



PacifiCorp FinAnswer Express 2006–2008 Idaho Program Evaluation

Prepared for
PacifiCorp

Prepared by
The Cadmus Group, Inc. / Energy Services
720 SW Washington Street, Suite 400
Portland, OR 97205
503-228-2992

December 6, 2010

Prepared by:
Brian Hedman
Randy Spitzer
Aquila Velonis

Corporate Headquarters:
57 Water Street
Watertown, MA 02472
Tel: 617.673.7000
Fax: 617.673.7001

An Employee-Owned Company
www.cadmusgroup.com

720 SW Washington St.
Suite 400
Portland, OR 97205
Tel: 503.228.2992
Fax: 503.228.3696

Table of Contents

1. Executive Summary	1
Conclusions	5
Recommendations	5
2. Introduction	7
Program Description	7
3. Impact Evaluation.....	9
Energy Analysis Methodology	9
Energy Savings Calculation Method	9
Engineering Calculations	9
Evaluation Approach	10
Step 1: Categorization	10
Step 2: Methodology Selection	11
Step 3: Site Visits and Data Collection	11
Step 4: Analysis	11
Net-to-Gross.....	13
Freeridership	13
4. Process Evaluation	15
Process Evaluation Overview	15
Process Evaluation	15
Organizational Data/Firmographics	15
Participation	17
Enrollment	18
Efficiency Measures	18
Operational Changes	19
Installation	19
Spillover	20
Energy-Efficiency Decision Making	20

Interaction with Rocky Mountain or Third-Party Staff	21
Satisfaction	21
Key Findings	21
Recommendations	22
5. Cost-Effectiveness Analysis	23
6. Alternative Analysis	27
Appendix A. Participant Survey	31
Appendix B. Nonparticipant Survey	48
Appendix C Staff Interview Guide.....	56
Appendix D. Market Actor Interview Guide.....	60
Appendix E. FinAnswer Express Process Flow Diagrams	63
Appendix F. FinAnswer Express Evaluation Plan	64
Appendix G. Project Reports	65
Appendix H. Measure Life Methodology	66
Appendix I. Participant and Nonparticipant Survey Results	67
Appendix J. Freeridership Analyses	68

1. Executive Summary

The FinAnswer Express Program offers Idaho customers an opportunity to increase energy efficiency through energy-efficient design and construction of commercial and industrial buildings. Customers become eligible to participate if served under Rocky Mountain Power's commercial and industrial general service rate schedules¹. The program applies to existing customers' retrofit and major renovation projects and to new facility construction. Nexant was selected as part of a competitive procurement process to provide trade ally coordination and application processing services for this program. A Trade Ally network has been established and managed by Nexant and it is a significant component for program delivery as well as marketing and awareness.

During early spring of 2007, all available 2007 funding for the FinAnswer Express program was fully committed and new requests for service (either studies or incentive agreements) were placed on a waiting list. In February 2008, the Company filed to add Energy FinAnswer, improve the existing programs, remove the funding availability language from existing tariffs, and requested an increase in the collection rate. The Idaho Public Utility Commission approved Rocky Mountain Power's filing effective May 1, 2008. Those on the waiting list were contacted, and many moved forward with their projects either in FinAnswer Express or Energy FinAnswer.

PacifiCorp offers this program throughout the five state service territories where it manages demand-side management programs². Together these programs acquired more than 54,000 MWhs of first year energy savings in 2008. Within the state of Idaho, this program was responsible for 37% of the savings that the utility realizes from commercial and industrial efficiency programs.

The Program was cost-effective from multiple perspectives in Idaho, using 2008 IRP decrement values.³

Expected savings and other program-related data were downloaded from Rocky Mountain Power's tracking database. Expected savings were those calculated for each installed project and, in some cases, documented based on pre and post-installation conditions as determined by Rocky Mountain Power. These values were then entered in Rocky Mountain Power's database at the conclusion of each project.

Table 1 summarizes expected savings, evaluated savings, and the realization rates for 2006–2008 Idaho participants. Savings were evaluated for each installed project.

¹ Irrigation customers may participate in a separate program directed specifically at irrigation energy savings.

² PacifiCorp manages demand-side management programs in five of its six state jurisdictions. Programs in Oregon are managed by the Energy Trust of Oregon.

³ The program did not pass the RIM test, as is typically the case for energy efficiency programs.

Table 1. Energy Savings and Realization Rates

Sector	No. Buildings	Expected Saving Estimates (kWh)	Evaluated Savings (kWh)	Realization Rates	Alternative Analysis Realization Rates
Commercial	17	757,833	780,122	103%	103%
Food Store	6	1,155,814	1,035,423	90%	90%
Industrial	21	1,963,039	1,404,717	72%	103%
Other	3	112,235	58,721	52% ⁴	90%
School	1	417,177	374,004	90%	52%
Total	48	4,406,098	3,652,987	83%	96%

Table 2 summarizes expected demand savings, evaluated demand savings, and realization rates.

Table 2. Demand Savings and Realization Rates

Sector	Expected Saving Estimates (kW)	Evaluated Savings (kW)	Realization Rates	Alternative Analysis Realization Rates
Commercial	145	143	99%	99%
Food Store	46	42	91%	92%
Industrial	310	228	74%	98%
Other	3	3	100%	100%
School	80	80	100%	100%
Total	584	496	85%	98%

To evaluate achieved energy savings, Cadmus performed site visits for 31 projects at 25 customer locations, covering 91 unique incentives. We also verified 101 additional projects, covering 189 unique incentives, by reviewing project documentation and speaking with facility staff. Verified projects represented 98 percent of expected savings. We were unable to schedule a visit for one large project which was completed in 2007 because the plant had suspended operations until 2011. Due to this uncertainty Cadmus has taken a conservative approach and not credited the full savings from that project. Section 6 of this report provides an alternative analysis that illustrates the impact of this project on realization rates and cost effectiveness results.

Based on measurements and observations obtained from the site visits, in addition to data provided in the project files and conversations with facility staff, Cadmus calculated realization rates for both energy and demand savings. Table 3 shows energy savings realization rates by measure type. Realization rates were highest for control measures (100%)⁵.

⁴ The low 'Other' energy realization rate was due to one measure no longer being used and one heat pump not used for heating purposes.

⁵ PacifiCorp tries to be conservative in their saving estimates but realization rates include factors that are difficult to predict and are typically reflective of how the equipment is used once it's installed, which is under direct customer control.

Table 3. Evaluated Energy Savings by Measure Type

	No. Incentives	Expected Saving Estimates (kWh)	Evaluated Savings Estimates (kWh)	Realization Rates
Controls	1	36,719	36,719	100%
HVAC	54	663,075	506,731	76%
Lighting	22	2,246,592	2,227,150	99%
Motors	201	890,102	360,911	41% ⁶
Refrigeration	15	569,610	521,476	92%
Total	293	4,406,098	3,652,987	83%

Table 4 shows demand savings realization rates by measure type. Realization rates were highest for HVAC measures (100%).

Table 4. Evaluated Demand Savings by Measure Type

	Expected Saving Estimates (kW)	Evaluated Savings Estimates (kW)	Realization Rates
Controls	0	0	100%
HVAC	44	44	100%
Lighting	376	369	98%
Motors	118	41	35% ⁷
Refrigeration	46	42	92%
Total	584	496	85%

Cadmus determined freeridership to be 59 percent through self-reporting surveys. For this evaluation freeridership was the only factor used to calculate the Net-to-Gross ratio⁸. After applying the Net-to-Gross ratio of 41 percent to the evaluated savings, the net program savings were 1,497,725 kWh.

When Cadmus examined just the respondents with less than 100 MWh in savings, the Net-to-Gross ratio increased to 76 percent. With this set of parameters, net program savings were 2,776,270 kWh. Section 6 of this report contains an alternative analysis of cost-effectiveness which uses the Net-to-Gross ratio of 76 percent.

Program cost-effectiveness was analyzed using Idaho-specific assumptions.

⁶ One customer's site suspended operations after installation of program measures. Partial credit was given for savings up to the point that the plant closed, consistent with treatment of closed facilities in other jurisdictions.

⁷ As noted, one customer's site suspended operations after installation of program measures, and verified energy savings were reduced to reflect only the period the customer was in operation.

⁸ The method employed is consistent with the Model Energy Efficiency Program Impact Evaluation Guide authored by the EPA as part of the National Action Plan for Energy Efficiency.

**Table 5. Cost-Effectiveness Summary for the Program in 2006 – IRP
65% LF Decrement – 59% Freeridership**

Cost Effectiveness Test	Levelized \$ / kWh	Costs	Benefits	Net Benefits	Benefit / Cost Ratio
Total Resource + Conservation Adder (PTRC)	\$0.041	\$226,936	\$334,375	\$107,439	1.47
Total Resource No Adder (TRC)	\$0.041	\$226,936	\$303,978	\$77,041	1.34
Utility (UCT)	\$0.029	\$163,789	\$303,978	\$140,189	1.86
Ratepayer Impact (RIM)	\$0.093	\$520,525	\$303,978	-\$216,548	0.58
Participant (PCT)	\$0.022	\$123,710	\$417,299	\$293,589	3.37
Lifecycle Revenue Impact (\$/kWh)				\$0.000007456	
Discounted Participant Payback (years)				1.70	

**Table 6. Cost-Effectiveness Summary for the Program in 2007 – IRP
65% LF Decrement – 59% Freeridership**

Cost Effectiveness Test	Levelized \$ / kWh	Costs	Benefits	Net Benefits	Benefit / Cost Ratio
Total Resource + Conservation Adder (PTRC)	\$0.076	\$271,088	\$265,551	-\$5,536	0.98
Total Resource No Adder (TRC)	\$0.076	\$271,088	\$241,410	-\$29,678	0.89
Utility (UCT)	\$0.051	\$181,556	\$241,410	\$59,854	1.33
Ratepayer Impact (RIM)	\$0.105	\$374,731	\$241,410	-\$133,321	0.64
Participant (PCT)	\$0.055	\$197,380	\$301,023	\$103,643	1.53
Lifecycle Revenue Impact (\$/kWh)				\$ 0.000004104	
Discounted Participant Payback (years)				5.77	

**Table 7. Cost-Effectiveness Summary for the Program in 2008 – IRP
65% LF Decrement – 59% Freeridership**

Cost Effectiveness Test	Levelized \$ / kWh	Costs	Benefits	Net Benefits	Benefit / Cost Ratio
Total Resource + Conservation Adder (PTRC)	\$0.044	\$216,275	\$366,320	\$150,045	1.69
Total Resource No Adder (TRC)	\$0.044	\$216,275	\$333,018	\$116,743	1.54
Utility (UCT)	\$0.034	\$166,756	\$333,018	\$166,262	2.00
Ratepayer Impact (RIM)	\$0.097	\$473,708	\$333,018	-\$140,690	0.70
Participant (PCT)	\$0.028	\$135,241	\$392,674	\$257,433	2.90
Lifecycle Revenue Impact (\$/kWh)				\$ 0.00000474	
Discounted Participant Payback (years)				1.55	

**Table 8. Cost-Effectiveness Summary for the Program Across 2006-2008 – IRP
65% LF Decrement – 59% Freeridership**

Cost Effectiveness Test	Levelized \$ / kWh	Costs	Benefits	Net Benefits	Benefit / Cost Ratio
Total Resource + Conservation Adder (PTRC)	\$0.051	\$666,844	\$899,209	\$232,364	1.35
Total Resource No Adder (TRC)	\$0.051	\$666,844	\$817,462	\$150,618	1.23
Utility (UCT)	\$0.036	\$477,404	\$817,462	\$340,059	1.71
Ratepayer Impact (RIM)	\$0.097	\$1,280,116	\$817,462	-\$462,653	0.64
Participant (PCT)	\$0.032	\$424,736	\$1,038,008	\$613,271	2.44
Lifecycle Revenue Impact (\$/kWh)				\$ 0.00001593	

Conclusions

Overall, the program is cost-effective and functioning well. The participating customers are satisfied with their involvement and their results.

Table 9. Customer Satisfaction

Rating Range	Number of Respondents
10	8
8 to 9	8
7	2
N/A	1

*10 = Extremely Satisfied

The program has very good quality assurance and quality control procedures. Savings estimates for each measure are established conservatively, which is reflected in the high realization rates. Recommendations reflect suggestions for only minor program enhancements.

Recommendations

- Much like the Energy FinAnswer program, most of the participation appears to come through one on one interaction between customers, Rocky Mountain Power and/or their support staff, as well as through trade allies or contractors. This evaluation found a lack of awareness of the program amongst nonparticipants. The company may wish to consider adding additional communication strategies to help expand awareness.

2. Introduction

Program Description

The 2006-2008 FinAnswer Express program offered customers an opportunity to increase their operations' energy efficiency through implementation of Energy Efficiency Measures (EEMs) for existing facilities and new construction projects. The program allows for customers to apply and receive incentives for prescriptive measures approved by Rocky Mountain Power. The eligible measures are outlined in extensive lists maintained by Rocky Mountain Power in conjunction with the implementation contractor. Custom incentives are available for measures that are not included on the prescriptive measure lists. All customers served under the company's standard general service commercial and industrial rate schedules were eligible⁹. The program is implemented by Nexant and Rocky Mountain Power.

Any new construction or existing customer on an eligible rate schedule, regardless of size or load, is eligible to participate in the program. The 2006–2008 program processed 293 unique EEMs and incentives for projects installed in Idaho, with expected savings of 4,406,098 kWh.

