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DOCKET NO. UE-090704/UG-090705
2009 PSE GENERAL RATE CASE
WITNESS: JON A. PILIARIS

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **PUGET SOUND ENERGY, INC.,** **Respondent.**	**Docket No. UE-090704** **Docket No. UG-090705**

FIRST EXHIBIT (NONCONFIDENTIAL) TO THE PREFILED REBUTTAL TESTIMONY OF JON A. PILIARIS ON BEHALF OF PUGET SOUND ENERGY, INC.

DECEMBER 17, 2009

Independent Third-Party Evaluation of PSE's Electric Conservation Incentive Mechanism

Prepared for
Puget Sound Energy
and
Washington Utilities and Transportation Commission

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Preface

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Table of Contents

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List of Tables

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List of Figures

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1. EXECUTIVE SUMMARY

A. Background

Blue Ridge Consulting Services, Inc. (Blue Ridge) was retained by Puget Sound Energy (PSE or Company) and the Washington Utilities and Transportation Commission staff (WUTC staff or Commission staff) to perform an independent third party evaluation of PSE's Energy Conservation Incentive Mechanism (ECIM).

On January 5, 2007, the WUTC issued an Order (Order 08) in PSE's 2006 general rate case (docket # UE-060266) which allowed PSE to implement an Energy Conservation Incentive Mechanism (ECIM) pilot program. Order 08 provides several specific elements of this pilot program concerning the design, calculation, targets, and oversight. Additionally, Order 08 contains key objectives that were anticipated to be fulfilled by the ECIM.

PSE implemented the ECIM on January 1, 2007, and it will continue until December 31, 2009. This review will provide the WUTC staff, PSE, and multiple stakeholder parties with input on the performance of the ECIM in meeting Commission objectives.

B. Purpose and Scope

In Order 08, the Commission stressed that it expected the results of the program "to be professionally evaluated in a cost-effective manner determined by Staff and PSE, with advice from the CRAG."[1]

On the basis of the Commission's direction and after two years of the pilot program had been completed, PSE issued a Request for Proposal (RFP) on June 5, 2009. The RFP sought a qualified Consulting/Evaluation firm to "assess the extent to which the design and implementation of the incentive mechanism addresses key issues and objectives from the Commission order approving the mechanism."[2] By joint decision of PSE and the WUTC Staff, and with input from the CRAG, Blue Ridge was awarded the contract to perform the evaluation.

PSE and the Commission Staff outlined the scope of the evaluation project in the RFP. Five major questions were identified as those relevant to satisfying the Commission's objective for the ECIM pilot program evaluation. These questions include the following:

1. Did PSE accurately implement the approved incentive mechanism in its calculations of incentives or penalties?
2. How well has the Company's incentive mechanism removed the disincentives to promote energy efficiency?

[1] WUTC Order 08, Docket UE-060266, paragraph 158, page 55.
CRAG = Conservation Resource Advisory Group

[2] PSE's Request for Proposal, Consulting Services: Independent Third-Party Evaluation of PSE's Electric Conservation Incentive Mechanism, June 5, 2009, page 3.

3. What, if any, unanticipated consequences – beneficial or detrimental – have been created through the incentive and penalty mechanism structure or implementation?
4. How did the scope/magnitude of Conservation programs change during the pilot period relative to the three years immediately prior to the pilot period?
5. Is PSE's incentive mechanism serving customers' and society's interests?

Blue Ridge organized these key evaluation questions into three functional areas for examination. These functional areas include: (1) Implementation, (2) Quantifiable Results, and (3) Qualifiable Results. Blue Ridge organized this report according to functional area with each area comprising a major division, and each division broken down by issue.

The evaluation is being conducted in two Phases. Phase 1 evaluates the ECIM's first two years of its pilot program (i.e., 2007 and 2008). Phase 2 will continue the evaluation by adding the third and final year (i.e., 2009) of the program to the analysis. Additionally and between the two phases, a report will also be prepared that reviews other incentive mechanisms in the utility industry and their comparison with PSE's ECIM.

C. Conclusions and Recommendations

The general conclusions for each of the functional areas follow:

Functional Area 1: Implementation

Issue 1.1: Structure

Issue Description: Determine whether PSE structured its ECIM according to the requirements of Commission Order 08.

Findings: Blue Ridge found that Schedule 121 (the tariff schedule which describes PSE's ECIM) includes the ECIM structure details required by the Commission's Order.

Conclusion: Blue Ridge concludes that PSE has followed the guidelines as established in Schedule 121 and therefore has structured its ECIM to be consistent with the design specified by Commission Order 08.

Recommendation: None

Issue 1.2: Calculations

Issue Description: Determine whether the calculations included in PSE's ECIM are consistent with the requirements of Commission Order 08.

Findings: Although the ECIM spreadsheet calculating the incentive provided valid results for both years 2007 and 2008, not all the calculations in the 2007 spreadsheet correspond to the ECIM as ordered by the Commission and described in Schedule 121. In the 2007 spreadsheet, the formulae for calculating penalties

(1) incorrectly brought total actual savings into the calculation rather than the difference between the baseline and actual savings, and (2) incorrectly applied the lowest band penalty per MWh against the entire amount instead of applying the incremental discrepancy against each of the appropriate declining band ranges. However, Blue Ridge also found that the 2007 calculation inconsistencies for penalties were recognized and corrected prior to the 2008 spreadsheet calculations. All calculation inconsistencies were resolved.

Conclusion: Blue Ridge concludes that the Company's incentives for 2007 and 2008 were based on calculations that were consistent with Commission Order 08, and the ECIM calculations for all levels now also correspond to Order 08.

Recommendation: None

Issue 1.3: Eligibility

Issue Description: Determine whether PSE correctly included the testing of ECIM incentive eligibility in its ECIM pilot program in accordance with the requirements of Commission Order 08.

Findings: The eligibility requirements mandated by the Commission for the Company's participation in the ECIM incentive program are included both in Schedule 121 (the governing document for the ECIM), and in the annual reporting document for the ECIM (Energy Efficiencies Services – Program Results).

Conclusion: Blue Ridge concludes that consideration of the eligibility requirements ordered by the Commission were appropriately incorporated into the Company's process involving the incentive mechanism. The Company properly considered its eligibility based on those requirements as they began their calculations of the incentive during 2007 and 2008.

Recommendation: Although eligibility requirements are listed in Schedule 121, Blue Ridge believes that the development of formal procedures regarding the determination of the Company's eligibility would increase confidence that future consideration would be consistently performed. (This conclusion is in conjunction with the conclusion for Issue 1.5.)

Issue 1.4: Payment Period

Issue Description: Determine whether PSE properly included the incentive and penalty payment process in its ECIM pilot program in accordance with Commission Order 08.

Findings: Blue Ridge found that PSE split the incentive award of ECIM program years 2007 and 2008 according to a 75%/25% breakdown for first and second year payment in Appendix B of Schedules 120-121. The paragraph in Schedule 121 under section Monthly Rate that describes the process for penalty payment states that penalty payments are treated in the same manner as incentive awards

by being placed into rates. According to WUTC Staff's ECIM plan approved by Order 08, the 75% portion of the penalty must be paid "within 90 days of filing the Annual Report." The remaining 25% must be paid "no later than April 1 of the second year following the program year."[3]

Conclusion: Blue Ridge concludes that the incentive award payment process is in accordance with Commission Order 08. However, the description of the penalty payment process in Schedule 121 is not consistent with Order 08.

Recommendation: Blue Ridge recommends that Tariff Schedule 121 be modified in regard to the penalty payment process to be consistent with the WUTC Staff ECIM plan and Commission Order 08 in stating, "For penalties, the 75% portion of the penalty must be paid within 90 days of filing the Annual Report. The remaining 25% must be paid no later than April 1 of the second year following the program year."

Issue 1.5: Oversight

Issue Description: Determine whether the CRAG was appropriately involved in the establishment of the baseline target and in reviewing progress and results. Additionally, determine the methods used to calculate and verify the energy savings reported by PSE.

Findings: Blue Ridge found that the CRAG was kept informed of budget and actual performance as well as program results. Baseline targets were developed through joint consensus of PSE and the CRAG as the Order stipulates. While no problems were discovered, Blue Ridge found that the process by which the ECIM program is operated by Energy Efficiency Services (EES) is not formally documented in a central location.

Conclusion: Blue Ridge found that the ECIM process operated in accordance with Commission Order 08. However, formal procedures would provide an additional level of confidence that the ECIM process would be performed consistently in future years.

Recommendation: Blue Ridge recommends that formal, centralized procedures for the ECIM and the broader activity of the energy efficiency programs be developed.

Functional Area 2: Quantifiable Results

Issue 2.1: Energy Conservation – Program and Components

Issue Description: Examine the energy conservation measures and program, identify changes, and attempt to determine whether the changes were driven by the ECIM. These results are examined and compared for the years of the pilot program (2007 and 2008) and with results from prior years (2004 through 2006).

[3] Testimony of Joelle Steward, Docket No. UE-060266, Exhibit JRS-8, paragraph 7.

Findings: PSE's annual overall expenditures have increased each year, and have more than doubled since 2004. The annual energy savings achieved by the portfolio of programs has nearly doubled (increased by 98%) from 138,288 MWh in 2004 to 273,483 MWh through the end of 2008. The total annual savings achieved in the two years since the implementation of the ECIM was 11% greater than that realized in the previous three years. Program spending on individual programs generally tracked with the savings. However, during the ECIM period, a notable increase in spending occurred on smaller programs that generated relatively small energy savings, such as Refrigerator Decommissioning (from $9,000 in 2006 to just below $1.1 million in 2008) and Energy Star Clothes Washer (from just over $1 million in 2006 to nearly $2.3 million in 2008).

The Company's investment in program evaluation and market research in the two years under the ECIM was more than double that of the preceding three years, increasing from $1.2 million to $2.6 million.

With the exception of the Residential Energy Efficient Lighting program, offered as part of the Residential Single Family Existing program, few programs exhibited notable changes. However, PSE's reorganization to dedicate subject matter and "channel experts" to increase the efficiency and effectiveness of the programs may be impacting all of the programs.

The changes in the Low Income Weatherization program have been significant in terms of energy savings, program expenditures, and program features.

Conclusion: Blue Ridge believes that the establishment and implementation of the ECIM has driven energy savings and program expenditures to increase by 11% and 25%, respectively over the three preceding years. Blue Ridge also believes that the ECIM drove the reorganization and dedication of resources to specific channels and the investment in market research and program evaluation.

The increased spending on market potential, customer end use, and program-specific market research since implementation of ECIM demonstrates the Company's increased commitment to improving the forecasting of energy efficiency resources as well as their delivery.

However, other factors exist, including increased emphasis on demand-side management (DSM) by the Northwest Power Pool (NWPP), the volatility of energy market prices experienced in the last two years, and the uncertainty in the regulatory and political environment with respect to carbon and other emissions credits and penalties, that may and should be driving efforts to diversify PSE's resource portfolio. Nevertheless, the opportunity the incentive provides the Company to generate direct revenue as a result of its efforts cannot be discounted as a significant driver for the major changes PSE has made to improve the efficiency and effectiveness of its energy conservation program offerings.

Recommendation: None

Issue 2.2: ECIM – Program and Components

Issue Description: Determine the baseline targets, energy savings achieved, and resulting incentive or penalty for each year of the pilot program. Determine the total amount of incentive mechanism revenue collected from ratepayers by year and by customer class.

Findings: Blue Ridge observed that PSE met or slightly underran the targeted energy savings for each of the program years 2004 through 2006. However, PSE's performance to target dramatically improved in 2007 and 2008, the two years under the incentive mechanism. This improvement could be attributable to an underestimation in the customer response to PSE's enhanced efforts under the ECIM. But, many factors could give rise to the dramatic increase in performance as compared to targets, including:

- PSE's continued and enhanced efforts to increase participation in its EES portfolio
- Underestimation of the maximum achievable energy efficiency
- Increased avoided costs
- Increased public awareness and attention to energy conservation and other green initiatives
- Overall economic conditions

Conclusion: PSE should continue to pursue its planned market, energy efficiency potential, and end-use studies to ensure it has the best information available to improve its understanding (including quantification) of its energy efficiency and demand management potential. The data from its program implementation, energy efficiency potential and monitoring and verification studies will provide factual PSE program-specific results that can be used to calibrate the forecasted achievable savings. This will assist PSE and its stakeholders in setting targets for the purposes of incentive calculation. More importantly, it will assist in improving the value of the kWh savings to PSE's resource planning.

PSE and WUTC staff have confirmed that PSE is consistent with the consensus in the region and direction of the CRAG that it is appropriate not to net free riders out of program energy savings.

Recommendation: Blue Ridge encourages PSE to pursue its planned market, energy efficiency potential, and end-use studies to ensure it has the best information available to improve its understanding (including quantification) of its energy efficiency and demand management potential.

Additionally, Blue Ridge believes that PSE should consider including in its marketing, monitoring and verification, and end-use studies the gathering of information that would support estimation of the percentage of participants in its

programs that would choose the efficient options in the absence of the programs. This information will improve estimation of savings attributable to the programs and may help PSE identify opportunities to lower incentives or increase minimum eligible efficiencies without reducing savings. Or, information might be gained that would assist PSE in improving the benefit-to-cost ratios for marginal or failing programs.

Issue 2.3: Total Resource Cost

Issue Description: Determine the total amount of net Total Resource Cost (TRC) benefit from the energy savings achieved during the pilot period. Determine the amount of incentive received by PSE each year as a percentage of the net Total Resource Cost benefit from the energy savings achieved. Determine the amount of penalty paid by PSE each year as a percentage of the net Total Resource Cost benefit lost as a result of not achieving the baseline target.

Findings: PSE has made significant improvement in the tracking, sourcing, consistency, and auditing of key inputs (energy savings, measure life, customer cost) to the Total Resource Cost Benefit/Cost test during the ECIM period.

Given the explanation that the new post-2007 modeling approach does not reflect the cost of capacity, it is necessary to include a capacity cost adder to estimate the value of deferring the need for capacity. It is also necessary to make an adjustment to reflect the risk that capacity will not be available solely from the market and PSE may need to meet the Company's native load using its preferred Supply-Side Only expansion plan, regardless of the relative expected costs. Failure to do so will underestimate the cost avoided by the energy savings resulting from PSE's EES programs. The methodology used to develop the adjustment appears to be reasonable.

Blue Ridge noticed that there were significant dollars being spent in 2008 on programs for which the individual Benefit/Cost ratios were not calculated. The Cost Benefit test results were not calculated in the Cost-Effectiveness spreadsheet for the individual programs that are offered as part of the Residential Single Family Existing program. The increasing expenditures for a few of these programs were notable. In calculating these ratios, Blue Ridge found that the Energy Star Heat Pump, Energy Star Clothes Washers, and Windows measures all have net TRC costs (i.e., the Benefit/Cost ratio is less than 1.0). The Windows program fails both the Utility and the Total Resource Cost tests. These three measures constitute 31% of the residential total program cost and 13% of the utility residential program utility cost.

Blue Ridge also noted that the program descriptions in the Annual Report filings do not generally discuss improvements to any declines in the cost-effectiveness of the programs or any efforts to improve those scores. There is also no discernable concern about the difficulty PSE has had in forecasting the magnitude of its achieved energy conservation.

Conclusion: For its overall program portfolio, PSE achieved a TRC benefit/cost ratio greater than 1.0, which is what is required by the WUTC. However, PSE should examine whether changes in the individual programs' structures can improve the cost-effectiveness of those programs and whether the dollars being expended on the less cost-effective programs could be better spent on other programs. If it has not done so already, PSE should regularly subject measures to the Participant test, especially if they have failing or marginal B/C ratios. The participants in a program that fails or nearly fails the Participant test are probably free riders and most payments by the Company to entice participation would be wasted resources. PSE should periodically evaluate programs that fail the Utility Cost and the TRC tests and should consider whether the dollars spent on marginal or failing programs could be better spent elsewhere.

Recommendation: Although the methodology is reasonable, Blue Ridge does not have the information to evaluate and comment on the value of the capacity credit or the planning adjustment and doing so is beyond the scope of this investigation. The Company's planning and modeling techniques used to address this issue should be further investigated.

Blue Ridge believes that a review of the programs with unanticipated increases in energy conservation as well as those with unanticipated shortfalls should be conducted. Such variances may signal issues with assumptions and opportunities to improve cost-effectiveness.

Issue 2.4: Results Comparisons

Issue Description: Determine the estimated amount of pre-tax earnings that PSE would have received if its investment in energy efficiency were capitalized instead of expensed. Determine the estimated amount of the lost electric revenues resulting from the energy savings of PSE's conservation programs in each year of the incentive mechanism pilot. Compare the amount of the incentives earned by PSE under the pilot mechanism to the estimated lost electric revenues and earnings.

Findings: For the 2007 expenditures, the net present value in 2007 of the impact on pre-tax earnings would be approximately $12.9 million. In 2008, the net impact on pre-tax earnings of capitalizing 2008 utility expenses would be approximately $17.3 million.

The amount of lost margin incurred and experienced in 2007 and 2008, from the energy savings achieved in these years, was $2,367,602 and $10,732,516, respectively. The approved incentive ($3.45 million in 2007 and $4.34 million in 2008) as a percentage of the accumulated lost margin incurred and experienced during 2007 and 2008 was 146% and 40%, respectively.

The net present value of the amount of total lost margin due to the energy savings incurred in 2007 and 2008 and accumulated until the next assumed rate change was just over $29 million. The approved incentives awarded based upon the 2007 & 2008 programs amount to just over 25% of the lost margins that would persist until the assumed date of the next rate change.

Conclusion: Blue Ridge concluded that the ECIM does not provide full recovery of lost margin and the effect on pre-tax earnings of the difference between the treatment of program costs and supply-side resources.

Recommendation: None

Issue 2.5: Customer Bills, Rates, Charges

Issue Description: Determine the impact of PSE's energy efficiency program costs and incentive mechanism revenues or payments on customer bills/rates by customer class. Determine the percentage of annual incentive/penalty amounts relative to total program costs.

Findings: Blue Ridge found that the impact of the ECIM program costs and incentives on the average annual customer bill was just under $3 per month for the residential class, approximately $20 per month for the average commercial customers, and industrial customers would experience an average impact of $60 per month. The impacts may be somewhat greater in the period 4/1/2009 through 3/31/2010 as the third year program costs are recovered along with 25% of the 2007 incentive and 75% of the 2008 incentive.

Blue Ridge found that the incentives for 2007 and 2008 were 5% and 4% of the Total Program Costs, respectively.

Conclusion: Blue Ridge concluded that the average residential bill impact would be just under $3 per month. The average commercial and industrial customer would experience estimated monthly increases of $20 and $50, respectively. All stakeholders should be mindful of the rate and bill impacts and this information should be reported at each tariff change.

Recommendation: None

Functional Area 3: Qualifiable Results

Issue 3.1: Energy Conservation Effectiveness

Issue Description: Determine whether PSE's portfolio of electric energy efficiency programs is still cost-effective when the amount of incentive received by the Company is added as a cost.

Findings: While the Cost/Benefit ratios declined, Blue Ridge found that the TRC and Utility Cost test ratios remained greater than 1.0.

Conclusion: Blue Ridge concluded that PSE's EEs program portfolio remains cost-effective when the cost of the incentive is included as a utility cost.

Recommendation: None

Issue 3.2: ECIM Effectiveness

Issue Description: Determine whether the baseline data and established targets were appropriate and sufficient to meet the goals of Order 08. Determine whether significant issues or conflicts are created when annual targets are established within the context of a two-year program cycle. Determine whether PSE's incentive mechanism is serving customers' and society's interests. Determine how well the Company's incentive mechanism has removed the disincentives to promote energy efficiency.

