Evaluation, Measurement & Verification Framework for Washington

Updated October 12, 2012

SOURCE DOCUMENTS

Information used in the development of this document came from PacifiCorp practices and experience, and knowledge gained from numerous guides, protocols, papers and reports. References that were used in the development of this framework are:

- National Action Plan for Energy Efficiency (2007). Model Energy Efficiency Program Impact Evaluation Guide. Prepared by Steven R. Schiller, Schiller Consulting, Inc. www.epa.gov/eeactionplan
- California Evaluation Framework (2004)
- Consortium for Energy Efficiency (2008): "Metering the Unmetered Resource: Evaluation Methods for Achieving Diverse Energy-Efficiency Policy Objectives"
- Efficiency Valuation Organization (2010): "International Performance Measurement and Verification Protocol"
- American Evaluation Association: Guiding Principles for Evaluators
- SEE Action (2012): "EM&V of Residential Behavior-Based Energy Efficiency Programs: Issues and Recommendations" by Lawrence Berkeley National Laboratory
- Avista Utilities (September 1, 2010): "Evaluation, Measurement and Verification (EM&V) Framework"
- Puget Sound Utilities (March 29, 2011): "Evaluation, Measurement and Verification (EM&V) Framework"
- PacifiCorp's Washington Demand-side Management Advisory Group

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LIST OF ABBREVIATIONS AND ACRONYMS

Advisory Group	PacifiCorp's Demand-side Management Advisory Group
CEE	Consortium for Energy Efficiency
DEER	California Database for Energy Efficiency Resources
ECM	Energy conservation measure
EM&V	Evaluation, Measurement & Verification
EUL	Effective Useful Life (measure life)
IPMVP	International Performance Measurement and Verification Protocol
IRP	Integrated Resource Plan
kWh	Kilowatt hour
M&V	Measurement and Verification
NEEA	Northwest Energy Efficiency Alliance
Portfolio	Energy Efficiency Programs and Market Transformation Efforts
PCT	Participant Cost Test
PTRC	PacifiCorp Total Resource Cost Test (recognizes Northwest Region 10 percent Conservation Adder)
RFP	Request for Proposal
RIM	Ratepayer Impact Measure Test
RTF	Regional Technical Forum of the Northwest Power and Conservation Council
TRC	Total Resource Cost Test
UCT	Utility Cost Test
WUTC	Washington Utilities and Transportation Commission
TRD	Technical Reference Database

PREFACE

Purpose and Scope

The purpose of this document is to describe the framework by which PacifiCorp ("the Company") conducts the evaluation, measurement and verification (EM&V) of the Company's energy efficiency programs. Evaluations are performed by independent external evaluators and/or PacifiCorp staff to validate energy and demand savings derived from the Company's energy efficiency portfolio.

Industry best practices are incorporated in this framework and are adopted by PacifiCorp with regards to principles of operation, methodologies, evaluation methods, definitions of terms, and protocols. The framework serves as a guide for PacifiCorp and external evaluators in the evaluation, measurement and verification of savings acquired through Company energy efficiency programs.

The intent of the Framework is to provide clarity, transparency, and a common understanding of methods and assumptions to consider in determining gross energy and demand savings of energy efficiency program activities. The document provides an overarching and transparent approach to EM&V processes including principles, objectives, metrics, methods, and reporting. The Framework is considered to be a "living document" that will undergo modifications as appropriate.

Background

PacifiCorp works with its customers to reduce the need for investment in supply side resources and infrastructure by reducing energy and peak consumption through cost-effective energy efficiency programs and market transformation efforts.

The Company currently offers six customer-focused energy efficiency programs, including the Home Energy Reporting pilot. In addition, the Company receives energy savings and market transformation benefits through its affiliation with the Northwest Energy Efficiency Alliance (NEEA). In the acquisition of cost-effective energy efficiency, the Company aspires to best practices in planning, program design and implementation, customer outreach, and measurement, verification and evaluations.

Historically, the Company has provided cash rebates and incentives directly to customers and technical assistance to commercial, industrial and agricultural customers in the form of engineering analyses. Customers use the rebates and incentives to offset the cost of energy efficient equipment and weatherization. Every qualifying measure and program must have an objective analysis to describe whether the investment in electrical energy savings is expected to be cost effective and how the savings will be achieved.

PacifiCorp maintains and utilizes an external group (the "Advisory Group") to advise the Company on, among other items, the development and modification of a written framework to evaluate, measure, and verify energy savings, as well as to provide guidance to PacifiCorp regarding EM&V methodology and measure assumptions used in the assessment of program cost effectiveness. The Advisory Group meets quarterly at a

minimum and represents the non-binding external oversight of PacifiCorp's EM&V activities.

This EM&V Framework document was originally prepared in response to the WUTC Docket UE-100170 Order No 2, and updated in response to additional requirements noted in WUTC Docket UE-111880 Order No 01. The framework is intended to provide overall guidelines including principles, objectives, methods, responsibilities and reporting requirements to direct PacifiCorp's energy efficiency EM&V activities.

OVERVIEW OF EM&V FRAMEWORK

This document describes PacifiCorp's approach to evaluating its energy efficiency measures, programs, and portfolio. Evaluations are planned, conducted and reported in a transparent manner recognizing that sound evaluation of energy efficiency programs requires transparency and independence as outlined and documented in this EM&V Framework as noted in Table 2.

Evaluations are conducted using best-practice approaches and techniques including those outlined in the National Action Plan for Energy Efficiency (NAPEE) Program Impact Evaluation and the California Evaluation Framework guides.

PacifiCorp will develop and maintain a database and supporting documentation, functionally similar to a Technical Reference Manual outlining the methods and assumptions and sources for those assumptions used for estimating energy savings. The database will be updated as necessary, with opportunities for review by the Advisory Group. The database and supporting documentation may be reviewed by external evaluators in its initial draft form and periodically as needed thereafter. The cost of developing and maintaining this database and supporting documentation will be considered as portfolio costs and may be allocated across two years (50/50 allocation) for calculation of cost effectiveness of the portfolio.

EM&V tasks will be segregated within PacifiCorp's organization to ensure they are performed and managed by personnel who have a neutral interest in the benefits associated with anticipated savings. While the Company's standard operating procedure for performing EM&V activities is the use of external independent evaluators selected through a competitive bid, the Company reserves the right, as appropriate, provided in Docket UE-111880 Order 01 to conduct internal evaluations.

Evaluations will be planned, conducted and reported in a transparent manner, affording opportunities for review and comment by the Advisory Group.