Customers who choose to take advantage of the program offerings can choose from a participating vendor in Rocky Mountain Power's Energy Efficiency Alliance (Trade Ally Network) for energy savings through installation of new lighting, motors, controls, HVAC equipment, or any other qualifying measures. If customers have a custom project that doesn't fit the prescriptive measure listing they can use an independent consultant to help them analyze their opportunities. The Trade Ally Network is an important part of the program delivery and has worked well to increase program awareness since being established. It is managed by Nexant¹⁰.

For EEMs retrofitted in existing facilities, the measure cost was defined as the total, installed cost of the measure. For new facilities, the measure cost was the installed cost, minus the cost of code compliant or common-practice equipment. Lighting projects in new construction or major renovation projects had to be 10% lower than the lighting power density allowed by state energy code. The savings estimates for the new construction projects where there was an applicable energy code used the building code as a baseline. For retrofit projects the baseline may have been the existing equipment, common practice or code depending on the nature of the project. For linear fluorescent lighting retrofit projects Rocky Mountain Power assumed that the baseline was energy saving T12 lamps with magnetic ballasts.

In some cases, the implementation contractor performed an on-site inspection, confirming pre and post conditions for certain projects to verify accuracy of applications and incentives paid.

For a process flow diagram of how the program operates please see Appendix E of this report.

⁹ Irrigation customers may participate in a separate program specifically directed towards irrigation savings.

¹⁰ Nexant was selected as part of a competitive procurement process.

Idaho FinAnswer Express Program customers completed 293 EEMs in 48 facilities from 2006–2008. See Table 10 for a description of savings by facility type. Expected energy savings were largest for industrial facilities.

Table 10. Expected Program Savings by Facility Type

	No. Buildings		Expected Savings	
	Frequency	%	kWh	%
Commercial	17	28%	757,833	17%
Food Storage	6	8%	1,155,814	26%
Industrial	21	62%	1,963,039	45%
Other	3	1%	112,235	2%
School	1	1%	417,177	10%
Total	48	100%	4,406,098	100%

Table 11 shows expected savings' distribution by end use. Lighting measures represented the greatest percentage of program savings, at 51%, followed by motors at 20%.

Table 11. Expected Savings by End Use

Measure	Expected Savings	
	KWh	%
Controls	36,719	1%
HVAC	663,075	15%
Lighting	2,246,592	51%
Motors	890,102	20%
Refrigeration	569,610	13%
Total	4,406,098	100%

3. Impact Evaluation

Energy Analysis Methodology

Cadmus used engineering calculations to verify savings estimates for all but 13 of the 2006–2008 EEMs.

Overall, the energy analyses evaluation Cadmus conducted verified the reasonableness of the original analyses underlying the utility's savings estimates. Original estimates typically were based on a thorough review of prior studies and/or site inspections. The evaluation sought to confirm that basic assumptions used in the analysis were correct, the analysis method was appropriate, measures had been installed and operated as planned and the customer's facility remained in use. During the review, Cadmus noted projects where changes in operating conditions were identified and provided revised energy and demand savings estimates. The revised analyses contained instances of decreased and increased savings.

As described below, the energy analysis verification process required a series of steps.

Energy Savings Calculation Method

Cadmus applied the basic level of rigor in conducting the analyses as specified in the California Public Utilities Commission's Protocols published in 2006¹¹ and IPMVP option A. Analysis of projects began with a complete review of project files, which included one or more reports at various project stages that reported energy savings, costs, and incentive calculations and estimates. Evaluated energy (or demand) savings were calculated by taking evaluated post-consumption less estimated pre-consumption.

Engineering Calculations

Cadmus reviewed the original energy savings assumptions, and determined whether the site visits or phone calls identified any changes in assumptions from that analysis. Cadmus also contacted the utility program manager and energy engineer, as needed, to resolve any issues, changes, or discrepancies that might affect estimated energy savings. If necessary, Cadmus adjusted original savings estimates using the same basic methodology, or worked with the energy engineer who originally analyzed the project to revise estimates.

Various engineering algorithms were used to estimate savings, based on specific measures. As variations can occur in calculated savings due to particular engineering methods and assumptions used, the savings calculation methods duplicated the engineering method used when savings were first derived. For some projects this included reviewing the lighting and HVAC analysis tools used by PacifiCorp. Cadmus reviewed both of these tools as part of this evaluation. Cadmus used the observations of key assumptions, validation of engineering methods, and recalculations based on observed differences to provide evaluated savings estimates.

¹¹ http://www.calmac.org/events/EvaluatorsProtocols_Final_AdoptedviaRuling_06-19-2006.pdf

Lighting Tool

The tool calculated energy savings based on total annual operating hours, which were based on daily occupancy schedules, weeks operated per year, and whether they were open on major holidays. Square footage was also used in new construction to determine baseline lighting power density (LPD). Business type was used in 2007 and in more recent versions of the calculator to determine the coincidence factor. The differences in lighting wattages used for fixture types were selected from a drop-down menu. Cadmus' review found these wattages and types to be comparable to those found in other commonly used lighting wattage tables. Cadmus agreed with the savings methodology, which incorporated straightforward calculations used in standard lighting savings calculations and did not alter the methodology, or make a recommendation to change it. Therefore, in the verification of the saving impacts, Cadmus used the tool to adjust inputs such as annual operating schedule, fixture types and fixture counts as appropriate based on our review and site visit data collection.

HVAC Tool

The tool uses inputs of equivalent full load hours (EFLH), unit capacity in BtuH and unit EER and SEER to calculate savings as compared to energy usage of a baseline unit with EER and SEER at code. Baseline EER and SEER were determined by the equipment size and category. This is a standard calculation to quantify savings from this measure. Cadmus found this to be the same equation that many utilities include in their technical resource manuals. During the verification process, Cadmus agreed with the methodology, and only adjusted inputs of equipment size, EFLH, EER and SEER, based on information gathered onsite or through verification phone calls.

Realization Rate Analysis Method

For each EEM in the projects, Cadmus calculated energy and demand savings realization rates as the ratio of evaluated savings to expected savings. The energy realization rate was calculated as a percentage, using evaluated energy savings from Cadmus' calculations and the utility's expected energy savings. The demand realization rate was calculated similarly. If the evaluation confirmed the original savings estimate, the realization rate would be considered 100%.

As discussed, evaluated energy and demand savings from a project reflected any changes observed in assumptions used in the original analyses. The realization rate accounted for these changes in estimating evaluated savings.

Evaluation Approach

Step 1: Categorization

Cadmus originally planned to visit 25% of the sample of projects for each given program year. Cadmus was able, however, to increase that number due to multiple projects at individual sites across program years. Remaining projects in the sample were verified through file reviews and phone interviews. The number of projects verified through this means also increased from the

original plan due to overlap. The realization rates for all 7 projects outside of the sample were extrapolated by measure, based on the findings of the on-site and file based realization rates.

Step 2: Methodology Selection

Cadmus analyzed all projects using the engineering calculation methods described above.

Step 3: Site Visits and Data Collection

On-site verification was used to verify equipment installation and operations, obtain data needed to perform calculations, and meet with building maintenance staff. Site visits were completed in January 2010. Site visit information and summaries of the analyses are provided in Appendix G.

Step 4: Analysis

Energy savings were determined for 280 EEMs using engineering calculations incorporating measurements and observations obtained from the site visits and information obtained from project files and interviews. Remaining project realization rates were determined through extrapolation. To extrapolate the realization rates to the other measures, Cadmus first weighted the evaluated realization rates, by energy savings for each measure category. The weighted realization rate was then applied to the remaining measures within that category that did not have a realization rate calculated by the Cadmus engineering staff.

Overall, the program achieved a 83% energy savings realization rate, as seen in Table 12, which shows savings by facility type.

Table 12. Evaluated Energy Savings by Facility Type

	Measure Type	Count of Buildings	Expected Savings Estimates (kWh)	Evaluated Savings Estimates (kWh)	Realization Rates
2006	Commercial	2	15,246	10,701	70%
	Food Store	6	1,155,814	1,035,423	90%
	Industrial	7	90,116	81,138	90%
	Other	2	54,553	41,346	76%
	School	1	371,047	328,498	89%
	Sub Total	18	1,686,776	1,497,106	89%
2007	Commercial	7	108,381	104,573	96%
	Industrial	15	1,308,085	726,764	56%
	Sub Total	22	1,416,466	831,338	59%
2008	Commercial	10	634,996	666,501	105%
	Industrial	9	564,049	595,162	106%
	Other	1	57,682	17,375	30%
	School	1	46,130	45,506	99%
	Sub Total	21	1,302,856	1,324,543	102%
Total All Years		61¹²	4,406,098	3,652,987	83%

¹² Some customers participated in multiple years so this count of unique buildings is higher.

Table 13 presents energy savings and realization rates by measure type.

Table 13. Evaluated Energy Savings by Measure Type

	Measure Type	Count	Expected Savings Estimates (kWh)	Evaluated Savings Estimates (kWh)	Realization Rates
2006	Controls	1	36,719	36,719	100%
	HVAC	6	304,570	192,251	63%
	Lighting	9	665,038	651,270	98%
	Motors	20	119,280	107,151	90%
	Refrigeration	14	561,169	509,714	91%
	Sub Total	50	1,686,776	1,497,106	89%
2007	HVAC	5	29,752	28,822	97%
	Lighting	4	660,488	608,156	92%
	Motors	86	717,785	182,598	25% ¹³
	Refrigeration	1	8,441	11,762	139%
	Sub Total	96	1,416,466	831,338	59%
2008	HVAC	43	328,753	285,658	87%
	Lighting	9	921,066	967,723	105%
	Motors	95	53,037	71,163	134%
	Sub Total	147	1,302,856	1,324,543	102%
Total All Years		293	4,406,098	3,652,987	83%

Table 14 shows demand savings realization rates by measure type.

Table 14. Demand Savings Realization Rates by Measure Type

	Measure Type	Count	Expected Savings Estimates (KW)	Evaluated Savings Estimates (KW)	Realization Rates
2006	Controls	1	-	-	0%
	HVAC	6	0.72	0.66	92%
	Lighting	9	79.30	76.56	97%
	Motors	20	4.71	4.42	94%
	Refrigeration	14	46.00	42.32	92%
	Sub Total	50	130.73	123.97	95%
2007	HVAC	5	28.03	27.97	100%
	Lighting	4	149.83	140.88	94%
	Motors	86	98.25	24.87	25% ¹⁴
	Refrigeration	1	-	-	0%
	Sub Total	96	276.11	193.72	70%
2008	HVAC	43	15.21	15.21	100%
	Lighting	9	147.04	151.14	103%
	Motors	95	15.25	12.10	79%
	Sub Total	147	177.51	178.45	101%
Total All Years		293	584.35	496.14	85%

¹³ One customer's site suspended operations after installation of program measures and verified energy savings were reduced to reflect only the period the customer was in operation.

¹⁴ One customer's site suspended operations after installation of program measures and verified energy savings were reduced to reflect only the period the customer was in operation.

Net-to-Gross

Net savings are the savings “net” of what would have occurred in the absence of the program¹⁵. Net-to-gross (NTG) consists of freeridership and spillover. For this evaluation, Cadmus only quantified freeridership. Spillover is noted separately in Section 4 but not quantified due to the level of complexity involved in determining the potential savings associated with Spillover for commercial measures.

Freeridership

Freeridership represents the percentage of program participants who would have implemented the program measure or practice in the absence of the program. This was quantified through telephone surveys with program participants who completed projects. While asking participants to self-report for calculating free ridership is a standard approach, it should be noted this methodology has some limitations in that it does not account for longer-term market trends among contractors and supply houses, which typically occur with multiyear programs. For example, a multiyear program may alter stocking practices at retailers or even the market share of higher-efficiency products available in a region. Consequently, the customer, choosing between various makes and models of a given product, may not be aware that the choices available were altered by a program. Therefore, while the customer may correctly state a choice was offered between two efficient products, the opportunity to make a higher efficient choice may have resulted from a program. In this case, while the customer would count as a freerider, a less-efficient option may have been available to the customer had the program not been running—an option they otherwise may have chosen.

Accuracy of self-report surveys partly depends on the respondent’s memory of their decisions. For the FinAnswer Express program, some interviewees interviewed were asked to recall actions taken more than a year before. Participant candor may also be a factor, as responses may tend to reflect a “halo” effect, where customers indicate they would have made the energy-efficient choice because they perceive it to be the response preferred by the interviewer.

In calculating freeridership, Cadmus surveyed 19 program participants. Three of these respondents had savings associated with their participation in excess of 100 MWh. Of these three customers, two indicated they would have installed the measures without the program, and had previously installed similar measures outside the program. As these customers were responsible for a significant portion of savings, freeridership was calculated as 59%. Given the mix of the respondent population, Cadmus calculated another freeridership estimate, excluding the three customers mentioned earlier. That exercise resulted in a 24% freeridership score¹⁶. Both types of freeridership analysis results are presented in Table 15 and Table 16, along with evaluated savings numbers from Table 13 and Table 14. These savings included all measures (not just measures for which respondents were surveyed). The freeridership value was applied across all measures to arrive at net savings for all years.

¹⁵ Model Energy Efficiency Program Impact Evaluation Guide authored by the EPA as part of the National Action Plan for Energy Efficiency.

