Evaluation Report for Utah's Recommissioning Program (PY 2012-2013)

Prepared for:
Rocky Mountain Power

Prepared by:

Navigant Consulting, Inc.
1375 Walnut Street
Suite 200
Boulder, CO 80302

303.728.2500
www.navigant.com

EMI Consulting
83 Columbia Street
Suite 400
Seattle, WA 98104

206.621.1160
www.emiconsulting.com

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Table of Contents

NAVIGANT

List of Figures and Tables

Figures:

Tables:

NAVIGANT

Executive Summary

This report describes the findings from Navigant's impact and process evaluation of Utah's Recommissioning program years 2012 through 2013 (PY 2012-2013), including program- and project-level gross and net realization rates, program cost-effectiveness results, and feedback from program participants concerning satisfaction and areas for improvement for the program as a whole. These evaluation results generated recommendations for improving program processes, methods, and delivery as Recommissioning transitions to the *wattsmart* Business program.

Program Overview

The Recommissioning program offered engineering services and incentives to commercial and industrial (C&I) customers in Utah for implementation of recommissioning measures (RCMs). The RCMs were no-cost and low-cost actions and measures intended to help restore a facility's operating characteristics to its "as designed" state.[1] Rocky Mountain Power project managers and an established network of Recommissioning Service Providers (RSP) implemented the program under contract with Rocky Mountain Power. The program offerings include the following:

- A vendor-neutral, recommissioning investigation analysis to identify recommissioning opportunities
- Financial incentives for identified recommissioning measures with a simple payback greater than one year
- Verification of savings from recommissioning measures implemented by the customer

On July 1, 2013, Rocky Mountain Power changed the Recommissioning program substantially in order to offer varying levels of energy management services to its C&I customers, and rebranded the program as Energy Management Services under the *wattsmart* Business program. Projects completed in 2013 fall into the 2013 program year for this evaluation.

Evaluation Objectives

This evaluation addressed the following objectives:

- To verify the annual and combined 2012-2013 gross and net energy and demand impacts of Rocky Mountain Power's Recommissioning program
- To review the effectiveness of program operations, highlight achievements, and identify opportunities for process improvements

[1] Capital improvements to the facility or its existing equipment, or equipment installed as part of new construction projects, may be eligible under other Utah energy efficiency programs.

» To characterize participant and near-participant[2] motivations

» To perform cost-effectiveness calculations on evaluated results for each year evaluated and for the complete program cycle

Program Impact Evaluation

The impact evaluation of Rocky Mountain Power's Recommissioning program performed the following activities:

» Quantifying the impacts of all measures and activities on annual gross energy consumption while accounting for any interactions among technologies;

» Establishing post-implementation performance for installed measures and activities; and

» Explaining discrepancies between the results of this study and the reported savings estimates.

Evaluation metrics and parameters reported through this effort include:

» Gross program demand and energy savings estimates and realizations rates for recommissioning projects;

» Energy usage profiles for C&I technologies obtained through Measurement & Verification (M&V) activities; and

» Net program savings estimates and realization rates as a function of both spillover and free-ridership.

Summary of Impact Findings

The evaluation team conducted a combination of in-depth project file reviews, spreadsheet reviews, weather-normalized utility meter analysis, and interviews with facility staff to determine the evaluated savings for each project sampled during the 2012-2013 evaluation period. The verification sample included 10 of the 12 projects that participated in the 2012-2013 program years. The 10 projects represent 94 percent of reported program savings and achieved a 90/10.4 confidence/precision at the program level.

[2] Participants are those customers who completed a project with a Rocky Mountain Power C&I program in 2012 or 2013. Near-participants are those who began a project with a Rocky Mountain Power C&I program in 2012 or 2013, but did not complete their projects. No non-participants were representative of this program in 2012 or 2013.

The 2012-2013 gross program demand savings realization rate was 166 percent and the gross program energy savings realization rate was 109 percent. Table ES-1 provides the *program-level* reported and evaluated gross kilowatt (kW) and gross kilowatt-hour (kWh) realization rates at the customer meter.

Table ES-1. Realization Rates for Utah Recommissioning

Program Year	Total Projects	Program Reported kW	Gross Program Evaluated kW	Gross Program kW Realization Rate	Program Reported kWh	Gross Program Evaluated kWh	Gross Program kWh Realization Rate
2012	5	158	180	*114%*	1,333,095	1,058,108	*79%*
2013	7	63	187	*297%*	1,826,875	2,385,247	*131%*
2012-2013	12	221	367	*166%*	3,159,970	3,443,355	*109%*

Net-to-Gross Ratio

The process evaluation team calculated an average NTGR of 1.0 for the Recommissioning program years 2012-2013. Section 4.1.3 provides further detail on the NTGR calculation at the project and program levels.

Cost Effectiveness

The evaluation team used a cost-effectiveness model, calibrated and updated with Rocky Mountain Power's input parameters, to produce results for five primary cost tests: PacifiCorp's Total Resource Cost test (PTRC), Total Resource Cost test (TRC), Utility Cost Test (UCT), Rate Impact Measure test (RIM), and the Participant Cost Test (PCT), for calculating the program's benefit-cost ratios. Table ES-2 provides the cost-effectiveness results for the five cost tests over the 2012 through 2013 evaluated program years.

Table ES-2. UT Recommissioning Cost-Effectiveness Results – 2012 through 2013 (1.0 NTG)

Benefit-Cost Test Performed	Evaluated Gross Savings (kWh)	Evaluated Net Savings (kWh)	Evaluated Costs	Evaluated Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	3,443,355	3,443,355	$734,311	$2,493,835	3.40
Total Resource Cost Test (TRC)	3,443,355	3,443,355	$734,311	$2,267,122	3.09
Utility Cost Test (UCT)	3,443,355	3,443,355	$640,737	$2,267,122	3.54
Rate Impact Test (RIM)	3,443,355	3,443,355	$2,366,730	$2,267,122	0.96
Participant Cost Test (PCT)	3,443,355	3,443,355	$122,008	$1,754,427	14.38

Process Evaluation

The process evaluation sought to characterize the Recommissioning program from the perspective of program staff, participants, and near-participants in order to identify both existing strengths and areas for refinement that may better serve the Utah C&I market in future years.

Between July and September of 2014, the evaluation team interviewed three program staff members, four participants, and two near-participants of the Utah Recommissioning program. The research team used the data from these interviews to develop overall findings for the Recommissioning program for the 2012-2013 program years. This section reports the high-level key findings.

- **The program worked well for participants, but near-participants felt that Rocky Mountain Power dropped their projects in error.** All four participants were satisfied or very satisfied with their overall experience and with individual components of the program. In contrast, both of the near-participants were dissatisfied with the program as they felt PacifiCorp dropped their projects erroneously. Both expressed wanting to complete their projects had they not been dropped.
- **Participants were satisfied with the outcomes of their projects, kept their equipment in operation, and achieved expected energy savings.** Participants reported high satisfaction with the measures pursued through the program, and indicated that any equipment installed was still in operation. They also indicated that they thought they were achieving expected savings both from energy use and maintenance reductions.
- **Previous participation was high among both participants and near-participants.** All six participant and near-participant interviewees reported participating regularly in Rocky Mountain Power energy efficiency programs for at least the last three years, and typically five or more years.
- **No free-ridership or spillover existed for Recommissioning program participants.** Participants reported that they would not have identified many or all of the measures they pursued without the Recommissioning Investigation Report and they would not have pursued a recommissioning study on their own. However, the verified savings incentive had little to no influence on participants' decisions to pursue measures. All four participants reported that incentives had little to no effect on their decision to pursue no- and low-cost engineering upgrades. Participants also identified additional capital measures through recommissioning and pursued these measures through other Rocky Mountain Power programs whenever possible, so the team identified no spillover.

Program Evaluation Recommendations

The evaluation team offers the following recommendations, in no particular order, to improve future evaluation efforts as the Recommissioning program transitions to the *wattsmart* Business program.

- **Recommendation 1. Account for kW demand savings on all applicable projects.** Several recommissioning projects reported zero kW demand savings; however, the evaluation did find kW demand savings for a few of these projects. PacifiCorp should ensure that the implementer includes average demand savings for all applicable projects.
- **Recommendation 2. Improve customer communications.** Both near-participants interviewed felt that Rocky Mountain Power dropped or canceled their projects due to errors made by the utility. Continually reaching out to customers will either prevent incorrect cancelations, or provide additional explanation on rejected applications and improve customer understanding and satisfaction. With the launch of *wattsmart* Business and the reorganization of the Recommissioning program into Energy Management, PacifiCorp has acted to improve customer communication through the implementation of a single, general application for Energy Management and the introduction of new delivery channel partners, to help manage communications among unmanaged accounts, which should limit or reduce project cancellation errors in the future.

1 Introduction

This section provides a description of Utah's Recommissioning program, along with a discussion of the underlying program theory and logic model depicting the activities, outputs, and desired outcomes of the program.

1.1 Program Description

The Rocky Mountain Power Recommissioning program in Utah seeks to reduce electrical energy consumption and peak demand requirements of existing electrical equipment in commercial and industrial (C&I) facilities through systematic evaluation of systems and implementation of low-cost measures. The third-party program administrator, Nexant, Inc. delivered the program from 2012 to 2013.

The program covers the cost of engineering studies to recommission existing buildings. Utah non-residential customers are eligible for the Recommissioning program if they meet the following requirements:

- Electric service on rate schedule 6, 6A, 6B, 8, 9, 9A, 10, 21, 23 or 23B
- Minimum summer peak demand of 300 kilowatts (kw) in the last 12 months
- Willingness to commit to spending $10,000 to implement identified measures within a project that has a combined estimated simple payback of one year or less

The program administrator reviews all customer applications to the Recommissioning program ensuring savings occurs within the program's intended low- and no-cost parameters, and redirects capital-intensive applications to more appropriate Rocky Mountain Power programs, such as Energy FinAnswer or FinAnswer Express. For smaller facilities, where the engineering costs would not be cost effective to achieve the available savings, Rocky Mountain Power directs the customer to a recommissioning toolkit to support customer recommissioning outside of the program.

Approved applications receive a contracted engineer, known as a Recommissioning Service Provider (RSP), to conduct the recommissioning study.[3] A program representative and the selected RSP go to the customer's facility to meet with management and facilities staff on site. The initial visit provides an opportunity to verify application materials and to scope the recommissioning project. The program administrator will assess the feasibility of the project based on the scoping and the customer will consider whether they are still interested; if both determine that the project is worthwhile, the project will move forward. The RSP completes a more detailed energy analysis of the project, writes up findings into a Recommissioning Investigation Report, and presents results to the customer. The customer considers the recommended measures, costs, and potential savings that are included in the Recommissioning Investigation Report and determines whether to move forward with some or all of the

[3] Engineers are pre-qualified to be part of a pool of potential Recommissioning Service Providers who are able to contract for engineering work with this program.

recommended actions. After the actions are completed, the customer notifies Rocky Mountain Power and the RSP comes out to the site to verify savings. In select cases, measures completed through the Recommissioning program are eligible for an incentive and the verification of savings will support cost-recovery.

1.2 Program Changes from 2012 to 2013

The Recommissioning program offered engineering services and incentives to commercial and industrial (C&I) customers in Utah for implementation of recommissioning measures (RCMs). The RCMs were no-cost and low-cost actions and measures intended to help restore a facility's operating characteristics to its "as designed" state.[4] Rocky Mountain Power project managers and an established network of Recommissioning Service Providers (RSP) implemented the program under contract with Rocky Mountain Power. The program offerings included the following:

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- Verification of savings from recommissioning measures implemented by the customer.

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1.3 Program Participation

From 2012 to 2013, Rocky Mountain Power completed 12 Recommissioning program projects at nine unique customer sites in Utah.[5]

1.4 Program Theory and Logic Model

Program logic models depict the primary program activities, actions required to implement the program, the outputs expected to result from each activity, and the expected short-, mid-, and long-term outcomes of those activities. This includes marketing, participant recruitment, and training, among others. The *outputs* depict tangible, tracked, or tallied "products" resulting from each primary activity (i.e., marketing materials, training documents, and databases of recruited participants). *Outcomes* represent the intended results of successful deployment of the identified activities.

[4] Capital improvements to the facility or its existing equipment, or equipment installed as part of new construction projects, may be eligible under other Utah energy efficiency programs.

[5] The Rocky Mountain Power participant data showed a total of eight participants; however, one interviewee on the *near-participant* list reported completing the project through the Energy Management Services portion of the *wattsmart* Business program and reclassified as a ninth participant.

