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IDAHO PUBLIC  
UTILITIES COMMISSION

September 1, 2006

VIA FEDERAL EXPRESS

Idaho Public Utilities Commission  
472 West Washington  
Boise, ID 83702-5983

*PAC-E-06-10*

Attention: Jean D. Jewell  
Commission Secretary

Re: In the Matter of the Petition of PacifiCorp to Determine the Appropriate Payment  
Structure of Schedule 21

PacifiCorp (d.b.a. Rocky Mountain Power) hereby submits for filing an original and seven copies of its  
Petition of PacifiCorp to Determine the Appropriate Payment Structure of Schedule 21.

Service of pleadings, exhibits, orders and other documents relating to this proceeding should be served on  
the following:

Dean Brockbank  
PacifiCorp  
201 South Main Street, Suite 2200  
Salt Lake City, Utah 84111  
[Dean.Brockbank@PacifiCorp.com](mailto:Dean.Brockbank@PacifiCorp.com)

Brian Dickman  
PacifiCorp  
201 South Main Street, Suite 2300  
Salt Lake City, Utah 84111  
[Brian.Dickman@PacifiCorp.com](mailto:Brian.Dickman@PacifiCorp.com)

It is respectfully requested that all formal correspondence and Staff requests regarding this material be  
addressed to:

By e-mail (preferred): [datarequest@pacificorp.com](mailto:datarequest@pacificorp.com)

By regular mail: Data Request Response Center  
PacifiCorp  
825 NE Multnomah, Suite 2000  
Portland, Oregon, 97232

By fax: (503) 813-6060

Sincerely,

*D. Douglas Larson (DL)*  
D. Douglas Larson  
Vice President, Regulation  
Enclosures

Dean Brockbank  
PacifiCorp  
201 South Main Street, Suite 2200  
Salt Lake City, Utah 84111  
Telephone: (801) 220-4568  
FAX: (801) 220-3299  
Dean.Brockbank@PacifiCorp.com

Attorneys for PacifiCorp

**BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION**

**IN THE MATTER OF THE PETITION OF )  
PACIFICORP TO DETERMINE THE )  
APPROPRIATE PAYMENT STRUCTURE )  
OF SCHEDULE 21 )**

**CASE NO. PAC-E-06-10**

**PETITION FOR DECLARATORY  
ORDER**

**COMES NOW**, PacifiCorp, d/b/a Rocky Mountain Power (“PacifiCorp” or the “Company”) and, pursuant to Rule of Procedure 101, hereby petitions the Idaho Public Utilities Commission (“IPUC” or the “Commission”) to issue an Order confirming that PacifiCorp’s current Schedule No. 21, as approved in Order No. 29952 and Tariff Advice 06-03, continues to be just and reasonable and in the public interest. This Petition is based on the following:

I.

In Commitment I13b adopted in Order No. 29998, Case No. PAC-E-05-8, the Company agreed to include in the direct testimony of its next general rate case an analysis of the costs and benefits of changing its current practice of matching 50 percent of federal contributions for low-income weatherization measures to matching at a higher percentage amount. Commitment I13b was accepted based on a previous stipulation in Case No. PAC-E-05-1, Order No. 29833, which proposed a general rate case was to be filed by the Company no later than April 29, 2006 to address an unresolved and unrelated cost of service issue.

## II.

On June 21, 2006, the Company made three applications with the Commission to adjust rates for tariff Schedule Nos. 10, 400, and 401 (Case Nos. PAC-E-06-4, PAC-E-06-8, and PAC-E-06-9). The above applications are based on settlement agreements reached between PacifiCorp and the representatives of customers served under the respective rate schedules. PacifiCorp contends that, pending Commission approval of the applications, a general rate case would no longer be needed during 2006.

