Appendix 1

Cost Effectiveness
2010 Utah Energy Efficiency and Peak Reduction Annual Report

Rocky Mountain Power

Table of Contents

Cost Effectiveness and Program Evaluation

The cost effectiveness of individual programs operated by the Company for 2010 are calculated using actual expenditures and reported savings. Cost-effectiveness is provided at the individual program, load management portfolio, residential energy efficiency portfolio, non-residential energy efficiency portfolio, combined energy efficiency portfolio, and overall demand-side management program portfolio levels.

Energy savings shown in this report are gross savings and the impact of line losses is indicated through designations of the savings as being “at site” or “at generation”. Line losses are based on the Company’s 2007 line loss study. Net-to-gross assumptions are consistent with planning estimates and recent program evaluations. The energy savings attributed to each program are shaped according to specific end-use savings (the hourly calculation of when energy is used for the various end-use measures from which the savings are derived). Program costs and the value of the energy savings are then compared on a present value basis with the Company’s 2008 Integrated Resource Plan (IRP) calculated decrement values for demand-side resource savings and avoided capacity investments. The energy efficiency resource decrement values are fully shaped to represent the 8,760 hourly values that exist within a calendar year. By matching the hourly savings with the hourly avoided costs, both energy and capacity impacts of energy efficiency savings are recognized. The cost/benefit analysis of the load management programs are based on the avoided value of peak or capacity investments. For purposes of calculating program cost-effectiveness, no energy savings are included for the load management programs, only a shift of when the energy is used away from the peak load hours. The five California Standard Practice Manual cost effectiveness tests were utilized in the cost benefit analysis for both energy efficiency and load management programs.

The resultant benefit cost ratios may be used to assess relative sensitivity of input assumptions. For example, benefit cost ratios that are close to 1.0 would be highly sensitive to changes in savings, different customer costs, higher estimates of free-ridership, and variations in avoided costs or a different discount rate.

The Company updates the cost effectiveness results annually based on actual results. Key inputs like net to gross ratios, measure life and deemed savings values will be updated as formal evaluations are completed and during the course of normal program management. Company program managers employ professional judgment informed by input from third-party delivery vendors when key cost effectiveness inputs are changed. Any changes will be noted in future DSM Annual Reports.

Key Assumptions for Cost Effectiveness Calculations:

Cost effectiveness calculations for programs and measures (or measure groups) within each program will be detailed on the following tables.

Global assumptions used in all cost effectiveness calculations include:

Key Assumptions for All Cost Effectiveness Studies:

Assumption	Value	Source
Discount Rate	7.40%	2008 IRP
Line Losses (Utah Specific)		
Residential	9.845%	2007 MAC Line Loss Study
Commercial	9.379%	2007 MAC Line Loss Study
Industrial	5.726%	2007 MAC Line Loss Study

Key elements that go into the cost effectiveness calculation for each program include:

- KW/kWh Savings at Gross
- Administrative expenses
- Incentives paid
- Total utility costs – including administration and evaluation
- Gross customer costs
- Net To Gross ratio
- Measure life
- IRP decrement value

The following Tables provide details for the key assumptions and inputs for cost effectiveness calculations for each program.

Portfolio and Sector Level Cost Effectiveness

The overall DSM portfolio and component sectors were all cost effective on a Total Resource Cost and Utility Cost basis. Only the Non-residential and Load Management portfolios generated Ratepayer Impact Test results greater than 1.0.

The following table provides the overall portfolio and sector results of all 5 cost effectiveness tests.

2010 Portfolio and Sector Cost Effectiveness Summary					
	Cost Effectiveness Test				
	PTRC	**TRC**	**UCT**	**RIM**	**PCT**
2010 Total Portfolio Including Load Management & Marketing	2.015	1.832	1.821	1.048	7.072
2010 Load Management Portfolio	2.216	2.015	1.491	1.491	NA
2010 Energy Efficiency Portfolio Including Marketing	1.844	1.676	2.356	0.804	6.032
2010 Residential Energy Efficiency Portfolio	1.376	1.251	1.404	0.584	15.295
2010 Non-residential Energy Efficiency Portfolio	2.324	2.113	3.859	1.012	4.152

Portfolio and Segment Level Cost Effectiveness Summaries:

The cost effectiveness results for the portfolio level and segment 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.

2010 Total Portfolio Including Marketing and Load Control

	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	NA	$110,157,824	$222,011,812	$111,853,989	2.015
Total Resource Cost Test (TRC) No Adder	NA	$110,157,824	$201,828,920	$91,671,097	1.832
Utility Cost Test (UCT)	NA	$110,836,887	$201,828,920	$90,992,033	1.821
Rate Impact Test (RIM)		$192,513,554	$201,828,920	$9,315,366	1.048
Participant Cost Test (PCT)		$17,135,890	$121,182,681	$104,046,791	7.072
Lifecycle Revenue Impacts ($/kWh)				NA	

2010 Energy Efficiency Portfolio Including Marketing

	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0490	$59,438,048	$109,608,485	$50,170,437	1.844
Total Resource Cost Test (TRC) No Adder	0.0490	$59,438,048	$99,644,077	$40,206,030	1.676
Utility Cost Test (UCT)	0.0349	$42,302,157	$99,644,077	$57,341,920	2.356
Rate Impact Test (RIM)		$123,978,824	$99,644,077	($24,334,747)	0.804
Participant Cost Test (PCT)		$17,135,890	$103,367,728	$86,231,837	6.032
Lifecycle Revenue Impacts ($/kWh)				$0.0001299036	

2010 C&I Energy Efficiency Portfolio

	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0398	$31,479,735	$73,153,724	$41,673,989	2.324
Total Resource Cost Test (TRC) No Adder	0.0398	$31,479,735	$66,503,386	$35,023,650	2.113
Utility Cost Test (UCT)	0.0218	$17,235,285	$66,503,386	$49,268,101	3.859
Rate Impact Test (RIM)		$65,714,977	$66,503,386	$788,408	1.012
Participant Cost Test (PCT)		$14,244,451	$59,144,286	$44,899,835	4.152
Lifecycle Revenue Impacts ($/kWh)				($0.0000029375)	

2010 Residential Energy Efficiency Portfolio

	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0613	$26,490,191	$36,454,761	$9,964,570	1.376
Total Resource Cost Test (TRC) No Adder	0.0613	$26,490,191	$33,140,692	$6,650,501	1.251
Utility Cost Test (UCT)	0.0546	$23,598,752	$33,140,692	$9,541,940	1.404
Rate Impact Test (RIM)		$56,795,726	$33,140,692	($23,655,034)	0.584
Participant Cost Test (PCT)		$2,891,440	$44,223,442	$41,332,002	15.295
Lifecycle Revenue Impacts ($/kWh)				$0.0001262752	

2010 Load Control Portfolio

	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder		$50,719,776	$112,403,327	$61,683,551	2.216
Total Resource Cost Test (TRC) No Adder		$50,719,776	$102,184,843	$51,465,067	2.015
Utility Cost Test (UCT)		$68,534,730	$102,184,843	$33,650,113	1.491
Rate Impact Test (RIM)		$68,534,730	$102,184,843	$33,650,113	1.491
Participant Cost Test (PCT)		$0	$17,814,954	$17,814,954	NA
Lifecycle Revenue Impacts ($/kWh)				NA	

Program Level Cost Effectiveness

Irrigation Load Control Program – Schedules 96 and 96A

The following tables outline the primary inputs and assumptions utilized in the cost effectiveness calculations for the Irrigation Load Control program.

Program Inputs - Irrigation Load Control	Value	Source and Notes
Total kW Under Load Control (All contracts)	total KW	2010 UT Load Control Quantitative Review
Average kW Dispatched during irrigation season (At Site)	49,100	2010 Goals report
Average kW Dispatched during irrigation season (At Gen)	51,911	Calculation - Gross up for Line Losses at 5.73%
Benefit Value of Dispatched kW (At Gen)	$ 73.09	2010 Value as determined by agreed upon Valuation Methodology (see notes below) - 2008 IRP
Benefit Value = Avg kW Distpatched multiplied by $73.09	$ 3,794,209	Calculation ($73.09 $/kW * 51,911 kW-Yr)
Program Management and Administration Costs	$ 1,191,541	Annual costs 2010
Incentives	$ 1,321,171	Annual costs 2010
Total Utility Costs	$ 2,512,712	Annual costs 2010
Total Participant Costs	NA	There are no direct participant costs for the program.
Net To Gross Ratio	1.00	Assume 1.0 Net To Gross
Measure Life (Years)	10	Benefit value is NPV of 10 year benfits from avoided generation and market purchases.

Notes:
For cost effectiveness calculations, utilitzed Utah Industrial Line Losses of 5.73%.

2010 Irrigation Load Control

All Measures					
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder		$1,191,541	$4,187,537	$2,995,996	3.51
Total Resource Cost Test (TRC) No Adder		$1,191,541	$3,806,852	$2,615,311	3.19
Utility Cost Test (UCT)		$2,512,712	$3,806,852	$1,294,140	1.52
Rate Impact Test (RIM)		$2,512,712	$3,806,852	$1,294,140	1.52
Participant Cost Test (PCT)		$0	$1,321,171	$1,321,171	NA
Lifecycle Revenue Impacts ($/kWh)					
Discounted Participant Payback (years)					

Cost Effectiveness Inputs

Program kW savings are calculated based on the aggregation of individual meters with load control equipment (both scheduled and dispatchable). Baseline capacity under control at each participating site is calculated in accordance with the methodology stated in the applicable program tariff (Schedule 96 or Schedule 96A) and used in the

calculation of grower participation credits (site value) and in the calculation of the weighted average kW dispatch value or program performance achieved (value at generator). Curtailments/dispatch events are documented and time stamped by hour and month during the control season to arrive at total loads curtailed during each event for purposes of program analysis and reporting.

For benefit determination, the Company analyzed the value of kW savings from the program utilizing the 2008 IRP model. The valuation methodology is consistent with the valuation that was used for the initial program filing and with program valuation in other jurisdictions. The value for 2010 is $73.09/kW-yr at site.

The 2010 kW savings is the weighted average monthly dispatch for the irrigation season (49,100 kW at site or 51,911 kW at generation). This amount is then multiplied by the $73.09 value per kW to determine benefits for the current program year.

The tables below prepared by The Cadmus Group present the cost effectiveness findings of the Utah Irrigation Load Control program based on 2010 costs and savings estimates provided by PacifiCorp in an email dated 3/11/2011. The Utility discount rate is from the 2008 PacifiCorp Integrated Resource Plan. Cost effectiveness was tested using $73.09/kW. Table 1 lists modeling inputs. The program is cost effective from all perspectives.

Table 1: Irrigation Load Control Inputs

Parameter	Value
Discount Rate	7.4%
Line Loss – Irrigation	5.73%

Table 2: Irrigation Load Control
Annual Program Costs and Savings

	2010
Costs	
Administrative support	$ 1,191,541.00
Participation credits	$ 1,321,171.00
Total program costs	$ 2,512,712.00
Avoided Cost Benefits	
Total avoided MW all days	49,100
Value- $/MW	$73.09
Line Loss	5.73%
Value with line loss	$77.53
Total value of Avoided kW	$3,806,852

Table 3: Avoided Capacity @ $73.09/kW

All Measures					
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder		$1,191,541	$4,187,537	$2,995,996	3.51
Total Resource Cost Test (TRC) No Adder		$1,191,541	$3,806,852	$2,615,311	3.19
Utility Cost Test (UCT)		$2,512,712	$3,806,852	$1,294,140	1.52
Rate Impact Test (RIM)		$2,512,712	$3,806,852	$1,294,140	1.52
Participant Cost Test (PCT)		$0	$1,321,171	$1,321,171	NA
Lifecycle Revenue Impacts ($/kWh)					
Discounted Participant Payback (years)					

Cool Keeper – Schedule 114

Savings Calculations and Reporting

Load under management reported for the Cool Keeper program is based on metered results from the previous program year, multiplied by the average number of participating units in the report year. Metered results are derived from a representative sample of participating sites, what is referred to as the measurement and verification (M&V) group. The M&V group is broken down into two groups, the control group and experimental groups. The control group equipment is allowed to operate in its normal duty cycle whereas the experimental group is controlled as if part of the general population of participating sites. The metered results from these two groups are compared and the delta kW is used in determining program performance for a given dispatch event and in aggregate are averaged to determine the performance during a given control year. The M&V group was constructed and is maintained to be representative of the larger participating network of sites, from average equipment tonnage and housing types to temperature zones. Twenty percent of the M&V sites are rotated each year to maintain robustness of the random sampling and to adjust for any changes needed to preserve a representative metered sample. While reported performance results are based on prior year M&V results multiplied by current participation (lag actual results one year) vendor payments are reconciled at the end of each control season based on the current year's M&V results to preserve the pay for performance nature of the resource.