Findings: Blue Ridge found that the process by which the targets were set was sound. This process involved the stakeholders and considered the achievable energy efficiency potential, which was consistent with the Comprehensive Assessment of Demand-Side Resource Potentials (2008-2027) study performed on PSE's behalf by Quantec. Furthermore, the proposed target of 23aMW for 2008 was presented in the context of a long-term energy efficiency forecast that demonstrated the commitment to exploit "all achievable potential savings."[4]

Blue Ridge's analysis was intended to measure the impact of disincentives in the context of a regulated electric utility whose profitability is limited to an allowed rate of return. The analysis also attempts to determine whether the differences between supply-side and energy conservation resources would be viewed as disincentives by shareholders by examining standard financial metrics. Blue Ridge also reviewed some additional metrics in order to demonstrate that there are many complex factors that affect financial performance of which lost margin and foregone return on expensed program costs are only two.

On average, from 2005 (first year after the start of the EES program) through 2007, PSE earned its allowed rate of return on rate base. However, it appears that PSE's realized return on rate base was below its allowed return in 2008. Blue Ridge added the calculated lost margin to PSE's net income for 2008, and determined that the rate of return on rate base increased from 7.67% to 8.02%, but would still be under the approved 8.38% Adding lost margin to the 2007 results would have increased PSE's rate of return to 9.09%, exceeding the allowed 8.4%. PSE may not have been aware of the magnitude of the calculated lost margins prior to this effort. That may indicate the lack of impact of these disincentives in terms of harm to the financial health of the Company.

[4] Response to Data Request BRCS-01-018, CRAG 6-29-2007, page 2 and CRAG 07-31-2007 page 2, slide 11.

There are complex interactions of many factors that impact financial performance, including the weather, economic and regulatory uncertainty, and market prices. However, there are also well-accepted benefits associated with energy efficiency as a resource, such as the short-term value in the avoidance or reduction of energy purchases.

There is real value in reducing exposure to the uncertainty in energy supply costs. Energy efficiency and other demand-side resources (DSM) remove the need for the energy and peak capacity in the first place and therefore the exposure to risk. While the avoided cost value attributed to DSM is tied to supply-side options and there is some uncertainty associated with the estimation of energy savings, once in place there is no market exposure for the respective avoided energy. It essentially produces power without utilizing any of the fuels that typically experience high degrees of market price volatility.

Conclusion: Blue Ridge concluded that the target set for 2007 probably was not high enough to meet the stated goal. However, the target was the product of a regulatory proceeding that considered the input and goals of all parties. Blue Ridge further concluded that the target set for 2008 was based upon a goal of implementing all achievable potential energy efficiency savings. There is no observable conflict presented by the two-year goal setting since the process for setting the goals explicitly takes into account the long-term goals and potential.

PSE has attempted to achieve as much cost-effective conservation as possible even though the ECIM was not designed as a recovery mechanism for lost margin or foregone earnings.

Because of the complex interactions of many factors that affect financial performance, it is possible for shareholders not to realize the impact of lost margin and foregone earnings as a disincentive. Therefore, Blue Ridge believes that full compensation for the foregone return (due to expensing versus capitalization of program costs) and the stand-alone lost margin should not be provided without considering the impact realization of the shareholders, regulators, and other stakeholders or ratepayers.

Theoretically, PSE's shareholders may be indifferent to energy efficiency as long as they are achieving the allowed rates of return on rate base and equity. In an under earning condition, such as occurred in 2007 and 2008, any decision that increases the likelihood that the condition will remain makes energy efficiency relatively less attractive vis-à-vis supply-side options.

Blue Ridge did not observe any indications that the failure to realize its allowed rates of return on rate base and equity in 2007 and 2008 caused PSE's behavior to change with respect to its implementation of EES programs. However, while still a minor contributor to those under-runs, the magnitude of the calculated lost margins has and will increase with increased program energy savings.

Blue Ridge concludes that the mechanism encourages energy conservation and provides an incentive when the utility's performance is near or above its financial targets. But the mechanism is not flexible enough to prevent the effects of the disincentives to be experienced by shareholders in an under earning condition.

Recommendation: Blue Ridge recommends that PSE and its stakeholders continue with its current ECIM while proceeding with other portions of this evaluation effort, which includes the review of other incentive mechanisms employed across the nation to identify the best features and learn from the unintended consequences faced by others. PSE and its stakeholders should work to identify the specific objectives to be achieved by the incentive and select a few mechanisms to be further evaluated. Blue Ridge recommends that PSE model integrated resource plans representing a base, aggressive, and minimal (perhaps just inside the penalty bandwidth) energy efficiency acquisition and evaluate the impact of various incentive mechanisms on PSE's shareholders, regulators and stakeholders, and ratepayers. The metrics used should include at least Return on Equity, Return on Rate Base, and Customer Bills.

If not already completed, PSE should also engage in a review of resource planning tools and processes to ensure that both are robust and that they support dynamic examination of multiple resource portfolios against a wide range of scenarios representing realistic interactions of assumptions moving with and against each other. If not already being performed, inclusion of hourly modeling of energy efficiency measures might provide useful information that might, for example, favor on-peak measures to optimize the energy cost savings to lost margin relationship.

Issue 3.3: Other Issues

Issue Description: Determine any unanticipated consequences – beneficial or detrimental – that have been created through the incentive and penalty mechanism structure or implementation.

Findings: Blue Ridge found that no additional unanticipated consequences were realized beyond those already discussed in other sections of this report.

Conclusion: Blue Ridge concluded that the ECIM's impact was limited to those areas discussed throughout the report.

Recommendation: None

2. Purpose and Scope

A. Background

Blue Ridge Consulting Services, Inc. (Blue Ridge) was retained by Puget Sound Energy (PSE or Company) in conjunction with the Washington Utilities and Transportation Commission (WUTC or Commission) to perform an independent third-party evaluation of PSE's Energy Conservation Incentive Mechanism (ECIM).

On January 5, 2007, the WUTC issued an Order (Order 08) in PSE's 2006 general rate case (Docket # UE-060266) which allowed PSE to implement an Energy Conservation Incentive Mechanism (ECIM) pilot program to replace the penalty-only mechanism that had been established in the 2001 Settlement Terms for Conservation in Docket UE-011570. The ECIM provides a financial incentive to the Company for energy conservation programs that meet or exceed annual baseline targets set by PSE in consultation with the Conservation Resource Advisory Group (CRAG), which is composed of representatives from PSE, ratepayers, regulators, and energy efficiency policy organizations. Based on the conditions set forth in Order 08, PSE began the ECIM pilot program on January 1, 2007, and will continue the program through December 31, 2009. Order 08 provides several specific elements of the program concerning design, calculation, targets, and oversight. Additionally, Order 08 contains key objectives that were anticipated to be fulfilled by the ECIM.

In Order 08, the Commission declined to establish a new evaluation group for the ECIM pilot program, stating that evaluation is an important function of the CRAG. Further, the WUTC suggested that Regional Technical Forum evaluations and studies could be used to assess the ECIM program. However, the Commission did stress that it expected the results of the program "to be professionally evaluated in a cost-effective manner determined by Staff and PSE, with advice from the CRAG."[5]

B. Scope and Approach

On the basis of the Commission's direction in Order 08[6] and after two years of the pilot program had been completed, in June 2008, PSE issued a Request for Proposal (RFP) which sought a qualified consulting firm to "assess the extent to which the design and implementation of the incentive mechanism addresses key issues and objectives from the Commission order approving the mechanism."[7] By joint decision of PSE and the WUTC Staff, and with input from the CRAG, Blue Ridge was awarded the contract to perform the evaluation of PSE's implementation of the ECIM.

PSE and the Commission Staff outlined the scope of the evaluation project in the RFP. Five major questions and several sub-level questions were identified as those relevant to

[5] WUTC Order 08, Docket UE-060266, paragraph 158, page 55.
[6] WUTC Order 08, Docket UE-060266, paragraph 158, page 55.
[7] PSE's Request for Proposal, Consulting Services: Independent Third-Party Evaluation of PSE's Electric Conservation Incentive Mechanism, June 5, 2009, page 3.

satisfying the Commission's objective for the ECIM pilot program evaluation. These key focus questions include:

1. Did PSE accurately implement the approved incentive mechanism in its calculations of incentives or penalties?
    a. What were the baseline targets, energy savings achieved, and resulting incentive or penalty for each year of the pilot program?
    b. Were the baseline data and established targets appropriate and sufficient to meet the goals of the order? Are significant issues or conflicts created when annual targets are established within the context of a two-year program cycle?
    c. Did PSE comply with all the conditions and requirements of the pilot program as adopted by the Commission?
    d. Did PSE follow the prescribed calculation methodology?
    e. What assumptions or methods were used to calculate and verify the energy savings reported by PSE?
    f. How was the CRAG involved in establishment of the baseline target and in reviewing progress and results?

2. How well has the Company's incentive mechanism removed the disincentives to promote energy efficiency?
    a. What is the estimated amount of the lost electric revenues resulting from the energy savings of PSE's conservation programs in each year of the incentive mechanism pilot?
    b. What is the estimated amount of pre-tax earnings that PSE would have received if its investment in energy efficiency were capitalized instead of expensed?
    c. How does the amount of the incentives earned by PSE under the pilot mechanism compare to the estimated lost electric revenues and earnings?

3. What, if any, unanticipated consequences – beneficial or detrimental – have been created through the incentive and penalty mechanism structure or implementation?

4. How did the scope/magnitude of Conservation programs change during the pilot period relative to the three years immediately prior to the pilot period?
    a. What incremental program changes or expansions were implemented during the incentive mechanism period and when?
    b. Have there been any changes or expansions to the Low Income Weatherization program since the incentive mechanism implementation?
    c. What were the energy savings and expenditures on electric energy efficiency during the three-year period prior to the incentive mechanism (2004 – 2006) vs. during the incentive mechanism period?

5. Is PSE's incentive mechanism serving customers' and society's interests?

a. What has been the impact of PSE's energy efficiency program costs and incentive mechanism revenues or payments on customer bills/rates by customer class? What is the percentage of annual incentive/penalty amounts relative to total program costs?
b. What was the total amount of incentive mechanism revenue collected from ratepayers by year and by customer class?
c. Is PSE's portfolio of electric energy efficiency programs still cost-effective when the amount of incentive received by the Company is added as a cost?
d. What was the total amount of net Total Resource Cost benefit from the energy savings achieved during the pilot period?
e. What was the amount of incentive received by PSE each year as a percentage of the net Total Resource Cost benefit from the energy savings achieved?
f. What was the amount of penalty paid by PSE each year as a percentage of the net Total Resource Cost benefit lost as a result of not achieving the baseline target?

The evaluation of PSE's ECIM is being conducted in two Phases. Phase 1 evaluates the ECIM's first two years of its pilot program (i.e., 2007 and 2008) and is the subject of this report. Phase 2 will continue the evaluation adding the third and final year of the program to the analysis (i.e., 2009) and will be conducted in January 2010. Additionally and between the two phases, a report will also be prepared that reviews other energy incentive mechanisms in other jurisdictions and how they compare with PSE's ECIM.

Blue Ridge organized these key evaluation questions into three functional areas for examination. These functional areas include: (1) Implementation, (2) Quantifiable Results, and (3) Qualifiable Results. Each functional area contains issues. Included in each issue is a "Background" section that identifies which key focus questions from the RFP are associated with the issue. Additionally, each issue provides sections detailing Blue Ridge's analysis, findings, and conclusions (including recommendations, if any).

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3. FUNCTIONAL AREA 1: IMPLEMENTATION

In this area, Blue Ridge reviewed PSE's compliance with conditions and requirements established by the Commission for the ECIM pilot program in Order 08. This functional area is divided into five issue subdivisions: 1.1 Structure, 1.2 Calculations, 1.3 Eligibility, 1.4 Payment Period, and 1.5 Oversight. Each issue relates to particular Commission instructions regarding the ECIM and provides our assessment of how well PSE's implementation satisfied the Commission's requirements.

A. Issue 1.1: Structure

Background

In this issue, Blue Ridge evaluated whether the implemented ECIM included the components specified by the Commission in Order 08. These components included (1) the two parts of the incentive—a $ per MWh incentive or penalty and a share of the net total resource cost value of the savings from the efficiency programs (applied as an incentive only), (2) the incentive applies to annual savings at 100% of the baseline target, and the incentive increases by incremental savings achieved above the baseline target, (3) a dead-band zone of achieved savings in which no incentive or penalty is assessed exists from 90% to 99.9% of the baseline target, (4) penalties are incurred for annual savings at a level below the dead-band zone, and (5) five ranges are established from the target and above for incentives and below the dead-band zone for penalties.

Accordingly, Blue Ridge evaluated the following key focus questions related to this issue:

- *Did PSE accurately implement the approved incentive mechanism in its calculations of incentives or penalties?*
- *Did PSE comply with all the conditions and requirements of the pilot program as adopted by the Commission?*

Analysis

Blue Ridge began its analysis by reviewing Order 08 and its related Docket UE-060266 testimony and exhibits, particularly that of WUTC Regulatory Analyst Joelle Steward, which provided Staff's plan for the ECIM that was approved in Order 08. Additionally, we reviewed the 2001 Settlement Terms for Conservation in association with Docket UE-011570, and Schedule 121 of the Electric Tariff G (Schedule 121 implements surcharges or refunds based on the amount of energy savings achieved through the conservation/efficiency programs). Data requests were submitted to the Company and responses were received that provide additional information concerning guideline procedures, annual conservation reports, and process data.

In the years prior to the ECIM implementation, the Company established, with input from the CRAG, the savings targets (also called baseline targets) for electric efficiency programs. The savings targets were established for two years. PSE computed the actual

electric savings during the same two year period and then divided that two year total in half to determine the average annual savings realized. This average was compared to the target average annual savings. If the average annual savings were not achieved during the two year period, the Company was assessed a penalty for each year that savings did not meet the target.[8]

Based on PSE's filing in 2006,[9] the Commission considered an incentive mechanism so that the utility would not merely be penalized for failure to meet the baseline target, but receive an incentive to realize savings at and beyond the target. The Commission decided that an incentive mechanism, proposed by WUTC Staff, should be implemented. The Energy Conservation Incentive Mechanism (ECIM) provides the Company an incentive for reaching the baseline savings target with five graduated steps for additional incentive up to 150% of the baseline. A 10% band, referred to as a "dead band," exists below the target for which no incentive or penalty is assessed. There are five band ranges below the dead band that specify increasing levels of penalty that the Company will pay if savings targets are not achieved. Figure 1 displays a chart of the ECIM incentive and penalty levels.

Figure 1: Proposed and Adopted ECIM Structure[10]

Band Ranges (based on percentages of Baseline Target)	$/MWH Incentive	Shared Savings Incentive
140 - <150%	$ 20	100%
130 - <140%	$ 20	80%
120 - <130%	$ 20	40%
110 - <120%	$ 20	20%
100.1 - <110%	$ 20	10%
100% Baseline Target	$ 10	5%
90% - <100% Deadband	$ -	$ -
80 - <90%	$ 75	n/a
70 - <80%	$ 80	n/a
60 - <70%	$ 85	n/a
50 - <60%	$ 90	n/a
<50%	$ 95	n/a

The incentives associated with each range apply only to that portion of the savings that falls within the range. Therefore, for example, actual savings of 115% of the baseline target would receive incentives at the 100% level for 100% of the savings; the next 9.9% of savings would receive the incentive associated with the next savings band up, and finally the last 5.1% of savings would receive the incentive associated with the band 110 - <120%.

The ECIM structure includes two incentive components for achieving and exceeding the baseline target. The first component is a dollar per megawatt hour (MWh) incentive.

[8] Conservation Settlement on 2001 GRC, Section M, Paragraph 39, page 10.
[9] Docket UE-060266.
[10] Workpaper *1.1 Proposed & Adopted ECIM Structure.xls*. For determining exact level of savings, the plan directs the rounding of numbers to the nearest tenth of one percent.

According to the Table 1 chart, savings at the baseline target level provide an incentive of $10 per MWh saved. All other levels offer $20 per MWh for each MWh saved (above 100% of baseline target).

The second incentive component is based on a shared savings calculation. Shared savings is the difference between avoided costs of the supply system and total resource costs of the program. At the 100% baseline target level, PSE would receive 5% of the calculated shared savings. In Issue 1.2 Calculations below, Blue Ridge discusses the total resource cost and avoided cost components of the shared incentive.

The baseline target is established each year with joint consensus of the Company and the CRAG. The baseline targets for the ECIM pilot program years included the following:

Table 1: Baseline Targets during ECIM Pilot Program

Year	Megawatt Hours	Average Megawatt
2007[11]	160,308	18.3
2008[12]	216,372	24.7
2009[13]	278,000	31.7

Tariff Schedule 121 was established as the document that defines PSE's ECIM structure and process with regard to determining incentives and penalties.[14] Blue Ridge compared the elements of the ECIM specified in Staff's plan and adopted by the Commission in Order 08 to the elements defined in Schedule 121. While most of the conservation tariff schedules (Schedules 83 and 200-270) "sunset" or expire every two years, Schedule 121 is filed with the Commission annually.[15] The major element focused on for comparison between Schedule 121 and the Commission's Order was the incentive and penalty structure, including band width, dollar per MWh incentive/penalty associated with each band width, shared savings rate, and baseline target.

Schedule 121 includes a section providing definitions for many of the terms related to the ECIM's structure and calculations. In its definitions, Schedule 121 lists the range for each band of the incentive and penalty structure for the ECIM. The Schedule also supplies the baseline target agreed to by both the Company and the CRAG. Additionally, Schedule 121 provides a table showing band ranges, incentives (both components), incremental savings/penalty in MWh for each band range, and the upper threshold point in MWh for each band range. Figure 2 is taken from Schedule 121.

[11] Testimony of Joelle Steward, Docket No. UE-060266, page 31, line 19.
[12] Response to Data Request BRCS-01-010, 2008 Sch 120-121 080389+PSE+Tariff+Pages.pdf.
[13] Response to Data Request BRCS-01-010, 2009 Sch 120-121 090314+PSE+Tariff+Pages.pdf.
[14] Response to Data Request BRCS-01-001.
[15] Response to Data Request BRCS-01-001.

Figure 2: Schedule 121 ECIM Range Detail

Band	(1)	(2)	(3)	(4)	(5)
A	140.0%-150.0%	$ 20.00	100%	27,800	416,722
B	130.0%-139.9.0%	$ 20.00	80%	27,800	388,922
C	120.0%-129.9.0%	$ 20.00	40%	27,800	361,122
D	110.0%-119.9.0%	$ 20.00	20%	27,800	333,322
E	100.0%-109.9.0%	$ 20.00	10%	27,522	305,522
F	100%	$ 10.00	5%	-	278,000
G	90.0%-99.9.0%	$ 75.00	0%	27,800	278,000(6)
H	80.0%-89.9.0%	$ 75.00	0%	27,800	250,200
I	70.0%-79.9.0%	$ 80.00	0%	27,800	222,400
J	60.0%-69.9.0%	$ 85.00	0%	27,800	194,600
K	50.0%-59.9.0%	$ 90.00	0%	27,800	166,800
L	Under 50.0%	$ 95.00	0%	27,800	139,000

(1) Range of incentive or penalty as a percent of Baseline Target.
(2) MWh Incentive (Bands A-F) or MWh Penalty (Bands G-L) which is a rate in dollars per MWh.
(3) Shared Savings Incentive Rate - the percentage of savings that are eligible for the incentive.
(4) Incremental Savings (Bands A-F) or Incremental Penalty (Bands G-L) in MWh.
(5) Threshold of Band - for each band the threshold of the MWh savings achieved.
(6) The Threshold of Band is 277,999,999kWh which rounds to 278,000 MWH.