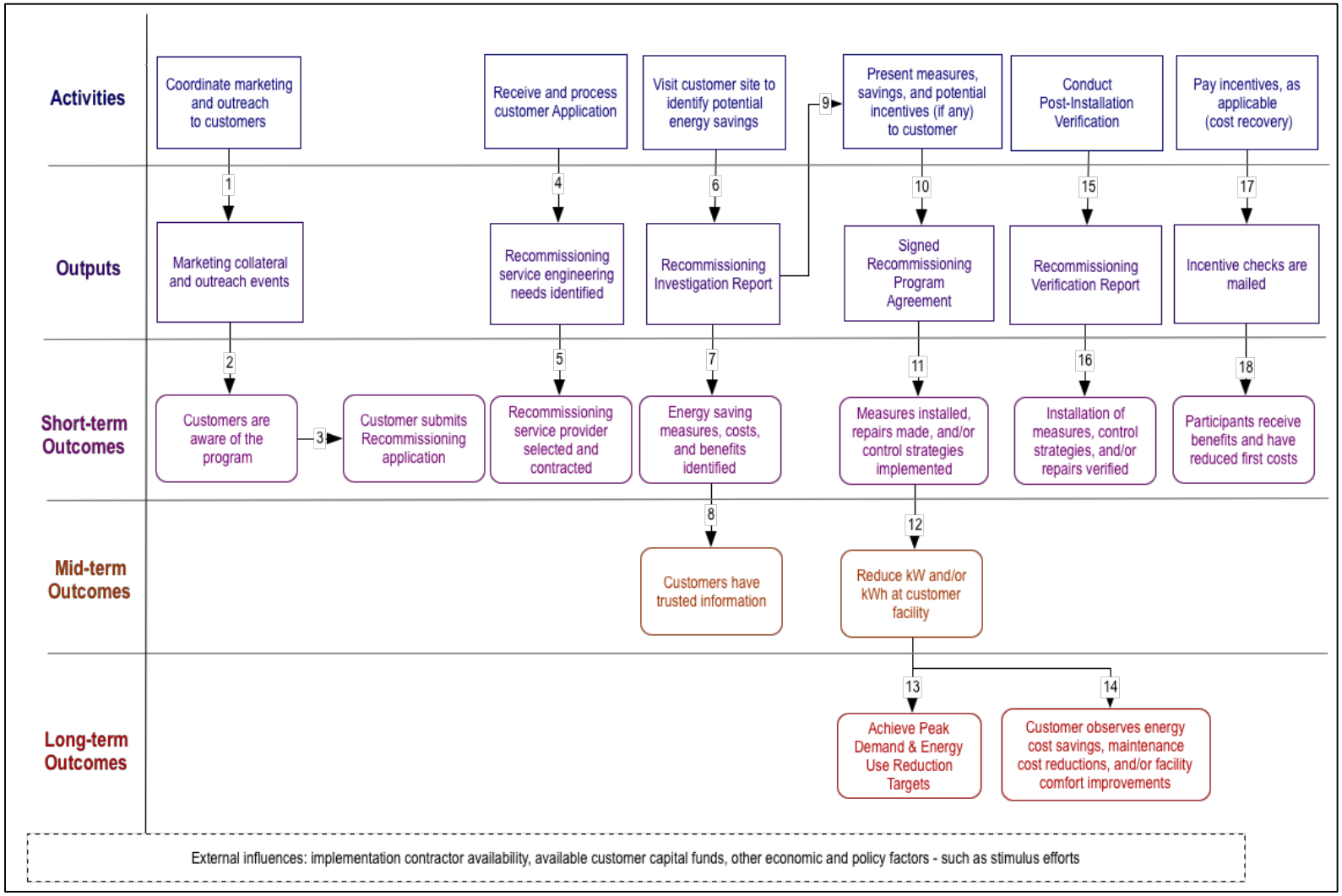
Developing a logic model that clearly provides the theory of action and change is an important step in evaluation, allowing the evaluator and program actors to see inside the program "black box."[6] Program logic models provide a framework for an evaluation by highlighting key linkages between program activities and expected outcomes. The process and impact evaluations focus on these linkages, particularly those on the critical path to achieving savings goals. The evaluation identifies properly working linkages in the program logic model, as well as weak or broken linkages which could cause program shortfalls in achieving the intended short, mid, or long-term outcome(s).[7] With this foundation, the evaluation team can then make informed choices related to the prioritization and focus of evaluation resources. The evaluation team reviewed program documentation and spoke with program management and implementers to verify the underlying theory for the Recommissioning program articulated in the Logic Model developed in 2011 (Figure 1).[8]

[6] Funnell, Sue and Patricia Rogers. 2011. Purposeful Program Theory: Effective Use of Theories of Change and Logic Models. John Wiley & Sons.

[7] Section 4.3, Question 3 provides more specifics on the logic model review.

[8] Appendix B shows the updated logic model for the 2013 Recommissioning program, now entitled "Energy Management Services," while Appendix C provides the logic model for the broader *wattsmart* Business program.

Figure 1. Recommissioning Logic Model (2011)



The Recommissioning program is designed to provide specific information about how to improve the energy efficiency performance of specific buildings in order to overcome the barrier of "lack of trusted information."[9] Linkages within the program logic are described here with numbers related to those shown in the logic model figure.

1. Rocky Mountain Power and Nexant coordinate marketing efforts.
2. Customers become aware of the program through marketing efforts.
3. Customers submit a Letter of Intent (program application). Nexant receives and reviews applications.
4. Nexant identifies the recommissioning project engineering needs.
5. Nexant selects a Recommissioning Service Provider (RSP) from a list of pre-qualified Energy Engineering Resources and contracts with them to do the project.
6. The RSP visits the customer's facility, collects building information, and develops a Recommissioning Plan. Nexant and Rocky Mountain Power review the initial Recommissioning Plan, and Rocky Mountain Power authorizes further investigation of selected projects. The RSP conducts detailed analysis of the selected projects and produces cost and savings estimates.
7. The analysis results in a Recommissioning Investigation Report.
8. The Recommissioning Investigation Report identifies effective recommissioning measures along with costs and savings. The customer can rely on this information to make decisions, reducing information barriers.
9. The report and any possible incentives are presented to the customer. An agreement is reached between Rocky Mountain Power and the customer on which measures to implement.
10. The customer signs an agreement for agreed-upon measures.
11. Recommissioning measures are implemented either by the RSP or another independent contractor.
12. Recommissioning measures reduce demand and/or energy consumption at the facility.
13. Reduced demand and/or energy consumption contribute to meeting annual program targets.
14. Recommissioning measures also improve equipment performance and reduce maintenance costs. Recommissioning measures may improve customer comfort levels in the facility.
15. The RSP verifies proper installation of measures, proper implementation of new control strategies, and proper repairs.
16. A Recommissioning Verification Report is submitted to Nexant. Nexant reviews the verification report and notifies Rocky Mountain Power. Verification ensures that expected savings occur.
17. If incentives were agreed upon as part of the recommissioning, Rocky Mountain Power processes incentives after learning of verification.
18. Incentive checks are mailed. Incentives reduce customer costs for the recommissioning project.

[9] 'Lack of trusted information' refers to the difficulty non-residential customers have in identifying engineering expertise that meets their unique process or facility needs.

The process evaluation team compared actual program outcomes with the outcomes expected in the logic model by identifying indicators for each expected outcome. The process evaluation team sourced the indicator data either from directly observable program tracking data or other archives, or through analysis of survey or interview responses. Table 1 identifies these indicators and corresponding data sources.

Table 1. Indicators and Data Sources for Program Outcomes

Outcome	Indicator	Data Source
Short-term Outcomes		
Customers are aware of the program	Non-participant awareness	Not evaluated; eligible non-participants cannot be identified
Customer submits recommissioning application	Application in project file; letter of intent (LOI) or application date in program tracking data	Program tracking data; customer interviews
Recommissioning Service Provider selected and contracted	Contracts; engineers identified in program tracking data	Project files; program tracking data; RSP interviews
Energy saving measures, costs, and benefits identified	Recommissioning Investigation Report includes measures, costs and benefits	Project files; customer interviews; RSP interviews
Measures installed, repairs made, and/or control strategies implemented	Final inspection report; invoices	Project files; customer interviews; RSP interviews
Installation of measures, control strategies, or repairs verified	Verification in project file	Project files; RSP interviews
Customers receive benefits and have reduced first costs	Customers receive benefits, as applicable	Cost-recovery in program tracking data; Customer interviews
Mid-term Outcomes		
Customers have trusted information	Customers find technical assistance valuable	Customer interviews
Reduce kW and/or kWh at customer facility	Customers realize expected savings	Customer surveys; program claimed savings
Long-term Outcomes		
Achieve peak demand and energy use reduction targets	Rocky Mountain Power meets targets with program claimed savings	Program tracking data
Customers observe energy cost savings, maintenance cost reductions, and/or facility comfort improvements	Customers realize benefits	Customer interviews

2 Methodology

The following section details the impact and process methods used for evaluating Utah's Recommissioning program.

2.1 Impact Methodology

This section summarizes the impact evaluation methods used to characterize program specific demand and energy impacts for C&I recommissioning measures and develop project- and program-level realization rates for the Recommissioning program. Findings provide Rocky Mountain Power staff with the feedback they need to improve the program and to meet the objectives of Utah's Public Service Commission by providing an independent quantitative review of program achievements.

Impact study goals included:

- Quantifying the impacts of all measures and activities on annual gross energy consumption while accounting for any interactions among technologies;
- Establishing post-implementation performance profiles for installed measures and activities; and
- Explaining discrepancies between the results of this study and the reported savings estimates.

Evaluation metrics and parameters reported through this study include:

- Gross program demand and energy savings estimates and realizations rates for recommissioning projects;
- Energy usage profiles for C&I technologies obtained through Measurement & Verification (M&V) activities; and
- Net program savings estimates as a function of both spillover and free-ridership.

See section 3 for gross and net impact results.

2.1.1 Evaluation Approach

Recommissioning applies to the following measures:

- Changing schedules for air handlers and variable air volume (VAV) boxes
- Changing Supply Air Temperature (SAT) setpoints
- Changing Supply Air Flows
- Changing static pressure setpoints
- Changing condenser water and chilled water setpoints
- Repairing valves and dampers

- » Changing schedules for refrigerated case lighting and overhead store lighting
- » Adding & adjusting refrigeration floating head pressure control
- » Adding & adjusting refrigeration floating suction pressure control
- » Anti-sweat heater control adjustments
- » Other no-cost/low-cost measures

It is inherently difficult to estimate savings from these types of measures due to the uncertainty in equipment loading and controls operation. The evaluation team paid special attention to any available baseline data, as well as current operational characteristics of any recommissioned equipment, to accurately estimate energy savings from this program. The team typically used baseline data from the project file detailing operation prior to the recommissioning.

The Recommissioning program included only custom projects. The most common evaluation method employed for these projects involved weather-normalized utility meter analysis for one year before and after measure implementation. In addition, the team used metering from individual equipment power consumption or facility data showing records of equipment operation. The majority of the projects had electronic paper copies of detailed spreadsheet calculations created by the RSP. These spreadsheets calculated savings based on-site measured data, trending data from the energy management system (EMS), and engineering estimates. The RSP used both pre- and post-measure data to verify savings from these calculations.

2.1.2 Project File Review

A thorough review of the recommissioning project files allowed the evaluation team to understand and verify the accuracy of the recommissioning energy savings calculation methodology and develop M&V plans for projects included in the sample. Project file review included characterizing data gaps, identifying consistency issues, and the verifying the accuracy of information used to estimate project-level savings.

2.1.3 Sampling Framework Development

The evaluation team achieved a sample with a 90/10.4 confidence/precision at the program level for Utah's Recommissioning program.[10] The team adopted a *Ratio Estimation* approach to sampling which achieved increased precision and reliability by taking advantage of a relatively stable correlation between an auxiliary variable and the variable of interest (i.e., the ratio of actual savings to program reported savings). This approach served to reduce the overall coefficient of variation within the population.

Per the 2004 California Evaluation Framework,[11] sample sizes developed using the Stratified Ratio Estimation approach comply with the following equation:

[10] The evaluation team planned for 90/10 by program and state.

[11] TecMarket Works, The California Evaluation Framework, June 2004

$$n = \frac{\left(\frac{Z * \varepsilon}{rp}\right)^2}{1 + \left(\frac{Z * \varepsilon}{rp}\right)^2 / N}$$

Where:

n = Sample Size
Z = Z-Score for Desired Confidence Level
ε = Assumed Error Ratio (0.5 Based on Prior Evaluation Studies)
rp = Desired Relative Precision
N = Population Size

Table 2 provides an overview of the impact evaluation framework representing the reported Recommissioning program savings for the 2012-2013 program years.

Table 2. Overview of the Utah Recommissioning Impact Evaluation Sampling Frame

Projects in the 2012-2013 Program Year	Program Population Savings (kWh)	Projects in Evaluation Sample	Sample Savings (kWh)	% of Population Savings Verified
12	3,159,970	10	2,966,370	94%

2.1.4 Sample Draw Results

The evaluation team evaluated 10 projects that totaled 2,966 MWh in reported energy savings representing 94 percent of the total reported savings for the entire Recommissioning program. The team used the Sample Framework and stratified the population into two categories: Large, with reported savings greater than 300 MWh, and Medium to Small with reported savings less than 300 MWh.[12] Table 3 provides a summary of the sampled sites within each stratum.

Table 3. Recommissioning Project Sample Details

Strata	Measure	Number of Projects	Reported MWh Savings*	Evaluated MWh Savings	IPMVP Option
1	Recommissioning	3	1,684	1,833	A/B/C
2	Recommissioning	7	1,283	1,400	A/B/C
	Total	10	2,966	3,232	-

**Megawatt hours are rounded. Sample is 94 percent of total program reported MWh savings*

[12] The evaluation team determined the strata threshold of 300 MWh through an iterative process with a confidence/precision target of 90/10.

2.1.5 Gross Energy & Demand Realization Rate Calculation

The impact evaluation team combined gross energy and demand realization rates for each project in the impact evaluation sample to form *program-level* realization rates for each program year. The team researched the following technical issues in order to accurately determine *gross* program impacts and realization rates:

- The appropriateness of the pre-installation technology performance baseline via project file and secondary literature review;
- Installation and quantity of claimed recommissioning measures;
- Baseline and measure performance characteristics of the measures installed, and revision of performance variables (e.g., operating hours) as needed;
- Load shapes for the energy efficiency measures installed through the programs; and
- Demand savings (kW) and energy savings (kWh) impacts of the recommissioning measures installed for projects sampled by calculating case weights for each evaluated project; the case weight is simply the number of projects in the population in each stratum divided by the number of projects in the final sample in the corresponding stratum.[13]

The program-level realization rate is the ratio between the product of case weights and *verified* savings estimates and the product of case weights and *reported* savings estimates; illustrated in the following equation.

$$Program\ Realization\ Rate_i = \frac{\sum_{i=1}^{n} Case\ Weight_i \times Verified\ Savings\ Estimate_i}{\sum_{i=1}^{n} Case\ Weight_i \times Reported\ Savings\ Estimate_i}$$

See section 3 for energy and demand realization rate results.

2.1.6 Cost Effectiveness

The cost effectiveness of utility-funded programs in the state are typically analyzed using cost-effectiveness tests prescribed by the California Standard Practice Manual.[14] For the purposes of this evaluation, Rocky Mountain Power specifically required the following cost-effectiveness tests:

- PacifiCorp Total Resource Cost Test (PTRC)
- Total Resource Cost Test (TRC)
- Utility Cost Test (UCT)
- Ratepayer Impact (RIM)

[13] The TecMarket Works Team, The California Evaluation Framework, Prepared for the California Public Utilities Commission and the Project Advisory Group, June 2004

[14] The California Standard Practice Manual is an industry-accepted manual identifying cost and benefit components and cost-effectiveness calculation procedures. Definitions and methodologies of these cost-effectiveness tests can be found at http://www.energy.ca.gov/greenbuilding/documents/background/07-J_CPUC_STANDARD_PRACTICE_MANUAL.PDF.

» Participant Cost Test (PCT)

The evaluation team worked with Rocky Mountain Power to understand the PTRC and construct a tool that calculates the PTRC at measure, program, and portfolio level. Table 4 presents descriptions of generally accepted cost-effectiveness tests.