Cost Effectiveness

Cost effectiveness analysis of the Cool Keeper program was conducted on a program lifecycle basis for program years 2003 to 2013 in order to remove the cost differences from year to year associated with the contractual payment schedule under the pay for performance contract with the program delivery vendor where the cost of the program varies by program year. Looking at the program from an overall contract period perspective is consistent with the method used to evaluate the program when initially approved.

The $/kW-year value used for program benefit determination was $100.62/kW-year in 2010 dollars. This value was determined based on a 10 year discounted 110 MW decrement to the 2008 IRP preferred portfolio. The value includes $23/kW-year associated with deferral of transmission and distribution infrastructure, consistent with the 2008 IRP findings and assumptions.

Annual costs and benefits (historic and future) were adjusted to 2010 dollars for the analysis. The program lifecycle costs and benefits are included in the table below. As a general rule load management programs do not perform as well from a UTC perspective as a result of how customer incentives are treated in the calculation.

The tables below prepared by The Cadmus Group present the cost effectiveness findings of the Utah Cool Keeper program based on 2010 costs and savings estimates provided by PacifiCorp in a spreadsheet entitled "Cool Keeper Expenses for 2010 Annual Report CE Analysis (3_15-11)" updated with 2010 information provided in an email dated 3/16/2011. The Utility discount rate is from the 2008 PacifiCorp Integrated Resource Plan. Cost effectiveness was tested using $100.62/kW. Table 1 lists modeling inputs. The program is cost effective from all perspectives.

Table 1: Cool Keeper Inputs

Parameter	Value
Discount Rate	7.4%
Line Loss – Residential	9.85%
Line Loss – Commercial	9.38%

Table 2: Avoided Capacity @ $100.62/kW

All Measures					
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder		$49,528,235	$108,215,790	$58,687,555	2.18
Total Resource Cost Test (TRC) No Adder		$49,528,235	$98,377,991	$48,849,756	1.99
Utility Cost Test (UCT)		$66,022,018	$98,377,991	$32,355,974	1.49
Rate Impact Test (RIM)		$66,022,018	$98,377,991	$32,355,974	1.49
Participant Cost Test (PCT)			$16,493,783	$16,493,783	NA
Lifecycle Revenue Impacts ($/kWh)					
Discounted Participant Payback (years)					

Cool Cash – Schedule 113

The following tables outline the primary inputs and assumptions utilized in the cost effectiveness calculations for the Cool Cash program.

Reported kWh savings are calculated based on measure level evaluated savings values (ex post) multiplied by measure participation. Sources for the evaluated savings are included in the detailed table below.

Program Inputs - Cool Cash		
Gross kWh/Year Savings (at Site)	2,521,763	Annual results 2010 (Gross at Site) - Calculated as evaluated savings per unit (ex-post) * unit participation.
Program Management and Administration Costs	$ 589,565	Annual costs 2010
Incentives	$ 900,725	Annual costs 2010
Total Utility Costs	$ 1,490,290	Annual costs 2010
Total Participant Costs	$ (879,782)	Deemed incremental cost per unit is estimated by the program administrator - Nexant based on market data and available customer cost data.
Net To Gross Ratio		Varies by measure - see below.
Measure Life		Varies by measure - see below.

Cool Cash

All Measures				AC: IRP 7% LF Decrement	
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	(0.0105)	($103,642)	$2,054,649	$2,158,291	NA
Total Resource Cost Test (TRC) No Adder	(0.0105)	($103,642)	$1,867,862	$1,971,505	NA
Utility Cost Test (UCT)	0.1517	$1,490,290	$1,867,862	$377,573	1.253
Rate Impact Test (RIM)		$2,464,431	$1,867,862	($596,568)	0.758
Participant Cost Test (PCT)		($1,593,932)	$2,440,288	$4,034,220	NA
Lifecycle Revenue Impacts ($/kWh)				$0.0000089002	
Discounted Participant Payback (years)				NA	

Cool Cash Program Measure Group Inputs and Assumptions

Evaporative Cooler - Replacements	**Value**	**Source and Notes**
Gross kWh/Year Savings (at Site)	616,908	Annual results 2010 (Gross at Site) - Calculated as evaluated savings per unit (ex-post) * unit participation. Unit value is 1,212 kWh/yr.
Program Management and Administration Costs	$ 144,227	Allocated percentage (based on kWh contribution) of non -incentive costs for 2010.
Incentives	$ 61,675	Annual costs 2010
Total Utility Costs	$ 205,902	Annual costs 2010
Total Participant Costs	$ (1,106,057)	Deeemed incremental cost per unit is estimated by the program administrator - Nexant based on market data and available customer cost data. Value is ($2,173) per unit and is based on a baseline of code compliant compressor cooling system installation.
Net To Gross Ratio	0.223	2007 - 2008 Evaporative Cooler and Central Air Conditioning Incentive Program - Cadmus 2010.
Measure Life (Years)	15	2007 - 2008 Evaporative Cooler and Central Air Conditioning Incentive Program - Cadmus 2010.
2008 IRP Decrement Load Shape		East Side Residential Cooling
Evaporative Cooler - New	**Value**	**Source and Notes**
Gross kWh/Year Savings (at Site)	496,920	Annual results 2010 (Gross at Site) - Calculated as evaluated savings per unit (ex-post) * unit participation. Unit value is 1,212 kWh/yr.
Program Management and Administration Costs	$ 116,175	Allocated percentage (based on kWh contribution) of non -incentive costs for 2010.
Incentives	$ 133,225	Annual costs 2010
Total Utility Costs	$ 249,400	Annual costs 2010
Total Participant Costs	$ (890,930)	Same deemed cost estimate and methodology as evaporative cooler replacement.
Net To Gross Ratio	0.469	2007 - 2008 Evaporative Cooler and Central Air Conditioning Incentive Program - Cadmus 2010.
Measure Life (Years)	15	2007 - 2008 Evaporative Cooler and Central Air Conditioning Incentive Program - Cadmus 2010.
2008 IRP Decrement Load Shape		East Side Residential Cooling
Evaporative Cooler - Premium Only	**Value**	**Source and Notes**
Gross kWh/Year Savings (at Site)	364,812	Annual results 2010 (Gross at Site) - Calculated as evaluated savings per unit (ex-post) * unit participation. Unit value is 1,212 kWh/yr.
Program Management and Administration Costs	$ 85,290	Allocated percentage (based on kWh contribution) of non -incentive costs for 2010.
Incentives	$ 196,600	Annual costs 2010
Total Utility Costs	$ 281,890	Annual costs 2010
Total Participant Costs	$ (490,555)	Same deemed cost estimate and methodology as evaporative cooler replacement.
Net To Gross Ratio	0.469	2007 - 2008 Evaporative Cooler and Central Air Conditioning Incentive Program - Cadmus 2010.
Measure Life (Years)	15	2007 - 2008 Evaporative Cooler and Central Air Conditioning Incentive Program - Cadmus 2010.
2008 IRP Decrement Load Shape		East Side Residential Cooling

Evaporative Cooler - Premium Whole House (Ducted)	Value		Source and Notes
Gross kWh/Year Savings (at Site)		24,240	Annual results 2010 (Gross at Site) - Calculated as evaluated savings per unit (ex-post) * unit participation. Unit value is 1,212 kWh/yr.
Program Management and Administration Costs	$	5,667	Allocated percentage (based on kWh contribution) of non -incentive costs for 2010.
Incentives	$	25,750	Annual costs 2010
Total Utility Costs	$	31,417	Annual costs 2010
Total Participant Costs	$	-	Deemed incremental cost per unit is estimated by the program administrator - Nexant based on market data and available customer cost data. Assumes installation is same cost as code compliant compressor based coolign system.
Net To Gross Ratio		0.694	2007 - 2008 Evaporative Cooler and Central Air Conditioning Incentive Program - Cadmus 2010.
Measure Life (Years)		15	2007 - 2008 Evaporative Cooler and Central Air Conditioning Incentive Program - Cadmus 2010.
2008 IRP Decrement Load Shape			East Side Residential Cooling

Central AC Sizing and TXV	Value		Source and Notes
Gross kWh/Year Savings (at Site)		271,625	Annual results 2010 (Gross at Site) - Calculated as evaluated savings per unit (ex-post) * unit participation. Unit value is 265 kWh/yr.
Program Management and Administration Costs	$	63,503	Allocated percentage (based on kWh contribution) of non -incentive costs for 2010.
Incentives	$	76,850	Annual costs 2010
Total Utility Costs	$	140,353	Annual costs 2010
Total Participant Costs	$	-	Deemed value per unit based on program adminsitrator estimates. No additional participant costs for this measure
Net To Gross Ratio		0.47	2007 - 2008 Evaporative Cooler and Central Air Conditioning Incentive Program - Cadmus 2010.
Measure Life (Years)		15	2007 - 2008 Evaporative Cooler and Central Air Conditioning Incentive Program - Cadmus 2010.
2008 IRP Decrement Load Shape			East Side Residential Cooling

Central AC Charge and Airflow	Value		Source and Notes
Gross kWh/Year Savings (at Site)		110,538	Annual results 2010 (Gross at Site) - Calculated as evaluated savings per unit (ex-post) * unit participation. Unit value is 89 kWh/yr.
Program Management and Administration Costs	$	25,843	Allocated percentage (based on kWh contribution) of non -incentive costs for 2010.
Incentives	$	154,625	Annual costs 2010
Total Utility Costs	$	180,468	Annual costs 2010
Total Participant Costs	$	-	Deemed value per unit based on program adminsitrator estimates. No additional participant costs for this measure
Net To Gross Ratio		0.459	2007 - 2008 Evaporative Cooler and Central Air Conditioning Incentive Program - Cadmus 2010.
Measure Life (Years)		10	2007 - 2008 Evaporative Cooler and Central Air Conditioning Incentive Program - Cadmus 2010.
2008 IRP Decrement Load Shape			East Side Residential Cooling

Central Air Conditioning - 15+SEER/12.5EER	Value	Source and Notes
Gross kWh/Year Savings (at Site)	636,720	Annual results 2010 (Gross at Site) - Calculated as evaluated savings per unit (ex-post) * unit participation. Unit value is 379 kWh/yr.
Program Management and Administration Costs	$ 148,859	Allocated percentage (based on kWh contribution) of non -incentive costs for 2010.
Incentives	$ 252,000	Annual costs 2010
Total Utility Costs	$ 400,859	Annual costs 2010
Total Participant Costs	$ 1,607,760	Deemed incremental cost per unit is estimated by the program administrator - Nexant based on market data and available customer data. Value is $957 per unit.
Net To Gross Ratio	0.464	2007 - 2008 Evaporative Cooler and Central Air Conditioning Incentive Program - Cadmus 2010.
Measure Life (Years)	15	2007 - 2008 Evaporative Cooler and Central Air Conditioning Incentive Program - Cadmus 2010.
2008 IRP Decrement Load Shape		East Side Residential Cooling

The tables below prepared by The Cadmus Group present the cost effectiveness findings of the Utah Cool Cash program based on 2010 costs and savings estimates provided by PacifiCorp in a spreadsheet entitled “UT 2010 Tables and Charts (Draft 3 _15_2011)”. The Utility discount rate is from the 2008 PacifiCorp Integrated Resource Plan. Cost effectiveness was tested using the 2008 IRP 7% east residential cooling load factor decrement. Table 1 lists modeling inputs. The program is cost effective from the TRC, UCT and PCT perspectives. The benefit/cost ratio for the RIM test is less than 1, indicating the program will have an upward influence on rates.