In an attempt to honor its commitment made in Case No. PAC-E-05-8, the Company sought agreement from the Community Action Partnership Association of Idaho (“CAPAI”) to address the issues raised in Commitment I13b in a filing other than a general rate case. Such an agreement was reached, and on June 19, 2006, the Company and CAPAI executed the stipulation attached hereto as Exhibit 1. As part of the stipulation PacifiCorp agreed to make this filing before the Commission no later than September 1, 2006. PacifiCorp also agreed to (1) contribute \$10,000 each to SouthEastern Idaho Community Action Agency (“SEICAA”) and Eastern Idaho Community Action Partnership (“EICAP”) to be used as energy assistance for the Lend-a-Hand program during the 2006-2007 heating season, and (2) support legislation sponsored by CAPAI during the 2007 Idaho general legislative session that would give the Commission authority to approve discount rates for low-income customers that are requested by utilities.

## III.

PacifiCorp has had programs in place to assist households in financial crisis with their energy needs for many years. Its Low Income Weatherization program has been in effect since 1988 with over 600 homes completed to date. The Company has also donated, and solicited donations, to the Lend-a-Hand energy assistance program for many years through envelopes

distributed in November and February billings. PacifiCorp has matched all contributions to Lend-a-Hand since November 2000. PacifiCorp recognizes the importance of providing services to households with limited income. This is also illustrated by the additional low-income commitments described in Section V below.

PacifiCorp partners with EICAP in Idaho Falls and SEICAA in Pocatello to provide energy efficiency services at no cost to income-qualifying households through its Low Income Weatherization Program (Schedule No. 21). This program is a demand side management (“DSM”) program intended to reduce electricity consumption and monthly bills by increasing the efficiencies of low-income homes. PacifiCorp reimburses the agencies 50 percent of the cost of installing approved measures while matching federal grants are available to the agencies so that the services are provided at no charge to participating households.

Pursuant to Commitment I13a, Case No. PAC-E-05-8, and as approved by the Commission in Tariff Advice 06-03, effective August 1, 2006, PacifiCorp will reimburse the agencies up to 100 percent of the cost of installing approved measures if government funds are exhausted. Also effective August 1, 2006, the previous maximum average investment per household of \$1,500 is no longer applicable. Instead, PacifiCorp will reimburse costs as described above with no maximum or average payment applied, providing the partnering agencies more flexibility in administering the program. The Company also continues to reimburse its partnering agencies 15 percent of the Company’s rebates on each completed home to cover their administrative costs. Total PacifiCorp funding available is subject to a cap of \$150,000 annually.

#### IV.

As a DSM program, funding for Schedule No. 21 is recovered from utility customers

through the Schedule No. 191 Customer Efficiency Services Rate Adjustment. PacifiCorp provides financial assistance to its partnering agencies on approved measures under Schedule No. 21. The agencies use a Department of Energy approved audit to determine if shell measures, including insulation and window replacements, are cost effective in electrically heated homes. Other measures are available to increase electric efficiencies such as water heating measures in homes with electric water heaters and efficient lighting and refrigerators in all homes.

PacifiCorp previously provided the Commission an analysis of the Low Income Weatherization Program in support of proposed program revisions in September 2005. That analysis included the results of a cost effectiveness study and is provided with this petition as Exhibit 2 (refer to page II-2 for cost effectiveness calculations). At that time and under the reimbursement policy of 50 percent matching rebates, the program narrowly passed the Utility Cost Test under the IRP Decrement approach for quantifying the expected benefits.

If the reimbursement portion is increased, the Company is concerned that fewer PacifiCorp customers will be provided weatherization services. An increase in the Company's reimbursement would mean a larger percentage of program costs would be covered through funds collected from Schedule No. 191 and a smaller percentage through federal tax funds. Because total program expenditures are capped, the total cost to the utility would remain relatively unchanged, but the benefits of the program would be reduced due to fewer homes receiving installed measures. Not only would fewer low-income customers in the Company's service area receive energy efficiency services, but the benefit of reduced energy usage and lower incremental power costs would no longer be shared by PacifiCorp's Idaho customers, making the program less cost effective. In fact, the benefits of the energy efficiency services could be shifted to customers of another gas or electric provider through federal funds no longer

available to PacifiCorp customers. PacifiCorp believes that the costs and the benefits of the weatherization program should be aligned and that the cost effectiveness of the program should be maintained.