Table 4. Descriptions of Cost-Effectiveness Tests[15]

Test	Acronym	Key Question Answered	Summary Approach
Participant cost test	PCT	Will the participants benefit over the measure life?	Comparison of costs and benefits of the customer installing the measure
Utility cost test	UCT	Will utility revenue requirements increase?	Comparison of program administrator costs to supply-side resource costs
Ratepayer impact measure[16]	RIM	Will utility rates increase? Considers rate impacts on all participants, and potential for cross-subsidization.	Comparison of program administrator costs and utility bill reductions to supply-side resource costs
Total resource cost test	TRC	Will the total costs of energy in the utility service territory decrease?	Comparison of program administrator and customer costs to utility resource savings
PacifiCorp Total Resource Cost Test	PTRC	Will the total costs of energy in the utility service territory decrease when a proxy for benefits of conservation resources is included?	Comparison of program administrator and customer costs to utility resource savings including 10% benefits adder

Section 3.3 provides the benefit-cost results and findings for each of the evaluated program years.

2.2 *Validity and Reliability of Impact M&V Findings*

The evaluation team identified several sources of uncertainty associated with estimating the impacts of the Recommissioning program. Examples of such sources include:

» Sample selection bias

» Physical measurement bias (e.g., meter bias, sensor placement, non-random selection of equipment or circuits to monitor)

» Engineering analysis error (e.g., baseline construction, engineering model bias, modeler bias)

[15] Navigant modified Table 2-2 from: "*Understanding Cost-effectiveness of Energy efficiency Programs: Best Practices, Technical Methods, and Emerging Issues for Policy – Makers*" NAPEE, November 2008. http://www.epa.gov/cleanenergy/documents/suca/cost-effectiveness.pdf

[16] The RIM test is a measure of the difference between the change in total revenues paid to a utility and the change in total costs to a utility resulting from an energy efficiency program. If retail rates are higher than marginal costs, few programs that significantly reduce energy consumption will pass this test.

The evaluation team remained cognizant of these issues throughout the evaluation process and adopted methods to reduce the uncertainty arising from these sources, thereby improving the validity and reliability of study findings.

2.2.1 Reducing Uncertainty from Sample Selection Bias

Evaluators recognize the problem that selection bias creates for program evaluation, even when prescribing to impact evaluation sample design protocols, if the selected projects did not choose to participate in the evaluation effort. In an effort to minimize non-response bias, the evaluation team established and implemented the following recruitment protocols:

- Notified participants as early as possible in the evaluation process;
- Accurately characterized M&V activities and the duration of the evaluation process; and
- Maintained brief and frequent communication with participants and informed them of any changes/additions to the evaluation effort.

The intent of these protocols was to give each participant ample time to prepare documentation and secure the appropriate resources to support the evaluation effort. Brief and frequent contact with each participant ensured the participant remained engaged.

2.2.2 Reducing Uncertainty of Physical Measurement Error

Inevitable error occurs with all physical measurement. For the impact evaluation of the Recommissioning program, the evaluation team obtained the majority of the measurements and site data from the EMSs through trending and screen prints. Temperature and static pressure setpoints came from programming sequences or from EMS interface computer screens and read independently of sensor accuracy. The team also read instantaneous temperatures, static pressures, damper positions, and Variable Frequency Drive frequencies from the EMS interface screen or trending data. For difficult measurements, that at times interacted with other measurements, the team used rational assumptions and sound engineering calculations, along with the trending and measured data to obtain results, and thoroughly reviewed all calculations, assumptions, and input parameters used by the RSPs to ensure the evaluation accuracy.

2.2.3 Reducing Uncertainty of Engineering Analysis Error

The evaluation team adopted the following protocols to minimize uncertainty from engineering analysis error in this study:

- Peer review of all project analysis findings to ensure the consistent use of methods and assumptions throughout the impact evaluation.
- The evaluation team developed data collection protocols that yielded appropriate inputs into the analysis models and reviewed all field observations with the evaluation team.

2.3 Net-to-Gross Methodology

This section contains a brief summary of the methods used to establish the program-level Net-to-Gross (NTG) ratio. The process evaluation team used participant reported responses to estimate the Recommissioning program's influence on decisions to implement an energy efficiency technologies and energy efficiency operations, as well as to understand what would have occurred in the absence of the program. This estimation included an examination of three key characteristics of energy efficiency upgrade projects: its timing, its level of efficiency, and its scope (i.e., the size of the project), which is purposed with identifying evidence of "free-ridership," where savings are generated through efficiency projects occurring without the influence of the program. The evaluation team then measured the estimated Recommissioning program influence on the broader market as an indirect result of program activities, often referred to as "spillover." This represents the amount of savings that occurred because of the program's influence, but not currently claimed by any Rocky Mountain Power program. Spillover savings can be broken into two categories: "participant" spillover and "non-participant" spillover. Participant spillover savings occur directly (i.e., program participants install additional energy efficient equipment), while non-participant spillover savings occur indirectly (i.e., market allies install additional energy efficient equipment to customers that choose not to participate because of the program).

Using the following calculation, the team applied the calculated NTG ratio to the program's calculated gross savings estimates in order to come up with net savings results.

$$\textit{Net Program Savings} = \textit{Net-Gross-Ratio} \times \textit{Gross Program Savings}$$

Section 4.1.3 provides the findings from the process evaluation on free-ridership and spillover, while section 3.2 provides the impact evaluation results of net savings using the NTG ratio.

2.4 Process Methodology

This section describes the process evaluation methodology including, a list of research questions, and a high-level overview of data collection and analysis steps.

2.4.1 Overview of Steps in the Process Evaluation

The evaluation team undertook the following activities to meet the objectives of this evaluation:

- **Develop Process Evaluation Research Questions.** The evaluation team and Rocky Mountain Power staff established key process evaluation questions throughout the development of the 2012-2013 evaluation plan
- **Review Program Documentation**. The evaluation team reviewed program documentation, including regulatory filings, brochures, application forms, and websites

» **Develop Logic Model.** The evaluation team worked with program staff to revise the Recommissioning program logic model to reflect changes made due to the development of the 2013 *wattsmart* Business program,[17] included in Appendix A

» **Collect Process Data.** The evaluation team collected process data through interviews with program staff, near-participants, and participants. Web usability studies were also conducted with trade allies and participating customers

» **Analyze and Synthesize Process Data.** The evaluation team assessed the effectiveness of the program processes by analyzing in-depth interview data and web usability study data

2.4.2 Process Evaluation Research Questions

Discussions with program staff and a review of the program theory identified seven overarching research questions to guide the process evaluation:

1. What are the program goals, concept, and design?
2. Do program staff and administrators have the resources and capacity to implement the program as planned? If not, what more is needed?
3. Is the program staff delivering the program in accordance with the logic model?
4. Is the program marketing effective? Specifically, how do customers find out about the programs? How do participants and trade allies get and use information provided on the *wattsmart* Business program website?
5. What is the program influence on participant actions? Specifically, what do participants identify as most important to their projects (i.e. program information, incentive/credit, payback, engineering, their own company goals, etc.)? What would they have done differently without the program?
6. What barriers are preventing customers from taking actions to reduce energy consumption and demand, and which jeopardize program cost effectiveness?
7. Are participants achieving planned outcomes? Specifically, are participants feeling satisfied, keeping their efficient equipment in operation, and exhibiting a greater propensity to install efficient equipment without incentives?

[17] The evaluation team also developed a logic model for the *wattsmart* Business program to show how the theory of this new program, aligns with recommissioning services.

Evaluation staff used a mixed-methods approach to explore these questions including, program documentation review, a web usability assessment, and interviews of program staff, near-participants, and participants. Table 5 shows the seven research questions and associated methods used to answer each.

Table 5. Data Sources to Answer Research Questions

	Q1	Q2	Q3	Q4	Q5	Q6	Q7
Program Documentation Review	X	X	X	X			
Program Staff And Administrator Interviews	X	X	X	X			
Web Usability Assessment				X			
Participant Interviews				X	X	X	X
Near-Participant Interviews				X		X	

2.4.3 Program Documentation Review

The evaluation team reviewed program marketing materials, websites, program manuals, savings measurement tools regulatory filings, annual reports, previous evaluations, and project tracking data to identify how the program is marketed, how trade allies are supported, and how the process for enrollment, administration, and tracking works.

2.4.4 Logic Model Development

Program administrator interviews revealed substantial changes to the 2012-2013 Recommissioning program, including Rocky Mountain Power's rebranding of the program in 2013 as Energy Management Services under the new *wattsmart* Business program. The evaluation team revised the 2011 Recommissioning program logic model to reflect the changes in program theory due to this rebranding and created a logic model to show how Energy Management Services fit into the overall theory behind the new *wattsmart* Business program.

2.4.5 Process Data Collection Activities

Interviews with program staff, participants, and near-participants, in addition to a web usability study supported the development of the program overview and logic model, as well as aided in the evaluation conclusions and recommendations for the Recommissioning program.

2.4.5.1 Program Staff Interviews

The evaluation team interviewed two program managers, one project manager, and four program administrators. The objectives were to:

- Understand the design and goals of the Recommissioning program;
- Understand any program changes that have been implemented in Utah going into the 2012-2013 cycle, and changes occurring during this cycle;

» Follow up on how recommendations from previous evaluation were implemented (or not);

» Support confirmation or revision of the existing program logic model;

» Identify program strengths, weaknesses, and opportunities for improvement from program staff perspective;

» Identify other actionable ideas the program staff hopes to gain from the evaluation.

2.4.5.2 Participant Interviews

The evaluation team conducted in-depth interviews with Recommissioning program participants from the 2012 and 2013 program years. Rocky Mountain Power data showed a total of eight participants, however, one near-participant completed their project through the Energy Management Services portion of the *wattsmart* Business program and was reclassified as a ninth participant although they were a near participant at the end of 2013.[18] The team attempted a census of all nine participants, offered interviewees a $25 Amazon gift card for their contribution in the evaluation, and successfully completed four participant interviews. Table 6 provides a summary of the participant population and final sample counts.

Table 6. Recommissioning Participant Population and Sample

	Population	Respondent Un-Reachable	Respondent Unaware of Program	Interviewed
Participant Database	8	4	1	3
Reclassified from Near-Participant Database	1	N/A	N/A	1
Total	9	4	1	4

The evaluation team designed the interview questions to be open-ended and coded responses following each interview to enable generalized observations and comparisons between interviewees. The team also framed questions in terms of "recommissioning services" rather than the "Recommissioning program" in order to avoid or introduce any confusion regarding the rebranding of the PacifiCorp energy efficiency programs. Two participants reported completing projects under the original Recommissioning program guidelines, one interviewee reported completing the project under a "beta" version of the *wattsmart* Business program, and the final interviewee, previously classified as a near-participant, completed the project in 2014 under the new *wattsmart* Business program guidelines. The interviewer tailored questions to suit these situations as needed.

[18] The respondent's perspective includes the experience of a participant because the evaluation interview was conducted after the project was finished. The project was *not* included in the gross savings estimates due to the 2014 actual completion date.

Participant interview research objectives included:

- Describe how customers come to participate in the program;
- Understand overall customer satisfaction with the program, including (where appropriate) marketing, application materials, inspections, customer service and the incentive or credit;
- Understand program influence on customer actions, including free-ridership and spillover;
- Identify barriers customers are facing that prevent increasing energy efficiency.

2.4.5.3 Near-Participant Interviews

Rocky Mountain Power identified five customers with recommissioning projects listed as "on hold" or "canceled," so the evaluation team conducted in-depth telephone interviews to collect information and understand these "near-participant's" experience with the program. The team attempted a census of the five firms identified as near-participants and offered interviewees a $25 Amazon gift card for their contribution in the evaluation. The team successfully reached three contacts; however, one of these contacts reported completing the listed project through the Energy Management Services portion of the *wattsmart* Business program and moved to the participant population. The resulting sample consisted of two near-participant customers.

The evaluation team designed the interview questions to be open-ended to allow interviewees a chance to describe the nuances of their project and coded responses following each interview to enable generalized observations and comparisons between interviewees.

Near-participant interview research objectives included:

- Characterize near-participant firms;
- Describe how customers came to participate in the program;
- Characterize the current status of projects identified as on hold or canceled;
- Understand overall customer satisfaction with the program while participating;
- Understand what it would take to motivate near-participants to participate;
- Understand barriers preventing customers from investing in energy efficiency.

2.4.6 Process Data Analysis and Synthesis

The evaluation team reviewed all interview response data for missing or erroneous entries before tabulating the frequency of similar responses within categories. After they analyzed data from each data collection activity individually for findings, the evaluation team identified common process findings across activities.

3 Impact Findings

This section summarizes the impact evaluation findings for each project included in the 2012-2013 evaluation sampling framework. The project-level savings estimates informed the overall program-level realization rates for both energy and demand savings. These findings provide Rocky Mountain Power staff with the feedback they need to improve the program and to meet the requirements of the Utah Public Service Commission by providing an independent quantitative review of program achievements.

3.1 Gross kWh and kW Savings

Ten of the 12 recommissioning projects representing 94 percent of the claimed savings make up the sample for verification activities. The 2012-2013 gross program demand savings realization rate was 166 percent, and the gross program energy savings realization rate was 109 percent. Table 7 provides the separate and combined realization rates for the Recommissioning program from 2012-2013.

Table 7. Gross Program-Level Realization Rates Utah's Recommissioning Program

Program Year	Total Projects	Program Reported kW	Gross Program Evaluated kW	Gross Program kW Realization Rate	Program Reported kWh	Gross Program Evaluated kWh	Gross Program kWh Realization Rate
2012	5	158	180	*114%*	1,333,095	1,058,108	*79%*
2013	7	63	187	*297%*	1,826,875	2,385,247	*131%*
2012-2013	12	221	367	*166%*	3,159,970	3,443,355	*109%*

The realization rates for the 2012 program were lower than the realization rates for the 2013 program primarily because there were a couple 2012 projects that had large ex ante savings and low realization rates and there were a couple 2013 projects that had large ex ante savings and high realization rates. In addition, there were a small number of projects in each program year which naturally contributes to a larger variation in results. Sections 3.1.1 through 3.1.5 provide further detail on the individual realization rates.

The realization rates reflect the difference between expected savings at the time of installation and evaluated savings 1-3 years after project completion; however, customers often modified their operating profiles during this time interval for varying reasons not always attributable to program influence. For example, the C&I sector is particularly sensitive to economic changes as production throughput, occupancy, and operating schedules driven by customer demand. Changes in equipment usage also affect the efficiency of the baseline and measures incented through the Recommissioning program. The evaluation team remained cognizant of these factors throughout the impact evaluation and of how they could influence project-level savings. Accordingly, the process evaluation team emphasizes that the aforementioned realization rates are a *snapshot* of program performance in time.