¹⁶ For a full description of the scoring matrix refer to Appendix J

Table 15. Freeridership Analysis (All Respondents)

2006-2008 kWh	Net-Gross-Ratio (1-Freeridership)	41% (+/- 16%) ¹⁷
	Evaluated Savings	3,652,987
	<i>Net Savings</i>	1,497,725
2006-2008 kW	Net-Gross-Ratio (1-Freeridership)	41%
	Evaluated Savings	496
	<i>Net Savings</i>	203

Table 16. Freeridership Analysis (Excluding Respondents with Savings >100 MWh)

2006-2008 kWh	Net-Gross-Ratio (1-Freeridership)	76% (+/- 16%) ¹⁸
	Evaluated Savings	3,652,987
	<i>Net Savings</i>	2,776,270
2006-2008 kW	Net-Gross-Ratio (1-Freeridership)	76%
	Evaluated Savings	496
	<i>Net Savings</i>	377

As a result of the program funding cap experienced in 2007, the addition of the Energy FinAnswer program in 2008, removal of the funding caps and the subsequent management of the remaining customers on the waiting list, there may have been some customer confusion regarding the two programs and the funding available which may be reflected in the participant surveys and interpreted as freeridership.

¹⁷ Reported at 90% confidence

¹⁸ Reported at 90% confidence

4. Process Evaluation

Process Evaluation Overview

With customer, trade ally, implementer, and company perspectives in mind, the evaluation looked at what has worked well, what can be improved, and recommended modifications for refining the program. This evaluation phase relied on interviews with utility and program staff as well as surveys of participants who completed projects, nonparticipants, and market actors for the incentive program. Interview and survey activities also informed evaluation of spillover and freeridership impacts, which can be used as a starting point for ongoing evaluations.

In total, 51 interviews and surveys were conducted for the process evaluation, as shown in Table 17.

Table 17. Rocky Mountain Power FY 2010 Process Evaluation Samples

Group	Goal	Achieved
Participants (with completed projects)	25	19
Nonparticipants	25	25
Implementers	2	2
Trade Allies	5	5

Process Evaluation

Organizational Data/Firmographics

A total of 19 participants who completed projects were interviewed for this study. Cadmus' goal was to interview 25 participants, but in some cases, no remaining staff recalled the project; others declined to participate, participants frequently failed to return our calls, and others had invalid contact information.

Responding participants were a diverse group. Table 18 shows respondents' primary business activities. The largest number of respondents, 37%, were dairies or agricultural farms.

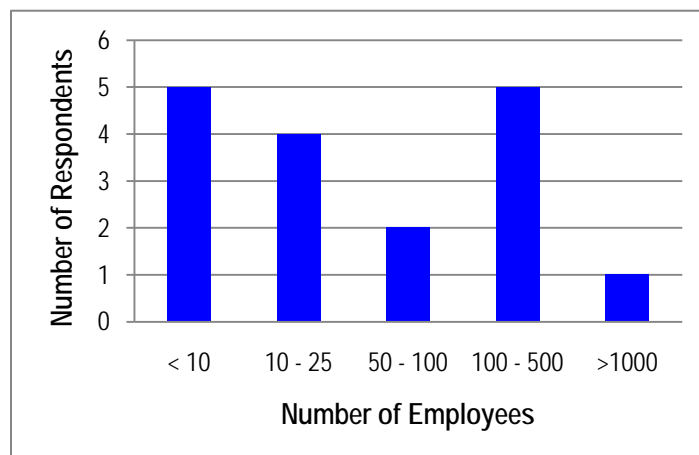
Table 18. Primary Business Activities of Participants

Primary Business Activities	Number of Respondents
Dairy/Agricultural	7
Educational Services	1
Food Processing	3
Health Care	1
Manufacturing	3
Public Administration	1
Other	3
Total	19

Although most respondents had less than 25 employees, several had employment into the hundreds. The five respondents with 100 to 500 employees, were all manufacturers or food

processors. Figure 1 shows the frequency of respondents with the corresponding numbers of employees.

Figure 1. Number of Employees



Respondents undertook a wide range of efficiency measures, with lighting being the most common. Table 19 shows a summary of the measures respondents were asked about.

Table 19. Measures Respondents were Asked About

Measure Type	Number of Respondents
Evaporative Coolers	1
Lighting	7
Plate Cooler	3
Programmable T-stat	1
Pump with VFD	3
TEFC Motor	4

Most respondents were unable to estimate the percentage their electric bill represented of their total annual operating costs. Of the respondents who were able to estimate these percentages, their electric bills represented roughly 15% of their total annual operating costs.

Cadmus was also able to interview 25 eligible customers not participating in the Idaho FinAnswer Express program from 2006 to 2008. The companies' primary activities are described in Table 20.

Table 20. Business Activities of Nonparticipants

Business Activity	Number of Respondents
Manufacturing	5
Retail	9
Dairy / Agriculture	2
Professional, Scientific, and Technical Services	4
Health Care	1
Food Services	2
Other	2

Company sizes varied as well. Eighteen companies employed less than 10 people; five employed between 10 and 30 people; and two employed over 30 people.

Seven respondents indicated their electricity bills were less than 10% of their total annual operating costs; four indicated they were between 10% and 20%; and one respondent said they were 25% of the company's operating cost.

Participation

The program implementer, Nexant, noted customers often found out about the program through them as well as Rocky Mountain Power account managers and architecture and engineering firms. They also noted the program's trade ally network has been proactive in identifying and facilitating FinAnswer Express projects. Nearly half of participants interviewed learned about the FinAnswer Express program when contacted by a trade ally, vendor, or contractor. A third of respondents were contacted by a Rocky Mountain Power account representative or other staff member. Table 21 indicates how respondents learned about the program. Respondents were allowed to indicate multiple methods.

Table 21. How Participants Learned of the Energy FinAnswer Express Program

Method	Number of Respondents
Contacted by Rocky Mountain Power	6
Marketing by trade ally, vendor, or contractor	2
Contacted by trade ally, vendor, or contractor	8
Participation in other Rocky Mountain Programs	1
Past Program participants	1
Internet research or Rocky Mountain Web site	1
Don't Know	2

When asked to list all reasons why they participated in the FinAnswer Express program, almost 90% of respondents participated to save money on their utility bills. Nearly 58% also indicated they participated to receive the program incentive. The third-largest number of respondents (32%) decided to participate in the program to replace old equipment. Their responses are shown in Table 22.

Table 22. Reason for Participating in the Program

Reason	Number of Respondents
To save money on utility bills	17
To obtain a program incentive	11
To replace old equipment	6
To acquire the latest technology	3
To help protect the environment	1
To save energy	3
Recommended by contractors/trade allies	1
Part of a broader remodeling or renovation	1
Other	1

The implementer noted that building market awareness and acceptance were challenges for any program because of ongoing change with those selling the products. Two of the 25 program nonparticipants had heard of the FinAnswer Express program; one had participated in the program in a different state, and the other heard of it through a trade publication and was approached by a contractor. Neither respondent had attempted to participate in the program in Idaho.

Most trade allies contributing to this program heard about the program directly from Nexant or learned about it from Rocky Mountain Power outreach efforts. Several trade allies were also involved with other Rocky Mountain Power programs. As a consequence, significant cross-selling occurred to customers involved in other Rocky Mountain Power programs.

Enrollment

No participants interviewed encountered any problems, delays, or difficulties during the program's application, review, or approval processes. One respondent, having had to wait for someone from Washington to arrive to conduct an inspection, suggested a local firm be used in the future. Three of the respondents said they had participated in the FinAnswer Express program either before 2006 or after 2008.

Most trade allies made contact with prospective FinAnswer Express program customers through previous work with those customers. In addition, trade allies tapped into their strong network of contractors to introduce and involve customers in the program. Trade allies said Rocky Mountain Power provided some additional customer leads for them as well.

Efficiency Measures

The implementer reported that they worked to increase types of eligible measures over time. Program offerings increased significantly in 2007, including additional motor categories and VFDs. There was also a significant increase in chillers and drives on the mechanical side. Three participants interviewed indicated they did not install items recommended through the program. One respondent did not install a plate cooler due to the amount of water the equipment required. Another respondent declined to install a VFD Motor because the respondent's service was single phase, and the equipment required three phase. The final respondent could not say what measure was recommended or the reason for not installing.

For 74% of respondents, the energy-saving measure installed through the program replaced existing equipment. When asked about operating condition of equipment replaced: 14% of respondents indicated it had failed or burned out, 64% responded it was old and had problems, but was still working, and 21% said it had no problems.

All participants rated their satisfaction with the new equipment highly: an 8 to 10 on a 10-point scale. The average rating was 9.4.

Three nonparticipants said they had installed energy-efficiency measures in the last year, but received no incentives or tax credits. One retail company put in efficient gas heaters, one manufacturer put in a low-watt portable heater, and one professional services company installed an efficient heat pump, water heater, and refrigerator.

Trade allies noted some customers were initially skeptical about program benefits, but, once they began investing in the efficiency measures, they came onboard the program. Customers generally started slowly, mainly focusing on lighting improvements (e.g., switching from T12 to T8 lighting). However, over time, customers worked with trade allies on more complex measures, such as HVAC and ventilation controls, refrigeration upgrades, EMS systems, anti-sweat controls, and efficiency improvements to drives and motors. Trade allies said some customers also worked with them on water management improvements.

Operational Changes

At the time respondents participated in the program, 11 had an overall plan to increase their operations' energy efficiency. These plans ranged from considering efficient equipment when replacing old equipment to setting a specific goal to reduce energy use by 25%. The remaining eight respondents did not have a formal plan in place. Respondents with the greatest number of employees were more likely to have an energy-efficiency plan established than those with a smaller number of employees.

Four respondents indicated they changed the manner they operated equipment after installing the new measures. Three of these respondents indicated they used their lights less. One respondent, a dairy, was able to use their compressors less frequently. Two of the four respondents making operational changes did so as part of their overall plan to increase their operations' energy efficiency.

Installation

Only one respondent removed or replaced any measures since installation with the program. This respondent replaced some motors that were damaged.

Six of the 14 respondents that replaced existing equipment through the program had scheduled the equipment for replacement or upgrade before the program. Five of these respondents included the project in their most recent capital budgets.

All respondents expected to save money on their electric bills. While 21% of respondents did not know whether electric savings met their expectations, the remaining 79% felt the savings did. Most respondents (63%) stated they observed benefits other than energy savings from equipment installation. The largest additional benefit reported was better quality equipment, as shown in Table 23.

Table 23. Additional Benefits Associated with Measure

Type of Benefit	Number of Respondents
Better quality equipment	5
Longer life or improved maintenance	3
Allows respondent to produce better product	2
Other	1

When asked to rate their satisfaction with the measures' final cost on a 10-point scale, respondents gave satisfaction an average rating of 8.1. Over 63% of respondents rated their satisfaction as 8. Table 24 shows ratings provided by respondents.

Table 24. Satisfaction with the Final Cost of Measure

Rating (0 to 10)	Number of Respondents
10	2
9	2
8	12
7	2
6	1

Spillover

Spillover is defined as the amount of additional savings generated by program participants, but not captured by program records. Cadmus used the same participant survey instrument to qualify spillover, resulting when customers purchase energy-efficient measures or adopt energy-efficient practices because of a program, yet choose not to participate in that program or are otherwise unable to participate. The nature of this behavior makes it difficult to actually quantify savings from each action or measure.

Since participating in the program, six respondents installed other energy-efficiency measures without assistance from a utility or another organization. Measures installed by respondents included: CFL light bulbs, new doors, insulation, motors and lamps, occupancy sensors, measures to reduce water usage, and some behavioral changes. Regarding the program's influence on their decisions to install additional energy-efficiency measures on their own, the average rating was 7.7 on a 10-point scale.

Energy-Efficiency Decision Making

Almost all respondents mentioned the importance of energy efficiency to cut costs. The three respondents that rated its importance at less than seven explained they only explored energy efficiency when it was cost-effective and did not have many opportunities to improve efficiency. Table 25 shows results for program participants.

Table 25. Importance of Energy Efficiency to Program Participants

Rating Range	Number of Respondents
> 7	16
5 to 7	3
< 5	0

When asked if their business had sufficient in-house technical resources to address management of energy costs, 10 respondents answered "yes" and 9 answered "no."

Ratings nonparticipants gave to energy efficiency's importance varied, but only one respondent rated it less than 5. Almost all other respondents felt energy efficiency was important, and, when asked for reasons supporting these high ratings, respondents overwhelmingly referred to cost savings. Some respondents also mentioned the importance of helping the environment. Table 26 shows results for program nonparticipants.

Table 26. Importance of Energy Efficiency to Program Nonparticipants

Rating Range	Number of Respondents
> 7	14
5 to 7	9
< 5	1

When asked if their business had sufficient in-house technical resources to address management of energy costs, 11 respondents answered “yes” and 12 answered “no.”

Interaction with Rocky Mountain or Third-Party Staff

Fifteen program participants interviewed reported they worked with program staff members. Numbers of staff worked with ranged from one to 10, and included account representatives, energy efficiency project managers, installation contractors, external consultants, and one government affairs representative. All respondents described their experiences working with program staff members in positive terms. Many respondents said the experience was “good” or “very good.”

Satisfaction

When asked if they would participate in the program again, 18 of the 19 respondents said yes, and one respondent did not answer. When asked for suggestions to improve the program, 10 responded they would not change anything at all, and three said the incentive should be increased. Other suggestions were to increase the program’s visibility, make the rules and timelines less strict, and to follow up with participants in a more timely manner. As shown in Table 27 all respondents rated their overall satisfaction with the program as 7 or greater.

Table 27. Program Satisfaction

Rating Range	Number of Respondents
10	8
8 to 9	8
7	2
N/A	1

Key Findings

Among the 19 participants interviewed, satisfaction with program and program staff was high. In addition, most respondents indicated energy efficiency was important to them because of its potential to cut costs: nearly all respondents indicated they participated in the program to save on energy costs. Many participants also reported the program incentive was an important part of their participation. Most participants learned of the program after being contacted by a trade ally, vendor or contractor, or Rocky Mountain Power.