- An Annual EM&V Plan establishing priorities for evaluation activities, including budgets and schedules, will be prepared each year as appendix of PacifiCorp's Annual Business Plan and filed with the WUTC as noted in Table 2. These plans will include a summary of each scheduled evaluation activity, whether the activity will be performed by an external evaluator or internal by PacifiCorp, including summary of work to be completed and budgets. .

- Other documents including project scopes, requests for proposals, detailed evaluation plans, and draft and final reports will be prepared for each major EM&V activity. It is the Company's intent to share the documents for review with the Advisory Group, to the degree time is available.

Reports from EM&V activities including evaluation of energy and demand savings and cost effectiveness will be available to the Advisory Group, WUTC and other interested stakeholders, consistent with the reporting schedules summarized in Table 3.

EVALUATION PRINCIPLES, OBJECTIVES AND METRICS

Evaluation, Measurement and Verification (EM&V) is a catch-all term used in energy efficiency literature to represent the determination of both program and project impacts. Evaluation includes "the performance of studies and activities aimed at determining the effects of a program".[1] By definition, Measurement and Verification refers to "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." [2]

Evaluations should be based on credible and transparent methods and efforts to be successful in capturing the savings that energy efficiency programs offer. Energy efficiency evaluations will develop retrospective estimates of energy savings attributable to a program. Evaluations should also go beyond simply documenting savings to actually improving programs and providing a basis for future savings estimates

While energy efficiency evaluations will be retrospective in nature, the information obtained will be used to inform future conservation potential assessments, conservation plans, forecasts and targets. Once used in establishing biennial targets the information will be used to evaluate the performance of the program during the biennium. The underlying savings estimates used to develop the targets will be based on RTF deemed savings or other deemed savings values based on generally accepted impact evaluation data and/or other reliable and relevant source data that has verified savings levels, and be presented to the Advisory Group for comment.

Evaluations fall into two major categories, Formative and Outcomes. Formative evaluations are used to develop or improve program designs, and include evaluation types of market characterization studies, potential assessments and process evaluations. Outcomes evaluations help in determining program results, and include evaluation types of impact evaluation and cost effectiveness analysis.[3] Table 1 provides a summary of the evaluation categories and types of energy efficiency program evaluations.

[1] National Action Plan for Energy Efficiency (2007). Model Energy Efficiency Program Impact Evaluation Guide. Prepared by Steven R. Schiller, Schiller Consulting, Inc. www.epa.gov/eeactionplan
[2] Id.
[3] Consortium for Energy Efficiency (2008): "Metering the Unmetered Resource: Evaluation Methods for Achieving Diverse Energy-Efficiency Policy Objectives"

Table 1: Categories and Types of Energy Efficiency Program Evaluation

Evaluation Category	Phase at which Implemented	Evaluation Type	Assessment Level
Formative	Planning and design phase	Market characterization study	Market and/or Program
		Potential Studies	Market and/or Program
	Implementation phase	Process evaluation	Program
Outcomes	Implementation and/or post implementation (ex-post)	Impact evaluation	Program
		Cost effectiveness analysis	Program or Portfolio

- Process Evaluations assess program delivery, from design to implementation, in order to identify bottlenecks, efficiencies, what worked, what did not work, constraints, and potential improvements. Timeliness in identifying opportunities for improvement is essential to making corrections along the way.

- Impact Evaluations determine the impacts (e.g. energy and demand savings) and co-benefits (e.g. job creation, water savings) that directly result from a program. Impact evaluations also support cost effectiveness analyses aimed at identifying relative program costs and benefits.

- Cost Effectiveness Analysis is the exercise to determine the cost effectiveness of programs and measures from various viewpoints including Total Resource Cost as modified by the Northwest Power and Conservation Council, Total Resource Cost, Utility Cost, Ratepayer Impact Measure and Participants Cost.

- Market Characterization and Potential Studies are described in PLANNING AND DESIGN STUDIES section.

This framework, and the industry as a whole, focuses on impact evaluations and the measurement and verification of demand and energy savings associated with specific programs. The results of impact evaluations will inform prospective cost effectiveness analysis in regards to future program planning.

Guiding Principles and Ethics – Outcome Evaluations

Evaluation principles of energy efficiency programs are defined by completeness and transparency; relevance and balance in risk management, uncertainty, and cost; and consistency.[4]

[4]National Action Plan for Energy Efficiency (2007). Model Energy Efficiency Program Impact Evaluation Guide. Prepared by Steven R. Schiller, Schiller Consulting, Inc. www.epa.gov/eeactionplan

1. *Completeness and transparency*. Results and calculations are coherently and completely compiled. Calculations are well documented in a transparent manner.
2. *Relevance and balance in risk management, uncertainty, and costs*. The data, methods, and assumptions are appropriate for the evaluated program. The level of effort expended in the evaluation process is balanced with respect to the value of the savings, the uncertainty of their magnitude, and the risk of overestimated or underestimated savings levels.
3. *Consistency*. Evaluators working with the same data and using the same methods and assumptions will reach the same conclusion.

This results in high quality information on which business decisions can be made.

As outlined in the Evaluation Cycle section below, PacifiCorp will perform EM&V activities on a rotation schedule such that, over the EM&V cycle, all major programs are covered.

When using external evaluators, their credibility is essential for providing credible findings on the results from the program and for providing recommendations impacting program and investment decisions. (See Impact Evaluation Methods and Key Assumptions below for more information.)

Evaluation Planning

PacifiCorp will plan and scope its evaluation activities in order to provide the greatest value from its evaluation resources and to ensure transparency. The criteria will assist the Company in 1) measuring the effects of the program as a reliable energy resource, 2) evaluating the cost effectiveness of the program for purpose of program design and incentive levels, 3) identifying recommendations to improve the program, and 4) meeting the requirements of completing timely evaluations. The Company intends to consider the following criteria to assist in prioritizing evaluation activities.

- Size of the program – larger programs prioritized above smaller programs in terms of budget and/or savings.
- Uncertainty regarding the results (e.g. maturity of program, magnitude of changes in the program market, related evaluation results available, etc.) – higher level of uncertainty would increase prioritization, all else equal
- Combining evaluations of same programs in other states to leverage economy of scale benefits to cost
- Impact upon regulatory processes or regulatory oversight: information necessary for regulatory oversight will receive a higher EM&V priority than information that is not necessary for that purpose, all else being equal
- Cost of evaluation. Alternative approaches should be considered when the value of incrementally better data is less than the cost of that data.
- Timeliness in providing important information for regulatory reporting, program planning, improvements and other needs.

The following guiding principles will be taken into consideration when planning evaluations:

- Leveraging secondary research as appropriate with modifications as deemed necessary and useful
- Expert review of program operation and design
- Key assumptions will be verified in evaluations
- Over time, evaluations are used to refine input assumptions used in savings estimation and resource analysis in order to improve program delivery.