In general, the difference between the evaluated savings and the reported savings as seen in the Verification Reports is due to one or more of the following:

- Conditions have changed since the Verification Report. These include quantity and intensity of energy efficiency improvements;
- Baseline conditions were estimated to be worse than they actually were;
- Energy efficiency measures were not as effective as originally estimated; and
- The evaluation team obtained different facility energy consumption using weather-normalized billing data before and after measure implementation.

In select cases, the evaluation yielded significant differences between the reported and evaluated savings estimates for projects in the impact evaluation sample (Table 8).

Table 8. Demand (kW) and Energy (kWh) Savings for Evaluated Recommissioning Projects

Project ID	Stratum	Year	Reported Savings kW	Evaluated Savings kW	Demand Realization Rate	Reported Savings kWh	Evaluated Savings kWh	Energy Realization Rate
6	1	2013	36	54	149%	763,400	1,186,900	155%
3	1	2012	106	115	109%	488,237	238,018	49%
4	1	2012	18	0	2%	431,900	407,685	94%
7	2	2013	0	24	NA	249,984	203,500	81%
9	2	2013	0	21	NA	244,159	267,908	110%
5	2	2013	27	38	142%	233,661	208,120	89%
2	2	2012	30	23	77%	217,800	203,274	93%
10	2	2013	0	2	NA	188,961	68,322	36%
8	2	2013	0	49	NA	110,110	410,567	373%
1	2	2012	1	31	NA	38,158	37,847	99%
Total			**218**	**357**	**164%**	**2,966,370**	**3,232,141**	**109%**
	Stratum	1	**160**	**169**	**106%**	**1,683,537**	**1,832,604**	**109%**
	Stratum	2	**58**	**188**	**325%**	**1,282,833**	**1,399,538**	**109%**

Realization rates over 1000% or resulting in an indivisible quantity shown as NA

The evaluation team notes the following explanatory factors driving the lower (or higher) realization rates for specific projects through the following considerations.

3.1.1 Adjusting Anti-sweat Heater Controls

One of the sample projects that had a low energy (kWh) realization rate (36 percent) had adjustments made to the anti-sweat heater control setpoints relative to the store's dew-point temperature. The RSP projected 69 percent of energy savings from the reprogramming of anti-sweat heater controls and 25 percent from reducing overhead lighting hours of operation. Based on utility meter analysis, interviews with the customer, and engineering review, the anti-sweat heater control may have only produced about 10 percent of the savings for this particular store. This resulted in reduced savings. The site contact

suggested that the existing anti-sweat heater controls might not have been in as bad of a condition as originally estimated.

3.1.2 Removing Discharge Dampers and Screens from Supply Air Handler Fan

One of the sample projects that had a low energy (kWh) realization rate (49 percent) had discharge dampers and screens removed from four supply air handler fans. The evaluation team performed weather-normalized utility meter analysis on this site, and interviews with the site contact indicated no other changes made to the facility that would affect energy consumption. Savings for these types of measures are highly dependent upon assumed reduction in static pressure. Research from the previous Recommissioning program evaluation indicated that energy savings from similar types of measures are unpredictable.

3.1.3 Overhead Lighting Controls

One project had a high energy (kWh) realization rate (373 percent). The evaluation team performed weather-normalized utility meter analysis on this site, and interviews with the site contact indicated no other changes made to the facility that would affect energy consumption. Based on review of the project files it appears that ex ante savings calculations underestimated the lighting fixture wattages which in turn may have underestimated original savings estimates.

3.1.4 Multiple HVAC Measures Enhanced

One project had a high energy (kWh) realization rate (155 percent), possibly due to enhancement of energy efficiency measures implemented. The evaluation team performed weather-normalized utility meter analysis on this site, however, the site contact indicated that the measures for optimizing the amount of outside air introduced to the building and turning down fan speeds significantly at night and weekends may have produced more savings than originally estimated. In addition, this site implemented improvements to the cooling towers.

3.1.5 Demand Savings

Several projects had reported kW demand savings of zero. The evaluation team produced evaluated kW demand savings for the majority of the projects that reported zero kW demand savings. The evaluation team analyzed the majority of projects through utility meter analysis using weather-normalized demand for pre-retrofit year and post retrofit year, normalized to Typical Meteorological Year (TMY3) data. Subtracting the post average demand from the pre-average demand yields the evaluated demand savings.

The project listed as Project ID 1 in Table 7 had a significantly higher evaluated demand savings relative to the reported kW demand savings. The reported kW demand for this particular project only included the demand savings from the chiller compressor crankcase heaters from the chillers being permanently taken offline. In addition, these chillers ran during the shoulder months and are now replaced with Water Side Economizers that only use a fraction of the power and energy of the chillers. Therefore, the evaluated kW demand savings was significantly higher when the average demand savings from the chillers was included.

The project listed as Project ID 4 in Table 7 had a significantly lower evaluated demand savings relative to the reported kW demand savings. The average evaluated kW demand savings was determined through utility meter analysis using weather-normalized demand for pre-retrofit year and post retrofit year, normalized to Typical Meteorological Year (TMY3) data. Each and every month in the evaluation analysis showed only a difference of one or two kW and alternated between an increase in demand and a decrease in demand. The two measures for this project that reported kW demand savings were measures adjusting control parameters and would not necessarily have resulted in demand savings.

3.2 *Net kWh and kW Savings*

The process evaluation team calculated an average NTGR of 1.0 for the Recommissioning program years 2012 through 2013. Section 4.1.3 provides further detail on the NTGR calculation at the project and program levels.

3.3 *Cost-Effectiveness Results*

The evaluation team initialized and validated the cost-effectiveness model used for this evaluation using prior inputs and outputs from previous evaluation cycles, to ensure similar inputs yielded similar outputs for the current cycle. The evaluation team worked through a range of input assumptions pertaining to avoided cost data formats, financial assumptions regarding discount and escalation rates, participant costs and benefits, and other input parameters. Table 9 provides an overview of cost-effectiveness input values used by the evaluation team in the cost-effectiveness analysis:

Table 9. Cost-Effectiveness Evaluation Input Values

Input Description	2012	2013	2012-2013
Discount Rate	7.17%	6.88%	-
Inflation Rate	1.80%	1.90%	-
Commercial Line Loss	8.71%	8.71%	8.71%
Industrial Line Loss	5.85%	5.85%	5.85%
Measure Life	7 yrs.	7 yrs.	
Commercial Retail Rate	$0.0785	$0.0821	-
Industrial Retail Rate	$0.0538	$0.0561	-
Gross Customer Costs	$55,608	$66,400	$122,008
Program Costs	$451,931	$188,806	$640,737
Program Delivery	$439,304	$172,999	$612,303
Incentives Costs	$12,627	$15,807	$28,434

The discount rates, inflation rates, line loss factors, and retail rates are based on the 2011 IRP for 2012 and the 2013 IRP for 2013. The UT_Large_Office_Space_ Cooling load shape and the Commercial Cooling Decrement were used for both program years.
Program Delivery includes: engineering, program implementation, marketing, and utility administration costs.

Table 10 through Table 12 provide detailed cost-effectiveness figures for each program year and the combined PY 2012-2013 evaluation period.

Table 10. UT Recommissioning Cost-Effectiveness Results - 2012 (1.0 NTG)

Benefit-Cost Test Performed	Evaluated Gross Savings (kWh)	Evaluated Net Savings (kWh)	Evaluated Costs	Evaluated Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	1,058,108	1,058,108	$494,912	$794,708	1.61
Total Resource Cost Test (TRC)	1,058,108	1,058,108	$494,912	$722,461	1.46
Utility Cost Test (UCT)	1,058,108	1,058,108	$451,931	$722,461	1.60
Rate Impact Test (RIM)	1,058,108	1,058,108	$961,921	$722,461	0.75
Participant Cost Test (PCT)	1,058,108	1,058,108	$55,608	$522,617	9.40

Table 11. UT Recommissioning Cost-Effectiveness Results - 2013 (1.0 NTG)

Benefit-Cost Test Performed	Evaluated Gross Savings (kWh)	Evaluated Net Savings (kWh)	Evaluated Costs	Evaluated Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	2,385,247	2,385,247	$239,399	$1,699,127	7.10
Total Resource Cost Test (TRC)	2,385,247	2,385,247	$239,399	$1,544,661	6.45
Utility Cost Test (UCT)	2,385,247	2,385,247	$188,806	$1,544,661	8.18
Rate Impact Test (RIM)	2,385,247	2,385,247	$1,404,809	$1,544,661	1.10
Participant Cost Test (PCT)	2,385,247	2,385,247	$66,400	$1,231,810	18.55

Table 12. UT Recommissioning Cost-Effectiveness Results – 2012 through 2013 (1.0 NTG)

Benefit-Cost Test Performed	Evaluated Gross Savings (kWh)	Evaluated Net Savings (kWh)	Evaluated Costs	Evaluated Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	3,443,355	3,443,355	$734,311	$2,493,835	3.40
Total Resource Cost Test (TRC)	3,443,355	3,443,355	$734,311	$2,267,122	3.09
Utility Cost Test (UCT)	3,443,355	3,443,355	$640,737	$2,267,122	3.54
Rate Impact Test (RIM)	3,443,355	3,443,355	$2,366,730	$2,267,122	0.96
Participant Cost Test (PCT)	3,443,355	3,443,355	$122,008	$1,754,427	14.38

4 Process Findings

This section describes the findings from the Recommissioning program process evaluation data collection activities, including participant and near-participant interviews, program staff interviews, and web usability study results.

4.1 Participant Findings

In August and September of 2014, the evaluation team interviewed four Recommissioning program participants including three manufacturing or industrial customers and one commercial customer. The industrial facilities employ between 500 and 1,200 workers and spend approximately $1 million to $4 million on electricity annually. The commercial customer employs around 60 at any given time and spends slightly over $100,000 on electricity annually.

4.1.1 Program Satisfaction

Interviewed participants are highly satisfied with their experience of the program, answering with a four or five on a satisfaction scale from one to five.[19] All four interviewees reported Rocky Mountain Power representatives being knowledgeable about the program and timely in their communications. Furthermore, all four would recommend the program to a friend or colleague and would participate again. Table 13 shows all actual satisfaction scores given by the four interviewees (participants labeled as P1 through P4).

Table 13. Participant Satisfaction with Recommissioning (RCx) and Program Components

Question	P1	P2	P3	P4
Satisfaction with Overall RCx Experience	4	4	5	4
Satisfaction with Installed Measures	5	4	5	5
Usefulness of Initial Visit	4	4.5	5	5
Satisfaction with RCx Service Provider	4	4	5	5
Usefulness of RCx Investigation Report	5	5	5	4
Satisfaction with Verification Provider	4	4	5	4

The evaluation team used open-ended response discussions during interviews to probe further into program components. For example, interviewees reported the Recommissioning Investigation Report as extremely useful, being both easy to understand and crucial for selling facility improvements to facility managers. One respondent called the report "clear and concise, without a lot of minutia, and identified low-hanging fruit."

[19] The team used a satisfaction scale from one to five, where 1= Very Dissatisfied, 2= Somewhat Dissatisfied, 3= Neutral, 4= Somewhat Satisfied, and 5= Very Satisfied.

Interviewees were also satisfied with the outcomes of their projects in terms of potential and verified energy savings. Two participants said they had already observed electricity cost savings since installing the recommended measures, while the remaining two participants reported either being too large an energy user to see much change or they were too early in the process to see definitive effects of the project. All four interviewees said that they believed their maintenance, parts, and replacement equipment costs had decreased since completing the program, but none was able to measure or quantify these savings.

Participants 1, 2, and 4 reported completing projects under the original Recommissioning program while P3 participated under the newly revamped Energy Management Services portion of the *wattsmart* Business program. Participant 4 completed a Recommissioning project in 2012 and was also working on a project under the new program design.[20] All interviewees had good things to say about their overall experiences, however, P3 and P4 did encounter some early "ramp-up" problems with the new program but both reported that Rocky Mountain Power resolved the problems satisfactorily and that they were otherwise very satisfied.

4.1.2 Program Awareness and Motivation

Interviewees reported prior involvement in Rocky Mountain Power programs as the main driver of awareness of the Recommissioning program; in fact, all had participated in Rocky Mountain Power energy efficiency programs for last five to 15 years. When probed further for information on how each participant originally heard of the energy efficiency programs, two interviewees reported learning through a Rocky Mountain Power account representative, one heard about them through a vendor, and another found the commercial program offerings online while looking for residential programs.

Open-ended question results on participant motivation showed cost savings to be the most important factor for all respondents participating in the Recommissioning program.[21] Two participants further mentioned efficiency or environmentally related goals as factors for participating in the program. Of these, one interviewee mentioned their business had a 30 percent energy reduction target, while the other interviewee reported a company-wide "lean manufacturing" practice.

[20] P4's experience and feedback were focused on the 2012 project for this evaluation. The respondent was specifically asked to think about that project when considering satisfaction, value, and program influence.

[21] Full motivation results included: Cost savings: 4/4; Corporate environmental/efficiency goals: 2/4
No additional reasons were given by the four participants.

The evaluation team also asked participants to grade seven motivating factors for program participation on a scale of one to five, with one being Not At All Important and five being Very Important.[22] Results show consistency with the open-ended responses where respondents graded cost- and savings-related influences highest overall. Table 14 provides the responses of each participant (P1 through P4).

Table 14. Program Motivation Grading

Source	P1	P2	P3	P4
Rocky Mountain Power providing study at no cost	5	5	5	5
Information provided by Rocky Mountain Power on energy savings	5	5	5	4
Information on payback	5	5	5	4
Corporate policy regarding energy reduction	5	5	5	4
Rocky Mountain Power incentive	4	5	5/2[23]	5
Previous participation	4	5	3	5
Recommendation from contractor/vendor	2	n/a	3	n/a

Interviewees generally graded Rocky Mountain Power incentives as highly motivating, however they indicated that this only applied to incentives for capital-intensive upgrades. As recommissioning does not cover these types of upgrades, these responses may be misleading. Participant three distinguished between "capital" and "engineering" improvements and graded the motivation of each respectively. The evaluation team compared results from the program influence section 4.1.3 and found that incentives actually make very little difference in motivating respondents to pursue low-cost or no-cost improvements.

[22] The team used an importance scale from one to five, where 1= Not At All Important, 2= Somewhat Important, 3= Neutral, 4= Important, and 5= Very Important.

