# Energy Efficiency Services
## 2010 Annual Report of
## Energy Conservation Accomplishments




PUGET SOUND ENERGY
The Energy To Do Great Things

# Puget Sound Energy

# Energy Efficiency Services

2010 Report of
Energy Conservation Accomplishments

**Cover photo thanks**

We wish to thank our staff members who contributed some of the Annual Report's cover photos which are illustrative of a few of our 2010 programs.

*(Lower collage portion of cover, clockwise from left)*
Brad Simcox; Refrigerator Decommissioning truck, from the *Single Family Existing* overview
Tianna Byrtus, a 2010 Business Energy Management event display,
Joel Smith, LED lamp, courtesy of GE®, used with permission
Kyle Webley, Re-Energize campaign billboard for the Residential *Fuel Conversion* program.

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## A Message from Cal Shirley

Vice President, Energy Efficiency Services (EES)

***Greetings!***

I'm pleased to be able to present this review of Puget Sound Energy's Energy Efficiency Services' 2010 conservation accomplishments. In spite of lingering economic pressures, our customers helped EES achieve near-record electric and gas savings. I'm proud of the results that EES achieved over the past year. We've developed new business processes and honed those that have been in place for several years and we are working closer than ever with our Conservation Resource Advisory Group (CRAG) to deliver cost-effective conservation programs for our customers. In 2010, PSE carried forward the momentum it developed over the last several years as a premier business leader in the energy conservation field.

With the advent and implementation of the 2010 Electric Conservation Settlement Agreement conditions, developed in response to the 2006 Energy Independence Act, (RCW 19.285) PSE will have the opportunity to document and illustrate the rigor with which we manage the business and fulfill the role of stewards of our ratepayers' interests. We take this responsibility very seriously. The commitment to our customers is at the forefront of every EES program. This Annual Report reflects our commitment to provide the utmost in value in a transparent and prudent fashion, always with an eye towards continuous improvement. The report fulfills several Settlement Agreement conditions, all of which are listed in the coming sections.

My sincere thanks go to the CRAG members and Washington Utility and Transportation Commission Staff who provided input and advice as we worked together throughout the year to achieve these positive results.

I know that I speak for all of EES when I say that I'm looking forward to an exciting and productive 2011!

Sincerely,

Cal Shirley

# Glossary of Commonly Used Terms

Unless otherwise noted in a specific Conservation Schedule, the following commonly-used terms, used throughout and applicable only to this document[1] have the below noted meanings. Definitions or glossaries contained in other EES documents, policies or guidelines referring to specific processes or unique functions shall have the meanings noted in those documents, policies or guidelines.

## *Definitions*

| | |
|---|---|
| **Calculated Savings** | This savings type is different than deemed values (described below). This term indicates that there is a pre-approved, stipulated input savings value (or cost) per measure. This value (or cost) is then multiplied by site-specific input values to arrive at the overall savings value (or cost). This term is used in the Savings Type field in Appendix B, List of Measures. |
| **Channel** | Within an EES Residential or Business sector, an organization that is established to focus on the value chain—consisting of manufacturer distributor, dealer, contractor to the end-use customer—with the most similar market, delivery methods and ultimate purchasers or product users. |
| **Conditions** | Also "2010 Electric conservation Settlement Agreement Terms and conditions" or "Energy Independence Act conditions". Specific deliverables and stipulations by which the Company must operate or produce through the course of operating and managing energy efficiency programs. In addition to compliance requirements outlined in the Settlement Terms Sections A through J and L, the conditions are listed under Section K of the Agreed Conditions for Approval of Puget Sound Energy, Inc's 2010-2011 Biennial Electric Conservation Targets Under RCW 19.285 Docket No. 100177. There are additional sections that regulate the Company's energy efficiency operations. |
| **Custom Savings** | This savings type applies to conservation projects where a PSE EME performs specific evaluation and review of a unique customer site to determine savings values—therms or kWh—that apply only for that site. For this type of measure, there is insufficient information, the occurrence is too infrequent or it cannot be specifically defined to justify development of a Calculated or Deemed protocol. |

[1] Some acronyms, such as "ECM" have a different connotation outside the purview of PSE or conservation activities. Outside of EES, "ECM" may mean "Electric Conservation Measure". Within PSE, though, it means "Electronically Commutated Motor".

Definitions, continued

| | |
|---|---|
| **Deemed Measure** | As in a measure's deemed value; A savings (or cost) value that applies to a unit of specific measure, regardless of where or how the measure is installed. Measures for which it is possible to "deem" per unit energy savings, cost and load shape based on program evaluation data and engineering estimates. (For instance, one residential interior CFL lamp has a deemed value of 24 kilowatt-hours per year.) This classification applies to both RTF and PSE deemed (noted on the following page). |
| **Direct Benefit to Customer (DBtC)** | Rebates, grants, credits or services that are of value to customers. Services can include, but aren't limited to, credits on a monthly bill, upstream incentive provided to channel partners or trade allies—either within our service territory or regionally—and free energy efficient devices available by mail. |
| **Direct Install Measure** | A conservation measure that is installed by a PSE representative—rather than a PSE customer—into a qualifying structure. |
| **I-937** | An informal reference to the 2006 voter initiative, The Washington Clean Energy Initiative. The vote resulted in the creation of RCW 19.285 and WAC 480-109, which is now referred to as the Energy Independence Act. |
| **Measure** | A product, device, piece of equipment, system or building design or operational practice used to achieve greater energy efficiency or to promote Fuel Conversion and Fuel Switching. Unless specifically enumerated in a specific Energy Efficiency Program, all Measures, proposed by Customers or otherwise, shall meet or exceed the efficiency standards set forth in the applicable energy codes, or, where none exists, "standard industry practice" as determined by the Company. Measures will meet common construction practices, and meet industry standards for quality and energy efficiency.[2] Measures must also meet cost-effectiveness standards. |
| **Program** | Programs may consist of a single measure, an assortment of related measures or a suite of measures that are related strictly by delivery type or customer segment. |
| **PSE Deemed** | Relative to measure savings types (Custom, Calculated, PSE Deemed or RTF Deemed), these measures are supported by PSE engineering calculations or evaluation studies, in compliance with Settlement Agreement condition K(6)(c).<br><br>This term is used in the Savings Type field in Appendix B, List of Measures. |

[2] Schedule 83, section 4, Definitions, #m. Schedule 183, section 4, #l.

Definitions, continued

| | |
|---|---|
| **RTF Deemed** | Relative to PSE savings types (Custom, Calculated, PSE Deemed or RTF Deemed), supported by RTF analyses, in compliance with Settlement Agreement condition K(6)(b).<br><br>This term is used in the Savings Type field in Appendix B, List of Measures. |
| **Savings** | Savings (both gas and electric) are defined and reported as those recognized in the first year of a measure's total expected life. PSE reports the total savings for the year that the measure was implemented, regardless of when it is installed. Electric savings are counted at the customer meter, not the busbar. Gas savings are counted at the customer gas meter.<br><br>It is important to note that all measures have an associated life, during which the noted annual savings accumulate. Each measure has a different life, as determined by rigorous evaluation. The average measure life per program can be found in the EES Cost-Effectiveness tables in Appendix D of this report. |
| **System** | In this document, System may have the following meanings:<br><br>1) Any software program—supported by PSE's IT department or otherwise—or physical apparatus used to record, track, compile, report, archive, audit energy savings claims or financial data.<br><br>2) Electrical, and/or gas equipment that is either attached together or works in concert to provide space conditioning, plumbing functions or other end-uses associated with structures, such as HVAC systems, pumping systems, etc. |

## *Acronyms*

| | |
|---|---|
| **AIA** | American Institute of Architects |
| **ARRA** | American Recovery and Reinvestment Act |
| **aMW** | Average MegaWatt. An expression of energy (versus "power"). It is used to express very large amounts of energy. The term represents an average of power (Megawatts [MW]) used over time (the standard term being one year or 8,760 hours). Thus, 1 aMW = 8,760 MWh. |
| **ASHRAE** | American Society of Heating, Refrigerating, and Air-Conditioning Engineers |
| **BOMA** | Building Owners and Managers Association |
| **BPA** | Bonneville Power Administration |
| **CHP** | Combined Heat & Power |
| **CMS** | Customer Management System. A PSE proprietary software application that tracks customer activities, inventory and rebate processing. |
| **CRAG** | Conservation Resource Advisory Group |
| **DDC** | Design, Development and Construction |
| **DHW** | Domestic Hot Water |
| **EC Motor (ECM)** | Electronically Commutated Motor |
| **EES** | Energy Efficiency Services; a department of Puget Sound Energy. |
| **EME** | Energy Management Engineer |
| **EM&V** | Evaluation, Measurement and Verification |
| **ERR** | Evaluation Report Response. A form used to complete an evaluation study's resultant actions. |
| **GPM** | Gallons Per Minute |
| **HID** | High Intensity Discharge (lamp type) |
| **HVAC** | Heating, Ventilation and Air Conditioning |
| **kWh** | Kilowatt Hour. 1,000 watt-hours = 1 kWh, which is equivalent to 10 100-watt incandescent lamps being turned on for one hour. |
| **LED** | Light Emitting Diode (lamp type) |
| **MEF** | Manufacturer's Energy Factor (applies primarily to appliances) |
| **MWh** | Megawatt-hour. 1,000 kWh = 1 MWh |
| **NEEA** | Northwest Energy Efficiency Alliance |
| **NEMA** | National Electrical Manufacturers Association |
| **O&M** | Operations & Maintenance |
| **RCW** | Revised Code of Washington. |

Acronyms, continued

| | |
|---|---|
| **RTF** | Regional Technical Forum, an advisory committee and a part of the Northwest Power and Conservation Council. The RTF develops standardized protocols for verifying and evaluating conservation. |
| **TRC** | Total Resource Cost: The cost to the customer and/or other party costs to install or have installed approved Measures plus Utility Costs and minus Quantifiable Benefits (or Costs).[3] |
| **UC** | Utility Cost: The Company's costs of administering programs included, but not limited to, costs associated with incentives, audits, analysis, technical review and funding specific to the Measure or program and evaluation.[4] |
| **ULI** | Urban Land Institute |
| **USGBC** | U.S. Green Building Council |
| **WAC** | Washington Administrative Code |
| **WAMOA** | Washington Association of Maintenance and Operations Administrators |
| **WSEC** | Washington State Energy Code |
| **WUTC** | Washington Utilities and Transportation Commission |

[3] Schedule 83, section 4, Definitions, #z. Schedule 183, section 4, #x.
[4] Schedule 83, section 4, Definitions, #bb. Schedule 183, section 4, #z.

## DID YOU KNOW?

Included in the 2010 Annual Report of Energy Conservation Accomplishments are a significant number of facts and figures. While all of them are fascinating and pertinent to managing our business, the below table provides references to several that may be obscure, but are very important nevertheless!

| Fact | Answer | Page Number |
|---|---|---|
| Therms EES saved in 2010 and how that relates to number of average residences | 5,033,406 therms<br>5,900 avg. residences[5]/1 year | 15 |
| Percent increase in portfolio-level aMW over the last five years | 77.8% | 17 |
| Residential lighting electric savings | 56,690 MWh | 69 |
| The number of residential dwelling units that define a Multifamily structure | Five, attached | 86 |
| The name of the system that manages residential rebate processing. | CMS | 35 |
| The number of net metered customers | 791 | 198 |
| The baseline electric or gas consumption needed for a customer to qualify for a full RCM program incentive. | 20,000,000 kWh for electric and 2,700,000 therms for gas customers | 119 |
| The percent of RTF Deemed measures installed (at the portfolio level) | 26% | 23 |
| The electric TRC B/C ratio for the Business sector | 3.19 | 106 |
| The number of residential rebates processed in 2010 by EES staff. | More than 24,000 | 35 |
| The number of customer calls answered by energy advisors | 86,000 | 59 |
| Number of “hits” to EES renewable energy web pages in 2010 | Over 3,700,000 | 178 |
| The number of EES staff working on Rider/Tracker-funded programs at year-end | 123 | 24 |

[5] Based on 2009 average residential usage of 849 therms annually.

# EXECUTIVE SUMMARY

## Energy Efficiency Services' Annual Report of 2010 Accomplishments

Puget Sound Energy's ("PSE's" or "The Company's") Energy Efficiency Services (EES) department presents this Annual Report of 2010 energy efficiency program accomplishments and activities. The report is associated with the Electric Conservation Rider and Natural Gas Conservation Tracker funding.

In 2010, EES exceeded energy savings goals while managing costs. Electric expenditures were $75,008,018[6]; 98.0 percent of the year-end budget target. The overall electric energy savings finished the year at 295,547 MWh or 33.7 aMW, or 104.9 percent of year-end goal. It is noteworthy that portfolio-level 2010 savings will be reviewed and verified in 2011 by an independent third party evaluator, per the 2010 Conservation Settlement Agreement condition *(hereinafter referred to as "Settlement Agreement conditions" or "conditions")* K(6)(g) .

Gas expenditures were $19,910,386[7]; 121.4 percent of the year-end budget[8]. The overall natural gas savings achieved in 2010 were 5,033,406 therms or 118.0 percent of year-end goal.

EES finished 2010 with portfolio cost effectiveness ratios of greater than 1.0. In 2010, the electric Utility Cost (UC) benefit-to-cost ratio was 3.39 and Total Resource Cost (TRC) of 2.15. Gas ratios were a UC of 2.78 and a TRC of 1.22. These tests were performed in compliance with condition K(10)(a).

All business units within EES made significant strides in cost management and productivity maximization; bringing key processes in-house, developing innovative tools to manage increased customer demand, reducing inventory expenses and enhancing reporting capabilities.

[6] Total includes $1,647,220 of Other Electric Program expenditures. Other Electric Programs are not conservation based, i.e., Small-Scale Renewables and Demand Response. Thus, it isn't possible to perform a cost of conservation per aMW calculation based on the overall total EES expenditures.
[7] Total includes PSE shareholder funding of $298,858.
[8] In compliance with the 2002 Stipulation Agreement (Docket No UE-011570 and UG-011571 and the 2010 Settlement Agreement condition K(3)(a)(ix), PSE advised the CRAG in its June 22 meeting that forecasts indicated that gas expenditures would exceed 120 percent of budget.

Teams enhanced the rigor with which savings and expenditure tracking and reporting is conducted, improved the communication and interaction with the Conservation Resource Advisory Group (CRAG) and made significant contributions to regional energy efficiency initiatives. Additionally, EES completed numerous internal quarterly audits and several noteworthy evaluation studies.

### Electric Conservation Incentive Mechanism

In its Schedule 120 March 2010 filing, PSE recovered the first 75 percent of the amount earned from its 2009 electric conservation incentive, in accordance with the Electric Conservation Incentive Mechanism (ECIM). Appendix E provides the complete ECIM calculation table. Of the total earned, $4,385,101, PSE claimed $3,288,826 in 2010. The remaining 25 percent, or $1,096,275, will be collected in 2011. That will represent the final ECIM payment of the 2007 through 2009 pilot. An evaluation of the pilot was completed by an independent third party, whose report was presented to the CRAG in September.

### Energy Independence Act Compliance

In June 2010, PSE filed its ten-year achievable conservation potential and biennial conservation target, based on its 2009 IRP. During the third quarter of 2010, PSE collaborated with members of the CRAG and WUTC Commission Staff to develop a new set of Energy Independence Act compliance conditions in association with Docket No UE-100177. A key consideration was incorporating the electric-focused elements while maintaining the gas portions of PSE's existing 2002 Conservation Stipulation Agreement (Dockets UE-011570 and UG-011571). In September, the team produced a document that achieved the goal of combining the necessary conditions:

AGREED CONDITIONS FOR APPROVAL OF
PUGET SOUND ENERGY, INC.'S 2010-2011 BIENNIAL ELECTRIC
CONSERVATION TARGETS UNDER RCW 19.285
DOCKET NO. UE-100177

AND AGREED MODIFICATIONS TO ELECTRIC SETTLEMENT TERMS FOR
CONSERVATION IN DOCKET NO. UE-011570

In October, the Commission issued Order #5, approving PSE's targets and Settlement Terms. PSE immediately began implementing compliance with the conditions, most notable of which was K(8)(b), with its filing of the Annual Conservation Plan for 2011. Applicable conditions are referenced throughout this report. The complete 2010 Electric Conservation Settlement Agreement is attached to this report as Appendix H for easy reference.

## EES Program Details

PSE's one-and two-year energy conservation performance indices are provided in Table 1a of the Introduction section, comparing the overall performance of PSE's energy efficiency programs against budget and savings targets for both 2010 and the 2010-2011 biennial tariff period progress to date. EES sector overviews (Residential, Business, Regional, Support Activities and Other Electric Programs) provide a business unit level review. Details of financial and savings performance, Direct Benefit to Customers, portfolio measure tables, program descriptions and program accomplishments are included with each program overview. Programs are organized in the report according to their Schedule number for easy reference.

# INTRODUCTION

Readers will notice a continued evolution in the "look and feel" of EES reports. In fact, several improvements were made since publication of the 2010 Semi-Annual Report in August 2010. The 2010 Annual Report of Energy Conservation Accomplishments provides a significant increase in the level of value-added information and program detail, emphasizing key performance indices. The report includes program-level budget and savings target tables, Direct Benefit to Customer ratios, savings distributions by measure type and a comprehensive measure table from the EES Measure Metrics system, attached to this report as Appendix B[9].

This report is organized in such a way as to provide overall reviews by portfolio, by sector and then by individual program. The layout follows the sequence of the Company's Budgets and Savings results table, Appendix A of this report, for easy reference. Specifically, we will detail within this report:

- Electric Settlement Terms for Conservation conditions[10], as applicable in affected programs
- Overall EES Summary Results
  - Expenditures and Savings , both portfolio and sector views
  - Five-year trends
  - Direct Benefit to Customers
  - Cost Effectiveness
  - Measure Savings by type
- EES EM&V Activities
- Residential Sector overview and program recaps
  - Residential program-by-program details
- Business Sector overview and program recaps
  - Business program-by-program details
- Support Activities recaps
  - Details for each support activity
- Other Electric Programs recaps
  - Details associated with Small Scale Renewables and Demand Response Pilot programs
- Stakeholder Relationships
  - Washington Utilities and Transportation Commission
  - Conservation Resource Advisory Group

[9] Originally, its 2010 – 2011 biennial conservation filing of Budgets and Saving Goals was named Appendix B. The budgets and savings goals document was subsequently re-named "Exhibit 1" with the advent of the 2011 Annual Conservation Plan. Both documents' content is the same.
[10] Docket No. UE-100177

- Appendices:
    A. Overall EES expenditure and savings results, electric and gas
    B. Complete listing of measures by program and fuel type, including savings type classifications and claim amounts
    C. Measures retired in 2010
    D. Cost-effectiveness benefit-to-cost ratio calculation figures, by program by fuel type
    E. Electric Conservation Incentive Mechanism calculation table
    F. Savings adjustments made in 2010
    G. EES Evaluation studies performed in 2010
    H. 2010 Electric Conservation Settlement Terms.

The report is designed to fulfill the requirements listed in the 2010 Settlement Agreement conditions, Docket No. UE-100177. Specifically:

K(8)(c) ("PSE must file") 2010 Annual Report on Conservation Acquisition, including an evaluation of cost-effectiveness and comparing budgets to actual, by February 15, 2011.

K(6)(f) "(….) Evaluation reports involving analysis of both program impacts and process impacts of the programs evaluation in the prior year must be part of the Annual Report on Conservation Acquisition…"

K(10)(a) Cost Effectiveness tests; (a) "…PSE's portfolio must pass the TRC test.

Additional conditions are addressed as they pertain to specific sections of the report and will be noted therein.

Updates and revisions from PSE's August 2010 Semi-Annual Report on Energy Conservation Accomplishments include:

- All expenditure, savings, Direct Benefit to Customer and measure data are updated to reflect year-end 2010 figures
- EES sector and program expenditure and savings performance tables were re-formatted to provide views by first-and second half and year-end total for the year to enable comparisons and trend analyses without referencing the Semi-annual report.
- Addition of savings by type[11] charts at the portfolio and sector level

[11] Percent of savings for RTF Deemed, PSE Deemed, Calculated or Custom measures.

- Where possible, program staff have attempted to represent accomplishments that are incremental to their January through June reports. In some cases, this is accomplished by a table reference, a separate heading or a brief narrative. Some accomplishments, though, span the entire year or required revision from those outlined in the Semi-annual report
- Section tables and figures are re-numbered. Using a chapterization approach, (e.g., "1a, 1b", "2a, 2b", etc.) this avoids maintenance of very long lists
- Where possible, report sections address their applicability to the 2010 Electric Conservation Settlement Agreement Headings and conditions (Section K of the Settlement Agreement)
- An expanded discussion of Measures and Savings Adjustments in the EM&V section
- Re-naming "Exhibits" to "Appendices"[12]
- Addition of Appendices;
    - C: Measures retired in 2010
    - F: Savings adjustments made in 2010
    - G: Evaluation studies performed in 2010, in compliance with condition K(6)(f)
    - H: 2010 Electric Conservation Settlement Terms.
- Revised grant and rebate data to a table format in the EM&V accomplishments section
- Added *Partnerships with Regional Utilities* and *PSE Contributions beyond its Service Territory* headings within the Regional Programs and Relationships section.

[12] This was made necessary because documents included with the 2011 Annual Conservation Plan were named "Exhibits". To avoid nomenclature confusion, the Annual report documents were re-named.

## Energy Efficiency Services 2010 Results

Fifty percent into the 2010-2011 biennium, PSE is well on its way to achieving the biennial savings goals of 71.0 aMW and over 9 million therms. The extensive planning process of 2009 is paying dividends, both in terms of savings achieved and in the prudence with which PSE is utilizing ratepayer funds. Table 1a presents a portfolio view of EES expenditures and savings for electric and gas, both for 2010 alone and the 2010 – 2011 biennium.

**Table 1a: Overall EES Results**

### 2010 Results

***January - December*** **100% of one year time frame**

| ELECTRIC CONSERVATION: | Year to Date Actuals | 1 year EES Budget/ EES Goal | % Goal |
|---|---|---|---|
| Electric Costs: | $75,008,018 | $76,504,975 | 98.0% |
| MWh Savings: | 295,547 | 281,680 | 104.9% |
| aMW Savings: | 33.7 aMW | 32.2 aMW | |
| **GAS CONSERVATION:** | | | |
| Gas Costs: | $19,910,386 | $16,459,912 | 121.4% |
| Therm Savings: | 5,033,406 | 4,264,500 | 118.0% |

***24 Month View*** **50% of two year time frame**

| ELECTRIC CONSERVATION: | Period to Date Actuals | 2 year EES Budget/ EES Goal | % Goal |
|---|---|---|---|
| Electric Costs: | $75,008,018 | $166,810,000 | 45.0% |
| MWh Savings: | 295,547 | 622,000 | 47.5% |
| aMW Savings: | 33.7 aMW | 71.0 aMW | |
| **GAS CONSERVATION:** | | | |
| Gas Costs: | $19,910,386 | $33,350,000 | 59.7% |
| Therm Savings: | 5,033,406 | 9,054,000 | 55.6% |

Over the past year, PSE formalized several operational processes in all sectors which were established and have been followed for several years; including evaluation planning that ensures all EES programs are examined in a regular, consistent fashion[13], guidelines for savings claim accuracy and measure revision processes.

[13] This process is in compliance with Settlement Agreement condition K(6)(f).

As an active participant in the RTF, PSE also made regional contributions to the development of consistent evaluation standards. Savings claims are regularly audited at various stages of development. From the time that a measure is implemented and its value and source of savings is added to the Measure Metrics database, it is regularly verified against the savings values logged in the EES tracking systems. Savings are internally reviewed and audited both on a monthly rolling basis and a formal stand-alone quarterly audit.

As you will read in the detailed program reviews, EES continues to make significant strides in reducing costs to ratepayers, maximize their direct benefits (as illustrated by a metric introduced in 2010, Direct Benefit to Customer) and provide the maximum support to trade allies, distributors, contractors, builders, developers, retailers and our vendors.

Our pilot programs are constantly evolving—demonstrating our commitment to bring the latest and most efficient technologies to our customers. PSE is engaged with an ever-increasing number of municipalities and community partners, which is broadening the reach of energy efficiency services.

## Expenditures and Savings

As noted in Table 1a on the previous page, EES finished 2010 at 98.0 percent of budget in electric expenditures and at 121.4 percent in gas expenditures ($75[14] million, electric and $19.9[15] million gas). Results are further detailed in Table 1b, Expenditures by Sector and Table 1c, Savings by Sector.

EES finished the year above goal in electric and gas savings; 33.7 aMW—equivalent to 25,000 average residential homes for 2010[16]—and 5.03 million therms, enough to heat 5,900 average residential homes for 2010[17]. The 2010 electric savings will be reviewed and verified by an independent third-party evaluator at the portfolio level in 2011, per the electric Settlement Agreement condition K(6)(g).

In compliance with condition K(3)(a)(ix), PSE notified the CRAG on June 22 of the expected gas expenditure budget over-run, which finished the year, as noted above, at 121.4 percent of budget.

The Business Sector experienced a significant increase in quantity of natural gas efficiency measures implemented through the C/I Retrofit program while the quantity of installed Commercial Rebate measures declined in 2010.

[14] Including Other Electric Program expenditures of $1,647,220. This amount is included in the total electric expenditures noted in Table 1a.
[15] Including LIW shareholder funding of $298,858. This amount is included in the total gas expenditures noted in Table 1a.
[16] Based on an average usage of 11,784 kWh per year per average electric residence, per 2009 figures.
[17] Based on an average usage of 849 therms per year per average gas-heated residence, per 2009 figures.

This shift in the Business sector portfolio resulted in a greater increase of incentive payments relative to achieved natural gas savings. Low flow pre-rinse spray head installations, a very cost-effective measure in the Commercial Rebate program, were suspended in 2010 due to changing market conditions. This measure had historically yielded a high quantity of natural gas savings at relatively low cost, thus its removal from the Business Sector portfolio increased overall costs for achieved energy savings.

The Residential sector gas efficiency programs overachieved to the point of 151 percent of the savings goal while keeping expenditures limited to 119 percent of the sector budget. The overachievement in savings was primarily driven by Federal tax credits, ARRA funding and increased contractor involvement. The latter specifically related to business opportunities in the economic downturn.

### 2010 PSE Awards

Several EES programs were recognized in 2010 for their significant contributions to energy efficiency initiatives, community involvement, industry leadership, environmental stewardship and sharing with neighboring utilities, including:

- The Resource Conservation Manager program was selected for the Association of Energy Services Professionals (AESP) 2011 award for ***Outstanding Achievement in Non-Residential Program Design and Implementation***
- The Powerful Choices program received the EPA's ***Clean Air Excellence*** award
- The Retail Lighting team received Energy Star® ***Partner of the Year*** for the program's execution of the Energy Star® tenets and standards.
- PSE's Rock the Bulb campaign received numerous recognitions:
    - In June 2010, PSE's 2009 Rock the Bulb campaign received one of the highest national honors in the field of public relations, Public Relations Society of America's (PRSA) ***Silver Anvil*** award; recognizing "..exemplary professional skill, creativity and resourcefulness[18]." in addressing a contemporary public relations issue
    - PSE's Rock the Bulb received the Totem Award for ***Best in Show*** and an honorable mention from PRSA's Puget Sound region
    - PR News™ Award for ***Corporate Responsibility*** for PSE's Rock the Bulb
    - PSE's Rock the Bulb also received AESP recognition in ***Program Design*** and an honorable mention in ***marketing***.