As an example, if on average the cost of completing energy efficiency services on a qualifying home is \$3,000, the Company's reimbursement for measures plus the 15 percent administrative cost rebate would total \$1,725. At this rate, 87 homes could be completed with PacifiCorp's annual budget of \$150,000. Reimbursement of 75 percent of costs under this scenario results in the potential completion of 58 homes, and reimbursement of 100 percent of costs results in only 45 homes completed annually. This example illustrates that considerably fewer PacifiCorp customers would benefit from these energy efficiency services if the funding policy is revised.

An updated cost effectiveness analysis is provided as Exhibit 3. This update provides cost effectiveness results under three reimbursement scenarios:

- PacifiCorp reimburses 50% of costs, federal funding covers 50%
- PacifiCorp reimburses 75% of costs, federal funding covers 25%
- PacifiCorp reimburses 100% of costs, federal funding covers 0%

As shown in Table 3 of Exhibit 3, under a 50 percent reimbursement scenario the program continues to pass the Total Resource Cost Test and the Utility Cost Test. Under a 75 percent reimbursement scenario, the program no longer passes the Utility Cost Test (Table 6). And finally, under a 100 percent reimbursement scenario, the program fails both the Total Resource Cost Test and the Utility Cost Test (Table 9).

As stated in Section III of Exhibit 2, PacifiCorp plans to have an impact evaluation completed on program results once the Low Income Weatherization Program revisions approved in January 2006 (Order No. 29952) have been in place for two years. The evaluation plan is

included in Section III of Exhibit 2. The Company will review these results in 2008 to determine if program changes should be made, including changes to the reimbursement policy. In addition, the Company will file a report by May 1 of each year, beginning May 1, 2007, detailing its Idaho DSM activities and program cost effectiveness, including the Low Income Weatherization Program.

V.

PacifiCorp has a variety of projects in place and under development to assist low-income customers. Providing weatherization services is an important component in its mix of offerings. The Company made three additional commitments in Case No. PAC-E-05-8 that will benefit low-income households. In Commitment I14, PacifiCorp committed to a total contribution level from all sources to low-income bill payment assistance in Idaho of \$40,000 annually for a five year period beginning July 1, 2006. This ongoing contribution will substantially increase annual funds. Through Commitment I15 PacifiCorp will provide shareholder funding to study an arrearage management project. In Commitment I41, PacifiCorp agreed to initiate a collaborative effort to track low-income issues by identifying and collecting data pertinent to low-income customers in the Company's Idaho service area.

VI.

The current 50 percent reimbursement policy is consistent with the low-income weatherization programs the Company offers in its other service areas. This policy allows customers to receive benefits from their tax dollars as well as cost-effective services from this demand-side management program. Using federal grants to cover 50 percent of program costs provides benefits to all PacifiCorp customers in Idaho regardless of income or participation in the Low Income Weatherization Program because all customers benefit from cost effective

energy efficiency investments. PacifiCorp requests that the Commission determine the current payment structure is appropriate based on the reasons stated above.

VII.

Service of pleadings, exhibits, orders and other documents relating to this proceeding should be served on the following:

Dean Brockbank  
PacifiCorp  
201 South Main Street, Suite 2200  
Salt Lake City, Utah 84111  
[Dean.Brockbank@PacifiCorp.com](mailto:Dean.Brockbank@PacifiCorp.com)

Brian Dickman  
One Utah Center, Suite 2300  
201 South Main  
Salt Lake City, UT 84111  
[Brian.Dickman@PacifiCorp.com](mailto:Brian.Dickman@PacifiCorp.com)

In addition, it is respectfully requested that all formal correspondence and Staff requests regarding this material be addressed to:

[datarequest@pacificorp.com](mailto:datarequest@pacificorp.com)

or

Data Request Response Center  
PacifiCorp  
825 NE Multnomah, Suite 2000  
Portland, OR 97232

VIII.

WHEREFORE, PacifiCorp respectfully requests the Commission determine and declare that PacifiCorp's current Schedule No. 21, as approved in Order No. 29952 and Tariff Advice 06-03, continues to be just and reasonable and in the public interest. PacifiCorp will follow this petition with direct testimony sponsored by a Company witness, to be filed by September 15, 2006. PacifiCorp requests that this Petition be processed under modified procedure pursuant to Rules 201 through 204 of the Commission's Rules of Procedure.




