EXHIBIT NO. ___(RWS-13)
DOCKET NOS. UE-111048/UG-111049
2011 PSE GENERAL RATE CASE
WITNESS: ROBERT W. STOLARSKI

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **PUGET SOUND ENERGY, INC.,** **Respondent.**	**Docket No. UE-111048** **Docket No. UG-111049**

TWELFTH EXHIBIT (NONCONFIDENTIAL) TO THE PREFILED REBUTTAL TESTIMONY OF ROBERT W. STOLARSKI ON BEHALF OF PUGET SOUND ENERGY, INC.

JANUARY 17, 2012

Energy Efficiency Services

EM&V Framework

Attachment 8

Comparison of NAPEE documents, Program Impact Evaluation Guide, and Understanding Cost Effectiveness of Energy Efficiency Programs to PSE's EM&V Framework

10/24/2011

PUGET SOUND ENERGY
The Energy To Do Great Things

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Overview

This document draws a comparison of the characteristics of Puget Sound Energy's EM&V Framework document to the National Action Plan for Energy Efficiency Model Energy Efficiency Program Impact Evaluation Guide[1] (PIEG). In addition, another NAPEE document, Understanding Cost Effectiveness of Energy Efficiency Programs[2] is referenced for comparison to cost effectiveness text in the Framework. The PIEG provides guidance on approaches for calculating energy, demand, and emissions savings resulting from energy efficiency programs.

The Puget Sound Energy (PSE) EM&V Framework describes PSE's overarching approach to evaluation of DSM energy efficiency programs, like the PIEG which focuses of program evaluation similarly. The National Action Plan for Model Energy Efficiency Program Impact Evaluation Guide is referenced throughout the EM&V Framework.

Importance of Evaluation

The PIEG, in Section 2, lists two objectives of evaluation[3] that address the importance of evaluation. The two objectives are copied word for word in the EM&V Framework. They are:

- To document and measure the effects of a program and determine whether it met its goals with respect to being a reliable energy resource.
- To help understand why those effects occurred and identify ways to improve or discontinue current programs, and develop future programs.[4]

The PIEG is focused on program evaluation as opposed to project evaluation. It lists three specific types of evaluations with the most text devoted to impact evaluations:

- Impact evaluations
- Process evaluations
- Market effects evaluation[5]

Under the heading "Evaluation Principles, Objectives and Metrics" the Framework[6], lists five types of evaluations, expanding on the list found in PIEG:

- Impact evaluations

[1] National Action Plan for Energy Efficiency (2007). Model Energy Efficiency Program Impact Evaluation Guide. Prepared by Steve Schiller, Schiller Consulting, Inc. <www.epa.gov/eeactionplan>
[2] National Action Plan for Energy Efficiency (2008), Understanding Cost Effectiveness of Energy Efficiency Programs: Best Practices, Technical Methods, and Emerging Issues for Policy Makers. Energy and Environmental Economics, Inc. and Regulatory Assistance Project. <www.epa.gov/eeactionplan>
[3] National Action Plan for Energy Efficiency (2007). Model Energy Efficiency Program Impact Evaluation Guide, page 2-1. Prepared by Steve Schiller, Schiller Consulting, Inc.
[4] EM&V Framework, August 19, 2011, page 4.
[5] National Action Plan for Energy Efficiency (2007). Model Energy Efficiency Program Impact Evaluation Guide, page 2-4. Prepared by Steve Schiller, Schiller Consulting, Inc.
[6] EM&V Framework, August 19, 2011, pages 4-5.

- Cost effectiveness analysis
- Process evaluations
- Market evaluations
- Market effects evaluations

Cost effectiveness analysis is a task taken on by the evaluation staff at PSE. Market evaluations entail research aspects that typically go beyond a process evaluation, in that they may focus on identifying the needs and of key market actors or trade allies, identify measure costs, and inform a market based program design. Market effects evaluations assess market transformation or estimate a program's influence on encouraging future energy efficiency projects because of changes in the marketplace.