Program details are provided in the coming pages of this report.

[18] Extracted from the Public Relations Society of America (PRSA) website: http://www.prsa.org/Awards/SilverAnvil/SilverAnvil_Results/

## 2010 EES Sector Results

Tables 1b and 1c show EES results in their component sector-level 2010 figures. Additionally, readers will note that these tables are re-formatted, so as to provide a new level of trend analyses; showing the first-half results alongside the second-half results for expenditures and savings separately.

### Table 1b: EES Expenditures by Sector

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| **Residential Sector** | | | | | | |
| Electric | | $ 13,033,463 | $13,640,693 | **$26,674,157** | 77.0% | $ 34,639,380 |
| Gas | | $ 8,230,022 | $4,840,500 | **$13,070,522** | 118.7% | $ 11,013,500 |
| **Business Sector** | | | | | | |
| Electric | | $ 19,774,441 | $19,235,767 | **$39,010,207** | 121.0% | $ 32,235,791 |
| Gas | | $ 2,601,167 | $3,031,463 | **$5,632,629** | 144.9% | $ 3,886,667 |
| Northwest Energy Efficiency Alliance | | $ 2,551,762 | $2,394,698 | **$4,946,460** | 107.0% | $ 4,625,000 |
| **Support Activities** | | | | | | |
| Electric | | $ 1,199,682 | $1,530,291 | **$2,729,974** | 75.6% | $ 3,612,612 |
| Gas | | $ 332,494 | $575,882 | **$908,376** | 72.1% | $ 1,259,745 |
| Other Electric Programs | | $ 811,509 | $835,711 | **$1,647,220** | 118.3% | $ 1,392,192 |

### Table 1c: EES Savings by Sector

| 2010 | Savings | 2010 Quarterly View: MWh and Therms | | | | 2010 Goal |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Goal | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| | **Residential Sector** | | | | | |
| | Electric | 59,471 | 46,917 | **106,388** | 75.1% | 141,680 |
| | Gas | 1,680,239 | 979,375 | **2,659,614** | 150.7% | 1,764,500 |
| | **Business Sector** | | | | | |
| | Electric | 82,612 | 83,047 | **165,659** | 142.2% | 116,500 |
| | Gas | 875,098 | 1,498,694 | **2,373,792** | 95.0% | 2,500,000 |
| | Northwest Energy Efficiency Alliance | 11,750 | 11,750 | **23,500** | 100.0% | 23,500 |
| | **Support Activities** | | | | | |
| | Electric | | | | | |
| | Gas | | | | | |
| | Other Electric Programs | | | | | |

## Five – Year Trends

The following figures represent electric and gas savings and expenditures for completed years 2006 through 2010. Figure 1a indicates that PSE's electric conservation efforts have resulted in a 78 percent increase in savings over the five-year period. Figure 1b indicates that gas savings increased considerably; over 111 percent. On the expenditure side, electric spending has increased slightly over 159 percent, while gas spending increased 207 percent.

Over this time, avoided costs have increased, as have measure baselines resulting from increased federal legislation on efficiency standards, higher energy code requirements and standard practice.

**Figure 1a: EES Electric Programs; Savings and Expenditures – Five-year Trends**

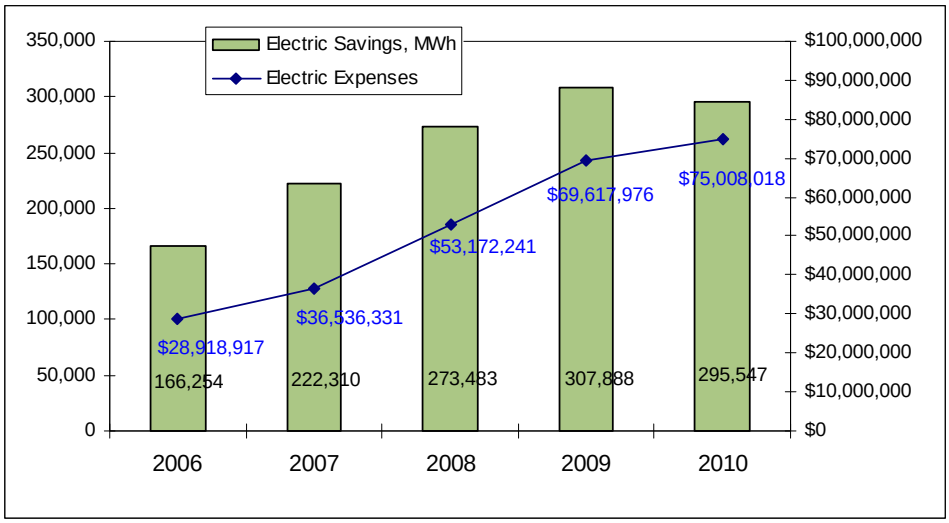
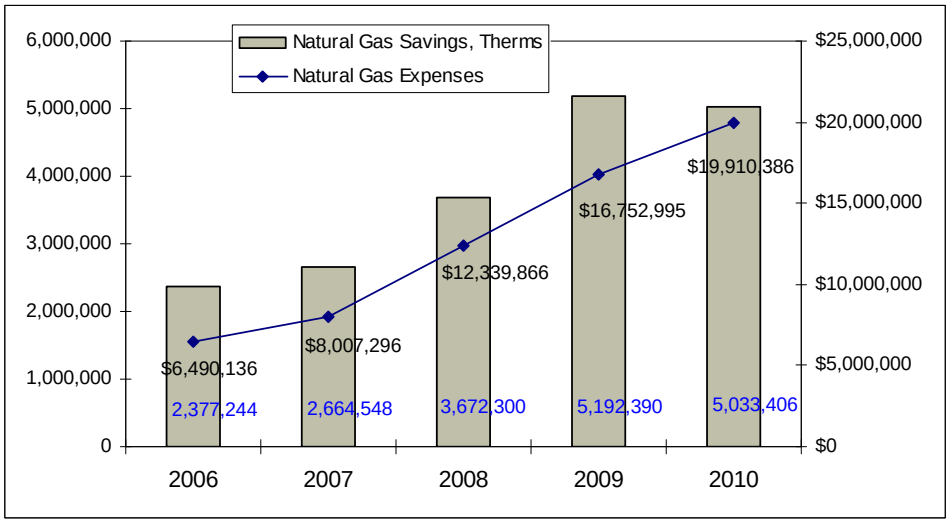



**Figure 1b: EES Gas Programs; Savings and Expenditures – Five-year Trends**



### Direct Benefit to Customer

As a measure of how effectively PSE is using ratepayer dollars, PSE considers Direct Benefit to Customer (DBtC) to be defined as rebates, grants, credits or services that are of direct value to customers. Services can include, but aren't limited to, credits on a monthly bill, upstream incentives provided to channel partners or trade allies—either within our service territory or regionally—and free energy efficient devices available by mail. DBtC may also include credits on equipment purchases at points of sale, payments to contractors for direct installation of efficiency measures at customer facilities and online access to energy interval data.

For example, at many retailers, customers receive a point of sale discount when they purchase a CFL bulb or high-efficiency commercial kitchen equipment. Similarly, customers are spared the trouble of transporting their old refrigerator to the local transfer station when they take advantage of the Refrigerator Decommissioning program.

It is important to note that some activities, currently classified as support, such as customer phone consultations with energy advisors and customer analyses with an Energy Management Engineer are direct benefits. Quantifying the proportions of these services, though, would be time-consuming and would divert department resources from achieving all feasible, available cost-effective savings.

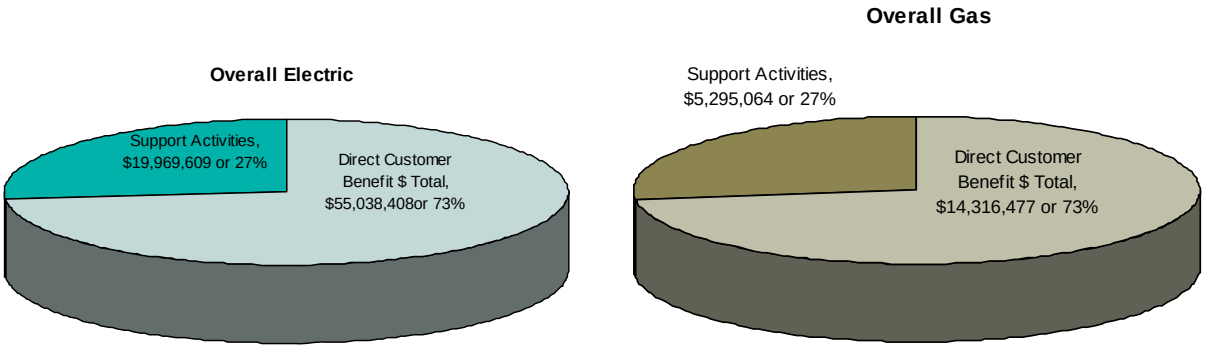
Support activities include a certain amount of administrative functions necessary to efficiently operate the department and maintain accurate recordkeeping, provide required reporting, and maintain good customer service. The noted Support Activities include, but are not limited to, marketing—including the creation and distribution of energy efficiency brochures, web and media content—market research and all program support functions.

Some of these include rebate processing, compliance, reporting, systems support and partner training to be advocates for PSE-supported energy efficiency measures and analyses.

Evaluation functions, EME project evaluation and verification analyses, trade ally/contractor training, community event participation and all customer renewable program support is also included in the Support Activity category. Each of these is critical to providing ratepayers with cost-effective, value-added energy efficiency programs.

Figure 1c represents the overall EES ratios for electric and gas, including costs of Support Activities and Other Electric Programs. Sector-specific ratios will be found in the applicable sections of this report.

**Figure 1c: EES Electric Programs Direct Benefit to Customers**




## Cost Effectiveness Ratios

In compliance with Settlement Agreement condition K(10)(a), EES performed the Utility Cost and Total Resource Cost tests at the portfolio level, which are indicated in Table 1d below. Two additional tests; Ratepayer Impact Measure and Participant Cost Test will be performed in 2011, concurrent with CRAG consultations. Details supporting these ratios are contained in Appendix D of this report.

**Table 1d: Overall EES Cost-effectiveness Benefit/Cost Ratios**

| Benefit to Cost Ratios | | |
|---|---|---|
| | Utility Cost | Total Resource Cost |
| **Electric** | 3.39 | 2.15 |
| **Gas** | 2.78 | 1.22 |

## Measures

In Appendix B of this report, EES presents complete measure tables for programs whose suites of offerings consist of deemed or selected calculated measures[19]. The information addresses Settlement Agreement condition K(6)(b) and (c). Since the majority of Business Sector measures are custom engineering calculations, only the Business Rebates program (Schedule 262 for both electric and gas) will list deemed and calculated Measure detail tables.

[19] Active measures as of December 31, 2010.

All measures noted in the Appendix are listed in the EES List of Measures, Incentives and Eligibility, previously referred to as ***Attachment 1***[20]. Attachment 1 is available at the Company's website:

http://www.pse.com/insidePSE/ratereginformation/Pages/Default.aspx

Measure tables included in Appendix B indicate the number of instances a particular measure category appears in the program's suite of offerings. Measures are listed and compiled according to equipment or usage type by Schedule. They are then separated into fuel types. A number of measures (residential clothes washers for instance) may apply to more than one program within that Schedule and thus, may be noted several times.

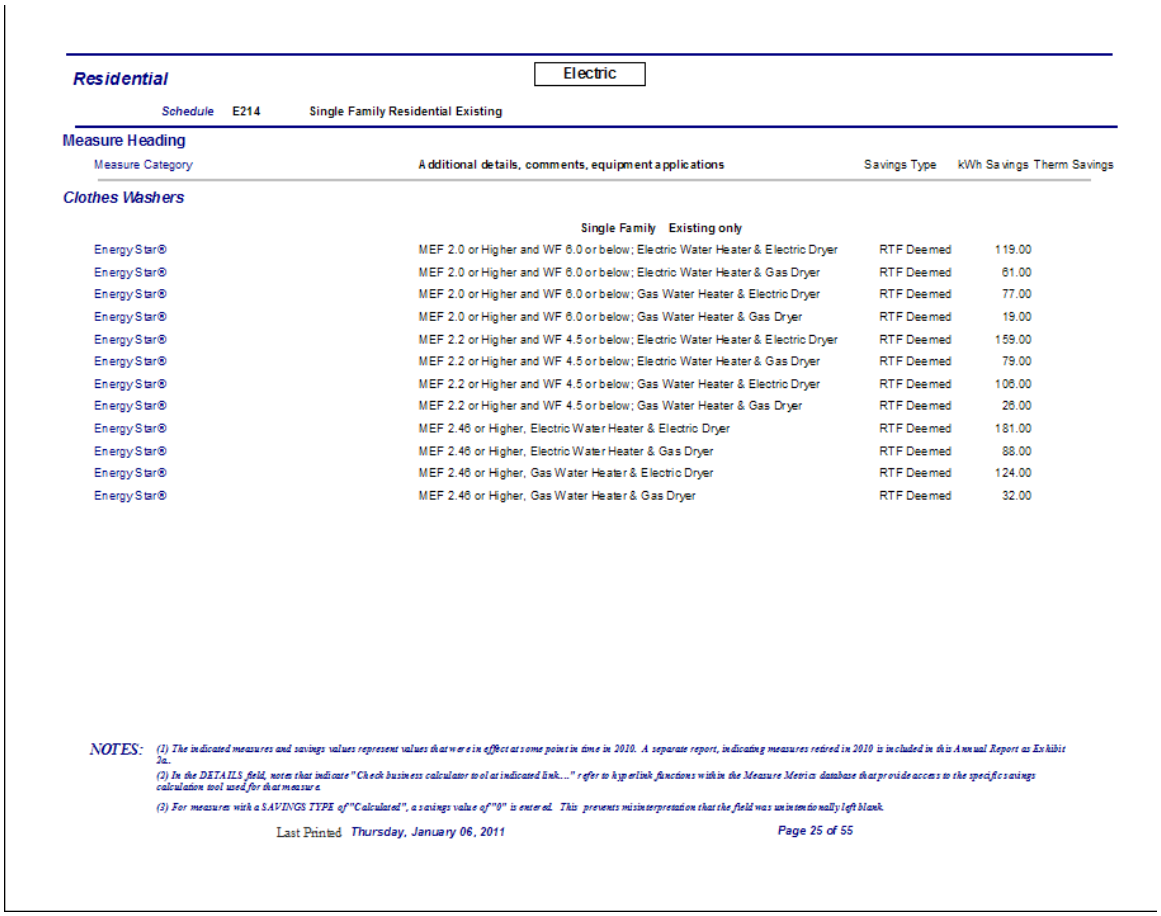
Each clothes washer variation is listed according to water heater and dryer type:

- Electric water heater/electric dryer
- Electric water heater/gas dryer
- Gas water heater/electric dryer
- Gas water heater/gas dryer.

Each of these also includes three MEF levels, for a total of 12 possible listings, as illustrated in the example Single Family Existing[21] table, Figure 1d:

[20] In the 2011 Annual Conservation Plan, Attachment 1 was renamed "Exhibit 4".
[21] Extracted from Appendix B, EES List of Measures.

**Figure 1d: Sample Page of Appendix B; Single Family Existing Clothes Washers**



***Residential*** Electric

*Schedule* E214 Single Family Residential Existing

**Measure Heading**

| Measure Category | Additional details, comments, equipment applications | Savings Type | kWh Savings | Therm Savings |
|---|---|---|---|---|
| ***Clothes Washers*** | | | | |
| | **Single Family Existing only** | | | |
| Energy Star® | MEF 2.0 or Higher and WF 6.0 or below; Electric Water Heater & Electric Dryer | RTF Deemed | 119.00 | |
| Energy Star® | MEF 2.0 or Higher and WF 6.0 or below; Electric Water Heater & Gas Dryer | RTF Deemed | 61.00 | |
| Energy Star® | MEF 2.0 or Higher and WF 6.0 or below; Gas Water Heater & Electric Dryer | RTF Deemed | 77.00 | |
| Energy Star® | MEF 2.0 or Higher and WF 6.0 or below; Gas Water Heater & Gas Dryer | RTF Deemed | 19.00 | |
| Energy Star® | MEF 2.2 or Higher and WF 4.5 or below; Electric Water Heater & Electric Dryer | RTF Deemed | 159.00 | |
| Energy Star® | MEF 2.2 or Higher and WF 4.5 or below; Electric Water Heater & Gas Dryer | RTF Deemed | 79.00 | |
| Energy Star® | MEF 2.2 or Higher and WF 4.5 or below; Gas Water Heater & Electric Dryer | RTF Deemed | 106.00 | |
| Energy Star® | MEF 2.2 or Higher and WF 4.5 or below; Gas Water Heater & Gas Dryer | RTF Deemed | 26.00 | |
| Energy Star® | MEF 2.46 or Higher, Electric Water Heater & Electric Dryer | RTF Deemed | 181.00 | |
| Energy Star® | MEF 2.46 or Higher, Electric Water Heater & Gas Dryer | RTF Deemed | 88.00 | |
| Energy Star® | MEF 2.46 or Higher, Gas Water Heater & Electric Dryer | RTF Deemed | 124.00 | |
| Energy Star® | MEF 2.46 or Higher, Gas Water Heater & Gas Dryer | RTF Deemed | 32.00 | |

*NOTES:* *(1) The indicated measures and savings values represent values that were in effect at some point in time in 2010. A separate report, indicating measures retired in 2010 is included in this Annual Report as Exhibit 2a.*

*(2) In the DETAILS field, notes that indicate "Check business calculator tool at indicated link..." refer to hyperlink functions within the Measure Metrics database that provide access to the specific savings calculation tool used for that measure.*

*(3) For measures with a SAVINGS TYPE of "Calculated", a savings value of "0" is entered. This prevents misinterpretation that the field was unintentionally left blank.*

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Some residential programs provide incentives for all clothes washer variants, while others limit incentives to selected types. These are detailed in Attachment 1, which is organized by program. Prescriptive Business measures are classified and compiled similarly in Appendix B.

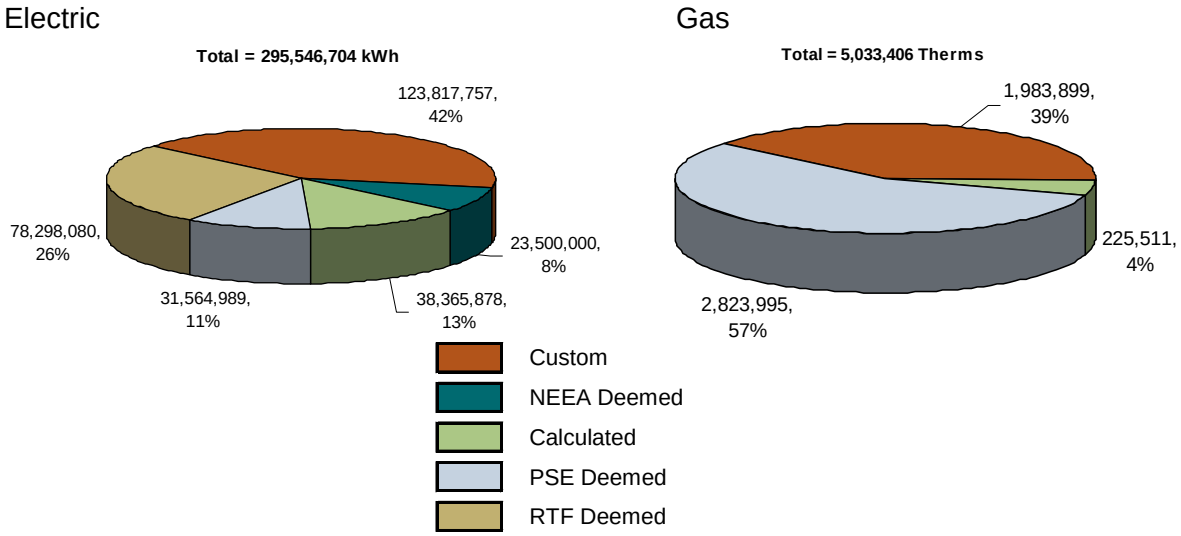
It is noteworthy that each measure noted in this report's measure tables represents a record in the Measure Metrics database. The database also manages an extensive list of retired measures. These are maintained to ensure that EES can track the history of energy savings claims, incentive amounts, measure life, etc. Furthermore, there is not a direct correlation of the number of combinations noted in the program tables and the measures listed in Attachment 1[22].

Appendix C lists all measures that were retired in 2010.

### Ratio of Savings by Measure Type

Figure 1e illustrates the overall EES electric and gas savings, distributed by Measure savings type. It is important to note that gas savings are limited in this type of analysis. Since the RTF does not deem gas prescriptive savings, all prescriptive gas measures are considered PSE Deemed, Calculated or Custom. These terms are defined in the Glossary section on pages 2 and 3 of this report.

**Figure 1e: 2010 Savings Distributions by Measure Savings Type**




[22] For example, as noted on page 25 of Appendix B, PSE makes savings claims on 12 different clothes washers but PSE pays three incentive levels, regardless of water heater/dryer types. In order to simplify the customer offering, all 12 variations are not noted in Attachment 1 (known as Exhibit 4 in 2011).

## 2010 Continuous Improvement

In 2010, the 123 skilled professionals involved with Rider/Tracked-funded programs of Energy Efficiency Services worked diligently to achieve the results noted in this report. Our focus on continuous improvement led to improvements in operational processes, reduce costs, enable increased levels of savings verification, maximize their productivity and above all, delight PSE customers and utilize their funding contributions wisely and prudently. Each EES Sector made continuous improvements, such as reducing service costs in the Retail Channel, reducing inventory storage fees, allowing residential Low Income Agencies to evaluate cost-effectiveness before a measure is installed, establishing a system to track Small Business Lighting contractors, managing community involvement and streamlining residential net meter installation processes, which are only a few examples of what readers will learn in the coming pages.

# EES EVALUATION, MEASUREMENT & VERIFICATION (EM&V)

This section of the report describes functions and activities related to Evaluation, Measurement and Verification that affect all conservation programs and activities in EES. Each Sector within EES contributes some element of Evaluation, Measurement or Verification; it is not unique to a specific program or sector. This discussion highlights key areas within EES that impact the overall Evaluation, Measurement and Verification of all EES programs, whether they be related to savings claims verification, auditing financial expenditures or managing the systems and archived used as bases for EES performance.

This section of the report does not represent the PSE EM&V Framework—required under Settlement Agreement condition K(3)(a)(i)(1):

> Development of a written framework for evaluation, measurement, and verification (EM&V) as implemented by PSE which guides its approach to evaluation, measurement, and verification of energy savings. This framework must be reflected in the Biennial Conservation Plan for the next biennium, 2012-2013.

The Framework is in development[23] at the time of the publication of this report.

## EES EM&V Elements

Within this section, we reference several departmental processes employed throughout the department. These are included for purposes of discussion and putting into context our 2010 energy conservation achievements; these process references are not intended to be comprehensive, in-depth process reviews.

Several of EES's EM&V processes have been in place since the inception of the department. As the business evolved and energy savings goals grew, so did the rigor with which EES conducted EM&V activities, including process and impact evaluations, energy savings and expense tracking, regulatory and Company compliance, audit functions, marketing, trade ally relationships and an ever-expanding suite of conservation services.

[23] PSE will ensure that the CRAG has opportunities to address this document during its development, per the applicable condition.

Over the last three years, EES has made significant progress in documenting and executing these guidelines and processes, including:

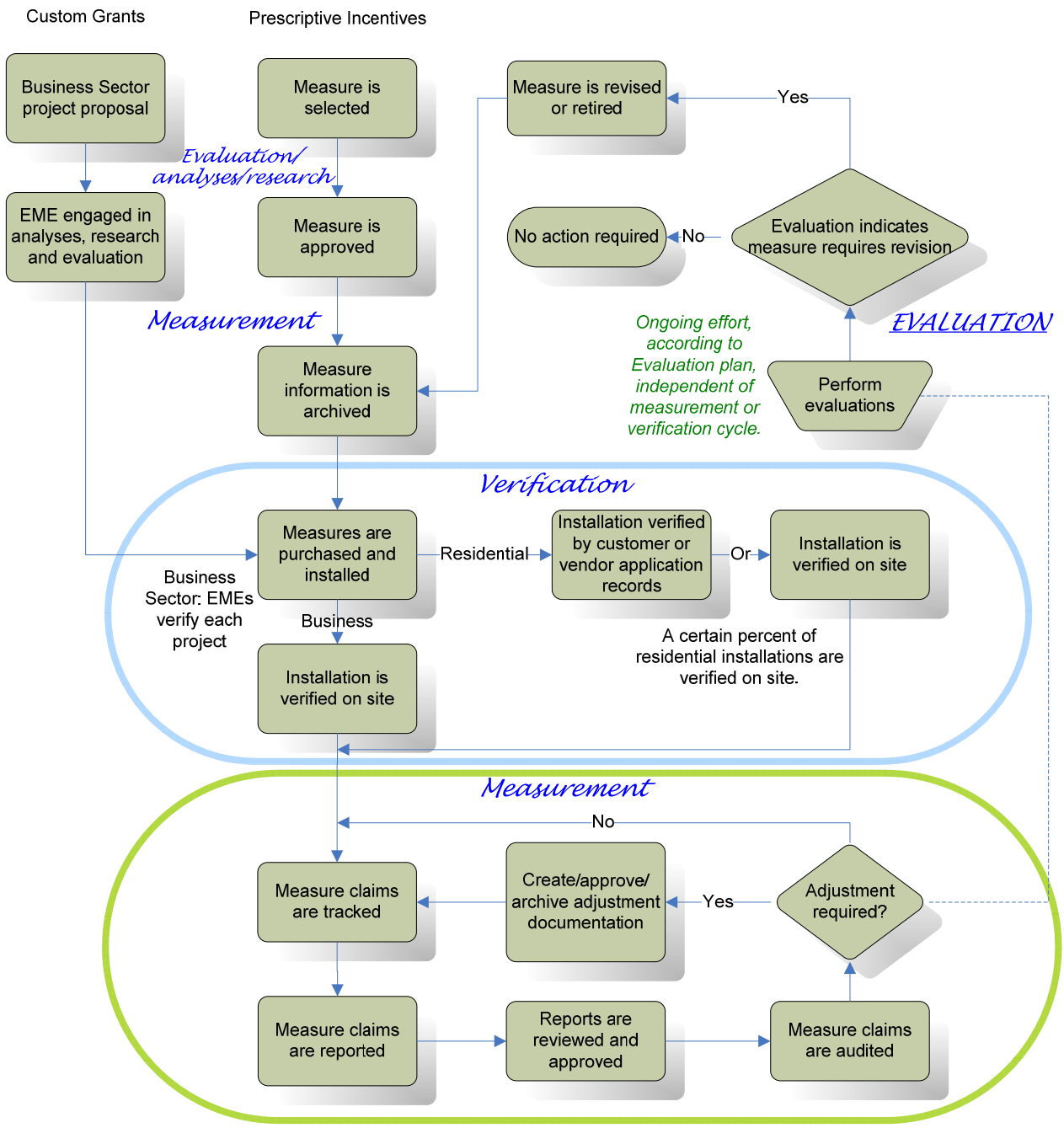
- Measure savings values and savings claims calculations
- Measure documentation
- Measure savings tracking and expenditure reconciliation
- Savings and expenditure verification

## EM&V Process Flow

In Figure 2a, we provide a summarized overview of EES's Evaluation, Measurement and Verification process that has been utilized for the past several years. The complete 2010 EM&V framework is in development and will be submitted as a part of the 2012 – 2013 Biennial Conservation Plan, in compliance with Settlement Agreement condition K(3)(a)(i)(1), which indicates that the EM&V framework is to be included with that filing.