Respectfully submitted this 1st day of September 2006.

By Dean Brockbank  
Dean Brockbank  
Attorney for PacifiCorp

**CERTIFICATE OF MAILING**

I HEREBY CERTIFY that on the 31<sup>th</sup> day of August 2006, I served a true and correct copy of the foregoing PETITION upon the following named parties by the method indicated below, and addressed to the following:

Brad Purdy	_____	Hand Delivered
Attorney at Law	_____	U.S. Mail
Community Action Partnership Association	<input checked="" type="checkbox"/>	Overnight Mail
of Idaho	_____	FAX
2019 N. 17 <sup>th</sup> Street		
Boise, ID 83702		

  
\_\_\_\_\_  
Shelley Zoller  
Regulation Department

**PACIFICORP DBA**

**ROCKY MOUNTAIN POWER**

**CASE NO. PAC-E-06-10**

**EXHIBIT NO. 1**

**IS CONFIDENTIAL**

Case No. PAC-E-06-10  
Exhibit No. 2

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

PACIFICORP

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Idaho Low Income Weatherization Program:  
Analysis in Support of Tariff Revision

September 2006

Final

**Idaho Low Income  
Weatherization Program:  
Analysis in  
Support of Tariff Revision**

*Prepared for:*  
PacifiCorp

*August 22, 2005*

***Prepared by:***  
Brian Hedman  
M. Sami Khawaja, Ph.D.  
Quantec, LLC

**Quantec Offices**

6229 SE Milwaukie Ave.  
Portland, OR 97202  
(503) 228-2992  
(503) 228-3696 fax  
[www.quantecllc.com](http://www.quantecllc.com)

3445 Grant St.  
Eugene, OR 97405  
(541) 484-2992  
(541) 683-3683 fax

1722 14th St., Suite 230  
Boulder, CO 80302  
(303) 998-0102  
(303) 998-1007 fax

6 Ridgeland Rd  
Barrington, RI 02806  
(401) 289-0059  
(401) 289-0287 fax

212 E Main St., Suite G  
Reedsburg, WI 53959  
(608) 524-4844  
(608) 524-6361 fax

20022 Cove Circle  
Huntington Beach, CA 92646  
(714) 287-6521



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# I. Program Description

The current Low Income Weatherization Program has been in place for over ten years. It is available to Utah Power customers with incomes at or below 150% of federal poverty guidelines that have installed electric heating systems. Services are provided at no cost to participants because partnering agencies are able to leverage Utah Power funding with federal and state funds they receive. Utah Power offers rebates directly to the Eastern Idaho Special Services Agency and the SouthEastern Idaho Community Action Agency (“Agencies”) that administer the Program. The average annual number of completions during the period 2000 through 2004 is 23.

Utah Power in consultation with their two partnering non-profit agencies is proposing revisions to the current program (Schedule 21). There are four goals to this effort.

1. To increase Utah Power customer participation numbers.
2. To provide incentives for the installation of additional cost effective measures.
3. To offer rebates on measures that reduce electricity consumption in homes regardless of heating source.
4. To reimburse agencies for services up to two times per home, one time per measure. This allows the installation of new technologies and/or measures that previously were not considered cost effective.

The agencies provided expected participation rates for the revised program based on their historic weatherization program experience. Estimates are presented in Table I.1.

**Table I.1: Expected Annual Participation Rates**

Electric Base Load Program Participants	170
Electrically Heated Homes	70

**Proposed Rebates:** The following summarizes Utah Power’s proposed reimbursement available to the Agencies for the installation of approved measures and reimbursement on administrative costs:

A rebate averaging up to \$1,500 per home annually (April 1 through March 31) will be provided towards the cost of installed qualifying Major and Supplemental Measures. The following measure categories will be eligible for rebates:



- Weatherization Measures in Electrically Heated Homes
- Compact Fluorescent Light Bulbs (CFLs)
- Refrigerator Replacements
- Water Saving Measures in Homes with Electric Hot Water Heaters