Verification

A component of the overall evaluation efforts is aimed at the reasonable verification of installations of energy efficient measures and associated documentation through review of documentation, surveys and/or ongoing onsite inspections.

Verification of the potential to achieve savings involves regular inspection and commissioning of equipment. However, such verification of the potential to generate savings is considered cost to program and should not be confused with M&V.

PacifiCorp engages in programmatic verification activities, including inspections, quality assurance reviews, and tracking checks and balances as part of routine program implementation and may rely upon these practices in the verification of installation information for the purposes of savings verifications in advance of more formal impact evaluation results. See Appendix 2 for Measure of Installation Verifications.

In addition, an independent third-party evaluator will be contracted through a competitive bid process to verify calculations of total portfolio MWh savings and review EM&V activities for best practices as defined in WUTC Docket UE-111880, Order 01, Condition 6(f) for the 2012-2013 biennial period. The final report is due June 1, 2014.

Budget

The budget includes reasonable EM&V activity costs associated with, but not limited to, market studies, process, and impact evaluations, cost effectiveness analyses, annual reporting, and costs associated with EM&V adherence and modifications of framework conducted by both internal PacifiCorp staff and external evaluators.

In WUTC Docket UE-111880, Order 01, spending requirements were set for EM&V activities to ensure adequate attention and resources are expended to verify conservation program results. Consistent with the requirements of Order 01, PacifiCorp must spend a reasonable amount of its conservation budget on EM&V, including a reasonable proportion on independent, third-party EM&V. These costs will be treated as portfolio costs and will not be assigned to programs for purpose of determining the cost effectiveness.

Table 2 outlines the different EM&V activities and identifies whether the costs will be captured at program specific or portfolio level as well as identifying whether the cost is included in program specific expenses or EM&V budget.

Table 2: Treatment of Costs for EM&V Activities

EM&V Activity	Expense Incurred By	Portfolio or Program Specific Cost	Included in EM&V Budget
Program Impact Evaluations	Costs of 3rd Party	Portfolio	Yes
	Internal Costs	Portfolio	Yes
Program Process Evaluations	Costs of 3rd Party	Portfolio	Yes
	Internal Costs	Portfolio	Yes
Annual Performance Reporting, including cost effectiveness	Internal Costs	Portfolio	Yes
Cost Effectiveness Analysis	All Incurred Costs	Program	No
Potential Studies *	All Incurred Costs	Portfolio	No
Market Characterization Studies	All Incurred Costs	Program	No
Field/site inspection as part of ongoing program quality control process	Costs of Consultant	Program	No
	Internal Costs	Program	No
Compliance with tariff and contract	Internal Costs	Program	No
Development and Maintenance of measure data *	Costs of Consultant and application	Portfolio	No
	Internal Costs	Portfolio	No

* Excluded from the cost effectiveness tests

A summary report on Washington System Benefits Charge expenditures incurred by the Company in complying with Docket UE-111880 Order 01 will be incorporated into the Annual Report on Conservation Acquisition. The Annual Report will also include a description of the EM&V studies completed and/or underway during the reporting cycle with reporting of the type of evaluations, whether they were conducted by internal staff or external evaluators, the program or programs studied, and the evaluation budgets. In addition, completed evaluations will be provided with the submission of the annual report.

Evaluation Cycle

PacifiCorp will perform evaluations on a rotation schedule of selected programs such that, over the EM&V cycle, all major programs are covered. Evaluations are scheduled to be performed on all programs every two years. There may be deviations from this

schedule as a result of new or changing programs or external influences that may impact the proposed schedule of EM&V activities. This rotation has evaluations being performed for all programs in the portfolio every two years, following the criteria outlined in Evaluation Planning section above.

When using external evaluators, the evaluation will be competitively bid through the RFP process, following the guidelines established by PacifiCorp's Procurement department. The rotation schedule will, when appropriate, combine programs from other states in the RFP process, allowing the Company to take advantage of potential cost reductions due to economies of scale (See Appendix 1: Multi-Year Evaluation Rotation Schedule.)

Captured Data

Critical data to be evaluated are as follows:

- Annual energy acquisition (gross and net savings)
- Cost and benefit data for cost effectiveness analysis including total project cost, ECM cost, measure life, IRP decrement value, etc.
- Net to gross ratios (examining free-ridership and spillover) to understand program efficacy and use as needed for program design purposes
- Program quality assurance and compliance to regulatory requirements
- Other information necessary for program and portfolio management
    - Market characterization attributes for measures and programs that may include, but are not limited to, product price and availability, market saturation, customer participation and satisfaction, incremental costs, and effects of codes, standards and prices
    - Other information including lost opportunities, demographics, budget targets and other useful information for system planning

EVALUATION PLANNING CYCLE

The hierarchy of documents outlining the planning steps for each evaluation cycle is made up of the following:

1. EM&V Framework – This document is considered a "living document" that will be updated as needed and will remain in place until superseded by regulatory modifications or changed through Advisory Group process.
2. Annual DSM Business Plan-_This document includes program-level detail that shows planned expenses and resulting projected energy savings. Program detail will include program descriptions, program measure data, measure incentives and customer and measure eligibility requirements. The plan will also include an annual EM&V Plan section.
3. The annual EM&V Plan will include summaries of scheduled evaluation activities, whether the activity will be performed by an external evaluator or internally by PacifiCorp staff (see section on Roles and Responsibilities) and information regarding the evaluation activities.
4. Evaluation Plan – New energy efficiency programs will include an evaluation plan at launch of the program, however plans are subject to revisions should program conditions warrant. The evaluation plan will address issues related to evaluation metrics, baselines, approaches, level of effort, estimated budget, tracking and reporting expectations associated with individual evaluation activities.

Table 3 below illustrates the EM&V planning cycles and documents.

Table 3: HEIRARCHY OF EM&V PLANNING CYCLES / DOCUMENTS

	EM&V Framework*	**Annual EM&V Plan**	**Planning and Oversight of Specific EM&V Activities**
Document(s)	EM&V Framework	Included as a section in Annual Business Plan	• Technical Reference Database • Statement of Work for significant EM&V projects • Evaluation Plan for new programs • Key issues requiring oversight • Draft results and final reports
Contents	The overarching structure and process for EM&V	EM&V major activities proposed for a given cycle: • High level description of major activity • Estimated budgets • Schedule	Details regarding specific EM&V activities including impact and process evaluations, market characterization studies, potential assessments. The TRD will contain measures, savings assumptions and data sources used for estimating energy savings.
Schedule	The Framework remains in place as a "living document" that can be updated as needed	Updated annually	As needed
Reviewers	Advisory Group	Advisory Group	Intent to share with the Advisory Group provided time is available.