As noted above, various elements that have been in practice for several years were recently formalized. It is important to note that each activity represented below has a minimum of one complete process behind the activity heading in the process box.

**Figure 2a: High-Level View of Measure EM&V**




Specific to 2010, the following functions that affect and are utilized in various degrees by all EES sectors were improved and formalized.

## Evaluation Report Responses

Although implemented in 2009, the Evaluation Report Response (ERR) process gained traction and was formalized this year. This process ensures that there is a direct link between evaluation studies, Program Staff and their savings tracking systems and the Measure Metrics archival system.

When an evaluation study is completed, it is reviewed with the applicable Program Staff[24]. The results are discussed as are potential program effects. The Evaluation Staff provide the Program Staff with the ERR form, indicating the study title, a hyperlink to the study and the study date. The Program Staff then indicate what actions, if any, will be taken as a result. Actions may include, but aren't limited to, revising the delivery method,[25] adjusting the incentive level or revising the savings value at a prescribed interval.

## Measures

### Savings Values

Before a measure (either new or a modified version of an existing measure) is offered to customers, it must follow a rigorous implementation process. The process is outlined in EES's *Measure Revision Guidelines* or *New Measure Guidelines (as applicable)*, made available to all EES staff in 2010. These processes provide outlines of all required documentation, approvals and archiving necessary to ensure that EES is compliant with Settlement Agreement condition K(6) and can demonstrate prudence for all savings claimed.

### Savings Claims

The methods of vetting, justifying, counting and reporting measure savings was documented in EES's *Guidelines for Ensuring the Accuracy of Electric and Gas Savings Claims* in April 2010. This is a comprehensive document that ensures consistency across programs and sectors, outlines rounding rules, applicable claims periods and how retired measures are tracked, reported and archived. In this document, EES also outlines the guidelines for tracking savings derived from rebate applications, directly-installed measures and savings from retailers, resellers and dealers.

### Measure Reports

Appendix B of this report lists all prescriptive (RTF Deemed and PSE Deemed) and selected calculated measures by program (Schedule number) and fuel type. This report had an additional level of detail that wasn't available for the August 2010 Semi-annual Report of Energy Conservation Accomplishments; that of Structure Type.

Appendix C of this report reflects all measures that were retired at some point in time throughout 2010.

[24] There are cases, such as the Showerhead Installation Survey, where multiple programs are affected, such as Single Family Existing, Multifamily Existing and Consumer/Retail.

[25] A hypothetical study may indicate, for instance, that a cost-effective "widget" may yield a higher penetration rate if PSE switches to a mail-in program versus a directly-installed "widget".

Measures are retired, rather than deleted, as it is critically important that PSE maintains a history of a measure's state throughout its life. A measure can be retired for a wide range of reasons. For instance, when reviewing Appendix C, readers may note a Reason Retired entry as "Dbase incorrectly rounded to whole number". At some point in 2010, when adding a database improvement, a field in Access® was inadvertently altered on some programs. This created a default where (hypothetical figures) "1.65" was adjusted to "2.0". When this was discovered during a routine audit, the affected (incorrect) measure was retired and the corrected version was created.

Measures are retired when the delivery method, savings value, incentive amount, Attachment 1 description, etc. changes.

## Measure Metrics

EES made reporting and evaluation-related upgrades to the system between January and June 2010 by employing an MS Access® database and a centralized hierarchal filing structure to maintain an archive of measure savings and evaluation-related findings. In addition to archiving every prescriptive measure's source of savings, incentive level, measure life, cost and revision history via a clearly enumerated process of review and management approval, the system now tracks measure sunset dates and reasons for measure revisions (for example, "Revised RTF Value", "Updated Evaluation Report", etc.).

A dedicated Evaluation database was also created to track evaluation studies; including authors, topics and programs affected. The database also tracks Evaluation Report Responses (ERRs), linking evaluation studies to any resultant change(s) in delivery methods, incentive or savings values.

## Program Audits

In 2010, EES formalized its policy of performing internal program audits each quarter. Audits have clear prioritizations and criteria as well as a set of steps to "drill down" to the highest level of detail where possible.

Although annual program audits have been performed since 2008[26], our savings tracking and audit guidelines were documented, vetted and published internally in April 2010. These guidelines ensure that all programs will be audited on a continuing basis in an ongoing cycle. Program audits include a focus on both savings and financial accuracy. In addition to formal, quarterly audits, savings and expenses are reviewed monthly against the plan[27] and internal order numbers[28].

[26] In January 2009, the Residential Lighting, Electric Weatherization and Multifamily Retrofit programs were audited for 2008 savings claims. In August 2009 and January 2010, semi-annual audits were performed on Residential Lighting, Manufactured Homes, Multifamily New Construction, Energy Education, Fuel Conversion and Refrigerator Decommissioning programs. All audits resulting in no findings. 2009 audits also included financial reviews.

[27] Budgets and targets aren't set on a monthly basis; rather, a linear, 12-month average is applied.

[28] Internal order number checks include: assuring that invoices are paid against correct accounts, incentives paid are classified correctly, etc.

## Savings Adjustments

Another practice that has been in place since 2007 is the savings adjustment process. This process is included in the EES *Guidelines for Ensuring the Accuracy of Electric and Gas Savings Claims*. Although rare, savings claims adjustments are periodically necessary. For example, a vendor may mistakenly identify some clothes washers from a previous month and add them into the next month's total. Data entry errors also occur infrequently and are corrected as soon as they are found (E.G.; a total of 69 refrigerators were entered in the Residential Savings Tracking System when there were actually 96).

The EES Budget team manages a formal adjustment process, which includes documenting answers to the following five questions.

- What happened ("savings were overstated by 10,000 kWh last month", etc.)?
- How was the need for adjustment discovered?
- Why it happened ("10 manufactured home rebates were counted twice", etc.)?
- How it is corrected ("10,000 kWh will be subtracted from this month's claims, with a corresponding note in the Residential Savings Tracking System", etc.)?
- What will be done to prevent future errors ("all rebate forms will be marshaled in areas specific to their corresponding programs and receive a check mark when processed", etc.)?

When the responses have been vetted by the Budget team, the adjustment is forwarded to EES management for approval. The applicable tracking system is then updated to reflect the accurate savings value and the adjustment is archived for historical records.

Appendix F of this report is comprised of gas and electric savings adjustment tables, indicating the date, reason and adjustment amount—in therms or kilowatt hours. The tables represent all savings adjustments processed throughout the year. The adjusted figures are added to or subtracted from the total in the "Savings Adjusted" month.

The adjusted amount is added to or subtracted from the original amount—depending on whether the claimed amount was an over or understatement—reported for the month in which the adjustment was approved by the manager, Budget and Administration. Once entered and reported, the month in which the revision is needed is NOT adjusted; the month in which the revision is *reported* is adjusted. If the adjustment is a result of a corrected savings value, the total for the month in which the adjustment is to be recognized, is calculated based on the correct value before the addition or subtraction.

Table 2a represents a hypothetical adjustment that was considered necessary in September[29]. The savings claims are adjusted pursuant to EES's *Measure Revision Guidelines.* There may be multiple adjustments in a single month and adjustments may apply to either electric or gas values. Actual adjustments are noted similarly in the EES Tracking Master.

[29] In this hypothetical case, PSE inadvertently used the Commercial electric water heater site value of 162 kWh/yr instead of 131 kWh/yr for a Residential electric water heater. For this illustration, the month-to-month values are omitted.

**Table 2a: Hypothetical September Savings Adjustment**

| | (A) Per-unit value | (B) Units | Total Claimed value (A * B) | Comment |
|---|---|---|---|---|
| Jan - Aug sumulative claims | 162 | 1,000 | 162,000 | *Six of the eight monthly values have already been filed.* |
| ***September correction*** | | | | |
| Adjusted cumulative value | **131** | 1,000 | 131,000 | *This is what should have been claimed* |
| **Total adjustment required** | | | **-31,000** | *This is the amount that was overstated through August* |
| September claims | 131 | 100 | 13,100 | *1) In the adjustment month, we first ensure that the correct value is being referenced.* |
| **Less Jan-Aug corrected values** | | | **-31,000** | *2) Add the adjustment amount* |
| Adjusted September claims | | | -17,900 | *3) Sometimes, the adjusted monthly total results in a negative value.* |
| **Adjusted cumulative YTD savings** | | | **144,100** | *162,000 + (-31,000) = 144,100* |

***The remaining months will use the correct per-unit value.***

Figure 2b is a sample of one adjustment entry provided in Appendix E.

**Figure 2b: Sample of 2010 Adjustments from Appendix E**

| Number | Sector | Channel | Program | Electric/Gas/ Other | Adjustment reason | Consequence | Adjustment Type (Addition or subtraction of savings) | Adjustment date (approved by B&A) | Savings date affected | Savings Adjusted (month adjustment is input) | Adjustment amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | Residential | Dealer | Weatherization | Electric | Some customer records were double counted due to data entry processes | kWh savings were over reported by 63,928 | Subtraction | 28-Jun | June | January | Electric savings reduced by 63,928 in June tracking |

## Evaluation Studies

Appendix G of this report contains all evaluation studies completed—either by EES Evaluation department staff or third-party consultants in 2010, pursuant to Condition K(6)(f). The studies include a final analysis of Project Porchlight savings, Premium HVAC Service, Storage Water Heaters, Home Energy Reports and Variable Frequency Drives, to name a few.

A complete Evaluation Study project table is provided in the Support Activities Section of the report, under the Program Evaluation heading.

## Cost-Effectiveness

Much of the EM&V activity performed or managed by EES staff contributes to confirming and/or determining the cost-effectiveness of programs and measures. EES Evaluation Staff, often working with 3rd party consultants, employ a high degree of rigor and review in determining program savings, persistence and consequent cost-effectiveness, with results expressed in terms of Utility Cost (UC) Benefit-to-Cost and Total Resource Cost (TRC) Benefit-to-Cost ratios. The protocols, guidelines and processes that Evaluation Staff employ for these purposes are currently being consolidated in draft documents in accordance with Electric Conservation Settlement Agreement condition K(3)(a). Cost-effectiveness results and development of the Evaluation Framework and related documents behind them will be completely outlined and discussed with the CRAG throughout 2011.

In its August 15, 2010 Semi-annual Report of Energy Conservation Accomplishments, PSE provided preliminary estimates of portfolio-level UC and TRC. Appendix D of this report provides a comprehensive view, by program and by fuel type of these cost-effectiveness ratios for the year. Additionally, summary views of portfolio and sector-level data are provided throughout the coming sections of the report.

**2010 Accomplishments and Activities**

The following programs were audited in 2010[30]:

- Residential Lighting[31]
- Low Income Weatherization[32]
- Single Family Existing Electric and Gas Weatherization
- King County and Opportunity Council (pertaining to LIW Enron funds
- Residential lighting program's vendor Ecos (at the Ecos offices)
- Single Family Existing Windows and Weatherization.

40 savings claims adjustments were made; 29 electric, 11 gas. One expenditure adjustment was made; a grant payment that was made once was logged twice.

Nine ERRs were generated in response to four evaluation studies and logged into the Evaluation tracking database in the first half of the year.

## EES Tracking and Reporting

### Description

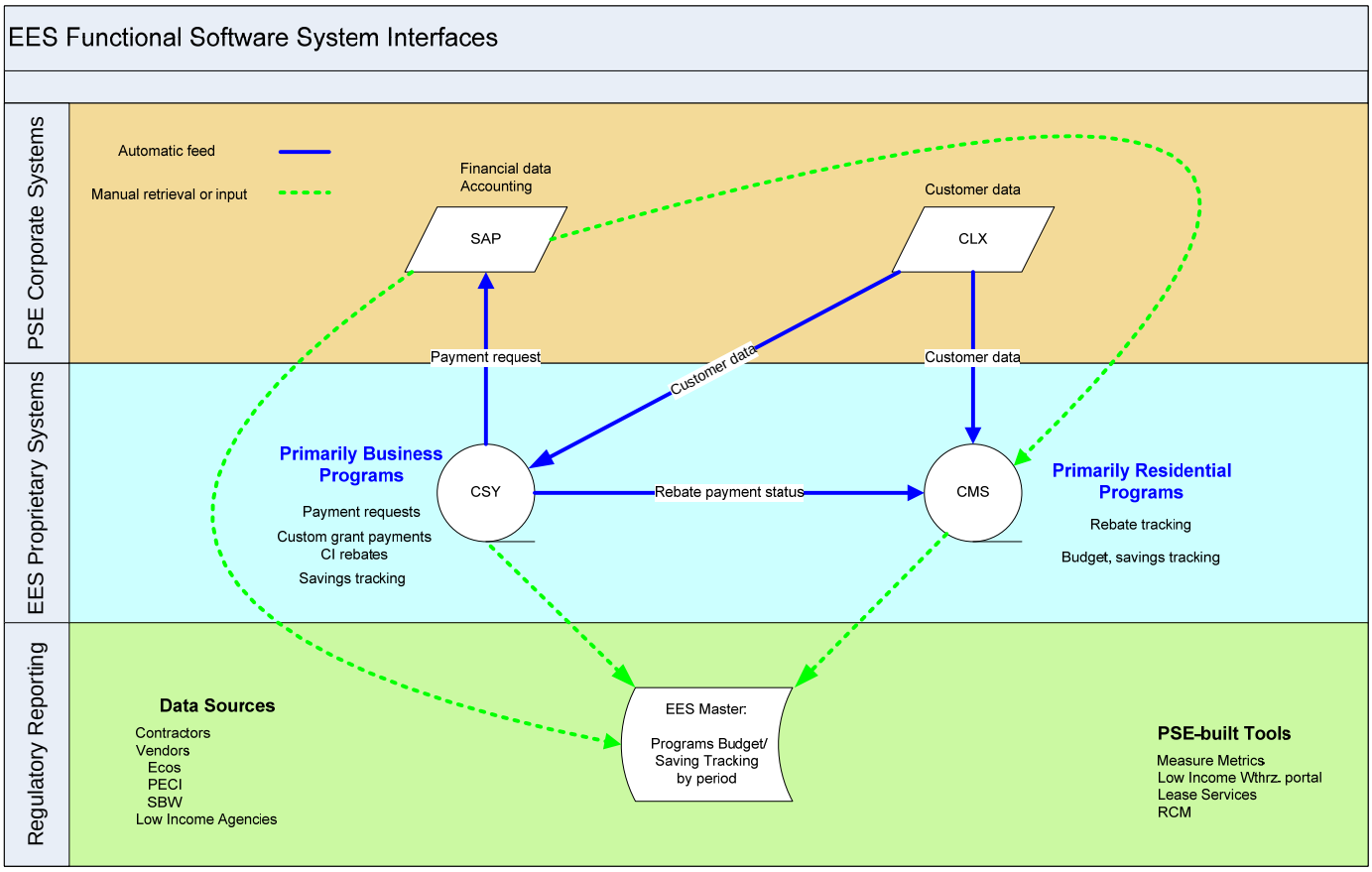
EES employs a combination of proprietary and licensed software applications to accumulate, validate and report financial and energy savings figures with a high degree of integrity and accuracy. Some are used strictly for Residential Sector reporting, others

[30] All Business grants over $100,000 are audited every quarter. Additionally, a random sampling of all Business grants are audited every quarter.
[31] Residential Lighting is audited every quarter, as it is such a large part of EES savings.
[32] Low Income Weatherization is audited each quarter as part of the Attorney General's disbursement of Enron settlement funds.

are primarily Business Sector focused. The EES Residential tracking database also maintains information on some Business measures used by Multifamily projects. Corporate systems, such as SAP, are used for all financial activity within the department. All come into play when EES presents data to its stakeholders.

The following diagram, Figure 2c, and associated descriptions provide background on what the systems do, how they assemble data and how the data is processed to the resulting reports. It is important to note that many business tools; spreadsheets, flowcharts, checklists, etc., utilized by individual programs or EES staff members which feed some of those listed here, are not outlined in this document.

**Figure 2c: EES Energy Management Tracking and Reporting Interface**




**SAP** (Systems, Applications, and Products in Data Processing) – SAP is a large multinational software development and consulting corporation located in Germany. The PSE SAP system is used mainly for HR, Contracting, inventory control and General Accounting. EES interacts with the system thru timesheets, contract/invoicing, and by assigning costs against order numbers.

**CLX** (Customer LinX) – A proprietary system used for managing customer billing information, meter data (meter readings, ID numbers, structure history, etc.) and tracking outages. The CLX data is saved in a business data warehouse to allow for information transfer to other systems. CSY and CMS pull customer usage data and basic account information (name, address, account number) from the data warehouse.

**CSY** (Customer SYstems solutions) – A PSE-created system with two distinct functional areas: Custom Grant Programs and Customer Rebate Programs. The system is used to track the status of Custom Grant Projects (from initial estimates to Grant Agreement to Final Payment) and to send payment request information to SAP. Payment information includes custom grants and rebates; both prescriptive and calculated for both EES sectors (Residential and Business).

**CMS** (Customer Management System) – EES Customer Management System is the primary interface for fulfilling and tracking customers' interactions with EES residential programs and services. Modules include: Literature & Rebate Fulfillment, Contractor Referrals, Rebate qualifying and processing and EES Inventory Management.

**EES Master** – Compiles all savings and all financial data relative to EES operations in both sectors (Residential and Business). Generates all periodic reports; internal and regulatory.

## 2010 Accomplishments and Activities

### Residential Rebate Processing

January through June
PSE's processing of residential retrofit rebates (windows, heat pumps, furnaces, water heaters, and gas conversion) increased substantially during 2010. The volume of rebates processed and paid out to customers increased nearly 147 percent over the same period in 2009 (14,691 vs. 5,938). To manage the increased workload and keep labor costs in check, the group cross-trained existing personnel within EES to assist with certain steps of the rebate process. Consequently, the Systems Channel's processing team maintained its strict verification process and prompt turnaround time throughout this period of high demand.

July through December
PSE's processing of residential retrofit rebates (heat pumps, furnaces, water heaters, and gas conversion) in the second half of 2010 experienced slightly lower volumes compared to the same period in 2009 (9,758 vs 10,316). The volume of rebates processed and paid out to customers was approximately 30 percent lower than the high volumes experienced in the first half of the year. In December, the residential rebate team was presented the challenge to process all rebates on hand. With a couple of weeks of hard work and support from other program support personnel, the team processed all rebates received to date.

Another notable achievement for the team was the completion of the rebate processing manual. This new manual proved very valuable as the team hosted CRAG and UTC staff in October to showcase PSE's internal rebate processes.

### Improved Inventory Control

The Systems Channel new inventory control system continues to provide benefits throughout EES. This new tool clearly monitors and tracks program brochures, promotional materials and lighting products as they are used for mailings, events, and programs. This system has allowed the group to help reduce waste, lower storage costs, decrease collateral charges in nearly every department. Savings in printing and storage fees for 2010 are in excess of $200,000.

**Research and Reporting**

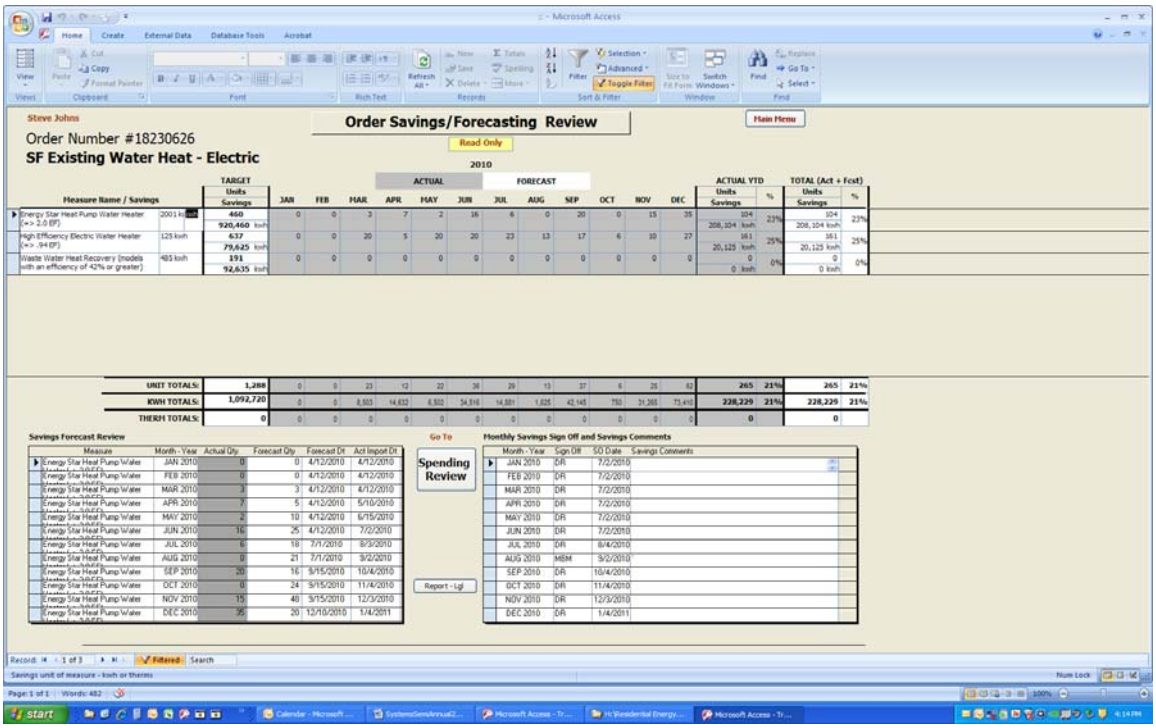
January through June

In 2010, the Systems team began building a new database-driven system to improve program analysis and reporting. As part of this effort, the group has recently implemented a new application to assist managers in tracking and forecasting program savings and spending. The system boasts improved security, streamlined data-entry and advanced reporting capabilities.

July through December

In the 2nd half of 2010, the Systems team fully implemented its new application to assist managers in tracking and forecasting residential program savings and spending. The team is now expanding the system capabilities to enable use for all programs under EES. Figure 2d is a sample from the new tracking and forecasting system.

**Figure 2d: Residential Tracking and Forecasting System Interface**




**Business Grants and Rebates**

The Business Sector also saw a significant number of grants and rebates paid in 2010. Table 2b presents the number and expenditure amount of electric and gas grants and rebates paid in the Business Sector.

**Table 2b: 2010 Business Sector Grants and Rebates Paid**

| Program | Grant/Rebate Amt | | Projects With Some Element of | | Total Unique Projects |
|---|---|---|---|---|---|
| | Electric | Gas | Electric | Gas | (Some projects include both electric and gas measures) |
| Retrofit | $ 19,812,923 | $ 3,463,976 | 1,098 | 119 | 1,196 |
| New Const | $ 4,957,901 | $ 422,713 | 41 | 20 | 47 |
| RCM | $ 487,595 | $ 190,836 | 65 | 59 | 89 |
| SBL | $ 6,672,212 | | 1,583 | | 1,583 |
| Traffic Signals | $ 13,360 | | 3 | | 3 |
| Large Power | $ 288,643 | | 5 | | 5 |
| Rebates | $ 2,345,305 | $ 316,211 | 793 | 350 | 968 |
| Gas Boiler Tune ups | $ 28,860 | $ 0 | - | (Incl w/Rebates) | |
| **GRAND TOTAL** | **$ 34,606,799** | **$ 4,393,736** | **3,588** | **548** | **3,891** |

All Business grants and rebates were processed through the CSY system.

# RESIDENTIAL SECTOR

## Overview

Customer Base

The Residential Sector provides incentives, rebates, contractor referrals, information and conservation value-added services for a wide variety of residential customers. The Residential structure types supported are equally varied, including single family, multifamily and low income dwellings.

Types of Incentives, Measures and Services

The Residential Sector offers a wide variety of incentives and Direct Benefits to Customers (DBtC) including mail-in rebates, point-of-sale (POS) discounts for energy-efficient products, no-charge measures such as showerheads and directly-installed CFL lamps provided to customers during HomePrint evaluations and services such as refrigerator decommissioning.

Who We Work With

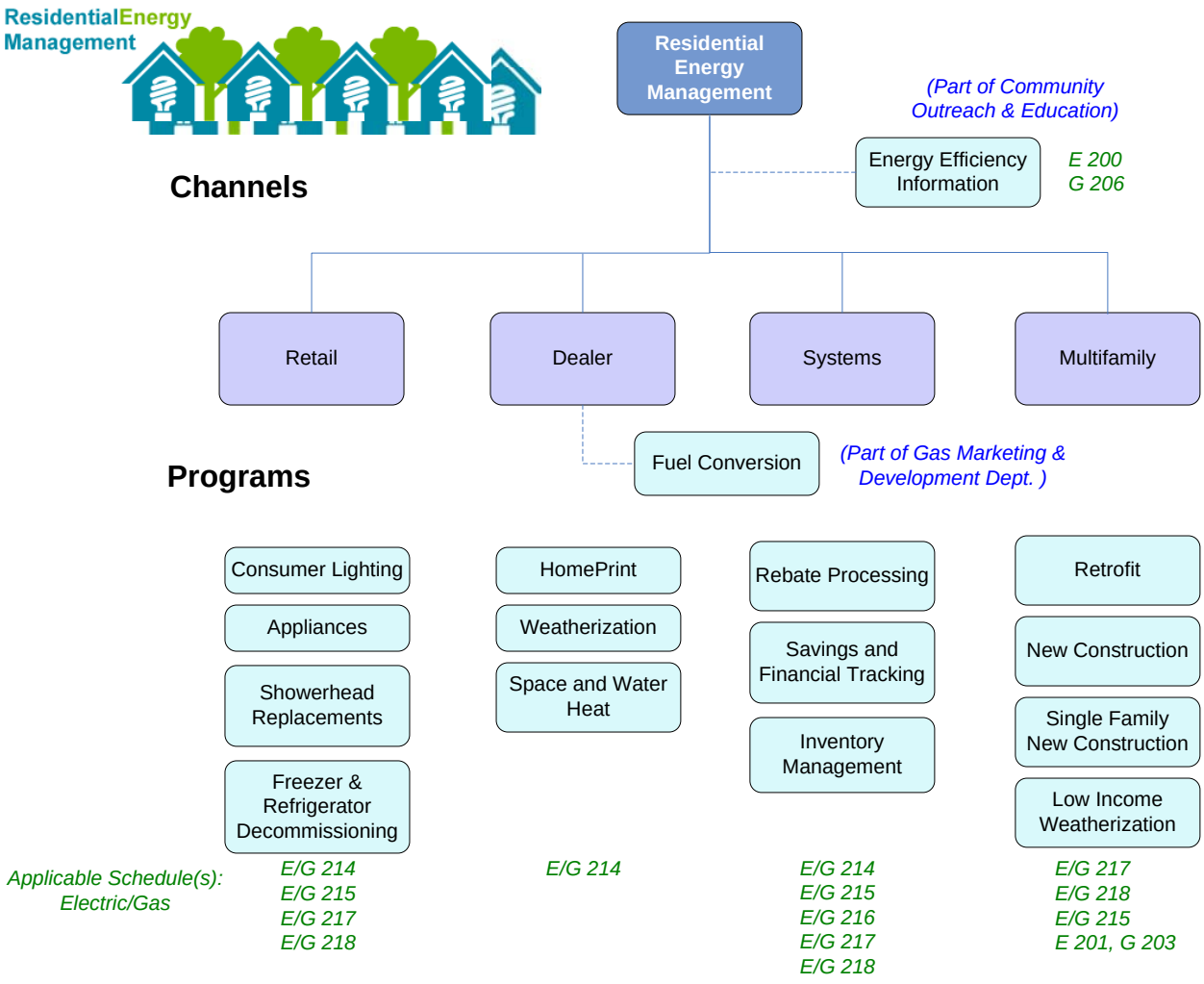
In order to deliver value-added conservation programs to customers, EES collaborates with vendors, contractors, manufacturers, distributors and retailers. PSE leverages these relationships to assist in maximizing existing and developing future programs so that implementation is seamless to our customers.