The Schedule 121 table is slightly misleading concerning band G. The $75.00 penalty per MWh appearing in column 2 of this band does not come into effect if actual savings is within the range of this band. However, if actual savings are below this range, the $75.00 penalty per hour will be applied to band G.

Using the guidelines defined in Schedule 121, PSE calculates its incentive or penalty each year. PSE publishes the results of its calculations in its annual report titled, "Energy Efficiency Services – Program Results." In Appendix B of the 2007 report and Exhibit 2 of the 2008 report, PSE reproduces the structure of their ECIM model showing baseline target, band ranges, and incentive/penalty components.

Findings

Blue Ridge found that Schedule 121 includes the ECIM structure details required by the Commission's Order.

Conclusions and Recommendations

Blue Ridge concludes that PSE has followed the guidelines as established in Schedule 121 and therefore has structured its ECIM to be consistent with the design specified by the Commission in Order 08.

B. Issue 1.2: Calculations

Background

The incentive portion of the ECIM includes two components—dollars per MWh saved and percent of shared savings. These components were mandated by the Commission in

Order 08. Blue Ridge's intent in the evaluation of this issue was to determine the following:

- *Did PSE follow the prescribed calculation methodology?*

Analysis

Blue Ridge began its analysis of this issue by reviewing Staff's plan for the ECIM, and Order 08 which approved Staff's plan and provided instruction for its implementation. According to Staff's plan, the dollars per MWh component of the incentive would begin at $10 for savings at the baseline target level. All band ranges above the baseline level would be calculated at $20 per MWh saved.[16] WUTC developers of the ECIM perceived the dollars per MWh incentive as recovery of "the costs that may not be recovered between rate cases if customer usage declines as a result of energy efficiency."[17]

The penalty calculation of the mechanism is intended to be performed in much the same way. For savings achieved that are less than 100% but at least 90% of the agreed to baseline target, there is no penalty. Savings achieved below 90% of the baseline target are assessed a penalty. The penalty is calculated on the MWh not achieved. In other words, the penalty is on the difference between the baseline target and the actual savings. The penalty in each range applies to the shortfall beyond that of the previous range. For example, if the baseline target had been set at 160,308 MWh and the Company achieved only 120,231 MWh of savings, they would have reached 75% of the baseline target. Therefore, they would be assessed the penalty for 10% of the baseline target at $75 per MWh (the rate for the band 90 to <100%), another 10% at $75 per MWh (the rate for the band 80% to <90%), and finally the last 5% at $80 per MWh (the rate for the band 70% to <80%).

[16] Testimony of Joelle Steward, Docket No. UE-060266, page 25, lines 11-13.
[17] Testimony of Joelle Steward, Docket No. UE-060266, page 25, lines 9-10.

Figure 3: ECIM Penalty Example[18]

Baseline Target	160,308
Actual Annual Savings	120,231
Percent of Target achieved	75%
MWh below Target	**40,077**

			Example:	
	(1)	(2)	(3)	(4) 1 x 3
Band Ranges (based on percentages of Baseline Target)	$/MWH Incentive	Shared Savings Incentive	MWhs below target	Penalty Dollars
140 - <150%	$ 20	100%		
130 - <140%	$ 20	80%		
120 - <130%	$ 20	40%		
110 - <120%	$ 20	20%		
100.1 - <110%	$ 20	10%		
100% Baseline Target	$ 10	5%		
90% - <100% Deadband	$ -	$ -	16030.8	$ 1,202,310
80 - <90%	$ 75	n/a	16030.8	$ 1,202,310
70 - <80%	$ 80	n/a	8015.4	$ 641,232
60 - <70%	$ 85	n/a		
50 - <60%	$ 90	n/a		
<50%	$ 95	n/a		
			40077	**$ 3,045,852**

The ECIM penalty example shows how the penalty is calculated. Although no penalty is assessed if actual savings fall within 90 to 99.9% of the baseline target, when the actual savings is below 90%, the penalty is assessed on all MWh not achieved up to the baseline target.

The shared savings component is more complex in its calculation. The shared savings calculation is designed to give PSE a portion of the first year "value" of the saved MWhs. The measurement of the value of electric efficiency is determined by subtracting the Total Resource Cost (TRC) from the avoided costs or those costs not incurred due to the reduction of demand by the energy conservation programs. The avoided cost is based on the Company's Integrated Resource Plan (IRP). The avoided cost for both 2008 and 2009 is derived from PSE's 2007 IRP.[19]

The TRC is composed of all the costs of the conservation measures. This includes the Company's costs "plus customer costs minus any quantified non-energy benefits."[20] The amount of costs avoided above that which the programs cost (TRC) is the "value" of the programs.

[18] Workpaper *1.2 Penalty Example.xls.*
[19] Response to Data Request BRCS-01-010, 2009 Sch 120-121 090314+PSE+Tariff+Pages.pdf.
[20] Testimony of Joelle Steward, Docket No. UE-060266, page 26, lines 4-5.

The ECIM as designed allows PSE to participate in this savings value on a graduated basis corresponding to the ranges set forth in the ECIM design structure. After the shared savings incentive is calculated, it is added to the dollars per MWh incentive to arrive at the total incentive. For savings below the baseline target, there is no penalty associated with the shared savings strategy.

PSE's Tariff Schedule 121 is the document that provides the guidelines for the ECIM design and calculations. Schedule 121 provides four steps in determining the incentive.

- Step 1 describes the incentive calculation for savings reaching 100%.
- Step 2 provides instruction for calculating the incentive for each of the bands greater than 100% which savings have exceeded.
- Step 3 guides the calculation for incentive for achieving savings within a band.
- Step 4 instructs that the incentives calculated in the first three steps be added together to determine total incentive.

Schedule 121 specifies three steps for calculating the penalties if actual savings are below 90% of the baseline target.

- Step 1 directs the calculation of penalty for each band below the baseline target in which the Company did not achieve any level of savings in the band.
- Step 2 directs the calculation of penalty within a band.
- Step 3 directs that penalties derived in steps 1 and 2 be added together to determine the total penalty.

The Company provided the calculations for the 2007 and 2008 incentives.[21] The results of these calculations along with copies of the spreadsheets were included in the annual reports for Energy Efficiency Services – Program Results.[22]

Findings

PSE designed the calculation spreadsheets for 2007 and 2008 to contain formulae covering all possibilities for incentives and penalties according to the ECIM structure of all bands (incentives, baseline target, dead band and penalties). However, not all the calculations in the 2007 spreadsheet are correct as ordered by the Commission and described in Schedule 121. The formulae for calculating penalties (1) incorrectly brought total actual savings into the calculation rather than the difference between the baseline and actual savings, and (2) incorrectly applied the lowest band penalty per MWh against the entire amount instead of applying the incremental discrepancy against each of the appropriate declining band ranges.[23]

However, since PSE achieved greater than targeted savings in 2007, none of the 2007 calculation inconsistencies affected the calculation of the Company's incentive. Furthermore, the Company recognized the formula errors and made changes prior to the 2008 spreadsheet calculations.

[21] Response to Data Request BRCS-01-011, Attachments A and B.
[22] Response to Data Request BRCS-01-003, Attachments D and E.
[23] Response to Data Request BRCS-01-011, Attachment A, cells D19 through D23.

Conclusions and Recommendations

Blue Ridge concludes that the Company's incentives for 2007 and 2008 were based on calculations that were consistent with Commission Order 08, and the ECIM calculations for all levels now also correspond to Order 08.

C. Issue 1.3: Eligibility

Background

In ordering the implementation of the ECIM pilot program, the WUTC identified three requirements in order for PSE to receive an incentive in any one year. These three eligibility requirements include: [24]

1. PSE must achieve at least 75% of the projected savings in each customer class or sector included in the program. The sectors are residential and commercial/industrial. Savings attributed to self-directing industrials in Tariff Schedule 258 and the Northwest Energy Efficiency Alliance in Tariff Schedule 254 are excluded from any sector calculation.
2. The weighted average measure life of the total program portfolio must meet a minimum of 9 years.
3. PSE's portfolio of programs must, in aggregate, be cost-effective from both the Utility Cost (PSE's cost to implement the program) and Total Resource Cost perspectives.

In both 2007 and 2008, PSE met the three eligibility requirements. In this section, Blue Ridge focused on whether the eligibility criteria of Order 08 were made part of the Company's program. Therefore, Blue Ridge's intent in the evaluation of this issue was to determine the following:

- *Did PSE comply with all the conditions and requirements of the pilot program as adopted by the Commission?*

Analysis

As established by Staff's ECIM plan, three eligibility requirements exist which PSE must meet in order to participate in any incentives as determined by the ECIM. The Company incorporated the ECIM incentive eligibility requirements into Tariff Schedule 121, which establishes the guidelines for the ECIM.[25]

The annual reports that provide program results of energy efficiencies also include the three criteria. Additionally, the reports not only state that PSE met each eligibility requirement, but they also provide the specific data showing that the measurement was reached and/or exceeded, as in the following example from the 2009 annual report.[26]

[24] Testimony of Joelle Steward, Docket No. UE-060266, Exhibit JRS-8.
[25] Response to Data Request BRCS-01-010, 2009 Sch 120-121 090314+PSE+Tariff+Pages.pdf.
[26] Response to Data Request BRCS-01-003, Attachments E.

1. At least 75 percent of the savings targets by Residential and Commercial/Industrial sector were achieved. Actual savings versus target results were, Residential: 158 percent and Commercial/Industrial: 104 percent.
2. The weighted average measure life of the total program portfolio is greater than the minimum life of nine (9) years. Actual weighted average measure life is 10.3 years**.**
3. PSE's portfolio of programs, in aggregate, is cost-effective from both the Utility Cost and Total Resource Cost (TRC) perspective - benefit/cost ratio is greater than one (1). Actual Utility Cost is 4.05 and Total Resource Cost is 1.75.

Findings

Blue Ridge found that the eligibility requirements are included in Schedule 121 (the governing document for the ECIM) and that the eligibility requirements were noted in the annual reporting document for the ECIM (the Energy Efficiencies Services – Program Results). Blue Ridge found that the Company's eligibility was considered with regard to the requirements ordered by the Commission in the Company's development of incentives during 2007 and 2008.

Conclusions and Recommendations

Although the eligibility requirements are incorporated in a list in Schedule 121, Blue Ridge believes that the development of formal procedures regarding the determination of the Company's eligibility would increase confidence that consideration of eligibility would be consistently performed in future years.[27]

D. Issue 1.4: Payment Period

Background

In Order 08, the Commission agreed with both the WUTC Staff and PSE that incentive payments would be included with Tariff Schedule 120. In addition, PSE reports its yearly energy conservation results on February 15 pursuant to Commission Order.[28] Tariff Schedule 120 becomes effective April 1 each year.[29] With only a month and a half between the annual energy conservation report and the effective date for new rates, there was not enough time for PSE to develop the annual report with the ECIM determination of incentive and still allow WUTC Staff time to review the EES program results and ECIM determination. The solution was to order the recovery of 75% of the incentive beginning April 1 in the year following that in which the incentive was earned. The other 25% would be recovered the following year. Any adjustments that WUTC Staff deemed appropriate could be made to the 25% deferred until the next year.

Blue Ridge's intent in the evaluation of this issue was to determine the following:

[27] This conclusion is in conjunction with the conclusion for Issue 1.5.
[28] Order in Docket UE-970686, May 15, 1997.
[29] Response to Data Request BRCS-01-010, Schedule 120 attachments.

- *Did PSE comply with all the conditions and requirements of the pilot program as adopted by the Commission?*

Analysis

Staff's ECIM plan provides the means for the recovery of incentive and the payment of penalty.[30] If an incentive is to be awarded, PSE will collect 75% of that incentive in the year after the programs have been implemented. The remaining 25% will be collected the following year, subject to adjustments based on the results of ex-post verification of the savings. If a penalty is to be paid, PSE shareholders must pay 75% of the full penalty within 90 days of filing the Annual Report. The remaining 25% of the penalty shall be paid no later than April 1 of the second year following the program year, subject to adjustments based on the results of ex-post verification of savings.

Tariff Schedule 121 describes the ECIM—its calculations and incentive/penalty settlement. Under a section entitled Monthly Rate, the following paragraph appears:

> "Incentive amounts earned by the Company and penalty amounts to be paid by the Company will be included in the calculation of rates under Schedule 120 as follows: 75% of the full amount in the Schedule 120 rate year immediately after the amount is calculated and 25% in the following rate year. For example, the final 25% of the 2009 incentive or penalty amount will be included in Schedule 120 rates from April 1, 2011 through March 31, 2012."[31]

Findings

Blue Ridge found that the 75/25% breakdown of the incentive in Appendix B of Schedules 120-121 occurred in accordance with the Commission's Order. However, the paragraph in Schedule 121 under section Monthly Rate that describes the process for penalty payment is inconsistent with the Commission Order. According to the paragraph in Schedule 121, penalty payments are treated in the same manner as incentive awards by being placed into rates. However, according to Staff's ECIM plan, the 75% portion of the penalty must be paid "within 90 days of filing the Annual Report." The remaining 25% must be paid "no later than April 1 of the second year following the program year."[32]

PSE earned an incentive in each year of the pilot program so far (2007-2008). Therefore, the error in Schedule 121 guidelines for penalty had no consequential effect.

Conclusions and Recommendations

Blue Ridge believes that the description and implementation of the penalty payment process in Schedule 121 should be modified to be consistent with the WUTC Staff plan and Order 08 in stating, "For penalties, the 75% portion of the penalty must be paid

[30] Testimony of Joelle Steward, Docket No. UE-060266, Exhibit JRS-8, Paragraph 7.
[31] Response to Data Request BRCS-01-010, 2009 Sch 120-121 090314+PSE+Tariff+Pages.pdf.
[32] Testimony of Joelle Steward, Docket No. UE-060266, Exhibit JRS-8, paragraph 7.

within 90 days of filing the Annual Report. The remaining 25% must be paid no later than April 1 of the second year following the program year."

E. Issue 1.5: Oversight

Background

The CRAG is a formal advisory committee established in the 2001 settlement of PSE's general rate case.[33]. Members of the CRAG include representatives from PSE, the WUTC Staff, ratepayers advocate groups, and energy efficiency policy organizations. The CRAG acts as an oversight group to PSE's conservation efforts. Accordingly, the Commission declined to establish a new evaluation group for the ECIM in Order 08, citing that evaluation of performance and informing the design of future programs was already an important function of the CRAG. Additionally, Blue Ridge captured in this section a review of the methods of calculating and verifying energy savings.

Blue Ridge's intent in the evaluation of this issue was to determine the following:

- *How was the CRAG involved in establishment of the baseline target and in reviewing progress and results?*
- *What assumptions or methods were used to calculate and verify the energy savings reported by PSE?*

Analysis

Oversight

According to the 2001 Settlement establishing the CRAG, PSE is to provide the CRAG with energy conservation program reports at least semi-annually.[34] In both 2007 and 2008, PSE provided quarterly reports to the CRAG on conservation measures. After the ECIM pilot program was implemented in 2007, the ECIM calculation results were included in the report which the Energy Efficiency Services organization published in February each year.[35]

The 2001 Settlement also specified that PSE inform the CRAG if annual program expenditures are expected to fall below 80% or exceed 120% of budget. This requirement was reaffirmed in Staff's ECIM plan in conjunction with the description of the ECIM program requirements.[36] Based on Company data, the forecast for annual program expenditures never fell below 80% or exceeded 120% during the two completed years of the ECIM pilot program—2007 and 2008.

[33] 2001 Settlement is in association with Docket No. UE-011570, Appendix F details the conservation agreements.
[34] Conservation Settlement on 2001 GRC, Section D, Paragraph 8, page 2.
[35] Response to Data Request BRCS-01-003, Attachments D and E.
[36] Testimony of Joelle Steward, Docket No. UE-060266, Exhibit JRS-8, Paragraph 10.

Each year's baseline target, after the initial 2007 target established by the Commission in Order 08, is to be determined by joint consensus of PSE and the CRAG.[37] Blue Ridge reviewed presentations by PSE to the CRAG in which baseline targets were discussed.[38] Each year's baseline target was established through discussions with the CRAG and approved by the Commission through Tariff Schedule 121.

Blue Ridge reviewed the process by which EES performs internal audits to ensure the reporting accuracy of the ECIM program savings and expenses that form the basis for determining the ECIM incentive/penalty. Through 2008, EES Budget and Administration performed an annual audit of residential programs and the EES Budget and Administration manager performed a quarterly audit of commercial/industrial project claims. The quarterly audits of commercial/industrial continue through 2009. Beginning in July 2009, audits of the residential programs are performed semi-annually.[39]

The Company's residential program audits review aggregate savings, sample monthly summary claims, and sample individual records. Discrepancies prompt a detailed review of all monthly summary reports. Any necessary adjustments are reported and filed in accordance with proper procedures of justification, timing, and approvals. The commercial/industrial project audits review estimated savings versus actual, peer review, and authorization.

PSE also had an external audit conducted by Ernst & Young at the conclusion of PSE's participation in the Conservation Rate Credit program.[40] No discrepancies were reported.

Measure Metrics

Blue Ridge reviewed PSE's Measure Metrics Management process by which energy savings are calculated.[41] EES electric program operations are guided by Tariff Schedule 83 under which are many energy conservation schedules. The program implementation staff is responsible for managing those measures that meet the terms of the schedule(s), are cost effective, and achieve savings goals. The majority of residential measures are RTF-deemed (that is, determined from the regional technical forum). The majority of commercial/industrial savings are derived from calculated or custom grants. Most commercial/industrial rebates are PSE-deemed. Considerations for new measures fall into five categories: (1) sources, such as RTF; industry studies; manufacturer solicitations; utility forums, initiatives, and partnerships; or EES program management research, (2) tariff impact, (3) administrative impact, (4) logistics, such as kind of program—direct install, rebates, mailing, and (5) financial. Measure claims are investigated; potential cost and savings are evaluated; and market conditions are considered. Where possible, PSE will use RTF-deemed measure savings in order to comply with the Stipulation Agreement in Docket 011570.

[37] Testimony of Joelle Steward, Docket No. UE-060266, Exhibit JRS-8, Paragraph 3.
[38] Response to Data Request BRCS-01-018.
[39] Response to Data Request BRCS-01-004, Attachment A, page 47.
[40] Response to Data Request BRCS-01-019, Attachment B.
[41] Response to Data Request BRCS-01-004, Attachment A.

Before an energy conservation measure may be implemented and, as a result, included in ECIM calculations, four conditions must be present: (1) enumerated savings, (2) an EES business case, (3) source of savings documentation, and (4) written management approval. When a measure is approved, the CRAG is notified and all necessary program documentation is created/implemented. Revisions to the program(s) undergo basically the same process as new measures.

EES has centralized all measure attribute information into a Measure Metrics archive. Measure Metrics is the foundation of prescriptive measure savings claims. However, the Measure Metrics system does not track measure performance, aggregate savings, or program costs. As measures are changed or retired, their history is maintained for possible later use in review for future comparison and implementation.

Findings

Oversight

Blue Ridge found that the ECIM process operated in accordance with Order 08. The CRAG was kept informed of budget and actual performance as well as program results. Baseline targets were developed through joint consensus of PSE and the CRAG as Order 08 stipulates.

While no problems were discovered, Blue Ridge found that the ECIM development process did not have formal procedural guidelines. Schedule 121 described the basics of the program in accordance with the Commission's requirements, but the internal procedures by which the program is implemented by EES are not formally documented in a central location.

Measure Metrics

The Measure Metrics Management process provides reasonable strength by which energy savings may be calculated. Attention to keeping the system current while ensuring justifiable additions, maintenance of historical record, and ease of access provide confidence in accurate reporting of savings.