*This document.

IMPACT EVALUATION METHODS AND KEY ASSUMPTIONS

Evaluation Standards

The key objective of impact evaluations is to produce the most accurate and unbiased estimate of energy and demand savings. PacifiCorp's evaluation methods are founded on industry best practice, based on applicable industry reference documents and guidelines including, but not limited to: NAPEE Guide, IPMVP, California Evaluation Framework and SEE Action (LBNL). The Company observes the following principles in its oversight of impact evaluations:

1. Evaluators will be impartial in their work and will not have compensation, performance appraisal or goals tied to evaluation results.
2. Evaluators are expected to follow the Guiding Principles for Evaluators as documented by the American Evaluation Association, which are:
    - Systematic inquiry
    - Competence
    - Integrity/Honesty
    - Respect for people
    - Responsibilities for general and public welfare
3. Transparent methods to estimate savings and impacts will be reviewed in various forums to increase quality and reliability.
4. Majority of evaluation dollars and efforts are spent in areas of greatest importance or uncertainty.

The company may expend resources up to ten (10) percent of its conservation budget on programs whose savings impact has not yet been measured, as long as the overall portfolio of conservation passes the modified TRC test. These programs may include certain information, education, marketing, outreach, pilot programs and similar efforts to effect behavioral changes under provision 7(d) of Docket UE-111880 Order 01. These efforts will not be subject to evaluation.

If the Company seeks to attribute savings from a pilot program, an evaluation plan must be provided prior to implementation.

Projected Energy Savings Estimates (Ex-Ante) versus After Impact Evaluations (Ex-Post)

Impact evaluations focus on estimating the amount of energy and demand savings a program delivered. Estimates of actual savings are ex-post savings; program savings analyzed over a specific period of time. The initial design and review of prospective programs will be based upon ex-ante savings; savings that are expected to be delivered by the program.

The results of the impact evaluations or ex-post savings will be used to inform the Company's ten year conservation plan and two year biennial targets including future program design. This information will not be used in retrospectively reporting the Company's performance to target within a current biennial period. These savings may

change over time. Savings documented after an impact evaluation (ex-post), can vary significantly from projected savings.

Approaches for Determining Gross Savings

Gross impact savings are determined using one of the following approaches:

1. One or more measurement and verification (M&V) methods from IPMVP, are used to determine the savings from a representative sample of projects. These savings are then applied to the entire population of projects in the program. The four IPMVP options are:[5]
    a. Option A: Key Parameter Measurement – field measurement of the key performance parameter(s) which define the energy use of the ECM's affected system(s) and/or the success of the project.
    b. Option B: All Parameter Measurement – field measurement of the energy use of the ECM affected system.
    c. Option C: Whole facility – measuring energy use at the whole facility or sub-facility level.
    d. Option D: Calibrated Simulation – simulation of the energy use of the whole facility, or of a sub-facility.
2. Deemed savings based on generally accepted impact evaluation data and/or other reliable and relevant source data that has verified savings levels. Examples of documented sources include but are not limited to the RTF or historical evaluations specific to a demographic area (e.g. DEER, CEE, impact evaluations).
3. Statistical analyses of large volumes of metered energy usage data typically collected from billing analyses.

Irrespective of which of the above approaches are utilized for gross savings calculation, if field inspections on specific measures are a necessity, they will be performed by external evaluators to confirm their installation. In some cases, measures will be inspected to confirm that they were not only installed, but also installed per specification and that they are properly operating, and on large-scale custom measures/projects, baseline inspections may be conducted.

Randomized Control Groups – Home Energy Reporting

Home Energy Reporting will use a randomly assigned "treatment" group receiving the reports, and a "control" group that does not. The statistical implication of this design is to avoid the issue of selection bias that substantially complicates the estimation of impacts for most voluntary opt-in programs.

[5] Efficiency Valuation Organization (2010): "International Performance Measurement and Verification Protocol"

Baseline

Net and/or gross savings are determined by comparing energy use and demand after a program is implemented (the reporting period) with what would have occurred had the program not been implemented (the baseline). The baseline and reporting period energy use and demand are compared using a common set of conditions such as weather, operating hours, building occupancy, and demographics. These conditions are then adjusted so that only program effects are considered when determining savings.[6]

Evaluators will use or determine baselines based on common practice, or codes and standards. Two generic approaches defining baselines are:

1. Project-Specific Baseline – defined by a specific technology or practice that would have been pursued or would continue to exist, at the site of individual projects, if the program had not been implemented.
2. Performance Standard Baseline – defined to avoid project-specific determinations and instead try to ensure quantified energy and demand savings. A common use is to define the minimum efficiency standard for a piece of equipment as defined by law, code or standard industry practice.

Persistence or Measure Life

Persistence is how long the energy savings are expected to last once an energy efficiency activity has taken place. A component of an impact evaluation should consider whether the savings from the project change over time. These changes are primarily due to retention and performance degradation, codes or standards or the impact of market progression can also reduce net savings. Effective useful life (EUL) or measure life is a term often used to describe persistence.[7]

PacifiCorp will be using the term of measure life to describe persistence.

In most cases, persistence of savings will be determined using historical and documented persistence data, such as manufacturer's studies or values provided in relevant databases such as the Regional Technical Form (RTF) and others. However, if deemed necessary, PacifiCorp may also utilize the following basic approaches for assessing persistence:

- Laboratory and field testing of the performance of energy efficient and baseline equipment
- Field inspections, over multiple years
- Other non-site methods such as telephone surveys and interviews, analysis of consumption data, or use of other data (e.g., data from a facility's energy management system)

[6] National Action Plan for Energy Efficiency (2007) Model Energy Efficiency Program Impact Evaluation Guide. Prepared by Steven R. Schiller, Schiller Consulting, Inc. www.epa.gov/eeactionplan

[7] National Action Plan for Energy Efficiency (2007) Model Energy Efficiency Program Impact Evaluation Guide. Prepared by Steven R. Schiller, Schiller Consulting, Inc. www.epa.gov/eeactionplan

Uncertainty – Expectations for Savings Determination

Program evaluations will seek to reliably determine energy and demand savings with reasonable accuracy, by deploying the EM&V resources in a manner that provides the best value in terms of information. While additional investment in the estimation process can reduce uncertainty, the tradeoffs between evaluation costs and reductions in uncertainty need to be considered. Evaluation results will be reported as expected values including some level of variability or uncertainty defined and explained.

