	\$67,219	\$148,817	\$2,233,200	\$2,465,873
Industrial	\$254,918	\$23,989	\$102,146	\$77,325	\$458,378	\$1,321,116	\$1,436,714
Total	\$275,738	\$50,719	\$136,194	\$144,544	\$607,195	\$3,554,316	\$3,902,587

**Table 3: Self Direction Savings by Measure Type**

	Gross kWh Savings	Realization Rate	Adjusted Gross Savings	Net to Gross Percentage	Net kWh Savings	Measure Life
Commercial	7,484,187	99%	7,409,345	87%	6,446,130	13
Industrial	8,030,398	99%	7,950,094	87%	6,916,582	13
Total	15,514,585		15,359,439		13,362,712	

<sup>12</sup> Future rates determined using a 1.8% annual escalator.

**Table 4: Self Direction Program Level Cost-Effectiveness Results**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0355	\$4,509,782	\$12,046,497	\$7,536,715	2.671
Total Resource Cost Test (TRC) No Adder	0.0355	\$4,509,782	\$10,951,361	\$6,441,579	2.428
Utility Cost Test (UCT)	0.0327	\$4,161,511	\$10,951,361	\$6,789,850	2.632
Rate Impact Test (RIM)		\$12,703,419	\$10,951,361	(\$1,752,058)	0.862
Participant Cost Test (PCT)		\$4,485,732	\$13,372,601	\$8,886,869	2.981
Lifecycle Revenue Impacts (\$/kWh)				\$0.000006643	
Discounted Participant Payback (years)				0.98	

**Table 5: Commercial**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0421	\$2,614,690	\$6,294,597	\$3,679,907	2.407
Total Resource Cost Test (TRC) No Adder	0.0421	\$2,614,690	\$5,722,361	\$3,107,671	2.189
Utility Cost Test (UCT)	0.0383	\$2,382,017	\$5,722,361	\$3,340,344	2.402
Rate Impact Test (RIM)		\$7,304,261	\$5,722,361	(\$1,581,900)	0.783
Participant Cost Test (PCT)		\$2,834,337	\$7,890,952	\$5,056,615	2.784
Lifecycle Revenue Impacts (\$/kWh)				\$0.000005998	
Discounted Participant Payback (years)				1.04	

**Table 6: Industrial**

	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0292	\$1,895,092	\$5,751,900	\$3,856,809	3.035
Total Resource Cost Test (TRC) No Adder	0.0292	\$1,895,092	\$5,229,000	\$3,333,909	2.759
Utility Cost Test (UCT)	0.0274	\$1,779,494	\$5,229,000	\$3,449,506	2.938
Rate Impact Test (RIM)		\$5,399,158	\$5,229,000	(\$170,158)	0.968
Participant Cost Test (PCT)		\$1,651,395	\$5,481,649	\$3,830,254	3.319
Lifecycle Revenue Impacts (\$/kWh)				\$0.000000645	
Discounted Participant Payback (years)				0.94	