Conclusions and Recommendations

The ECIM program is new and process has been developing over the past two years of implementation. Therefore, development of formal procedures for the ECIM program has understandably not kept pace with actual ECIM operating performance. However, Blue Ridge recommends that formal procedures for the ECIM program and the broader activity of the energy efficiency programs be developed.

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4. FUNCTIONAL AREA 2: QUANTIFIABLE RESULTS

The Quantifiable Results functional area contains Blue Ridge's review of the energy conservation programs offered by PSE during the years 2004-2008. PSE offered a portfolio of Energy Efficiency programs from 2004 through 2006 under the provisions of the 2001 Settlement Agreement in Dockets UE-011570 and UG-011571. That Agreement set forth penalties for failure to meet energy savings targets, but did not provide for incentives. The Energy Conservation Incentive Mechanism (ECIM) that became effective for the program year 2007 provided for incentives as well as penalties. The purpose of this investigation is to evaluate and report on the effectiveness of the ECIM pilot program. Blue Ridge also calculated certain financial metrics in order to estimate the financial results as they might have been in the absence of the energy efficiency program portfolio. Additionally, Blue Ridge evaluated the impact of ECIM and the energy conservation program on customers.

This functional area is divided into five sub-issues including 2.1 Energy Conservation – Program and Components, 2.2 ECIM – Program and Components, 2.3 Total Resource Cost, 2.4 Results Comparison, and 2.5 Customer Bills, Rates, Charges. Each issue relates to particular Commission concerns regarding the ECIM and provides the assessment of how well PSE's ECIM, in coordination with its energy conservation program portfolio, satisfies the Commission's intent as outlined in Order 08.

A. Issue 2.1: Energy Conservation – Program and Components

Background

Throughout this section of the report, Blue Ridge examines measures that may be used to identify changes and attempts to determine whether the changes were driven by the ECIM. These results are examined and compared for the years of the pilot program (2007 and 2008) and with results from prior years (2004 through 2006).
For this issue, Blue Ridge answered the following questions:

1. What were the energy savings and expenditures on electric energy efficiency during the three-year period prior to the incentive mechanism (2004 – 2006) vs. during the incentive mechanism period?
2. How did the scope/magnitude of Conservation programs change during the pilot period relative to the three years immediately prior to the pilot period?
3. What incremental program changes or expansions were implemented during the incentive mechanism period and when?
4. Have there been any changes or expansions to the low income weatherization program since the incentive mechanism implementation?

Analysis

Blue Ridge analyzed PSE's responses to Data Requests 01-003, 01-007, and 01-037 to trace the program names and attributes from year to year. This mapping facilitated trend analysis over the study period (2004-2008) as well as comparisons between pre-ECIM

program years (2004-2006) and the ECIM period (2007-2008). Blue Ridge also interviewed key EES employees to identify any organizational changes implemented over the same period.

Energy Savings

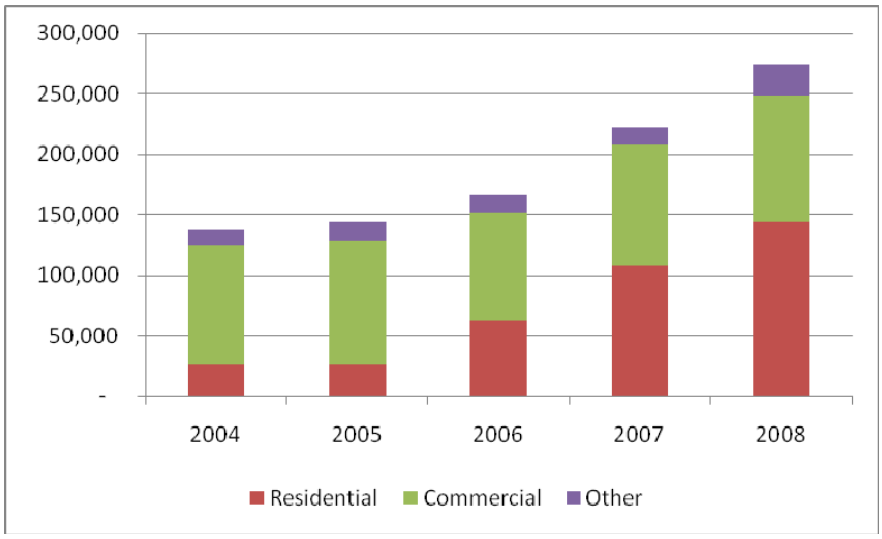
Blue Ridge analyzed the savings achieved by the programs that were included in PSE's cost-effectiveness reports. The overall annual energy savings achieved increased in every year since the program began.

Table 2: Annual Energy Savings (MWh) as Reported in PSE Annual Reports[42]

Class	2004	2005	2006	2007	2008
Residential	26,733	26,315	62,590	107,987	144,274
Commercial	97,884	102,153	89,164	99,823	104,709
Other	13,671	15,368	14,500	14,500	24,500
Total	138,288	143,837	166,254	222,310	273,483
Annual Change		**5,549**	**22,417**	**56,056**	**51,173**

As illustrated in Figure 4, the relative contribution from each customer segment has shifted over time. The contributions by the Commercial sector far exceeded that of residential until 2007. Since then savings from the Residential sectors have outpaced Commercial.

Figure 4: Annual Energy Savings (MWh) as Reported in PSE Annual Reports[43]



[42] Response to Data Request BRCS-01-037, energy savings for each program year except for 2005, which was obtained from Response to Data Request BRCS-01-007. Workpaper *Annual Energy Savings, Utility Cost, Program distribution.xls.*

[43] Response to Data Request BRCS-01-037, energy savings for each program year except for 2005, which was obtained from Response to Data Request BRCS-01-007. Workpaper *Annual Energy Savings, Utility Cost, Program distribution.xls.*

While the relative contribution of the Residential sector programs was much less than that of Commercial, the Residential programs experienced the most dramatic growth, increasing by nearly 140% from 2005 to 2006 and by 73% from 2006 to 2007. Growth slowed slightly in 2008 but was still up by just over one third from 2007. After a decrease in 2006, the performance in the C&I sector rebounded in 2007 and 2008, with annual savings greater than the previous high in 2005. The annual energy savings achieved by the portfolio of programs has nearly doubled (increased by 98%) from 138,288 MWh in 2004 to 273,483 MWh through the end of 2008. The total annual savings achieved in the two years since the implementation of the ECIM was 11% greater than that realized in the previous three years. Those improvements were primarily driven by the C/I New Construction, High Voltage Self-Directed, and the NW Energy Efficiency Alliance programs. C/I Retrofit, RCM, and C/I Rebate programs decreased between 2007 and 2008.

Figure 5: Change in Annual Energy Savings in %[44]
Reported in PSE Annual Reports 2004-2008

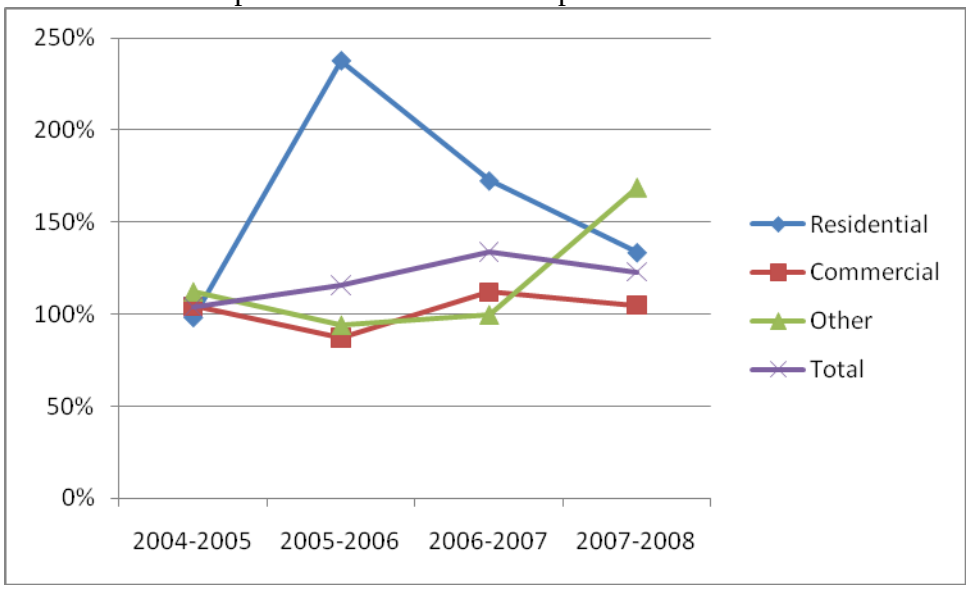
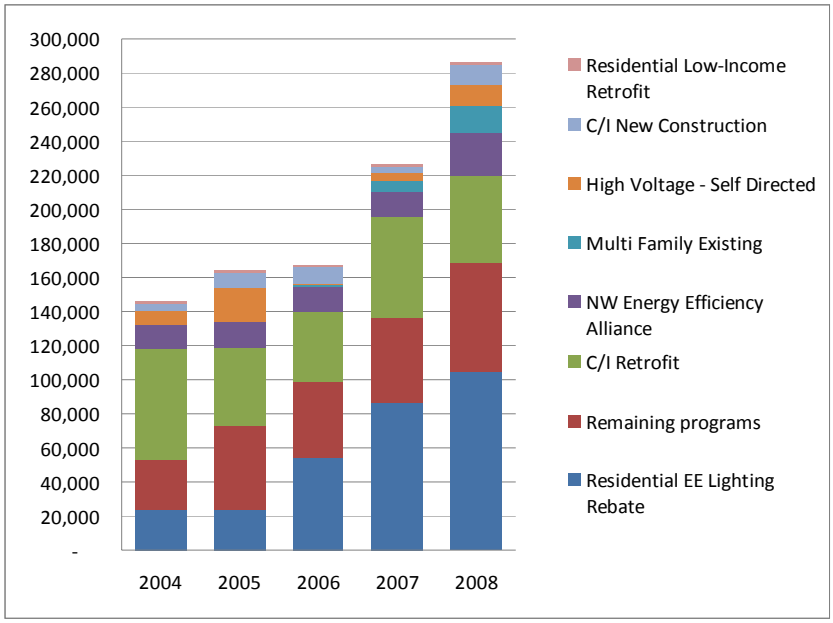


Figure 6 depicts the changes in contributions over the period 2004 through 2008. The Residential Energy Efficient Lighting Rebate, C/I Retrofit and NW Energy Efficiency Alliance programs have remained the strongest performers throughout the period. Residential Energy Efficient Lighting Rebate saves more than all of the C/I programs combined. While overall savings had leveled off in 2006, the Residential Energy Efficient Lighting program started increases that would continue through 2008. Gains were realized in the Energy Efficiency Lighting, Multi-Family Existing, and NW Energy Efficiency Alliance and it appears that the savings in C & I began to come from the larger participants in the High Voltage – Self Directed program, particularly in 2008. There were also a number of small programs, including Refrigerator Decommissioning and Energy Star Clothes Washers that, while still making minor contributions, began to register savings.

[44] Workpaper *Annual Energy Savings, Utility Cost, Program distribution.xls*.

Figure 6: Energy Savings Comparison[45]



Program Expenditures

Blue Ridge analyzed program expenditures reported in the Cost-Effectiveness calculations for each program year 2004-2008 and examined the trends associated with these program expenditures. As tabulated below, PSE's annual overall expenditures have increased each year, and have more than doubled since 2004. The greatest increase in expenditures occurred in 2008, an increase of 45% over 2007. The program expenditures in the two years since the implementation of the ECIM were 25% greater than the spending in the previous three years.

Table 3: Annual Utility Cost of Programs[46]

[45] Response to Data Request BRCS-01-037, energy savings for each program year except for 2005, which was obtained from Response to Data Request BRCS-01-007. Energy Savings for "sub-programs" within Residential Energy Efficient Rebate program were also obtained from Response to Data Request BRCS-01-007. Workpaper *Annual Energy Savings, Utility Cost, Program distribution.xls.*

[46] Response to Data Request BRCS-01-037, Utility Costs for each program year except for 2005, which was obtained from Response to Data Request BRCS-01-007. Workpaper *Annual Energy Savings, Utility Cost, Program distribution.xls.*

Included in the Cost-Effectiveness Calculations ($000)

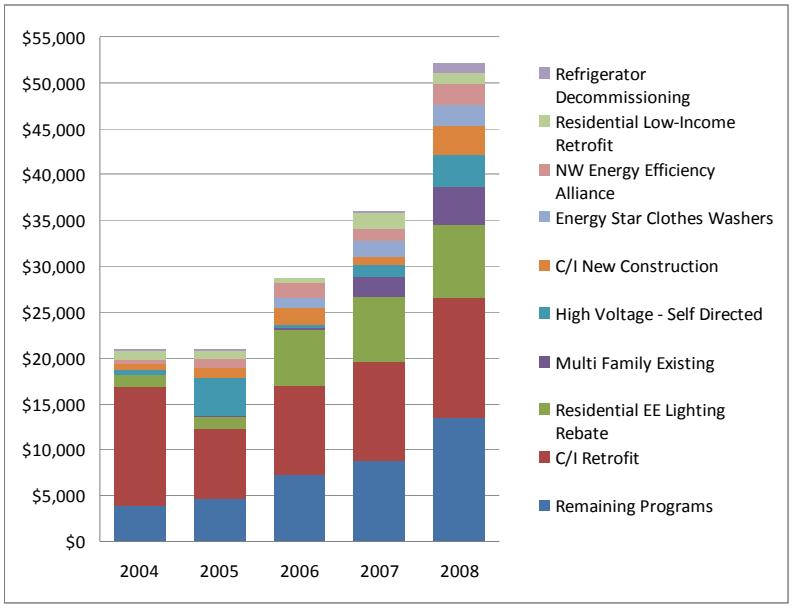
Class	2004	2005	2006	2007	2008
Residential	$3,481	$3,679	$10,411	$16,935	$23,641
Commercial	16,414	15,698	15,618	16,656	24,357
Other	975	1,507	2,629	2,407	4,150
Total	$20,869	$ 20,884	$28,658	$35,998	$52,148
Annual Change		$14	$7,774	$7,341	$16,149

Table 4: Rate of Change of Annual Utility Cost[47]
Included in Cost-Effectiveness Calculations ($000)

Class	2004	2005	2006	2007	2008
Residential		106%	283%	163%	140%
Commercial		96%	99%	107%	146%
Other		155%	174%	92%	172%
Total Portfolio		**100%**	**137%**	**126%**	**145%**

Figure 7 illustrates the trend in spending over the program years 2004-2008. The spending generally tracked with the savings except that while the savings were still too small to cause much impact, there appeared to be a considerable increase in spending on smaller programs such as Refrigerator Decommissioning and Energy Star Clothes Washer.

Figure 7: Energy Efficiency Program Spending[48]

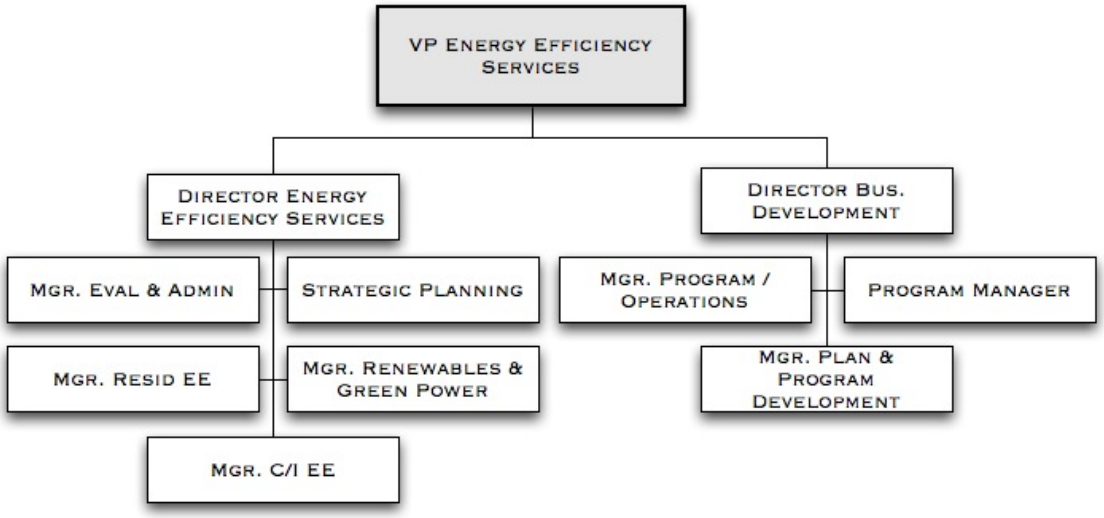


[47] Workpaper *Annual Energy Savings, Utility Cost, Program distribution.xls*.
[48] Response to Data Request BRCS-01-037, Utility Costs for each program year except for 2005, which was obtained from Response to Data Request BRCS-01-007. Workpaper *Annual Energy Savings, Utility Cost, Program distribution.xls.*

Program Magnitude Changes

PSE Energy Efficiency Services Department has continuously evolved since being "spun-off" from Business Development into a separate group under a new director in 2002. This action was at least partially in response to the Settlement Agreement for Conservation in Dockets No. UE-011570 and UG-011571. As illustrated in Figure 8, the groups were combined in 2005 but remained separate until 2006.

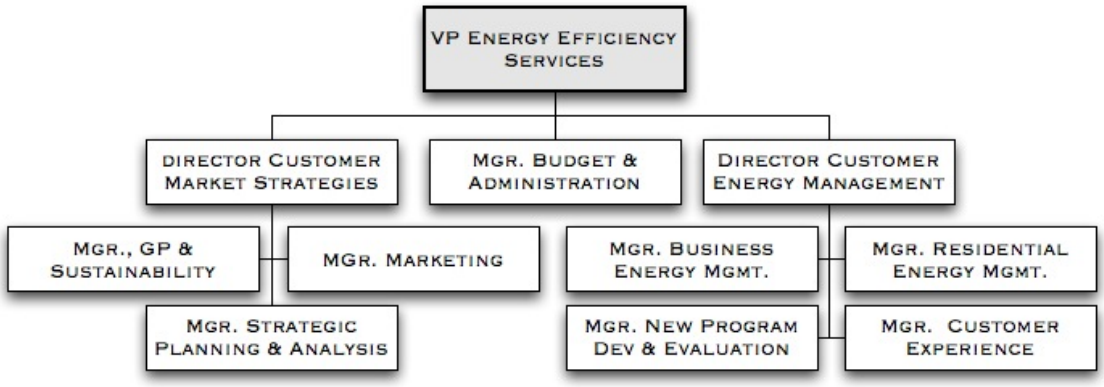
Figure 8: 2005 EES Organization[49]



In 2006, the Energy Efficiency Services group was established uniting the two functions at the vice president level. Two departments, Customer Energy Management and Customer Market Strategies, were established.