Table 1: Cool Cash Inputs

Parameter	Value
Discount Rate	7.4%
Line Loss	9.85%
Residential Energy Rate ($/kWh)	$0.0880

Table 2: Cool Cash
Annual Program Costs and Savings

	Program Costs	Utility Admin	Evaluation	Incentives	Total Utility Costs	Net Participant Incremental Cost
Evaporative Cooling - Replacements	$147,618	$7,384		$50,900	$205,902	($1,106,057)
Evaporative Cooling - New	$119,452	$5,948		$124,000	$249,400	($890,930)
Evaporative Cooling - Premium Only	$124,223	$4,367		$153,300	$281,890	($490,555)
Evaporative Cooling - Premium whole house ducted system	$10,627	$290		$20,500	$31,417	$0
Central Air Conditioning - Sizing + TXV	$85,802	$3,251.33		$51,300	$140,353	$0
Central Air Conditioning - Charge + Airflow	$116,995	$1,323.13		$62,150	$180,468	$0
Central Air Conditioning - 15+SEER/12.5EER	$141,238	$7,621.49		$252,000	$400,859	$1,607,760
Total	$745,954	$30,185	$0	$714,150	$1,490,290	($879,782)

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 Cooling - Replacements	616,908	1.10	681,066	22%	151,877.81	15
Evaporative Cooling - New	496,920	1.10	548,600	47%	257,293.25	15
Evaporative Cooling - Premium Only	364,812	1.10	402,752	69%	279,510.20	15
Evaporative Cooling - Premium whole house ducted system	24,240	1.10	26,761	69%	18,572.11	15
Central Air Conditioning - Sizing + TXV	271,625	1.05	284,935	47%	133,919.27	15
Central Air Conditioning - Charge + Airflow	110,538	1.05	115,954	46%	53,223.05	10
Central Air Conditioning - 15+SEER/12.5EER	636,720	1.05	667,919	46%	309,914.55	15
Total	2,521,763		2,727,988		1,204,310	

Table 4: IRP 7% Load Factor Decrement

All Measures				AC: IRP 7% LF Decrement	
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	(0.0105)	($103,642)	$2,054,649	$2,158,291	NA
Total Resource Cost Test (TRC) No Adder	(0.0105)	($103,642)	$1,867,862	$1,971,505	NA
Utility Cost Test (UCT)	0.1517	$1,490,290	$1,867,862	$377,573	1.253
Rate Impact Test (RIM)		$2,464,431	$1,867,862	($596,568)	0.758
Participant Cost Test (PCT)		($1,593,932)	$2,440,288	$4,034,220	NA
Lifecycle Revenue Impacts ($/kWh)				$0.0000089002	
Discounted Participant Payback (years)				NA	

Table 5: Evaporative Cooling - Replacements

			AC: IRP 7% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	($951,055)	$262,793	$1,213,848	NA
Total Resource Cost Test (TRC) No Adder	($951,055)	$238,903	$1,189,958	NA
Utility Cost Test (UCT)	$205,902	$238,903	$33,001	1.160
Rate Impact Test (RIM)	$329,089	$238,903	($90,186)	0.726
Participant Cost Test (PCT)	($1,156,957)	$616,026	$1,772,983	NA
Discounted Participant Payback (years)			NA	

Table 6: Evaporative Cooling - New

			AC: IRP 7% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	($765,530)	$445,193	$1,210,723	NA
Total Resource Cost Test (TRC) No Adder	($765,530)	$404,721	$1,170,250	NA
Utility Cost Test (UCT)	$249,400	$404,721	$155,320	1.623
Rate Impact Test (RIM)	$464,939	$404,721	($60,218)	0.870
Participant Cost Test (PCT)	($1,014,930)	$496,210	$1,511,140	NA
Discounted Participant Payback (years)			NA	

Table 7: Evaporative Cooling - Premium Only

			AC: IRP 7% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	($361,965)	$483,635	$845,600	NA
Total Resource Cost Test (TRC) No Adder	($361,965)	$439,668	$801,633	NA
Utility Cost Test (UCT)	$281,890	$439,668	$157,778	1.560
Rate Impact Test (RIM)	$515,285	$439,668	($75,617)	0.853
Participant Cost Test (PCT)	($643,855)	$364,291	$1,008,146	NA
Discounted Participant Payback (years)			NA	

Table 8: Evaporative Cooling - Premium whole house ducted system

			AC: IRP 7% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$10,917	$32,135	$21,218	2.944
Total Resource Cost Test (TRC) No Adder	$10,917	$29,214	$18,297	2.676
Utility Cost Test (UCT)	$31,417	$29,214	($2,203)	0.930
Rate Impact Test (RIM)	$46,051	$29,214	($16,837)	0.634
Participant Cost Test (PCT)	($20,500)	$24,205	$44,705	NA
Discounted Participant Payback (years)			NA	

Table 9: Central Air Conditioning - Sizing + TXV

			AC: IRP 7% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$89,053	$231,720	$142,666	2.602
Total Resource Cost Test (TRC) No Adder	$89,053	$210,654	$121,601	2.365
Utility Cost Test (UCT)	$140,353	$210,654	$70,301	1.501
Rate Impact Test (RIM)	$251,813	$210,654	($41,159)	0.837
Participant Cost Test (PCT)	($51,300)	$257,724	$309,024	NA
Discounted Participant Payback (years)			NA	

Table 10: Central Air Conditioning - Charge + Airflow

			AC: IRP 7% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$118,318	$62,930	($55,388)	0.532
Total Resource Cost Test (TRC) No Adder	$118,318	$57,209	($61,109)	0.484
Utility Cost Test (UCT)	$180,468	$57,209	($123,259)	0.317
Rate Impact Test (RIM)	$203,696	$57,209	($146,487)	0.281
Participant Cost Test (PCT)	($62,150)	$77,697	$139,847	NA
Discounted Participant Payback (years)			NA	

Table 11: Central Air Conditioning - 15+SEER/12.5EER

			AC: IRP 7% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$1,756,619	$536,243	($1,220,376)	0.305
Total Resource Cost Test (TRC) No Adder	$1,756,619	$487,494	($1,269,125)	0.278
Utility Cost Test (UCT)	$400,859	$487,494	$86,635	1.216
Rate Impact Test (RIM)	$653,558	$487,494	($166,064)	0.746
Participant Cost Test (PCT)	$1,355,760	$604,135	($751,625)	0.446
Discounted Participant Payback (years)			-	

Energy Star New Homes – Schedule 110

The following tables outline the primary inputs and assumptions utilized in the cost effectiveness calculations for the Energy Star New Homes program.

Reported kWh savings are calculated based on measure level deemed savings values (ex ante) multiplied by measure participation. Sources for the deemed savings estimates are consistent with the estimates used in past program filings (Advice 08-01 and Advice 09-09).

Program Inputs - Energy Star New Homes		
Gross kWh/Year Savings (at Site)	5,931,957	Annual results 2010 (Gross at Site). Calculated as deemed savings per unit * unit participation. Deemed savings per unit is consistent with the measure level estimates utilized in past filings (Advice 08-01 and Advice 09-09).
Program Management and Administration Costs	$ 1,269,382	Annual costs 2010
Incentives	$ 1,335,170	Annual costs 2010
Total Utility Costs	$ 2,604,552	Annual costs 2010
Total Participant Costs	$ 1,803,315	Deemed costs per unit * unit participation. Deemed costs per unit is from Ecotope Residential New Construction Version 45 - 2008.
Net To Gross Ratio	0.74	Cadmus 2010 Program Evaluation
Measure Life		At program level, it is a weighted average of the measure group inputs.

Energy Star New Homes

All Measures				AC: IRP 46% LF Decrement	
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.1160	$2,603,835	$2,630,218	$26,383	1.010
Total Resource Cost Test (TRC) No Adder	0.1160	$2,603,835	$2,391,107	($212,728)	0.918
Utility Cost Test (UCT)	0.1160	$2,604,552	$2,391,107	($213,445)	0.918
Rate Impact Test (RIM)		$4,802,538	$2,391,107	($2,411,431)	0.498
Participant Cost Test (PCT)		($717)	$3,212,760	$3,213,477	NA
Lifecycle Revenue Impacts ($/kW				$0.0000524378	
Discounted Participant Payback				NA	

For this cost effectiveness analysis, program savings were grouped into measure groups with similar characteristics and measure lives. The approach is consistent with the analysis provided with Advice Filing 09-09. The measure groups are Building Shell, Lighting, HVAC and Dishwashers. Savings from Whole House measures offered by the program (e.g., Tier 1, Tier 2, etc.) were distributed to Shell and Lighting based on the analysis completed by the program administrator for Advice Filing 09-09.

Energy Star New Homes Program Measure Group Inputs and Assumptions

Building Shell	**Value**	**Source and Notes**
Gross kWh/Year Savings (at Site)	509,256	Annual results 2010 (Gross at Site) for Whole House Measures attributable to Building Shell based on analysis by program administrator ECOS.
Program Management and Administration Costs	$ 108,976	Allocated percentage (based on kWh contribution) of non -incentive costs for 2010.
Incentives	$ 87,278	Annual Incentives for 2010 for Whole House Measures attributable to Building Shell based on analysis by program administrator ECOS.
Total Utility Costs	$ 196,253	Sum of Program Management and Incentives
Total Participant Costs	$ 77,649	Incremental costs for 2010 for Whole House Measures attributable to Building Shell based on analysis by program administrator ECOS.
Net To Gross Ratio	0.74	Cadmus 2010 Program Evaluation
Measure Life (Years)	44	Consistent with Advice Filing 09-09
2008 IRP Decrement		East Side Residential Whole House

Lighting	**Value**	**Source and Notes**
Gross kWh/Year Savings (at Site)	4,913,331	Annual results 2010 (Gross at Site) for Whole House Measures attributable to Lighting based on analysis by program administrator ECOS plus Lighting specific measures.
Program Management and Administration Costs	$ 1,051,406	Allocated percentage (based on kWh contribution) of non -incentive costs for 2010.
Incentives	$ 1,073,113	Annual Incentives for 2010 for Whole House Measures attributable to Lighting based on analysis by program administrator ECOS plus Lighting specific measure incentives.
Total Utility Costs	$ 2,124,518	Sum of Program Management and Incentives
Total Participant Costs	$ 1,043,131	Incremental costs for 2010 for Whole House Measures attributable to Lighting based on analysis by program administrator ECOS plus Lighting specific measure costs.
Net To Gross Ratio	0.74	Cadmus 2010 Program Evaluation
Measure Life (Years)	6	Consistent with Advice Filing 09-09
2008 IRP Decrement		East Side Residential Whole House

Air Conditioning	**Value**	**Source and Notes**
Gross kWh/Year Savings (at Site)	468,180	Annual results (# of units) * Deemed savings per unit (Gross At Site) for Air Conditioning specific measures for 2010.
Program Management and Administration Costs	$ 100,186	Allocated percentage (based on kWh contribution) of non -incentive costs for 2010.
Incentives	$ 161,050	Annual AC Measure Incentives 2010
Total Utility Costs	$ 261,236	Sum of Program Management and Incentives
Total Participant Costs	$ 648,210	Deemed costs per unit * unit participation. Deemed costs per unit is from Ecotope Residential New Construction Version 45 - 2008.
Net To Gross Ratio	0.74	Cadmus 2010 Program Evaluation
Measure Life (Years)	15	Consistent with Advice Filing 09-09
2008 IRP Decrement		East Side Residential Whole House

Dishwasher	Value	Source and Notes
Gross kWh/Year Savings (at Site)	41,190	Annual results (# of units) * Deemed savings per unit (Gross At Site) for Energy Star Dishwasher measure for 2010.
Program Management and Administration Costs	$ 8,814	Allocated percentage (based on kWh contribution) of non -incentive costs for 2010.
Incentives	$ 13,730	Annual costs 2010
Total Utility Costs	$ 22,544	Annual costs 2010
Total Participant Costs	$ 34,325	Deemed costs per unit * unit participation. Deemed costs per unit is from Ecotope Residential New Construction Version 45 - 2008.
Net To Gross Ratio	0.74	Cadmus 2010 Program Evaluation
Measure Life (Years)	12	Consistent with Advice Filing 09-09
2008 IRP Decrement		East Side Residential Whole House

The tables below prepared by The Cadmus Group present the cost effectiveness findings of the Utah Energy Star New Homes program based on 2010 costs and savings estimates provided by PacifiCorp in a spreadsheet entitled "UT 2010 Tables and Charts (Draft 3 _15_2011)". The Utility discount rate is from the 2008 PacifiCorp Integrated Resource Plan. Cost effectiveness was tested using the 2008 IRP 46% east residential whole house load factor decrement. Table 1 lists modeling inputs. The program is cost effective from the TRC perspective. The benefit/cost ratio for the RIM test is less than 1, indicating the program will have an upward influence on rates.