[23] Interviewee distinguished between "capital" and "engineering" upgrades identified by the study, and graded the motivation of each respectively.

4.1.3 Program Influence

The evaluation team examined the influence of the recommissioning study and the incentives for no- and low-cost engineering measures from a qualitative perspective and found no substantial free-ridership or spillover. The evaluation team found that providing the recommissioning study at no cost was highly influential, but the incentive for verified energy savings was not. Interviewees contrasted the influence of this "engineering" incentive with the incentives offered through other programs for capital-intensive projects and actually completed these projects through the other programs creating no quantifiable program spillover. Table 15 provides the NTGRs by participating site.

Table 15. Utah Recommissioning Project-Level Net-to-Gross Ratios

Site ID	Year	Measure Group	NTG*
ReCx0_000016	2012	Recommissioning	1.0
ReCx0_000013	2012	Recommissioning	1.0
ReCx0_000032	2013	*wattsmart* Business	1.0
ReCx0_000017	2012	Recommissioning	1.0

**The evaluation team estimated a NTGR of 1.0 for each project in the sample because there was no indication of free-ridership or quantifiable spillover.*

The team researched possible free-ridership for the Recommissioning program by asking the question, "Would you have conducted any recommissioning study for this facility without Rocky Mountain Power covering the costs of the study?" The four interviewees responded with the following:

P1. "Probably not... This allowed us to make sure [the facility] was operating efficiently first. I don't think they would have done any of that type of effort."

P2. "It would be real limited. Actually we probably wouldn't have done it all, to be honest."

P3. "We might have; it's a lot more attractive with them covering the costs… I can't tell you for 100 percent certain, because we didn't have to face that."

P4. "No. [When prompted:] It was the tipping point. We wanted to do it, we knew we probably should do it, but we couldn't cost-justify the study."

The evaluation team asked respondents P1-P4 follow up questions to understand the scope and timing of studies that they would have performed on their own without the Recommissioning program. When pressed, no respondents would have completed any study with a year of the study that was completed. They also indicated that without the study they would not have been able to identify and move forward with the identified measures. These results do not indicate any free ridership in the Recommissioning program. In addition, there was no spillover identified. When asked if they had completed any additional energy efficiency improvements or changes on their own since completing the project, respondents said "No." Two respondents went on to describe projects they were completing or had completed under other Rocky Mountain Power programs.

4.1.4 Further Energy Efficiency Opportunities and Barriers

Three of the four interviewees reported interest in pursuing further energy efficiency projects after participating in the Recommissioning program. All three indicated cost savings as the primary motivating factor in future projects. The single participant, a facilities supervisor, who could not identify any future savings opportunities, felt it was not his responsibility to identify additional measures.

Interviewees mentioned return on investment as the primary barrier to future projects, indicating that their organizations regularly fund capital energy efficiency upgrades as long as the payback justifies them.

4.2 Near-Participant Findings

In August and September of 2014, the evaluation team interviewed two of the four organizations identified as near-participants with projects that had either a "held" or a "canceled" status. One was a privately held firm and the other was a public organization. Both facilities employed over 500 employees.

4.2.1 Project Status and Causes of Non-Completion

Both near-participant respondents reported mistakes on the part of Rocky Mountain Power as the cause for their recommissioning projects being "canceled" or "held." One customer claimed program staff incorrectly deemed the expected savings too low and mistakenly canceled his project. The facility, originally commissioned under the Self-Direction program, reported a degrading in energy efficiency since its initial commissioning project and therefore applied to the Recommissioning program to address this reduction. The interviewee reported that Rocky Mountain Power did not take that depreciation of efficiency into account when assessing the incremental energy savings, and canceled the project in error.

The second near-participant reported a communication breakdown with the Rocky Mountain Power account representative after manufacturing delays caused his project's cancelation. The customer claimed that he reached out to the account representative once he received and installed the measure, but never received a reply to follow up on the project.

Both near-participants were understandably dissatisfied with their recommissioning experiences, based on the causes of non-completion discussed in section 4.2.1, and rated their overall satisfaction a two on a scale from one to five, with one being very dissatisfied and five being very satisfied.

The evaluation team asked respondents about their satisfaction with specific components of the program such as the initial site visit, walk-through analysis, and Recommissioning Investigation Report (RIR). Unfortunately, neither customer received or recalled the majority of these milestones. Only one interviewee received the RIR and rated it a four out of five, finding it quite useful even though Rocky Mountain Power canceled his project before he could take full advantage of the recommendations.

4.2.2 Program Awareness and Motivation

Recommissioning near-participants were knowledgeable with Rocky Mountain Power energy efficiency offerings before beginning the Recommissioning program. Both respondents reported to have

participated in many Rocky Mountain Power programs in the past, including Self-Direction Credit, FinAnswer, and CoolKeeper.

The evaluation team asked interviewees why they initially decided to participate in the Recommissioning program. Interviewees had contrasting participation influences, which reflect the private and public nature of the two organizations. One customer said that incentives were the only significant motivation for program participating while the other reported that state regulations required them to pursue energy efficiency projects.

4.2.3 Further Energy Efficiency Opportunities and Barriers

The near-participants identified additional opportunities for energy efficiency at their organizations including efficient lighting upgrades, variable frequency drives for pumps, and upgrades to or optimizing of air compressors. One interviewee reported having several upgrade projects in progress while the other had no plans to pursue measures currently, but would definitely look into them in the future.

Respondents also reported capital first costs as the major barrier to pursuing energy efficiency upgrades, but the privately owned customer also mentioned having a five-year payback requirement on any capital expenditures.

4.3 Process Findings Summary

In August and September of 2014, the evaluation team interviewed four participants and two near-participants, seeking to answer seven process evaluation research questions. This section lists the questions and summarized answers.

1. **What are the program goals, concept, and design?**

   The Recommissioning program in Utah seeks to improve energy efficiency of existing equipment at C&I sites. The concept behind recommissioning is generating energy savings by fine-tuning equipment to allow for operation that is more efficient. In 2013, Rocky Mountain Power changed the Recommissioning program substantially to offer varying levels of energy management services to its C&I customers. The utility also rebranded the program as Energy Management Services.

2. **Do program staff and administrators have the resources and capacity to implement the program as planned, and if not, what more is needed?**

   Yes. Staff reported that they had resources and capacity to implement the program as planned. Nearly all participants reported staff as knowledgeable and timely in their communications, and only one of the two near-participants reported they had not heard back from a staff member in a timely fashion. This appeared to be more of an oversight rather than systematic program challenge.

3. **Is the program staff delivering the program in accordance with the logic model?**

   Evaluation findings suggest program delivery coincides with logic model and process map methodology with one exception related to marketing and outreach. The program theory states that the purpose of performing marketing and outreach is so customers become aware of the program. However, evaluation findings show the majority of participants learned of the program through prior participation in other Rocky Mountain Power energy efficiency programs. It is possible that current marketing activities focus too heavily on existing program participants rather than soliciting new ones.

4. **How do customers find out about the programs? How do participants and trade allies get and use information provided on the *wattsmart* business website?**

   Participant and near-participant interviewees reported learning about the Recommissioning program through prior participation in other Rocky Mountain Power energy efficiency programs. These customers reported participating in the energy efficiency programs for at least five years. The web usability study findings suggest that participants and trade allies rarely use the website as an informational source. Customers rely on trade allies for information, and trade allies receive program documentation through annual trainings.

5. **What is the program influence on participant actions? Specifically, what do participants identify as most important to their projects (i.e. program information, incentive/credit, payback, engineering, their own company goals, etc.)? What would they have done differently without the program?**

   All participant interviewees reported that providing the RIR at no cost was highly influential in their decision to participate in the Recommissioning program by making them aware of energy efficiency opportunities. They also reported that they would not have recommissioned their facilities without the support from Rocky Mountain Power. Interviewees also reported that financial incentives influenced them to purchase new equipment, but had little influence on conducting operational improvements. The RIR alone provided enough motivation to carry out the operational improvements.

6. **What barriers are preventing customers from taking actions to reduce energy consumption and demand, and which jeopardize program cost effectiveness?**

   All of the participant interviewees reported to be following through with most of the recommendations in the RIR. However, interviewees also mentioned capital first costs and payback as barriers to taking complete advantage of all energy savings projects.

7. **Are participants achieving planned outcomes? Specifically, are participants feeling satisfied, keeping their efficient equipment in operation, and exhibiting a greater propensity to install efficient equipment without incentives?**

   Yes, interviewees achieved planned outcomes and all expressed satisfaction with the program and program components. Furthermore, interviewees plan to perform additional energy efficiency projects in the future and to pursue incentives from Rocky Mountain Power to do so.

5 Program Evaluation Recommendations

The evaluation team recommends that Rocky Mountain Power consider undertaking the following steps to improve the program experience for participants, engineers, and program staff in the Recommissioning program for future program cycles.

- **Recommendation 1. Account for kW demand savings on all applicable projects.** Several recommissioning projects reported zero kW demand savings; however, the evaluation did find kW demand savings for a few of these projects. PacifiCorp should ensure that the implementer includes average demand savings for all applicable projects.
- **Recommendation 2. Improve customer communications.** Both near-participants interviewed felt that Rocky Mountain Power dropped or canceled their projects due to errors made by the utility. Continually reaching out to customers will either prevent incorrect cancelations, or provide additional explanation on rejected applications and improve customer understanding and satisfaction. With the launch of *wattsmart* Business and the reorganization of the Recommissioning program into Energy Management, PacifiCorp has acted to improve customer communication through the implementation of a single, general application for Energy Management and the introduction of new delivery channel partners, to help manage communications among unmanaged accounts, which should limit or reduce project cancellation errors in the future.

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Utah's Recommissioning Program (PY 2012-2013)

APPENDIX

Prepared for:
Rocky Mountain Power

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Prepared by:

NAVIGANT

Navigant Consulting, Inc.
1375 Walnut Street
Suite 200
Boulder, CO 80302

303.728.2500
www.navigant.com

EMI CONSULTING

EMI Consulting
83 Columbia Street
Suite 400
Seattle, WA 98104

206.621.1160
www.emiconsulting.com

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NAVIGANT

Table of Contents

NAVIGANT

List of Figures

NAVIGANT

Appendix A Glossary[1]

Adjustments: For M&V analyses, factors that modify baseline energy or demand values to account for independent variable values (conditions) in the reporting period.

Allowances: Represent the amount of a pollutant that a source is permitted to emit during a specified time in the future under a cap and trade program. Often confused with credits earned in the context of project-based or offset programs, in which sources trade with other facilities to attain compliance with a conventional regulatory requirement. Cap and trade program basics are discussed at the following EPA website: <http://www.epa.gov/airmarkets/cap-trade/index.html>.

Assessment boundary: The boundary within which all the primary effects and significant secondary effects associated with a project are evaluated.

Baseline: Conditions, including energy consumption and related emissions, that would have occurred without implementation of the subject project or program. Sometimes referred to as "business-as-usual" conditions. Defined as either project-specific baselines or performance standard baselines.

Baseline period: The period of time selected as representative of facility operations before the energy efficiency activity takes place.

Bias: The extent to which a measurement or a sampling or analytic method systematically underestimates or overestimates a value.

Co-benefits: The impacts of an energy efficiency program other than energy and demand savings.

Coincident demand: The metered demand of a device, circuit, or building that occurs at the same time as the peak demand of a utility's system load or at the same time as some other peak of interest, such as building or facility peak demand. This should be expressed to indicate the peak of interest (e.g., "demand coincident with the utility system peak"). Diversity factor is defined as the ratio of the sum of the demands of a group of users to their coincident maximum demand. Therefore, diversity factors are always equal to one or greater.

Comparison group: A group of consumers who did not participate in the evaluated program during the program year and who share as many characteristics as possible with the participant group.

Confidence: An indication of how close a value is to the true value of the quantity in question. Confidence is the likelihood that the evaluation has captured the true impacts of the program within a certain range of values (i.e., precision).

[1] Glossary definitions are provided to assist readers of this report, and are adapted from the Model Energy Efficiency Program Impact Evaluation Guide, US Environmental Protection Agency, November 2007

Cost-effectiveness: An indicator of the relative performance or economic attractiveness of any energy efficiency investment or practice. In the energy efficiency field, the present value of the estimated benefits produced by an energy efficiency program is compared to the estimated total costs to determine if the proposed investment or measure is desirable from a variety of perspectives (e.g., whether the estimated benefits exceed the estimated costs from a societal perspective).

Database for Energy-Efficient Resources (DEER):
A California database designed to provide well-documented estimates of energy and peak demand savings values, measure costs, and effective useful life.

Demand Side Management (DSM): See "Energy efficiency."

Deemed savings: An estimate of an energy savings or energy-demand savings outcome (gross savings) for a single unit of an installed energy efficiency measure that (a) has been developed from data sources and analytical methods that are widely considered acceptable for the measure and purpose and (b) is applicable to the situation being evaluated.

Demand: The time rate of energy flow. Demand usually refers to electric power measured in kW (equals kWh/h) but can also refer to natural gas, usually as Btu/hr, kBtu/hr, therms/day, etc.

Direct emissions: Direct emissions are changes in emissions at the site (controlled by the project sponsor or owner) where the project takes place. Direct emissions are the source of avoided emissions for thermal energy efficiency measures (e.g., avoided emissions from burning natural gas in a water heater).

Effective Useful Life (EUL): An estimate of the median number of years that the efficiency measures installed under a program are still in place and operable.

Energy efficiency: The use of less energy to provide the same or an improved level of service to the energy consumer in an economically efficient way; or using less energy to perform the same function. "Energy conservation" is a term that has also been used, but it has the connotation of doing without a service in order to save energy rather than using less energy to perform the same function. Demand Side Management (DSM) is also frequently used to refer to actively-managed energy efficiency initiatives.

Energy Efficiency Measure (EEM): A permanently installed measure which can improve the efficiency of the Customer's electric energy use.

Engineering model: Engineering equations used to calculate energy usage and savings. These models are usually based on a quantitative description of physical processes that transform delivered energy into useful work such as heat, lighting, or motor drive. In practice, these models may be reduced to simple equations in spreadsheets that calculate energy usage or savings as a function of measurable attributes of customers, facilities, or equipment (e.g., lighting use = watts × hours of use).

Error: Deviation of measurements from the true value.

Evaluation: The performance of studies and activities aimed at determining the effects of a program; any of a wide range of assessment activities associated with understanding or documenting program performance, assessing program or program-related markets and market operations; any of a wide range of evaluative efforts including assessing program-induced changes in energy efficiency markets, levels of demand or energy savings, and program cost-effectiveness.