Uncertainty of savings level estimates is a result of two types of errors, systematic and random.

1. Systematic errors are those that are subject to decisions and procedures developed by the evaluator and are not subject to "chance". These include:
    a. Measurement errors, arising from meter inaccuracy or errors in recording an evaluator's observation.
    b. Non-coverage errors, which occur when the evaluator's choice of a sampling frame excludes part of the population.
    c. Non-response errors, which occur when some refuse to participate in the data collection effort.
    d. Modeling errors, due to the evaluator's selection of models and adjustments to the data to take into account differences between the baseline and the test period.
2. Random errors (also known as Sampling errors), those occurring by chance, arise due to sampling rather than taking a census of the population. In other words, even if the systematic errors are all negligible, the fact that only a portion of the population is measured will lead to some amount of error.[8]

Evaluators are expected to control for systematic error through best practices and control random error by striving to follow industry standards which is designed to achieve a 90% confidence level and $\pm$ 10 percent precision. If sampling requirements can be shown to be unrealistic, an 80/20 confidence level would be required. (Confidence refers to the probability the estimated outcome will fall within some level of precision.) Deviations from these specifications may be permitted provided the circumstances warrant it and it is not expected to materially impact the validity of the evaluation results. The evaluation report will discuss aspects of uncertainty and the decision process that determined sample size and confidence/precision level achieved.

Net Savings

Net savings attempts to separate out the influence of a particular energy efficiency program from all the other influences that determine participant and non-participant behavior and decisions of whether, when, and to what degree to adopt efficiency actions offered by a program. Two primary factors that will differentiate gross and net savings are free-ridership and spillover.

[8] Id.

Free riders are customers who would have installed the efficient measure or changed a behavior regardless of a program's incentive. Categories of free riders can be full or partial. Spillover occurs when there are reductions in energy consumption caused by the presence of the energy efficiency program, but which the program does not directly influence. There can be participant and non-participant spillover.

- Participant spillover is defined as additional energy efficiency actions that program participants take outside the program as a result of having participated.
- Non-Participant spillover is defined as savings from efficiency projects implemented by those who did not directly participate in a program, but still occurred due to that influence of the program.

PacifiCorp will use the Net-to-Gross ratio of 1.0, consistent with the Council's methodology, for each program or portfolio for the purpose of cost effectiveness analysis. However, when feasible, the Company will continue to examine the program free-ridership and spillover. Free-ridership will be monitored since high percentage of savings that would have occurred in the program's absence is not desirable for managing costs of a program. Spillover may be a valid adjustment to evaluated savings and in consideration of program economics if there is a verifiable causal link to the program and doing so does not result in the double counting of savings or impact another program's economics.

When required, net savings may be determined using one or more of the following approaches:

- Self-reporting surveys (which is industry standard) in which information is reported by participants and non-participants without external verification or review.
- Enhanced self-reporting surveys in which self-reporting surveys are combined with interviews and documentation review and analysis
- Statistical models that compare participant and non-participant energy and demand patterns
- Stipulated net-to-gross ratios where ratios are multiplied by the gross savings to obtain an estimate of net savings and are based on historical studies of similar programs.

Cost Effectiveness

PacifiCorp's cost effectiveness evaluations compare program benefits and costs, showing the relationship between the value of a program's outcomes and the costs incurred to achieve those benefits. The findings help in judging whether to retain, revise, or eliminate program elements and provide feedback on whether efficiency is a wise investment as compared to energy generation and/or procurement options.

The primary test for the WUTC is the Total Resource Cost (TRC) test incorporating the 10 percent conservation benefit and risk adder consistent with the Council's approach. This test examines the benefits and costs of an energy efficiency program as a resource option from the Company's and customers' perspective. PacifiCorp will also consider

quantifiable non-energy benefits unless the Company shows that they do not materially impact resource targets and potentials.

In addition to the adjusted TRC test, PacifiCorp's programs and portfolios will be analyzed using cost-effectiveness tests prescribed by the California Standard Practice Manual. These tests are defined as follows:

1. Utility Cost Test (UCT): From Company's perspective, benefits are avoided energy costs, capacity costs and line losses. Costs include any program administration, implementation or incentive costs associated with funding the program.
2. Ratepayer Impact (RIM): All ratepayers (participants and non-participants) may experience an increase in rates to recover lost revenue. This test includes all program costs as well as lost revenues.
3. Participant Cost Test (PCT): From this perspective, program benefits include bill reductions. Costs include any customer contribution to the measure cost.

MEASURE DATA

PacifiCorp will develop and maintain a technical reference database (TRD) and accompanying documentation of measures, savings assumptions, and data sources used for estimating energy savings. This information will be maintained and updated as need, with opportunities for Advisory Group review and comment.

Procedures will be established and documented to define the guidelines for creating and maintaining the methods and assumptions for different measures. Segregation of duties will be considered for the creation and ongoing maintenance of this information. The intent is for this to become a resource for program delivery, evaluation, planning or reporting purposes.

The information will include, but not be limited to, the following measure data:

- Description of projected savings estimates, considering the following categorization:
    - RTF Deemed – prescriptive savings whose values have been evaluated and deemed by the Regional Technical Forum, or
    - PacifiCorp Deemed – prescriptive savings based on:
        - Project specific engineering analysis
        - Program specific impact evaluation results
        - RTF values and adjusted for the Company's service territory
        - Other verifiable sources

      If PacifiCorp utilizes savings amounts for prescriptive programs other than those established by the RTF, such estimates must be based on generally accepted impact evaluation data and/or other reliable and relevant source data that has verified savings levels, and be presented to the Advisory Group for comment.

- References source of assumption for information used in calculating cost effectiveness analysis (e.g. IRP decrement value, avoided costs, transmission line loss estimates and etc.)
- Measure life
- The source of the projected savings estimates (e.g. RTF deemed or PacifiCorp deemed)

The final draft of the TRD and/or access to the TRD shall be provided to the Advisory Group for review and comment by March 31, 2013 and applied in the development of biennial conservation plans starting with the 2014-2015 Conservation Target.

PROCESS EVALUATIONS

Process evaluations of PacifiCorp's programs will involve systematic assessments of programs and internal operations for the purpose 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. The primary mechanisms used for process evaluations are data collection via surveys, questionnaires, and interviews to gather information and feedback from administrators, designers, participants, implementation staff and key policy makers. Other elements of a process evaluation can include workflow and productivity measures, reviews, assessments and testing of records, databases, program-related materials and tools.