Table 1: Energy Star New Homes
Inputs

Parameter	Value
Discount Rate	7.4%
Line Loss	9.85%
Residential Energy Rate ($/kWh)	$0.0880

Table 2: Energy Star New Homes
Annual Program Costs and Savings

	Program Costs	Utility Admin	Evaluation	Incentives	Total Utility Costs	Net Participant Incremental Cost
Shell	$102,615	$6,361		$87,278	$196,253	$57,460
AC	$94,338	$5,848		$161,050	$261,236	$479,675
Lighting	$990,034	$61,372		$1,073,113	$2,124,518	$771,917
Dishwasher	$8,300	$515		$13,730	$22,544	$25,401
Total	$1,195,286	$74,096	$0	$1,335,170	$2,604,552	$1,334,453

Table 3: Energy Star New Homes
Savings by Measure Type

	Gross kWh Savings	Realization Rate	Adjusted Gross Savings	Net to Gross Percentage	Net kWh Savings	Measure Life
Shell	509,256	0.95	483,793	74%	358,007	44
AC	468,180	0.95	444,771	74%	329,131	15
Lighting	4,913,331	0.95	4,667,665	74%	3,454,072	6
Dishwasher	41,190	0.95	39,131	74%	28,957	12
Total	5,931,957		5,635,359		4,170,166	

Table 4: IRP 46% Load Factor Decrement

All Measures				AC: IRP 46% LF Decrement	
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.1160	$2,603,835	$2,630,218	$26,383	1.010
Total Resource Cost Test (TRC) No Adder	0.1160	$2,603,835	$2,391,107	($212,728)	0.918
Utility Cost Test (UCT)	0.1160	$2,604,552	$2,391,107	($213,445)	0.918
Rate Impact Test (RIM)		$4,802,538	$2,391,107	($2,411,431)	0.498
Participant Cost Test (PCT)		($717)	$3,212,760	$3,213,477	NA
Lifecycle Revenue Impacts ($/kW				$0.0000524378	
Discounted Participant Payback				NA	

Table 5: Shell

			AC: IRP 46% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$166,436	$845,901	$679,465	5.082
Total Resource Cost Test (TRC) No Adder	$166,436	$769,001	$602,565	4.620
Utility Cost Test (UCT)	$196,253	$769,001	$572,748	3.918
Rate Impact Test (RIM)	$724,371	$769,001	$44,630	1.062
Participant Cost Test (PCT)	($29,818)	$731,946	$761,763	NA
Discounted Participant Payback (years)			NA	

Table 6: AC

	AC: IRP 46% LF Decrement			
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$579,861	$438,132	($141,729)	0.756
Total Resource Cost Test (TRC) No Adder	$579,861	$398,302	($181,560)	0.687
Utility Cost Test (UCT)	$261,236	$398,302	$137,066	1.525
Rate Impact Test (RIM)	$540,936	$398,302	($142,634)	0.736
Participant Cost Test (PCT)	$318,625	$402,296	$83,671	1.263
Discounted Participant Payback (years)			10.90	

Table 7: Lighting

	AC: IRP 46% LF Decrement			
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$1,823,323	$1,323,211	($500,112)	0.726
Total Resource Cost Test (TRC) No Adder	$1,823,323	$1,202,919	($620,404)	0.660
Utility Cost Test (UCT)	$2,124,518	$1,202,919	($921,599)	0.566
Rate Impact Test (RIM)	$3,493,930	$1,202,919	($2,291,011)	0.344
Participant Cost Test (PCT)	($301,195)	$2,048,370	$2,349,565	NA
Discounted Participant Payback (years)			(0.79)	

Table 8: Dishwasher

	AC: IRP 46% LF Decrement			
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$34,215	$22,973	($11,241)	0.671
Total Resource Cost Test (TRC) No Adder	$34,215	$20,885	($13,330)	0.610
Utility Cost Test (UCT)	$22,544	$20,885	($1,659)	0.926
Rate Impact Test (RIM)	$43,301	$20,885	($22,416)	0.482
Participant Cost Test (PCT)	$11,671	$30,148	$18,478	2.583
Discounted Participant Payback (years)			3.89	

Home Energy Savings Program – Schedule 111

The following tables outline the primary inputs and assumptions utilized in the cost effectiveness calculations for the Home Energy Savings program.

Reported kWh savings are calculated based on measure level deemed savings values (ex ante) multiplied by measure participation. Sources for the deemed savings estimates are included in the detailed table below.

Program Inputs - Home Energy Savings		
Gross kWh/Year Savings (at Site)	59,711,660	Annual results 2010 (Gross at Site). Calculated as deemed savings per unit * unit participation. Deemed savings per unit is from a variety of sources, including Regional Technical Forum, Energy Star and measure specific analysis performed by the program administrator. More detail is available at the measure group level.
Program Management and Administration Costs	$ 4,949,975	Annual costs 2010
Incentives	$11,925,710	Annual costs 2010
Total Utility Costs	$16,875,684	Annual costs 2010
Total Participant Costs	$19,974,282	Deemed costs per unit * unit participation. Deemed costs per unit is from a variety of sources, including Regional Technical Forum, Energy Star and analysis of invoices submitted with incentive applications. Developed and maintained by program administrator - PECI.
Net To Gross Ratio	0.845	Utah Homed Energy Savings Program Evaluation 2006-2008 Cadmus 2010
Measure Life		Consistent with 2010 advice filing

All Measures				AC: IRP 46% LF Decrement	
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0975	$21,828,243	$26,123,895	$4,295,652	1.197
Total Resource Cost Test (TRC) No Adder	0.0975	$21,828,243	$23,748,995	$1,920,752	1.088
Utility Cost Test (UCT)	0.0754	$16,875,684	$23,748,995	$6,873,311	1.407
Rate Impact Test (RIM)		$40,511,293	$23,748,995	($16,762,298)	0.586
Participant Cost Test (PCT)		$4,952,559	$29,347,178	$24,394,620	5.926
Lifecycle Revenue Impacts ($/kWh)				$0.0004642405	
Discounted Participant Payback (years)				1.06	

Home Energy Savings Program Measure Group Inputs and Assumptions:

Lighting (Includes CFLs, Fixtures and Ceiling Fans)	**Value**	**Source and Notes**
Gross kWh/Year Savings (at Site)	46,833,407	Annual results 2010 (Gross at Site) based on measure level savings from Energy Star savings calculator 2008 and RTF 2007
Program Management and Administration Costs	$ 584,438	Allocated percentage (based on kWh contribution) of non -incentive costs for 2010.
Incentives	$ 1,554,383	Annual costs 2010
Total Utility Costs	$ 2,138,822	Annual costs 2010
Total Participant Costs	$ 5,219,505	Deemed based on RTF estimates developed and maintained by program administrator - PECI.
Net To Gross Ratio	0.845	Utah Homed Energy Savings Program Evaluation 2006-2008 Cadmus 2010
Measure Life (Years)	5	Consistent with 2010 advice filing
2008 IRP Decrement		East Side Residential Whole House

Appliances (Clothes Washers, Dishwasher, Water Heater, Refrigerator)	**Value**	**Source and Notes**
Gross kWh/Year Savings (at Site)	4,402,800	Annual results 2010 (Gross at Site) based on measure level savings from RTF PTR Software 2007
Program Management and Administration Costs	$ 1,492,484	Allocated percentage (based on kWh contribution) of non -incentive costs for 2010.
Incentives	$ 1,781,140	Annual costs 2010
Total Utility Costs	$ 3,273,624	Annual costs 2010
Total Participant Costs	$ 5,519,450	Deemed based on RTF and Energy Star estimates developed and maintained by program administrator - PECI.
Net To Gross Ratio	0.845	Utah Homed Energy Savings Program Evaluation 2006-2008 Cadmus 2010
Measure Life (Years)	14	Consistent with 2010 advice filing
2008 IRP Decrement		East Side Residential Whole House

Shell Measures (Insulation and Windows)	**Value**	**Source and Notes**
Gross kWh/Year Savings (at Site)	8,068,437	Annual results 2010 (Gross at Site) based on measure level inputs. (RTF for insulation projects completed prior to June 1, 2010. For projects completed after June 1, 2010 savings based on revised modeling described in Advice 09-04 Home Energy Saver simulation tool analysis. Windows based on RTF data)
Program Management and Administration Costs	$ 2,735,080	Allocated percentage (based on kWh contribution) of non -incentive costs for 2010.
Incentives	$ 8,047,915	Annual costs 2010
Total Utility Costs	$10,782,995	Annual costs 2010
Total Participant Costs	$ 8,360,093	Windows deemed based on RTF. Insulation based on application analysis.
Net To Gross Ratio	0.845	Utah Homed Energy Savings Program Evaluation 2006-2008 Cadmus 2010
Measure Life (Years)	30	Consistent with 2010 advice filing
2008 IRP Decrement		East Side Residential Whole House

HVAC (AC and Heat Tune ups, Duct Sealing, Duct Insulation)	Value	Source and Notes
Gross kWh/Year Savings (at Site)	407,016	Annual results 2010 (Gross at Site) based on measure level inputs based on program administrator research utilizing sources including Energy Trust of Oregon 2007, and RTF PTR Software Version 1.0 + Research by Gary Smith 2006.
Program Management and Administration Costs	$ 137,972	Allocated percentage (based on kWh contribution) of non -incentive costs for 2010.
Incentives	$ 542,272	Annual costs 2010
Total Utility Costs	$ 680,244	Annual costs 2010
Total Participant Costs	$ 875,234	Deemed incremental costs for HVAC measures from multiple sources. Tune-ups & heat pumps (average cost from customer application). Duct sealing & insulation - PTCS/RTF. Developed and maintained by program administrator - PECI.
Net To Gross Ratio	0.845	Utah Homed Energy Savings Program Evaluation 2006-2008 Cadmus 2010
Measure Life (Years)	14	Consistent with 2010 advice filing
2008 IRP Decrement		East Side Residential Whole House

The tables below prepared by The Cadmus Group present the cost effectiveness findings of the Utah Home Energy Savings program based on 2010 costs and savings estimates provided by PacifiCorp in a spreadsheet entitled "UT 2010 Tables and Charts (Draft 3 _15_2011)". The Utility discount rate is from the 2008 PacifiCorp Integrated Resource Plan. Cost effectiveness was tested using the 2008 IRP 46% east residential whole house load factor decrement. Table 1 lists modeling inputs. The program is cost effective from the TRC, UCT and PCT perspectives. The benefit/cost ratio for the RIM test is less than 1, indicating the program will have an upward influence on rates.

Table 1: Home Energy Savings
Inputs

Parameter	Value
Discount Rate	7.4%
Line Loss	9.85%
Residential Energy Rate ($/kWh)	$0.0880

Table 2: Home Energy Savings
Annual Program Costs and Savings

	Program Costs	Utility Admin	Evaluation	Incentives	Total Utility Costs	Net Participant Incremental Cost
Lighting	$533,053	$51,385		$1,554,383	$2,138,822	$4,410,481
Appliance	$1,361,261	$131,223		$1,781,140	$3,273,624	$4,663,935
Shell	$2,494,604	$240,476		$8,047,915	$10,782,995	$7,064,279
HVAC	$125,841	$12,131		$542,272	$680,244	$739,573
Total	$4,514,759	$435,216	$0	$11,925,710	$16,875,684	$16,878,268

Table 3: Home Energy Savings
Savings by Measure Type

	Gross kWh Savings	Realization Rate	Adjusted Gross Savings	Net to Gross Percentage	Net kWh Savings	Measure Life
Lighting	46,833,407	0.99	46,365,073	85%	39,178,487	5
Appliance	4,402,800	1.00	4,402,800	85%	3,720,366	14
Shell	8,068,437	0.72	5,809,275	85%	4,908,837	30
HVAC	407,016	1.00	407,016	85%	343,929	14
Total	59,711,660		56,984,164		48,151,618	

Table 4: IRP 46% Load Factor Decrement

All Measures				AC: IRP 46% LF Decrement	
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0975	$21,828,243	$26,123,895	$4,295,652	1.197
Total Resource Cost Test (TRC) No Adder	0.0975	$21,828,243	$23,748,995	$1,920,752	1.088
Utility Cost Test (UCT)	0.0754	$16,875,684	$23,748,995	$6,873,311	1.407
Rate Impact Test (RIM)		$40,511,293	$23,748,995	($16,762,298)	0.586
Participant Cost Test (PCT)		$4,952,559	$29,347,178	$24,394,620	5.926
Lifecycle Revenue Impacts ($/kWh)				$0.0004642405	
Discounted Participant Payback (years)				1.06	

Table 5: Lighting

Lighting			AC: IRP 46% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$4,994,919	$11,979,664	$6,984,745	2.398
Total Resource Cost Test (TRC) No Adder	$4,994,919	$10,890,604	$5,895,684	2.180
Utility Cost Test (UCT)	$2,138,822	$10,890,604	$8,751,782	5.092
Rate Impact Test (RIM)	$16,642,945	$10,890,604	($5,752,341)	0.654
Participant Cost Test (PCT)	$2,856,098	$17,339,042	$14,482,944	6.071
Discounted Participant Payback (years)			0.75	

Table 6: Appliance

Appliance			AC: IRP 46% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$6,156,419	$3,403,041	($2,753,378)	0.553
Total Resource Cost Test (TRC) No Adder	$6,156,419	$3,093,674	($3,062,746)	0.503
Utility Cost Test (UCT)	$3,273,624	$3,093,674	($179,950)	0.945
Rate Impact Test (RIM)	$6,254,608	$3,093,674	($3,160,934)	0.495
Participant Cost Test (PCT)	$2,882,795	$3,794,723	$911,927	1.316
Discounted Participant Payback (years)			9.72	

Table 7: Home Improvement

Home Improvement			AC: IRP 46% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$9,799,359	$10,309,735	$510,375	1.052
Total Resource Cost Test (TRC) No Adder	$9,799,359	$9,372,486	($426,873)	0.956
Utility Cost Test (UCT)	$10,782,995	$9,372,486	($1,410,509)	0.869
Rate Impact Test (RIM)	$16,683,939	$9,372,486	($7,311,453)	0.562
Participant Cost Test (PCT)	($983,636)	$7,862,611	$8,846,247	NA
Discounted Participant Payback (years)			(2.07)	

Table 8: HVAC

HVAC			AC: IRP 46% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$877,545	$431,455	($446,090)	0.492
Total Resource Cost Test (TRC) No Adder	$877,545	$392,232	($485,313)	0.447
Utility Cost Test (UCT)	$680,244	$392,232	($288,012)	0.577
Rate Impact Test (RIM)	$929,802	$392,232	($537,570)	0.422
Participant Cost Test (PCT)	$197,301	$350,802	$153,501	1.778
Discounted Participant Payback (years)			6.74	

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

The following tables outline the primary inputs and assumptions utilized in the cost effectiveness calculations for the See ya later, refrigerator program.