Nonparticipant interviews revealed many customers not participating in the FinAnswer Express program were unaware of it. Twenty-three of 25 nonparticipants interviewed had never heard of the FinAnswer Express program. Even though the majority of respondents stated energy

efficiency was important to them, only three had installed any energy-efficient measures in the last year.

Recommendations

- Much like the Energy FinAnswer program, most of the participation appears to come through one on one interaction between customers, Rocky Mountain Power and/or their support staff, as well as through trade allies or contractors. This evaluation found a lack of awareness of the program amongst nonparticipants. The company may wish to consider adding additional communication strategies to help expand awareness.

5. Cost-Effectiveness Analysis

To assess cost-effectiveness, evaluators conducted an analysis of program costs and benefits from five perspectives, using Cadmus' DSM Portfolio Pro model. These perspectives include:

- (1) **PacifiCorp Total Resource Cost Test (PTRC):** This test examined program benefits and costs from Rocky Mountain Power's and Rocky Mountain Power customers' perspectives, combined. On the benefit side, it includes avoided energy costs, capacity costs, and line losses plus a 10% adder to reflect non-quantified benefits. On the cost side, it includes costs incurred by both the utility and participants.
- (2) **Total Resource Cost Test (TRC):** This test examined program benefits and costs from Rocky Mountain Power's and Rocky Mountain Power customers' perspectives, combined. On the benefit side, it included avoided energy costs, capacity costs, and line losses. On the cost side, it included costs incurred by both the utility and participants.
- (3) **Utility Cost Test (UCT):** From Rocky Mountain Power's perspective, benefits were through avoided energy and capacity costs and line losses. Costs included any program administration, implementation or incentive costs associated with funding the program.
- (4) **Ratepayer Impact (RIM):** All ratepayers (participants and nonparticipants) may experience increases in rates to recover lost revenues. This test included all Rocky Mountain Power program costs as well as lost revenues. As benefits, this test included all avoided energy costs, capacity costs, and line losses.
- (5) **Participant Cost Test (PCT):** From this perspective, program benefits included bill reductions. Costs included any customer contribution to the measure cost.

Table 28 summarizes various components of the five tests.

Table 28. Benefits and Costs Included in Various Tests

Test	Benefits	Costs
PTRC	Present Value of Avoided Energy and Capacity Costs with 10% Adder for Non-quantified Benefits	Program Administrative and Marketing Cost + Participant Cost
TRC	Present Value of Avoided Energy and Capacity Costs	Program Administrative and Marketing Cost + Participant Cost
UCT	Present Value of Avoided Energy and Capacity Costs	Program Administrative, Marketing and Incentive Cost
RIM	Present Value of Avoided Energy and Capacity Costs	Program Administrative and Marketing Cost + Present Value of Lost Revenues
PCT	Present Value of Bill Savings	Participant Share of Measure Cost

Table 29 provides selected inputs to the cost analysis. These include the evaluated energy savings for each year (from Table 28 above), discount rate, line loss, and program costs. Other than the energy savings, these values are provided by Rocky Mountain Power. The discount rate is from Rocky Mountain Power's 2008 Integrated Resource Plan. Rocky Mountain Power also provided the values for line loss and the program costs.

Table 29. Selected Cost-Effectiveness Analysis Inputs (59% Freeridership)

Input Description	2006	2007	2008
Net Program Savings (kWh/year)	1,497,106	831,338	1,324,543
Discount Rate	7.40%	7.40%	7.40%
Line Loss	10.7% Commercial 10.39% Industrial	10.7% Commercial 10.39% Industrial	10.7% Commercial 10.39% Industrial
Commercial Retail Rate	\$0.0660	\$0.0669	\$0.0679
Industrial Retail Rate	\$0.0414	\$0.0463	\$0.0497
Net Participant Costs	\$123,710	\$197,380	\$135,241
Program Costs			
Program Management Costs	\$56,452	\$32,555	\$54,844
Engineering Costs	\$31,910	\$35,947	\$16,672
Incentive Costs	\$60,563	\$107,848	\$85,722
Utility Administrative Costs	\$14,864	\$5,206	\$9,518
Total Program Costs	\$163,789	\$181,556	\$166,756

Program benefits are comprised of energy savings and their associated avoided costs. The energy savings used in the cost-effectiveness analysis are the evaluated kWh savings from this study. Benefits are accrued over the expected useful life of the installed measure. Measure lives are shown in Table 30.

Table 30. Measure Life Summary¹⁹

Program Year	Average Measure Life (years)
2006	11.75
2007	14.27
2008	9.66
Weighted Average	11.57

Table 31, Table 32, and Table 33 present the results of the cost-effectiveness analysis for the Program in 2006, 2007, and 2008 respectively using a freeridership of 59% as described in Section 3 of this report. Table 34 presents the results of the cost-effectiveness analysis for the Program for 2006-2008 combined. All analyses are based on the Rocky Mountain Power 2008 IRP 65% Eastside System Decrement²⁰.

¹⁹ Measures lives were calculated based on information from California's DEER database, the New England State Program Working Group report for the ISO Forward Capacity Market, and ACEEE's report on updating Energy Efficiency Standards. The average is achieved by weighting the savings associated with each of the measure types in a given year. See Appendix H for a detailed explanation.

²⁰ IRP decrements are detailed in Appendix G of PacifiCorp's 2008 Integrated Resource Plan Volume II Appendices:
http://www.pacificorp.com/content/dam/pacificorp/doc/Environment/Environmental_Concerns/Integrated_Resource_Planning_6.pdf

**Table 31. Cost-Effectiveness Summary for the Program in 2006 – IRP
65% LF Decrement – 59% Freeridership**

Cost Effectiveness Test	Levelized \$ / kWh	Costs	Benefits	Net Benefits	Benefit / Cost Ratio
Total Resource + Conservation Adder (PTRC)	\$0.041	\$226,936	\$334,375	\$107,439	1.47
Total Resource No Adder (TRC)	\$0.041	\$226,936	\$303,978	\$77,041	1.34
Utility (UCT)	\$0.029	\$163,789	\$303,978	\$140,189	1.86
Ratepayer Impact (RIM)	\$0.093	\$520,525	\$303,978	-\$216,548	0.58
Participant (PCT)	\$0.022	\$123,710	\$417,299	\$293,589	3.37
Lifecycle Revenue Impact (\$/kWh)				\$0.000007456	
Discounted Participant Payback (years)				1.70	

**Table 32. Cost-Effectiveness Summary for the Program in 2007 – IRP
65% LF Decrement – 59% Freeridership**

Cost Effectiveness Test	Levelized \$ / kWh	Costs	Benefits	Net Benefits	Benefit / Cost Ratio
Total Resource + Conservation Adder (PTRC)	\$0.076	\$271,088	\$265,551	-\$5,536	0.98
Total Resource No Adder (TRC)	\$0.076	\$271,088	\$241,410	-\$29,678	0.89
Utility (UCT)	\$0.051	\$181,556	\$241,410	\$59,854	1.33
Ratepayer Impact (RIM)	\$0.105	\$374,731	\$241,410	-\$133,321	0.64
Participant (PCT)	\$0.055	\$197,380	\$301,023	\$103,643	1.53
Lifecycle Revenue Impact (\$/kWh)				\$ 0.000004104	
Discounted Participant Payback (years)				5.77	

**Table 33. Cost-Effectiveness Summary for the Program in 2008 – IRP
65% LF Decrement – 59% Freeridership**

Cost Effectiveness Test	Levelized \$ / kWh	Costs	Benefits	Net Benefits	Benefit / Cost Ratio
Total Resource + Conservation Adder (PTRC)	\$0.044	\$216,275	\$366,320	\$150,045	1.69
Total Resource No Adder (TRC)	\$0.044	\$216,275	\$333,018	\$116,743	1.54
Utility (UCT)	\$0.034	\$166,756	\$333,018	\$166,262	2.00
Ratepayer Impact (RIM)	\$0.097	\$473,708	\$333,018	-\$140,690	0.70
Participant (PCT)	\$0.028	\$135,241	\$392,674	\$257,433	2.90
Lifecycle Revenue Impact (\$/kWh)				\$ 0.00000474	
Discounted Participant Payback (years)				1.55	

**Table 34. Cost-Effectiveness Summary for the Program Across 2006-2008 – IRP
65% LF Decrement – 59% Freeridership**

Cost Effectiveness Test	Levelized \$ / kWh	Costs	Benefits	Net Benefits	Benefit / Cost Ratio
Total Resource + Conservation Adder (PTRC)	\$0.051	\$666,844	\$899,209	\$232,364	1.35
Total Resource No Adder (TRC)	\$0.051	\$666,844	\$817,462	\$150,618	1.23
Utility (UCT)	\$0.036	\$477,404	\$817,462	\$340,059	1.71
Ratepayer Impact (RIM)	\$0.097	\$1,280,116	\$817,462	-\$462,653	0.64
Participant (PCT)	\$0.032	\$424,736	\$1,038,008	\$613,271	2.44
Lifecycle Revenue Impact (\$/kWh)				\$ 0.00001593	

Table 35, Table 36, and Table 37 present the results of the cost-effectiveness analysis for the Program in 2006, 2007, and 2008 respectively using a freeridership of 24% as described in Section three of this report. All analyses are based on the Rocky Mountain Power 2008 IRP 65% Eastside Decrement.

**Table 35. Cost-Effectiveness Summary for the Program in 2006 – IRP
65% LF Decrement – 24% Freeridership**

Cost Effectiveness Test	Levelized \$ / kWh	Costs	Benefits	Net Benefits	Benefit / Cost Ratio
Total Resource + Conservation Adder (PTRC)	\$0.032	\$332,543	\$619,818	\$287,275	1.86
Total Resource No Adder (TRC)	\$0.032	\$332,543	\$563,471	\$230,928	1.69
Utility (UCT)	\$0.016	\$399,682	\$563,471	\$399,682	3.44
Ratepayer Impact (RIM)	\$0.08	\$825,056	\$563,471	-\$261,275	0.68
Participant (PCT)	\$0.022	\$229,316	\$721,830	\$492,514	3.15
Lifecycle Revenue Impact (\$/kWh)				\$ 0.000009007	
Discounted Participant Payback (years)				2.48	

**Table 36. Cost-Effectiveness Summary for the Program in 2007 – IRP
65% LF Decrement – 24% Freeridership**

Cost Effectiveness Test	Levelized \$ / kWh	Costs	Benefits	Net Benefits	Benefit / Cost Ratio
Total Resource + Conservation Adder (PTRC)	\$0.066	\$439,583	\$492,242	\$52,659	1.12
Total Resource No Adder (TRC)	\$0.066	\$439,583	\$447,492	\$7,909	1.02
Utility (UCT)	\$0.027	\$181,556	\$447,492	\$265,936	2.46
Ratepayer Impact (RIM)	\$0.081	\$539,636	\$447,492	-\$92,144	0.83
Participant (PCT)	\$0.055	\$365,875	\$465,928	\$100,054	1.27
Lifecycle Revenue Impact (\$/kWh)				\$ 0.000002837	
Discounted Participant Payback (years)				9.66	

**Table 37. Cost-Effectiveness Summary for the Program in 2008 – IRP
65% LF Decrement – 24% Freeridership**

Cost Effectiveness Test	Levelized \$ / kWh	Costs	Benefits	Net Benefits	Benefit / Cost Ratio
Total Resource + Conservation Adder (PTRC)	\$0.037	\$331,724	\$679,031	\$347,307	2.05
Total Resource No Adder (TRC)	\$0.037	\$331,724	\$617,301	\$285,577	1.86
Utility (UCT)	\$0.018	\$166,756	\$617,301	\$450,545	3.70
Ratepayer Impact (RIM)	\$0.081	\$735,741	\$617,301	-\$118,439	0.84
Participant (PCT)	\$0.028	\$250,690	\$654,706	\$404,016	2.61
Lifecycle Revenue Impact (\$/kWh)				\$ 0.000003999	
Discounted Participant Payback (years)				2.84	

6. Alternative Analysis

During an evaluation period in which there are some completed projects that represent a disproportionate amount savings compared to the whole, the overall results can be significantly influenced if even one of those projects differs from its original assumptions, as was the case with one particular industrial customer.

The referenced customer participated in the FinAnswer Express program multiple times in all three program years. Because the facility is currently idle for an indefinite amount of time the verified energy savings were significantly reduced to reflect only the time the customer was operating. The fact that the facility has been idle for a prolonged period of time is clearly outside of the program's control. As a result Cadmus reran the cost effectiveness and realization rate analysis for the Idaho FinAnswer Express program excluding this customer's projects in order to provide another perspective. For this scenario Cadmus removed the energy savings, incentive costs, and measure costs for the customer. Table 38 shows the results of the revised realization rate analysis.

Table 38. Evaluated Energy Savings by Measure Type

Measure Type		Count	Expected Savings Estimates (kWh)	Evaluated Savings Estimates (kWh)	Realization Rates
2006	Controls	1	36,719	36,719	100%
	HVAC	6	304,570	192,251	63%
	Lighting	9	665,038	651,270	98%
	Motors	11	109,879	105,390	96%
	Refrigeration	14	561,169	509,714	91%
	Sub Total	41	1,677,375	1,495,346	89%
2007	HVAC	5	29,752	28,822	97%
	Lighting	3	601,647	598,752	100%
	Motors	57	107,051	102,405	96%
	Refrigeration	1	8,441	11,762	139%
	Sub Total	66	746,891	741,741	99%
2008	HVAC	43	328,753	285,658	87%
	Lighting	9	921,066	968,535	105%
	Motors	74	43,774	70,372	161%
	Sub Total	126	1,293,593	1,324,564	102%
Total All Years		233	3,717,859	3,561,650	96%

Table 39 and Table 40 show the results of the revised freeridership analysis for the two scenarios illustrated in section three.