PLANNING AND DESIGN STUDIES

Potential Studies

Potential studies are intended to quantify energy efficiency and peak reduction opportunities starting with an estimate of what's technically feasible (technical potential) and based on maturity of technologies, market characteristics, resource adoption rates, and other information that provide an adjustment for the amount that is realistically achievable (achievable potential), which is generally over a prescribed planning horizon (e.g. 20 years). Potential studies assess market baselines, costs and savings potentials for different technologies and customer markets and often provide information on customer needs and barriers to the adoption of energy efficiency and peak reduction helpful in the pursuit of these resources. Information provided by potential assessment studies allow energy efficiency and peak reduction to be considered as a competing resource against supply-side resources in Company integrated resource plans, providing quantity and cost information which allows for economic screening, or what is often referred to as economic potential.

Market Characterization Studies

Market characterization studies are systematic assessments of changes in the structure or functioning of a market, or the behavior of participants in a market, that result from one or more program efforts or due to other factors. Market characterization studies will usually consist of surveys, reviews of market data, and analysis of the survey results and related data. These studies may focus on estimation of achievable energy and demand savings, measure and implementation costs, and assessment of baselines and market potentials.

ROLES AND RESPONSIBLITITES FOR CONDUCTING AND MANAGING EM&V ACTIVITIES

EM&V tasks will be segregated within PacifiCorp's organization to ensure evaluation tasks are performed and managed by personnel who are neutral to the anticipated savings results. While the Company's standard operating procedure for performing EM&V activities is using external evaluators selected through a competed bid, the Company reserves the right provided in Docket UE-111880 Order 01 to conduct evaluations internally. External work is defined as work performed by entities outside of PacifiCorp. Evaluations performed by the Company's staff will be performed by personnel who have no part of their performance assessment or goals tied to energy efficiency acquisition targets and results.

PacifiCorp's standard operating procedure for performing EM&V activities is using external evaluators selected through a competitive bid process.

Roles of PacifiCorp Staff and External Evaluators

Work within PacifiCorp EM&V will generally fall into four categories:

- Planning and Development (P&D) Staff (pre implementation design)
    - Design and administration of RFP for external consulting firms to characterize market conditions prior to program implementation
    - Data management of deemed savings estimates and adjustments
    - Assess pre-implementation cost effectiveness
    - Establish estimated EM&V budget (joint with P&C)
    - Establish EM&V plans and processes (joint with P&C)
- Process and Compliance (P&C) Staff (post implementation assessment)
    - Preparation and management of post implementation impact evaluations to determine ex-post evaluated savings, prepare cost effectiveness analysis, and determine realization rates
    - Process tracking and performance data management
    - Design and administration of RFP for external evaluation firms for EM&V processing
    - Administration and management of external firm(s) performing EM&V
    - Preparation of performance reports
    - Establish pre-implementation estimated EM&V budget (joint with P&D)
    - Establish pre-implementation EM&V plans and processes (joint with P&D)
- Program Delivery Staff (implementation of programs)
    - Administration of program to ensure goals and targets are achieved
    - Program quality assurance and compliance to regulatory requirements
    - Oversee data collection for program
    - Implement evaluation recommendations related to program implementation

    - Provide recommendations to P&D on program improvements including but not limited to market adoption, advancing codes, new technologies, and market changes
- Evaluators (external and/or PacifiCorp staff)
    - Perform process and impact evaluations to determine ex-post evaluated savings, prepare cost effectiveness analysis, determine realization rates, and improve program adoption and processes
    - Conduct verification activities
    - Conduct market characterization studies
- Advisory Group
    - Review and provide advice on
        - EM&V Framework
        - Annual EM&V Plan
        - Final EM&V reports
        - RFP / Statement of work, to the degree time is available

Managing Selection of External Evaluators

External evaluators will be selected utilizing a competitive bidding process consistent with PacifiCorp's Procurement procedures. Qualified firms who are known for performing such EM&V activities will be given the opportunity to bid on a proposed RFP where the Statement of Work outlines the EM&V activity being requested.

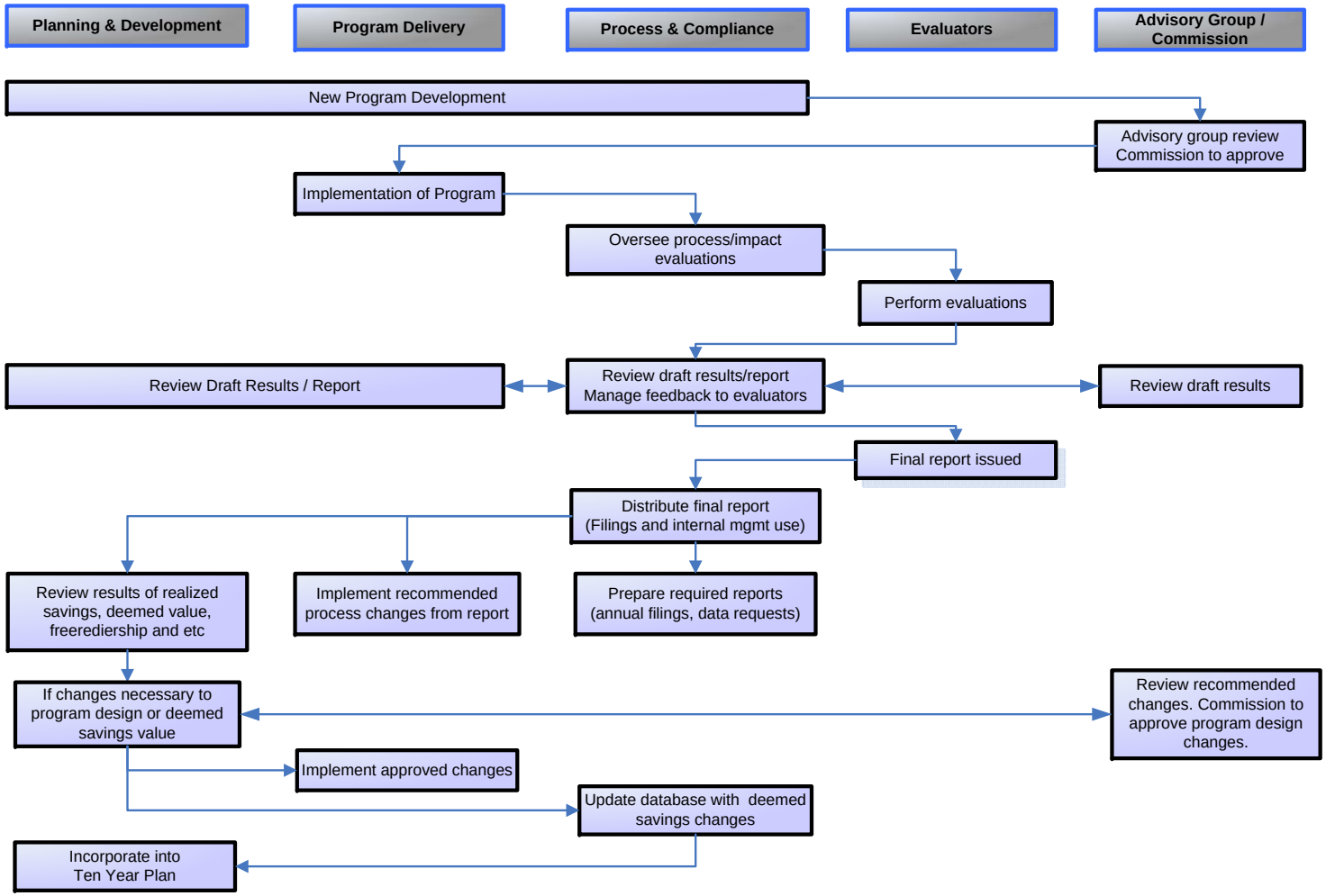
External evaluator reports will be available to the Advisory Group upon completion and filed with the Annual Report on Conservation Acquisition.