### **Weatherization**

Major Measures with a Savings to Investment Ratio (SIR) of 1.0 or greater are required (based on results of the State of Idaho Weatherization Energy Analysis) on homes with an electric heating system that is operable and permanently installed with the capacity to heat at least 51% of the dwelling. If physical barriers exist that prohibit the installation of a measure, the measure is not required. A list of qualifying measures follows. Greater R-values than listed below may be installed as long as audit results show it to be cost effective:

- Insulation up to R-48 for ceilings with less than R-30 in place.
- Floor insulation over unconditioned spaces up to R-30
- Insulation (not urea-formaldehyde) up to R-26 for walls without insulation installed
- Class 40 replacement windows

Supplemental Measures qualify for a rebate when they are determined to be cost effective.

Funding is available on the following Supplemental Measures installed in electrically heated homes:

- Attic ventilation when installed with ceiling insulation
- Ground cover and water pipe insulation when installed with floor insulation
- Forced air electric space heating duct testing, insulation, and sealing in unconditioned spaces
- Weather stripping and/or caulking including blower door assisted air sealing and duct sealing
- Thermal doors
- Timed thermostats on centrally controlled multi-room heating/cooling systems

Funding is available on the following supplemental measures installed in all homes:

- Compact fluorescent light bulbs – limit 8 Energy Star certified bulbs per home placed in fixtures that are on 2 hours or more per day.

- Refrigerators identified in the Weatherization Assistance Program Technical Assistance Center (WAPTAC) database as having mean annual usage of 900 kWh or greater may be replaced with an Energy Star model with estimated annual consumption of 500 kWh or less. Replaced refrigerators must be removed and recycled in accordance with EPA guidelines.
- Pipe insulation, energy-efficient showerheads, and aerators for homes with an electric water heater.

Administrative Cost Reimbursement will be provided at 15% of Utah Power's reimbursement for Major and Supplemental Measures with a minimum of \$150 on homes with at least one major measure installed and \$50 on homes without the installation of a major measure, not to exceed the following per building (Table I.2).

**Table I.2: Program Administration**

Dwelling Units/Building	Maximum Payment
Minimum Payment - \$150 w/major measure, \$50 without major measure	
1 to 4	\$350
5 to 10	\$800
11 to 15	\$1,200
16 to 20	\$1,400
21 to 25	\$1,600
26 to 30	\$1,800
31+	\$2,100

Table I.3 displays the assumptions used in the Program design and in conducting cost-effectiveness analysis. The U.S. DOE estimates the average cost per home throughout the nation is \$2,744 (based on the 2005 DOE Weatherization Guideline). The average total cost of homes completed through the Utah Power program in 2004 was \$1,678. Expected savings are based on an Oakridge National Laboratory study of weatherization programs. These savings include the Major Measures and Supplemental Measures with the exception of CFLs, and refrigerator replacements, which are separately estimated below. We used a 30-year economic life for the weatherization component of the Program. Overall weatherization measures were assumed to have a 30-year economic life.

**Table I.3: Weatherization Assumptions**

Inputs	Data Source	Estimate	Outputs	Calculation
Number of Homes Annually	Agencies	70	Total Annual Savings (kWh)	150,710
National Average Total Cost	U.S. DOE	\$2,744	Total Utah Power Annual Contribution to Admin Cost	\$15,750
Average Total Savings (kWh) *	ORNL /CON-488 02/2003	2,153	Total Utah Power Annual Rebate	\$105,000
Average Admin Cost	Utah Power	\$225	Total Annual Utah Power Cost	\$120,750
Average Rebate per Home	Utah Power	\$1,500	Total Annual Cost	\$192,080

\* Includes Major Measures and Supplemental Measures except as noted below.

### **Compact Fluorescent Light Bulbs (CFL)**

Utah Power will pay 50% of the bulb cost for up to eight ENERGY STAR<sup>®</sup>-certified CFLs per home, to be placed in lighting fixtures that are in use for two or more hours/day. Table I.4 displays the assumptions used in the CFL portion of the Program and in conducting cost-effectiveness analysis.