Table 39. Freeridership Analysis (All Respondents)

2006-2008 kWh	Freeridership	59% (+/- 16%) ²¹
	Evaluated Savings	3,561,650
	Net Savings	1,460,277

²¹ Reported at 90% confidence

Table 40. Freeridership Analysis (Excluding Respondents with Savings >100kWh)

2006- 2008 kWh	Freeridership	24% (+/- 16%) ²²
	Evaluated Savings	3,561,650
	Net Savings	2,706,854

Table 41, Table 42, and Table 43 present the results of the cost-effectiveness analysis for the Program in 2006, 2007, and 2008 respectively using and a freeridership of 59% as described in Section three of this report. All analyses are based on the Rocky Mountain Power 2008 IRP 65% Eastside Decrement.

**Table 41. Cost-Effectiveness Summary for the Program in 2006 – IRP
65% LF Decrement – 59% Freeridership**

Cost Effectiveness Test	Levelized \$ / kWh	Costs	Benefits	Net Benefits	Benefit / Cost Ratio
Total Resource + Conservation Adder (PTRC)	\$0.041	\$226,426	\$333,665	\$107,239	1.47
Total Resource No Adder (TRC)	\$0.041	\$226,426	\$303,332	\$76,906	1.34
Utility (UCT)	\$0.029	\$162,461	\$303,332	\$140,871	1.87
Ratepayer Impact (RIM)	\$0.093	\$518,634	\$303,332	-\$215,302	0.58
Participant (PCT)	\$0.022	\$123,200	\$415,407	\$292,208	3.37
Lifecycle Revenue Impact (\$/kWh)				\$0.000007413	
Discounted Participant Payback (years)				1.72	

**Table 42. Cost-Effectiveness Summary for the Program in 2007 – IRP
65% LF Decrement – 59% Freeridership**

Cost Effectiveness Test	Levelized \$ / kWh	Costs	Benefits	Net Benefits	Benefit / Cost Ratio
Total Resource + Conservation Adder (PTRC)	\$0.069	\$211,070	\$225,377	\$14,306	1.07
Total Resource No Adder (TRC)	\$0.069	\$211,070	\$204,888	-\$6,182	0.97
Utility (UCT)	\$0.048	\$145,942	\$204,888	\$58,946	1.40
Ratepayer Impact (RIM)	\$0.102	\$310,736	\$204,888	-\$105,848	0.66
Participant (PCT)	\$0.045	\$137,362	\$237,028	\$99,665	1.73
Lifecycle Revenue Impact (\$/kWh)				\$ 0.000003258	
Discounted Participant Payback (years)				4.84	

²² Reported at 90% confidence

**Table 43. Cost-Effectiveness Summary for the Program in 2008 – IRP
65% LF Decrement – 59% Freeridership**

Cost Effectiveness Test	Levelized \$/ kWh	Costs	Benefits	Net Benefits	Benefit / Cost Ratio
Total Resource + Conservation Adder (PTRC)	\$0.046	\$215,615	\$353,995	\$138,381	1.64
Total Resource No Adder (TRC)	\$0.046	\$215,615	\$321,814	\$106,199	1.49
Utility (UCT)	\$0.035	\$165,257	\$321,814	\$156,557	1.95
Ratepayer Impact (RIM)	\$0.098	\$461,572	\$321,814	-\$139,758	0.70
Participant (PCT)	\$0.028	\$134,581	\$380,538	\$245,957	2.83
Lifecycle Revenue Impact (\$/kWh)				\$ 0.00000471	
Discounted Participant Payback (years)				1.62	

Table 44, Table 45, and Table 46 present the results of the cost-effectiveness analysis for the Program in 2006, 2007, and 2008 respectively using a freeridership of 24% as described in Section three of this report. All analyses are based on the Rocky Mountain Power 2008 IRP 65% Eastside Decrement.

**Table 44. Cost-Effectiveness Summary for the Program in 2006 – IRP
65% LF Decrement – 24% Freeridership**

Cost Effectiveness Test	Levelized \$/ kWh	Costs	Benefits	Net Benefits	Benefit / Cost Ratio
Total Resource + Conservation Adder (PTRC)	\$0.032	\$331,596	\$618,501	\$286,905	1.87
Total Resource No Adder (TRC)	\$0.032	\$331,596	\$562,274	\$230,677	1.70
Utility (UCT)	\$0.016	\$162,461	\$562,274	\$399,813	3.46
Ratepayer Impact (RIM)	\$0.079	\$822,683	\$562,274	-\$260,410	0.68
Participant (PCT)	\$0.022	\$228,370	\$719,457	\$491,087	3.15
Lifecycle Revenue Impact (\$/kWh)				\$ 0.000008966	
Discounted Participant Payback (years)				2.49	

**Table 45. Cost-Effectiveness Summary for the Program in 2007 – IRP
65% LF Decrement – 24% Freeridership**

Cost Effectiveness Test	Levelized \$/ kWh	Costs	Benefits	Net Benefits	Benefit / Cost Ratio
Total Resource + Conservation Adder (PTRC)	\$0.058	\$328,331	\$417,771	\$89,440	1.27
Total Resource No Adder (TRC)	\$0.058	\$328,331	\$379,792	\$51,461	1.16
Utility (UCT)	\$0.026	\$145,942	\$379,792	\$233,850	2.60
Ratepayer Impact (RIM)	\$0.08	\$451,413	\$379,792	-\$71,621	0.84
Participant (PCT)	\$0.045	\$254,623	\$377,705	\$123,082	1.48
Lifecycle Revenue Impact (\$/kWh)				\$ 0.000002205	
Discounted Participant Payback (years)				7.69	

**Table 46. Cost-Effectiveness Summary for the Program in 2008 – IRP
65% LF Decrement – 24% Freeridership**

Cost Effectiveness Test	Levelized \$/ kWh	Costs	Benefits	Net Benefits	Benefit / Cost Ratio
Total Resource + Conservation Adder (PTRC)	\$0.038	\$330,501	\$656,187	\$325,686	1.99
Total Resource No Adder (TRC)	\$0.038	\$330,501	\$596,533	\$266,033	1.80
Utility (UCT)	\$0.019	\$165,257	\$596,533	\$431,277	2.54
Ratepayer Impact (RIM)	\$0.081	\$714,524	\$596,533	-\$117,991	0.83
Participant (PCT)	\$0.028	\$249,467	\$633,490	\$384,024	2.54
Lifecycle Revenue Impact (\$/kWh)				\$ 0.00000398	
Discounted Participant Payback (years)				2.94	

Appendix A. Participant Survey

FinAnswer Express Participant Interview Guide

Company: _____ Telephone: _____

Name: _____ Cell phone: _____

Title: _____ Fax: _____

City: _____ State: _____ Zip: _____

Interview date: _____ Time: _____

Measure with the greatest savings, and amount of savings (from column W): _____
(Refer to this measure in the ‘Installed Efficiency Measures’ section.)

Hello, my name is _____ from The Cadmus Group, calling on behalf of:

[Utah or Idaho] Rocky Mountain Power

[Washington] Pacific Power

[PACIFIC POWER/ROCKY MOUNTAIN POWER] is evaluating its FinAnswer Express program and would appreciate your input. “It is important for [PACIFIC POWER/ROCKY MOUNTAIN POWER] to include your opinions in this study so they can serve your needs better.”

[NOTE: If the customer has received a FinAnswer Express site visit, state: ‘This is a brief follow up to the site visit you recently received.’]

[NOTE: If the customer has been selected for a FinAnswer Express site visit but the visit has not yet happened, state: ‘We are conducting this survey to prepare for an upcoming site visit to see your FinAnswer Express project. We perform site visits to get a better understanding of the energy savings you are actually getting from the program.’]

This survey is for research purposes only and this is not a marketing call. Your responses will remain confidential. This survey will take approximately 20 minutes. *As a Thank You for your assistance, at the end of the survey you we would like to offer you a \$50 gift card, which will be mailed to you.* Do you have a moment to answer questions about your experience with the program?

[If a customer asks if this is the Total Quality Service survey, or states that he has recently participated in the Total Quality Service survey, say ‘this is a separate survey about your participation and satisfaction with the FinAnswer Express program.’]

[If “No – Not a convenient time,” ask if Respondent would like to 1. Start now and do part of the survey, or 2. Arrange a more convenient time we can call them at home.

[If customer wants to verify the validity of the survey, tell them that they are welcome to contact Nancy Goddard, PacifiCorp Program Manager, at (503)813-5183.

[IF “NO” – ARRANGE CALLBACK]

•

• **Confirmation**

1. The [PACIFIC POWER/ROCKY MOUNTAIN POWER] records show that you participated in the FinAnswer Express program during [Month] of [Year], and at that time received [AN INCENTIVE/INCENTIVES] for the installation of (a) [MEASURE(s)] at [ADDRESS OF INSTALLATION]

Is that correct?

1. Yes *[IF YES → GO TO QUESTION 4.]*

2. No, measure is/are incorrect

3. No, date is incorrect (Skip to 3)

98. DK (TERMINATE)

2. [IF Q1= No, measure is/are incorrect, ASK] What measures were installed?
_____ *[RECORD RESPONSE]*

3. [IF Q1= No, date is incorrect, ASK] About when were the measures installed?

1. _____MONTH _____YEAR

98. DK (do not terminate)

99. REF (TERMINATE)

4. Which of the following best describes your company's primary activities?
 1. Manufacturing
 2. Retail
 3. Dairy / Agricultural
 4. Finance and Insurance
 5. Food Processing
 6. Refrigerated Warehouse
 7. Professional, Scientific, and Technical Services
 8. Educational Services
 9. Health Care
 10. Public Administration
 11. Arts, Entertainment, and Recreation
 12. Accommodation
 13. Food Services
 14. Real Estate
 15. Other [SPECIFY] _____

Participation

5. How did you learn about the FinAnswer Express?

[DO NOT READ RESPONSES; MARK ALL THAT APPLY]

1. Contacted by my [PACIFIC POWER/ROCKY MOUNTAIN POWER] account representative or other [PACIFIC POWER/ROCKY MOUNTAIN POWER] staff
2. Contacted by program representative [IF YES ASK 'Do you remember what company they were from?']
3. Program sponsored conference or workshop
4. Program sponsored technology demonstration
5. Program sponsored integrated audit
6. Trade Publication
7. Marketing by Trade Ally, vendor or contactor
8. Firm approached/contacted by Trade Ally, vendor or contractor
9. Word of mouth; from another business colleague
10. Through a trade organization or professional organization/association
11. Through printed material or outreach materials sent by the Program
12. At a trade show
13. Through family, friend, or neighbor
14. Participation in other [PACIFIC POWER/ROCKY MOUNTAIN POWER] Programs
15. Past Program participants
16. Internet research/found Program on the [PACIFIC POWER/ROCKY MOUNTAIN POWER] website

17. Other [SPECIFY] _____
98. Don't know
99. Refused

6. Why did you decide to participate in the Program?

[DO NOT READ RESPONSES; MARK ALL THAT APPLY]

1. To save money on utility bills; save money on electric bills
2. To obtain a program incentive
3. To replace old equipment
4. To replace broken equipment
5. To acquire the latest technology
6. To reduce maintenance costs
7. Because the Program was sponsored by [PACIFIC POWER/ROCKY MOUNTAIN POWER]
8. Previous experience with other [PACIFIC POWER/ROCKY MOUNTAIN POWER] Programs
9. To help protect the environment
10. To save energy
11. Recommended by Program contact
12. Recommended by contractors/trade allies
13. Recommended by another [PACIFIC POWER/ROCKY MOUNTAIN POWER] customer; word of mouth
14. Recommended by family, friend, or neighbor
15. Part of a broader remodeling or renovation
16. Other [SPECIFY] _____
98. Don't know
99. Refused

7. Thinking back to when you were first involved with the Program, were there any aspects of the Program that initially caused you concern?

1. Yes
2. No *[SKIP TO 8]*
98. Don't know *[SKIP TO 8]*
99. Refused *[SKIP TO 8]*

7a. What caused your concern?

_____ *[RECORD RESPONSE]*

7b. Was this issue resolved?

1. Yes [*Ask 7C*]
2. No [*SKIP TO 8*]
98. Don't know [*SKIP TO 8*]
99. Refused [*SKIP TO 8*]

7c. How was it resolved?

_____ [*RECORD RESPONSE*]

Enrollment

8. Did you encounter any problems, delays or difficulties during the application, review and approval process for the Program?

1. Yes
2. No [*SKIP TO 10C*]
98. Don't know [*SKIP TO 10C*]
99. Refused [*SKIP TO 10C*]

9. [*IF 8 = YES*] What problems, delays or difficulties did you encounter?

[DO NOT READ RESPONSES; MARK ALL THAT APPLY]

1. The process took too long
2. Too many delays between steps in the process
3. The process was too complex
4. The application materials were difficult to understand
5. Lack of coordination and communication among Program staff
6. The Program staff was not responsive; could not get questions answered
7. The Program staff was not knowledgeable
8. The incentives were less than I expected
9. Unable to get information on the status of the application
10. Multiple requests for more information from[PACIFIC POWER/ROCKY MOUNTAIN POWER] throughout the process
11. Disagreement over initial energy savings calculations
12. Disagreement over final energy savings calculations
13. Other [*SPECIFY*] _____
98. Don't know
99. Refused

9a. *[IF 9= MORE THAN ONE ANSWER]:* What was the **most** difficult issue for you?