Reported kWh savings are calculated based on measure level evaluated savings values (ex post) multiplied by measure participation. Sources for the evaluated savings are included in the detailed table below.

Program Inputs - See ya later, refrigerator		
Gross kWh/Year Savings (at Site)	20,410,218	Annual results 2010 (Gross at Site) - Calculated as evaluated savings per unit (ex-post) * unit participation.
Utility Administration Costs	$ 47,866	Annual costs 2010
Program Management and Administration Costs	$ 1,855,467	Annual costs 2010
Incentives	$ 466,470	Annual costs 2010
Total Utility Costs	$ 2,369,803	Annual costs 2010
Total Participant Costs	NA	There are no participant costs for this program.
Net To Gross Ratio		Utilize measure specific savings and Net To Gross
Measure Life (Years)	5	*Utah Refrigerator and Freezer Recycling Program evaluation 2006-2008, Cadmus 2010*

See Ya Later Refrigerator – All Measures

All Measures				AC: IRP 46% LF Decrement	
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0235	$1,903,333	$4,124,545	$2,221,211	2.167
Total Resource Cost Test (TRC) No Adder	0.0235	$1,903,333	$3,749,586	$1,846,253	1.970
Utility Cost Test (UCT)	0.0293	$2,369,803	$3,749,586	$1,379,783	1.582
Rate Impact Test (RIM)		$7,337,960	$3,749,586	($3,588,374)	0.511
Participant Cost Test (PCT)		($466,470)	$7,784,328	$8,250,798	NA
Lifecycle Revenue Impacts ($/kWh)				$0.0001629933	
Discounted Participant Payback (years)				NA	

See Ya Later, Refrigerator Program Measure Group Inputs and Assumptions:

Refrigerators	**Value**	**Source and Notes**
Number of Units	12,490	Annual results 2010
Gross kWh/Unit	1,149	*Evaluation of Utah Refrigerator Recycling Program* - Kema - July 31, 2007
Gross kWh/Year Savings (at Site)	14,351,010	Annual results 2010 (Gross at Site)
Net To Gross Ratio	0.66	Utah Refrigerator and Freezer Recycling Program evaluation 2006-2008. Cadmus 2010
Measure Life (Years)	5	Utah Refrigerator and Freezer Recycling Program evaluation 2006-2008. Cadmus 2010
2008 IRP Decrement Load Shape		East Side Residential Whole House

Freezers	**Value**	**Source and Notes**
Number of Units	3,059	Annual results 2010
Gross kWh/Unit	1,590	*Evaluation of Utah Refrigerator Recycling Program* - Kema - July 31, 2007
Gross kWh/Year Savings (at Site)	4,863,810	Annual results 2010 (Gross at Site)
Net To Gross Ratio	0.65	Utah Refrigerator and Freezer Recycling Program evaluation 2006-2008, Cadmus 2010
Measure Life (Years)	5	Utah Refrigerator and Freezer Recycling Program evaluation 2006-2008, Cadmus 2010
2008 IRP Decrement Load Shape		East Side Residential Whole House

Savings Kits	**Value**	**Source and Notes**
Number of Units	14,758	Annual results 2010
Gross kWh/Unit	81	Evaluation of Utah Refrigerator Recycling Program - Kema - July 31, 2007
Gross kWh/Year Savings (at Site)	1,195,398	Annual results 2010 (Gross at Site)
Net To Gross Ratio	0.68	Utah Refrigerator and Freezer Recycling Program evaluation 2006-2008, Cadmus 2010
Measure Life (Years)	6.6	Utah Refrigerator and Freezer Recycling Program evaluation 2006-2008, Cadmus 2010
2008 IRP Decrement Load Shape		East Side Residential Whole House

The tables below prepared by The Cadmus Group present the cost effectiveness findings of the Utah See-Ya-Later Refrigerator program based on 2010 costs and savings estimates provided by PacifiCorp in a spreadsheet entitled "UT 2010 Tables and Charts (Draft 3 _15_2011)". The Utility discount rate is from the 2008 PacifiCorp Integrated Resource Plan. Cost effectiveness was tested using the 2008 IRP 46% east residential whole house load factor decrement. Table 1 lists modeling inputs. The program is cost effective from the TRC, UCT and PCT perspectives. The benefit/cost ratio for the RIM test is less than 1, indicating the program will have an upward influence on rates.

Table 1: See-Ya-Later
Inputs

Parameter	Value
Discount Rate	7.4%
Line Loss	9.85%
Residential Energy Rate ($/kWh)	$0.0880

Table 2: See-Ya-Later
Annual Program Costs and Savings

	Program Costs	Utility Admin	Evaluation	Incentives	Total Utility Costs	Net Participant Incremental Cost
Refrigerators	$1,304,632	$33,656		$374,700	$1,712,988	
Freezers	$442,163	$11,407		$91,770	$545,339	
Kits	$108,672	$2,803		$0	$111,476	
Total	$1,855,467	$47,866		$466,470	$2,369,803	

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

	Gross kWh Savings	Realization Rate	Adjusted Gross Savings	Net to Gross Percentage	Net kWh Savings	Measure Life
Refrigerators	14,351,010	1.00	14,351,010	66%	9,471,667	5
Freezers	4,863,810	1.00	4,863,810	65%	3,161,477	5
Kits	1,195,398	1.00	1,195,398	68%	812,871	6.6
Total	20,410,218		20,410,218		13,446,014	

Table 4: IRP 46% Load Factor Decrement

All Measures				AC: IRP 46% LF Decrement	
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0235	$1,903,333	$4,124,545	$2,221,211	2.167
Total Resource Cost Test (TRC) No Adder	0.0235	$1,903,333	$3,749,586	$1,846,253	1.970
Utility Cost Test (UCT)	0.0293	$2,369,803	$3,749,586	$1,379,783	1.582
Rate Impact Test (RIM)		$7,337,960	$3,749,586	($3,588,374)	0.511
Participant Cost Test (PCT)		($466,470)	$7,784,328	$8,250,798	NA
Lifecycle Revenue Impacts ($/kWh)				$0.0001629933	
Discounted Participant Payback (years)				NA	

Table 5: Refrigerators

			AC: IRP 46% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$1,338,288	$2,812,602	$1,474,313	2.102
Total Resource Cost Test (TRC) No Adder	$1,338,288	$2,556,910	$1,218,622	1.911
Utility Cost Test (UCT)	$1,712,988	$2,556,910	$843,922	1.493
Rate Impact Test (RIM)	$5,137,059	$2,556,910	($2,580,149)	0.498
Participant Cost Test (PCT)	($374,700)	$5,366,815	$5,741,515	NA
Discounted Participant Payback (years)			(0.32)	

Table 6: Freezers

			AC: IRP 46% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$453,569	$938,797	$485,228	2.070
Total Resource Cost Test (TRC) No Adder	$453,569	$853,452	$399,882	1.882
Utility Cost Test (UCT)	$545,339	$853,452	$308,112	1.565
Rate Impact Test (RIM)	$1,690,055	$853,452	($836,603)	0.505
Participant Cost Test (PCT)	($91,770)	$1,818,908	$1,910,678	NA
Discounted Participant Payback (years)			NA	

Table 7: Kits

			AC: IRP 46% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$111,476	$373,146	$261,670	3.347
Total Resource Cost Test (TRC) No Adder	$111,476	$339,224	$227,748	3.043
Utility Cost Test (UCT)	$111,476	$339,224	$227,748	3.043
Rate Impact Test (RIM)	$510,846	$339,224	($171,622)	0.664
Participant Cost Test (PCT)	$0	$598,605	$598,605	NA
Discounted Participant Payback (years)			NA	

Low Income Weatherization – Schedule 118

The following tables outline the primary inputs and assumptions utilized in the cost effectiveness calculations for the Low Income Weatherization program.

Program Inputs - Low Income Weathization			
Gross kWh/Year Savings (at Site)		1,917,712	Annual results 2010 (Gross at Site) - Measure level evaluated (ex-post) savings * number of units installed.
Program Management and Administration Costs	$	52,630	Annual costs 2010
Incentives	$	205,792	Annual costs 2010
Total Utility Costs	$	258,422	Annual costs 2010
Total Participant Costs		NA	There are no participant costs for this program.
Net To Gross Ratio		1.00	Low income support. NTG assumed to be 1.0
Measure Life (Years)		12	Weighted average measure life from *Utah 2007 Low Income Weatherization Program Enahancements* analysis - Quantec 2007.
2008 IRP Decrement Load Shape			East Side Residential Whole House

Low Income Weatherization

All Measures				AC: IRP 46% LF Decrement	
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0138	$258,422	$1,521,455	$1,263,033	5.887
Total Resource Cost Test (TRC) No Adder	0.0138	$258,422	$1,383,141	$1,124,719	5.352
Utility Cost Test (UCT)	0.0138	$258,422	$1,383,141	$1,124,719	5.352
Rate Impact Test (RIM)		$1,679,504	$1,383,141	($296,363)	0.824
Participant Cost Test (PCT)		$0	$1,438,888	$1,438,888	NA
Lifecycle Revenue Impacts ($/kWh)				$0.0000052657	
Discounted Participant Payback (years)				NA	

The tables below prepared by The Cadmus Group present the cost effectiveness findings of the Utah Low Income Weatherization program based on 2010 costs and savings estimates provided by PacifiCorp in a spreadsheet entitled "UT 2010 Tables and Charts (Draft 3 _15_2011)". The Utility discount rate is from the 2008 PacifiCorp Integrated Resource Plan. Cost effectiveness was tested using the 2008 IRP 46% east residential whole house load factor decrement. Table 1 lists modeling inputs. The program is cost effective from the TRC, UCT and PCT perspectives. The benefit/cost ratio for the RIM test is less than 1, indicating the program will have an upward influence on rates.

Table 1: Low Income Weatherization Inputs

Parameter	Value
Discount Rate	7.4%
Line Loss	9.85%
Residential Energy Rate ($/kWh)	$0.0880

Table 2: Low Income Weatherization Annual Program Costs and Savings

	Program Costs	Utility Admin	Evaluation	Incentives	Total Utility Costs	Net Participant Incremental Cost
Low Income weatherization	$37,887	$14,743		$205,792	$258,422	$205,792

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	1,917,712	100%	1,917,712	100%	1,917,712	12

Table 4: IRP 46% Load Factor Decrement

All Measures				AC: IRP 46% LF Decrement	
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0138	$258,422	$1,521,455	$1,263,033	5.887
Total Resource Cost Test (TRC) No Adder	0.0138	$258,422	$1,383,141	$1,124,719	5.352
Utility Cost Test (UCT)	0.0138	$258,422	$1,383,141	$1,124,719	5.352
Rate Impact Test (RIM)		$1,679,504	$1,383,141	($296,363)	0.824
Participant Cost Test (PCT)		$0	$1,438,888	$1,438,888	NA
Lifecycle Revenue Impacts ($/kWh)				$0.0000052657	
Discounted Participant Payback (years)				NA	

Energy FinAnswer – Schedule 125

The following tables outline the primary inputs and assumptions utilized in the cost effectiveness calculations for the program.