Estimates of CFL cost were derived from several other recent programs. The average wattage of replaced bulbs, installed bulb wattage, and expected number of hours of use were derived from PacifiCorp's evaluation of its CFL program in Utah. The total number of CFLs to be installed is determined by multiplying the expected participation level from Table I.1 (170 households) by eight. The program requirements will limit installations of CFLs to locations with at least two hours of use per day. With a minimum of two hours per day, we assumed an overall average use time of three hours per day across the installed CFLs. Average energy savings as a result of CFL replacement is calculated as the difference in wattage between the average incandescent light bulb (70 Watts) and the replacement CFL (20 Watts), multiplied by hours of use per day (3 hours) and days per year (365). This product is then converted to kWh by dividing by 1,000. The economic life of a CFL light bulb (9 years) is determined by assuming 10,000 hours of burn time divided by the annual hours of use (10,000/(3\*365)). Agency administrative payments are limited to 15% of the Utah Power estimated contribution of \$1,700.

**Table I.4: CFL Assumptions**

Inputs	Data Source	Estimate	Outputs	Calculation
No. CFLs per Home	Program	8	Total Annual No. CFLs	1,360
Average Cost per CFL	Various	\$2.50	Avg. CFL Savings (kWh)	54.8
Average Existing Wattage	Utah Eval.	70	Total Annual Savings (kWh)	74,460
Average New Wattage	Utah Eval.	20	Total Utah Power Annual Contribution to Admin Cost	\$255
			Total Utah Power Rebate	\$1,700
Average No Hours per Day	Utah Eval.	3	Total Annual Utah Power Cost	\$1,955
			Total Annual Program Cost	\$3,655
Rebate as % of CFL Cost	Utah Power	50%	Economic Life (Years)	9

### Refrigerators

Refrigerators can be replaced where existing models are listed in the WAPTAC database as having annual mean usage of 900 kWh or greater. Replacement refrigerators will be ENERGY STAR-certified models with annual consumption levels of 500 kWh or less. Replaced refrigerators will be removed and recycled according to Environmental Protection Agency (EPA) guidelines.<sup>1</sup>

Table I.5 displays the assumptions used in the refrigerator replacement portion of the Program and in conducting cost-effectiveness analysis. The consumption data are based on metered units from a similar program run in Utah during 2003. We assumed a 19-year economic life for a new refrigerator. Utah Power's total annual cost is set at 50% of the cost of replaced refrigerators. As mentioned above, the administration fee is limited to 15% of Utah Power contribution.

<sup>1</sup> Existing refrigerators consuming over 900 kWh annually can be cost-effectively replaced. For detailed information concerning EPA Guidelines, please refer to Appendix A.

**Table I.5: Refrigerators Assumption**

Inputs	Data Source	Estimate	Outputs	Estimate
Number of Refrigerators Tested	Agencies	153	No. Refrigerators Replaced	68
Proportion of Tested Replaced	Utah Pgm	44%	Avg Annual Savings (kWh)	1,510
Avg Cost per New Unit	Agencies	\$600	Total Annual Savings (kWh)	101,653
Avg Cost Per Tested Unit	Agencies	*	Total Annual Equip Cost	\$40,800
Avg Consumption of Existing Unit (kWh)	Utah Pgm	1,944	Total Annual Testing Cost	*
Avg Consumption of New Unit (kWh)	Utah Pgm	434	Total Utah Power Contribution to Admin Cost	\$3,060
Rebate as % of Unit Cost	Utah Power	50%	Total Utah Power Rebate	\$20,400
Economic Life (Years)		19	Total Annual Utah Power Cost	\$23,460
			Total Annual Cost	\$43,860

\* The WAPTAC database will be used in lieu of testing<sup>2</sup>.

### Hot Water Measures

Table I.6 displays the assumptions used in the design of the hot water portion of the Program, and in conducting cost-effectiveness analysis. The segment of clients likely to have gas heat with electric hot water was estimated at 10% (approximately 17 households). The program will install low-flow showerheads, kitchen and bathroom aerators and pipe wraps for these customers. Energy savings estimates were obtained from the evaluation of the 2002 California Low Income Energy Efficiency program<sup>3</sup>. As in the components above, Utah Power's contribution to administration cost will be limited to 15% of the total rebate amount for measures installed.