One of the primary tools used to provide maximum exposure to energy conservation programs is our training expertise. Through our extensive training programs, contractors are certified in rigorous insulation installation techniques and standards. HomePrint analyses and retailers are trained in providing product mark-downs at the point of sale and HVAC installation. EES conducts several vendor seminars throughout the year to ensure that all customer touch points have the most up-to-date information and customer satisfaction skills.

Organizational Structure

Residential Energy Management is made up of 30 dedicated managers, analysts and accomplished employees who are committed to exceeding our customers' expectations while working to maximize conservation savings. In order to maximize the Residential Sector effectiveness—responding to customer requirements, addressing contractor and trade ally questions, and providing the highest level of service possible—the organization is modeled according to the accompanying chart, Figure 3a.

**Figure 3a: Residential Energy Management Organizational Structure**




**Retail Channel**
The Retail channel focuses on services targeted to a wide variety of retail entities, including “big box” chains, hardware chains, regional concerns and local resellers. The channel manages several programs—most of which are consumer-oriented—including refrigerator decommissioning, appliances and of course, energy efficient lighting. As the above chart indicates, this channel provides services covered by several Conservation Schedules.

**Dealer Channel**
The Dealer Channel’s target market constituency consists primarily of resellers and contractors that sell, install and service HVAC systems, water heating systems, windows and insulation. The Dealer Channel operates primarily within the structure of Schedule 214; Single Family Existing. Programs within this channel are delivered to customers mostly through contractors.

**Systems Channel**
The Systems Channel plays an important support role within Residential EES. This group provides the department with the right tools, resources, and people to assist in managing their respective businesses. Rebate processing, customer fulfillment, program analysis, and savings reporting are some of the critical services this group provides.

The group has staff dedicated to process many of the residential rebates offered by its delivery channels. Rebates for windows, heat pumps, furnaces, water heaters, gas conversion, and new construction are all processed in-house.

The Systems Channel was instrumental in designing and building a customer management system (CMS) to track customer requests logged by the team of Energy Advisors in its call center. This system enables the group to manage the daily mailings to its customers as well as internal requests for brochures and supplies for program-related events.

The group's analysts handle research and data requests, program analysis, savings tracking and systems support for the various managers within Residential EES. The team is now building an integrated tracking and reporting system within CMS. This database system will merge information captured from all of its residential efficiency programs (run both internally and by outside vendors) to provide analysis to its internal program managers as well reporting to outside agencies.

**Multifamily Channel**
In addition to facilitating the installation and usage of energy efficiency measures within multifamily structures (both new and existing), this channel also manages Single Family New Construction activities.

The Multifamily New Construction program manages relationships with developers and contractors to implement cost-effective projects, many of which involve custom engineering calculations. This program collaborates extensively with a Business Sector Energy Management Engineer (EME) in developing grants, along with prescriptive incentives.

The Single Family New Construction program manages relationships with lighting showrooms (whose clientele are largely builders and developers), and builders directly, including single-proprietor and large regional operations.

Low Income Weatherization is also managed in the Multifamily Channel.

Program and Services Development

The Residential Sector regularly reassesses its suite of offerings to ensure that Customers have access to incentives and measures that will save them the maximum amount of energy and money. We partner with the Evaluation staff to review savings claim figures, delivery methods, measure costs and program cost effectiveness.[33]

[33] A detailed description of Evaluation activities is located on page 189 of this report.

This effort includes the development of pilot programs, which expose customers to newer technologies, new and innovative marketing techniques to create a sense of excitement about energy conservation, and different types of incentives and value-added services.

## Five-Year Trends

As illustrated in Figure 3b, the five-year trends indicate an average annual increase in electric savings of 17.5 percent and an overall 70 percent increase from 2006 to 2010. Figure 3c illustrates an average annual increase in gas savings of 73 percent and an overall 292 percent increase from 2006 to 2010.

**Figure 3b: Residential Electric Savings (MWh) and Expenditures Five-Year Trends**

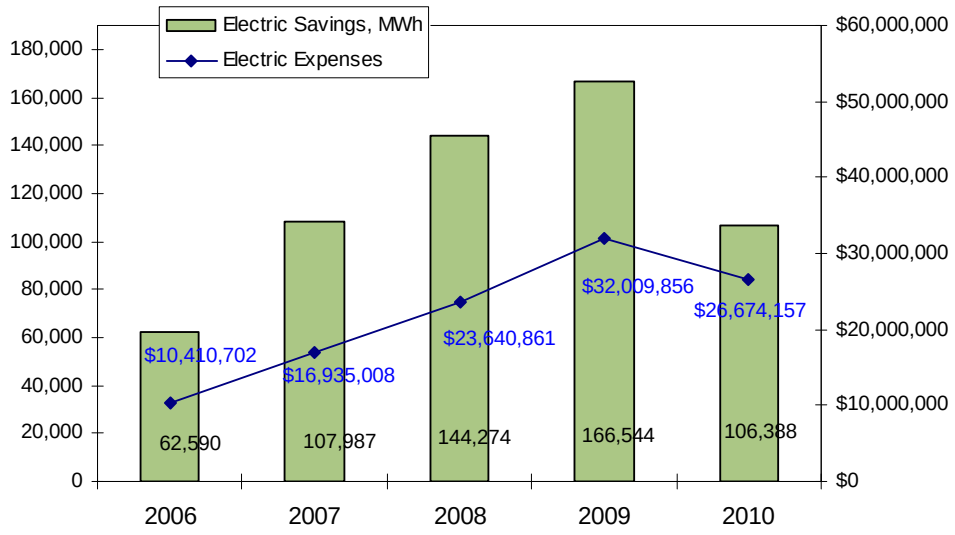
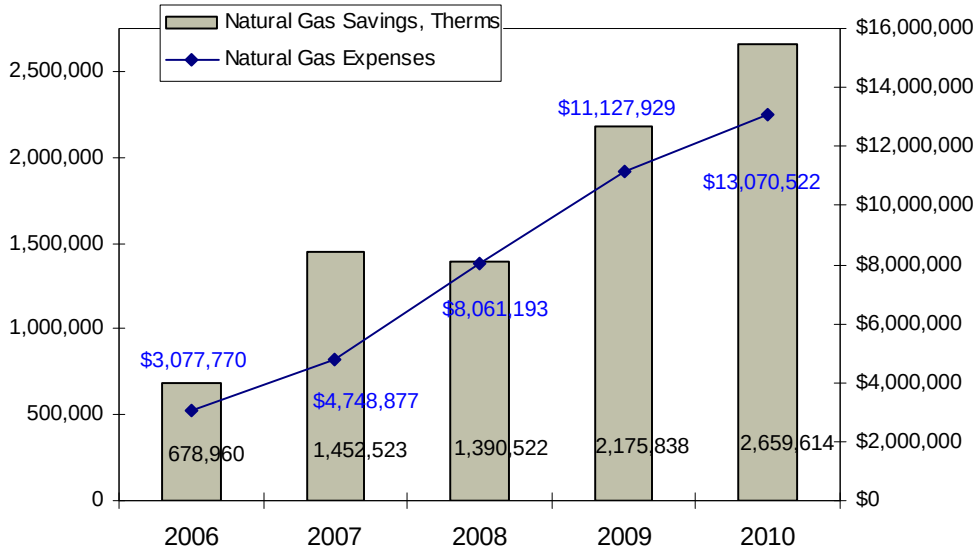


**Figure 3c: Residential Gas Savings and Expenditures Five-Year Trends**




## 2010 Summary

### Electric Programs

PSE's Single family Electric existing weatherization programs, namely rebates for windows and insulation measures, realized significant success in 2010 with greater than anticipated customer participation. This increased demand can be attributed to PSE marketing efforts, the availability of the $1,500 Federal Tax Credit, and other Federal Stimulus programs being administered in our service territory. Less than anticipated customer participation in the Compact Fluorescent Lamp (CFL) program, however, lowered overall electric savings results relative to expectations.

2010 program expenditures finished at $26,674,157, or 77 percent of year-end budget. Residential electric programs achieved savings of 106,388 MWh (12.14 aMW), which is 75 percent of year-end savings goals.

### Natural Gas Programs

PSE's Single family Gas existing weatherization program (windows and insulation), space heat program (90% furnaces), and water heat program (0.62 Energy Star storage water heaters), realized great success in 2010 with greater than anticipated customer participation. This increased demand can be attributed to PSE marketing efforts, the availability of the $1,500 Federal Tax Credit, and other Federal Stimulus programs being administered in our service territory.

2010 saw program expenditures finish the year at $13,070,522, or 119 percent of year-end budget. Residential gas programs achieved savings of 2,659,614 therms, which is 151 percent of year-end savings goals.

**Key Results Drivers**

ARRA Funding – Community Involvement

- Community ARRA funded efforts are increasing the demand for PSE incentives beyond targeted planned marketing efforts. More groups are receiving funding, primarily for in-home energy audits, which is increasing the number of "sales people" in the marketplace and therefore greater demand and program participation.

Tax Credits

- The $1,500 Federal Tax Credit, currently running through 2010, for energy efficient products and appliances (insulation, windows, space heat, water heat, etc.) has significantly increased consumer demand. Contractors are successfully integrating the credits into their sales messaging and are leveraging them for record sales on high efficient appliances and weatherization measures. A good example is that HVAC contractors are installing 95% efficient gas furnaces, almost exclusively, where prior to the tax credits they were struggling to install 90% efficient models.

Contractor Involvement

- The economic downturn has affected the job mix of HVAC and Weatherization contractors. They are concentrating their efforts on jobs where funding is available – energy efficient products and appliances. Consequently more and more contractors in the marketplace are selling and installing rebate eligible energy efficient products and appliances – at greater levels than originally anticipated.

## 2010 Programs

The 2010 performance for each program in the Residential Sector is indicated in Table 3a and 3b[34].

### Table 3a: Residential Expenditures Year to Date Performance

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| E200 | Residential Information Services | $ 406,890 | $ 475,478 | **$ 882,368** | 58.7% | $1,503,280 |
| E201 | Low Income Weatherization | $ 1,070,063 | $ 1,656,157 | **$ 2,726,219** | 123.5% | $2,207,080 |
| E202 | Energy Education | $ 266,800 | $ 173,776 | **$ 440,576** | 73.7% | $598,000 |
| E214 | Single Family Existing | | $ - | **$ -** | | $19,550,460 |
| E214 | Homeprint, Water Heat | $ 467,431 | $ 1,118,701 | **$ 1,586,132** | | |
| E214 | Residential EE Lighting Rebate | $ 3,092,699 | $ 2,263,479 | **$ 5,356,177** | | |
| E214 | Space Heat | $ 637,823 | $ 1,026,753 | **$ 1,664,576** | | |
| E214 | Refrigerator Decommissioning | $ 288,859 | $ 602,865 | **$ 891,724** | | |
| E214 | Energy Star Clothes Washers | $ 1,075,012 | $ 1,476,986 | **$ 2,551,998** | | |
| E214 | Showerheads | $ 4,257 | $ (437) | **$ 3,820** | | |
| E214 | Weatherization | $ 1,817,673 | $ 701,989 | **$ 2,519,662** | | |
| E215 | Single Family New Construction | $ 795,875 | $ 459,730 | **$ 1,255,606** | 112.9% | $1,112,280 |
| E216 | Single Family Fuel Conversion | $ 441,631 | $ 352,179 | **$ 793,810** | 38.4% | $2,068,620 |
| E217 | Multi Family Existing | $ 1,947,172 | $ 2,328,319 | **$ 4,275,490** | 90.1% | $4,747,200 |
| E218 | Multi Family New Construction | $ 451,496 | $ 755,570 | **$ 1,207,066** | 112.3% | $1,074,560 |
| E249 | Pilots, excluding: | $ 21,671 | $ 47,348 | **$ 69,019** | 6.5% | $1,069,040 |
| | Home Energy Reports | $ 248,111 | $ 201,800 | **$ 449,911** | 63.5% | $708,860 |
| | **Total Electric Programs** | $ 13,033,463 | $ 13,640,693 | **$ 26,674,157** | 77.0% | $34,639,380 |
| G203 | Low Income Weatherization | $ 234,712 | $ 603,738 | **$ 838,449** | 147.7% | $567,500 |
| G206 | Residential Information Services | $ 239,755 | $ 261,294 | **$ 501,049** | 80.3% | $624,000 |
| G207 | Energy Education | $ 162,286 | $ 94,908 | **$ 257,194** | 73.5% | $350,000 |
| G214 | Single Family Existing | | $ - | **$ -** | | $7,365,000 |
| G214 | HomePrint | $ 177,656 | $ 408,275 | **$ 585,930** | | |
| G214 | Water Heater | $ 385,443 | $ 252,689 | **$ 638,132** | | |
| G214 | Space Heat | $ 2,107,179 | $ 715,747 | **$ 2,822,926** | | |
| G214 | Showerheads | $ 9,035 | $ (291) | **$ 8,744** | | |
| G214 | Weatherization | $ 4,105,038 | $ 1,688,274 | **$ 5,793,312** | | |
| G214 | Energy Star Apliances | $ - | $ - | **$ -** | | |
| G215 | Single Family New Construction | $ 335,130 | $ 329,970 | **$ 665,100** | 68.4% | $972,500 |
| G217 | Multi Family Existing | $ 284,368 | $ 195,357 | **$ 479,725** | 139.9% | $343,000 |
| G218 | Multi Family New Construction | $ 59,031 | $ 128,697 | **$ 187,728** | 74.2% | $253,000 |
| G249 | Pilots, excluding: | $ 14,984 | $ 70,361 | **$ 85,345** | 47.8% | $178,500 |
| | Home Energy Reports | $ 115,406 | $ 91,481 | **$ 206,887** | 57.5% | $360,000 |
| | **Total Gas Programs** | $ 8,230,022 | $ 4,840,500 | **$ 13,070,522** | 118.7% | $11,013,500 |

[34] In Table 3a, Gas Programs, Schedule G214, Energy Star Appliances, the expenditures are captured under the electric portion of that program. Gas savings are derived from analyses of rebate applications from PSE gas service territories.

## Table 3b: Residential Savings Year to Date Performance

| 2010 | Savings | 2010 Quarterly View: MWh and Therms | | | | 2010 Goal |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Goal | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| E200 | Residential Information Services | n/a | n/a | **n/a** | | 0 |
| E201 | Low Income Weatherization | 1,370 | 1,331 | **2,701** | 195.7% | 1,380 |
| E202 | Energy Education | 712 | 0 | **712** | 51.6% | 1,380 |
| E214 | Single Family Existing | | 0 | **0** | | 0 |
| E214 | Homeprint, Water Heat | 302 | 1,011 | **1,313** | 1.2% | 109,480 |
| E214 | Residential EE Lighting Rebate | 35,097 | 21,594 | **56,690** | | 0 |
| E214 | Space Heat | 1,875 | 3,686 | **5,561** | | 0 |
| E214 | Refrigerator Decommissioning | 1,920 | 3,804 | **5,724** | | 0 |
| E214 | Energy Star Clothes Washers | 2,010 | 1,360 | **3,371** | | 0 |
| E214 | Showerheads | 587 | 0 | **587** | | 0 |
| E214 | Weatherization | 6,471 | 3,621 | **10,091** | | 0 |
| E215 | Single Family New Construction | 1,398 | 1,248 | **2,646** | 82.2% | 3,220 |
| E216 | Single Family Fuel Conversion | 1,819 | 1,344 | **3,162** | 40.4% | 7,820 |
| E217 | Multi Family Existing | 4,848 | 6,242 | **11,090** | 73.1% | 15,180 |
| E218 | Multi Family New Construction | 1,013 | 1,539 | **2,552** | 111.0% | 2,300 |
| E249 | Pilots, excluding: | 50 | 138 | **188** | 20.5% | 920 |
| | Home Energy Reports | 0 | 0 | **0** | | 0 |
| | **Total Electric Programs** | 59,471 | 46,917 | **106,388** | 75.1% | 141,680 |
| G203 | Low Income Weatherization | 14,365 | 41,835 | **56,200** | 208.1% | 27,000 |
| G206 | Residential Information Services | 0 | 0 | **0** | | 0 |
| G207 | Energy Education | 48,214 | 0 | **48,214** | 74.8% | 64,500 |
| G214 | Single Family Existing | | 0 | **0** | | 0 |
| G214 | HomePrint | 709 | 11,107 | **11,816** | 0.8% | 1,408,000 |
| G214 | Water Heater | 149,587 | 101,092 | **250,679** | | 0 |
| G214 | Space Heat | 572,430 | 394,050 | **966,480** | | 0 |
| G214 | Showerheads | 37,908 | 0 | **37,908** | | 0 |
| G214 | Weatherization | 734,305 | 304,713 | **1,039,018** | | 0 |
| G214 | Energy Star Apliances | 22,638 | 15,132 | **37,770** | | 0 |
| G215 | Single Family New Construction | 52,913 | 57,733 | **110,646** | 61.5% | 180,000 |
| G217 | Multi Family Existing | 40,483 | 22,921 | **63,404** | 139.3% | 45,500 |
| G218 | Multi Family New Construction | 4,743 | 13,512 | **18,255** | 84.9% | 21,500 |
| G249 | Pilots, excluding: | 1,944 | 17,280 | **19,224** | 106.8% | 18,000 |
| | Home Energy Reports | 0 | 0 | **0** | | 0 |
| | **Total Gas Programs** | 1,680,239 | 979,375 | **2,659,614** | 150.7% | 1,764,500 |

Figure 3d and Figure 3e on the following page are representations of proportions of EES Residential programs savings and spending for electric and gas.

**Figure 3d: Residential Sector Savings, as percents of totals**

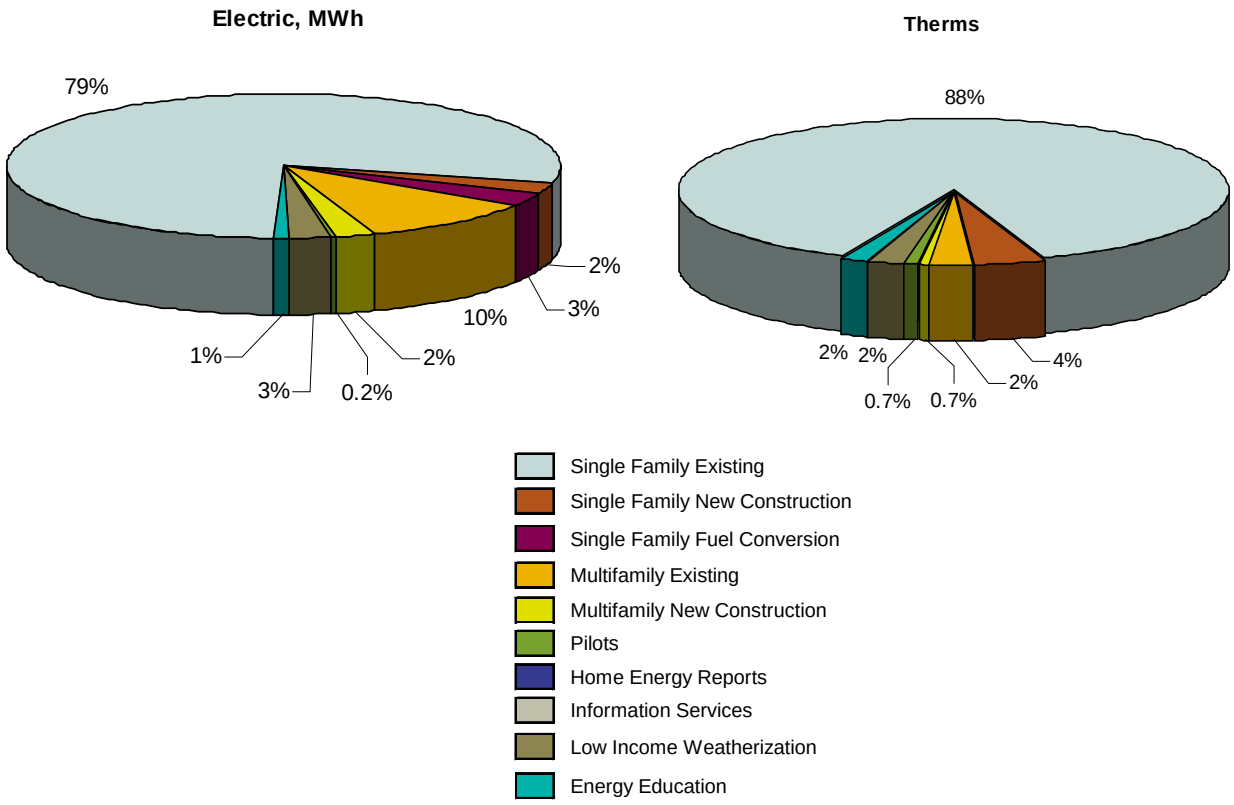
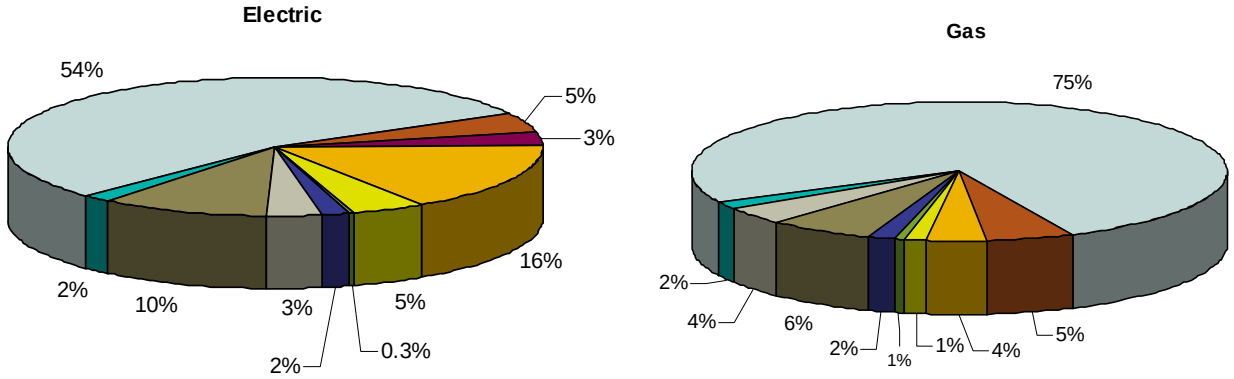



**Figure 3e: Residential Sector Expenses, as percents of totals**

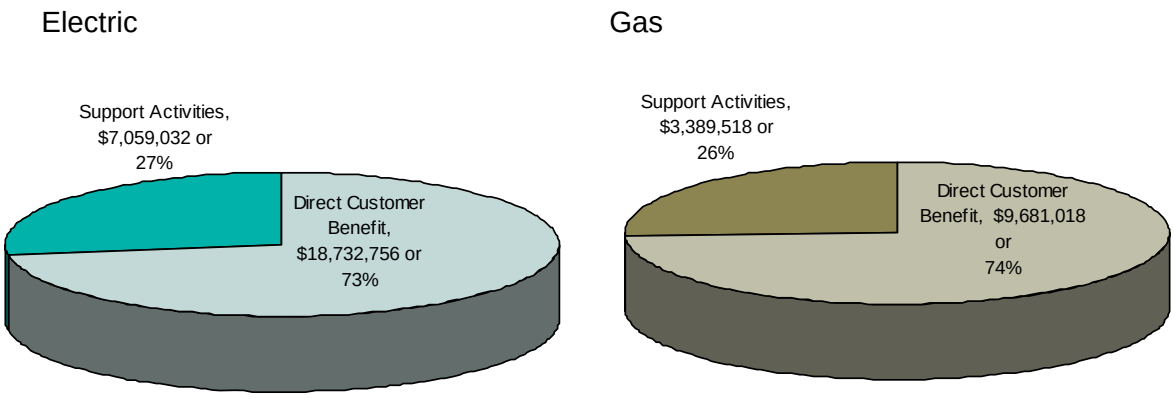


## Direct Benefit to Customer

As a measure of how effectively PSE is using ratepayer dollars, PSE considers Direct Benefit to Customer to be defined as rebates, grants, credits or services that are of value to customers. These services can include, but aren't limited to, credits on a monthly bill, upstream incentive provided to channel partners or trade allies—either within our service territory or regionally—and free energy efficient devices available by mail.

For example, at many retailers, customers receive a point of sale discount when they purchase a CFL bulb. Similarly, customers are spared the trouble of transporting their old refrigerator to the local transfer station when they take advantage of the Refrigerator Decommissioning program. The below charts represent the overall Residential Sector ratios for electric and gas. As noted in Figure 3f, the DBtC for electric programs is 73 percent and the gas DBtC is 74 percent. Program-specific DBtC ratios are indicated in the applicable overviews.

**Figure 3f: Residential Sector Direct Benefit to Customer Ratio**




Support activities include a certain amount of administrative functions necessary to efficiently operate the department and maintain accurate recordkeeping, provide required reporting, and maintain good customer service. Additionally, the noted Support Activities include, but are not limited to, marketing—including the creation and distribution of energy efficiency brochures, web and media content—market research, all program support functions, including rebate processing, reporting, systems support and analyses. Evaluation functions, EME project evaluation and verification analyses, trade ally/contractor training, community event participation and all customer renewable program support is also included in this category. Each of these is critical to providing ratepayers with cost-effective, value-added energy efficiency programs.

The individual program synopses below will provide additional details of our achievements through the first two quarters of 2010.

## Residential Cost-Effectiveness

The below Table 3c represents the actual calculated Utility Cost and Total Resource Cost benefit-to-cost (B/C) tests for the Residential Sector.

**Table 3c: Residential Sector Cost Effectiveness Tests**

| Benefit to Cost Ratios | | |
|---|---|---|
| | Utility Cost | Total Resource Cost |
| **Electric** | 3.32 | 2.55 |
| **Gas** | 2.83 | 1.09 |

Table 3d and Table 3e provide highlights of data[35] used to determine the Sector's UC B/C and TRC B/C, respectively. The complete UC and TRC tables are presented in Appendix D of this report.

[35] Some fields in the TRC tables, which do not affect the indicated cost-effectiveness results and are included in the Appendix D Cost-Effectiveness tables, are hidden in Table 3e for illustration and to preserve formatting of the report.