Impact Evaluation

The rest of PIEG, starting with section 3, addresses Impact Evaluations. Basic Impact Evaluation Concepts are listed as:

- Impact Evaluations are used for determining directly achieved program benefits (e.g., energy and demand savings, avoided emissions).
- Savings cannot be directly measured, only indirectly determined by comparing energy use and demand after a program is implemented to what would have been had the program not been implemented.
- Successful evaluations harmonize the costs incurred with the value of the information received, that is, they appropriately balance risk management, uncertainty and cost considerations.[7]

The EM&V Framework acknowledges these concepts and specifically addresses concept number 3 by stating, "The goal of evaluation planning is to spend the least money necessary in order to adequately ascertain the best value savings estimates and mitigate the risk of either under or over-reporting savings. Evaluation planning identifies the types of evaluation information that is crucial to different stakeholders."[8]

Basics for Calculating Gross Energy Savings

The PIEG cites and describes[9] IPMVP[10] Options A – D:

- Retrofit Isolation: Key Parameter Measurement
- Retrofit Isolation: All Parameter Measurement
- Whole Facility

[7] National Action Plan for Energy Efficiency (2007). Model Energy Efficiency Program Impact Evaluation Guide, page 3-1. Prepared by Steve Schiller, Schiller Consulting, Inc.
[8] EM&V Framework, August 19, 2011, page 6
[9] National Action Plan for Energy Efficiency (2007), Model Energy Efficiency Program Impact Evaluation Guide. Prepared by Steve Schiller, Schiller Consulting, Inc., pages 4-3 – 4-17
[10] The International Performance Measurement and Verification Protocol, Volume 1 is available at: <http://www.evo-world.org/> .

- Calibrated Simulation

The Framework also cites the International Performance Measurement and Verification Protocol to follow when performing program evaluations.[11]

How Energy and Demand Savings Are Determined

The PIEG lists three components of how savings are determined:[12]

- Gross program energy and demand savings are determined
- Gross program savings are converted to net energy and demand savings using a range of possible considerations (e.g., free rider and spillover corrections).
- Avoided emissions are calculated based on net energy savings
- Additional co benefits are calculated as appropriate.

The EM&V Framework has a section that discusses Net Savings but consistent with condition K(10)(c), PSE does not estimate Net Savings, since the Net-to-Gross ratio is set to 1.0. Gross savings is reported in Washington State. That said, the Framework does acknowledge the value of evaluating free-ridership and spillover, key metrics to Net Savings, as useful for program design.

Avoided emissions are not mentioned in the EM&V Framework as they are not currently calculated as a benefit of PSE's EES programs. Other co benefits or Non-Energy Benefits are acknowledged in the Framework, have not been used in recent years for the purposes of passing the Total Resource Cost Test, but going forward evaluations will seek to quantify them.

Planning an Impact Evaluation

In Section 7, Planning an Impact Evaluation, of the PIEG, speaks of integrating evaluation into the program implementation cycle so that evaluation results may be used to make informed decisions on program improvements and program designs.

The EM&V Framework outlines a four year cycle for evaluation of all PSE programs so evaluations may inform future program design and savings estimates. Occasionally, special evaluation projects may arise from regional or other interests that will be interspersed within the four year cycle as needed.

Cost Effectiveness

While PIEG mentions cost effectiveness as an element of Impact Evaluations it is mute on cost effectiveness analysis methodologies, another NAPEE document, Understanding Cost-Effectiveness of Energy Efficiency Programs, describes methodologies for determining program cost effectiveness in detail.[13] This document

[11] PSE EM&V Framework, August 19,2011, page 5
[12] National Action Plan for Energy Efficiency (2007). Model Energy Efficiency Program Impact Evaluation Guide, pages 3-1 – 3-2. Prepared by Steve Schiller, Schiller Consulting, Inc
[13] National Action Plan for Energy Efficiency (2008), Understanding Cost Effectiveness of Energy Efficiency Programs: Best Practices, Technical Methods, and Emerging Issues for Policy-Makers. Energy and Environmental Economics, Inc. and Regulatory Assistance Project.

defines items such as Avoided Cost, Customer Bill Savings, Customer Cost, Incentive Cost, Measure Cost, Program Overhead Cost, Quantified Non-Energy Benefits, and Un-Quantified Non-Energy Benefits, and lays out the means of using these items in four cost effectiveness tests, stipulated by the WUTC for PSE to use starting in 2012. These tests are listed below:

- Total Resource Cost (TRC), with addition of the 10% Power Act Credit
- Utility Cost (UC) or Program Administrator Cost Test (PACT)
- Ratepayer Impact Measure (RIM)
- Participant Cost Test (PCT)

These tests are described in the EM&V Framework. The TRC and UC tests are designated as the primary cost effectiveness tests with the RIM and PCT tests as additional tests to report.[14]

www.epa.gov/eeactionplan

[14] EM&V Framework, August 19, 2011, pages 15-16