**Table I.6: Hot Water Measure Assumptions**

Inputs	Data Source	Estimate	Outputs	Calculation
Percent of Participants with gas heat and electric hot water	Agencies	10%	Annual Participants	17
Showerhead savings (kWh)	2002 CA LIEE	230	Total Annual Savings (kWh)	6,749
Aerators (kWh)	2002 CA LIEE	75	Total Annual Utah Power Contribution to Admin Cost	\$97
Pipe Wrap	2004 CA DEER	92	Total Annual Utah Power Rebate	\$323
Measure Cost	Iowa LI Pgm	\$38	Total Annual Utah Power Cost	\$420
Rebate as % of Unit Cost	Utah Power	50%	Total Annual Program Cost	\$ 743
			Economic Life (Years)	9

<sup>2</sup> Energy use data for over 41,000 refrigerators, refrigerator-freezers, and freezers has been compiled by D&R International, Ltd., for DOE from the Directory of Certified Refrigerators, Freezers, and Refrigerator Freezers published by the California Energy Commission (CEC) from 1979 to 1992. See <http://www.waptac.org/sp.asp?id=70>.

<sup>3</sup> *Impact Evaluation of the 2002 California Low Income Energy Efficiency Program*, West Hill Energy and Computing, Inc. October 11, 2004

## Other Program Costs

Table I.7 displays the estimated Utah Power program management and administrative costs as well as the estimated cost of a third party evaluator. Table I.8 summarizes overall expected annual Program costs and savings.

**Table I.7: Other Program Costs**

Utah Power Labor*	\$10,000
Evaluation	\$10,000

\*Includes program management, rebate processing and inspections.

\*\* Evaluation costs are estimated to be \$20,000, with evaluations occurring every two years.

**Table I.8: Combined Annual Program Costs and Savings**

	Utah Power	Total	KWh
Weatherization	\$120,750	\$192,080	150,710
CFLs	\$1,955	\$3,655	74,460
Refrigerators	\$23,460	\$43,860	102,680
Hot Water	\$420	\$743	6,749
Other	\$20,000	\$20,000	
<b>Total</b>	<b>\$166,585</b>	<b>\$260,338</b>	<b>334,599</b>

## II. Cost Effectiveness

Cost-effectiveness tests were run for the Program as designed using the following Standard tests:

- **Total Resource Cost (TRC):** This test examines the program benefits and costs from the Company and its customers' combined perspective. On the benefit side, it includes reduction in supply costs. On the cost side, it includes costs incurred by both Utah Power and the other funders. We also include a TRC test that includes a 10% conservation adder (PTRC).
- **Utah Power (Utility Cost Test; UCT):** From the Company's perspective, the benefits are in the form of avoided supply and line-loss costs. The costs include administration, evaluation, and rebate costs associated with the program.
- **Ratepayers:** All ratepayers (participants and non-participants) may experience an increase in rates to recover lost revenue. This test (entitled Ratepayer Impact Measure, RIM) includes all the Company's program costs as well as first-year lost revenues. On the benefits side, it includes all avoided energy and capacity costs.

The participant test is included but no benefit cost ratio is calculated due to zero participant costs. Cost-effectiveness assumptions are summarized in Table II.1.

**Table II.1: Program Cost-Effectiveness Assumptions**

Item	Assumptions
Energy Savings	Savings by measure
Retail Rate	Average 2004 Residential Retail Rate
Discount Rate	The US Treasury Long Term Composite bond rate of 4.60% posted on August 10, 2005 was used for the TRC. Utah Power's estimated cost of capital of 7.18% was used for the other tests.
Line Loss	10.23% from the 2004 Utah Power line loss study
Measure Life	Each measure has its own expected life.
Avoided Costs	Primary source is the 2005 Integrated Resource Plan 65% load factor decrement. We also used the June 31, 2005, official Company forward price curve as a secondary data source.
Measure Cost	Each measure has its own expected cost.
Incentive Amount	Varies by element. See previous sections.