Program Inputs - Energy FinAnswer			
Gross kWh/Year Savings (at Site)		50,698,242	Annual results 2010 (Gross at Site)
Engineering Costs	$	1,572,027	Annual costs 2010
Utility Administration	$	620,939	Annual costs 2010
Program Management and Administration Costs	$	298,947	Annual costs 2010
Incentives	$	7,769,668	Annual costs 2010
Total Utility Costs	$	10,261,580	Annual costs 2010
Total Participant Costs	$	15,122,365	Incremental costs incurred by customers based on invoices and any necessary adjustments.
Net To Gross Ratio		0.87	PacifiCorp Energy FinAnswer 2005-2008 Utah Program Evaluation, Cadmus 2010
Measure Life (Years)		14	PacifiCorp Energy FinAnswer 2005-2008 Utah Program Evaluation, Cadmus 2010
2008 IRP Decrement Load Shape			East Side System

Savings Calculations and Reporting:

Energy FinAnswer program savings reported for 2010 are calculated for each completed (installed) project. The savings calculations are project specific and performed at a measure level. Preliminary engineering savings and costs estimates are completed prior to project installation, during a scoping phase by a pre-qualified third party energy engineering firm working under contract with the Company. If the customer indicates an interest in proceeding with the project, savings and costs are further refined during the preparation of an energy analysis by the same firm that did the original scoping work. The energy analysis work undergoes a peer review or quality assurance process by another third party engineering firm prior to being provided to the customer. After the customer installs and commissions (if required) the project, a post-installation inspection is conducted by the same firm and the final as installed savings are calculated for each project. Measure costs are based on invoices from the installing contractors to the customer. Any necessary adjustments to customer provided costs occur at the final inspection stage and incentives are paid on final inspected savings and costs.

Program results were categorized by measure type for cost effectiveness analysis. Each measure type utilized the same Net To Gross ratio, same measure life and same load shape as outlined in the summary table above.

The tables below prepared by The Cadmus Group present the cost effectiveness findings of the Utah Energy FinAnswer program based on 2010 costs and savings estimates provided by PacifiCorp in a spreadsheet entitled "UT 2010 Tables and Charts (Draft 3 _15_2011)". The Utility discount rate is from the 2008 PacifiCorp Integrated Resource Plan. Cost effectiveness was tested using the 2008 IRP 65% east system load factor decrement. Table 1 lists modeling inputs. The program is cost effective from all perspectives.

Table 1: Energy FinAnswer
Inputs

Parameter	Value
Discount Rate	7.4%
Commercial Line Loss	9.38%
Industrial Line Loss	5.73%
Commercial Energy Rate ($/kWh)	$0.0709
Industrial Energy Rate ($/kWh)	$0.0475

Table 2: Energy FinAnswer
Annual Program Costs and Savings

	Program Costs	Utility Admin	Evaluation	Incentives	Total Utility Costs	Net Participant Incremental Cost
Additional Measures	$33,897	$70,408	$178,251	$677,822	$960,379	$1,794,198
Building Shell	$4,841	$10,055	$25,457	$90,334	$130,688	$761,359
Compressed Air	$55,209	$114,674	$290,321	$971,277	$1,431,481	$1,803,266
Controls	$1,669	$3,466	$8,776	$22,181	$36,092	$48,095
HVAC	$73,632	$152,940	$387,198	$1,421,616	$2,035,387	$4,229,425
Lighting	$36,875	$76,592	$193,907	$757,206	$1,064,580	$1,610,055
Motors	$36,853	$76,548	$193,795	$568,985	$876,181	$1,313,228
Refrigeration	$55,970	$116,255	$294,321	$768,334	$1,234,879	$1,596,830
Total	$298,947	$620,939	$1,572,027	$5,277,755	$7,769,668	$13,156,458

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	5,514,684	1.01	5,569,831	87%	4,845,753	14
Building Shell	795,466	1.00	795,466	87%	692,055	14
Compressed Air	9,256,794	0.98	9,071,658	87%	7,892,343	14
Controls	234,373	1.17	274,216	87%	238,568	14
HVAC	12,221,008	0.99	12,098,798	87%	10,525,954	14
Lighting	7,128,270	0.85	6,059,030	87%	5,271,356	14
Motors	6,442,050	0.94	6,055,527	87%	5,268,308	14
Refrigeration	9,105,597	1.01	9,196,653	87%	8,001,088	14
Total	50,698,242		49,121,179		42,735,426	

Table 4: IRP 65% Load Factor Decrement

All Measures				AC: IRP 65% LF Decrement	
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0462	$15,648,370	$37,303,681	$21,655,311	2.384
Total Resource Cost Test (TRC) No Adder	0.0462	$15,648,370	$33,912,437	$18,264,067	2.167
Utility Cost Test (UCT)	0.0229	$7,769,668	$33,912,437	$26,142,770	4.365
Rate Impact Test (RIM)		$30,949,643	$33,912,437	$2,962,794	1.096
Participant Cost Test (PCT)		$7,878,703	$27,258,984	$19,380,281	3.460
Lifecycle Revenue Impacts ($/kWh)				($0.0000083272)	
Discounted Participant Payback (years)				3.20	

Table 5: Additional Measures

			AC: IRP 65% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$2,076,755	$4,016,645	1,939,890	1.934
Total Resource Cost Test (TRC) No Adder	$2,076,755	$3,651,496	1,574,740	1.758
Utility Cost Test (UCT)	$960,379	$3,651,496	2,691,117	3.802
Rate Impact Test (RIM)	$3,583,278	$3,651,496	68,218	1.019
Participant Cost Test (PCT)	$1,116,376	$3,090,885	1,974,509	2.769
Discounted Participant Payback (years)			4.08	

Table 6: Building Shell

			AC: IRP 65% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$801,713	$573,645	($228,068)	0.716
Total Resource Cost Test (TRC) No Adder	$801,713	$521,495	($280,217)	0.650
Utility Cost Test (UCT)	$130,688	$521,495	$390,807	3.990
Rate Impact Test (RIM)	$505,728	$521,495	$15,767	1.031
Participant Cost Test (PCT)	$671,025	$441,431	($229,594)	0.658
Discounted Participant Payback (years)			-	

Table 7: Compressed Air

			AC: IRP 65% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$2,263,471	$6,541,964	$4,278,493	2.890
Total Resource Cost Test (TRC) No Adder	$2,263,471	$5,947,240	$3,683,769	2.627
Utility Cost Test (UCT)	$1,431,481	$5,947,240	$4,515,759	4.155
Rate Impact Test (RIM)	$5,712,575	$5,947,240	$234,665	1.041
Participant Cost Test (PCT)	$831,989	$5,034,166	$4,202,177	6.051
Discounted Participant Payback (years)			1.77	

Table 8: Controls

			AC: IRP 65% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$62,006	$197,749	$135,743	3.189
Total Resource Cost Test (TRC) No Adder	$62,006	$179,772	$117,766	2.899
Utility Cost Test (UCT)	$36,092	$179,772	$143,680	4.981
Rate Impact Test (RIM)	$165,995	$179,772	$13,777	1.083
Participant Cost Test (PCT)	$25,914	$152,172	$126,258	5.872
Discounted Participant Payback (years)			1.83	

Table 9: HVAC

			AC: IRP 65% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$4,843,196	$9,936,153	$5,092,957	2.052
Total Resource Cost Test (TRC) No Adder	$4,843,196	$9,032,866	$4,189,670	1.865
Utility Cost Test (UCT)	$2,035,387	$9,032,866	$6,997,479	4.438
Rate Impact Test (RIM)	$7,736,350	$9,032,866	$1,296,516	1.168
Participant Cost Test (PCT)	$2,807,809	$6,714,027	$3,906,218	2.391
Discounted Participant Payback (years)			4.80	

Table 10: Lighting

			AC: IRP 65% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$1,917,429	$5,038,521	$3,121,092	2.628
Total Resource Cost Test (TRC) No Adder	$1,917,429	$4,580,473	$2,663,044	2.389
Utility Cost Test (UCT)	$1,064,580	$4,580,473	$3,515,893	4.303
Rate Impact Test (RIM)	$3,916,480	$4,580,473	$663,993	1.170
Participant Cost Test (PCT)	$852,849	$3,362,358	$2,509,509	3.943
Discounted Participant Payback (years)			2.78	

Table 11: Motors

			AC: IRP 65% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$1,620,425	$4,366,902	$2,746,477	2.695
Total Resource Cost Test (TRC) No Adder	$1,620,425	$3,969,911	$2,349,486	2.450
Utility Cost Test (UCT)	$876,181	$3,969,911	$3,093,729	4.531
Rate Impact Test (RIM)	$3,739,372	$3,969,911	$230,539	1.062
Participant Cost Test (PCT)	$744,243	$3,360,414	$2,616,171	4.515
Discounted Participant Payback (years)			2.41	

Table 12: Refrigeration

			AC: IRP 65% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$2,063,375	$6,632,103	$4,568,728	3.214
Total Resource Cost Test (TRC) No Adder	$2,063,375	$6,029,185	$3,965,809	2.922
Utility Cost Test (UCT)	$1,234,879	$6,029,185	$4,794,305	4.882
Rate Impact Test (RIM)	$5,589,866	$6,029,185	$439,319	1.079
Participant Cost Test (PCT)	$828,496	$5,103,530	$4,275,034	6.160
Discounted Participant Payback (years)			1.74	

FinAnswer Express – Schedule 115

The following tables outline the primary inputs and assumptions utilized in the cost effectiveness calculations for the FinAnswer Express program.

Program Inputs - FinAnswer Express		
Gross kWh/Year Savings (at Site)	35,956,871	Annual results 2010 (Gross at Site)
Utility Administration	$ 211,447	Annual costs 2010
Program Management and Administration Costs	$ 1,729,634	Annual costs 2010
Incentives	$ 3,185,147	Annual costs 2010
Total Utility Costs	$ 5,126,228	Annual costs 2010
Total Participant Costs	$11,538,329	Actual customer costs incurred based on project close-out documentation (invoices) - less any adjustments (if necessary) for baseline equipment.
Net To Gross Ratio	0.79	PacifiCorp FinAnswer Express 2005-2008 Utah Program Evaluation, Cadmus 2010
Measure Life	14	PacifiCorp FinAnswer Express 2005-2008 Utah Program Evaluation, Cadmus 2010
2008 IRP Decrement Load Shape		East Side System

Savings Calculations and Reporting:

There are several primary categories of FinAnswer Express measures that are eligible for prescriptive incentives. They include lighting, motors, HVAC equipment, mechanical and other energy efficiency measures. The “other” category includes; evaporative cooling, chillers, occupancy sensors for packaged HVAC units, solid door freezers, cool roofs, plug load occupancy sensors and beverage machine occupancy controls. In addition, the program includes a provision to calculate a custom incentive for measures without a prescriptive incentive.

Cost effectiveness inputs included in this section are the aggregations of savings and expenditures in several categories – Lighting, HVAC, Compressed Air, Refrigeration, Building Shell, Motors and Other.

Each measure type utilized the same Net To Gross ratio, same measure life and same load shape as outlined in the summary table above.

The tables below prepared by The Cadmus Group present the cost effectiveness findings of the Utah FinAnswer Express program based on 2010 costs and savings estimates provided by PacifiCorp in a spreadsheet entitled “UT 2010 Tables and Charts (Draft 3 _15_2011)”. The Utility discount rate is from the 2008 PacifiCorp Integrated Resource Plan. Cost effectiveness was tested using the 2008 IRP 65% east system load factor decrement. Table 1 lists modeling inputs. The program is cost effective from the TRC, UCT and PCT perspectives. The benefit/cost ratio for the RIM test is less than 1, indicating the program will have an upward influence on rates.