## Table 3d: Residential Sector UC Cost Effectiveness Data

**Electric**

| Sch. No. | Program Name | Meas Life | Electric End-Use Type | kWh Savings | Program Overhead Cost | Incentive Payments | Total Program Administrator Cost | Levelized Program Administrator Cost per kWh | Cost Eff. Standard Value per kWh | UC B/C Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| **200** | Residential Information Services | | | - | $ 882,368 | $ - | $ 882,368 | | | |
| **201** | Residential Low-Income | 20 | SFSH | 2,701,016 | $ 268,995 | $ 2,457,225 | $ 2,726,219 | $ 0.105 | $ 0.187 | **1.79** |
| **202** | Energy Education | 10 | LIGHTING | 711,883 | $ 440,576 | $ - | $ 440,576 | $ 0.093 | $ 0.116 | **1.25** |
| **214** | Existing Residential Single Family | 9 | LIGHTING | 83,337,082 | $ 6,368,612 | $ 8,205,478 | $ 14,574,090 | $ 0.028 | $ 0.114 | **4.03** |
| **215** | Residential Single Family New Construction | 14 | LIGHTING | 2,645,769 | $ 471,785 | $ 783,821 | $ 1,255,606 | $ 0.058 | $ 0.124 | **2.12** |
| **216** | Fuel Conversion | 30 | SFSH | 3,162,250 | $ 111,293 | $ 682,517 | $ 793,810 | $ 0.023 | $ 0.203 | **8.89** |
| **217** | Multi-Family Existing Structure | 16 | SFSH | 11,089,740 | $ 1,102,195 | $ 3,173,295 | $ 4,275,490 | $ 0.044 | $ 0.179 | **4.04** |
| **218** | Multi-Family New Construction | 17 | LIGHTING | 2,551,999 | $ 134,993 | $ 1,072,073 | $ 1,207,066 | $ 0.053 | $ 0.129 | **2.44** |
| **249** | Electric Pilot Programs, excluding: | 18 | SFSH | 188,178 | $ 30,719 | $ 38,300 | $ 69,019 | $ 0.040 | $ 0.183 | **4.59** |
| | Home Energy Reports | | | - | $ 449,911 | | $ 449,911 | | | |
| | Total Residential Efficiency Programs | 11 | | 106,387,917 | $ 10,261,448 | $16,412,709 | $ 26,674,157 | $ 0.036 | $ 0.118 | **3.32** |

**Gas**

| Sch. No. | Program Name | Meas Life | Gas End-Use Type | Therm Savings | Program Overhead Cost | Incentive Payments | Total Program Administrator Cost | Levelized Program Administrator Cost per Therm | Cost Eff. Standard Value per Therm | UC B/C Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| **203** | Residential Low Income | 28 | SH | 56,200 | $ 84,770 | $ 753,679 | $ 838,449 | $ 1.381 | $ 1.457 | **1.05** |
| **206** | Residential Information Services | | | - | $ 501,049 | $ - | $ 501,049 | | | |
| **207** | Energy Education | 10 | SH | 48,214 | $ 257,194 | | $ 257,194 | $ 0.804 | $ 1.198 | **1.49** |
| **214** | Existing Residential Singe Family | 22 | SH | 2,343,671 | $ 2,174,629 | $ 7,674,416 | $ 9,849,045 | $ 0.420 | $ 1.388 | **3.30** |
| **215** | Residential Single Family New Construction | 16 | SH | 110,646 | $ 241,060 | $ 424,040 | $ 665,100 | $ 0.690 | $ 1.300 | **1.88** |
| **217** | Multi-Family Existing Structures | 24 | SH | 63,404 | $ 147,698 | $ 332,027 | $ 479,725 | $ 0.734 | $ 1.413 | **1.93** |
| **218** | Multi-Family New Construction | 18 | SH | 18,255 | $ 67,853 | $ 119,875 | $ 187,728 | $ 1.116 | $ 1.332 | **1.19** |
| **249** | Natural Gas Pilot Program excluding: | 15 | SH | 19,224 | $ 31,945 | $ 53,400 | $ 85,345 | $ 0.527 | $ 1.285 | **2.44** |
| | Home Energy Reports | | | - | $ 206,887 | $ - | $ 206,887 | | | |
| | Total Residential Efficiency Programs | 22 | | 2,659,614 | $ 3,713,085 | $ 9,357,437 | $ 13,070,522 | $ 0.491 | $ 1.388 | **2.83** |

## Table 3e: Residential Sector TRC Cost Effectiveness Data

**Electric**

| Sch. No. | Program Name | Meas Life | kWh Savings | Program Overhead Cost | Incentive | Customer Cost | Incremental Measure Cost | Total Resource Cost | Total Benefits per kWh | TRC B/C Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| **200** | Residential Information Services | | - | $ 882,368 | $ - | $ - | $ - | $ 882,368 | | |
| **201** | Residential Low-Income | 20 | 2,701,016 | $ 268,995 | $ 2,457,225 | $ - | $ 2,457,225 | $ 4,316,939 | 0.206 | **1.24** |
| **202** | Energy Education | 10 | 711,883 | $ 440,576 | $ - | $ - | $ - | $ 440,576 | 0.128 | **1.37** |
| **214** | Existing Residential Single Family | 9 | 83,337,082 | $ 6,368,612 | $ 8,205,478 | $ 18,200,305 | $ 26,405,784 | $ 32,774,396 | 0.125 | **1.97** |
| **215** | Residential Single Family New Construction | 14 | 2,645,769 | $ 471,785 | $ 783,821 | $ 87,866 | $ 871,687 | $ 1,343,472 | 0.136 | **2.18** |
| **216** | Fuel Conversion | 30 | 3,162,250 | $ 111,293 | $ 682,517 | $ 7,591,778 | $ 8,274,295 | $ 8,385,588 | 0.223 | **0.93** |
| **217** | Multi-Family Existing Structure | 16 | 11,089,740 | $ 1,102,195 | $ 3,173,295 | $ 2,991,153 | $ 6,164,448 | $ 7,266,644 | 0.197 | **2.61** |
| **218** | Multi-Family New Construction | 17 | 2,551,999 | $ 134,993 | $ 1,072,073 | $ 48,300 | $ 1,120,373 | $ 1,255,366 | 0.142 | **2.58** |
| **249** | Electric Pilot Programs, excluding: | 18 | 188,178 | $ 30,719 | $ 38,300 | $ 29,868 | $ 68,168 | $ 98,887 | 0.201 | **3.53** |
| | Home Energy Reports | | | $ 449,911 | | | | $ 449,911 | | |
| | Total Residential Efficiency Programs | 19 | 106,387,917 | $ 10,261,448 | $ 16,412,709 | $ 28,949,271 | $ 45,361,980 | $ 57,214,148 | 0.145 | **2.55** |

**Gas**

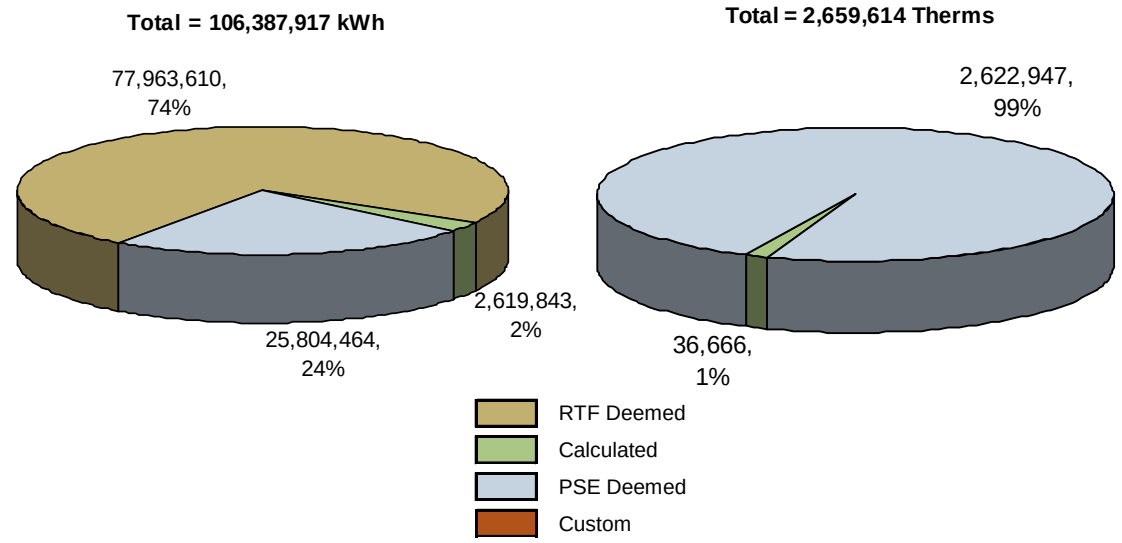
| Sch. No. | Program Name | Meas Life | Therm Savings | Program Overhead Cost | Incentives | Customer Cost | Incremental Measure Cost | Total Resource Cost | Total Benefits per Therm | TRC B/C Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| **203** | Low Income | 28 | $ 56,200 | $ 84,770 | $ 753,679 | | $ 753,679 | $ 1,654,228 | 1.597 | **0.59** |
| **206** | Residential Information Services | | $ - | $ 501,049 | | | $ - | $ 501,049 | 0.000 | |
| **207** | Energy Education | 10 | $ 48,214 | $ 257,194 | | | $ - | $ 257,194 | 1.313 | **1.63** |
| **214** | Single Family Existing | 22 | $ 2,343,671 | $ 2,174,629 | $ 7,674,416 | $ 22,146,581 | $ 29,820,996 | $ 31,995,625 | 1.522 | **1.12** |
| **215** | Single Family New Construction | 16 | $ 110,646 | $ 241,060 | $ 424,040 | $ 457,371 | $ 881,411 | $ 1,122,471 | 1.426 | **1.22** |
| **217** | Multi Family Existing | 24 | $ 63,404 | $ 147,698 | $ 332,027 | $ 485,735 | $ 817,762 | $ 965,460 | 1.549 | **1.05** |
| **218** | Multi Family New Construction | 18 | $ 18,255 | $ 67,853 | $ 119,875 | $ 11,690 | $ 131,565 | $ 199,418 | 1.461 | **1.23** |
| **249** | Pilots excluding : | 15 | $ 19,224 | $ 31,945 | $ 53,400 | $ 220,275 | $ 273,675 | $ 305,620 | 1.408 | **0.75** |
| | Home Energy Reports | | | $ 206,887 | | | | $ 206,887 | | |
| | Total Residential Efficiency Programs | 22 | $ 2,659,614 | $ 3,713,085 | $ 9,357,437 | $ 23,321,652 | $ 32,679,089 | $ 37,207,954 | 1.522 | **1.09** |

## Savings Ratios by Measure Type

Figure 3g illustrates the distribution of savings in the Residential Sector by measure type. It is important to note that gas savings are treated differently in this type of analysis. Since the RTF does not deem gas prescriptive savings, all prescriptive gas measures are considered PSE Deemed, Calculated or Custom. In contrast to the savings distribution in the Business Sector[36], it is apparent that the majority of Residential savings are derived from RTF Deemed measures[37].

[36] A similar chart is included in the Business Sector Overview, beginning on page 96.
[37] A complete list of prescriptive and calculated measures used by PSE is included in this Annual report as Appendix B.

**Figure 3g: Residential Sector Savings Distributions by Measure Type**




## Continuous Improvement

Programs within the Residential Energy Management Sector implemented several process revisions to improve efficiencies, reduce cost and maximize customer satisfaction. From reducing service costs in the Retail Channel to revising the HomePrint program to improve cost-effectiveness to saving $200,000 in inventory storage fees, the following program-specific reviews will outline key EES achievements and revisions.

# RESIDENTIAL PROGRAMS

## Residential Energy Efficiency Information

Schedules E200/G206

### Description

Although Energy Efficiency Information provides services to both residential and business customers, the program summary is presented here, in the Residential Sector section of this report. This is to preserve continuity with previous reports as well as to maintain the numerical sequence of our Schedules in the report. In future reports, this program may appear either separately in the Residential and Business sectors or in its own separate section.

These services consist of five components that complement each other to provide information for customers on energy programs and efficiency improvements tailored to their interests and energy-use concerns.

*Energy Advisors*

The Energy Advisors research, analyze, resolve and respond to customer inquiries, issues and requests related to energy efficiency and conservation as well as promote and explain energy efficiency and renewable programs and their advantages. They represent PSE in an effort to promote and cross market products and services by presenting and providing educational materials to employees, organizations and community groups. Energy advisors receive training and instruction in departmental procedures and are expected to use good judgment in independently responding to recurring Customer issues and/or complaints. Unique, difficult or unusual Customer service issues are referred to the senior energy advisor**.** They consult with customers to help lower bills and educate them regarding energy efficiency and conservation. Energy advisors promote PSE energy efficiency and conservation programs and services at community and corporate outreach events such as trade and home shows, fairs, educational workshops and trainings.

Customers have access to speak directly to an Energy Advisor through a toll-free number, **1-800-562-1482**, Monday through Friday, 8am to 5pm.

*Energy Efficiency Brochures*

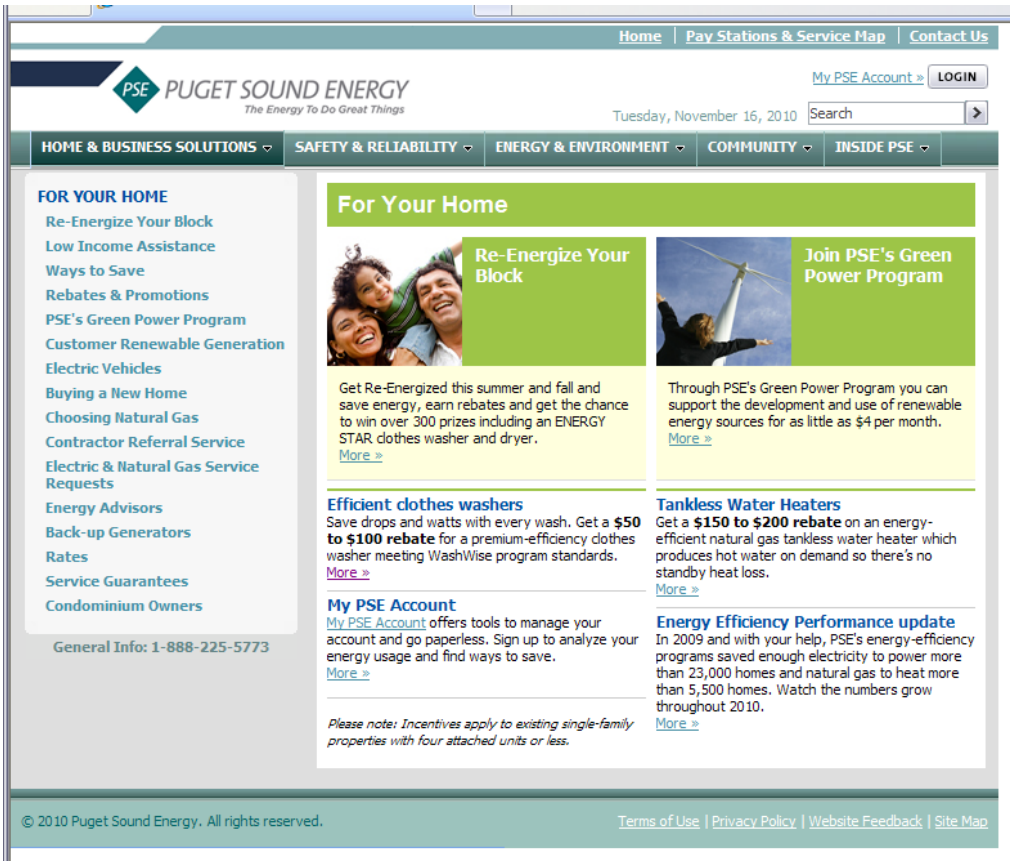
PSE provides brochures and how-to guides on numerous energy efficiency opportunities, including low-cost equipment, weatherization measures, major weatherization improvements, and equipment upgrades. This information includes investment and savings estimates where appropriate. These brochures are available to customers in paper form and online at the PSE Web site. Where required by tariff, brochures are included as bill inserts.

*On Line Services*

To assist customers with information and questions, a section of the PSE web site (www.pse.com) is dedicated to energy efficiency and energy management for customers that prefer on-line services. Figure 4a is an example of PSE's Energy Efficiency Services' website. PSE provides "Energy at Home", a quarterly e-newsletter promoting energy efficiency services. This free service contains articles about energy efficiency, timely seasonal tips, links to PSE program information and coupons for energy efficient products. A similar bimonthly "Energy in Business" e-newsletter features case studies of PSE energy efficiency projects, as well as announcements of upcoming training opportunities. Other services include an email box, and links from a customer's Energy Tracker information and graphs to energy efficient tips and ideas.

Revisions to the PSE.com website commenced in 2010, with several pages incorporating an interface with PSE's Re-Energize campaign. Details about the Re-Energize campaign are contained in the Mainstreaming Green discussion on page 176. Figures 4a and 4b are examples from EES pages on PSE.com.

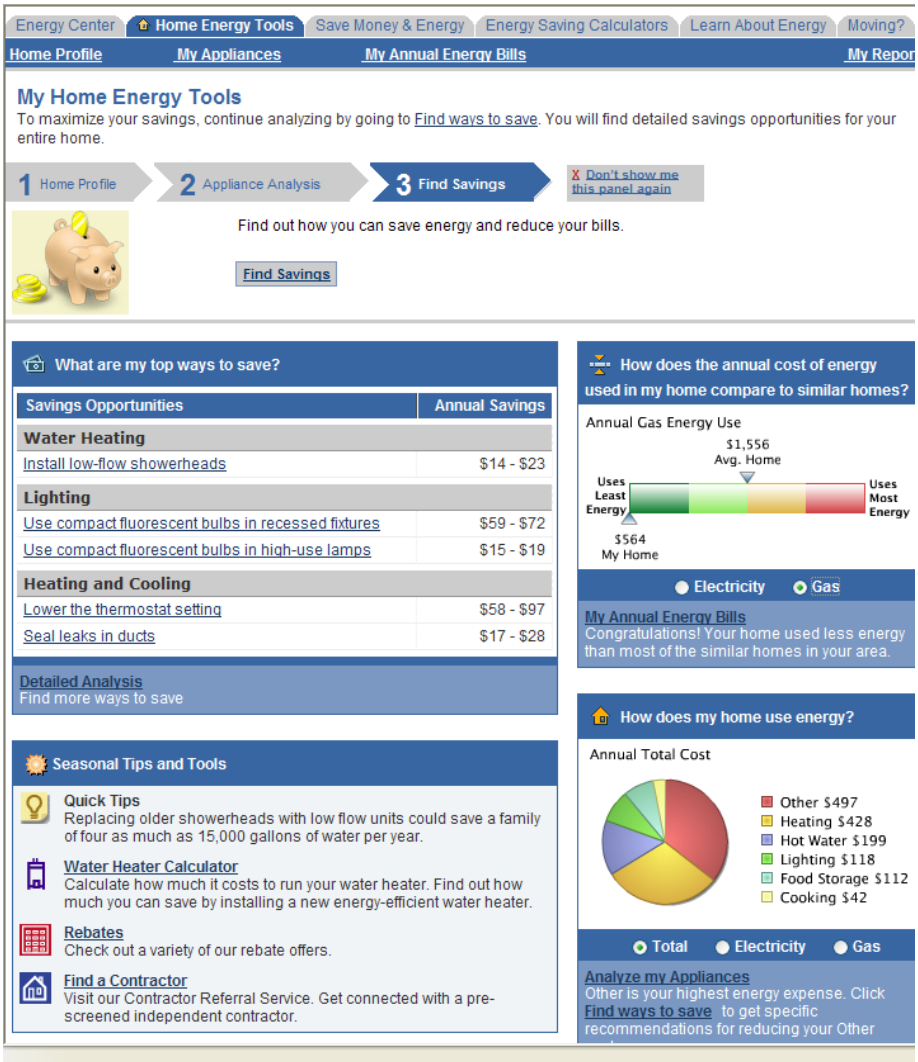
**Figure 4a: EES Residential Website on PSE.com**



*On-Line Self-Audit*
Personal Energy Profile (residential) and Business Energy Profile (small business) are free energy self-audit surveys, with PSE follow-up analysis and a report that provides customers with specific and customized energy efficiency recommendations. These services identify current energy costs and consumption by end-use, and provide a list of specific recommendations for energy efficiency opportunities and their associated savings estimates.

*MY PSE Account* incorporates easy-to-navigate tabs and menus that a customer can use to query their billing history and details and an analyzer tool that explains what is included in their bill. An Example of a My PSE Account home page is illustrated in Figure 4b. Customers can access energy analysis tools to better understand what changes can be made to reduce energy usage. Below is a sample energy tools page. The Business Energy Profile is available only to online users.

Figure 4b: My PSE Account Home Page on PSE.com



Events

Energy Efficiency Services participates in community, local, and regional events annually. These events include home shows, trade shows, seminars, corporate events and community outreach. This provides unique opportunities for EES staff to interact directly with customers and discuss a variety of products, programs and services that PSE offers. EES staff can also match customer interests and needs with Energy Efficiency programs.

The event strategy team provides specific criteria for event participation that matches overall business and strategy of the programs supporting EES programs with emphasis on presence, affiliation and relevance. Each event holds a particular value to stakeholders and relates to objectives of PSE EES programs. The Events team has been redesigning and organizing the events management processes in order to improve the customer experience. The Events strategy team—including representatives from marketing, outreach and programs—assesses event requests, and reviews event opportunities in advance, with a focus on tactical planning for and vetting events.


*A typical PSE booth at a consumer retail Lighting event.*


*An EES staff member engages customers at the 2010 Seattle Home Show.*

**Program Performance**

Table 4a provides a 2010 summary of expenditures for Residential Information Services.

**Table 4a: Residential Information Services Year to Date Performance**

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| E200 | Residential Information Services | $ 406,890 | $475,478 | **$882,368** | 58.7% | $ 1,503,280 |
| G206 | Residential Information Services | $ 239,755 | $261,294 | **$501,049** | 80.3% | $ 624,000 |

## 2010 Program Revisions

There were no revisions to the Information Services program during 2010.

## 2010 Accomplishments and Activities:

January through June

Recently, we have relocated three of the eight energy advisors to support local business offices by representing Energy Efficiency as community challenges and partnerships develop. Olympia, South Whidbey and Bothell are currently staffed with an Energy Advisor as Energy Efficiency's representative. We provide improved customer service with person to person contact with walk in customers, and are more integrated with other PSE departments such as Customer Care and Customer Construction Services.

January through June event activities decreased slightly from last year, primarily due to economic conditions and a mild winter. In the first six months of 2010, PSE participated in or sponsored 71 residential events and 35 commercial events.

Earth Day events around the region request Puget Sound Energy participation each year and are recognized in April. PSE is an active participant in many of these Earth Day events as the focus is usually energy efficiency, renewable awareness and sustainable activities. Four of the events in which PSE participated were at companies that created an "Employee Awareness" event specifically around Earth Day. In Thurston County, it was hosted by the Washington State Employment Security Department, State Farm has an event in Pierce County, and Boeing had their Earth Day festivities in King and Pierce counties.

Attendance for the two Boeing events alone attracted about 2,300 employees. This is the third year that Boeing asked PSE to be a main source of information for their event. State Farm was also eager for PSE to participate in their Earth Day event which attracted about 1,200 employees. In addition to company-sponsored Earth Day events, communities also hosted events; most notable was the Community Energy Forum on Bainbridge Island located at Sakai Intermediate School. The event focused on creating positive power solutions and pathways to sustainable energy practices.

July through December

We continue to promote Energy Efficiency in the communities with senior energy advisors on Whidbey Island and Olympia. Additionally, a Senior Energy Advisor is located in the Customer Care Department to train and enhance PSE's customer service representatives' awareness of our energy efficiency programs.

EES participated in a variety of community, local and regional events during the months of July through December. Thirty three were in support of local communities to promote partnerships, energy efficiency and renewable programs.

For the second year, the Microsoft Product Fair offered energy efficiency and renewable information to 15,000 Microsoft employees, a 41 percent increase from 2009. Microsoft employees participated in a CFL and incandescent bulb demonstration and those who are PSE electric customers had an opportunity to enroll in the Green Power program.

PSE provided Coupeville and Freeland libraries with customer workshops that provided education and training on how to use the Power Cost Monitors and Kill A Watt devices.

Multifamily Existing and Single Family New Construction Events

The niche markets of Single-family New Construction (SFNC) and Multifamily Existing (MFE) programs target direct-to-business customers ranging from builders, developers, apartment complex owners and property managers - to contractors and various green building associations. Event outreach is one way to educate larger volumes of customers. Each year these programs analyze the previous year's accomplishments and identify the upcoming events being offered by various industry partners. From there, they create a plan to target and prioritize the events that reach these programs' primary and sometimes secondary business audiences.


*An EES staff member addresses multifamily-specific questions at a 2010 event.*

Various business tactics and marketing outreach are planned for each: including not limited to, program educational presentations, new collateral development, media buys, logo visibility in programs and event websites, creation of booth displays and special signage, e-news releases, signup request forms to track new leads, customer surveys, and post debrief follow-ups.

The SFNC program conducted two large-scale conferences and 11 smaller to mid-sized events/workshops. The MFE program completed eight events in 2010. One multifamily lead at a multifamily event can result in a tremendous amount of energy savings, as one complex can contain hundreds of multifamily units. Depending on the event type, attendance can be anywhere from thousands to less than 20. Typical returns can be up to 35 leads generated.

The MFE program works as a key partner to position for the Annual TRENDS Rental Housing Management Conference and Tradeshow. In its 26th year, TRENDS is one of the largest multifamily conferences in the Northwest, attracting approximately 15,000 multifamily property owners and maintenance managers each year. The strategic positioning for this event begins almost a year in advance. This year, PSE concentrated on ways to streamline customer engagement and generate more green-focused customer leads. A concept was developed to create a “green row”; focusing on vendors/businesses committing to building green. The end results for PSE included securing a green row and increased visibility, staffed by members of PSE, Seattle City Light and Cascade Natural Gas and secured the participation of five of PSE’s Multifamily weatherization partners. PSE's updated Multifamily exhibition messaging also helped to secure more leads at this event. New signage promoted “Sign up for a Free Energy Audit” that resulted in 35 scheduled audits to proceed in 2011.

Table 4b represents several key activities performed by energy advisors throughout the year; both in office and event venues.

**Table 4b: Residential Information Services Year to Date Performance**

| Activity | Jan - June | July - Dec | Total |
|---|---|---|---|
| Residential Energy Management Bill inserts | 844 | 383 | **1,227** |
| Phone Queries | 38,124 | 47,907 | **86,031** |
| Emails | 1,964 | 1,845 | **3,809** |
| Energy Efficiency Brochures (During event participation) | 26,000 | 52,868 | **78,868** |

## Low Income Weatherization

Schedules E201/G203

### Description

Key stakeholders are low-income gas and electric Customers; county and municipal low-income weatherization agencies in the PSE service area, Washington State Department of Commerce ("Department of Commerce" or "Commerce"), and participating weatherization contractors and suppliers.

Residential Low Income Weatherization provides funding of many cost-effective home weatherization Measures for low-income Customers receiving gas and/or electric heat from PSE. Funds are used for single-family, multi-family and mobile home residences. Some Measures which do not meet standard cost-effectiveness tests may also be approved.

In addition, this program provides funding for energy-related repairs and energy education. An energy-related repair is one that is necessary (1) to install a weatherization Measure properly, (2) to protect the health and/or safety of the occupants, (3) to address an existing problem that weatherization could aggravate or (4) to protect the integrity of the installed Measure. Examples include but are not limited to:

- Repair roof leaks
- Electrical inspection and repairs
- Mold/mildew remediation
- Rodent, insect and pest extermination
- Bath and kitchen ventilation upgrades
- Furnace or water heater repairs or replacement.

Sources of Low Income Weatherization funding include, but are not limited to, Electric Rider, Gas Tracker, Company funds, BPA credits or other federal or state government programs and proceeds from the sale of Renewable Energy Credits as made available in Docket No. UE-070725 ("REC Funding").

For those funds that must meet a cost effectiveness standard, up to 30 percent may be applied to energy-related repairs that are necessary to effect the installation of other cost-effective Measures. The final percentage allocated will be determined according to the overall program cost-effectiveness.

Energy education include those Measures that would help Customers understand how to benefit from Measures installed in their home and to further reduce energy consumption through behavior modification.