External Oversight and Review

External review ensures that the EM&V process is thorough, transparent and conducted according to proper standards. PacifiCorp relies on the Advisory Group for external review. The Advisory Group may advise PacifiCorp concerning the EM&V plans and framework outlined in this document.

Inserted below is a functional chart showing the EM&V activities and how its flows through the different responsible parties.

EM&V Functional Chart



DATA MANAGEMENT

PacifiCorp's data management systems used to maintain, track and report for the management of energy efficiency programs is a combination of proprietary and licensed software applications. There are three active data sources, outside of the program administrators databases, used to maintain customer-related data associated to energy efficiency programs for PacifiCorp. All of the databases within the Company are managed with restricted access capabilities. These systems are as follows:

1. CSS – PacifiCorp major customer database containing all data related to the delivery and billing of customers.
2. SAP – Used to track detail payment information, program costs, contract terms and approval, and general accounting functionality.
3. TrakSmart – Application used to track information for project, program and/or customer specific depending on whether the information is for residential, commercial or industrial. Supporting data tracked includes measures, savings, measure costs, status, accounting, and incentive payments. This application also provides reporting functionality.
4. Third-party program administrator's database – Program administration outsourced to contractors will utilize their own database that will capture the details of program specifics identified by the Company and needed by the program administrator including application processing, measure specifics, associated cost, and other relevant information required to manage the program.
5. Technical Reference Database (currently being developed) – Database that will be used to reference measures, savings assumptions and data sources used for estimating energy savings.

REPORTING CYCLES AND SCHEDULE

The program implementation cycle operates on a calendar year basis, from January 1 through December 31 each year. PacifiCorp will provide reports as outlined in Table 4 listing the preliminary schedule of the activities associated with EM&V reporting. A final schedule with contents of each report will be reviewed with the Advisory Group.

Table 4: EM&V Reporting Schedule

Report	Description	Distribution Date *	Distribution List
Annual DSM Business Plan	Forward looking. Program-level expected savings, expenditures, adjustments, major changes, includes EM&V plan	November 1st	WUTC, Advisory Group
Annual Conservation Report	Backward looking. Program-level savings, expenditures, adjustment, changes, EM&V activities, including cost effectiveness analyses from prior years and budget variance report.	March 31st	WUTC, Advisory Group
Tariff Changes	Revisions to Cost Recovery Tariff with requested effective date of July 1st	May 1st	WUTC, Advisory Group
Semi-annual Expenditures/ Collections Report	Semi-annual Expenditures and System Benefits Charge Collections report showing budgeted versus actual collections and expenditures.	August 15th	WUTC, Advisory Group
Biennial Conservation Plan	Forward looking. A Biennial Conservation Plan including revised program details and program tariffs, together with identification of the 10 year achievable conservation potential and 2-year biennial target.	September 15th	WUTC, Advisory Group
Biennial Conservation Report	Backward looking. A two-year report on the prior two calendar year Biennial Conservation Plan achievements, including savings and cost effectiveness, filed by June 1, every two years starting in 2012.	June 1st	WUTC Advisory Group

*****Dates may change in future orders**.**

APPLICATION OF EM&V RESULTS

Performance results with EM&V activities will be reported on the basis of gross savings, without taking into consideration adjustments for free-ridership.

Program results will be filed annually on March 31st, using the estimates for measure and/or program savings utilized in the development of the conservation plan and biannual targets and will not reflect the results of evaluations conducted during the biennium.

EM&V efforts that result in changes to savings estimates made prior to program implementation, saving calculations (for custom measures), and/or algorithms used to calculate savings for custom measures will in most cases be applied prospectively, taking effect in subsequent evaluation cycles (beginning January 1 of the next biennial cycle), as appropriate. Such changes will be documented in the measure data information maintained by the Company.

GLOSSARY OF TERMS

The Glossary of Terms is based primarily on two evaluation-related reference documents. Where the definitions may differ from these references is for the purpose of defining their distinct use at PacifiCorp.

1. 2004 California Evaluation Framework
2. 2007 National Action Plan for Energy Efficiency. Model Energy Efficiency Program Impact Evaluation Guide.

Baseline – Conditions, including energy consumption, which would have occurred without implementation of the subject project or program. Baseline conditions are sometimes referred to as "business-as-usual" conditions.

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

Cost effectiveness – An indicator of the relative performance or economic attractiveness of any energy efficiency investment or practice when compared to the costs of energy produced and delivered in the absence of such an investment. 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.

Confidence – Refers to the probability the estimated outcome will fall within some level of precision. Statement of precision without a statement of confidence proves misleading, as evaluation may yield extremely high precision with low confidence or vice versa.

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

Energy conservation measure (ECM) – An installation or modification of an installation in, or a remodeling of, an existing building in order to reduce energy consumption and operating costs.

Evaluation – The performance of studies and activities aimed at determining the effects of a program and/or portfolio; 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) – Catch-all term for evaluation activities at the measure, project, program and/or portfolio level; can include impact,

process, market and/.or planning evaluation. EM&V is distinguishable from Measurement and Verification (M&V).

Ex-ante savings – Forecasted savings used for program planning; from Latin for "beforehand".

Ex-post savings – Savings estimates reported by an evaluator after the energy impact evaluation has been completed; from Latin for "from something done afterward".

External Evaluators – Independent professional energy efficiency evaluators retained to conduct EM&V.

Free rider – A program participant who would have implemented the program measure or practice in the absence of any program incentive or education received.