Table 1: FinAnswer Express Inputs

Parameter	Value
Discount Rate	7.4%
Commercial Line Loss	9.38%
Industrial Line Loss	5.73%
Commercial Energy Rate ($/kWh)	$0.0709
Industrial Energy Rate ($/kWh)	$0.0475

Table 2: FinAnswer Express
Annual Program Costs and Savings

	Program Costs	Utility Admin	Evaluation	Incentives	Total Utility Costs	Net Participant Incremental Cost
Building Shell	$17,895	$2,188		$86,349	$106,432	$301,208
Compressed Air	$1,016	$124		$1,669	$2,809	$21,027
HVAC	$125,194	$15,305		$380,584	$521,083	$804,162
Lighting	$1,545,915	$188,987		$2,639,060	$4,373,963	$7,746,253
Motors	$11,172	$1,366		$28,814	$41,351	$40,254
Other	$979	$120		$1,407	$2,506	$7,221
Refrigeration	$27,464	$3,357		$47,263	$78,084	$195,154
Total	$1,729,634	$211,447	$0	$3,185,147	$5,126,228	$9,115,280

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	319,563	1.00	319,563	79%	252,455	14
Compressed Air	20,856	0.87	18,145	79%	14,334	14
HVAC	3,387,306	0.66	2,235,622	79%	1,766,141	14
Lighting	31,370,303	0.88	27,605,867	79%	21,808,635	14
Motors	243,289	0.82	199,497	79%	157,602	14
Other	17,476	1.00	17,476	79%	13,806	14
Refrigeration	598,078	0.82	490,424	79%	387,435	14
Total	35,956,871		30,886,593		24,400,409	

Table 4: IRP 65% Load Factor Decrement

All Measures				AC: IRP 65% LF Decrement	
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0571	$11,056,361	$20,617,271	$9,560,910	1.865
Total Resource Cost Test (TRC) No Adder	0.0571	$11,056,361	$18,742,974	$7,686,613	1.695
Utility Cost Test (UCT)	0.0265	$5,126,228	$18,742,974	$13,616,745	3.656
Rate Impact Test (RIM)		$21,585,498	$18,742,974	($2,842,524)	0.868
Participant Cost Test (PCT)		$5,930,132	$21,281,611	$15,351,479	3.589
Lifecycle Revenue Impacts ($/kWh)				$0.0000079892	
Discounted Participant Payback (years				3.08	

Table 5: Building Shell

	AC: IRP 65% LF Decrement			
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$321,291	$245,569	($75,722)	0.764
Total Resource Cost Test (TRC) No Adder	$321,291	$223,245	($98,046)	0.695
Utility Cost Test (UCT)	$106,432	$223,245	$116,812	2.098
Rate Impact Test (RIM)	$273,047	$223,245	($49,802)	0.818
Participant Cost Test (PCT)	$214,859	$220,187	$5,328	1.025
Discounted Participant Payback (years)			13.53	

Table 6: Compressed Air

	AC: IRP 65% LF Decrement			
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$22,167	$13,770	($8,397)	0.621
Total Resource Cost Test (TRC) No Adder	$22,167	$12,518	($9,649)	0.565
Utility Cost Test (UCT)	$2,809	$12,518	$9,709	4.456
Rate Impact Test (RIM)	$12,492	$12,518	$26	1.002
Participant Cost Test (PCT)	$19,358	$12,502	($6,855)	0.646
Discounted Participant Payback (years)			-	

Table 7: HVAC

	AC: IRP 65% LF Decrement			
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$944,661	$1,489,830	$545,169	1.577
Total Resource Cost Test (TRC) No Adder	$944,661	$1,354,391	$409,730	1.434
Utility Cost Test (UCT)	$521,083	$1,354,391	$833,308	2.599
Rate Impact Test (RIM)	$1,702,094	$1,354,391	($347,703)	0.796
Participant Cost Test (PCT)	$423,578	$1,540,398	$1,116,819	3.637
Discounted Participant Payback (years)			3.03	

Table 8: Lighting

			AC: IRP 65% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$9,481,156	$18,396,689	$8,915,534	1.940
Total Resource Cost Test (TRC) No Adder	$9,481,156	$16,724,263	$7,243,107	1.764
Utility Cost Test (UCT)	$4,373,963	$16,724,263	$12,350,300	3.824
Rate Impact Test (RIM)	$19,099,269	$16,724,263	($2,375,006)	0.876
Participant Cost Test (PCT)	$5,107,193	$19,021,111	$13,913,919	3.724
Discounted Participant Payback (years)			2.96	

Table 9: Motors

			AC: IRP 65% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$52,792	$132,946	$80,154	2.518
Total Resource Cost Test (TRC) No Adder	$52,792	$120,860	$68,068	2.289
Utility Cost Test (UCT)	$41,351	$120,860	$79,508	2.923
Rate Impact Test (RIM)	$147,094	$120,860	($26,235)	0.822
Participant Cost Test (PCT)	$11,440	$137,458	$126,018	12.015
Discounted Participant Payback (years)			0.88	

Table 10: Other

			AC: IRP 65% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$8,320	$11,646	$3,326	1.400
Total Resource Cost Test (TRC) No Adder	$8,320	$10,587	$2,268	1.273
Utility Cost Test (UCT)	$2,506	$10,587	$8,082	4.225
Rate Impact Test (RIM)	$11,846	$10,587	($1,258)	0.894
Participant Cost Test (PCT)	$5,814	$12,041	$6,227	2.071
Discounted Participant Payback (years)			5.65	

Table 11: Refrigeration

			AC: IRP 65% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$225,975	$326,821	$100,846	1.446
Total Resource Cost Test (TRC) No Adder	$225,975	$297,110	$71,135	1.315
Utility Cost Test (UCT)	$78,084	$297,110	$219,026	3.805
Rate Impact Test (RIM)	$339,656	$297,110	($42,546)	0.875
Participant Cost Test (PCT)	$147,891	$337,914	$190,023	2.285
Discounted Participant Payback (years)			5.05	

Re-Commissioning – Schedule 126

The following tables outline the primary inputs and assumptions utilized in the cost effectiveness calculations for the Re-Commissioning program.

Program Inputs - Recommissioning			
Gross kWh/Year Savings (at Site)		7,231,291	Annual results 2010 (Gross at Site)
Utility Administration	$	11,617	Annual costs 2010
Program Management and Administration Costs	$	974,797	Annual costs 2010
Incentives	$	-	Annual costs 2010
Total Utility Costs	$	986,414	Annual costs 2010
Total Participant Costs	$	223,167	Incremental costs incurred by consumers based on receipts provided.
Net To Gross Ratio		0.84	PacifiCorp Recommissioning 2007-2008 Utah Program Evaluation, Cadmus 2010
Measure Life (Years)		7	PacifiCorp Recommissioning 2007-2008 Utah Program Evaluation, Cadmus 2010
2008 IRP Decrement Load Shape			East Side Commercial Cooling

Savings Calculations and Reporting:

Savings reported for the Re-Commissioning program are calculated on a project specific basis. These calculations are completed by a Re-Commissioning Service Provider (RSP) in a manner similar to that outlined in the Energy FinAnswer section. For this program, the program administrator performs the quality assurance functions for each project prior to reporting savings.

The tables below prepared by The Cadmus Group present the cost effectiveness findings of the Utah Recommissioning program based on 2010 costs and savings estimates provided by PacifiCorp in a spreadsheet entitled "UT 2010 Tables and Charts (Draft 3 _15_2011)". The Utility discount rate is from the 2008 PacifiCorp Integrated Resource Plan. Cost effectiveness was tested using the 2008 IRP 16% east commercial cooling load factor decrement. Table 1 lists modeling inputs. The program is cost effective from the TRC, UCT and PCT perspectives. The benefit/cost ratio for the RIM test is less than 1, indicating the program will have an upward influence on rates.

Table 1: Recommissioning Inputs

Parameter	Value
Discount Rate	7.4%
Line Loss	9.38%
Commercial Energy Rate ($/kWh)	$0.0709

Table 2: Recommissioning Annual Program Costs and Savings

	Program Costs	Utility Admin	Evaluation	Incentives	Total Utility Costs	Net Participant Incremental Cost
Commercial	$974,797	$11,617		$0	$986,414	$187,460

Table 3: Recommissioning Savings by Measure Type

	Gross kWh Savings	Realization Rate	Adjusted Gross Savings	Net to Gross Percentage	Net kWh Savings	Measure Life
Commercial	7,231,291	0.98	7,086,665	84%	5,952,799	7

Table 4: IRP 16% Load Factor Decrement

All Measures				AC: IRP 16% LF Decrement	
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0358	$1,173,875	$3,782,823	$2,608,948	3.223
Total Resource Cost Test (TRC) No Adder	0.0358	$1,173,875	$3,438,930	$2,265,055	2.930
Utility Cost Test (UCT)	0.0301	$986,414	$3,438,930	$2,452,515	3.486
Rate Impact Test (RIM)		$3,320,113	$3,438,930	$118,816	1.036
Participant Cost Test (PCT)		$187,460	$2,859,124	$2,671,664	15.252
Lifecycle Revenue Impacts ($/kWh)				($0.0000007345)	
Discounted Participant Payback (years)				0.40	

Self Direction – Schedule 192

The following table outlines the primary inputs and assumptions utilized in the cost effectiveness calculations for the Self Direction program.

Program Inputs - Self Direction			
Gross kWh/Year Savings (at Site)		17,160,393	Annual results 2010 (Gross at Site) - Based on engineering evaluated savings for each project.
Engineering Costs	$	152,995	Annual costs 2010
Utility Administration	$	51,533	Annual costs 2010
Program Management and Administration Costs	$	312,379	Annual costs 2010
Incentives	$	2,836,067	Incentive costs for projects completed in 2010
Total Utility Costs	$	516,907	Annual costs 2010
Total Participant Costs	$	3,545,084	Incremental costs incurred by consumers based on receipts provided.
Net To Gross Ratio		0.87	Utah 2007-2008 Self-Direction Credit Program evaluation, Cadmus 2010
Measure Life (Years)		13	Utah 2007-2008 Self-Direction Credit Program evaluation, Cadmus 2010
2008 IRP Decrement Load Shape			East Side System

(Note: For cost effectiveness, only the incentives associated with projects completed in 2010 are included. Total incentives paid during 2010 were $2,526,837. This amount includes ongoing incentive credits from projects completed in prior years.)

Savings Calculations and Reporting

Savings reported for the Self Direction program are based on project and measure specifics as installed and validated savings. Savings estimates are provided by the customer typically using an outside firm, vendor analysis or their own staff. Customers provide this information to the program administrator who performs a quality assurance function including comparing baselines, analysis approaches and cost documentation with Energy FinAnswer and FinAnswer Express guidelines for the same work. Final reporting savings from the project are based on calculations approved by the program administrator, including a post installation inspection and review of the commissioning results (if commissioning is required). Reported measure costs are based on customer costs in a manner comparable to the Energy FinAnswer program.

The tables below prepared by The Cadmus Group present the cost effectiveness findings of the Utah Self Direction program based on 2010 costs and savings estimates provided by PacifiCorp in a spreadsheet entitled "UT 2010 Tables and Charts (Draft 3 _15_2011)". The Utility discount rate is from the 2008 PacifiCorp Integrated Resource Plan. Cost effectiveness was tested using the 2008 IRP 65% east system load factor decrement. Table 1 lists modeling inputs. The program is cost effective from all perspectives.

Table 1: Self Direction
Inputs

Parameter	Value
Discount Rate	7.4%
Commercial Line Loss	9.38%
Industrial Line Loss	5.73%
Commercial Energy Rate ($/kWh)	$0.0709
Industrial Energy Rate ($/kWh)	$0.0475

Table 2: Self Direction
Annual Program Costs and Savings

	Program Costs	Utility Admin	Evaluation	Incentives	Total Utility Costs	Net Participant Incremental Cost
Commercial	$121,636	$26,950	$38,249	$208,937	$395,772	$227,219
Industrial	$190,743	$24,583	$114,746	$2,627,130	$2,957,202	$2,857,004
Total	$312,379	$51,533	$152,995	$2,836,067	$3,352,975	$3,084,223

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	1,164,050	0.99	1,152,410	87%	1,002,596	13
Industrial	15,996,343	0.99	15,836,380	87%	13,777,650	13
Total	17,160,393		16,988,789		14,780,246	

Table 4: IRP 65% Load Factor Decrement

All Measures				AC: IRP 65% LF Decrement	
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0216	$3,601,130	$11,449,949	$7,848,819	3.180
Total Resource Cost Test (TRC) No Adder	0.0216	$3,601,130	$10,409,045	$6,807,915	2.890
Utility Cost Test (UCT)	0.0201	$3,352,975	$10,409,045	$7,056,070	3.104
Rate Impact Test (RIM)		$9,859,723	$10,409,045	$549,322	1.056
Participant Cost Test (PCT)		$248,155	$7,744,567	$7,496,411	31.209
Lifecycle Revenue Impacts ($/kWh)				($0.0000016859)	
Discounted Participant Payback (years)				0.32	

Table 5: Commercial

			AC: IRP 65% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$414,054	$914,575	$500,520	2.209
Total Resource Cost Test (TRC) No Adder	$414,054	$831,431	$417,377	2.008
Utility Cost Test (UCT)	$395,772	$831,431	$435,659	2.101
Rate Impact Test (RIM)	$1,028,646	$831,431	($197,214)	0.808
Participant Cost Test (PCT)	$18,282	$758,785	$740,503	41.505
Discounted Participant Payback (years)			0.24	

Table 6: Industrial

			AC: IRP 65% LF Decrement	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$3,187,076	$10,535,375	$7,348,299	3.306
Total Resource Cost Test (TRC) No Adder	$3,187,076	$9,577,613	$6,390,537	3.005
Utility Cost Test (UCT)	$2,957,202	$9,577,613	$6,620,411	3.239
Rate Impact Test (RIM)	$8,831,078	$9,577,613	$746,536	1.085
Participant Cost Test (PCT)	$229,873	$6,985,782	$6,755,908	30.390
Discounted Participant Payback (years)			0.33	

Cost Effectiveness Results with Avoided Costs as Approved

The Commission order dated October 7, 2009 in Docket No. 09-035-27 directed that, "…the Company shall perform the tests assuming its most recent IRP avoided costs, subject to any Commission order with respect to the IRP avoided costs, in addition to the avoided costs used when the program was approved." (p. 14)

The results of the five cost effectiveness tests using the 2008 IRP avoided costs (the most recent values) have been provided in summary fashion in the body of the Demand-Side Management Annual Report and in further detail in Appendix 1. This section provides the results of the five cost effectiveness tests utilizing the avoided costs at the time each program was last modified and approved by the Commission.