Evaluation, Measurement and Verification (EM&V): Data collection, monitoring, and analysis associated with the calculation of gross and net energy and demand savings from individual sites or projects which is performed in conjunction with a program or portfolio evaluation (see Evaluation).

Evaluated savings estimate: Savings estimates reported by an evaluator after the energy impact evaluation has been completed. Often referred to as "***Ex Post" Savings*** (from the Latin for "after the fact").

Free driver: A non-participant who has adopted a particular efficiency measure or practice as a result of the evaluated program.

Free rider: A program participant who would have implemented the program measure or practice in the absence of the program. Free riders can be total, partial, or deferred.

Gross savings: The change in energy consumption and/or demand that results directly from program-related actions taken by participants in an efficiency program, regardless of why they participated.

Impact evaluation: An evaluation of the program-specific, directly induced changes (e.g., energy and/or demand usage) attributable to an energy efficiency program.

Independent variables: The factors that affect energy use and demand, but cannot be controlled (e.g., weather or occupancy).

Interactive factors: Applicable to IPMVP Options A and B; changes in energy use or demand occurring beyond the measurement boundary of the M&V analysis.

Load shapes: Representations such as graphs, tables, and databases that describe energy consumption rates as a function of another variable such as time or outdoor air temperature.

Market effect evaluation: An evaluation of the change in the structure or functioning of a market, or the behavior of participants in a market, that results from one or more program efforts. Typically, the resultant market or behavior change leads to an increase in the adoption of energy-efficient products, services, or practices.

Market transformation: A reduction in market barriers resulting from a market intervention, as evidenced by a set of market effects, that lasts after the intervention has been withdrawn, reduced, or changed.

Measurement: A procedure for assigning a number to an observed object or event.

Measurement and Verification (M&V): Data collection, monitoring, and analysis associated with the calculation of gross energy and demand savings from individual sites or projects. M&V can be a subset of program impact evaluation.

Measurement boundary: The boundary of the analysis for determining direct energy and/or demand savings.

Metering: The collection of energy consumption data over time through the use of meters. These meters may collect information with respect to an end-use, a circuit, a piece of equipment, or a whole building (or facility). Short-term metering generally refers to data collection for no more than a few weeks. End-use metering refers specifically to separate data collection for one or more end-uses in a facility, such as lighting, air conditioning or refrigeration. Spot metering is an instantaneous measurement (rather than over time) to determine an energy consumption rate.

Monitoring: Gathering of relevant measurement data, including but not limited to energy consumption data, over time to evaluate equipment or system performance (e.g., chiller electric demand, inlet evaporator temperature and flow, outlet evaporator temperature, condenser inlet temperature, and ambient dry-bulb temperature and relative humidity or wet-bulb temperature) for use in developing a chiller performance map (e.g., kW/ton vs. cooling load and vs. condenser inlet temperature).

Net savings: The total change in load that is attributable to an energy efficiency program. This change in load may include, implicitly or explicitly, the effects of free drivers, free riders, energy efficiency standards, changes in the level of energy service, and other causes of changes in energy consumption or demand.

Net-to-gross ratio (NTGR): A factor representing net program savings divided by gross program savings that is applied to gross program impacts to convert them into net program load impacts.

Non-participant: Any consumer who was eligible but did not participate in the subject efficiency program, in a given program year. Each evaluation plan should provide a definition of a non-participant as it applies to a specific evaluation.

Normalized annual consumption (NAC) analysis: A regression-based method that analyzes monthly energy consumption data.

Participant: A consumer that received a service offered through the subject efficiency program, in a given program year. The term "service" is used in this definition to suggest that the service can be a wide variety of services, including financial rebates, technical assistance, product installations, training,

energy efficiency information or other services, items, or conditions. Each evaluation plan should define "participant" as it applies to the specific evaluation.

Peak demand: The maximum level of metered demand during a specified period, such as a billing month or a peak demand period.

Persistence study: A study to assess changes in program impacts over time (including retention and degradation).

Portfolio: Either (a) a collection of similar programs addressing the same market (e.g., a portfolio of residential programs), technology (e.g., motor efficiency programs), or mechanisms (e.g., loan programs) or (b) the set of all programs conducted by one organization, such as a utility (and which could include programs that cover multiple markets, technologies, etc.).

Potential studies: Studies conducted to assess market baselines and savings potentials for different technologies and customer markets. Potential is typically defined in terms of technical potential, market potential, and economic potential.

Precision: The indication of the closeness of agreement among repeated measurements of the same physical quantity.

Primary effects: Effects that the project or program are intended to achieve. For efficiency programs, this is primarily a reduction in energy use per unit of output.

Process evaluation: A systematic assessment of an energy efficiency program for the purposes of documenting program operations at the time of the examination, and identifying and recommending improvements to increase the program's efficiency or effectiveness for acquiring energy resources while maintaining high levels of participant satisfaction.

Program: A group of projects, with similar characteristics and installed in similar applications. Examples could include a utility program to install energy-efficient lighting in commercial buildings, a developer's program to build a subdivision of homes that have photovoltaic systems, or a state residential energy efficiency code program.

Project: An activity or course of action involving one or multiple energy efficiency measures, at a single facility or site.

Rebound effect: A change in energy-using behavior that yields an increased level of service and occurs as a result of taking an energy efficiency action.

Regression analysis: Analysis of the relationship between a dependent variable (response variable) to specified independent variables (explanatory variables). The mathematical model of their relationship is the regression equation.

Reliability: Refers to the likelihood that the observations can be replicated.

Remaining Useful Life (RUL): An estimate of the remaining number of years that a technology being replaced under an early retirement program would have remained in place and operable. Accurate estimation of the RUL is important in determining lifetime program savings and cost effectiveness.

Reported savings estimate: Forecasted savings used for program and portfolio planning purposes. Often referred to as "***Ex Ante" Savings*** (from the Latin for "before the event").

Reporting period: The time following implementation of an energy efficiency activity during which savings are to be determined.

Resource acquisition program: Programs designed to directly achieve energy and/or demand savings, and possibly avoided emissions.

Retrofit isolation: The savings measurement approach defined in IPMVP Options A and B, and ASHRAE Guideline 14, that determines energy or demand savings through the use of meters to isolate the energy flows for the system(s) under consideration.

Rigor: The level of expected confidence and precision. The higher the level of rigor, the more confident one is that the results of the evaluation are both accurate and precise.

Spillover: Reductions in energy consumption and/or demand caused by the presence of the energy efficiency program, beyond the program-related gross savings of the participants. There can be participant and/or nonparticipant spillover.

Statistically adjusted engineering (SAE) models: A category of statistical analysis models that incorporate the engineering estimate of savings as a dependent variable.

Stipulated values: See "deemed savings."

Takeback effect: See "rebound effect."

Uncertainty: The range or interval of doubt surrounding a measured or calculated value within which the true value is expected to fall within some degree of confidence.

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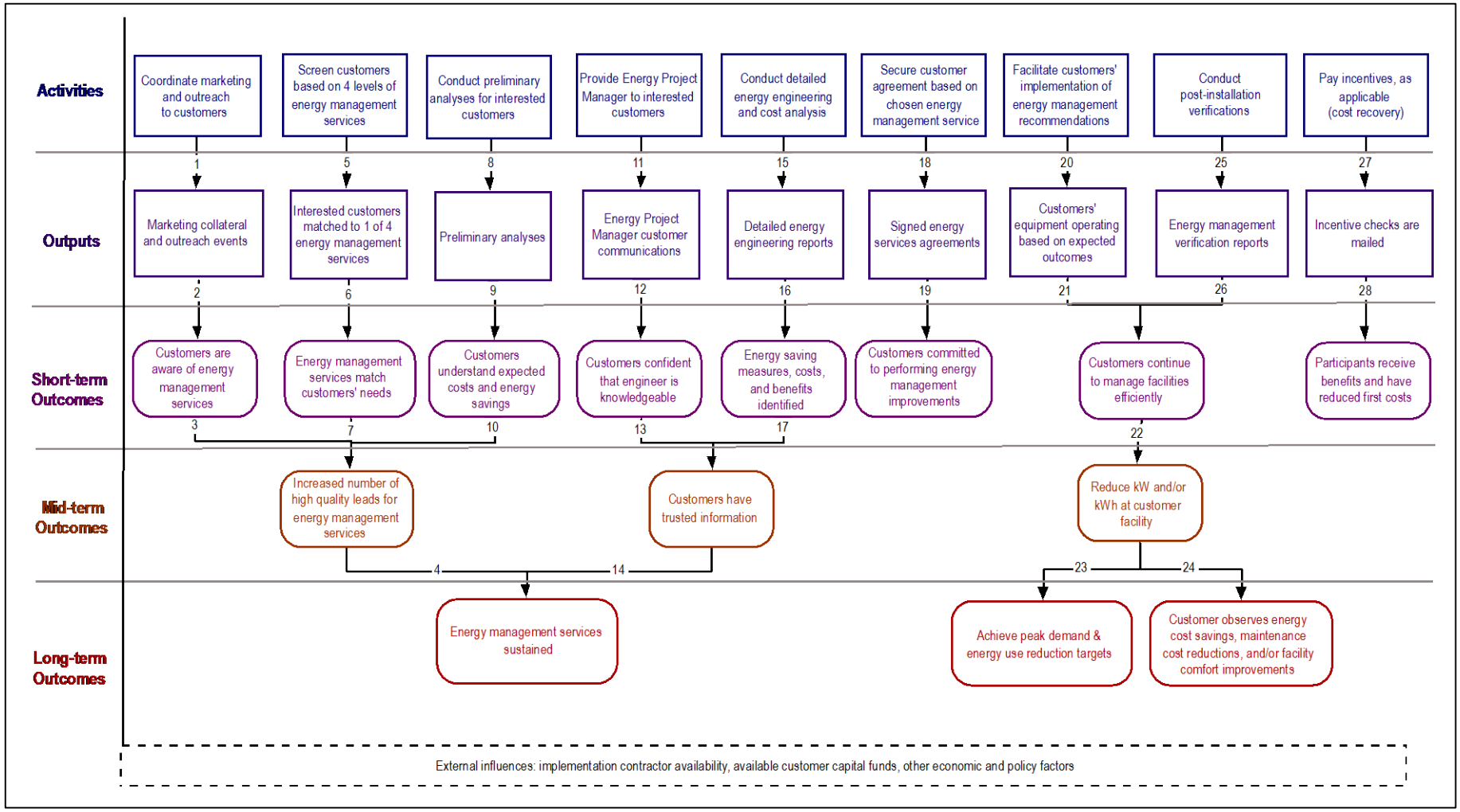
Appendix B Energy Management Services Logic Model

The process evaluation team reviewed program documentation and spoke with program management and implementers to present the underlying theory for the new 2013 Energy Management Services program articulated in the Logic Model in Figure B-1. This model replaces the Recommissioning logic model developed in 2011 with the transition to *wattsmart* Business.

Figure B-1. Energy Management Services Logic Model (2013)



Each number in the list below corresponds to a linkage in the logic model diagram and provides further details for the Recommissioning program theory.

1. Rocky Mountain Power and Nexant coordinate marketing efforts.
2. Marketing efforts increase customer awareness of energy management services.
3. Increased awareness of energy management services generates an increased number of high quality leads than would have occurred without any marketing or outreach.
4. Customer knowledge of the energy management services and the *wattsmart* program as a whole allows the program to sustain itself over time.
5. When customers submit their general *wattsmart* application, program staff will screen customers to assign them to the energy management service that best fits the customers' needs.
6. Assigning to unique energy management services provides customers with services that best match their unique needs.
7. By offering various energy management services, more customers are able to receive some level of energy management services.
8. Program staff conducted a preliminary analysis to determine expected energy savings and costs prior to finalizing the customer agreement.
9. The preliminary analysis informs customers on the expected savings and costs associated with carrying out energy management improvements.
10. Conducting preliminary analyses will weed out customers who may not be able to benefit from energy management services and hence focus program resources on those customers who are able to dedicate resources to implementing energy savings recommendations.
11. Program staff assigns an Energy Project Manager to those customers who want to pursue energy management services. Energy Project Managers manage energy management services offered to customers through various communications throughout the process.
12. Providing customers' access to an Energy Project Manager allows them to feel confident that the engineer conducting the analysis is knowledgeable in energy management services.
13. Working with a knowledgeable Energy Project Manager ensures that customers have increased trust in the information they receive on energy management practices.
14. When customers receive trusted information from program staff, they develop positive program experiences which helps sustain the program over the long term.
15. Energy Project Managers conduct a detailed energy engineering assessment and cost analysis, and report their findings in a detailed energy engineering report.
16. The detailed energy engineering report identifies energy savings measures (which includes operations and maintenance procedures) and their associated costs and benefits.

17. Customers have information they can trust and an understanding of how to pursue energy efficiency upgrades through a thorough and detailed energy engineering report.
18. Once customers receive the detailed energy engineering report, they sign the energy services agreement.
19. By signing the energy services agreement form, customers commit to perform energy management improvements.
20. Staff can help facilitate the implementation of energy management recommendations, which results in customer equipment operating based on expected outcomes.
21. Customers will continue to manage their facilities efficiently after achieving expected outcomes.
22. On-going efficient facility management results in reduced demand and energy savings at facility sites.
23. Customer demand reductions and energy savings allow Rocky Mountain Power to achieve its peak demand and energy use targets.
24. Customer demand reductions and energy savings also provide customers with cost savings and facility improvements.
25. Program staff conducts post-installation verifications and present findings in a verification report after customers implement recommendations.
26. By conducting verifications, customers are more likely to continue to manage their facilities efficiently.
27. Program staff mails incentive checks based on realized energy savings after savings verification.
28. Incentive checks help reduce the costs associated with receiving energy management services.

The process evaluation team compared actual program outcomes with the outcomes expected in the logic model by identifying indicators for each expected outcome. The process evaluation team sourced the indicator data either from directly observable program tracking data or other archives, or through analysis of survey or interview responses. Table 1 identifies these indicators and corresponding data sources.