_____ *[RECORD RESPONSE]*

10. If you could change anything about the application process, what would you change?

_____ *[RECORD RESPONSE]*

11. Besides this project did your company participate in the FinAnswer Express program before 2006? After 2008?

1. Yes
2. No
- 98 Don't know
- 99 Refused

11a. Have you participated in other energy efficiency programs?

1. Yes
2. No [skip to 12]
98. Don't know [skip to 12]
99. Refused [skip to 12]

11b. *[IF 11a = YES]* What other energy efficiency programs have you participated in?

_____ *[RECORD RESPONSE]*

11c. *[IF 11a = YES]* Who were the sponsors for these programs?

_____ *[RECORD RESPONSE]*

11d. *[IF 11a = YES]* How did this Program's application process compare to your prior experience? Was it easier, harder, or about the same?

1. Easier
2. Harder
3. About the same

11e. *[IF 11d = EASIER OR HARDER]* Why do you say that?

_____ *[RECORD RESPONSE]*

Recommended Efficiency Measures

12. Was any equipment, lighting, controls or other item recommended through this Program that you did not install?

1. Yes
2. No *[IF NO SKIP TO 13]*
98. Don't know
99. Refused

12a. *[IF YES]* What was recommended but not installed?

_____ *[RECORD RESPONSE]*

12b. *[IF YES]* Why did you choose not to install these items?

_____ *[RECORD RESPONSE]*

Installed Efficiency Measures

[REFER TO THE SPREADSHEET FOR "INSTALLED MEASURE." IF MORE THAN ONE MEASURE INSTALLED, PLEASE CHOOSE MEASURE WITH LARGEST SAVINGS]

13. Did the *[INSTALLED MEASURE]* installed through the Program replace existing equipment or was it a totally new installation?

1. Replaced existing equipment
2. Totally new *[IF TOTALLY NEW, "PLEASE DESCRIBE" AND, SKIP TO 15]*
98. Don't know
99. Refused

14. What was the operating condition of the equipment that the *[INSTALLED MEASURE]* replaced?

1. Old equipment had failed or burned out
2. Old equipment had problems, but still working
3. Old equipment in working condition with no problems
4. Expanding services or production line; wanted efficient equip
5. Other *[SPECIFY]* _____
98. Don't know
99. Refused

15. On a scale of 0 to 10, where 0 is not at all satisfied and 10 is very satisfied, how satisfied would you say you are with the performance of the new *[INSTALLED MEASURE]*?

_____ *[RECORD RESPONSE]*

98. Don't know

99. Refused

15a. [If 15 <=5] Why do you say that?

_____ *[RECORD RESPONSE]*

98. Don't know

99. Refused

Operational Changes

[INTERVIEWER: RESPONDENT WILL RECEIVE ONLY ONE SET OF QUESTIONS REFERRING TO OPERATIONAL CHANGES FOR A SINGLE MEASURE TYPE (LIGHTING, HVAC, CONTROLS, OR OTHER)]

16. At the time that you participated in the program, did you have an overall plan to increase the energy efficiency of your operations?

16A. Did you change the manner in which you operated *[MEASURE TYPE]* after the new *[MEASURE TYPE]* was installed?

1. Yes

2. No *[SKIP TO 18]*

98. Don't know

99. Refused

16b. Were these changes part of the overall plan to increase the energy efficiency of your operations?

1. Yes

2. No *[SKIP TO 18]*

98. Don't know

99. Refused

16c. What did you change?

_____ *[RECORD RESPONSE]*

17. *[ASK IF 16B MENTIONS HOURS OF OPERATION]* Did you change the number of operating hours or change the operation schedules since measures were installed?

1. Yes
2. No *[SKIP TO 18]*
98. Don't know
99. Refused

17a. Please explain what changes were made

_____ *[RECORD RESPONSE]*

18. Has the/Have any *[INSTALLED MEASURE]* been removed since they were installed with this program?

1. Yes
2. No *[SKIP TO 19]*
98. Don't know *[SKIP TO 19]*
99. Refused

18a. **What** was removed?

_____ *[RECORD RESPONSE]*

98. Don't know
99. Refused

18b. **Why** was it removed or replaced?

_____ *[RECORD RESPONSE]*

98. Don't know
99. Refused

18c. **About when** was it removed or replaced?

_____ *[RECORD RESPONSE]*

98. Don't know
99. Refused

19. How did installation of the *[INSTALLED MEASURE]* fit with planned replacement and/or maintenance? Was any of this equipment scheduled for replacement/upgrade before the program?

1. Yes *[IF YES, PROBE]*
2. No *[SKIP TO 20]*
98. Don't know
99. Refused

19a. Which equipment

_____ *[RECORD RESPONSE]*

98. Don't know
99. Refused

20. Was the installation of the *[INSTALLED MEASURE]* included your most recent capital *BUDGET BEFORE YOU PARTICIPATED IN THE PROGRAM?*

1. Yes
2. No
98. Don't know
99. Refused

21. When you installed the new *[INSTALLED MEASURE]*, did you expect savings on:

	Yes	No	Don't Know	Refused
21a. Electricity?				
21b. Water?				
21c. Natural Gas?				

21d. *[ASK IF 21a = YES]* Do the electric energy savings meet your expectations?

3. Yes *[SKIP TO 22]*
4. No
98. Don't know
99. Refused

21e. *[ASK IF 21a =No]* When do you expect these energy savings?

1. Immediately
2. Within the next 6 Months *[SKIP TO 22]*
3. Within the next year *[SKIP TO 22]*
4. Within the next two years *[SKIP TO 22]*
5. Never
98. Don't know *[SKIP TO 22]*
99. Refused *[SKIP TO 22]*

21f. Why do you not expect savings from the *[INSTALLED MEASURE]* in the future?
_____ *[SKIP TO 22]*

22. Are there any other benefits that you anticipate?
[PROBE IF NEEDED: HAVE YOU OBSERVED ANY CHANGES IN LEVEL OF PRODUCTION OR SALES? PRODUCT QUALITY?]
_____ *[RECORD RESPONSE]*

23. How satisfied are you with the final cost to you of the *[INSTALLED MEASURE]*?
Please use a scale from 0 to 10, with 0 being extremely dissatisfied and 10 being extremely satisfied.
_____ *[RECORD RESPONSE]*
98. Don't know
99. Refused

23a. *[IF Q23<=5]* Why do you say that?
_____ *[RECORD RESPONSE]*
98. Don't know
99. Refused

24. How satisfied are you with the performance of the *[INSTALLED MEASURE]*?
Please use a scale from 0 to 10, with 0 being extremely dissatisfied and 10 being extremely satisfied.
_____ *[RECORD RESPONSE]*
98. Don't know
99. Refused

24a. [If 24 <=5] Why do you say that?

_____ [RECORD RESPONSE]

Freeridership and Market Effects

[NOTE: ONLY ASK FOR SAME MEASURE AS PRIOR QUESTIONS]

25. On a scale from 1 to 10, how important were the following factors in deciding which measures to install:

Factor	Score
A. Information provided by program staff on measure savings	
B. Information on payback for the measure	
C. The project incentive	
D. Familiarity with these measures	
E. Had purchased these measures in the past	

26. Regarding the installation of [INSTALLED MEASURE/MEASURE(S)], would you have installed the [MEASURE/ANY OF THE MEASURES] without the incentive?

1. Yes
2. No [IF 'NO', ASK Q27, THEN SKIP TO Q30]
98. Don't know
99. Refused

27. Before the incentive program, had you previously installed the same type of [MEASURE] without participating in a program?

1. Yes
2. No
98. Don't know
99. Refused

28. Without the program, would you have installed units to the same level of efficiency?

1. Yes
2. No
3. Don't know
4. Refused

29. Without the program, would you have installed all of the measures or some of the measures?
1. All
 2. Some
 3. Don't know
 4. Refused

29a. [If 29=Some] Which measures would you have installed?

_____ [RECORD RESPONSE]

30. Without the program, would you have installed these measures...

1. In the same year?
2. In one to two years?
3. In three to five years?
4. More than five years out?
5. Don't know
6. Refused

31. Would you have installed the exact same unit(s) if the amount of the program incentive was less than the current value?

1. Yes
2. No
3. Don't know
4. Refused

32. How much less? Would you say...

1. 25% less
2. 50% less
3. 75% less
4. Don't know
5. Refused

33. In your opinion was the difference in price between the energy efficient models and the conventional models:

1. Very dramatic
2. Somewhat dramatic but significant
3. Not at all different
4. Don't know
5. Refused

Energy Efficiency Decision Making

Next, I would like to ask you some questions about the decision making process in regards to energy efficiency purchases and upgrades.

34. Using a 0 to 10 rating scale, where 0 means not at all important and 10 means extremely important, please rate how important energy efficiency is to the operations and management of your company?

_____ [RECORD RESPONSE]

98. Don't know

99. Refused

34a. Why do you say that?

35. Do you have sufficient in house technical resources in house to address the management of energy and water costs?

1. Yes

2. No

98. Don't know

99. Refused

35a. [IF 35=NO] For this project, as [PACIFIC POWER/ROCKY MOUNTAIN POWER] or Nexant able to provide you with the needed technical assistance?

_____ [RECORD RESPONSE]

Spillover

36. Besides installing the measures through this program, since this project have you made any other energy efficiency improvements or purchases on your own without any assistance from a utility or other organization?

1. Yes

2. No [SKIP TO 37]

98 Don't know [SKIP TO 37]

99 Refused [SKIP TO 37]

36a. [IF 36 = YES] What did you purchase or install?

_____ [RECORD RESPONSE]

- 36b *[IF 36 = YES]* I'm going to read a statement about the equipment that you purchased on your own. On a scale from 0 to 10, with 0 indicating that you strongly disagree, and 10 indicating that you strongly agree, please rate the following statement.

"My experience with the *[Program]* influenced my decision to install other high efficiency equipment on my own."

_____ *[RECORD RATING]*

98. Don't know
99. Refused

Interaction with **[PACIFIC POWER/ROCKY MOUNTAIN POWER]** or 3rd Party Staff

We are also interested in learning more about your interactions with the Program staff

37. How many people did you work with throughout your participation in the Program? This would include people from Nexant, **[PACIFIC POWER/ROCKY MOUNTAIN POWER]**, contractors, etc.

_____ Number of people

[SKIP TO 41 IF =0]

38. In what capacity did they work with you?

[PROBE IF NEEDED. WAS IT PROJECT MANAGERS, ACCOUNT REPS, THIRD PARTY STAFF, CONTRACTORS; MULTIPLE RESPONSE]

1. _____ **[PACIFIC POWER/ROCKY MOUNTAIN POWER]** Account Representatives
2. _____ **[PACIFIC POWER/ROCKY MOUNTAIN POWER]** Energy Efficiency Project Managers
3. _____ Nexant Energy Efficiency Project Managers
4. _____ Installation Contractors
5. _____ External Consultant
6. _____ Other *[SPECIFY]* _____

[RECORD COMMENTS]

39. Please describe your overall experience working with these people in relation to this project. _____ *[RECORD RESPONSE]*

Satisfaction

40. Would you participate in the Program again?

1. Yes
2. No

40a. *[IF 40 = NO]* Why not?

_____ *[RECORD RESPONSE]*

41. If you could change anything about the Program, what would you change?

_____ *[RECORD RESPONSE]*

98. Don't know
99. Refused

42. Using a scale from 0 to 10, with 0 being extremely dissatisfied and 10 being extremely satisfied, how satisfied are you with your overall experience with the Program?

_____ *[RECORD RESPONSE]*

98. Don't know
99. Refused

42a. *[IF 42 <=5]* Why do you say that?

Organizational Data/Firmographics

I have a few last questions about your business or organization

43. Approximately, what percent of your total annual operating costs does your electricity bill represent?

_____ *[RECORD RESPONSE]*

98. Don't know
99. Refused

44. Approximately, what percent of your total annual operating costs does your natural gas bill represent?

_____ *[RECORD RESPONSE]*

98. Don't know
99. Refused

45. Approximately, what percent of your total annual operating costs does your water bill represent?

_____ [RECORD RESPONSE]

98. Don't know

99. Refused

46. How many people does your firm employ?

_____ [RECORD RESPONSE]

98. Don't know

99. Refused

Thank you for your time. Your opinions are very valuable to this research for [PACIFIC POWER/ROCKY MOUNTAIN POWER].

Appendix B. Nonparticipant Survey

FinAnswer Express Nonparticipant Interview Guide

Company: _____ Telephone: _____

Name: _____ Cell phone: _____

Title: _____ Fax: _____

City: _____ State: _____ Zip: _____

Interview date: _____ Time: _____

SIC Code (4-digit) NAIC: _____

Hello, my name is _____ from _____, calling on behalf of [PACIFIC POWER/ROCKY MOUNTAIN POWER]. We are conducting a study on behalf of [PACIFIC POWER/ROCKY MOUNTAIN POWER] regarding energy efficiency programs. May I speak with *[designated respondent]* or with the person who is responsible for overseeing energy management for your organization?