### Program Performance

Tables 4c and 4d provide a 2010 summary of expenditures and energy savings for the Low Income Weatherization program.

### Table 4c: Low Income Weatherization 2010 Expenditures

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| E201 | Low Income Weatherization | $ 1,070,063 | $1,656,157 | **$2,726,219** | 123.5% | $ 2,207,080 |
| G203 | Low Income Weatherization | $ 234,712 | $603,738 | **$838,449** | 147.7% | $ 567,500 |

### Table 4d: Low Income Weatherization 2010 Savings

| 2010 | Savings | 2010 Quarterly View: MWh and Therms | | | | 2010 Goal |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Goal | |
| Electric | Electric | Electric (MWh) | | | | Electric |
| Gas | Gas | Gas (Therms) | | | | Gas |
| E201 | Low Income Weatherization | 1,370 | 1,331 | **2,701** | 195.7% | 1,380 |
| G203 | Low Income Weatherization | 14,365 | 41,835 | **56,200** | 208.1% | 27,000 |

## 2010 Program Revisions

Several new measures were implemented in 2010, including multifamily space heat and water heating gas boiler replacements, common area lighting, solar pool heaters and common area heating upgrades,

## Process Revisions

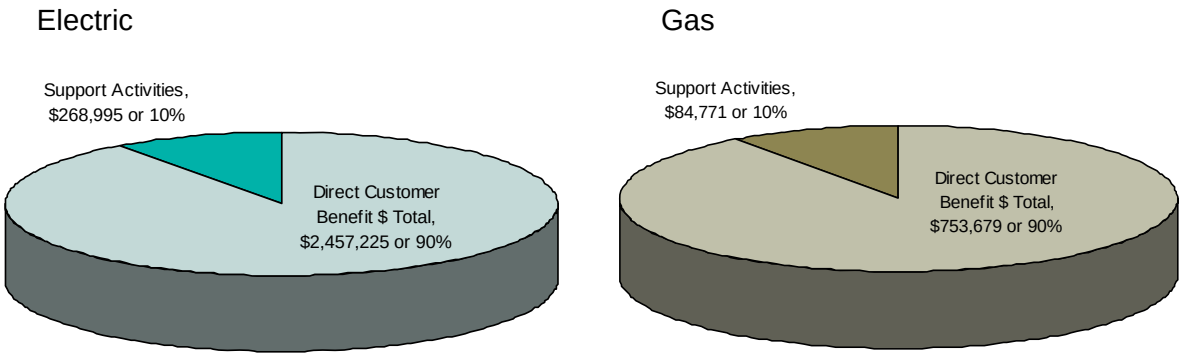
In June, 2010, the team implemented a process where, working with Low Income agencies, 15 percent of each agency's completed projects are reviewed and verified. Results are shared with the agency being reviewed in a timely manner and where necessary, corrective actions are suggested. Where there are discrepancies, savings adjustments are made in the EES LIW tracking database.

The team also redesigned the agency online reporting system, including tools that now include the ability to determine project and funding level cost effectiveness BEFORE measures are installed and paid by PSE.

## Direct Benefit to Customer

PSE considers Direct Benefit to Customer (DBtC) to be defined as rebates, grants, credits or services that are of value to customers. In the case of Low Income Weatherization, DBtC are incentive payments for those measures directly installed in customer's homes/building by social service agencies and approved by the Department of Commerce. No measure costs are passed on to the low income customer; therefore, incentive payments are made directly to social service agencies for reimbursement of measures installed. The accompanying charts in Figure 4c, indicate that the Low Income Weatherization program has maintained a DBtC ratio of 90 percent in electric service and 90 percent in gas service.

**Figure 4c: Low Income Weatherization Direct Benefits to Customers**




**2010 Accomplishments and Activities:**

January through June
The Low Income Weatherization program January-June 2010 experienced increased production as compared to past years. As of June 2010, the tariff electric program was at 89 percent of year-end goal and the tariff gas program was at 43 percent of year-end goal. This increased production is due to a number of factors: 1) PSE funding has been leveraged with ARRA funding by social service agencies in the PSE service territory to maximize number of units served; 2) increase in multi-family units served, primarily due to State policy encouraging increased service to this housing sector; and 3) distribution of Enron settlement funding for the 2010 program, providing increased funding for weatherization-related repairs and energy efficiency improvements (see below).

July through December
The LIW team added a new staff member to assist in the development of field activities including weatherization measure verification and provide technical assistance to Agencies. The team provided testimony and received unanimous approval from the CRAG to allow PSE to commit up to 30 percent of Renewable Energy Credit and Tariff Electric funds for repairs on low income buildings that facilitate weatherization measure upgrades. We also negotiated an agency contract with the City of Seattle, Office of Housing. This is the first time in three years that the Office of Housing has participated in PSE's LIW program.

**Enron Proceeds Processing**

PSE received $2.1 million from the recent Enron Settlement in November 2009, when reporting requirements and logistics were established for the disbursement of the funds. EES filed its first required report on Enron settlement proceeds spending on May 31, 2010. The second report was provided on November 30. Those reports can be procured from PSE's Regulatory Department.

As of April 30th, EES spent $1,066,508.96 on gas and electric weatherization projects to single-family, multi-family and mobile home low income customers. By November 30, that amount increased to $1,854,557. Also specific to low income applications are energy-related repairs, such as mechanical ventilation and electrical, roof, floor and structural repairs required prior to weatherization. The remaining allocated funding was exhausted by the end of the year.

As noted on page 50 of this report, the Total Resource Cost benefit-to-cost ratio of the 2010 Low Income Weatherization gas program was 0.59. This ratio is below the allowable TRC for Low Income Weatherization of 0.667 as stipulated in PSE's Natural Gas Schedule 183, section 9. The TRC was impacted by the application of Enron proceeds to fund energy-related repairs in 2010. The LIW team began taking steps in 2010 to ensure that the cost-effectiveness standard for Low Income Weatherization is met in future program periods.

## Energy Education

Schedules E202/G207

### Description

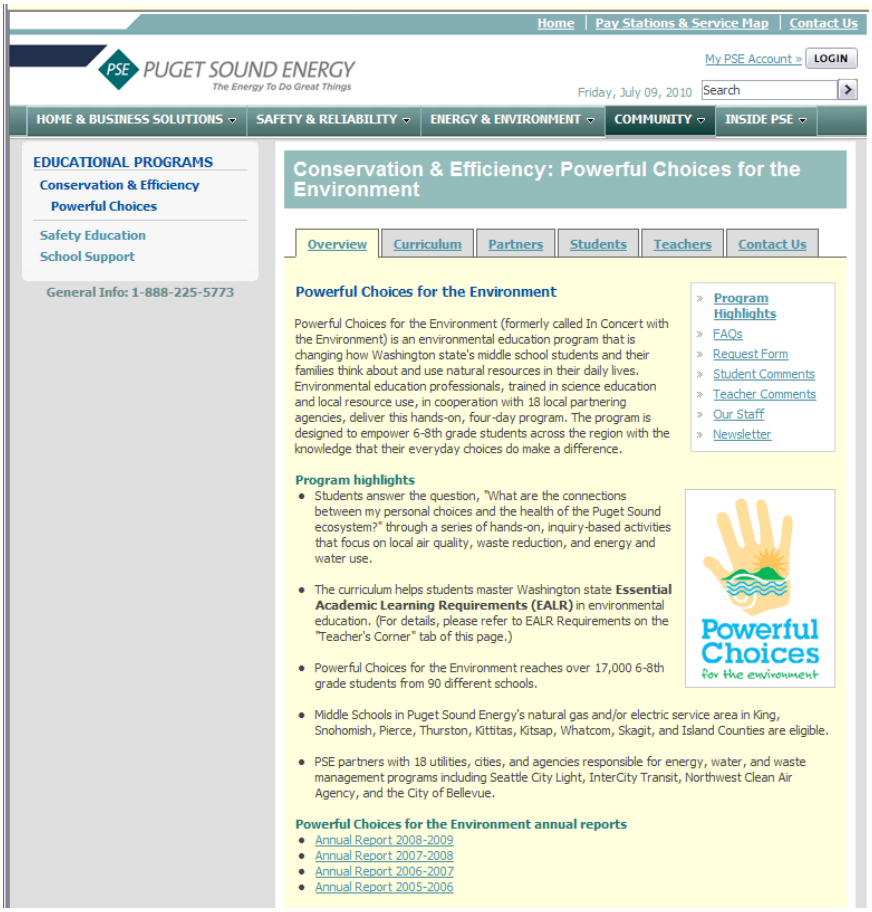
Education is a key component in furthering consumer energy efficiency and renewable energy awareness so that Customers are adequately informed to make wise energy decisions.

The education programs are undergoing transition as we look at new ways to strategize for achieving energy savings, higher education, K-12 schools, and community outreach reaching underserved communities, broker energy efficiency products and services and leverage with existing resources.

Powerful Choices created a forum to provide information to leaders and educators who can leverage the knowledge to a greater audience. The programs also tied directly to the company's existing energy efficiency opportunities, active resource conservation efforts, and commitment to the community channel. The programs focused on strengthening community actions by developing and preserving local relationships with Customers and other education and community-based organizations. Figure 4d is an example of EES's Energy Education page as it appeared at year-end[38].

[38] At the beginning of 2011, this website was replaced with information related to the program's revision, explained in the program description above and on page 66.

**Figure 4d: 2010 Energy Education Website on PSE.com**




## Program Performance

Tables 4e and 4f provide a year-to-date summary of expenditures and energy savings for the Energy Education program.

**Table 4e: Energy Education 2010 Expenditures**

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| E202 | Energy Education | $ 266,800 | $173,776 | **$440,576** | 73.7% | $ 598,000 |
| G207 | Energy Education | $ 162,286 | $94,908 | **$257,194** | 73.5% | $ 350,000 |

**Table 4f: Energy Education 2010 Savings**

| 2010 | Savings | 2010 Quarterly View: MWh and Therms | | | | 2010 Goal |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Goal | |
| Electric | Electric | Electric (MWh) | | | | Electric |
| Gas | Gas | Gas (Therms) | | | | Gas |
| E202 | Energy Education | 712 | 0 | **712** | 51.6% | 1,380 |
| G207 | Energy Education | 48,214 | 0 | **48,214** | 74.8% | 64,500 |

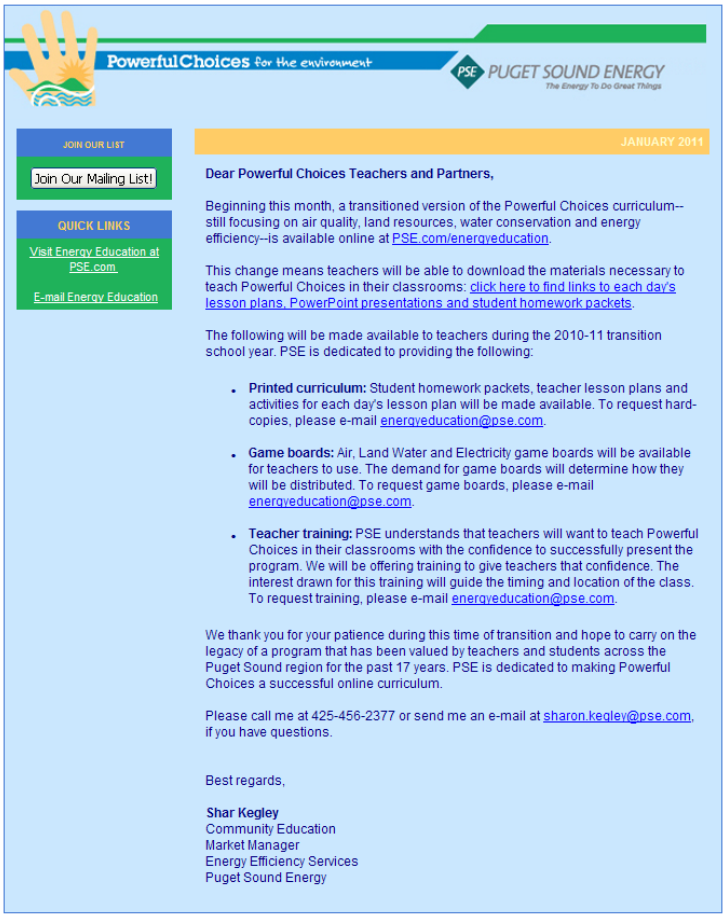
**2010 Program Revisions**

PSE started revising the Energy Education program in the second half of 2010.

The Powerful Choices program transitioned from an on-site facilitated program where PSE staff conduct classroom energy efficiency seminars into a “train the trainer” energy efficiency & renewable education program. The focus will broaden customer knowledge on energy efficiency and renewable energy and to support participation in the efficiency programs.

PCE curriculum is available January 2011 for teachers & partners for easy access to PSE.com with downloadable files. Figure 4e is a letter posed on the EES Energy Education website to teachers and partners, outlining the Powerful Choices program revision.

**Figure 4e: A Website Letter to Teachers Outlining Powerful Choices Revisions**



Powerful Choices for the environment

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The Energy To Do Great Things

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E-mail Energy Education

JANUARY 2011

**Dear Powerful Choices Teachers and Partners,**

Beginning this month, a transitioned version of the Powerful Choices curriculum--still focusing on air quality, land resources, water conservation and energy efficiency--is available online at PSE.com/energyeducation.

This change means teachers will be able to download the materials necessary to teach Powerful Choices in their classrooms: click here to find links to each day's lesson plans, PowerPoint presentations and student homework packets.

The following will be made available to teachers during the 2010-11 transition school year. PSE is dedicated to providing the following:

- **Printed curriculum:** Student homework packets, teacher lesson plans and activities for each day's lesson plan will be made available. To request hard-copies, please e-mail energyeducation@pse.com.
- **Game boards:** Air, Land Water and Electricity game boards will be available for teachers to use. The demand for game boards will determine how they will be distributed. To request game boards, please e-mail energyeducation@pse.com.
- **Teacher training:** PSE understands that teachers will want to teach Powerful Choices in their classrooms with the confidence to successfully present the program. We will be offering training to give teachers that confidence. The interest drawn for this training will guide the timing and location of the class. To request training, please e-mail energyeducation@pse.com.

We thank you for your patience during this time of transition and hope to carry on the legacy of a program that has been valued by teachers and students across the Puget Sound region for the past 17 years. PSE is dedicated to making Powerful Choices a successful online curriculum.

Please call me at 425-456-2377 or send me an e-mail at sharon.kegley@pse.com, if you have questions.

Best regards,

**Shar Kegley**
Community Education
Market Manager
Energy Efficiency Services
Puget Sound Energy

**2010 Accomplishments and Activities:**

The Powerful Choices team remained on target with savings and budget goals in 2010. The team is now in the process of enhancing the energy efficiency component of the curriculum so that the program builds up to the understanding of how the students' use of energy affects their local ecosystem. The staff sought input from key stakeholders, including the larger EES department, teachers, and partners.

The staff will pilot the new energy efficiency curriculum this summer and in the fall of 2010. The former energy efficiency lesson plan will now be given to teachers to implement after the PSE facilitators have left the school. The education staff continues to learn and update the delivery of the program and will participate in a retreat at the Baker dam facilities. At this retreat, the staff will focus on PSE's environmental mitigations and the delivery of the new energy efficiency curriculum.

Two new partners joined the Powerful Choices team during the first half of 2010.

The new web-based scheduling data system is on target and expected to launch in fall 2010. Staff, teachers, and partners will begin utilizing this new system to expedite the classroom scheduling, communication, and coordination with 90 schools, 300 teachers, and PSE education staff.

PSE and Hopelink partnered to provide an Energy Efficiency Education program to low income adults with limited English speaking skills. Curriculum and materials were developed for use in the classroom in educating adults on how to save energy and save money. Upon completion of the class, they receive a bag of low cost energy efficient applications such as a low flow showerhead, CFL bulbs and weather stripping.

The pilot ITSCOOL school fundraiser, The Cool School Challenge, and Komo Kulshan Outdoor School programs were discontinued due to lack of funding and less than optimal cost effectiveness. A strategy plan was launched to communicate this transition to key stakeholders, including community members and school leaders. Internal and external messaging ensured an easy transition and preserved PSE's connection to these communities.

## Single Family Existing

Schedules E214, G214

### Description

Single Family Existing programs implement cost effective, targeted, residential energy savings using a menu of prescriptive and calculated efficiency Measure incentives, including rebates for single family existing structures. Existing single family structures are defined as residential dwellings which include; structures with four or less units that are attached by a contiguous roofline and manufactured or factory built homes affixed to permanent foundations. Single family existing residences exclude structures that are currently under construction. Prescriptive rebates are intended to facilitate participation by Customers, contractors, developers and trade allies, and provide administrative efficiencies for PSE in meeting energy efficiency goals.

Rebates and incentives offered to eligible natural gas and electric PSE Single Family Existing Customers include a variety of end-use classifications, not limited to:

- Compact Fluorescent Lighting including CFL lamps and CFL fixtures,
- Appliance—including refrigerators, freezers and clothes washers—rebates,
- Refrigerator Decommissioning – focused on removing the “garage” unit
- Weatherization, including insulation and duct sealing,
- Space heating including high efficiency furnaces and heat pumps,
- Water heating, including tankless water heaters and efficient showerheads.

Incentive amounts and savings values are regularly reviewed and are based on regionally accepted energy savings estimates and incremental efficiency Measure cost. Incentives may be subject to change in response to revisions in savings estimates, average incremental cost or changes in Federal appliance efficiency standards or State codes.

The Single Family Existing group is comprised of three programs, which are detailed in the following pages:

1. Retail and Consumer Channel
2. Dealer Channel
3. Multifamily and New Construction Channel

### Program Performance

Tables 4g and 4h provide a 2010 summary of expenditures and energy savings for the Single Family Existing group.

## Table 4g: Single Family Existing 2010 Expenditures

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| E214 | Single Family Existing | | | | | $19,550,460 |
| | HomePrint + Water heat | $ 467,431 | 1,118,701 | **1,586,132** | | |
| | Residential EE Lighting Rebate | $ 3,092,699 | 2,263,479 | **5,356,177** | | |
| | Space Heat | $ 637,823 | 1,026,753 | **1,664,576** | | |
| | Refrigerator Decommissioning | $ 288,859 | 602,865 | **891,724** | | |
| | Energy Star Clothes Washers | $ 1,075,012 | 1,476,986 | **2,551,998** | | |
| | Showerheads | $ 4,257 | -437 | **3,820** | | |
| | Weatherization | $ 1,817,673 | 701,989 | **2,519,662** | | |
| Subtotals | | $ 7,383,755 | 7,190,336 | **14,574,090** | | $19,550,460 |
| G214 | Single Family Existing | | | | | $7,365,000 |
| | HomePrint | $ 177,656 | 408,275 | **585,930** | | |
| | Water Heater | $ 385,443 | 252,689 | **638,132** | | |
| | Space Heat | $ 2,107,179 | 715,747 | **2,822,926** | | |
| | Showerheads | $ 9,035 | -291 | **8,744** | | |
| | Weatherization | $ 4,105,038 | 1,688,274 | **5,793,312** | | |
| | Energy Star Apliances | 0 | 0 | **0** | | |
| Subtotals | | $ 6,784,350 | 3,064,694 | **9,849,045** | | $7,365,000 |

## Table 4h: Single Family Existing 2010 Savings

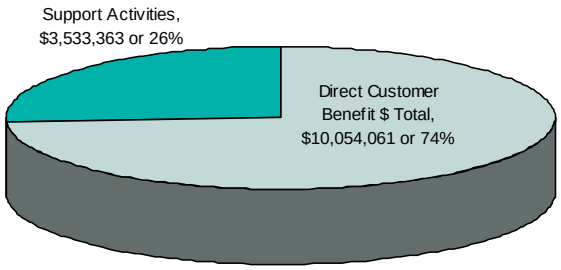
| 2010 | Savings | 2010 Quarterly View: MWh and Therms | | | | 2010 Goal |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Goal | |
| Electric | Electric | Electric (MWh) | | | | Electric |
| Gas | Gas | Gas (Therms) | | | | Gas |
| E214 | Single Family Existing | | | | | 109,480 |
| | HomePrint + Water heat | 302 | 1,011 | **1,313** | | |
| | Residential EE Lighting Rebate | 35,097 | 21,594 | **56,690** | | |
| | Space Heat | 1,875 | 3,686 | **5,561** | | |
| | Refrigerator Decommissioning | 1,920 | 3,804 | **5,724** | | |
| | Energy Star Clothes Washers | 2,010 | 1,360 | **3,371** | | |
| | Showerheads | 587 | 0 | **587** | | |
| | Weatherization | 6,471 | 3,621 | **10,091** | | |
| Subtotals | | 48,262 | 35,075 | **83,337** | | 109,480 |
| G214 | Single Family Existing | | | | | 1,408,000 |
| | HomePrint | 709 | 11,107 | **11,816** | | |
| | Water Heater | 149,587 | 101,092 | **250,679** | | |
| | Space Heat | 572,430 | 394,050 | **966,480** | | |
| | Showerheads | 37,908 | 0 | **37,908** | | |
| | Weatherization | 734,305 | 304,713 | **1,039,018** | | |
| | Energy Star Apliances | 22,638 | 15,132 | **37,770** | | |
| Subtotals | | 1,517,577 | 826,094 | **2,343,671** | | 1,408,000 |

### Direct Benefit to Customer

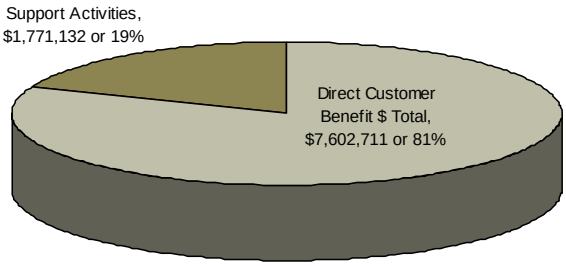
PSE considers Direct Benefit to Customer to be defined as rebates, grants, credits or services that are of value to customers. Figure 4f on the following page indicates that the Single Family Existing program maintained a DBtC of 74 percent in electric offerings and 81 percent in gas service through the first half of 2010.

**Figure 4f Single Family Existing Direct Benefits to Customers**

Electric




Gas



## Retail and Consumer Channel


The Retail and Consumer Channel focuses on promoting energy efficiency products and services to customers through retailers, manufacturers, and direct-to-consumer offerings.


*A recent retail lighting event with store and PSE staff.*


*A 2010 Cash for Appliances flier with PSE collateral in a local retailer.*


*A next-generation LED lamp. Image used with permission, courtesy of* Phillips.

## Residential Retail Program

This program collaborates with retailers and manufacturers of energy efficient products – such as lamps, light fixtures, showerheads, electronics, and appliances such as clothes washers – to ensure that customers have access to a wide variety of efficient product options. The Retail Program provides incentives and promotions for efficient products to PSE's residential customers by establishing agreements with retailers and manufacturers; PSE also provides field services to educate retail employees on our products, detail qualifying product, and ensure compliance with PSE agreements.

### 2010 Program Revisions

There were no revisions to the Retail and Consumer program during 2010.

### 2010 Accomplishments and Activities:

In June, PSE completed the transition of its Retail Program from third party management to in-house program management. The result is immediate recognition of approximately $25,000 per month in cost savings. Since then, the team has realized further cost-saving strategies by realigning its incentive processing and field services contracts. After re-scoping the responsibilities and conducting a competitive bidding process the team realized cost savings for these two contracted services of more than 30 percent.

PSE Retail Program field contractors helped inform and engage retail sales staff in its service territory, along with customer outreach events to educate our customers on the energy efficiency rebates and promotions offered by PSE. Table 4i provides activities conducted throughout 2010.

**Table 4i: Retail Channel Field Activity**

| Activity | Jan - June | July - Dec | Total |
|---|---|---|---|
| Formal Retailer Training Sessions | 30 | 70 | **100** |
| Informal Retailer Training Sessions | 1,654 | 446 | **2,100** |
| Number of Stores served | 350 | 50 | **400** |
| Customer Outreach Events | 53 | 47 | **100** |

PSE Retail Program staff also worked closely with regional utilities and the Washington State Department of Commerce this year to aid in the formation and launch of the State's *Cash for Appliances* program. Managed by the Department of Commerce Energy Policy Division, this program administered $5.6 million in American Recovery and Reinvestment Act (ARRA) funds to Washington residential consumers who purchased eligible efficient refrigerators and clothes washers and recycle their resource-wasting appliance.

It is noteworthy that the program was so successful that funding, expected to last through April of 2011, was exhausted by November of this year due to customers' enthusiastic responses.

As a final highlight, PSE conducted a field assessment of LED 6-watt A-lamps in conjunction with the Department of Energy's L-Prize competition. L Prize is the first government-sponsored technology competition designed to spur lighting manufacturers to develop high-quality, high-efficiency solid-state lighting products to replace the common light bulb. Philips is the first manufacturer to have submitted a qualifying product to the competition. By working cooperatively with the DOE, PSE distributed about 100 bulbs to PSE customers to test in a variety of applications – from single family homes, to multifamily common area lighting, and even in retail stores. PSE conducted surveys of the bulb-testers and customers who patronized a retail location where the bulbs were being tested, and reactions were overwhelmingly positive. PSE will continue to explore opportunities to bring cutting-edge technologies to our customers in order to gain real-world feedback and testing results.

## Refrigerator Decommissioning


*PSE's decommissioning contractor pulls up to their Kent warehouse with a truck full of PSE customer refrigerators to recycle.*

This program provides customers with a means to safely dispose of their unused, unwanted, surplus refrigerators while receiving an incentive for removing a potentially high-energy usage appliance from service. Decommissioning is differentiated from refrigerator replacement insofar as decommissioned refrigerators are not replaced with another refrigerator[39].

### 2010 Program Revisions

There were no revisions to the Refrigerator Decommissioning program during 2010.

### 2010 Accomplishments and Activities:

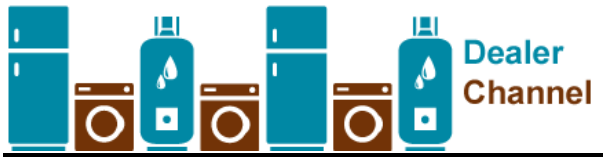
The program exceeded its kWh savings target by 15 percent while only exceeding its budget by one percent.

6,325 refrigerators and freezers decommissioned in 2010, leading to the following materials being recycled:

- 885,500 lbs of metal
- 126,500 lbs of plastic
- 18,975 lbs of glass
- 6,325 lbs of oil and refrigerant

[39] RTF values are substantially different for refrigerator decommissioning versus refrigerator replacement. Additionally, the process for decommissioning at the customer's residence is completely different.

## Dealer Channel




The Dealer channel focuses on space heating, water heating, and weatherization measures that are installed or facilitated through contractors, vendors and resellers. The Dealer Channel operates primarily within the structure of Schedule 214; Single Family Existing. Programs within this channel are delivered to customers mostly through contractors.

**2010 Dealer Channel Accomplishments:**

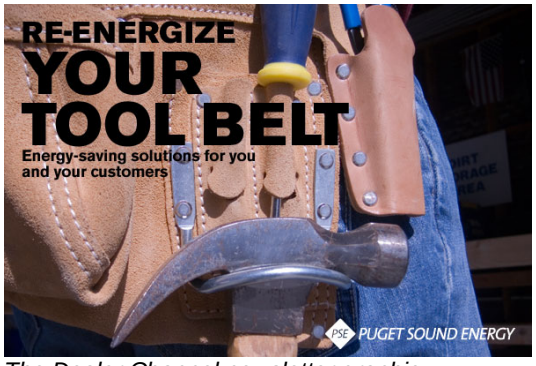
- **The Dealer Channel Implemented a Customer Satisfaction Survey to rebate recipients[40]**
  - Started in September
  - Over 750 survey responses
  - Over 92 percent satisfaction rate[41]
  - Only 1.1 percent would not recommend the PSE rebate.