Table 1. Indicators and Data Sources for Program Outcomes

Outcome	Indicator	Data Source
Short-term Outcomes		
Customers are aware of the program	Non-participant awareness	Not evaluated; eligible non-participants cannot be identified
Customer submits recommissioning application	Application in project file; letter of intent (LOI) or application date in program tracking data	Program tracking data; customer interviews
Recommissioning Service Provider selected and contracted	Contracts; engineers identified in program tracking data	Project files; program tracking data; RSP interviews
Energy saving measures, costs, and benefits identified	Recommissioning Investigation Report includes measures, costs and benefits	Project files; customer interviews; RSP interviews
Measures installed, repairs made, and/or control strategies implemented	Final inspection report; invoices	Project files; customer interviews; RSP interviews
Installation of measures, control strategies, or repairs verified	Verification in project file	Project files; RSP interviews
Customers receive benefits and have reduced first costs	Customers receive benefits, as applicable	Cost-recovery in program tracking data; Customer interviews
Mid-term Outcomes		
Customers have trusted information	Customers find technical assistance valuable	Customer interviews
Reduce kW and/or kWh at customer facility	Customers realize expected savings	Customer surveys; program claimed savings
Long-term Outcomes		
Achieve peak demand and energy use reduction targets	Rocky Mountain Power meets targets with program claimed savings	Program tracking data
Customers observe energy cost savings, maintenance cost reductions, and/or facility comfort improvements	Customers realize benefits	Customer interviews

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Appendix C *wattsmart* Business Program Logic Model

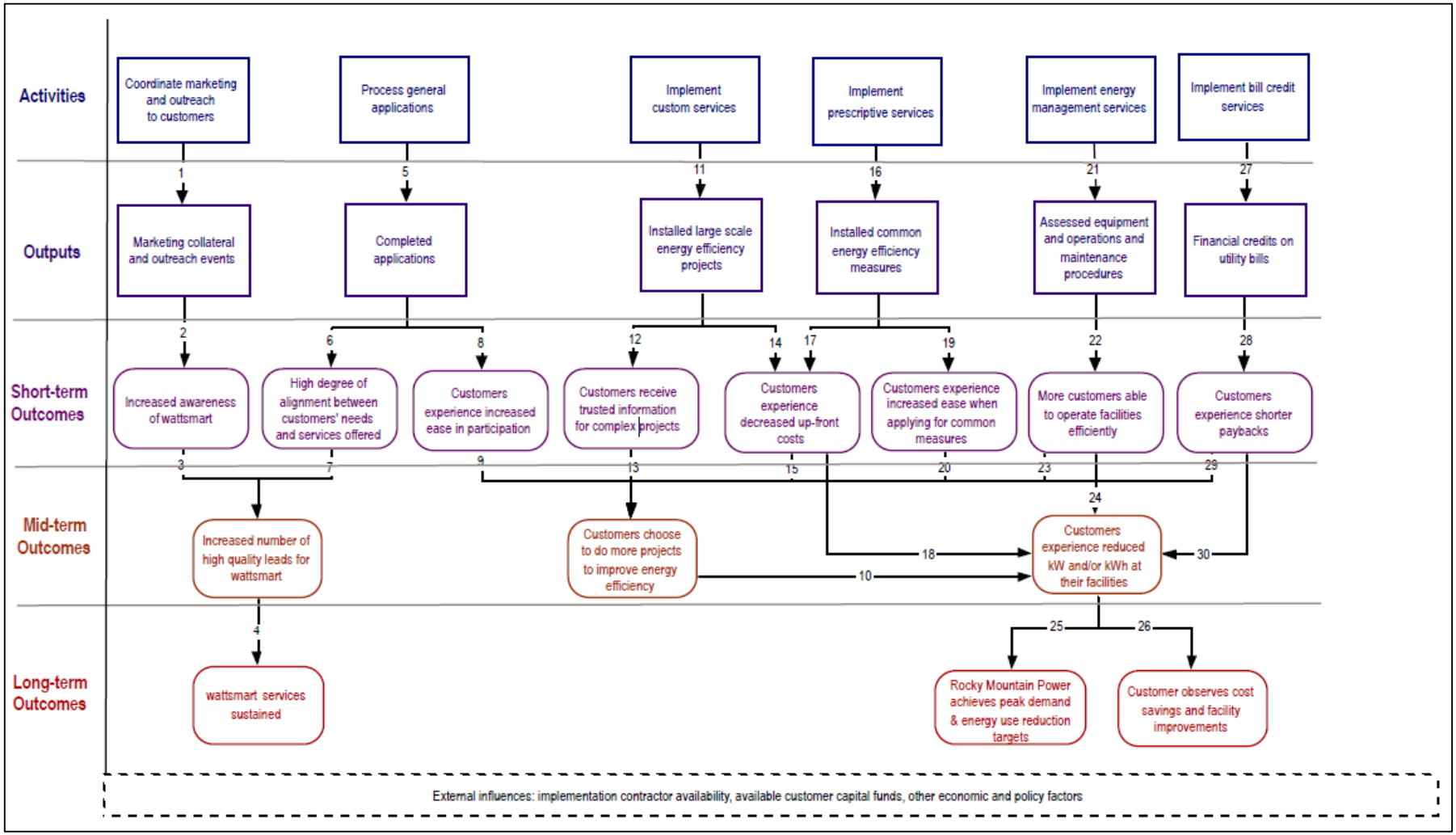
The *wattsmart* program is an umbrella program encompassing all of Rocky Mountain Power's energy efficiency services. The *wattsmart* program provides customers with a suite of programs based on the former Rocky Mountain Power energy efficiency programs:

- Energy FinAnswer – offered incentives for large-scale custom energy efficiency projects
- FinAnswer Express – offers incentives for small-scale energy efficiency projects, including prescriptive measures
- Energy Management Services (formally called Recommissioning) – offers incentives for optimizing equipment and operating and maintenance procedures
- Bill Credit Services – offers financial credits on utility bills for energy efficiency projects

The logic model presented in Figure C-1, therefore, depicts the logic for each activity carried out by implementers as part of the *wattsmart* program.

The overall purpose of developing the *wattsmart* program is to offer customers with a streamlined application process for energy efficiency services. By offering one energy efficiency program, customers do not need to choose a specific energy efficiency program. Instead, customers submit one application and program staff can direct customers to the most applicable service. By providing a suite of services catered to unique customer needs, *wattsmart* intends the program to generate higher quality leads and encourage customers to carry out more energy efficiency projects. Ultimately, implementers expect the program to generate enough energy savings and demand reductions for Rocky Mountain Power to meet its energy use reduction targets. The list following Figure C-1 describes the detailed program theory by referencing the numbered links in the figure.

Figure C-1. *wattsmart* Business Program Logic Model (2013)



Each number in the following list corresponds to a linkage in the logic model diagram and provides further details for the *wattsmart* program theory.

1. Rocky Mountain Power staff coordinates marketing and outreach to customers through marketing collateral and outreach events.
2. Marketing and outreach functions increase customer awareness of *wattsmart*.
3. Increasing customer awareness of *wattsmart* increases the number of high quality leads, defined as eligible customers that can directly benefit from program services than would have occurred without any marketing or outreach.
4. Program sustainability over time improves with increased customer awareness of *wattsmart*.
5. Program staff processes general applications to ensure completeness and direct customers to the best *wattsmart* service.
6. Processing general applications ensures that customers' needs align with program services.
7. Aligning customers' needs with program services means that more customers can or are willing to participate in *wattsmart*, resulting in greater leads for program services.
8. Allowing customers to submit general applications for the entire *wattsmart* program is intended to ease the customers' experiences with the application process, making it simpler and more direct.
9. By making the application process simple, customers will be more likely to conduct more energy efficiency projects.
10. When customers conduct more energy efficiency projects, they continue to experience reduced demand and/or energy savings at their facilities.
11. Customers may use the custom offerings portion of the *wattsmart* Business program to install large-scale, site-specific energy efficiency projects.
12. The custom portion of *wattsmart* provides customers with trusted information on complex energy efficiency project that they would not receive otherwise.
13. Providing trusted information to customers on complex projects allows them to follow through with more energy efficiency projects than they would have otherwise.
14. Participation in the custom portion of *wattsmart* provides customers financial incentives which help decrease upfront costs for energy efficiency projects.
15. By decreasing upfront costs, participants are able to conduct even more energy efficiency projects.
16. Customers may use the prescriptive offerings portion of *wattsmart* to install common energy efficiency measures such as lighting and/or HVAC equipment.
17. The prescriptive service provides incentives for common energy efficiency measures, thereby decreasing customers' upfront costs for efficiency improvements.

18. By helping to cover some of the upfront costs, customers are able to install energy efficiency equipment and hence reduce their energy costs or demand at their facilities.
19. The purpose of offering an "express" program is to provide customers with a simple means to receive financial incentives for common measures.
20. When customers feel that the incentive process is easy, they are more likely to conduct more energy efficiency projects through *wattsmart*.
21. Program staff provides a variety of energy management services to assess customers' operations and maintenance (O&M) procedures and equipment.
22. The overall purpose of providing energy management services is to help more customers operate their facilities efficiently.
23. By participating in this program, program staff identifies energy efficiency opportunities, which allow customers to install more energy efficiency projects in the future.
24. When customers operate their facilities efficiently, they generate demand reductions and energy savings.
25. When individual customers can generate demand reductions and energy savings, Rocky Mountain Power can achieve peak demand and energy use targets.
26. When customers are able to save energy, they also receive added benefits of energy cost savings and facility improvements.
27. Providing bill credit services allows customers to receive financial credits on their utility bills for energy efficiency projects.
28. Bill credits are intends to provide customers with shorter paybacks for energy efficiency projects.
29. Receiving bill credits allow customers to install more energy efficiency projects.
30. When install more energy efficient projects, they generate energy savings and reduced demand.

Appendix D Recommissioning Participant Interview Guide

D.1 Introduction

As part of the evaluation of the 2012-2013 Recommissioning Program, EMI Consulting conducted interviews with participants in Utah. We will attempt to interview a census of the eight 2012-2013 program participants. The research team obtained contact information and project descriptions from PacifiCorp's records of completed Recommissioning measures. Objectives for the participant interviews are identified in the bullets below:

- Describe how customers come to participate in the program;
- Understand overall customer satisfaction with the program, including (where appropriate) marketing, application materials, inspections, technical assistance, customer service and any incentive;
- Understand program influence on customer actions, including free-ridership and spillover;
- Identify barriers customers are facing that prevent increasing energy efficiency.
- Characterize participating firms

Interview Instructions

The evaluation team attempted a census of the eight Recommissioning participants that have completed a total of 11 projects. The evaluation team understands that in July 2013, the Recommissioning Program changed to Energy Management under the new Wattsmart program. Under this new implementation, customers were treated differently depending on the type of energy management services they need: basic recommissioning (4-6 months), industrial recommissioning (for industrial customers), persistent recommissioning (9-12 months), or strategic energy management (1-2 years). It is our understanding that none of the 11 projects were completed under these revised processes. However, interviewers will tailor questions to these revised processes if needed. In addition, the interviewer will frame questions as "recommissioning services" rather than the "Recommissioning Program" in order to avoid or to introduce any confusion regarding the rebranding of the PacifiCorp energy efficiency programs.

To solicit interviews, the evaluation team will offer a $25 Amazon gift card to respondents that complete an interview. If more than one person needs to be contacted/project, then the interviewer will use their budget judgment to determine if more than one person should receive the gift card (i.e. If one person answered only one question, they would not receive a gift card.)

The evaluation team designed the interview questions to be open-ended. The interviewer will code responses following the interviews. If a contact person is listed for more than one recommissioning projects, the interviewer will discuss with the contact person whether it makes sense to conduct these interviews separately or at the same time. Additionally, the interviewer will be prepared to conduct multiple interviews for the same project if more than one person is better suited to answer the questions.

D.2 Interview Guide

Introduction and Screen

IS1. Hello, this is [INTERVIEWER'S NAME] from EMI Consulting, calling on behalf of Rocky Mountain Power. May I please speak with [CONTACT]?

IS2a. We are conducting an independent evaluation of Rocky Mountain Power's energy efficiency programs and I understand that [FIRM] conducted a recommissioning project at its facility using support from Rocky Mountain Power, is this correct?

IF NO/DK: Is there someone else who would know more about these?

IF NO: TERMINATE CALL

IS3. Are you the person most familiar with your firm's decision to begin and carry out this project?

IF NO: Is someone else better positioned to respond to questions about the project?

[GET CONTACT INFO AND THEN ASK TO BE TRANSFERRED]

IS4. Do you have a few minutes to answer questions about your experience with the program? This survey is for research purposes only. It will take about 30 minutes and we can give you a $25 Amazon gift card as a thank you gift.

IS5. Great, thanks. All of your responses will be kept confidential and will not be revealed to anyone outside of the research team. Is it ok if I record the conversation for note taking purposes?

Please say your name for the recording.

[IF VERIFICATION IS NEEDED, TELL THEM THEY CAN CALL SHAWN GRANT AT 801-220-4196].

Confirmation of Site, Measures, and Interviewer's Role

C1. Records indicate that [FIRM] received recommissioning support from Rocky Mountain Power at [SITE ADDRESS]. Is that correct?

IF NO: What was the address of the facility that did receive recommissioning services?

C2. Records also indicate that your business [INSTALLED/ADJUSTED MEASURE TYPE]. Is that correct?

[PROBE AS NEEDED TO BETTER UNDERSTAND MEASURE]

IF NO: What measures were installed or adjusted through the recommissioning process?

C3. Can you help me understand your role at [FIRM]?

Awareness & Participation

AP1. Next, how did [FIRM] first become aware of the recommissioning services offered through Rocky Mountain Power?

PROBE: Was it Rocky Mountain Power, a vendor, an advertisement, their account manager?

AP2. Were you generally aware of recommissioning before learning about the offerings from RMP?

PROBE: Have you ever conducted a recommissioning project before?

AP3. What is the primary reason your organization initially decided to recommission this facility?

PROBE: Were there other driving factors?

AP4. Why did [FIRM] decide to partner with RMP on the recommissioning project?

PROBE: Were there other reasons or driving factors?

PROBE IF MULTIPLE REASONS: Of those reasons, which one was most influential in your initial decision to participate in the program?

Enrollment/Application/Approval

EAA1. When you applied to participate in the program, did you complete the application paperwork yourself?

IF NO: Who completed the application? Were you familiar with that process?

EAA2. Can you describe to me what was required to complete the application?

EAA3. Did you (and/or the person who filled out the application) encounter any problems, delays, or difficulties during the application process?

IF YES:

- What were they?
- Were they resolved to your satisfaction?

  IF YES: How were they resolved?

  IF NOT, how would you have liked them to be resolved?

EAA4. How were the program eligibility requirements?

PROBE: Were there any challenges related to the eligibility requirements? Were these concerns resolved to your satisfaction?

IF YES: How were your concerns resolved?

IF NO: How would you have liked your concerns to have been addressed/resolved?

