

**Date:** March 16, 2009  
**To:** Jim Gilroy  
Don Jones Jr.  
**From:** Brian Hedman  
**Re:** Utah Cool Cash 2009 Cost Effectiveness Analysis

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This report provides a cost-effectiveness analysis of PacifiCorp's preliminary estimates for the 2009 Cool Cash Program in Utah. The analysis is based on the 2007 IRP decrement avoided costs. The discount rate is the after-tax weighted cost of capital from PacifiCorp's most Integrated Resource Plan. Cost effectiveness parameters for line losses and 2007 average retail rates were provided by PacifiCorp's regulation department.

The following tables present the evaluation inputs, the per-unit costs and savings assumptions, the total program cost, and the IRP 7% residential cooling load factor decrement results. The IRP decrement values are derived from the Company's IRP analysis and reflect the specific value of the program to Rocky Mountain Power's Utah service territory.

Table 1 lists the program cost effectiveness inputs.

**Table 1: Cost Effectiveness Inputs**

Parameter	Value
Discount Rate	7.10%
Line Loss	8.859%
Energy Rate (\$/kWh)	\$0.0830

Table 2 presents the program participation, incentive levels and per unit cost and savings estimates. Table 3 presents the total program costs and savings.

**Table 2: Program Participation**

Program Options	Savings Lifetime	Annual Participation	Net Annual Energy Savings (kWh/yr/unit)	Net Demand Savings (kW/unit)	Gross Incremental Customer Cost (\$/unit)	Customer Incentive (\$/unit)	Dealer Incentive (\$/unit)
<b>Evaporative</b>							
Replacement	15	412	303	0.53	(\$2,173)	\$100	\$25
New	15	248	533	0.93	(\$2,173)	\$300	\$25
Premium	15	5	909	1.58	(\$1,630)	\$500	\$150
Premium w/ducts	15	5	909	1.58		\$1000	\$300
Subtotal		670					
<b>Central AC</b>							
Sizing + TXV	15	1,166	82	0.05		\$50	\$25
Charge and Airflow	10	1,013	74	0.22		\$50	\$75
15+ SEER/12.5+ EER	15	1,193	144	0.21	\$957	\$150	
Subtotal		3,372					
<b>Total</b>		4,042					

**Table 3: Costs and Savings**

Program Year	Program Administration	Utility Administration	Incentives	Total Utility Cost	Net Participant Cost	Annual kWh Savings
2009	\$168,360	\$45,000	\$534,875	\$748,235	(\$33,203)	608,613

The program is cost effective from all perspectives. The participant cost ratio is not calculated due to negative participant costs.

**Table 4: Program Cost Effectiveness**

All Measures	AC: IRP 7% Load Factor				
	Levelized \$/kWh	Costs	Benefits	Net Benefit	Ratio
Total Resource Cost Test (TRC) + Conservation Adder	0.0578	\$283,877	\$990,268	\$706,391	3.488
Total Resource Cost Test (TRC) No Adder	0.0578	\$283,877	\$900,243	\$616,367	3.171
Utility Cost Test (UCT)	0.1421	\$698,632	\$900,243	\$201,611	1.289
Utah Rate Impact Test (URIM)		\$749,147	\$900,243	\$151,097	1.202
Participant Cost Test (PCT)		(\$414,755)	\$512,564	\$927,319	n/a
Lifecycle Revenue Impacts (\$/kW)				(\$0.0000003481)	

The following tables present measure specific cost effectiveness. Administrative costs are assigned to the measure level based on the proportion of the measure savings to the total program savings.