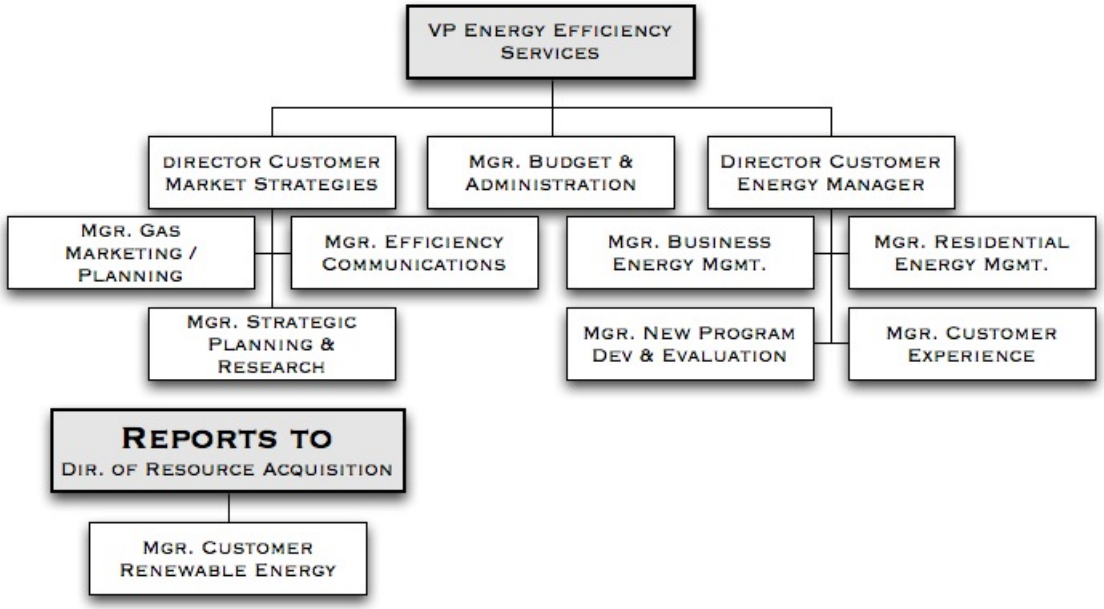
Figure 9: 2006 EES Organization[50]

[49] Response to Data Request BRCS-01-005, supp OrgChart_10-13-2005.
[50] Response to Data Request BRCS-01-005, supp OrgChart_10-03-2006.



In 2007, the first year of the ECIM, organizational changes were made that implied a shift from a measure to a customer focus. The Residential group implemented changes that leveraged the existing delivery channels to deliver programs. The Business group added a supervisor to focus on that customer class. A new Gas Marketing & Development function was installed with a manager reporting to the Director of Customer Market Strategies. PSE management also recognized the importance of energy efficiency as a resource in PSE's portfolio. Two employees who had been in the Energy Efficiency organization were moved into the IRP group to support Supply Curve and other planning and forecasting functions. The Green Power and Customer Renewables group was also moved to the Resource Acquisition area.

Figure 10: 2007 EES Organization[51]

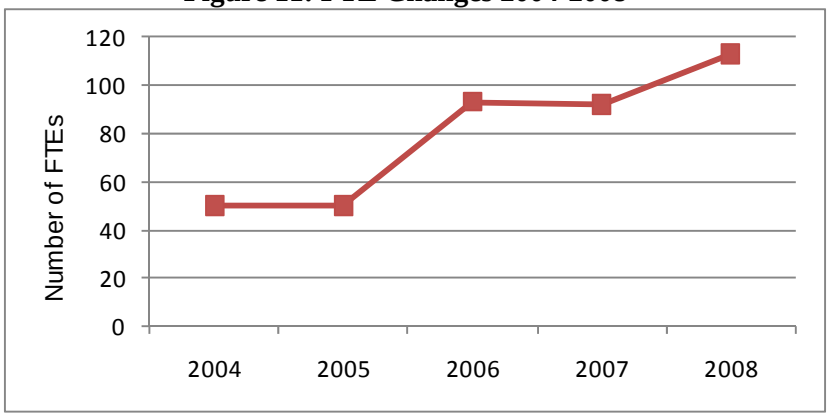


[51] Response to Data Request BRCS-01-005, supp OrgChart_01-28-2008.

In 2008, the Energy Efficiency organization evolved further. The Community Outreach and Education group was created in recognition of the value of community-level customer pull, with a new director position to manage this function. The Customer Renewable Energy function was also moved from Resource Acquisition back to Energy Efficiency.

Figure 11 illustrates the changes in FTEs over the period of this evaluation.

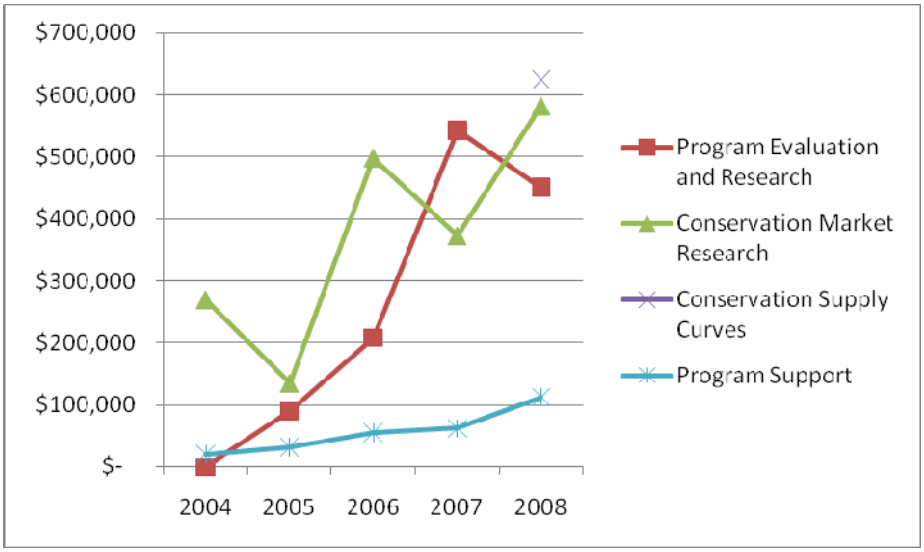
Figure 11: FTE Changes 2004-2008[52]



As illustrated in Figure 12, Blue Ridge observed that spending on program evaluation and research has more than doubled since the implementation of the ECIM from $208,073 in 2006 to $451,379 in 2008. Spending on conservation market research has also increased from $497,720 in 2006 to $542,056 and $451,379 in 2007 and 2008, respectively.

[52] Workpaper *Energy Efficiency Org History 2003 – 2009*, provided by PSE on August 21st in response to an informal data request during the on-site visit.

Figure 12: Spending on Program Evaluation and Market Research[53]



PSE is also conducting an assessment of the long-term market potential for energy savings from energy efficiency and other demand-side resources. The results will be used in assessing the potential for these resources in the 2009 IRP and will also inform the setting of future savings targets.

PSE's description of the project to conduct baseline research for program design and promotional campaign development demonstrates the increased effort to improve the information needed to improve performance.

> *"This research will consist of several studies designed to provide basic, foundational information about PSE customers that will be used as input to the Company's Integrated Resource Plan, as well as for the planning and design of programs and promotional campaigns. Over the next two years, the Company plans to conduct customer end use characteristics surveys for the residential and commercial sectors, leveraging regional efforts where appropriate. In addition, the Company plans to conduct market segmentation, communications media effectiveness, and energy efficiency service expectation studies.* [54]

The need to "sell" the programs to customers rather than simply deliver "widgets" is recognized in the "Program-Specific Market Research Support" project. The research was conducted to assist in the development and evaluation of specific program promotion

[53] Responses to informal Requests: (1) *2004 and 2006 CE Tie Out.xls*, (2) email *BlueRidge Q A - Other Category - 2004 -06* provided to correct response to request for cost information for the listed EES Program support programs for 2004-2005provided by PSE on August 21st in response to an informal data request during the on-site visit..*Other Program Descriptions*, provided by PSE on August 21st in response to an informal data request during the on-site visit.

[54] *Other Program Descriptions*, provided by PSE on August 21st in response to an informal data request during the on-site visit.

and communications campaigns, including message testing, campaign target markets, and campaign effectiveness studies, as appropriate.[55]

Program Incremental Changes

The analysis of the differences between the programs pre- and post-ECIM implementation focused on the top five programs for the 2008 achieved energy savings:

Table 5: 2008 Top Five Programs

Program	% of 2008 Total Energy Savings
Residential Energy Efficient Lighting	38%
C/I Retrofit	19%
NW Energy Efficiency Alliance	9%
Multi-Family Existing	6%
High Voltage – Self Directed	6%

During on-site interviews, PSE pointed Blue Ridge to the descriptions of the programs contained in the Annual Reports to identify the changes in the programs. Based upon their view of the annual reports, only the Residential Energy Efficient Lighting program, offered as part of the Residential Single Family Existing program, exhibited significant changes. The following quotation from PSE's 2007 Annual Report describes the changes and the benefit of the shift in emphasis from delivery directly to customers to increasing the focus on leveraging the market-based delivery channels.

> *"Energy Star® Lighting: The Lighting program substantially exceeded targets through the addition of new retail partners and greater field support for the program. The program added Wal-Mart and increased PSE's allocation to Costco. Fall promotions were enormously successful, with Costco fall sales generating more volume than the first three quarters of 2007 combined."*[56]

Further demonstrating the increased customer focus, PSE's new regional offices provided Energy Efficiency Services a permanent location for customers to receive information and speak directly to a PSE employee regarding opportunities to save energy.

While there were less transformative changes in the other programs, the concerted focus on leveraging the existing market-based delivery channels may be impacting all of the programs. Also, for programs that offer customized grants or award contracts on the basis of individual cost-benefit analyses, the near doubling of the cost-effectiveness (CE) standard was a significant change (e.g., High Voltage – Self-Directed and C/I Retrofit).

The Multi-Family Existing program began at the end of 2006. Consistent with its

[55] *Ibid*
[56] PSE 2007 Annual Report, page 6.

channel focused approach, PSE is leveraging relationships with managers of portfolios of apartments to deliver this program. Energy savings more than doubled from 6,773 MWH in 2007 to 15,720 MWH in 2008 (fourth highest savings of the portfolio); but, since it began in 2006, it is unlikely that the approval of the ECIM drove significant change.

Low Income Weatherization

After achieving nearly 1,200 MWH of energy savings in 2004, savings fell steadily through 2006. PSE attributed the 50% drop in spending in 2006 to changes in the source and rules for external funding that is leveraged by the PSE program. In 2007, the program rebounded. Energy savings increased by more than 50%, from 841 MWH to 1,294 MWH and expenditures more than quadrupled, from $404,663 in 2006 to $1,822,000 in 2007. The program is still a minor contributor to overall energy savings, at less than 0.5%. Energy savings and spending on the low income program were lower in 2008, to 1,031 MWH and $1.2 million, respectively. The program also had benefit to cost ratio of greater than 1.0 for the first time in 2008. However, this was primarily attributable to the increase in PSE's avoided cost in 2008. Given the 2008 cost and savings with the 2007 CE standard, the B/C ratio would have increased to 0.91 but would have remained below 1.0.

There were also a number of changes in the delivery and management of the low income weatherization program. In 2006, PSE began work on an on-line tracking system that was launched in April of 2007. The new system streamlined management by allowing agencies to track and report measure installations, costs and payments on-line, in real-time. PSE and its partner agencies also completed work on a comprehensive schedule for evaluation and payment schedules that increased payments for the first time in over 5 years. Energy savings and expenditures were lower in 2008, savings dropping from its high of 1,294 MWH to just over 1,000 MWH and expenditures dropping from $1.8 million in 2007 to about $1.2 million. PSE assigned a dedicated program manager to work with the agencies to improve 2009 performance.

Findings

Energy Savings and Program Expenditures

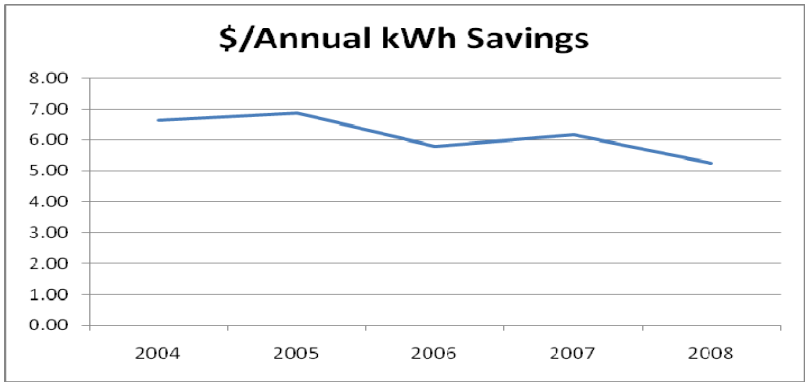
PSE's annual overall expenditures have increased each year, and have more than doubled since 2004. The greatest increase in expenditures occurred in 2008—an increase of 45% over 2007. The program expenditures in the two years since the implementation of the ECIM were 25% greater than the spending in the previous three years.

The annual energy savings achieved by the portfolio of programs has nearly doubled (increased by 98%) from 138,288 MWh in 2004 to 273,483 MWh through the end of 2008. The total annual savings achieved in the two years since the implementation of the ECIM was 11% greater than that realized in the previous three years.

Expenditures increased by 25% (from $70,111,000 to $88,146,000) and the annual energy savings increased by 11% (from 448,379 MWH to 495,792 MWH) between the

end of 2006 and the end of 2008. While the costs increased more than the savings, the ratio of expenditures per annual kWh savings generated improved to its lowest level in 2008.

Figure 13: Improvement in Dollars per Annual kWh Savings[57]



Program spending on individual programs generally tracked with the savings. However, during the ECIM period, a notable increase in spending on smaller programs that generated relatively small energy savings, such as Refrigerator Decommissioning (from $9,000 in 2006 to just below $1.1 million in 2008) and Energy Star Clothes Washer (from just over $1 million in 2006 to nearly $2.3 million in 2008) occurred. As discussed in Section 2.3, these programs also do not pass the TRC B/C test.

Program Magnitude Changes

Since the implementation of the ECIM, PSE has reorganized and refocused the administration of its EES portfolio to leverage existing provider networks. The Company's investment in program evaluation and market research in the two years under the ECIM was more than double that of the preceding three years, increasing from $1.2 million to $2.6 million.

Program Incremental Changes

With the exception of the Residential Energy Efficient Lighting program, offered as part of the Residential Energy Efficiency Rebates program, few programs exhibited notable changes. However, PSE's reorganization to dedicate subject matter and "channel experts" to increase the efficiency and effectiveness of the programs may be impacting all of the programs. The improvements in the Multi-Family-Existing program may be indicative of that emphasis. There do not appear to be material changes in the program offerings for the C/I programs that offer customized grants or award contracts on the basis of individual cost-benefit analyses (e.g., High Voltage – Self-Directed and C/I Retrofit). Their improvement may be attributable to the near doubling of the CE standard

[57] Workpaper *Annual Energy Savings, Utility Cost, Program distribution.xls.*

(see section 2.3 for more detail concerning the doubling of the CE standard).

Low Income Weatherization

The changes in the Low Income Weatherization program have been significant in terms of energy savings, program expenditures, and program features. There were also a number of changes in the delivery and management of the program, including assignment of a dedicated program manager. PSE believes this yielded some positive results based upon contracting for 2009.

Conclusions and Recommendations

Blue Ridge believes that the establishment and implementation of the ECIM has driven energy savings and program expenditures to increase by 11% and 25%, respectively over the three preceding years. Blue Ridge also believes that the ECIM drove the reorganization and dedication of resources to specific channels and the investment in market research and program evaluation.

The increased spending on market potential, customer end use, and program-specific market research since implementation of ECIM demonstrates the Company's increased commitment to improving the forecasting of energy efficiency resources as well as their delivery.

However, other factors exist, including increased emphasis on demand-side management (DSM) by the Northwest Power Pool (NWPP), the volatility of energy market prices experienced in the last two years, and the uncertainty in the regulatory and political environment with respect to carbon and other emissions credits and penalties, that may and should be driving efforts to diversify PSE's resource portfolio. Nevertheless, the opportunity the incentive provides the Company to generate direct revenue as a result of their efforts cannot be discounted as a significant driver for the major changes PSE has made to improve the efficiency and effectiveness of their energy conservation program offerings.

B. Issue 2.2: ECIM – Program and Components

Background

PSE's EES organization publishes an annual report providing the results of the ECIM. Blue Ridge's intent in the evaluation of this issue was to determine the following:

- *What were the baseline targets, energy savings achieved, and resulting incentive or penalty for each year of the pilot program?*
- *What was the total amount of incentive mechanism revenue collected from ratepayers by year and by customer class?*

Analysis

Blue Ridge analyzed PSE's responses to 01-003 and 01-011 to develop the comparison of baseline targets to achieved savings and the resultant incentive payments for 2007 and 2008. This information is reported in Table 6.

Table 6: Savings and Incentives Comparison (2007-2008)

	2007[58]	2008[59]
Target Energy Savings (MWH)	160,308	216,372
Achieved Energy Savings (MWH)	222,310	273,483
% of Energy Savings Target Achieved	139%	126%
Amount of Incentive Earned	$3,452,657	$4,339,150

While developing the information requested, Blue Ridge noted that PSE's performance to target energy savings has improved dramatically in 2007 and 2008 when compared to prior years. This comparison is reported in the following Table 7 and Figure 14.

Table 7: Savings Comparison (2004-2008)

	2004[60]	2005[61]	2006[62]	2007[63]	2008[64]
Target Energy Savings (MWH)	171,540	171,540	175,314	160,308	216,372
Achieved Energy Savings (MWH)	173,215	171,390	166,254	222,310	273,483
% of Energy Savings Target Achieved	101%	100%	95%	139%	126%

[58] Response to Data Request BRCS-01-011, BRCS-01-011 PSE Att A-Elec Incentive Calc 2007 FINAL 020408.xls.
[59] Response to Data Request BRCS-01-011, BRCS-01-011 PSE Att B-Elec Incentive Calc 2008 FINAL 02-11-09.xls.
[60] Response to Data Request BRCS-01-010, 2004-2005 APP B final.xls for two-year target. Response to Data Request BRCS-01-003, BRCS-01-003 PSE Att A-2004 Annual EE WUTC report.pdf, page 1 for achieved Energy Savings.
[61] Response to Data Request BRCS-01-010, 2004-2005 APP B final.xls for two-year target. Response to Data Request BRCS-01-003, BRCS-01-003 PSE Att B-2005 Annual EE WUTC report.pdf for achieved Energy Savings.
[62] Response to Data Request BRCS-01-010, 2006_2007 App B Pgm Targets & Budgets.pdf for two-year target. Response to Data Request BRCS-01-003, BRCS-01-003 PSE Att C-2006 Annual EE WUTC report.doc for annual achieved Energy Savings.
[63] Response to BRCS-01-011, BRCS-01-011 PSE Att A-Elec Incentive Calc 2007 FINAL 020408.xls.
[64] Response to BRCS-01-011, BRCS-01-011 PSE Att B-Elec Incentive Calc 2008 FINAL 02-11-09.xls.