EAA5. Did a Rocky Mountain Power representative visit your facility to collect building documentation and discuss the scope and timing of the project?

[IF YES] Can you rate the usefulness of that meeting on a scale of 1-5, with 1 being not at all useful and 5 being most useful? Why did you give it that score?

EAA6. Next, I understand that a Recommissioning Service Provider conducted a walk through analysis of your facility. What happened at this meeting?

IF NOT SURE: The RSP should have visited your facility, conducted a walk-through, and created a Recommissioning Investigation Report. This report would have highlighted actions that you could take to improve the energy efficiency of your facility along with costs and savings. Did you receive this walk through and report?

IF NO: In that case, can you describe what happened after you applied to the program? **[THEN SKIP TO EAA9]**

EAA7. Can you rate your satisfaction with the Recommissioning Service Provider, again on a scale of 1-5, with 5 being "very satisfied"? Why did you give it that score?

EAA8. Can you rate the usefulness of the report, again on a scale of 1-5, with 5 being "most useful"? Why did you give it that score?

EAA9. Were there recommendations in the report that your business did not pursue at the time?

IF YES:

- What were they?
- Why didn't your business pursue them?
- Does your business plan to implement them in the future? When?

EAA10. Can you describe your role in moving the project forward?

EAA11. After you finished implementing the recommendations, I understand a representative of the program came out to your facility to verify that the work was completed. **[IF NEEDED: This representative would have measured the performance of the system(s) adjusted as part of the recommissioning project.]** Do you recall this visit? [IF NO, SKIP TO PI1]

EAA12. How did the verification process go?

IF DIFFICULT/POOR:

- What were the problems or difficulties?
- Where they resolved? **IF NO**, how would you have liked them to have been resolved?

EAA13. How *satisfied* were you with the people who performed the verification? (On a similar 1-5 scale, 1=not at all satisfied, 5=very satisfied) Why would you give it that score?

Program Influence (FR/SO)

At this point, I have a few questions about what influenced you to complete this project. I am going to ask you to rate the importance of 7 different factors on a scale of 1 to 5, with 1 being not important at all and 5 being extremely important. **[IF NEEDED READ: "To clarify, this question is more about the decision to go ahead with the recommissioning as opposed to the decision to sign up for the program."]**

PI1. How important was…

1. RECOMMENDATION FROM CONTRACTOR OR VENDOR
2. INFORMATION PROVIDED BY ROCKY MOUNTAIN POWER ON POTENTIAL SAVINGS
3. INFORMATION ON PAYBACK
4. ROCKY MOUNTAIN POWER PROVIDING THE STUDY AT NO COST
5. A ROCKY MOUNTAIN POWER INCENTIVE
6. PREVIOUS PARTICIPATION WITH A ROCKY MOUNTAIN POWER PROGRAM
7. CORPORATE POLICY REGARDING ENERGY REDUCTION

PI2. Would you have conducted <u>any</u> recommissioning study for this facility without Rocky Mountain Power covering the costs of the study?

PROBE: Can you please describe the impact the program had on your decision to conduct a recommissioning study? (Scope/timing)

PI3. Thinking about the recommendations to improve the energy performance of your facility, would you have implemented any of those recommendations if they had not been identified in the recommissioning study?

IF YES: Which ones? When?

PI4. Did you receive financial incentives for all the measures implemented?

Would you have implemented those measures without the incentives?

PI5. Besides implementing the recommendations identified in the study, have you made any other energy efficiency upgrades without any financial or technical assistance from a utility or other organization?

IF YES: Did your experience with Rocky Mountain Power's recommissioning offerings play a part in your decision to pursue those energy efficient upgrades?

Installed Measures

Briefly, I'm interested to hear about your experience with the work conducted based on the recommissioning recommendations.

IM1. First, on a scale of 1-5 with 1 being very dissatisfied and 5 being very satisfied, how satisfied are you overall with the changes made through the recommissioning process at your facility?

PROBE: Why did you give it that score?

IM2. Have you been able to realize the electric energy savings that you expected from performing the work?

IF YES: How did you determine this?

IM3. Other than energy cost savings, did you expect other cost savings as a result of this project (i.e. maintenance)?

IF YES:

- Did these savings meet expectations?
- How did you determine this?

IM4. Did you install any new equipment as a result of the RCx recommendations?

IF YES: Is that equipment still installed and working properly? If no, why not?

Barriers

B1. Do you think there are any additional changes (beyond the ones identified in the recommissioning report) you could make to increase energy efficiency at your facility?

IF YES: Can you provide some examples?

IF NO: SKIP TO S1

B2. Are plans in place to make these changes?

IF YES: When will these changes be made?

Do you plan to apply for incentives from Rocky Mountain Power or another organization for any of these changes?

IF YES: How would you go about doing the work and or applying for those incentives? (i.e. Who would you contact and how?)

B3. What is the biggest obstacle, if any, preventing your organization from making these changes?

PROBE: Are there any other factors?

Satisfaction

I'd like to ask you some questions about your overall experiences with Recommissioning.

S1. Using a scale of 1 to 5 where 1 is very dissatisfied and 5 is very satisfied, how satisfied were you with your overall experience with the recommissioning services through Rocky Mountain Power?

PROBE: Why would you give it that rating?

S2. How timely were Rocky Mountain Power and its representatives in providing you feedback and addressing any questions regarding the program?

S3. How knowledgeable were Rocky Mountain Power and its representatives regarding the program and the program eligibility requirements?

There are several entities that are usually involved when completing one of these projects. These include Rocky Mountain Power employees and third-party contractors and engineers. I'm interested in who you interacted with.

S4.1 Did you interact with Rocky Mountain Power on this project?

What was their role in moving the project forward?

On a scale of 1 to 5, where 1 is "completely dissatisfied" and 5 is "extremely satisfied," how satisfied were you with RMP? Why?

S4.2 Did you interact with Nexant on this project?

What was their role in moving the project forward?

How satisfied were you with Nexant? Why?

S4.3 Did you interact with a contractor?

What was their role in moving the project forward?

How satisfied were you with the contractor? Why?

S5. Would you participate in this program again?

IF NOT: Why not?

S6. Would you recommend this program to your friends and/or colleagues?

IF NOT: Why not?

S7. If you could change anything about the program, what would you change?

Firmographics

Now I have a few final, general questions about your company for comparison purposes only.

F1. What is the primary activity at your business?

PROBE: How would you classify the facility where the recommissioning was conducted?

F2. Has [FIRM] participated in any other energy efficiency programs?

IF YES: Were the programs sponsored by Rocky Mountain Power?

IF NO: who sponsored the programs?

F3. Approximately, what are your average monthly or annual electricity costs?

What are your monthly or annual operating costs?

F4. About how many people does your firm employ?

F5. Does your organization have a staff person whose role is to manage energy usage?

F6. Does your organization have a specific policy regarding energy efficiency or conservation?

IF YES: What is it?

End

END1. Those are all of the questions that I have for you. Is there anything about your experiences with the recommissioning you'd like to mention that we did not talk about today?

END2. Great. Thank you very much for your input and time. In order to send the gift card, can you please provide me with your email address?

Thanks again. You should receive the gift card in the next few weeks.

Appendix E Recommissioning Near Participant Interview Guide

E.1 Introduction

As part of the evaluation of the 2012-2013 Recommissioning Program, EMI Consulting will be conducting interviews with the census of near participants in Utah (N=52). Near participants are defined as those customers who began a Recommissioning project but cancelled it or had the project on hold for longer than six months, at the time the participant data was collected for this evaluation. Objectives for the near participant interviews are identified in the below bullets:

- Describe how customers come to participate in the program
- Characterize the current status of projects identified as on hold or cancelled
- Understand overall customer satisfaction with the program, while participating
- Understand what it would take to motivate near participants to participate
- Understand barriers customers are facing that prevent increasing energy efficiency
- Characterize near-participant firms

Interview Instructions

The evaluation team understands that in July 2013, the Recommissioning Program changed to Energy Management under the new Wattsmart program. Under this new implementation, customers were treated differently depending on the type of energy management services they need: Recommissioning (3-6 mo. engagement), Industrial Recommissioning (3-9 mo. engagement), Persistent Commissioning (6-12 mo. engagement), or Strategic Energy Management (18-24 mo. engagement). Four of the six near participants interacted with the program before this change occurred and two of them interacted with the program after the change occurred. To solicit interviews, the evaluation team will offer a $25 Amazon gift card to customers that complete an interview.The evaluation team designed the interview questions to be open-ended. The interviewer will code responses following the interviews. Because the program changed in 2013, the interviewer will attempt to frame questions in terms of recommissioning in general rather than the "Recommissioning Program."

[2] Note: There are six projects listed in the "on hold-cancelled" list, but one of those projects was listed as canceled because it was a duplicate entry; therefore the evaluation team did not include them as a qualifying near participant for these interviews.

E.2 Interview Guide

Introduction and Screen

IS1. Hello, this is [INTERVIEWER'S NAME], calling on behalf of Rocky Mountain Power. May I please speak with [CONTACT]?

IS2a. We are conducting an independent evaluation of Rocky Mountain Power's recommissioning services and I understand that you considered recommissioning your facility using support from Rocky Mountain Power in [YEAR] but ultimately decided not to do so, is this correct?

IF NO: TERMINATE CALL

IS3. Are you the person most familiar with your firm's decision to begin this project?

IF NO: Is someone else better positioned to respond to questions about the project?

[GET CONTACT INFO AND THEN ASK TO BE TRANSFERRED]

IS4. Do you have a few minutes to answer questions about your experience with the program? This survey is for research purposes only. It will take about 15 - 20 minutes and we can give you a $25 Amazon gift card as a thank you gift.

IS5. Great thanks. All of your responses will be kept confidential and will not be revealed to anyone outside of the research team. Is it OK if I record the conversation for note taking purposes?

[IF VERIFICATION IS NEEDED, TELL THEM THEY CAN CALL SHAWN GRANT AT 801-220-4196].

Awareness & Participation

AP1. How did you first become aware of the recommissioning offerings available through Rocky Mountain Power?

PROBE: Were you generally aware of recommissioning before learning about the offerings from RMP?

AP2. Why did you initially decide to recommission this facility?

AP3. Why did you decide to participate in the program with Rocky Mountain Power?

PROBE IF MULTIPLE REASONS: Of those reasons, which one was most influential in your decision to initially participate in the program?

Near Participant

NP1. What is the status of the recommissioning project today?

NP2. **[IF NP1 = PROJECT IS ON HOLD/DELAYED]** Why did you put the project on hold?

PROBE: Does your firm plan to continue working with Rocky Mountain Power on the recommissioning project? [THEN SKIP TO B1]

NP3. **[IF N1 = COMPLETED PROJECT WITHOUT UTILITY SUPPORT]** Why did you decide to perform recommissioning without support from Rocky Mountain Power?

PROBE: What would have needed to change for you to recommission using incentives through Rocky Mountain Power?

NP4. **[IF N1= PROJECT CANCELED]** Why did you decide not to recommission your facility?

PROBE: What would need to change for you to recommission your facility?

NP5. Did the program requirements pose any barriers to completing the project through Rocky Mountain Power?

Satisfaction

S1. I understand you did not *complete* a project through Rocky Mountain Power, but I am interested in your overall experience and interactions with the program. Using a scale of 1 to 5 where 1 indicates 'very dissatisfied' and 5 indicates 'very satisfied', how satisfied were you with your experiences with Rocky Mountain Power's recommissioning services?

PROBE if rated: Why would you give it that score?

S2. Were Rocky Mountain Power and its representatives timely in providing you feedback and addressing questions regarding the program?

PROBE if not: Can you explain or provide an example?

S3. Were Rocky Mountain Power and its representatives knowledgeable regarding the program and the program eligibility requirements?

PROBE if not: Can you explain or provide an example?

S4. I understand that your company needed to apply to confirm your eligibility for this service. Was the application process straightforward?

S5 Did a Rocky Mountain Power representative visit your facility to collect building documentation and discuss the scope and timing of the project?

IF NO: Would this type of visit been helpful to you?

[SKIP TO B1]

[IF YES] On a scale of 1-5 with 1 being least useful and 5 being most useful, how useful did you find that meeting? Why did you give it that score?

S6. After this meeting, did a Recommissioning Service Provider conduct a walk through analysis of your facility? What happened at this meeting?

IF NOT SURE: The RSP should have created a Recommissioning Investigation Report. This report would have highlighted actions that you could take to improve the energy efficiency of your facility along with costs and savings. Did you receive a walk through and report?

[IF YES]

- On a scale of 1-5 with 1 being least useful and 5 being most useful, how useful did you find the report? Why did you give it that score?
- On a scale of 1 to 5 with one being very dissatisfied and 5 being very satisfied, how satisfied were you with the Recommissioning Service Provider that conducted the walk through? Why did you give them that score?

Barriers

B1. Even though you did not recommission a facility through Rocky Mountain Power, did you perform any other energy efficiency upgrades as a result of beginning the recommissioning process through Rocky Mountain Power? [**IF NO, SKIP TO B4**]

B2. What actions did you take?

B3. Did you receive any incentives from Rocky Mountain Power to do any of this work?

B4. Do you think there are any other changes you could make at your organization to improve electric efficiency at your organization?

[IF YES}: Can you provide some examples?

[**IF NO, SKIP TO IC1]**

B5. Are plans in place to make any of those changes? [**IF NO, SKIP TO F1**]

PROBE: Do you plan to apply for any incentives from Rocky Mountain Power or another organization? If yes, how would you go about it? (i.e. Who would you contact and how?)

B6. What factors could prevent your organization from making these changes?

PROBE IF MORE THAN ONE RESPONSE: Which of these do you think is the most challenging factor?

Firmographics

F1. Now I have a few final, general questions about your company for comparison purposes only. What is the primary activity at your business?

PROBE: How would you classify your organization's facilities?

F2. Has [FIRM] participated in any other energy efficiency programs?

PROBE: Were the programs sponsored by Rocky Mountain Power?

IF NO: who sponsored the programs?

F3. Approximately, what are your average monthly or annual electricity costs?

What are your monthly or annual operating costs?

F4. About how many people does your firm employ?

F5. Does your organization have a staff person whose role is to manage energy usage?

F6. Does your organization have a specific policy regarding energy efficiency or conservation?

IF YES: What is it?

End

END1. Those are all of the questions that I have for you. Is there anything about your experiences with recommissioning you'd like to mention that we did not talk about today?

END2. Great. Thank you very much for your input and time. In order to send the gift card, can you please provide me with your email address?

Thanks again. You should receive the gift card in the next few weeks.