Gross savings – The change in energy consumption and/or demand that results directly from program-related actions taken by participants in an efficiency program.

Impact Evaluation – An evaluation of the program-specific, estimated energy savings (e.g. energy and/or demand usage) attributable to an energy efficiency program.

Market Characterization Study – A study 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. The study can be designed to assess baselines, measure costs, market actor needs and preferences, free-ridership and spillover, or market transformation.

Market progression –When the rate of naturally occurring investment in efficiency increases and can be considered to erode the persistence of earlier first year savings. An example of a cause of market progression is energy price effects – higher energy costs resulting in higher levels of efficiency.

Measure (also known as ECM) – Installation of a single piece of equipment, subsystem or system, or single modification of equipment, subsystem, system, or operation on the customer side of the meter, for the purpose of reducing energy and/or demand usage (and, hence, energy and/or demand costs) at a comparable level of service.

Measure Life (also known as Effective Useful Life) – An estimate of the median number of years that the measures installed under the program are still in place and operable.

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

Net-to-Gross Ratio – A factor representing net program savings divided by gross program savings that is applied to gross program impacts. (The net-to gross ratio for PacifiCorp is set to 1.0 for all cost effectiveness tests in Washington.)

Portfolio – Collection of similar programs addressing the same market (e.g., a portfolio of residential programs) or the set of all programs conducted by one organization.

Potential Assessment – A study 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.

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 that can be made to the program 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 are a program to install energy-efficient lighting in commercial buildings and residential home energy savings program. Each program is defined by a unique combination of program strategy, market segment, marketing approach and energy efficiency measure(s) included.

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

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 non-participant spillover.

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.

Verification – A component of overall evaluation efforts aimed at the reasonable verification of installations of energy efficient measures and associated documentation through review of documentation, surveys and/or ongoing onsite inspections. It does not include primary research (e.g. billing analysis, metering, post installation onsite inspections, etc.) typically associated with more formal impact evaluation processes and practices. PacifiCorp engages in programmatic verification activities, including inspections, quality assurance reviews, and tracking checks and balances as part of routine program implementation and may rely upon these practices in the verification of installation information for the purposes of savings verifications in advance of more formal impact evaluation results.

APPENDICES

Appendix 1 - Multi-Year Evaluation Rotation Schedule

Appendix 2 – Measure Installation Verifications summary

APPENDIX 1 - Sample of Multi-Year Evaluation Rotation Schedule

P-Process
I-Impact evaluation

State	Program	Last Evaluation / Program Years	Comments	2012 Schedule Business Type	2012 Schedule Business Status	2012 Schedule Business Period	2013 Schedule Residential Type	2013 Schedule Residential Period	2014 Schedule Business/Pilot Type	2014 Schedule Business/Pilot Period
WA	Home Energy Savings	2010					P & I	2011-2012		
WA	SYLR	2010					P & I	2011-2012		
WA	Home Energy Reporting- Pilot	N/A	18 mo behavior impact eval						P & I	Jun-14
WA	Low Income	3/2008-2/2009		P & I	Sep-12	3/09-2/11				
WA	Energy FinAnswer	2008		P & I		2009-2011			P & I	2012-2013
WA	FinAnswer Express	2008		P & I		2009-2011			P & I	2012-2013
			# of Programs evaluated	3			2		3	

Appendix 2
Measure Installation Verifications

Low Income Weatherization

All projects

- All shell measures are qualified through US DOE approved audit tool.
- 100% inspection by agency inspector of all homes treated reconciling work completed and quality (corrective action includes measure verification) prior to invoicing company.
- State inspector follows with random inspections.
- Company hires independent inspector to inspect between 5%-10% of homes as well (post treatment and payment).

Home Energy Savings

Site Inspections by Program Administrator staff for the following retrofit measures (>=5%)

- Insulation
- Windows
- CAC/HP Installs and Tune ups
- Duct Sealing

Site inspections by Program Administrator staff of all new homes measures (100%)

- Insulation
- Windows
- CAC/HP Best Practice Install, Sizing
- Duct Sealing
- CFLs

No site inspections are conducted for the following measures (unless part of new homes inspection process) however all post purchase incented measures undergo a quality assurance review prior to the issuance of the customer incentive and recording of savings i.e. proof of purchase receipt review, model number/eligible equipment review, and serial numbers are checked to ensure the Company does not double pay for the same measure or double count measure savings.

- Refrigerators
- Dishwasher
- Ceiling fans
- Light fixtures
- Clothes washers
- Water heaters
- Evaporative coolers
- Air conditioners

Other measures

- CFLs – retail channel, manufacturer agreements and program administrator sales record reviews of qualifying equipment. Invoicing and retail pricing is administered by program administrator.

Refrigerator Recycling

Company hires independent inspector to phone survey >=5% program participants and site inspect >=5% (minimum review of 10% of program participants) verifying program participation, eligibility of equipment, vendor pick-up procedures are followed (equipment is disabled at site, kits distributed, etc.) and customer experience.

FinAnswer Express

For trade ally program administrated projects

Lighting projects

- 100% pre/post site inspections by 3rd party consultant of all projects with incentives over $X,000
- 5% post site inspections by program administrator of projects with incentives under $X,000

Non-lighting projects

- 100% of applications with an incentive that exceeds $X,000 (irrigation dairy/farm and compressed air) and $XX,000 (all others) will be inspected (via site inspection) are made by program administrator.
- A minimum of 5% of remaining non-lighting applications will be inspected in accordance with an agreed upon inspection protocol, either in person or via telephone interview, by program administrator.

For Company project manager delivered projects (lighting and non-lighting)

Lighting and non-lighting

- 100% pre/post installation site inspections by 3rd party consulting engineering firms, invoice reconciled to inspection results.

Energy FinAnswer

All projects

- 100% pre and/or post site (no pre inspection for new construction) inspections by 3rd party engineering consultant, inspection is reconciled with project invoice for energy efficiency retrofit measures provided by customers.
- Dynamic energy efficiency measures require additional performance verification (commissioning documentation) to be submitted with completed project.

All Programs with Installed Measures

As part of the third-party program evaluations process, the Company is implementing semi-annual customer surveys to collect evaluation relevant data (cure from memory loss, customers moving and data not be readily available at evaluation time). This will serve as a further check verifying customer participation and measures installed.

In addition, an independent third-party evaluator will be contracted to verify calculations of total portfolio MWh savings and review of EM&V activities for best practices and reasonable findings as defined in WUTC Docket UE-111880, Order 01 for the 2012-2013 biennial period.

Additional record reviews and site inspections (including metering/data logging) is conducted as part of the impact and process evaluations, a final verification of measure installations.