[IF DIRECTED TO A DIFFERENT RESPONDENT, REPEAT INTRODUCTION]

My questions are for research purposes only. We are interested in your opinions to help improve our programs, and understand how to assist customers in saving money on their utility bills. Your individual answers will be used by [PACIFIC POWER/ROCKY MOUNTAIN POWER] to evaluate energy efficiency programs. *As a Thank You for your assistance, at the end of the survey you we would like to offer you a \$50 gift card, which will be mailed to you [IF RESPONDENT ASKS HOW LONG THE SURVEY IS, SAY: "APPROXIMATELY 15 MINUTES."]*

[If a customer asks if this is the Total Quality Service survey, or states that he has recently participated in the Total Quality Service survey, say 'this is a separate survey about our energy efficiency programs.']

[If customer wants to verify the validity of the survey, tell them that they are welcome to contact Nancy Goddard, PacifiCorp Program Manager, at (503)813-5183.

Screening:

S2. First, I need to validate my records.

S3. Which electric company provides electric power to your business?

1 Pacific Power/Rocky Mountain Power CONTINUE

2 OTHER..... TERMINATE AND TALLY

98 DON'T KNOW RETURN TO Q.B AND RESCREEN

Introduction

6. Which of the following best describes your company's primary activities?

1. Manufacturing
2. Retail
3. Dairy / Agricultural
4. Finance and Insurance
5. Food Processing
6. Refrigerated Warehouse
7. Professional, Scientific, and Technical Services
8. Educational Services
9. Health Care
10. Public Administration
11. Arts, Entertainment, and Recreation
12. Accommodation
13. Food Services
14. Real Estate
15. Other [*SPECIFY*] _____

Participation

7. Have you heard of the [PACIFIC POWER/ROCKY MOUNTAIN POWER] FinAnswer Express Program?

1. Yes [*CONTINUE*]
2. No [*SKIP TO 11*]
98. Don't know
99. Refused

8. How did you learn about the FinAnswer Express Program?

[DO NOT READ RESPONSES; MARK ALL THAT APPLY]

1. Contacted by my [PACIFIC POWER/ROCKY MOUNTAIN POWER] account representative or other [PACIFIC POWER/ROCKY MOUNTAIN POWER] staff
2. Contacted by program representative [IF YES ASK 'Do you remember what company they were from?']
3. Program sponsored conference or workshop
4. Program sponsored technology demonstration
5. Program sponsored integrated audit
6. Trade Publication
7. Marketing by Trade Ally, vendor or contactor
8. Firm approached/contacted by Trade Ally, vendor or contractor
9. Word of mouth; from another business colleague
10. Through a trade organization or professional organization/association
11. Through printed material or outreach materials sent by the Program
12. At a trade show
13. Through family, friend, or neighbor
14. Participation in other [PACIFIC POWER/ROCKY MOUNTAIN POWER] Programs
15. Past Program participants
16. Internet research/found Program on [PACIFIC POWER/ROCKY MOUNTAIN POWER] website
17. Other [*SPECIFY*] _____
98. Don't know
99. Refused

9. What are the reasons you have not had the opportunity to participate in the Program?

[DO NOT READ RESPONSES; MARK ALL THAT APPLY]

_____ [*RECORD RESPONSE*]

98. Don't know
99. Refused

10. Regarding the FinAnswer Express program, have you either begun participation in the program and dropped out, or had a project application rejected?

1. Dropped out

2. Application rejected
3. No *[SKIP TO 10]*
98. Don't know *[SKIP TO 10]*
99. Refused *[SKIP TO 10]*

Program Drop-Outs and Rejected Applications

ASK THIS SECTION ONLY IF RESPONDENT IS: (1) PROGRAM DROP-OUT (2) REJECTED APPLICATION

11. Thinking back to when you were first considered the Program, were there any aspects of the Program that initially caused you concern?

1. Yes
2. No *[SKIP TO 5D]*
- 98 Don't know *[SKIP TO 5D]*
- 99 Refused *[SKIP TO 5D]*

6a. What caused your concern?

_____ *[RECORD RESPONSE]*

6b. Was this issue resolved?

1. Yes
2. No *[SKIP TO 5D]*
- 98 Don't know *[SKIP TO 5D]*
- 99 Refused *[SKIP TO 5D]*

6c. How was it resolved?

_____ *[RECORD RESPONSE]*

ASK ONLY IF RESPONDENT IS A PROGRAM DROP-OUT

6d. Why did your business drop out of the Program?

_____ *[RECORD RESPONSE]*

ASK ONLY IF RESPONDENT'S APPLICATION WAS REJECTED

6e. Do you know why your application to participate in the program was denied?

_____ [RECORD RESPONSE]

ASK FOR BOTH GROUPS

6f. Was the underlying problem resolved to your satisfaction? If not, why not?

We are also interested in learning more about your interactions and experience with the Program staff

12. How many people did you work with during your time with the Program? This would include people from Nexant, [PACIFIC POWER/ROCKY MOUNTAIN POWER], contractors, etc.

_____ number of people

13. Who worked with you with you on this project?

[PROBE IF NEEDED. WAS IT PROJECT MANAGERS, ACCOUNT REPS, THIRD PARTY STAFF, CONTRACTORS; MULTIPLE RESPONSE]

7. _____ [PACIFIC POWER/ROCKY MOUNTAIN POWER] Account Representatives
8. _____ [PACIFIC POWER/ROCKY MOUNTAIN POWER] Energy Efficiency Project Managers
9. _____ Another Energy Efficiency Project Managers [IF YES ASK 'Do you remember what company they were from?']
10. _____ Installation Contractors
11. _____ External Consultant
12. _____ Other [SPECIFY] _____

[RECORD COMMENTS]

14. If you could change anything about the Program, what would you change?

_____ [RECORD RESPONSE]

98. Don't know
99. Refused

15. Did your company participate in the FinAnswer program before 2006? After 2008?

Installed Efficiency Measures

16. In the past year, have you installed any energy efficiency measures in your building(s)?

3. Yes [*CONTINUE*]
4. No [*IF NO, SKIP TO ENERGY EFFICIENCY DECISION MAKING*]
98. Don't know
99. Refused

11a. What measures have you installed? [*DO NOT READ. RECORD ALL EQUIPMENT, LIGHTING, CONTROLS, OTHER ITEMS INSTALLED*]

1. Lighting
2. HVAC
3. Controls
4. VFD
5. Compressed Air measures
6. Other [*SPECIFY*] _____
98. Don't know
99. Refused

11b. Did you receive a financial incentive or tax credit for installing this equipment?

1. Yes [Specify the incentive and/ or tax credit amount, and the agency/program offering the incentive/tax credit.]
2. No [*IF NO, SKIP TO ENERGY EFFICIENCY DECISION MAKING*]
98. Don't know
99. Refused

17. Why did you decide to install this equipment?

[*DO NOT READ RESPONSES; MARK ALL THAT APPLY*]

1. To save money on electric bills
2. To obtain a rebate; Program incentive
3. It was scheduled for replacement/upgrade
4. To replace old equipment
5. To replace broken equipment
6. To acquire the latest technology
7. To reduce maintenance costs
8. Because [PACIFIC POWER/ROCKY MOUNTAIN POWER] account manager suggested it
9. Because Nexant engineer suggested it
10. Because we had funds available in this fiscal year
11. Because we lose funds if we don't replace it now.
12. Because the Program was sponsored by [PACIFIC POWER/ROCKY MOUNTAIN POWER]
13. Previous experience with other [PACIFIC POWER/ROCKY MOUNTAIN POWER] Programs

14. To help protect the environment
15. To save energy
16. Recommended by Program contact
17. Recommended by contractors/trade allies
18. Recommended by another word of mouth
19. Recommended by family, friend, or neighbor
20. Part of a broader remodeling or renovation
21. Other [*SPECIFY*] _____
98. Don't know
99. Refused

12a . Have you taken any other actions to save energy in your buildings?
_____ [*RECORD RESPONSE*]

18. What actions have you taken?
_____ [*RECORD RESPONSE*]
98. Don't know
 99. Refused

Energy Efficiency Decision Making

Next, I will ask some questions about the decision making process in regards to energy efficiency purchases and upgrades.

19. Using a 0 to 10 rating scale, where 0 means not at all important and 10 means extremely important, please rate how important energy efficiency is to the operations and management of your company?
_____ [*RECORD RESPONSE*]
98. Don't know
 99. Refused

20. Why do you say that?
_____ [*RECORD RESPONSE*]

21. Do you have sufficient in house technical resources to address the management of energy and water costs?
1. Yes [*SKIP NEXT QUESTION*]
 2. No
 98. Don't know
 99. Refused

Organizational Data/Firmographics

I have a few last questions about your business or organization

22. Approximately, what percentage of your total annual operating costs is spent in electricity bills?

_____ [RECORD RESPONSE]

98. Don't know

99. Refused

23. Approximately, what percentage of your total annual operating costs is spent in natural gas bills?

_____ [RECORD RESPONSE]

98. Don't know

99. Refused

24. Approximately, what percentage of your total annual operating costs is spent in water bills?

_____ [RECORD RESPONSE]

98. Don't know

99. Refused

25. How many people does your firm employ?

_____ [RECORD RESPONSE]

98. Don't know

99. Refused

Thank you for your time. Your opinions are very valuable to this research for [PACIFIC POWER/ROCKY MOUNTAIN POWER].

Appendix C Staff Interview Guide

FinAnswer Express Program Discussion Guide

Name

Title

Company

Program

Date

Program Overview

1. Can you briefly describe how the program operates?
 - a. What is the program theory – how do you expect the programs to change the way that the target market behaves with respect to energy efficiency?
2. How has the program evolved or changed since the last evaluation in 2004?
3. How do you coordinate activities internally? [marketing, service delivery, work with TAs, etc.]
4. Are you providing training to:
 - a. PacifiCorp staff
 - b. Implementers
 - c. Trade allies
 - d. What feedback have you gotten back?
5. What improvements could be made in the administration of the programs?

Application process

6. Could you please describe your understanding of the application process:
 - a. How do the participants enter the program?
 - b. What issues are there?

Eligibility criteria and the verification process

7. Please describe the verification process?

- a. Participant eligibility
- b. What if they are not eligible?

Marketing

8. Do you do anything to promote the program? [What marketing and outreach activities have been and are being conducted? What's worked best?]

Savings estimation techniques

9. How are savings estimated for the program as a whole and for individual projects?
10. Are the estimations generally felt to be accurate? Is there a way to improve the manner in which savings are calculated?
11. How are savings verified for the individual projects?
 - a. What materials had to be submitted with the applications [invoices, drawings]?
 - b. Who received the applications and what the steps were for reviewing and approving applications and setting up payments?
 - c. What post-inspections are required?

Participant interaction and satisfaction

12. What aspects of the programs do customers seem to be most interested in or most satisfied with?
 - a. Any concerns? How were they addressed?

Program data collection

13. Who is responsible for collecting and tracking participation data?
 - a. How effective and accurate is the data-tracking and data collection system?
 - b. Are data entered and reported in a timely fashion?

- c. Have there been any difficulties with the data tracking systems?
14. Have the implementers had any problems meeting the tracking and reporting requirements?
15. Would you recommend any changes to the procedures?

Trade Allies – Communication

16. Is PacifiCorp involved in the recruitment or management of Trade Allies, retailers or contractors?
- a. Describe the relationship between these parties
17. How frequently do you contact people, and how is the communication carried out?
18. How often do trade allies contact you?
19. Have you had any particular challenges in working with trade allies?
20. How are their problems and questions dealt with?
21. What kinds of things have been done or are being planned to identify trade allies and get them involved?
22. What has/has not worked well?
23. How would you change or improve communications, either within the program, or with trade allies?

Implementation Barriers

24. Has the level of program participation met your expectations?
- a. Why do you think this has been the case?
25. Have any challenges resulted from perceptions or attitudes about the value of the program among the *target population*? If so, what?

26. How have you dealt with those perceptions and attitudes?

27. How about any challenges resulting from perceptions or attitudes about the value of the programs among the vendors?

a. How have these been dealt with?

Close

28. What would you say are the program's strongest points?

29. What are its weakest points?

30. Other than what we've discussed above, what would you change about the program?

Appendix D. Market Actor Interview Guide

Market Actor Interview Guide - FinAnswer Express Program

Name:

Organization:

Title:

Telephone

Hello, my name is _____ from The Cadmus Group, calling on behalf of:

[Utah or Idaho] Rocky Mountain Power

[Washington] Pacific Power

[Rocky Mountain Power, Pacific Power] is evaluating its FinAnswer Express program and would appreciate your input. This survey is for research purposes only and this is not a marketing call. Your responses will remain confidential. The questions focus on how the program operated in the 2006-2008 time period. Do you have a moment to answer questions about your experience with the program?

[If “No – Not a convenient time,” ask if Respondent would like to 1. Start now and do part of the survey, or 2. Arrange a more convenient time we can call them at home. Emphasize that]

“It is important for Rocky Mountain Power/Pacific Power to include your opinions in this study so they can serve your needs better.”

[If “No” – Arrange callback]

Program Overview

1. When did you first start providing services for the program?
2. What did you see as the purpose of the program?
3. Who else was involved in carrying out the program? How were they involved? [PROBE on contractors, engineering firms, energy services companies, retailers, and equipment manufacturers.]
4. Have there been changes over time in the services or measures people are interested in? What are the changes?

Program Entry

5. How did a prospective customer find out about the program?

6. Who provided program leads? [DO NOT READ]
 - a. Program staff
 - b. Nexant (program implementer)
 - c. Engineering firms,
 - d. Energy services companies
 - e. Retailers
 - f. Other _____

Participant interaction and satisfaction

7. Did customers express any concerns about the program? How were the concerns addressed?

Pacific Power/Rocky Mountain Power Communication

8. Did your company have any particular challenges in working with Rocky Mountain Power?
9. How were these challenges dealt with?