Figure 14: % Energy Savings Target Achieved[65]

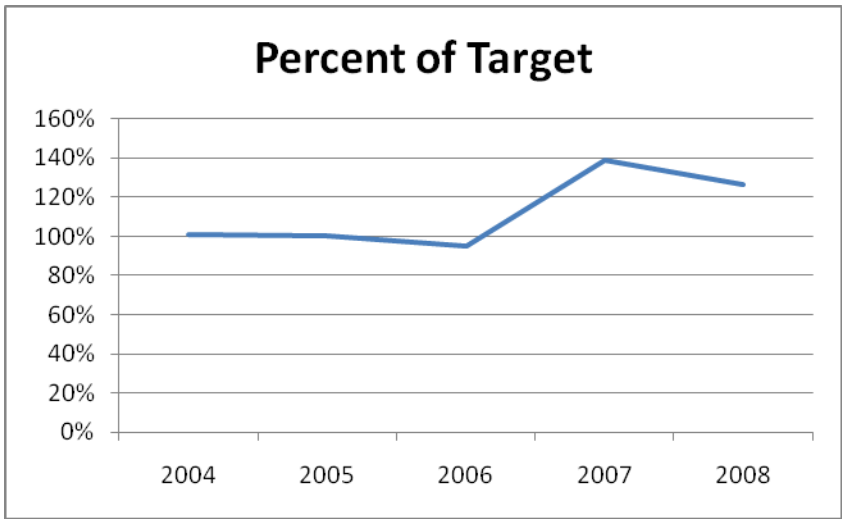


Table 8: Incentive Mechanism Revenue (2007-2008)[66]

Customer Class	2007	2008
Residential	$20,403,022	$30,500,013
Commercial	$15,208,387	$21,605,608
Industrial	$ 2,000,182	$ 2,668,960
Lighting	$ 165,415	$ 211,183
Transportation	$ 810,688	$ 1,279,286
Total	**$38,587,694**	**$56,265,050**

Findings

Blue Ridge observed that PSE met or slightly underran the targeted energy savings for each of the program years 2004 through 2006. PSE's performance to target dramatically improved in 2007 and 2008, the two years under the incentive mechanism. For 2007, the target, 18 aMW, set in the Commission's Order 8 in Dockets UE-060266 and UG-060267, was approximately 10% higher than the target proposed by PSE in the course of its testimony in the proceeding.[67] PSE's proposed target, 16.5 aMW, was above its base case forecast, which estimated acquisition of an average of 15 aMW and achievement of maximum achievable energy efficiency over 20 years. PSE's proposed target was 31% less than the average estimated in its accelerated case, which estimated acquisition of an average of 24 aMW per year, reaching all achievable energy efficiency in 10 years. Had

[65] Graph based on data from Table 9.
[66] Response to Informal Data Request, "PSE ECIM Cost", *Sch 120 Incentive_ prgm cost amts 9 8-09 (2).xls.* The 2008 Schedule 120 amount includes only 75% of the incentive earned in 2007, while the 2009 Schedule 120 includes 75% of the incentive earned in 2008 plus the remaining 25% of the incentive earned in 2007. Values in the table represent the approved amounts to be recovered. The actual amounts recovered will be presented in Phase 2 of this evaluation.
[67] Dockets UE-060266 and UG-060267, Order 8, Table 12.

PSE's forecasted target been ordered, PSE's energy savings would have exceeded the target by approximately 150%. Many factors could give rise to the dramatic increase in performance as compared to targets, including:

- *PSE's continued and enhanced efforts to increase participation in its EES portfolio*
  PSE has increased the number of resources focused on energy efficiency. In addition, the delivery of its EES programs has been refocused on the customer market segments to leverage the service providers that know and serve those markets to increase the market penetration of its programs. It is possible that these efforts increased the rate at which the forecasted maximum achievable energy efficiency will be reached. If this is the cause of the increased performance, the next assessment of energy efficiency potential is likely to indicate that PSE will achieve its maximum achievable energy efficiency in less than 10 years. The market research underway may also improve the ability to forecast customer responses to the ECIM programs.

- *Underestimation of the maximum achievable energy efficiency*
  It is possible that the expanded efforts have revealed more energy efficiency potential than originally projected. If so, the next potential study will reflect that change.

- *Increased avoided costs*
  As described in more detail in Section 2.3, the Cost-Effectiveness standard to which program costs are compared have nearly doubled. More measures are cost-effective and, for those programs with customized grants and incentives tied to avoided costs, increased incentives may be increasing participation and/or the range and number of cost-effective measures.

- *Increased public awareness and attention to energy conservation and other green initiatives*
  The spike in energy prices in the last couple of years coupled with the political and media attention on conservation and other green initiatives may be driving consumers to choose more energy efficiency options. That same demand may be driving base efficiencies of end-use appliances up. Advertising and marketing campaigns by manufacturers and distributors may also be drivers.

- *Overall Economic Conditions*
  Economic pressures may be causing consumers who would not normally investigate incentives or rebates to do so when making purchases.

Conclusions and Recommendations

After barely achieving energy savings targets in 2004-2006, PSE has dramatically exceeded its forecasted savings in 2007 and 2008. As explained in the Findings, there are a number of possible causes for this increased variance. Therefore, Blue Ridge encourages PSE to pursue its planned market and end-use studies to ensure it has the best

information available to improve its understanding (including quantification) of its energy efficiency and demand management potential and the projected response of customers to PSE's program offerings. The data from its program implementation, energy efficiency potential and monitoring and verification studies will provide factual PSE program-specific results that can be used to calibrate the forecasted achievable savings. This will assist PSE and its stakeholders in setting targets for the purposes of incentive calculation. More importantly, it will assist in improving the value of the kWh savings to PSE's resource planning.

PSE has indicated that the consensus in the region and direction of the CRAG indicate that free ridership should not be factored into the cost-effectiveness calculations. Blue Ridge believes that PSE should consider including in its marketing, monitoring and verification, and end-use studies the gathering of information that would support estimation of the percentage of participants in its programs that would choose the efficient options in the absence of the programs. This information will improve estimation of the savings attributable to the programs and may help PSE identify opportunities to lower incentives or increase minimum eligible efficiencies without reducing savings. For example, if PSE learned that 10% of the customers purchasing compact fluorescent bulbs or fixtures would do so in the absence of the program, that would lower the estimated savings and the benefit to cost ratio and might drive the incentive down. Or, information might be gained that would assist PSE in improving the benefit-to-cost ratios for marginal or failing programs. For example, PSE might learn that a significant percentage of customers in the high-efficiency clothes washer program would purchase the high-efficiency washer based upon lower incentives or based upon marketing and advertisement without offering the incentives. This might free up dollars to spend on other programs without reducing participation.

C. Issue 2.3: Total Resource Cost

Background

The net Total Resource Cost (TRC) test measures the value of a program or portfolio of programs including all costs incurred by participants and the utility in support of the program or portfolio. The benefits include any available tax credits, any non-energy related benefits, and the avoided energy and capacity costs (i.e., basically, the cost that would be incurred but for the implementation of the energy efficiency program). While existing energy efficiency is embedded in the forecast used to develop the avoided cost, planned conservation is not.

Blue Ridge's intent in the evaluation of this issue was to determine the following:

- *What was the total amount of net Total Resource Cost (TRC) benefit from the energy savings achieved during the pilot period?*
- *What was the amount of incentive received by PSE each year as a percentage of the net Total Resource Cost benefit from the energy savings achieved?*
- *What was the amount of penalty paid by PSE each year as a percentage of the net Total Resource Cost benefit lost as a result of not achieving the baseline target?*

Analysis

Net TRC Benefit

Using the inputs from PSE's cost-effectiveness reports, Blue Ridge calculated the Net Total Resource benefit resulting from the installation of PSE's portfolio of Energy Efficiency Programs in 2007 and 2008. The derivation of the Net TRC benefits resulting from the programs implemented in those years is tabulated in Table 9.

Table 9: Net TRC Benefit under ECIM[68]

Net Total Resource Benefit Derivation	2007	2008
(1) Annual Energy Savings Achieved (kWh)[69]	222,309,780	273,482,690
(2) Cumulative Energy Savings (kWh)[70]	222,309,780	495,792,470
(3) Levelized CE Standard ($/kWh)[71]	0.059	0.108
(4) Levelized TRC per kWh ($/kWh) [72]	0.039	0.063
(5) Net Total Resource Benefits per kWh	0.020	0.045
Net Total Resource Benefit (1st year annual savings) =Line (1) x Line (5)	$4,446,196	$12,334,069
Net Total Resource Benefit ($) =Line (2) x Line (5)	4,446,196	22,360,240

Many inputs to the calculation of net TRC could affect the results. Some of the most critical inputs include:

- the estimated per measure energy savings
- the estimated measure life
- the customer costs
- the avoided electricity costs

Blue Ridge reviewed the EES Annual Reports and the program details tabulated in the Tracking and Energy Efficiency Calculation spreadsheets provided by PSE in response to BRCS-01-003, BRCS-01-007, and BRCS-01-037, respectively. During on-site meetings with the Company, PSE identified and described the source(s) of estimated savings, estimated costs, and measure life for the measures responsible for the majority of the energy savings in the portfolio.[73]

[68] Workpaper *Net Total Resource Benefit during the ECIM period.xls.*
[69] Response to Data Request BRCS-01-003, Attachment D (2007) and Attachment E (2008). The 2007 value is consistent with Order 08, Dockets UE-060266 and UG-060267 (consolidated). The 2008 CE Std value was reviewed and approved by the CRAG and was filed in Appendix C of the 2008-09 Tariff filing provided in response to Data Request BRCS-01-011.
[70] Added the 2007 and 2008 annual energy savings achieved on the previous line.
[71] Response to Data Request BRCS-01-003, Attachment D, Annual EE WUTC Report. Cost Effectiveness Standard for 2007 was developed and approved in Order 8 in Docket UE-060266. The CE Standard (or Avoided Cost) was increased by 83% for 2008 in Advice No. 2008-04.
[72] Levelized Total Resource Cost (TRC) per kWh. The TRC consists of the Utility Cost + the Customer Cost + other contributions – any non-energy savings resulting from implementation of the programs. TRC per kWh is levelized using the fixed charge rate that reflects PSE's discount rate.
[73] See Appendix B for samples.

At the end of the first quarter of 2008, a member of the RTF and the CRAG requested that he be allowed to review all of the "PSE Deemed" 2007 measure documentation in hopes of utilizing it in the RTF's regional evaluations. It was in the course of the effort to gather and produce the information that PSE decided to develop an Access Database to consolidate the detailed per measure savings and cost information being maintained by individual Program Managers into a central Measure Metrics database to be used by all Program Managers in estimating and tracking savings.

The need for configuration and change management processes to ensure the integrity of the system gave rise to enhanced processes and procedures for consolidating and formalizing the review, implementation, and distribution of revisions and updates to the key measure cost and per measure energy savings assumptions. In addition to the values themselves, the Measure Metrics database contains the sources and workpapers associated with development of the assumptions. It also holds the change documentation and timing that has been used to correct savings and incentive calculations. Blue Ridge also noted evidence of regular reviews of the customer cost and estimated per measure savings with the CRAG in the Program Managers' tracking spreadsheets. Some of the tracking sheets document the notes from reviews with the CRAG that indicate that the measure life, the customer costs, and energy savings for specific programs are appropriate or need review.[74] In the third quarter of 2009, PSE initiated quarterly rolling audits of individual programs to replace the validations that were performed just prior to submittal of the annual reports.[75]

The Avoided Cost, referred to as the CE Standard by PSE, to which the program costs are compared represents the cost of each kWh that is not generated or purchased because of the reduction in demand caused by PSE's program portfolio. That value can be derived in several different ways. Some utilities produce Integrated Resource Plan (IRP) forecasts with and without incremental (planned) conservation programs and use models to produce the cost avoided. Others produce a plan without any incremental conservation and use the marginal price forecast as the value of the cost that would occur but for the conservation programs being screened.

Validation of the CE Standard (i.e., Avoided Cost) used in the 2007 and 2008 Cost-Effectiveness evaluation was not included in the scope of this effort. However, as documented in Table 9, PSE's CE Standard nearly doubled in 2007, the first year of the ECIM, from $0.059/kWh to $0.108/kWh. Since the CE Standard is the benefit against which the TRC and Utility Costs are compared, it affects not only the incentive paid to PSE but, more importantly, the type and amount of energy efficiency available in PSE's portfolio. If the CE Standard is too low, it would underestimate the value of energy efficiency and preclude valuable demand-side resources. If the CE Standard is too high, the relative value of those resources would be over-estimated, resulting in an over-investment in energy efficiency.

[74] See response to BRCS-01-037, Attachment K.
[75] On-site meeting with Anna Moran on August 20, 2009.

In response to a Blue Ridge data request concerning the increase in the CE Standard, PSE explained that a number of changes had been made to its calculation of Avoided Cost. Specifically, starting in 2007, the Company added an avoided marginal peak capacity value and a 35% planning adjustment to the avoided cost calculation.[76] In response to a follow-up request from Blue Ridge, PSE justified those changes by saying that a need existed to add a discrete avoided capacity cost. The company stated "In 2007, because Aurora market prices no longer implicitly reflected capacity values, PSE added a separate energy-supply related capacity cost to ensure such costs would be included in avoided cost analysis."[77] PSE further explained, "Prior to 2007, avoided costs were based on Aurora market prices, which implicitly reflected capacity values, as noted above. In addition to updating avoided costs for the Aurora update of capacity, it was also necessary to ensure PSE's physical planning standards were reflected in the avoided cost calculation."[78]

A document produced by the Northwest Power and Conservation Council, whose risk premium concept was cited by PSE in its explanation of the 35% planning adjustment, sheds some light on the reasons why the modeling approach was changed and why the increase is so dramatic.[79] According to this document, prior to 2007, the Aurora model included an assumption that renewable portfolio standards would be met beyond what a competitive market would provide. This resulted in an "enduring surplus." It also resulted in the addition of renewable resources with lower operating costs. The addition of resources with lower operating costs caused them to be dispatched before other higher cost resources. This resulted in a lower marginal cost of the resource that would be used to meet the load requirement than would have been the case in the absence of the renewable resources. In summary, using the market price that reflected the surplus supplies may have underestimated the true avoided costs. This may explain why the difference is so dramatic even though capacity was built into the pre-2007 forecast.[80]

Incentive % of TRC

Blue Ridge attempted to quantify the value of the energy savings realized in 2007 and 2008 as a result of the expenditures by PSE, its customers, and other parties to implement PSE's portfolio of Energy Efficiency Programs. We obtained the incentive from PSE's response to BRCS-01-011 and the Annual Tariff Filings provided in response to BRCS-01-010 and divided the values by the Net Total Resource benefit (reflected in Table 9).

[76] Email, Bill Hopkins, 8/21/09, subject: 2008 CE Standard Revision documentation, attachment "2008-2009CERevisionsLogic_Final_20071106."
[77] Response to Data Request BRCS-04-002, PlanningAdj+AvoidedCostDR.doc.
[78] Response to Data Request BRCS-04-002, PlanningAdj+AvoidedCostDR.doc.
[79] Northwest Power and Conservation Council, "Issues for the Sixth Pacific Northwest Power and Conservation Plan," pages 7-8.
[80] Northwest Power and Conservation Council, "Issues for the Sixth Pacific Northwest Power and Conservation Plan," pages 7-8.

Table 10: Incentive Amount as % of Net TRC[81]

	2007	2008
Calculated Incentive[8283]	$3,452,657	$4,339,150
Net Total Resource Benefit (1st year ann. savings) [8485]	$4,446,196	$12,334,069
Net Total Resource Benefit (Cumulative)	$4,446,196	$22,360,240
Incentive Amount as % of 1st year annual net TRC	78%	35%
Incentive Amount as % of Cumulative Net TRC)	78%	19%

Penalty % of TRC

No penalties have been required or paid by PSE under the provisions of the Settlement Agreement that resolved the 2001 rate case, and none have been required or paid under the ECIM.

Findings

Key Inputs to Total Resource Cost: energy savings, measure life, customer cost

PSE has made significant improvement in the tracking, sourcing, consistency, and auditing of these key inputs to the Total Resource Cost Benefit/Cost test (TRC B/C test) during the ECIM period. However, the Company emphasized that that effort was driven by a request from a member of the RTF to review all of the PSE-Deemed 2007 measure documentation in hopes of utilizing it in the RTF's regional evaluations. Appendix A contains a sample of the documentation maintained in the Measure Metrics database. Also included is a sample tracking spreadsheet that contains notes from the CRAG meetings verifying or requesting changes to values. In the third quarter of 2009, PSE initiated quarterly rolling audits of individual programs to replace the validations that were performed just prior to submittal of the annual reports.

Avoided Cost Input to the TRC B/C Test

Given the explanation that the new post-2007 modeling approach does not reflect the cost of capacity, it is necessary to include a capacity cost adder to estimate the value of deferring the need for capacity. It is also necessary to make an adjustment to reflect the risk that capacity will not be available solely from the market and PSE may need to meet the Company's native load using its preferred Supply-Side Only expansion plan,

[81] Workpaper *Incentive as % of Net TRC.xls.*
[82] Response to Data Request BRCS-01-011, BRCS-01-011 PSE Att A-Elec Incentive Calc 2007 FINAL 020408.xls.
[83] Response to Data Request BRCS-01-011, BRCS-01-011 PSE Att B-Elec Incentive Calc 2008 FINAL 02-11-09.xls.
[84] Product of Annual Energy Savings Achieved and the Net Shared Incentive from BRCS-01-011 PSE Att A-Elec Incentive Calc 2007 FINAL 020408.xls.
[85] Product of Annual Energy Savings Achieved and the Net Shared Incentive from BRCS-01-011 PSE Att B-Elec Incentive Calc 2008 FINAL 02-11-09.xls.

regardless of the relative expected costs. Failure to do so will underestimate the cost avoided by the energy savings resulting from PSE's EES programs.

Blue Ridge does not have the information to evaluate and comment on the value of the capacity credit or the planning adjustment and doing so is beyond the scope of this investigation. However, the methodology used to develop the adjustment appears to be reasonable. Nevertheless, the Company's planning and modeling techniques used to address this issue should be further investigated.

TRC Test of Individual Measures

In the course of the Net TRC review, Blue Ridge noticed that there were significant dollars being spent in 2008 on programs for which the individual Benefit/Cost ratios were not calculated. The Cost Benefit test results were not calculated in the Cost-Effectiveness spreadsheet for the individual measures that are offered as part of the Residential Single Family Existing program. The increasing expenditures for a few of these measures were notable. Consequently, Blue Ridge pulled the appropriate values into the Cost-Effectiveness spreadsheet from the Tracking spreadsheets and the ratios were calculated. As the Table 11 illustrates, the Energy Star Heat Pump, Energy Star Clothes Washers, and Windows measures all have net TRC costs (i.e., the Benefit/Cost or B/C ratio is less than 1.0). The Windows measure fails both the Utility and the Total Resource Cost tests. These three measures constitute 31% of the residential program total cost and 13% of the residential program utility cost.

Blue Ridge also noted that the program descriptions in the Annual Report filings do not generally discuss improvements to declines in the cost-effectiveness of the measures or efforts to improve those scores. There is also no discernable concern about the increased variance between PSE's forecasted energy savings and the actual magnitude of its achieved energy conservation. The lack of concern is probably because the overall savings targets were exceeded. However, a variance which is that significant should signal the need for a review of the measures with unanticipated increases as well as those with unanticipated shortfalls. Such variances may signal issues with assumptions and opportunities to improve cost-effectiveness.

Table 11: Residential Single Family Existing Cost Effectiveness[86]

2008 EES Electric Program Cost Effectiveness									
Sch No.		Meas Life	End-Use Type	MWh Savings	Utility Cost	Customer Cost	Total Cost	UC B/C Ratio	TRC B/C Ratio
	RESIDENTIAL PROGRAMS	**10**	**LIGHTING**	**144,274**	**$ 23,640,861**	**$ 32,740,866**	**$ 56,438,606**	**4.71**	**1.97**
E214	**Single Family Existing**	**10**	**LIGHTING**	**122,446**	**$ 14,390,325**	**$ 25,678,383**	**$ 40,068,708**	**6.57**	**2.36**
	Energy Star Heat pump rebate	18	SH		$ 449,498	$ 11,507,688	$ 11,957,186	**2.46**	**0.09**
	Energy Star Clothes Washers	14	APP		$ 2,283,320	$ 2,621,823	$ 4,905,143	**2.02**	**0.94**
	Windows	30	SH		$ 319,231	$ 313,539	$ 632,770	**0.82**	**0.42**

[86] Response to Data Request BRCS-01-037, Att. D with addition of individual program costs from BRCS-01-007, Attach. E. Workpaper *BRCS-01-037 PSE Att D-CE2008EESPgms_Final unprot.xls.*

Conclusions and Recommendations

While the entire portfolio is required to have a TRC B/C ratio greater than 1.0, PSE should examine whether changes in the individual programs' structures can improve the cost-effectiveness of those programs and whether the dollars being expended on the less cost-effective programs could be better spent on other programs. If it has not done so already, PSE should regularly subject measures to the Participant test, especially if they have failing or marginal B/C ratios. The participants in a program that fails or nearly fails the Participant test are probably free riders and most payments by the Company to entice participation would be wasted resources. PSE should periodically evaluate programs that fail the Utility Cost and the TRC tests and should consider whether the dollars spent on marginal or failing programs could be better spent elsewhere.