**What Some PSE Customers Had to Say**

- "In today's economy, it's just great to know that there are people & companies out there that still care about the consumer, the quality of work provided, the education offered, and on top of that you receive some money back. It's awesome! Thank you so much!!"
- "It would be great to have the contractor be encouraged to fill out the form on behalf of the customer. Also, it would be good to have the whole process on the Web."
- "I would just like to state again what a pleasure this whole experience has been. From the outstanding service rep recommendation to the AMAZING PSE energy advisors, I am extremely happy. Heck, I am even saving $40/month on my PSE bill and I wasn't really expecting that. Thank you again for the great program you have."

[40] The customer segment included recipients of rebates for weatherization, space and water heat programs.
[41] 75 percent "very satisfied", 17.3 percent "somewhat satisfied", 3.1 percent "neither satisfied or dissatisfied", 3.9 percent "somewhat dissatisfied" and 0.8 percent "very dissatisfied".

- **The Channel developed and distributed a quarterly Contractor E-Newsletter**.
  - Initial deployment 22 contractors
  - Currently 400 contractors and growing




*The Dealer Channel newsletter graphic.*

**HomePrint**

HomePrint™

*A PSE QA inspector reviews duct insulation.*


*An infrared view of a typical residential structure, as seen through a Forward Looking Infrared Radar camera.*

HomePrint provides incentives to authorized independent HomePrint Certified Specialists to provide home performance evaluations and direct install efficiency Measures to requesting Customers. During the third and fourth quarter, PSE engaged its HomePrint trade allies to conduct program design modifications which will take effect first quarter 2011.

**2010 Program Revisions**

There were no revisions implemented for the HomePrint program in 2010.

**2010 Accomplishments and Activities:**

In the first half of 2010, HomePrint became a sponsor of Home Performance with Energy Star program. Table 4j reflects key 2010 HomePrint metrics.

**Table 4j: Retail Channel Field Activity**

| Activity | Jan - June | July - Dec | Total |
|---|---|---|---|
| Specialists Trained | 46 | 0 | **46** |
| HomePrint Evaluations Completed | 364 | 876 | **1,240** |
| CFLs installed | 6,771 | 23,102 | **29,873** |
| HomePrint Quality Assurance Reviews Performed | 94 | 31 | **125** |

## Weatherization

*A wall insulation job using sprayed foam.*

*A typical attic insulation project.*

The weatherization program oversees the “shell” of residential structures; installation of windows, insulation and duct sealing for both natural gas and electric savings.

There are a wide variety of duct sealing offerings, some directed specifically to manufactured homes, while other focus on site-build residences.

**2010 Program Revisions**

The Weatherization program implemented the below revisions during 2010.

Effective June 16th, 2010

**Suspended Incentives**:
- Window upgrades: Gas and Electrically heated homes

**Modified Incentives:**
- Floor insulation: 50 percent of the cost, up to $200.00
- Attic insulation: 50 percent of the cost, up to $200.00
- Wall insulation: 50 percent of the cost, up to $200.00

**2010 Accomplishments and Activities:**

Higher than usual participation rates by customers relative to past years have been attributed to spill over of 2009 tax credits installations, increased 3rd party marketing from ARRA funded programs and an increase in the number of independent contractors authorized to install insulation measures for PSE.

The fourth quarter of 2010 saw an additional uptick in participation based on the anticipated revision to Federal Tax credits beginning January 1, 2011.

**Space and Water Heating**

*A typical ductless heat pump.*

*A typical heat pump electric water heater.*

The program manages incentives and installations of gas furnaces, heat pumps, water heaters.

**2010 Program Revisions**

The Space and Water Heat program implemented the following revisions during 2010.

**Modified Incentives:**

- ENERGY STAR® qualified gas storage water heaters - must meet or exceed 0.65 EF: $50.00
- ENERGY STAR® qualified gas forced-air furnace (AFUE greater than 90 percent): $100.00

**2010 Accomplishments and Activities:**

During the first half of 2010, the Space and Water Heating program launched an instant rebate option for contractors; encouraging them to participate in for space & water heating programs. This improved process enhanced the customer and contractor experience and improved productivity by speeding up the processing of rebates and reducing the number of checks issued by the Company. The program also completed four training webinars; two focused on proper heat pump sizing & lockout controls, another described PSE water heating programs, with the most recent discussing the new instant rebate process. The participation for each webinar ranged from 60-100 people. The heat pump sizing and instant rebate webinars were recorded so that additional interested contractors and trade allies can link to our website or receive a DVD via our contractor network.

We also distributed PSE co-advertised heat pump water heater, geothermal heat pump, and ductless heat pump fliers to 27 HVAC/plumbing contractors during the first two quarters. Co-advertising on the fliers includes contractor and PSE information. These are used by these contractors for mailing to their PSE customers, home shows, and overall industry marketing. Lastly, we presented to and met with over 100 contractors during January and February to discuss space & water heating programs.

## Single Family, New Construction

Schedule E215, G215

*Typical residential new construction activities, including drafting of architectural plans and structure framing.*

### Description

Similar to PSE's Single Family Existing program, rebates and incentives are offered to eligible natural gas and electric PSE Single Family New Construction builders, contractors, trade allies and Customers (cumulatively, the Program refers to these as "partners") who are constructing new single family residential structures (consisting of four or less attached units). EES works with these partners to market energy efficient equipment to their Customers. EES encourages the purchase and installation of energy efficient products for their construction projects.

Incentives include a variety of end-use classifications, not limited to:

- Lighting: Compact Fluorescent Lighting including CFL lamps and CFL fixtures,
- Appliances: Clothes washers, refrigerators,
- Whole House Ventilation,
- HVAC: Furnace upgrades, duct sealing with performance testing, ducts in the conditioned space with performance testing and heat pumps,
- Water heating: storage and tankless water heaters
- Manufactured homes: And ENERGY STAR or EcoRated Manufactured homes, which is unique to this program.

For all of the conservation Measures installed, EES receives Measure installation data directly from builders, developers, showrooms and distributors. It is therefore possible to precisely track Measure details.

## Program Performance

Tables 4k and 4l provide a 2010 summary of expenditures and energy savings for the Single Family New Construction program.

### Table 4k: Single Family New Construction 2010 Expenditures

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| E215 | Single Family New Construction | $ 795,875 | $459,730 | **$1,255,606** | 112.9% | $ 1,112,280 |
| G215 | Single Family New Construction | $ 335,130 | $329,970 | **$665,100** | 68.4% | $ 972,500 |

### Table 4l: Single Family New Construction 2010 Savings

| 2010 | Savings | 2010 Quarterly View: MWh and Therms | | | | 2010 Goal |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Goal | |
| Electric | Electric | Electric (MWh) | | | | Electric |
| Gas | Gas | Gas (Therms) | | | | Gas |
| E215 | Single Family New Construction | 1,398 | 1,248 | **2,646** | 82.2% | 3,220 |
| G215 | Single Family New Construction | 52,913 | 57,733 | **110,646** | 61.5% | 180,000 |

## 2010 Program Revisions

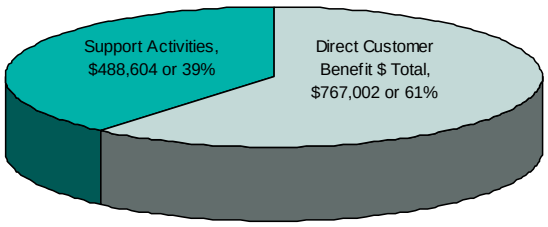
There were no revisions to the New Construction program during 2010.

## Direct Benefit to Customer

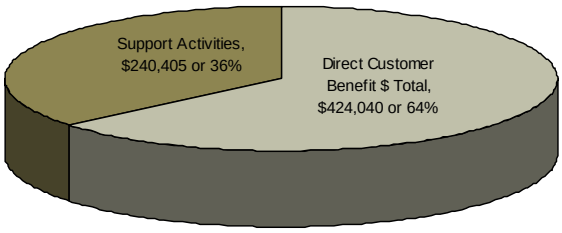
PSE considers Direct Benefit to Customer to be defined as rebates, grants, credits or services that are of value to customers. Figure 4g below indicates that the Single Family New Construction program maintained a DBtC ratio or 61 percent in electric offerings and 64 percent in gas offerings through the first half of the year.

### Figure 4g: Single Family New Construction Direct Benefits to Customers

Electric




Gas



**2010 Accomplishments and Activities:**

Builders of all sizes are seeing value in energy efficient building in several ways. The new construction building community wants to build energy efficient homes, however, the market slowdown and the increased building efficiencies in the new Washington State Energy Code that is pending implementation have them very concerned and seriously evaluating the value.

Some highlights of January through June:

- PSE targeted existing builders and increased the participation of four large existing builders while recruiting 11 new builders into the program,
- ENERGY STAR® Homes market share is 18 percent; approximately 75 percent of our savings came from homes being built to this standard,
- Three new lighting distributors with ten locations were added,
- Several new lighting distributors that signed up in late 2009 have increased the supply and demand of ENERGY STAR® recessed ("can") fixtures by up-selling to electrical contractors,
- The program educated our partners on the upcoming 2009 WSEC changes and PSE program impacts in a seminar attended by 200 new construction industry partners,
- We've engaged in a collaborative effort with NEEA and the ENERGY STAR® Homes Program to increase the energy efficiency components and verification standards of two home building associations,
- Our Showroom and Distributor lighting program successfully transitioned to in house management and tracking, saving the program approximately $500,000 during the first six months of 2010.

July through December achievement highlights:

- The team created a plan to capture lighting savings for 51 percent or more fixture installations,
- We created and began implementing a process to bring lighting incentive processing in house,
- The program worked closely over the last few years with NEEA and the ENERGY STAR® Homes Program to get builders to sign up to build ENERGY STAR® Homes. In December, Puget Sound's largest builder made the commitment to building 100 percent ENERGY STAR® Homes; they will build 200-300 homes in 2011.
- A new partner signed and committed to building 100 percent ENERGY STAR® Homes; they will build 400 homes in 2011,
- After receiving many suggestions from verifiers, PSE proposed, drafted, and implemented a Utility Incentive Section in the ENERGY STAR® database. This new feature minimizes the paperwork a verifier has to do when certifying homes,
- The program team hosted and facilitated several energy code and ENERGY STAR® Homes trainings for partners,
- We brought the ENERGY STAR® lighting program in house for all outreach and training,
- The team implemented an incentive verification process, resulting in inspection of a minimum of 15 percent of all submittals.

## Single Family Fuel Conversion

Schedule E216


*PSE's Re-Energize campaign for Fuel Conversion, as seen in a Kirkland neighborhood.*

### Description

The Company provides incentives for replacing existing electric forced-air or baseboard space heating equipment and/or tank style water heating equipment with high efficiency natural gas space heating equipment[42] and/or high efficiency natural gas domestic water heating equipment.

Based on the Measure/product type and market factors, PSE may provide incentives to its Customers at different points along the value chain. Market barriers vary dramatically from Measure to Measure; consequently PSE incentives may occur at the manufacturer, distributor, contractor, retailer or consumer level. Incentive amounts are based on regionally accepted energy-saving estimates and incremental efficiency Measure costs. These incentives may be subject to change in response to revisions in savings estimates, average incremental cost or changes in Federal appliance efficiency standards or State codes. Training, education and support by PSE for independent contractors, distributors, retailers, showrooms, sales associates, consumers and partnering organizations are foundational to the success of this program.

PSE estimates that approximately 10 percent of the customer base qualifies for the incentive, creating a finite and specialized niche for conversion opportunities. To date, the majority of conversions are water heater installations. Dealers indicate that 50-70 percent of the water heater conversions require relocation of the equipment to meet the efficiency code requirements. PSE incentives assist customers offset these relocation costs. Another opportunity requiring PSE focus is that of construction costs, such as meter installation and street restoration where natural gas lines aren't yet installed or require overhaul.

[42] As outlined in the Company's Schedule 216, **Section 1, Availability/Eligibility**, the equipment to which the Customer is converting must be "highly efficient natural gas space and/or domestic water heating…"

## Program Performance

Tables 4m and 4n provide a 2010 summary of expenditures and energy savings for the Fuel Conversion program.

### Table 4m: Single Family Fuel Conversion 2010 Expenditures

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| E216 | Single Family Fuel Conversion | $ 441,631 | $352,179 | **$793,810** | 38.4% | $ 2,068,620 |

### Table 4n: Single Family Fuel Conversion 2010 Savings

| 2010 | Savings | 2010 Quarterly View: MWh and Therms | | | | 2010 Goal |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Goal | |
| Electric | Electric | Electric (MWh) | | | | Electric |
| E216 | Single Family Fuel Conversion | 1,819 | 1,344 | **3,162** | 40.4% | 7,820 |

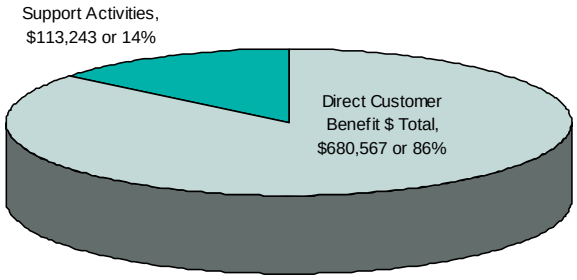
## 2010 Program Revisions

There were no revisions to the Fuel Conversion program during 2010.

## Direct Benefit to Customer

PSE considers Direct Benefit to Customer to be defined as rebates, grants, credits or services that are of value to customers. Figure 4h below indicates that the Fuel Conversion program maintained a DBtC ratio or 86 percent through the first half of the year.

### Figure 4h: Single Family Fuel Conversion Direct Benefits to Customers



**2010 Accomplishments and Activities:**

One of the key marketing initiatives for our Fuel Conversion rebate program was an outdoor media campaign. Our marketing strategy called for geo-targeting due to the fact that such a small percentage of our overall customer base is eligible for the incentives or cost effectiveness is affected relative to the proximity to the gas main. These outdoor posters were deemed a cost-effective medium to supplement other fuel conversion marketing, as they were strategically located at heavy traffic intersections within our combination service area with high conversion market potential. The "call to action" from the terse messaging (a sample of which leads this program review section) was a short URL extension; **PSE.com/Refuel**, which took the customer directly to our Fuel Conversion webpage. There were two separate four-week segments to the campaign; commencing on September 13th and October 18th respectively. Each segment included a total of 12 outdoor posters. This was a very cost-effective initiative. The Daily Effective Circulation (meaning how many vehicle passengers potentially saw the fuel conversion message each day of the campaign) was 230,000, for a total of 12,880,000 impressions; at a cost of 1¢ per impression. The overall results were very favorable. Within the first week, there was a 95 percent increase in unique page views of the fuel conversion webpage, versus the week prior and an 18 percent increase compared to 2009.

The program has been working with EES Marketing, utilizing its new “Re-Energized” campaign (details of which are outlined in the Mainstreaming Green section of this report) to post in neighborhoods of potentially eligible customers. EES partnered with City of Enumclaw in March and Cascade Natural Gas in May and conducted a joint utility bill insert. Table 4o provided year-end comparisons of some key Fuel Conversion activities.

**Table 4o: Key Fuel Conversion Activities**

| Key 2010 Fuel Conversion Types | Jan - June | July - Dec | Total |
|---|---|---|---|
| Space Heat Only | 10 | 11 | **21** |
| Space Heat and Water Heat | 69 | 43 | **112** |
| Water Heat Storage Tank | 61 | 53 | **114** |
| Water Heat Tankless | 128 | 119 | **247** |

Relative to the above list, almost 73 percent of all rebates were for water heat only, as expected. This is due to the easier installation than a space heat conversion. Of the total water heat rebates processed, approximately 68 percent were tankless.

## Multifamily Existing

Schedule E217, G217

*A typical multifamily structure.*

### Description

The Multi-Family Retrofit Program is designed to increase the installation of selected energy efficient measures in existing, multifamily buildings with five or more attached residential dwelling units located in PSE's electric and natural gas service areas. The team works with property owners, managers, contractor's trade allies and tenants to encourage installation of energy efficient measures. These structures typically have opportunities for upgrades in common areas, building envelope and in the units. Measures include window and insulation upgrades, appliance, lighting, HVAC and water heating upgrades and calculated commercial upgrades including boilers and solar pool heaters. This program targets installation of energy efficient measures occurring during planned retrofit and replace upon failure.

### Program Performance

Tables 4p and 4q provide a 2010 summary of expenditures and energy savings for the Multifamily Existing program.

**Table 4p: Multifamily Existing 2010 Expenditures**

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| E217 | Multi Family Existing | $ 1,947,172 | $2,328,319 | **$4,275,490** | 90.1% | $ 4,747,200 |
| G217 | Multi Family Existing | $ 284,368 | $195,357 | **$479,725** | 139.9% | $ 343,000 |

**Table 4q: Multifamily Existing 2010 Savings**

| 2010 | Savings | 2010 Quarterly View: MWh and Therms | | | | 2010 Goal |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Goal | |
| Electric | Electric | Electric (MWh) | | | | Electric |
| Gas | Gas | Gas (Therms) | | | | Gas |
| E217 | Multi Family Existing | 4,848 | 6,242 | **11,090** | 73.1% | 15,180 |
| G217 | Multi Family Existing | 40,483 | 22,921 | **63,404** | 139.3% | 45,500 |

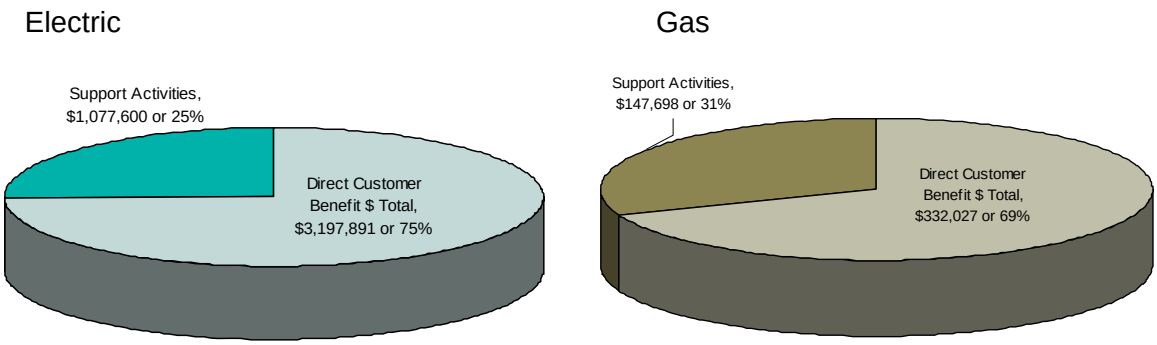
## 2010 Program Revisions

There were no revisions to the Multifamily Existing program during 2010.

## Direct Benefit to Customer

PSE considers Direct Benefit to Customer to be defined as rebates, grants, credits or services that are of value to customers. Figure 4i below indicates that the Multifamily Existing program maintained a DBtC ratio of 75 percent in electric service and 69 percent in gas service through the first half of the year.

**Figure 4i: Multifamily Existing Direct Benefits to Customers**




## 2010 Accomplishments and Activities:

### *Electric*

<u>January through June</u>

During the first six months of 2010, 83 multifamily electric complexes were completed. As the program matures (3.5 years), several new energy saving opportunities were evaluated and are now being offered. Triple pane windows, LED common area lighting, GU-24 in unit fixtures and common heating/water heating systems were added at the beginning of 2010. The EES evaluation team began conducting a comprehensive program savings evaluation on all multifamily offerings beginning late in the second quarter of this year.

July through December
The program finished the year completing 107 complexes. It is anticipated that the results of the savings evaluation will be available by the second quarter of 2011. The evaluation will include billing analysis of buildings weatherized in 2008-9 to allow for heating season overlap.

The program completed implementation of the Data Consolidation Workbook, which is a single data source to collect information between contractors, outside vendors and PSE. This system can track projects in process and completed, calculated measures detail, and Contract invoices in updated in 'real time' (on a daily and weekly basis).

***Gas***

January through June
In the first half of 2010 there was a dramatic increase in gas weatherization and heating/water heating measure installations.

July through December
By the end of 2010, the program served 19 multifamily gas properties.

## Multifamily New Construction

Schedule E218/G218

*A typical newly-constructed multifamily structure.*

### Description

This program targets structures with five or more residential units per building, per Washington State Energy Code 2009 Edition (effective January 1, 2011). These structures typically have both in-unit and common area energy-savings opportunities. These include, but are not limited to, energy efficient upgrades to building shell, appliances, lighting, HVAC and water heating systems.

Under this comprehensive program, financial incentives for multifamily new construction projects are packaged under one grant and are structured to work in accord with current commercial programs. PSE provides a single "point of contact" to development teams for all energy efficient Measures/upgrades. This allows PSE to maximize the energy savings opportunity in each development and reduce multi-program confusion for the Customer.

The program includes prescriptive rebates/incentives and calculated grants. Eligible Customers include builders, developers, owner or agent receiving electricity or natural gas through PSE's residential schedules 7 (including 17, 27, 37 and 47) and 7A; and commercial schedules 8, 11, 12 and 24.

Structures include but are not limited to apartments, town homes, condominiums, and assisted living residences. There are three distinct construction types in this market that typically offer in-unit and common area energy saving opportunities:

1. Low/mid rise construction
2. High rise construction
3. Assisted Living/Affordable Housing construction

There may be any combination of residential and commercial meter mixes in all three types of construction. Once the meter type mix is confirmed with the development team, the appropriate PSE programs are identified to serve that development.

### Program Performance

Tables 4r and 4s provide a 2010 summary of expenditures and energy savings for the Multifamily New Construction program.

**Table 4r: Multifamily New Construction 2010 Expenditures**

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| E218 | Multi Family New Construction | $ 451,496 | $755,570 | **$1,207,066** | 112.3% | $ 1,074,560 |
| G218 | Multi Family New Construction | $ 59,031 | $128,697 | **$187,728** | 74.2% | $ 253,000 |

**Table 4s: Multifamily New Construction 2010 Savings**

| 2010 | Savings | 2010 Quarterly View: MWh and Therms | | | | 2010 Goal |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Goal | |
| Electric | Electric | Electric (MWh) | | | | Electric |
| Gas | Gas | Gas (Therms) | | | | Gas |
| E218 | Multi Family New Construction | 1,013 | 1,539 | **2,552** | 111.0% | 2,300 |
| G218 | Multi Family New Construction | 4,743 | 13,512 | **18,255** | 84.9% | 21,500 |

### 2010 Program Revisions

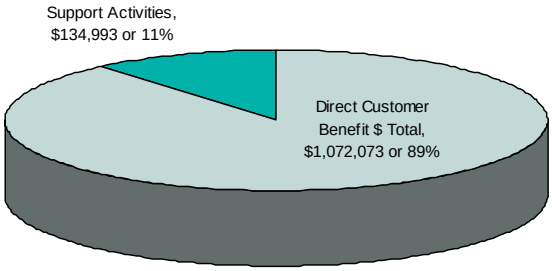
There were no revisions to the Multifamily New Construction program during 2010, although several program changes will occur in 2011 due to the implementation of the 2009 Washington State Energy Code.

### Direct Benefit to Customer

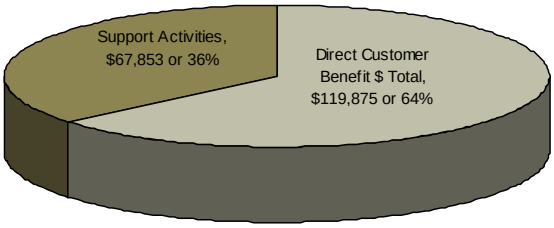
PSE considers Direct Benefit to Customer to be defined as rebates, grants, credits or services that are of value to customers. Figure 4j indicates that the Multifamily New Construction program maintained a DBtC ratio of 89 percent in electric offerings and 64 percent in gas offerings through the first half of the year.

**Figure 4j: Multifamily New Construction Direct Benefits to Customers**

Electric




Gas




**2010 Accomplishments and Activities:**

18 project grants were fully verified, paid and closed during 2010, representing 2,241 units. Despite a down-turned market and several deferred or canceled projects, both the electric and gas programs stayed on track to meet their savings goals.

In addition, the program secured 16 new grants in 2010, serving student housing, market rate apartments and condos and low-income housing units. These new grants set the baseline for a successful program in 2011 and beyond.

Two PSE-funded multi-family new construction projects received regional and national recognition in 2010. Bastyr student housing was notable for achieving LEED platinum certification, the highest achievement by the U.S. Green Building Council. Bastyr also won the USGBC's award for Outstanding Multifamily Project in the 2010 LEED for Homes Awards. A second project, Senior City Apartments, was nominated as a finalist in the People's Choice awards by Affordable Housing Finance Magazine in the "Seniors" category. The project was nominated for its environmental sustainability, transit-oriented development, and affordable senior housing.

## Pilots

Schedule E249

### Description

Pilot programs and demonstration projects may be undertaken to determine whether certain strategies and Measures are cost-effective in the long run. Pilots are employed to test cost-effective ways to demonstrate market opportunities for energy efficiency.

Pilots may include tests of Measure cost and performance, Customer acceptance and delivery methods. In compliance with the 2010 Settlement Agreement[43] condition K(7)(d), pilots will only claim energy savings that achieve energy savings sufficient to demonstrate cost-effectiveness by passing the TRC test.

### Program Performance

Tables 4t and 4u provide a 2010 summary of expenditures and energy savings for the Pilots program.

**Table 4t: Pilots 2010 Expenditures**

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| E249 | Pilots, excluding: | $ 21,671 | $47,348 | **$69,019** | 5.4% | $ 1,069,040 |
| | Home Energy Reports | $ 248,111 | $201,800 | **$449,911** | 63.5% | $ 708,860 |
| Subtotal | | $ 269,782 | $ 249,148 | **$ 518,930** | 29.2% | $ 1,777,900 |
| G249 | Pilots, excluding: | $ 14,984 | $70,361 | **$85,345** | 47.8% | $ 178,500 |
| | Home Energy Reports | $ 115,406 | $91,481 | **$206,887** | 57.5% | $ 360,000 |
| Subtotal | | $ 130,390 | $161,842 | **$292,232** | 54.3% | $ 538,500 |

**Table 4u: Pilots 2010 Savings**

| 2010 | Savings | 2010 Quarterly View: MWh and Therms | | | | 2010 Goal |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Goal | Savings |
| Electric | Electric | Electric (MWh) | | | | Electric |
| Gas | Gas | Gas (Therms) | | | | Gas |
| E249 | Pilots, excluding: | 50 | 138 | **188** | 20.5% | 920 |
| | Home Energy Reports | 0 | 0 | **0** | | 0 |
| Subtotal | | 50 | 138 | **188** | 20.5% | 920 |
| G249 | Pilots, excluding: | 1,944 | 17,280 | **19,224** | 106.8% | 18,000 |
| | Home Energy Reports | 0 | 0 | **0** | | 0 |
| Subtotal | | 1,944 | 17,280 | **19,224** | 106.8% | 18,000 |

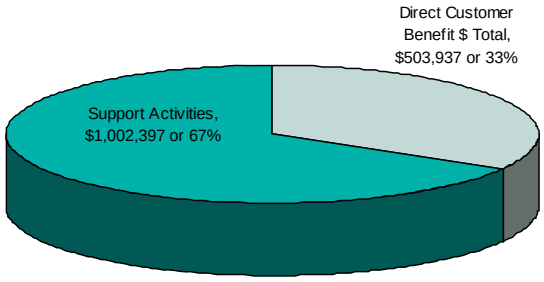
### Direct Benefit to Customer

PSE considers Direct Benefit to Customer to be defined as rebates, grants, credits or services that are of value to customers. Figure 4k indicates that overall pilot programs (excluding Demand Response pilots) maintained a DBtC ratio of 33 percent in electric and 58 percent in gas services through the first half of the year.