### Results

The cost effectiveness of the Idaho Low Income Weatherization Program was calculated using Quantec's Demand Impact and Cost Effectiveness (DICE)

model. The model distributes the estimated annual kWh savings across the year based on hourly residential load shapes for each measure. Each of these hourly savings values is multiplied by the associated hourly avoided-costs from PacifiCorp's market price forecasts. These products are all discounted back to the present. This approach accurately captures the hourly differences in the value of a kWh during the year.

Cost effectiveness was calculated based on avoided costs estimated through the August 2005 IRP decrement approach using a 65% load factor and on the Company's official market price forecasts base case for Palo-Verde Hub, dated June 31, 2005.

The proposed Program design passes the utility cost effectiveness tests from the UCT perspective under both the forward price curve scenario and under the IRP decrement<sup>4</sup>. The program passes the TRC under the forward price curve scenario and narrowly fails the TRC under the IRP 65% load factor decrement scenario. Neither scenario reflects the additional benefits associated with low-income weatherization to both the utility and the participant. These additional benefits include decreases in collections and arrearages, improved comfort, improved health, fewer work and school absences, less frequent moves and more money to spend on other necessities.

**Table II.2: IRP Decrement (65% Load Factor)**

All Measures				AC: 65% Load Factor	
	Levelized \$/kWh	Costs	Benefits	Net Benefit	Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0552	\$260,338	\$243,705	-\$16,633	0.936
Total Resource Cost Test (TRC) No Adder	0.0552	\$260,338	\$221,550	-\$38,788	0.851
Utility Cost Test (UCT)	0.0353	\$166,585	\$177,086	\$10,501	1.063
Rate Impact Test (RIM)		\$325,395	\$177,086	-\$148,309	0.544
Participant Cost Test (PCT)		\$0	\$189,322	\$189,322	n/a
Lifecycle Revenue Impacts (\$/kWh)				\$0.0000039059	

**Table II.3: June 31, 2005 Base Case Forward Prices**

All Measures				AC: Base Case	
	Levelized \$/kWh	Costs	Benefits	Net Benefit	Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.0552	\$260,338	\$349,279	\$88,941	1.342
Total Resource Cost Test (TRC) No Adder	0.0552	\$260,338	\$317,527	\$57,189	1.220
Utility Cost Test (UCT)	0.0353	\$166,585	\$245,576	\$78,991	1.474
Rate Impact Test (RIM)		\$325,395	\$245,576	-\$79,819	0.755
Participant Cost Test (PCT)		\$0	\$189,322	\$189,322	n/a
Lifecycle Revenue Impacts (\$/kWh)				\$0.0000021021	

<sup>4</sup> The Utility Cost Test is often considered the appropriate test for low-income weatherization programs since non-utility costs are federally funded.



## **III. Evaluation Plan**

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The goals of the evaluation are to:

1. Estimate actual energy (kWh) and demand (kW) savings
2. Analyze Program cost effectiveness

The Company has committed to a process and impact evaluation at the end of the second program year.

### **Impact Evaluation**

The impact evaluation will include collecting key data, selecting a random sample of participants, estimating energy savings, and assessing cost effectiveness. The impact evaluation approach will vary by type of measure installed.

#### **Weatherization/Shell**

This is not expected to be a large part of the Program. Energy impacts will be assessed through billing analysis, and demand impacts will be assessed using residential load shapes from secondary sources.

#### **Compact Fluorescent Light bulbs**

The analysis will begin with the Program database for the number of CFLs installed, initial and final wattage, and hours of use whenever available.

Program database will be used to verify number of CFLs installed, hours of use, whether the replaced bulbs were in working condition, and number of bulbs removed. It is recommended that this effort be enhanced with a survey of about 100 participants to verify the information in the program database. However, this may also lead to increasing overhead costs to prohibitive levels given the size of this program.

The data collected will be used to estimate the energy (kWh) savings. The evaluator will then use secondary lighting hourly use data to estimate the Program demand (kW) impacts. Actual savings will be verified with billing analysis as described below.

#### **Refrigerators**

The evaluator will utilize the metered data collected from the replaced refrigerators for estimating the energy and demand impacts. If conducted,