Implementation Barriers

10. Did any challenges result from perceptions or attitudes about the value of the program among the Pacific Power/Rocky Mountain Power customers? If so, what were they?
11. How did you deal with those perceptions and attitudes?
12. Did anything else make it difficult for you to bring in participants and/or carry out program requirements? If so, what?
13. How have you dealt with those perceptions and attitudes?

Program data collection

14. Please describe the program's data collection and tracking requirements.
 - a. Were there any difficulties meeting those requirements?
15. Would you recommend any changes to the procedures?

Close

16. Other than what we've discussed above, what would you have changed about the program as it operated in 2006 through 2008?
17. What would you change about the program as it is currently operated?
18. Is there anything else you would like to add?

Appendix E. FinAnswer Express Process Flow Diagrams

Lighting and non-lighting process flow diagrams are provided under separate cover.

Appendix F. FinAnswer Express Evaluation Plan

Provided under separate cover.

Appendix G. Project Reports

Provided under separate cover. (Some Project numbers are duplicative since there were multiple incentives filed under singular invoices from the implementation contractor)

60731	60880	61156	61231	61358	61507	61559	61655	61731
60731	60881	61157	61231	61358	61507	61560	61655	61731
60731	60909	61157	61231	61358	61507	61560	61655	61731
60731	60909	61157	61231	61358	61507	61560	61683	61731
60732	60909	61157	61278	61414	61507	61560	61683	61731
60732	60909	61157	61278	61414	61510	61571	61683	61731
60732	60916	61157	61279	61414	61511	61571	61683	61731
60732	60963	61157	61279	61414	61511	61612	61683	61731
60733	60963	61171	61279	61414	61511	61612	61704	61731
60733	60963	61175	61279	61414	61511	61613	61704	61731
60733	60964	61189	61279	61414	61511	61613	61723	61731
60734	60964	61189	61318	61428	61511	61613	61730	61731
60734	60964	61189	61318	61428	61511	61613	61730	61731
60734	60964	61189	61318	61428	61530	61613	61730	61731
60734	60964	61189	61318	61428	61536	61613	61730	61731
60735	60982	61189	61318	61428	61536	61613	61730	61731
60735	60983	61189	61318	61428	61537	61613	61730	61731
60735	61021	61189	61318	61428	61537	61613	61730	
60735	61021	61189	61318	61428	61537	61613	61730	
60736	61022	61197	61318	61430	61537	61613	61730	
60736	61022	61198	61318	61435	61537	61613	61730	
60736	61023	61198	61327	61436	61537	61616	61730	
60736	61036	61198	61327	61436	61548	61632	61730	
60743	61037	61199	61344	61436	61548	61632	61730	
60789	61037	61199	61344	61436	61549	61632	61730	
60790	61037	61199	61344	61469	61549	61632	61730	
60796	61069	61199	61344	61469	61549	61632	61730	
60812	61069	61230	61344	61469	61549	61632	61730	
60812	61069	61231	61358	61469	61549	61654	61730	
60847	61069	61231	61358	61469	61552	61654	61730	
60847	61069	61231	61358	61469	61559	61655	61730	
60848	61070	61231	61358	61506	61559	61655	61731	
60878	61070	61231	61358	61507	61559	61655	61731	

Appendix H. Measure Life Methodology

Measure lifetimes by general measure type were determined for various states and program years (2005-2008) for the following PacifiCorp programs:

- Energy Finanswer
- Finanswer Express
- Self Direction
- Retrocommissioning

This analysis was performed in an Excel workbook. Comprehensive economic useful life (EUL) information for the various individual measures in the portfolio, including sources, were compiled on a master sheet named “Measure Life.” Some of the sources used were DEER 2008, ACEEE, and the “Measure Life Report” prepared by GDS Associates in 2007. When multiple values for the same measure were available, an average was taken. For example, the measure life of air compressor improvements in the GDS report was 13 and 15 years for retrofit and new construction, respectively. Therefore, the final average measure life used in this analysis was 14 years for air compressor improvements. Where measure names in the data sets or in the sources were open to interpretation, comments were added to clarify to what measure was being referenced.

Project data, such as measure name, type, and savings, were organized as sets on individual worksheets representing each state/program/year combination. Measure type includes the following main categories (shown with their respective sources):

Measure Type	GDS	DEER	ACEEE	Other
Refrigeration	X	X		
Lighting	X	X		
HVAC	X	X	X	Calmac Report 2007
Controls	X	X		
Motors	X	X		
Additional Measures	X		X	
Air Compressors	X			
Building Shell	X	X		
Nonlighting	X	X		
Hot Water	X	X		Energy Star
Traffic Signals	X			

For each data set, the EUL for the applicable measure types was determined by weighting the EULs of component measures by total kWh savings. Using the Idaho Energy Finanswer Express 2008 project data as an example, there are 3 measure types (Lighting, HVAC, and Motors). Lighting measures include Package, Package Trade Ally, and Other. Each of these individual measures has an associated lifetime (14, 14, and 15, respectively). To determine what the overall EUL should be, the total kWh savings for each measure from this data set was used to weight the EULs. This process was repeated for the HVAC and Motor measure types to complete the analysis.

Appendix I. Participant and Nonparticipant Survey Results

Provided under separate cover.

Appendix J. Freeridership Analyses

Freeridership quantifies the percentage of participants who report they would have installed a measure in the absence of the program.

Energy FinAnswer Express Program

Freeridership survey data was analyzed for the FinAnswer Express program using a scoring matrix approach. This approach is acknowledged in the National Action Plan for Energy Efficiency: Model Energy Efficiency Program Impact Evaluation Guide¹⁵ (Guide).

A survey was designed to understand why customers installed a given measure, and the influence the program had over those decisions.

In conducting surveys with the battery of questions, Cadmus randomly selected customers participating in the FinAnswer Express program. Results of the survey questions were used in a scoring matrix to determine each participant's freeridership score between 0 and 100%.

There are six core questions asked in the survey are written to obtain objective responses and are used in the freeridership scoring matrix:

- Would the participant have installed the measure without the program?
- Had the participant already ordered or installed the measure before learning about the program?
- Would the participant have installed the measure to the same level efficiency without the program incentive?
- Would the participant have installed the same quantity of measures without the program?
- In absence of the program, when would the respondent have installed the measures?
- Was the measure included in included the participant's most recent capital budget?

Cadmus has developed a transparent, straightforward matrix approach to assign a score to all participants based on their responses.

Patterns of responses to these questions are assigned freerider scores, and confidence and precision estimates are calculated based on the distribution of the scores.

The table below shows the scoring matrix that was used for FinAnswer Express. This matrix is expanded from the general format of the scoring matrix included in the Guide. If a respondent had a non-response, "Don't Know" or "Refused", the respondent was assigned a "Partial" for that given question. This allows for respondents who had a non-response, "Don't Know" or "Refused" answer for a question to be left in the analysis sample.

¹⁵ http://www.epa.gov/cleanenergy/documents/suca/evaluation_guide.pdf

Would have Installed without Program	Already Ordered or Installed	Same Efficiency	Would have Installed All of the Measures	Planning to Install Soon	Already in Budget	Pattern	Freeridership Score
Yes	Partial	x	x	x	x	YesPartial	100.00%
Yes	Yes	x	x	x	x	YesYes	100.00%
Partial	Yes	x	x	x	x	PartialYes	100.00%
No	x	x	x	x	x	No	0.00%
Partial	No	x	x	x	x	PartialNo	0.00%
Partial	Partial	x	x	x	x	PartialPartial	25.00%
Yes	No	No	x	x	x	YesNoNo	0.00%
Yes	No	Partial	No	No	Yes	YesNoPartialNoNoYes	0.00%
Yes	No	Partial	No	No	Partial	YesNoPartialNoNoPartial	0.00%
Yes	No	Partial	No	No	No	YesNoPartialNoNoNo	0.00%
Yes	No	Partial	No	Partial	Yes	YesNoPartialNoPartialYes	0.00%
Yes	No	Partial	No	Partial	Partial	YesNoPartialNoPartialPartial	0.00%
Yes	No	Partial	No	Partial	No	YesNoPartialNoPartialNo	0.00%
Yes	No	Partial	No	Yes	Yes	YesNoPartialNoYesYes	12.50%
Yes	No	Partial	No	Yes	Partial	YesNoPartialNoYesPartial	0.00%
Yes	No	Partial	No	Yes	No	YesNoPartialNoYesNo	0.00%
Yes	No	Partial	Partial	No	Yes	YesNoPartialPartialNoYes	0.00%
Yes	No	Partial	Partial	No	Partial	YesNoPartialPartialNoPartial	0.00%
Yes	No	Partial	Partial	No	No	YesNoPartialPartialNoNo	0.00%
Yes	No	Partial	Partial	Partial	Yes	YesNoPartialPartialPartialYes	0.00%
Yes	No	Partial	Partial	Partial	Partial	YesNoPartialPartialPartialPartial	0.00%
Yes	No	Partial	Partial	Partial	No	YesNoPartialPartialPartialNo	0.00%
Yes	No	Partial	Partial	Yes	Yes	YesNoPartialPartialYesYes	12.50%
Yes	No	Partial	Partial	Yes	Partial	YesNoPartialPartialYesPartial	0.00%
Yes	No	Partial	Partial	Yes	No	YesNoPartialPartialYesNo	0.00%
Yes	No	Partial	Yes	No	Yes	YesNoPartialYesNoYes	0.00%
Yes	No	Partial	Yes	No	Partial	YesNoPartialYesNoPartial	0.00%
Yes	No	Partial	Yes	No	No	YesNoPartialYesNoNo	0.00%
Yes	No	Partial	Yes	Partial	Yes	YesNoPartialYesPartialYes	12.50%
Yes	No	Partial	Yes	Partial	Partial	YesNoPartialYesPartialPartial	0.00%
Yes	No	Partial	Yes	Partial	No	YesNoPartialYesPartialNo	0.00%
Yes	No	Partial	Yes	Yes	Yes	YesNoPartialYesYesYes	25.00%
Yes	No	Partial	Yes	Yes	Partial	YesNoPartialYesYesPartial	12.50%
Yes	No	Partial	Yes	Yes	No	YesNoPartialYesYesNo	0.00%
Yes	No	Yes	No	No	Yes	YesNoYesNoNoYes	0.00%
Yes	No	Yes	No	No	Partial	YesNoYesNoNoPartial	0.00%
Yes	No	Yes	No	No	No	YesNoYesNoNoNo	0.00%
Yes	No	Yes	No	Partial	Yes	YesNoYesNoPartialYes	0.00%
Yes	No	Yes	No	Partial	Partial	YesNoYesNoPartialPartial	0.00%
Yes	No	Yes	No	Partial	No	YesNoYesNoPartialNo	0.00%
Yes	No	Yes	No	Yes	Yes	YesNoYesNoYesYes	0.00%
Yes	No	Yes	No	Yes	Partial	YesNoYesNoYesPartial	0.00%
Yes	No	Yes	No	Yes	No	YesNoYesNoYesNo	0.00%
Yes	No	Yes	Partial	No	Yes	YesNoYesPartialNoYes	0.00%
Yes	No	Yes	Partial	No	Partial	YesNoYesPartialNoPartial	0.00%
Yes	No	Yes	Partial	No	No	YesNoYesPartialNoNo	0.00%
Yes	No	Yes	Partial	Partial	Yes	YesNoYesPartialPartialYes	12.50%
Yes	No	Yes	Partial	Partial	Partial	YesNoYesPartialPartialPartial	0.00%
Yes	No	Yes	Partial	Partial	No	YesNoYesPartialPartialNo	0.00%
Yes	No	Yes	Partial	Yes	Yes	YesNoYesPartialYesYes	25.00%
Yes	No	Yes	Partial	Yes	Partial	YesNoYesPartialYesPartial	12.50%
Yes	No	Yes	Partial	Yes	No	YesNoYesPartialYesNo	0.00%
Yes	No	Yes	Yes	No	Yes	YesNoYesYesNoYes	0.00%
Yes	No	Yes	Yes	No	Partial	YesNoYesYesNoPartial	0.00%
Yes	No	Yes	Yes	No	No	YesNoYesYesNoNo	0.00%
Yes	No	Yes	Yes	Partial	Yes	YesNoYesYesPartialYes	25.00%
Yes	No	Yes	Yes	Partial	Partial	YesNoYesYesPartialPartial	12.50%
Yes	No	Yes	Yes	Partial	No	YesNoYesYesPartialNo	0.00%
Yes	No	Yes	Yes	Yes	Yes	YesNoYesYesYesYes	50.00%
Yes	No	Yes	Yes	Yes	Partial	YesNoYesYesYesPartial	25.00%
Yes	No	Yes	Yes	Yes	No	YesNoYesYesYesNo	12.50%

The Freeridership Designation

If customers both did not know about the measure before hearing about the program and had no plans to install the measure, they are not freeriders. Likewise, if they knew about the program, but had no plans to install the measure, they are not freeriders. Customers who indicated they would have installed the measure without the program or had already installed the measure when they learned of the program are 100-percent freeriders.

Customers can also be partial freeriders. Partial scores are assigned to customers that indicated a likelihood that they would have installed the measure without the program, but that the program had some influence over the timing of their decision, the level of efficiency they would have chosen or the number of measures they would have chosen.

FINANSWER EXPRESS® NON-LIGHTING INCENTIVE PROCESS