**Table 5: Replacement Evaporative Cooler Cost Effectiveness**

	Costs	Benefits	Net Benefit	Ratio
Total Resource Cost Test (TRC) + Conservation Adder	(\$179,058)	\$210,306	\$389,365	NA
Total Resource Cost Test (TRC) No Adder	(\$179,058)	\$191,188	\$370,246	NA
Utility Cost Test (UCT)	\$68,392	\$191,188	\$122,796	2.795
Utah Rate Impact Test (URIM)	\$78,753	\$191,188	\$112,434	2.428
Participant Cost Test (PCT)	(\$247,450)	\$108,654	\$356,104	NA

**Table 6: New Evaporative Cooler Cost Effectiveness**

	Costs	Benefits	Net Benefit	Ratio
Total Resource Cost Test (TRC) + Conservation Adder	(\$203,386)	\$222,802	\$426,189	NA
Total Resource Cost Test (TRC) No Adder	(\$203,386)	\$202,548	\$405,934	NA
Utility Cost Test (UCT)	\$87,480	\$202,548	\$115,068	2.315
Utah Rate Impact Test (URIM)	\$98,457	\$202,548	\$104,091	2.057
Participant Cost Test (PCT)	(\$290,866)	\$115,110	\$405,976	NA

**Table 7: Premium Evaporative Cooler Cost Effectiveness**

	Costs	Benefits	Net Benefit	Ratio
Total Resource Cost Test (TRC) + Conservation Adder	(\$4,761)	\$7,657	\$12,417	NA
Total Resource Cost Test (TRC) No Adder	(\$4,761)	\$6,961	\$11,721	NA
Utility Cost Test (UCT)	\$3,281	\$6,961	\$3,680	2.122
Utah Rate Impact Test (URIM)	\$3,658	\$6,961	\$3,303	1.903
Participant Cost Test (PCT)	(\$8,042)	\$3,956	\$11,997	NA

**Table 8: Premium Evaporative Cooler w/Ductwork Cost Effectiveness**

	Costs	Benefits	Net Benefit	Ratio
Total Resource Cost Test (TRC) + Conservation Adder	\$1,647	\$7,657	\$6,010	4.649
Total Resource Cost Test (TRC) No Adder	\$1,647	\$6,961	\$5,314	4.226
Utility Cost Test (UCT)	\$6,316	\$6,961	\$645	1.102
Utah Rate Impact Test (URIM)	\$6,693	\$6,961	\$268	1.040
Participant Cost Test (PCT)	(\$4,669)	\$3,956	\$8,624	NA

**Table 9: Sizing Cost Effectiveness**

	Costs	Benefits	Net Benefit	Ratio
Total Resource Cost Test (TRC) + Conservation Adder	\$84,686	\$161,368	\$76,683	1.906
Total Resource Cost Test (TRC) No Adder	\$84,686	\$146,699	\$62,013	1.732
Utility Cost Test (UCT)	\$139,121	\$146,699	\$7,578	1.054
Utah Rate Impact Test (URIM)	\$147,071	\$146,699	(\$372)	0.997
Participant Cost Test (PCT)	(\$54,435)	\$83,370	\$137,805	NA

**Table 10: Charge and Airflow Cost Effectiveness**

	Costs	Benefits	Net Benefit	Ratio
Total Resource Cost Test (TRC) + Conservation Adder	\$120,866	\$91,026	(\$29,840)	0.753
Total Resource Cost Test (TRC) No Adder	\$120,866	\$82,751	(\$38,115)	0.685
Utility Cost Test (UCT)	\$168,158	\$82,751	(\$85,407)	0.492
Utah Rate Impact Test (URIM)	\$174,369	\$82,751	(\$91,618)	0.475
Participant Cost Test (PCT)	(\$47,292)	\$47,975	\$95,268	NA

**Table 11: SEER 15+ Cost Effectiveness**

	Costs	Benefits	Net Benefit	Ratio
Total Resource Cost Test (TRC) + Conservation Adder	\$463,884	\$289,452	(\$174,432)	0.624
Total Resource Cost Test (TRC) No Adder	\$463,884	\$263,138	(\$200,746)	0.567
Utility Cost Test (UCT)	\$225,886	\$263,138	\$37,252	1.165
Utah Rate Impact Test (URIM)	\$240,146	\$263,138	\$22,992	1.096
Participant Cost Test (PCT)	\$237,998	\$149,544	(\$88,455)	0.628