D. Issue 2.4: Results Comparison

Background

The objective of this analysis was to determine the impact on PSE of the ECIM. As such, Blue Ridge's intent in the evaluation of this issue was to determine the following:

- *What is the estimated amount of pre-tax earnings that PSE would have received if its investment in energy efficiency were capitalized instead of expensed?*
- *What is the estimated amount of the lost electric revenues resulting from the energy savings of PSE's conservation programs in each year of the incentive mechanism pilot?*
- *How does the amount of the incentives earned by PSE under the pilot mechanism compare to the estimated lost electric revenues and earnings?*

Analysis

Impact on Pre-Tax Earnings if investment in energy efficiency was capitalized

Blue Ridge attempted to determine the impact on PSE's pre-tax earnings if the amount PSE expended on its ECIM programs received the same treatment as an investment in a supply-side resource (i.e., capitalization of costs, amortization of the cost over the economic life of the program, and earning the allowed return on the unamortized balance).

PSE program expenses for 2007 and 2008 were amortized on an individual measure basis using the straight line method, beginning in the year incurred and using the economic lives provided by the Company. In the case of program support and research and evaluation programs, measure lives were assumed based upon accounting rules governing intangible assets. According to FASB 142 – Goodwill and Other Intangible Assets, intangible assets not acquired through a business combination must be amortized over their useful lives:

> "The accounting for a recognized intangible asset is based on its **useful life** to the reporting entity. An intangible asset with a finite useful life is

> amortized; an intangible asset with an indefinite useful life is not amortized."[87]

Furthermore, FASB 142 goes on to state:

> "If an intangible asset has a finite useful life, but the precise length of that life is not known, that intangible asset shall be amortized over the best estimate of its useful life."[88]

Consequently, for this analysis, Blue Ridge assigned one of two useful lives to each energy efficiency measure for which no useful life was provided: a two-year life for those measures we felt would see a rapid decay in economic value over time, such as information campaigns, and five years for those measures that would have a more persistent value over time. Of course, these lives might be different following a rate case or similar proceeding in which input would be provided for discussion and consensus on the depreciation schedule.

For the 2007 expenditures, the net present value in 2007 of the impact on pre-tax earnings would be approximately $12.9 million. In 2008, the net impact on pre-tax earnings of capitalizing 2008 utility expenses would be approximately $17.3 million.[89]

Lost Electric Revenues

The lost revenues attributable to the EES programs offered under the ECIM in 2007 and 2008 are estimated to be $2,942,696 and $16,446,165, in those years respectively. If there is no rate case prior to 2011, the lost revenues due to the period's programs would persist until rates are reset in the next rate case.[90] Following our on-site meeting with PSE's rate team, they supplemented their response with a calculation of Lost Margin or Lost Contribution to Fixed Cost. This adjustment recognizes the offsetting reduction in variable costs associated by the energy reduction. As displayed in Table 12, the magnitude of the Lost Margin incurred due to the programs implemented during the 2007 and 2008 program years and experienced in 2007 and 2008 is estimated to be $2,367,602 and $10,732,516, respectively. Again, these lost margins will continue until rates are reset following the next rate case.

Incentives Earned / Lost Margin Comparison

The incentive earned as a percentage of the accumulated Lost Margin incurred and experienced during 2007 and 2008 are tabulated in Table 12.

[87] FASB 142, paragraph 11.
[88] FASB 142, paragraph 12.
[89] Workpaper *Capitalization vs Expense v6.xls*
[90] Response to Data Request BRCS DR-02-001, Attachment A.

Table 12: Incentives as Percentage of Lost Margin[91]

	2007	2008
Approved Incentive	$3,452,657	$4,339,150
Lost Margin 1st year annual	$2,367,602	$10,732,516
Incentive as % of Lost Margin incurred in current year	146%	40%

While the scope of this study calls for examination of the short-term impacts, it is instructive to illustrate that the stream of lost margins resulting from the programs implemented in 2007 and 2008 continues until rates are reset in the Company's next base rate case. Table 13 contains the stream of lost margin and incentives, the net present value of the calculated lost margin and incentives, and the comparison of the incentives as a percentage of the lost margin. Blue Ridge assumes that rates are reset in June 2011, as suggested by PSE. As tabulated in Table 13, the approved incentives awarded based upon the 2007 & 2008 programs amount to just over 25% of the lost margins that would persist until the next rate case.

Table 13: Incentives as Percentage of NPV of Lost Margin[92]

	2007	2008	2009	2010	2011
Approved Incentive	$3,452,657	$4,339,150			
Lost Margin annual	$2,367,602	$10,732,516	$12,325,936	$6,970,548	$1,787,840
NPV Approved Incentive (2007 & 2008)	$7.5				
NPV Lost Margin annual	$29.525,348				
Incentive as % of NPV of Lost Margin due to 2007 & 2008 programs	25.2%				

Findings

What is the estimated amount of pre-tax earnings that PSE would have received if its investment in energy efficiency were capitalized instead of expensed?

For the 2007 expenditures, the net present value in 2007 of the impact on pre-tax earnings would be approximately $12.9 million. In 2008, the net impact on pre-tax earnings of capitalizing 2008 utility expenses would be approximately $17.3 million.

[91] Response to Data Request BRCS DR-02-001, Attachment A; Workpaper *Incentive as Percentage of Lost Margin - NPV lost margin.xls*.
[92] Response to Data Request BRCS DR-02-001, Attachment A; Workpaper *Incentive as Percentage of Lost Margin - NPV lost margin.xls*.

What is the estimated amount of the lost electric revenues resulting from the energy savings of PSE's conservation programs in each year of the incentive mechanism pilot?

As shown in Table 12, the amount of lost margin incurred and experienced in 2007 and 2008, from the energy savings achieved in these years, was $2,367,602 and $10,732,516, respectively. The approved incentive as a percentage of the accumulated lost margin incurred and experienced during 2007 and 2008 was 146% and 40%, respectively.

As tabulated in Table 13, the net present value of the amount of total lost margin due to the energy savings incurred in 2007 and 2008 and accumulated until the next assumed rate change was just over $29 million. The approved incentives awarded based upon the 2007 & 2008 programs amount to just over 25% of the lost margins that would persist until the next assumed rate change.

Conclusions

How does the amount of the incentives earned by PSE under the pilot mechanism compare to the estimated lost electric revenues and earnings?

The mechanism does not provide full recovery of lost margin and the effect on pre-tax earnings of the difference between the treatment of program costs and supply-side resources. For example, even if one assumes that 100% of the incentive amount is applied to the approximately $10.7 million in lost margin from savings achieved in 2007 and 2008 and experienced in 2008, the incentive would compensate for approximately 40%.

E. Issue 2.5: Customer Bills, Rates, Charges

Background

Blue Ridge's intent in the evaluation of this issue was to determine the following:

- *What has been the impact of PSE's energy efficiency program costs and incentive mechanism revenues or payments on customer bills/rates by customer class? What is the percentage of annual incentive/penalty amounts relative to total program costs?*

Analysis

Estimated Rate Impact

PSE recovers the revenue requirement for the ECIM program costs and incentives via Schedule 120, which is effective from April 1 through March 31st of each year. As simply represented in Table 14, PSE concurrently recovers the ECIM program costs but the incentive amounts are recovered 75% in the year following approval and 25% in the year after that. For this analysis, Blue Ridge assumed that PSE recovers its approved revenue requirement and no adjustments are required to adjust for over/(under) recovery.

Table 14: Timing of ECIM Program Cost and Incentive Recovery[93]

4/1/07 thru 3/31/08	4/1/08 thru 3/31/09	4/1/09 thru 3/31/10
2007 Program Costs	2008 Program Costs	2009 Program Costs
	75% of 2007 Incentive	25% of 2007 Incentive
		75% of 2008 Incentive

In response to a request for the actual program cost and incentive amounts collected via Schedule 120 Data Request BRCS-01-024, PSE provided a spreadsheet that totaled the program costs projected at the beginning of 2007 and the incentive approved at the end of 2007 and allocated the amount to each rate schedule covered by Schedule 120 using the sales forecast for April 1, 2008 through March 31, 2009. The same information was provided for the 2008 program cost and incentive amounts.

Table 15: Timing of ECIM Program Cost and Incentive Recovery Represented in this Analysis[94]

4/1/08 thru 3/31/09	4/1/09 thru 3/31/10
2007 Program Costs	2008 Program Costs
75% of 2007 Incentive	25% of 2007 Incentive
	75% of 2008 Incentive

Table 16 presents the estimated rate impact of the 2007 and 2008 ECIM program costs and incentives as though they were recovered as represented in Table 15. While this might over-estimate the impact for the period 4/1/2007 through 3/31/2008, it is reasonably representative of the remaining two years over which the program costs are being recovered.

Table 16: Estimated Rate Impact by Customer Class ($/kWh)[95]

Customer Class	4/1/08 thru 3/31/09	4/1/09 thru 3/31/10
Residential	$0.0019	$0.0028
Commercial	$0.0016	$0.0022
Industrial	$0.0015	$0.0021
Public Street & Highway Lighting Total	$0.0018	$0.0021
Transportation	$0.0004	$0.0006

[93] Based upon description of incentive mechanism in Testimony of Joelle Steward, Docket No. UE-060266, Exhibit JRS-8, paragraph 7.
[94] Response to Data Request BRCS-01-024 and Workpaper *Sch 120 Incentive_ prgm cost amts 9 8-09 (3) - ced.xls.*
[95] Response to Data Request BRCS-01-024 and Workpaper *Sch 120 Incentive_ prgm cost amts 9 8-09 (3) - ced.xls.*

Estimated Bill Impacts

In order to approximate the estimated impact of the ECIM Program Costs and Incentives on customer bills, Blue Ridge obtained the average number of customers by class from PSE's 2008 FERC Form 1 and assumed the same customer growth rate experienced between 2007 and 2008. For the same reasons discussed in the Estimated Rate Impacts section, above, the Bill Impact more closely represents the estimated 2008 impact.

Table 17: Estimated Monthly Bill Impact ($/customer)[96]

Customer Class	4/1/08 thru 3/31/09	4/1/09 thru 3/31/10
Residential	$10.11	$2.71
Commercial	$14.57	$20.40
Industrial	$44.52	$58.54
Public Street & Highway Lighting Total	$4.28	$5.38
Transportation	$3,753.19	$5,836.10

Incentives as Percentage of Total Program Cost

Blue Ridge calculated the percentage of annual incentive relative to total program cost using the incentive value from the incentive calculation spreadsheets attached to the response to data request BRCS-01-011 for 2007 and 2008, Attachments A and B, respectively. The total program costs, including the customer and utility program costs, for 2007 and 2008 were obtained from the Cost-Effectiveness spreadsheets attached to the response to BRCS-01-037, Attachments B and D. The results are tabulated below.

Table 18: Annual Incentive as % of Total Program Cost[97]

	2007	2008
Approved Incentive	$3,452,657	$4,339,150
Total Program Cost	$64,559,350	$123,523,040
Incentive as % of Total Program Cost	5.3%	3.5%

Total program costs include customer cost and any costs contributed by others. Those costs are not recovered from customers. Therefore, Table 19 provides the Incentives as a % of utility costs.

[96] Response to Data Request BRCS-01-024 and Workpaper *Sch 120 Incentive_ prgm cost amts 9 8-09 (3) - ced.xls*. Average number of Customers by Rate Schedule from PSE's FERC Form 1, page 304 and 304.1.
[97] Response to data request BRCS-01-011 for 2007 and 2008, Attachments A and B, respectively. Response to BRCS-01-037, Attachments B and D. Workpaper *Incentives as % of Total Program Cost.xls.*

Table 19: Annual Incentive as % of Utility Cost[98]

	2007	2008
Approved Incentive	$3,452,657	$4,339,150
Total Program Cost	$35,998,202	$52,147,523
Incentive as % of Total Program Cost	9.6%	8.3%

Findings

Estimated Bill Impacts

Blue Ridge found that the impact of the ECIM program costs and incentives on the average annual customer bill was just under $3 per month for the residential class, approximately $20 per month for the average commercial customers, and industrial customers would experience an average impact of $60 per month. The impacts may be somewhat greater in the period 4/1/2009 through 3/31/2010 as the third year program costs are recovered along with 25% of the 2007 incentive and 75% of the 2008 incentive.

Incentives as % of Total Program Costs

Blue Ridge found that the incentives for 2007 and 2008 were 5% and 4% of the Total Program Costs, respectively.

Conclusions

Blue Ridge concluded that the average residential bill impact would be just under $3 per month. The average commercial and industrial customer would experience estimated monthly increases of $20 and $50, respectively. All stakeholders should be mindful of the rate and bill impacts and this information should be reported at each tariff change.

[98] Response to data request BRCS-01-011 for 2007 and 2008, Attachments A and B, respectively. Response to BRCS-01-037, Attachments B and D. Workpaper *Incentives as % of Total Program Cost.xls.*

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5. FUNCTIONAL AREA 3: QUALIFIABLE RESULTS

The Qualifiable Results functional area involves the use of information identified and categorized in functional area 2 in determining the effectiveness of the ECIM in achieving the Commission's objectives and in maintaining cost-effectiveness. The Phase 1 portion of this functional area is divided into three issue subdivisions, including 3.1 Energy Conservation - Effectiveness, 3.2 ECIM - Effectiveness, and 3.3 Other Issues. Each issue relates to particular Commission concerns in ordering the ECIM.

A. Issue 3.1: Energy Conservation Effectiveness

Background

Blue Ridge's intent in the evaluation of this issue was to determine the following:

- *Is PSE's portfolio of electric energy efficiency programs still cost-effective when the amount of incentive received by the Company is added as a cost?*

Analysis

Blue Ridge added the approved Incentive for each year to the portfolio Utility Cost and recalculated the Utility and TRC costs per kWh and divided it into the Cost-Effectiveness Standard per kWh for the portfolio.

Table 20: Cost Effectiveness of 2007 Portfolio with Cost of Incentives[99]

	Utility Cost	Incentive	Total Cost (utility + cust)	UC B/C Ratio	TRC B/C Ratio
No Incent.	$35,998,202	$0	$64,559,350	2.71	1.51
Add Incent	$35,998,202	$3,452,657	$68,012,007	2.47	1.43

Table 21: Cost Effectiveness of 2008 Portfolio with Cost of Incentives[100]

	Utility Cost	Incentive	Total Cost (utility + cust)	UC B/C Ratio	TRC B/C Ratio
No Incent.	$52,148,523	$0	$120,523,040	4.05	1.75
Add Incent	$52,148,523	$4,339,150	$127,862,190	3.74	1.65

Findings

While the Cost/Benefit ratios declined, Blue Ridge found that the TRC and Utility Cost test ratios remained greater than 1.0.

[99] Workpaper *BRCS-01-037 PSE Att B-CE2006_2007Programs_v2 - unprot - add incent.xls*
[100] Workpaper *BRCS-01-037 PSE Att D-CE2008EESPgms_Final unprot - add incentive.xls*

Conclusions

Blue Ridge concluded that PSE's EES program portfolio remains cost-effective when the cost of the incentive is included as a utility cost.

B. Issue 3.2: ECIM Effectiveness

Background

Blue Ridge's intent in the evaluation of this issue was to determine the following:

- *Were the baseline data and established targets appropriate and sufficient to meet the goals of the order? Are significant issues or conflicts created when annual targets are established within the context of a two-year program cycle?*
- *Is PSE's incentive mechanism serving customers' and society's interests?*
- *How well has the Company's incentive mechanism removed the disincentives to promote energy efficiency?*

Analysis

Review of baseline and established energy savings targets

Blue Ridge first reviewed the Commission's Order in order to set forth the goals related to establishment of target energy savings. In paragraph 153 of Order 8, the Commission cites its goal to "provide such incentives and encourage through their design Company efforts to achieve as much cost-effective conservation as possible."

On their face, the information in Tables 6 and 7 and Figure 14 in Section 2.2 of this report implies that the targets for 2007 and 2008 were too low to drive the Company to "achieve as much cost-effective conservation as possible." However, the 2007 target, while lower than the targets and achieved savings in the previous 4 years, was established following testimony by all parties to the PSE 2006 General Rate Case. The Commission seemed to acknowledge that the chosen target may not be a "stretch goal" in the following paragraph of Order 8.

> *154 After carefully reviewing all of the proposals, we find the Staff design is the most balanced and reasonable. It provides a clear and consistent pattern of rewards for performance and it preserves the current threshold of 16.5 aMW minimum performance for penalty avoidance. By initiating incentive payments when PSE achieves the 18.3 aMW target, we effectively agree with PSE that "[i]t is better policy and more understandable to stakeholders to set a reasonably achievable target and then incent the Company to reach beyond the target".*[101]

[101] Dockets Dockets UE-060266 and UG-060267, Order 8, paragraph 153.

Table 22: Savings Comparison (2004-2008) [102]

	2004[103]	2005[104]	2006[105]	2007[106]	2008[107]
Target Energy Savings (MWH)	171,540	171,540	175,314	160,308	216,372
Achieved Energy Savings (MWH)	173,215	171,390	166,254	222,310	273,483
% of Energy Savings Target Achieved	101%	100%	95%	139%	126%

According to the Cover Letter 072235 for the 2008-2009 energy conservation tariff filing, regarding Advice 2007-032, the 2008-2009 energy savings target was set in conjunction with the CRAG and included consideration of the energy efficiency market potential used in the 2007 IRP. An email sent on July 16, 2007 presents PSE's market potential information to be reviewed in the subsequent meeting. The presentation to the CRAG on July 19, 2007 reflects the target as it was set for 2008. PSE quantified "all achievable potential savings" from energy efficiency for 2008 and 2009 as 55aMW, under an accelerated scenario. On July 31, 2007, PSE presented a forecast of the annual achievable savings demonstrating that the forecast was one that accelerates energy efficiency over the next 10 years. A projection of the accelerated trend was also presented, suggesting steep increases over the period. PSE proposed a target of 50aMW for the two year period and proposed a target of 23aMW for 2008. The incentive baseline was set slightly higher at 24.7aMW.

Removal of Disincentives

Blue Ridge examined several metrics to determine whether the impacts of lost revenues and the lack of return on program costs are relieved by the ECIM when the Company is not realizing its financial targets. These are metrics that indicate financial health of the utility and are affected by factors well beyond conservation. If these targets are being met, the impacts may not be experienced as a disincentive that would cause a party to favor supply-side over energy efficiency resources. The metrics examined included:

1. Comparison of allowed and actual rate of return on rate base
2. Comparison of allowed and actual return on equity
3. Comparison of forecast sales versus actual sales

[102] Workpaper *Baseline vs. Actuals for Penalty-Incentive Calcs.xls.*
[103] See Response to Data Request BRCS-01-010, 2004-2005 APP B final.xls for two-year target. See Response to Data Request BRCS-01-003, *BRCS-01-003 PSE Att A-2004 Annual EE WUTC report.pdf*, page 1 for achieved Energy Savings..
[104] See Response to Data Request BRCS-01-010, *2004-2005 APP B final.xls* for two-year target. See Response to Data Request BRCS-01-003, *BRCS-01-003 PSE Att B-2005 Annual EE WUTC report.pdf* for achieved Energy Savings.
[105] See Response to Data Request BRCS-01-010, *2006_2007 App B Pgm Targets & Budgets.pdf* for two-year target. See Response to Data Request BRCS-01-003, *BRCS-01-003 PSE Att B-2006 Annual EE WUTC report.doc* for annual achieved Energy Savings.
[106] See PSE Response to BRCS-01-011, BRCS-01-011 PSE Att A-Elec Incentive Calc 2007 FINAL 020408.xls.
[107] See PSE Response to BRCS-01-011, BRCS-01-011 PSE Att B-Elec Incentive Calc 2008 FINAL 02-11-09.xls.