No other assumptions or inputs were modified between the results provided in the Annual Report and previous sections of this Appendix 1 and the results in this section.

Approach to analysis:

The Company identified the appropriate avoided costs that were utilized at the time each program was last modified and approved. When specific analyses were included with the program filing, then the same avoided costs were used in this analysis.

This analysis used the 2010 avoided cost values from historic avoided cost analyses as the starting point for this analysis. For example, if the "as approved" avoided costs for a program utilized the 2007 IRP, the analyses provided in this section would utilize the 2010 avoided cost value from the 2007 IRP stream of avoided costs and subsequent values in the avoided cost stream for future years.

It is important to note that the cost effectiveness results will be different than those provided during the last program approval process. While the change in the avoided costs used in this analysis contributes to those changes, there are several other assumptions and inputs that may be different between the 2010 results and the last program approval process. Those differences include gross savings (both at a program level and on a measure level), incentive and non-incentive costs, retail energy rates, measure lives, net to gross ratios and discount rates.

Cool Cash
Last Approved Filing – Advice 09-05, Filed April 7, 2009.
Avoided Costs Used – 2007 IRP – 7% Residential Cooling Load Factor decrement

Results of the five cost effectiveness tests using 2010 program performance and utilizing the 2007 IRP avoided costs are included in the following table.

2007 IRP 7% Load Factor Decrement

All Measures				AC: IRP 7% LF Decrement	
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	(0.0105)	($103,642)	$1,966,216	$2,069,858	NA
Total Resource Cost Test (TRC) No Adder	(0.0105)	($103,642)	$1,787,469	$1,891,111	NA
Utility Cost Test (UCT)	0.1517	$1,490,290	$1,787,469	$297,179	1.199
Rate Impact Test (RIM)		$2,464,431	$1,787,469	($676,962)	0.725
Participant Cost Test (PCT)		($1,593,932)	$2,440,288	$4,034,220	NA
Lifecycle Revenue Impacts ($/kWh)				$0.0000100996	
Discounted Participant Payback (years)				(7.13)	

Home Energy Savings
Last Approved Filing – Advice 10-05, Filed June 3, 2010.
Avoided Costs Used – 2007 IRP – 46% Residential Whole House Load Factor decrement.

Results of the five cost effectiveness tests using 2010 program performance and utilizing the 2007 IRP avoided costs are included in the following table.

2007 IRP 46% Load Factor Decrement

All Measures				AC: IRP 46% LF Decrement	
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0975	$21,828,243	$23,867,243	$2,039,000	1.093
Total Resource Cost Test (TRC) No Adder	0.0975	$21,828,243	$21,697,494	($130,749)	0.994
Utility Cost Test (UCT)	0.0754	$16,875,684	$21,697,494	$4,821,809	1.286
Rate Impact Test (RIM)		$40,511,293	$21,697,494	($18,813,800)	0.536
Participant Cost Test (PCT)		$4,952,559	$29,347,178	$24,394,620	5.926
Lifecycle Revenue Impacts ($/kWh)				$0.0005210579	
Discounted Participant Payback (years)				1.06	

Energy Star New Homes
Last Approved Filing – Advice 10-14, Filed December 28, 2010.
Avoided Costs Used – 2007 IRP – 46% Residential Whole House Load Factor decrement.

Results of the five cost effectiveness tests using 2010 program performance and utilizing the 2007 IRP avoided costs are included in the following table.

Table 4: 2007 IRP 46% Load Factor Decrement

All Measures				AC: IRP 46% LF Decrement	
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.1160	$2,603,835	$2,328,121	($275,714)	0.894
Total Resource Cost Test (TRC) No Adder	0.1160	$2,603,835	$2,116,473	($487,362)	0.813
Utility Cost Test (UCT)	0.1160	$2,604,552	$2,116,473	($488,079)	0.813
Rate Impact Test (RIM)		$4,802,538	$2,116,473	($2,686,064)	0.441
Participant Cost Test (PCT)		($717)	$3,212,760	$3,213,477	NA
Lifecycle Revenue Impacts ($/kW				$0.0000584099	
Discounted Participant Payback				NA	

See ya later, refrigerator
Last Approved Filing – Advice 07-17, Filed June 29, 2007.
Avoided Costs Used – August 2007 update to the 2005 IRP 65% east residential system load factor decrement.

Results of the five cost effectiveness tests using 2010 program performance and utilizing the 2005 IRP Update avoided costs are included in the following table.

2005 Updated IRP 65% Load Factor Decrement

All Measures				AC: IRP 65% LF Decrement	
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0235	$1,903,333	$3,283,965	$1,380,632	1.725
Total Resource Cost Test (TRC) No Adder	0.0235	$1,903,333	$2,985,423	$1,082,090	1.569
Utility Cost Test (UCT)	0.0293	$2,369,803	$2,985,423	$615,620	1.260
Rate Impact Test (RIM)		$7,337,960	$2,985,423	($4,352,537)	0.407
Participant Cost Test (PCT)		($466,470)	$7,784,328	$8,250,798	NA
Lifecycle Revenue Impacts ($/kWh)				$0.0001977035	
Discounted Participant Payback (years)				(0.28)	

Low Income Weatherization
Last Approved Filing – Advice 07-08, Filed February 14, 2007.
Avoided Costs Used – August 2005 updated to the 2004 IRP 65% east system load factor decrement.

Results of the five cost effectiveness tests using 2010 program performance and utilizing the 2004 IRP Update avoided costs are included in the following table.

2005 update to 2004 IRP 65% Load Factor Decrement

All Measures				AC: IRP 65% LF Decrement	
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0138	$258,422	$967,930	$709,508	3.746
Total Resource Cost Test (TRC) No Adder	0.0138	$258,422	$879,937	$621,515	3.405
Utility Cost Test (UCT)	0.0138	$258,422	$879,937	$621,515	3.405
Rate Impact Test (RIM)		$1,679,504	$879,937	($799,567)	0.524
Participant Cost Test (PCT)		$0	$1,438,888	$1,438,888	NA
Lifecycle Revenue Impacts ($/kWh)				$0.0000142065	
Discounted Participant Payback (years)				NA	

Energy FinAnswer
Last Approved Filing – Advice 06-15, Filed November 17, 2006.
Avoided Costs Used – August 2005 updated to the 2004 IRP 65% east system load factor decrement.

Results of the five cost effectiveness tests using 2010 program performance and utilizing the 2004 IRP Update avoided costs are included in the following table.

2005 Updated IRP 65% Load Factor Decrement

All Measures				AC: IRP 65% LF Decrement	
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0462	$15,648,370	$24,122,115	$8,473,745	1.542
Total Resource Cost Test (TRC) No Adder	0.0462	$15,648,370	$21,929,196	$6,280,826	1.401
Utility Cost Test (UCT)	0.0229	$7,769,668	$21,929,196	$14,159,528	2.822
Rate Impact Test (RIM)		$30,949,643	$21,929,196	($9,020,447)	0.709
Participant Cost Test (PCT)		$7,878,703	$27,258,984	$19,380,281	3.460
Lifecycle Revenue Impacts ($/kWh)				$0.0000253528	
Discounted Participant Payback (years)				3.20	

FinAnswer Express
Last Approved Filing – Advice 10-08, Filed June 24, 2010.
Avoided Costs Used – August 2005 updated to the 2004 IRP 65% east system load factor decrement.

Results of the five cost effectiveness tests using 2010 program performance and utilizing the 2004 IRP Update avoided costs are included in the following table.

2005 Updated IRP 65% Load Factor Decrement

All Measures				AC: IRP 65% LF Decrement	
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0571	$11,056,361	$13,361,516	$2,305,155	1.208
Total Resource Cost Test (TRC) No Adder	0.0571	$11,056,361	$12,146,833	$1,090,472	1.099
Utility Cost Test (UCT)	0.0265	$5,126,228	$12,146,833	$7,020,604	2.370
Rate Impact Test (RIM)		$21,585,498	$12,146,833	($9,438,665)	0.563
Participant Cost Test (PCT)		$5,930,132	$21,281,611	$15,351,479	3.589
Lifecycle Revenue Impacts ($/kWh)				$0.0000265282	
Discounted Participant Payback (years)				3.08	

Re-Commissioning
Last Approved Filing – Advice 05-04, Filed November 17, 2006.
Avoided Costs Used – 2004 IRP 12% east commercial cooling load factor decrement

Results of the five cost effectiveness tests using 2010 program performance and utilizing the 2004 IRP avoided costs are included in the following table.

Table 4: 2005 IRP 12% Load Factor Decrement

All Measures				AC: IRP 12% LF Decrement	
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0358	$1,173,875	$2,269,992	$1,096,117	1.934
Total Resource Cost Test (TRC) No Adder	0.0358	$1,173,875	$2,063,629	$889,754	1.758
Utility Cost Test (UCT)	0.0301	$986,414	$2,063,629	$1,077,215	2.092
Rate Impact Test (RIM)		$3,320,113	$2,063,629	($1,256,485)	0.622
Participant Cost Test (PCT)		$187,460	$2,859,124	$2,671,664	15.252
Lifecycle Revenue Impacts ($/kWh)				$0.0000077672	
Discounted Participant Payback (years)				0.40	

Self Direction
Last Approved Filing – Advice 10-03, Filed February 23, 2010.
Avoided Costs Used – 2003 IRP 300 MW 60% Load Factor Decrement

Results of the five cost effectiveness tests using 2010 program performance and utilizing the 2003 IRP avoided costs are included in the following table.

IRP 300 MW 60% Load Factor Decrement

All Measures				AC: IRP 60% LF Decrement	
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0216	$3,601,130	$8,062,260	$4,461,130	2.239
Total Resource Cost Test (TRC) No Adder	0.0216	$3,601,130	$7,329,327	$3,728,197	2.035
Utility Cost Test (UCT)	0.0201	$3,352,975	$7,329,327	$3,976,353	2.186
Rate Impact Test (RIM)		$9,859,723	$7,329,327	($2,530,396)	0.743
Participant Cost Test (PCT)		$248,155	$7,744,567	$7,496,411	31.209
Lifecycle Revenue Impacts ($/kWh)				$0.0000077661	
Discounted Participant Payback (years)				0.32	

Irrigation Load Control

Last Approved Filing – Advice 08-11, Filed December 17, 2008.
Avoided Costs Used – $/kW-year value of $59.43 based on estimate at time of filing.

Results of the five cost effectiveness tests using 2010 program performance and utilizing the $59.43 benefit value are included in the following table.

Irrigation Load control @ $59.43/kW

All Measures					
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder		$1,191,541	$3,404,916	$2,213,375	2.86
Total Resource Cost Test (TRC) No Adder		$1,191,541	$3,095,378	$1,903,837	2.60
Utility Cost Test (UCT)		$2,512,712	$3,095,378	$582,666	1.23
Rate Impact Test (RIM)		$2,512,712	$3,095,378	$582,666	1.23
Participant Cost Test (PCT)		$0	$1,321,171	$1,321,171	NA
Lifecycle Revenue Impacts ($/kWh)					
Discounted Participant Payback (years)					

Air Conditioner Load Management (Cool Keeper)

Last Approved Filing – Advice 03-03, Filed May 12, 2003.
Avoided Costs Used – 2003 IRP – 100 MW 1% Load Factor Decrement

Results of the five cost effectiveness tests using 2010 program performance and utilizing the 2003 IRP benefit value are included in the following table.

IRP 100 MW 1% Load Factor Decrement

All Measures					
	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder		$49,528,235	$108,215,790	$58,687,555	2.18
Total Resource Cost Test (TRC) No Adder		$49,528,235	$98,377,991	$48,849,756	1.99
Utility Cost Test (UCT)		$66,022,018	$98,377,991	$32,355,974	1.49
Rate Impact Test (RIM)		$66,022,018	$98,377,991	$32,355,974	1.49
Participant Cost Test (PCT)			$16,493,783	$16,493,783	NA
Lifecycle Revenue Impacts ($/kWh)					
Discounted Participant Payback (years)					