4. Evidence of declining sales per customer

The first measure used to assess the financial position of PSE and the potential disincentive posed by PSE's energy efficiency portfolio was a comparison of allowed versus realized rate of return on electric rate base. This is a measure of the electric utility's financial performance from the perspective of the regulator and other stakeholders. If a utility is earning its allowed rate of return on rate base, one might expect the utility to be indifferent to energy efficiency vis-à-vis supply-side resources. As shown in Table 23, the Company did not realize its allowed rate of return on electric rate base in 2007 through 2008.

Table 23: Allowed/Realized Pre-Tax Rate of Return on Electric Rate Base Comparison[108]

Pre-Tax Return on Rate Base	2004[109]	2005[110]	2006[111]	2007[112]	2008[113]
Realized	8.48%	8.76%	8.54%	8.24%	6.51%
Allowed	8.76%	8.46%	8.40%	8.40%	8.38%
Difference	**-0.28%**	**0.30%**	**0.14%**	**-0.16%**	**-1.87%**

A comparison of the realized versus allowed rate of return on equity (ROE) was the next measure reviewed since ROE is a measure of shareholder value. As with the rate of return on rate base, many factors affect this measure of financial health. As with rate of return on rate base, shareholders might tend to favor supply-side resources over energy efficiency if the utility is not achieving its allowed rate of return on equity.

[108] Workpaper *Return on Rate Base - Actual vs Allowed.xls*
[109] Actual data derived from PSE's 2004 FERC Form 1. Net Operating Income from the FERC Form 1, page 115, line 26. Allowed Rate of Return on Rate Base and Approved Rate Base from the Revenue Requirements Settlement Appendix 1in Docket Nos. UE-011570 and UG-011571
[110] Realized from PSE's 2005 FERC Form 1. Net Operating Income from the FERC Form 1, page 115, line 26. Allowed Rate of Return on Rate Base and Approved Rate Base until 3/1/2005 from the Revenue Requirements Settlement Appendix 1in Docket Nos. UE-011570 and UG-011571. Allowed Rate of Return on Rate Base and Approved Rate Base on and after 3/1/2005 from Order 6, Docket Nos. UG-040640, UE-040641, UE-031471, and UE-032043, Table Appendix B-2
[111] Realized from PSE's 2006 FERC Form 1. Net Operating Income from the FERC Form 1, page 115, line 26. Allowed Rate of Return on Rate Base and Approved Rate Base from Order 6, Docket Nos. UG-040640, UE-040641, UE-031471, and UE-032043, Table Appendix B-2
[112] Realized from PSE's 2007 FERC Form 1. Net Operating Income from the FERC Form 1, page 115, line 26. Allowed Rate of Return on Rate Base and Approved Rate Base from Order 8, Docket No. UE-060266, Table Appendix 9
[113] Realized from PSE's 2008 FERC Form 1. Net Operating Income from the FERC Form 1, page 115, line 26. Allowed Rate of Return on Rate Base and Approved Rate Base through 10/31/2008 from Order 8, Docket No. UE-060266, Table Appendix 9. Allowed Rate of Return on Rate Base and Approved Rate Base effective 11/1/2008 from Order 8, Docket No. UE-072300 & UG-072301, paragraphs 51 and 52

Table 24: Allowed / Realized Rate of Return on Equity Comparison[114]

Pre-Tax Rate of Return on Equity	2004[115]	2005[116]	2006[117]	2007[118]	2008[119]
Realized	7.92%	7.39%	8.45%	7.63%	7.24%
Allowed	11.00%	10.42%	10.30%	10.40%	10.36%
Difference	-3.08%	-3.03%	-1.85%	-2.77%	-3.12%

As tabulated in Table 24, Blue Ridge has calculated the Company's realized return on equity based upon standard definitions. Based on this analysis, it appears that the Company's realized return on equity has been below its allowed return by more than 300 basis points as far back as the start of their EES programs. As previously indicated, many factors contribute to the calculation of the Company's rate of return on equity. That is one reason why this metric along with the rate of return on rate base are used in setting rates. However, if all of those factors remain the same, adding back current year lost margin would slightly improve the actual rate of return on equity for 2007 and 2008 to 7.69% and 7.55%, respectively; well below the allowed rate of return on equity.

Additional indicators were reviewed for evidence of direct impact of the ECIM portfolio. The first one considered was a simple comparison of forecasted electric sales to actual electric sales to ultimate consumers. The forecasted sales were obtained from PSE's response to Informal DR-001. The actual sales were pulled from Account 400 in PSE's FERC Form 1s for each respective year. This comparison is shown in Table 25.

[114] Workpaper *Return on Equity calc.xls.*

[115] Realized from PSE's 2004 FERC Form 1. Net Income from from page 117, line 78. Total Proprietary Capital from page 112, line 16. Allowed ROE from Order 6 in Docket Nos. UG-040640, UE-040641, UE-031471, and UE-032043, Appendix A, Table A-1.

[116] Realized from PSE's 2005 FERC Form 1. Net Income from PSE's from page 117, line 78. Total Proprietary Capital from page 112, line 16. Allowed ROE from PSE's 2005 FERC form 1, page 123.28, paragraph 6.

[117] Realized from PSE's 2006 FERC Form 1. Net Income from PSE's from page 117, line 78. Total Proprietary Capital from page 112, line 16. Allowed Return from PSE's 2005 FERC form 1, page 123.28, paragraph 6.

[118] Realized from PSE's 2007 FERC Form 1. Net Income from PSE's from page 117, line 78. Total Proprietary Capital from page 112, line 16. Allowed ROE from Docket Nos. UG-040640, UE-040641, UE-031471, and UE-032043, Order 6, paragraph 90.

[119] Realized from PSE's 2008 FERC Form 1. Net Income from PSE's from page 117, line 78. Total Proprietary Capital from page 112, line 16. Allowed ROE from PSE's 2008 FERC form 1, page 123.39, paragraph 2.

Table 25: Sales Over/(Under) Forecast (MWh)[120]

Class	2004[121]	2005[122]	2006[123]	2007[124]	2008[125]
Residential	228,195	552,007	399,748	693,829	301,313
Commercial	245,796	391,318	237,822	386,320	-34,690
Industrial	-42,889	-28,912	43,564	34,630	-52,070
Total	-12,334	-4,560	-25,842	-10,414	-22,360
Annual Change	**418,767**	**909,852**	**655,291**	**1,104,365**	**192,193**

Actual Sales to ultimate consumers exceeded the forecast amounts in each of the 5 years in the period covered by this review. There are many factors (e.g., weather, economy, fuel prices, public awareness, and state and utility conservation incentives) that affect increases or decreases in electricity sales. However, in all years reviewed, Actual Sales exceeded Forecast. Blue Ridge did not have a forecast of off-system sales. Therefore, we could not assess how much of the displaced energy may have been sold to others.

Another measure used to indicate a possible negative impact of PSE's energy efficiency portfolio was the change over time in MWH sales per consumer. As tabulated below in Table 26, consumption per customer has increased slightly over the period 2004-2008.

Table 26: MWh Sold per Average Customer[126]

Class	2004	2005	2006	2007	2008
Residential	11.4	11.6	11.7	11.8	11.8
Commercial	76.9	77.6	80.5	80.1	80.7
Industrial	338.2	349.5	370.8	361.6	348.3
Other	39.6	40.6	26.9	29.9	28.9
Sales to Ultimate Consumer	**20.1**	**20.2**	**20.5**	**20.6**	**20.7**

[120] Actual Sales from PSE's FERC Form 1, page 300. Workpaper *2007 FERC Form 1 - ELECTRIC OPERATING REVENUES (Account 400) - 09-05.xls.*
[121] See BRCS Informal DR-001, Forecast UE-040641 (F2003 Load Forecast).
[122] See BRCS Informal DR-001, Forecast UE-040641 (F2003 Load Forecast).
[123] See BRCS Informal DR-001, Forecast UE-060266 (F2005 Load Forecast) because it was higher than the forecast sales in 2006 UE-040641.
[124] See BRCS Informal DR-001, Forecast UE-060266 (F2005 Load Forecast).
[125] See BRCS Informal DR-001, Forecast UE-072300 (F2006 Load Forecast).
[126] MWH Sold and Average number of Customers from PSE's FERC Form 1, page 301. Workpaper *2007 FERC Form 1 - ELECTRIC OPERATING REVENUES (Account 400) - 09-05.xls.*

Table 27: Revenues from Sales to Ultimate Consumers[127]

Class	2004	2005	2006	2007	2008
Residential	$628,475,260	$694,847,619	$798,497,804	$959,585,629	$1,052,677,902
Commercial	$581,113,053	$633,776,815	$712,485,517	$756,081,967	$805,895,431
Industrial	$96,034,545	$100,965,501	$111,534,136	$114,321,354	$113,896,658
Other	$12,767,192	$13,411,958	$14,287,647	$15,216,280	$16,448,586
Sales to Ultimate Consumer	$1,318,390,050	$1,443,001,893	$1,636,805,104	$1,845,205,230	$1,988,918,577

Findings

Review of baseline and established energy savings targets

While unable to comment on the assumptions and output of the 2007 IRP, Blue Ridge found that the process by which the targets were set was sound. The process involved the stakeholders and considered the achievable energy efficiency potential, which was consistent with the Comprehensive Assessment of Demand-Side Resource Potentials (2008-2027) study performed on PSE's behalf by Quantec. Furthermore, the proposed target of 23aMW for 2008 was presented in the context of a long-term energy efficiency forecast that demonstrated the commitment to exploit "all achievable potential savings."[128]

Is PSE's incentive mechanism serving customers' and society's interests?

How well has the Company's incentive mechanism removed the disincentives to promote energy efficiency?

The findings related to these two questions will be addressed together. Blue Ridge's analysis was intended to measure the impact of disincentives in the context of a regulated electric utility whose profitability is limited to an allowed rate of return. The analysis also attempts to determine whether the differences between supply-side and energy conservation resources would be viewed as disincentives by shareholders by examining standard financial metrics. Blue Ridge also reviewed some additional metrics in order to demonstrate that there are many complex factors that affect financial performance of which lost margin and foregone return on expensed program costs are only two.

Based on Blue Ridge's analysis of PSE's rate of return on electric rate base (from Commission Basis Reports), the Company's realized rate of return was below the Company's allowed rate of return on electric rate base in 2004 (the first year of EES programs), 2007, and 2008. Since actual electric sales exceeded forecast electric sales

[127] MWH Sold and Average number of Customers from PSE's FERC Form 1, page 300. Workpaper *2007 FERC Form 1 - ELECTRIC OPERATING REVENUES (Account 400) - 09-05.xls.*

[128] Response to Data Request BRCS-01-018, CRAG 6-29-2007, page 2 and CRAG 07-31-2007 page 2, slide 11.

(Table 25), and electric sales per customer (Table 26) increased in 2008, the EES programs do not appear to be a significant driver for the under run. However, given the failure to realize the allowed return, the utility could experience conservation as a disincentive, albeit a minor one. If the calculated lost margin in 2007 and 2008 is added to the realized return, the rate of return on electric rate base would have only increased from 8.24% to 8.29% in 2007, and 6.51% to 6.71% in 2008. In both years, the realized rate of return on electric rate base, including lost margins, would still slightly under run the approved levels of 8.40% and 8.38%, respectively. While PSE has indicated they were aware of conservation-related lost revenues and lost margins prior to their mention in the 2006 General Rate Case, PSE appeared to be unaware of the magnitude of the calculated lost margins during period the ECIM was in place. That may indicate the lack of impact of these disincentives in terms of harm to the financial health of the Company.

There are complex interactions of many factors that impact financial performance, including the weather, economic and regulatory uncertainty, and market prices. However, there are also well-accepted benefits associated with energy efficiency as a resource, such as the short-term value in the avoidance or reduction of energy purchases. Assuming that PSE's marginal cost is less than or equal to the market marginal cost, PSE can sell excess capacity or use it as a reserve to enable sales on the spot market. There is also significant risk in building physical plant, especially in the current environment. Some of these risks (economic, volumetric, and even political) manifest themselves in the volatility of market prices for power, fuel, and emissions as well as the volatility of economic growth forecasts and transmission assumptions.

The effects of some of these risks can be exemplified by considering that during the summer of 2008, energy providers with primarily wind resources enjoyed an advantage over their counterparts with resources fueled by natural gas. This summer, in the wake of the recession, as well as development of new natural gas sources, gas prices have dropped dramatically, making gas-fired generation more cost-effective than wind. There is real value in reducing exposure to the uncertainty in energy supply costs. Energy efficiency and other demand-side resources (DSM) remove the need for the energy and peak capacity in the first place and therefore the exposure to risk. While the avoided cost value attributed to DSM is tied to supply-side options and there is some uncertainty associated with the estimation of energy savings, once in place there is no market exposure for the respective avoided energy. It essentially produces power without utilizing any of the fuels that typically experience high degrees of market price volatility.

Conclusions and Recommendations

Review of baseline and established energy savings targets

Blue Ridge concluded that the target set for 2007 probably was not high enough to meet the stated goal. However, the target was the product of a regulatory proceeding that considered the input and goals of all parties. Blue Ridge further concluded that the target set for 2008 was set based upon a goal of implementing all achievable potential energy efficiency savings. There is no observable conflict presented by the two-year goal setting

since the process for setting the goals explicitly takes into account the long-term goals and potential.

Is PSE's incentive mechanism serving customers' and society's interests?
How well has the Company's incentive mechanism removed the disincentives to promote energy efficiency?

Conclusions regarding these two questions are included in the following discussion.

As specified in Section 3 of the Request for Proposal (RFP) for this effort, the primary purpose for this evaluation was "to assess the extent to which the design and implementation of the incentive mechanism addresses key issues and objectives from the Commission order approving the mechanism." Those "key issues and objectives" were outlined in the following four questions.[129]

- Did the mechanism design encourage PSE to achieve as much cost-effective conservation as possible?
- Did the mechanism allow the PSE to earn a return on its investment in energy efficiency?
- Did the mechanism protect PSE from a reduction in short term earnings resulting from energy efficiency programs?
- Did the mechanism reflect sound public policy?

These purpose questions are addressed below followed by recommendations.

Did the mechanism design encourage PSE to achieve as much cost-effective conservation as possible?

PSE has attempted to achieve as much cost-effective conservation as possible even though the ECIM was not designed as a recovery mechanism for lost margin or foregone earnings. This is evidenced by the fact that the savings targets representing the Company's aggressive forecast were surpassed by more than 25% in 2007 and 2008. The Company has continued to set aggressive targets despite the failure to meet its financial performance targets and the fact that the mechanism does not remove disincentives that have not caused but have exacerbated that condition.

Because of the complex interactions of many factors that affect financial performance, Blue Ridge believes it is possible for shareholders not to realize the impact of lost margin and foregone earnings as a disincentive. Therefore, Blue Ridge believes that full compensation for the foregone return (due to expensing versus capitalization of program costs) and the stand-alone lost margin should not be provided without considering the overall impact to the shareholders, regulators, and other stakeholders or ratepayers. The value and the mechanism must be thoughtfully constructed to meet the desired objectives. A mechanism with an objective to remove or mitigate disincentives may have different features from one that encourages all possible cost-effective energy conservation. It is

[129] PSE Elect Incentive Eval RFP final 06-05-09, page 3, Section 3.0

important to carefully select a mechanism or a combination of mechanisms that drive the desired behavior by all participants while guarding against unintended consequences.

Theoretically, PSE's shareholders may be indifferent to energy efficiency as long as they are achieving the allowed rates of return on rate base and equity. In an under earning condition, such as occurred in 2007 and 2008, any decision that increases the likelihood that the condition will remain may make energy efficiency relatively less attractive vis-à-vis supply-side options. In that situation, a mechanism might have to compensate for the disincentives up to a level that may allow the utility to meet its allowed rate of returns. It could be argued that an incentive sufficient to drive the utility to achieve "as much cost-effective conservation as possible" might require the shareholders to experience an advantage when energy efficiency targets are met. That incentive might allow compensation for the disincentives over and above the allowed rate of return. Or, it may take the form of a bonus above the allowed rate of return.

Blue Ridge did not observe any indications that the failure to realize its allowed rates of return on rate base and equity in 2007 and 2008 caused PSE's behavior to change with respect to its implementation of EES programs. However, while still a minor contributor to those under-runs, the magnitude of the calculated lost margins has and will increase with increased program energy savings.

Did the mechanism allow the PSE to earn a return on its investment in energy efficiency?

Based on the analysis in Section 2.4, Blue Ridge concluded that the incentive mechanism could be viewed as providing some amount of a return on its investment in energy efficiency, but even if one assumes that 100% of the incentive amount is applied to the approximately $29 million that was not earned on the nearly $90 million expenditure, the incentive would be less than 25% of the impact.

Did the mechanism protect PSE from a reduction in short term earnings resulting from energy efficiency programs?

As discussed in Section 2.4, the design of the incentive does not provide for 100% compensation for lost margin even when financial targets are not met.

Did the mechanism reflect sound public policy?

In answering this question, Blue Ridge reviewed the policy elements outlined by the Commission in Paragraph 150 of Order 8 in Docket Nos. UE-060266 AND UG-060267 and finds that the mechanism encourages energy conservation and provides an incentive when the utility's performance is near or above its financial targets. But the mechanism is not flexible enough to prevent the effects of the disincentives to be experienced by shareholders in an under earning condition.

Blue Ridge recommends that PSE and its stakeholders continue with its current ECIM while proceeding with the other portions of this evaluation effort, which includes the

review of other incentive mechanisms employed across the nation to identify the best features and learn from the unintended consequences faced by others. PSE and its stakeholders should work to identify the specific objectives to be achieved by the incentive and select a few mechanisms to be further evaluated. Blue Ridge recommends that PSE model integrated resource plans representing a base, aggressive, and minimal (perhaps just inside the penalty bandwidth) levels of conservation and that the stakeholders review and evaluate the impact of various incentive mechanisms on PSE's shareholders, regulators and stakeholders, and ratepayers. The metrics used should include at least Return on Equity, Return on Rate Base, Customer Rates, and Customer Bills. The value of the metrics for a supply-side only scenario would also be helpful to the parties in evaluating mechanisms.

If not already completed, PSE should also engage in a review of resource planning tools and processes to ensure that both are robust and that they support dynamic examination of multiple resource portfolios against a wide range of scenarios representing realistic interactions of assumptions moving with and against each other. If not already being performed, inclusion of hourly modeling of energy efficiency measures might provide useful information that might, for example, favor on peak measures to optimize the energy cost savings to lost margin relationship.

C. Issue 3.3: Other Issues

Background

Blue Ridge's intent in the evaluation of this issue was to determine the following:

- *What, if any, unanticipated consequences – beneficial or detrimental – have been created through the incentive and penalty mechanism structure or implementation?*

Analysis

Blue Ridge examined the ECIM and the impact on the energy efficiency programs of the Company.

Findings

Blue Ridge found that no additional unanticipated consequences were realized beyond those already discussed in other sections of this report (e.g., lost revenues, increased staffing).

Conclusions and Recommendations

Blue Ridge concluded that the ECIM's impact was limited to those areas discussed throughout the report.

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APPENDICES

A. Workpapers