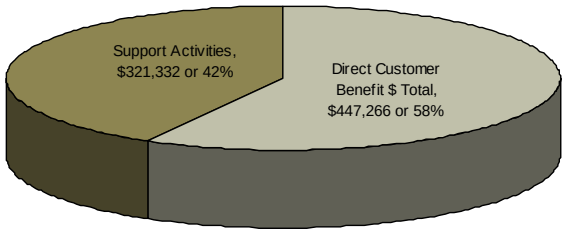
[43] Docket No. UE-100177.

**Figure 4k: Pilots Direct Benefits to Customers**

Electric




Gas




2010 pilot programs include:

- *Heat Pump Air Handler/Furnace Fan Motor Upgrade*
  - Installation of a high efficiency, variable speed, Brushless Permanent Magnet fan motor. This motor will replace less efficient existing Permanent Split Capacitor (PSC) motors. Installation will be by trained PSE technicians or existing contractor network. PSE will offer this pilot to 1,500 single family homes throughout PSE's service territory.
    - Status:

      As of October program was discontinued due to low levels of customer participation

- *Heat Pump Sizing and Lock out Controls*
  - This pilot measure will be delivered through an existing contractor network, to assure properly sized heat pump systems by following industry standard sizing recommendations, and by installing an outdoor control (thermostat) that will sense outdoor temperatures. This control will lock out inefficient auxiliary heat down to specified temperatures in order to achieve full energy saving potential of heat pump systems. PSE will offer this pilot to 1,000 single family homes throughout PSE's service territory.
    - Status:

      This pilot launched in January 2010 and included all program documentation and a PSE sizing form. The PSE sizing form can be downloaded on www.pse.com. PSE conducted dealer outreach at local distributors in December 2009 and January 2010. Further, we did specific program training, which included the use of the new PSE sizing form, via a few PSE webinars. These webinars reached 150 individuals in February 2010.

- *Home Energy Reports*
  - Home Energy Reports are customized reports mailed directly to PSE customers that help each residential customer better understand their home electric and gas consumption, motivate them to conserve and provide targeted calls to action tailored to help each customer save money and improve energy efficiency. The initial pilot included 40,000 combined gas and electric single family households and ran for one year. Pilot was launched 3rd quarter 2008. Additional customers will be added in partnership with communities who are interested in bringing the reports to their constituents, and in order to further evaluate the pilot.
    - Status:

      Contracts have been executed with 7 municipalities in east King County, as well as Bainbridge Island and Whatcom County to add approximately 119,000 customers to the pilot. The first reports were sent to the King County expansion group in October, and Whatcom and Bainbridge Island participants are expected to receive their first reports in February, 2011. The initial pilot group of 40,000 participants has been receiving reports for two years as of October. At that point we decided to discontinue a third of the remaining participants so that we can measure the impact of no longer receiving reports after being in the program for two years and compare it to participants who continue to receive reports.

- *Micro-Combined Heat and Power (CHP) System*
  - This pilot measure combines two technologies, an advanced warm air furnace that will also incorporate domestic water heating and a gas fired engine generator. This hybrid heat and power generation package provides energy efficiency in combined heat and power delivery to the home. The Freewatt® system is designed to be installed in the place of a typical furnace and uses the same ductwork system to deliver the heat to the home. PSE will offer this pilot to 20 single family homes within PSE's service territory.
    - Status:

      This pilot is scheduled to be launched in 2011.

- *Natural Gas Fireplaces*
  - High-efficiency direct vent gas fireplaces provide heat directly in the room. Advances in gas heating technology make these heat sources safe and easy to operate. Units must be direct vented with sealed combustion. PSE will utilize our existing contractor network for installation.

PSE will offer this pilot to 500 single family homes throughout PSE's service territory.

- Status:

  This program launched in January 2010. PSE conducted dealer outreach at local distributors in December 2009 and January 2010. We have had 27 participants without any marketing investment. We believe that this is a good start. Currently in development is a bill insert planned to run in August 2010. Further, development is ongoing for further outreach to dealers for the upcoming Fall/Winter season. We can target the dealers that are on PSE's CRS program for fireplaces and the companies that have already installed the fireplaces under this pilot program.

- *Residential Grants*
  - This pilot measure will utilize advanced energy modeling and structure-specific data to identify the energy savings value of an identified project. The savings will be unique to each project and allow a program approach similar to that of the existing commercial retrofit custom grant program. PSE will offer this pilot to 30 residential electric single family existing customers.
    - Status:

      This pilot is on hold as additional research is conducted, savings estimates evaluated and market penetration rates analyzed.

# BUSINESS SECTOR

## Overview

Readers will find that EES uses the term “Business” and “Commercial/Industrial (C/I)” interchangeably within this and following sections of the report. As the EES suite of offerings evolve and become more sophisticated, we constantly review the focus of the sector. We determined that there are many more business classifications other than “Commercial” and “Industrial”. Hence, the evolution of the sector name to that of “Business”.

As most of the EES Conservation Schedules indicate “Commercial/Industrial,” we felt it appropriate to retain that reference for consistency. As new iterations of reporting and tariffs are presented and reviewed by the CRAG, PSE will transition to a single reference.

Customer Base

The Business Sector serves a diverse set of clientele. Our programs serve small, medium and large commercial customers; industrial facilities and industrial processes; government entities such as school districts, municipal and county buildings, utilities such as water and sewer treatment plants, state and federal buildings and military bases. Our programs also serve agricultural customers such as farms, food storage and food processing.

Types of Incentives, Measures and Services

A variety of offerings are available and tailored to meet the needs of our customer base. PSE has incentives for efficiency improvements for both existing and new buildings and equipment. Prescriptive rebates are used for small lighting projects, motors, kitchen equipment, heating/cooling equipment, etc. Other prescriptive incentives are available for more complex projects such as new construction or Building Energy Optimization for existing buildings. Custom grants are used for large lighting projects and complicated projects such as HVAC modifications, heat recovery, process improvements, boiler upgrades and replacements, whole-building new construction, etc.

PSE’s services also include training and education for contractors and customers. For example we train contractors to make effective use of our programs; we sponsor workshops, conferences and provide incentives for customers to attend regional training programs such as Building Operator Certification. Resource Conservation Managers have individual and group training opportunities to improve their skills and to share their knowledge with others. Other types of support include Energy Interval Service, utility tracking software, analysis tools, etc.

Who We Work With

PSE works directly with the following entities to promote and deliver business efficiency programs:

- Customers
- Contractors
- Other Service Providers (e.g. direct-installers, RFP contractors, etc.)
- Design Professionals and Consultants
- NEEA; Other Utilities; Local & Regional Organizations
- Professional and Trade Associations (e.g. AEE, ASHRAE, BOMA, etc.)

Organizational Structure

The Business Sector is comprised of 36 engineers, manager, analysts and accomplished professionals, who participate in large construction project engineering, collaborate with contractors and vendors and exceed our customers' expectations throughout the vast PSE service territory. The Business Sector organization consists of three engineering teams that focus on custom grants; a commercial rebates team, a building performance team, and program support staff.

The engineering teams are responsible for administering custom grants and managing sector-specific programs such as Energy Smart Grocer and the Large Power User Self-Directed Program. All engineers work on a diverse mix of projects to broaden skills and promote professional development.

The commercial rebates team consists of a mix of engineers, program managers and implementers to deliver prescriptive rebates and programs. Two administrative specialists process commercial rebates and track rebate projects and participation.

The building performance team consists of program managers, applications analysts and engineers to support customers with operational and behavioral improvements for energy efficiency at their facilities. This team is responsible for delivery of the Resource Conservation Management (RCM) program and the Building Energy Optimization Program (BEOP).

Business support staff consists of a Senior Business Analyst and administrative specialists responsible for issuing and tracking grant contracts and maintaining procedures to ensure accurate tracking and reporting of business sector incentive payments and energy savings.

The Business Sector teams deliver programs through the following primary channels:

- Contractors (Lighting, Mechanical, Design-Build, Performance Contractors)
- Design Professionals (Architects, Mechanical Engineers, Electrical Engineers)
- Product Distributors
- Resource Conservation Managers (RCMs)
- Commissioning Agents

Geographical coverage: To enhance customer service and facilitate delivery through channels mentioned above across PSE's service area, members of the engineering teams and commercial rebate team are positioned in multiple PSE offices located in Burlington, Bothell, Bellevue, Bremerton, Kent, and Olympia.

Figure 5a provides a summary view of Business Energy Management's organizational structure. It illustrates the primary customer sectors served, measure delivery channels and incentive types.

**Figure 5a: Business Sector Organizational Structure**


| Service Delivery | | | |
|---|---|---|---|
| Trade Allies | | | Customer Direct |
| Contractors | Design Professionals | Product Distributors | Many services are provided directly to customers |
| Lighting<br>Mechanical<br>Design-Build<br>Performance Contractors<br>Contracted Direct-Install Programs | Architects<br>Engineers | Distributors<br>Resellers, Retailers | Communities,<br>Counties,<br>State/Fed Govt<br>Property owners,<br>Leasors,<br>Business owners |

| Schedule | Program | Responsible Business Group | | | |
|---|---|---|---|---|---|
| E250, G205 | Commercial/Industrial Retrofit | Engineering Teams<br>Building Performance Team | Engineering Teams<br>Building Performance Team | | Engineering Teams |
| E251/G251 | Commercial/Industrial New Construction | Engineering Teams<br>Building Performance Team<br>Commercial Rebate Team | Engineering Teams<br>Building Performance Team | | Engineering Teams |
| E253, G208 | Resource Conservation Manager | | | | Building Performance Team |
| E255 | Small Business Lighting | Commercial Rebate Team | | | Commercial Rebate Team |
| E257 | LED Traffic Lights | | | | Commercial Rebate Team |
| E258 | Large Power Users/Self-Directed | | | | Engineering Teams |
| E262/G262 | Commercial Rebates | Commercial Rebate Team | | Commercial Rebate Team | Commercial Rebate Team |

Value to Customers and Trade Allies

PSE provides direct incentives to customers in the form of rebates, grants and direct-installation of equipment. Customers also receive indirect incentives such as point-of-sale discounts. In addition to financial incentives, customers receive services such as training & education, Energy Interval Service and other services, including expert on-site advice, etc. Contractors, design professionals and other trade allies can boost their business and knowledge in the application of energy efficient technologies through PSE's programs.

Program and Services Development

PSE strives to enhance and refine its programs to achieve annual goals in a cost effective manner. It is imperative that our customers, contractors and vendors—who provide efficient equipment and services—find our services worthwhile and our participation requirements well-defined and easy to navigate.

We gain insights and high level guidance for our programs from our Integrated Resource Plan. But program design and implementation is where "the rubber meets the road." PSE exerts significant effort to work out program details and anticipate issues or barriers pertaining to participation before a program is launched to the public, and continues to modify and adjust programs based on input from participants and lessons learned from completed projects.

We rely heavily on support from others who are experts in the field when designing new programs or modifying existing programs. We value suggestions from our customers and trade allies because they are most directly involved in the process. We also rely on the experience of other utilities and players in the energy efficiency field. After launching a program, we constantly look for ways to improve it, simplify it, make it more user-friendly and adjust it as needed to respond to changing market conditions.

To keep informed of the latest technologies, we make use of extensive regional and national information resources to help enhance and refine our program offerings; (e.g. NPCC, Regional Technical Forum, NEEA Energy Efficiency Technology Roadmap, BPA's E3T/HVAC Technical Advisory Group, WSU Energy Program, Emerging Technologies Coordinating Council, various National Labs, Department of Energy, CEE, ACEEE, AEE, ASHRAE, etc.) We also make use of our Energy Efficient Technology Evaluation tariff to research technologies or new applications that show significant potential.

The "oversight" function is important in order to assure that our programs continue to stay on track, achieve our goals and do it cost effectively. PSE's Evaluation staff reviews our savings, delivery methods, measure costs and program cost effectiveness. It assures accurate reporting of our results and helps to improve our processes. The Conservation & Renewable Advisory Group (CRAG) also provides valuable guidance and advice regarding our programs.

## Five-Year Trends

As illustrated in Figure 5b, the five-year trends indicate an average annual increase in electric savings of 21.4 percent and an overall 86 percent increase from 2006 to 2010. Figure 5c illustrates an average annual increase in gas savings of ten percent and an overall 40 percent from 2006 to 2010.

**Figure 5b: Business Sector Electric Savings (MWh) and Expenses**

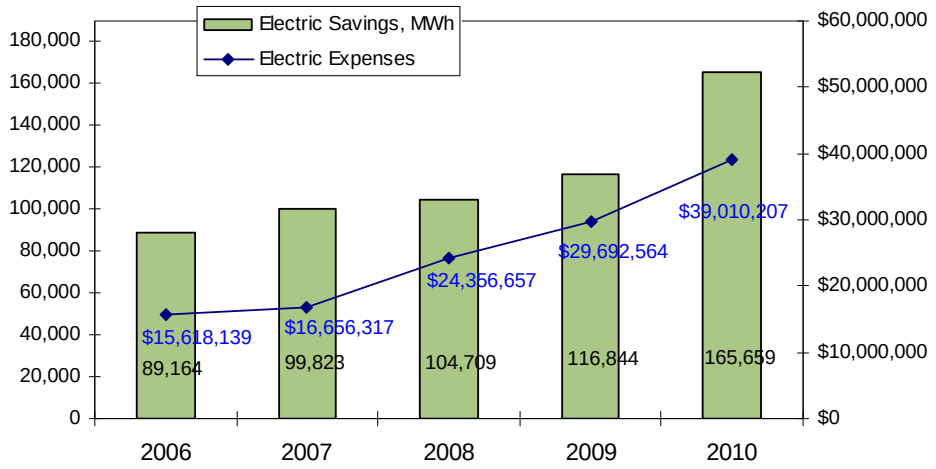
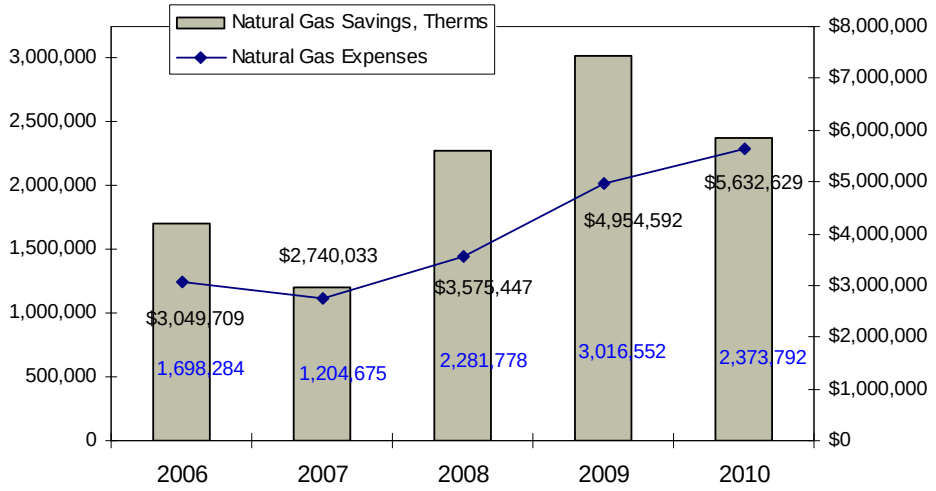



**Figure 5c: Business Sector Gas Savings*44* and Expenses**




[44] Some very large retrofit gas projects anticipated for fall 2010 completion did not get completed and fully commissioned by year-end. This combined with a break in spray head direct install programs resulted in lower BEM natural gas savings.

## 2010 Summary

### Electric Programs

The Business Energy Management team achieved a record quantity of custom grant measures and rebate measures in 2010. The effects of the economic downturn and fall-off in new construction activity led many contractors to utilize energy efficiency incentives to help them market their electric retrofit projects.

The Small Business Lighting rebate program experienced a rapid increase in participation. A similar trend was experienced in other rebate programs and the quantity of custom grant measures funded.

While new construction starts were down significantly, existing project closeout activity was high due to the time required after a building is completed to commission and verify funded efficiency measures.

2010 saw program expenditures finish the year at $39,010,207[45], or 121 percent of year-end budget. Commercial/Industrial electric programs achieved savings of 165,659 MWh (18.9 aMW), which is 142 percent of year-end savings goals.

### Natural Gas Programs

The custom grant retrofit program yielded significant savings in 2010 as a result of high program participation and several large scale projects involving heat recovery and ventilation controls at energy intensive facilities such as hospitals, laboratories, and natatoriums.

The Resource Conservation Manager (RCM) program generated large natural gas savings in 2010, due in part to carryover of 2009 projects that could not be closed until meter data issues were resolved to ensure accurate savings.

Business gas program expenditures finished the year at $5,632,629, or 145 percent of year-end budget. The sector achieved savings of 2,373,792 therms in 2010, which is 95 percent of year-end savings goals.

### Key Results Drivers

On the electric side of the Sector, participation in PSE's Small Business Lighting Rebate program increased tremendously as contractors leveraged PSE incentives to help sell projects during a down economy.

[45] This total amount includes $758,514 of 2006-2009 Large Power User Self-Directed program expenses reported in 2010 during previous program cycle true-up and closeout.

- Many contractors lowered costs so that PSE incentives covered a greater portion of the measure cost (less cost to customer). PSE lowered incentives in the Small Business Lighting program in response to these changing market conditions. This ensured an appropriate level of project cost-sharing with customers and provided cost savings on a "per project" basis to support budgeting for an increased quantity of projects
- A significant increase in project volume occurred in late 2009/early 2010 and a special team was mobilized to process these projects
- Project volume and annual savings were more than double the original 2010 goal.

Additionally, some large New Construction projects were completed in 2010. Even though construction has slowed due to economic conditions, projects typically take several years to complete.

Several programs also realized greater than expected gas savings. One key driver was the RCM program, which saw a significant increase in participation rates in 2010. Some of the early 2010 results included delayed completion of 2009 Start-Up Grant deliverables by customers, resulting in an accumulation savings from activities initiated and partially completed in previous years due to RCM turnover[46] which delayed savings verifications along with reconciliation and verification of meter data[47].

Details of Business Sector results are included in the program overviews in Section 6.

[46] PSE does not claim savings until deliverables are completed. RCM turnover often results in additional time and effort being required to complete start-up deliverables. Energy savings associated with program start-up deliverables are not claimed until these activities are fully completed.

[47] Savings are not claimed until verified and "trued-up", e.g. After verifying the accuracy of data used for the analysis a regression model is used to normalize for variables such as weather, square footage, or similar energy-driving factors.

## 2010 Programs

The 2010 performance for each program in the Business Sector is indicated in Tables 5a[48] and 5b.

### Table 5a: Business Sector 2010 Expenditures

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| E250 | C/I Retrofit | $ 11,709,016 | $10,657,883 | **$22,366,899** | 102.4% | $21,850,000 |
| E251 | C/I New Construction | $ 1,479,993 | $3,242,195 | **$4,722,188** | 219.2% | $2,153,846 |
| E253 | Resource Conservation Manager - RCM | $ 428,538 | $492,787 | **$921,326** | 76.8% | $1,200,000 |
| E255 | Small Business Lighting Rebate | $ 3,881,252 | $3,367,295 | **$7,248,547** | 189.6% | $3,822,222 |
| E257 | LED Traffic Signals | $ 13,360 | $741 | **$14,101** | 56.4% | $25,000 |
| E258 | Large Power User - Self Directed | $ 544,133 | $520,989 | **$1,065,122** | 255.6% | $416,667 |
| E260 | Commercial Energy Efficiency Information | $ 66,099 | $35,642 | **$101,741** | 47.9% | $212,500 |
| E262 | Commercial Rebates | $ 1,652,050 | $918,233 | **$2,570,283** | 100.6% | $2,555,556 |
| | **Total Electric Programs** | $ 19,774,441 | $19,235,767 | **$39,010,207** | 121.0% | $32,235,791 |
| G205 | C/I Retrofit | $ 1,805,873 | $2,257,395 | **$4,063,268** | 203.2% | $2,000,000 |
| G251 | C/I New Construction | $ 225,281 | $269,233 | **$494,515** | 72.7% | $680,000 |
| G208 | RCM | $ 259,540 | $289,912 | **$549,453** | 137.4% | $400,000 |
| G260 | Commercial Energy Efficiency Information | $ 43,964 | $27,924 | **$71,888** | 35.9% | $200,000 |
| G262 | Commercial Rebates | $ 266,508 | $186,998 | **$453,506** | 74.8% | $606,667 |
| | **Total Gas Programs** | $ 2,601,167 | $3,031,463 | **$5,632,629** | 144.9% | $3,886,667 |

### Table 5b: Business Sector 2010 Savings

| 2010 | Savings | 2010 Quarterly View: MWh and Therms | | | | 2010 Goal |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Goal | |
| Electric | Electric | Electric (MWh) | | | | Electric |
| Gas | Gas | Gas (Therms) | | | | Gas |
| E250 | C/I Retrofit | 44,544 | 39,164 | **83,708** | 126.8% | 66,000 |
| E251 | C/I New Construction | 4,178 | 12,614 | **16,792** | 335.8% | 5,000 |
| E253 | Resource Conservation Manager - RCM | 6,870 | 13,299 | **20,169** | 168.1% | 12,000 |
| E255 | Small Business Lighting Rebate | 13,038 | 12,140 | **25,178** | 209.8% | 12,000 |
| E257 | LED Traffic Signals | 334 | 0 | **334** | 66.9% | 500 |
| E258 | Large Power User - Self Directed | 0 | 604 | **604** | 60.4% | 1,000 |
| E260 | Commercial Energy Efficiency Information | 0 | | **0** | | 0 |
| E262 | Commercial Rebates | 13,647 | 5,227 | **18,874** | 94.4% | 20,000 |
| | **Total Electric Programs** | 82,612 | 83,047 | **165,659** | 142.2% | **116,500** |
| G205 | C/I Retrofit | 300,648 | 456,916 | **757,564** | 222.8% | 340,000 |
| G251 | C/I New Construction | 51,261 | 49,370 | **100,631** | 100.6% | 100,000 |
| G208 | RCM | 271,569 | 854,135 | **1,125,704** | 469.0% | 240,000 |
| G260 | Commercial Energy Efficiency Information | 0 | 0 | **0** | | 0 |
| G262 | Commercial Rebates | 251,620 | 138,273 | **389,893** | 21.4% | 1,820,000 |
| | **Total Gas Programs** | 875,098 | 1,498,694 | **2,373,792** | 95.0% | **2,500,000** |

[48] Schedule E258, Large Power User/Self-Directed Program expenses shown in Table 5a reflect both 2010 program activity and costs associated with 2006-2009 program cycle close-out. Expenses related to actual 2010 program activity total $306,608. Additional amounts shown in Table 5a are related to close-out of the 2006-2009 program cycle and include a large grant payment that was delayed until January 2010 and a $235,622 charge (transfer) to the NEEA program as required for Schedule 449 participants.

Figures 5d and 5e show the relative savings and expenses for all EES Business programs.

**Figure 5d: Business Sector Savings, as percents of totals**

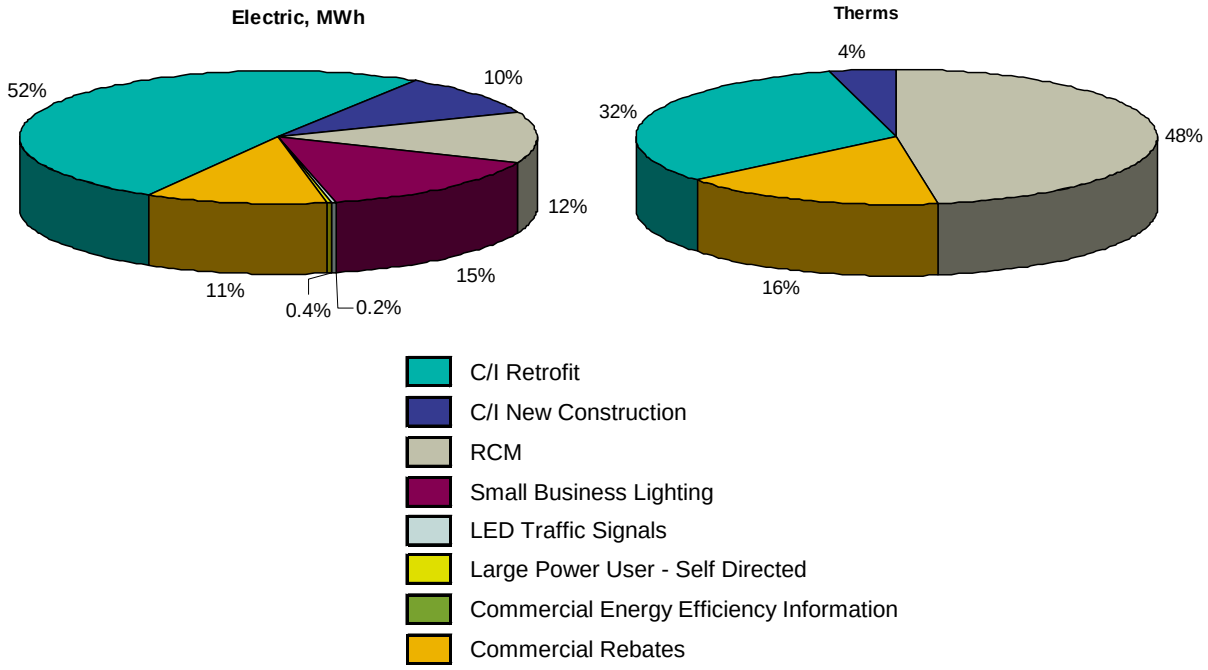
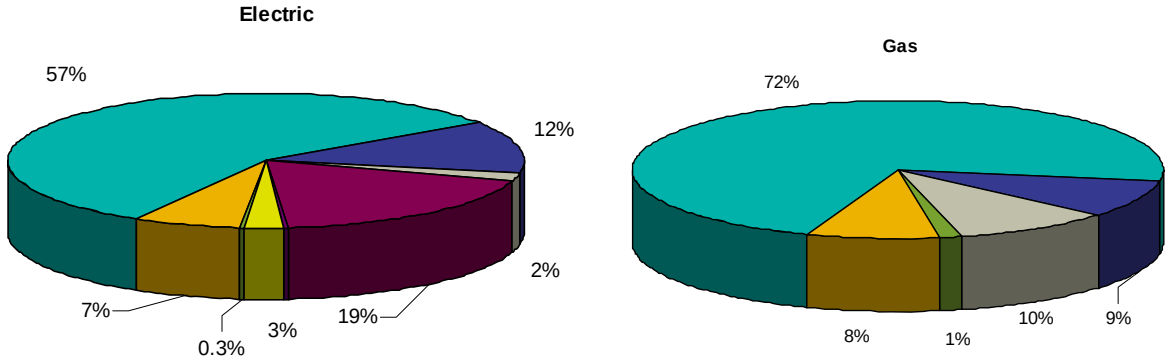



**Figure 5e: Business Sector Expenses, as percents of totals**



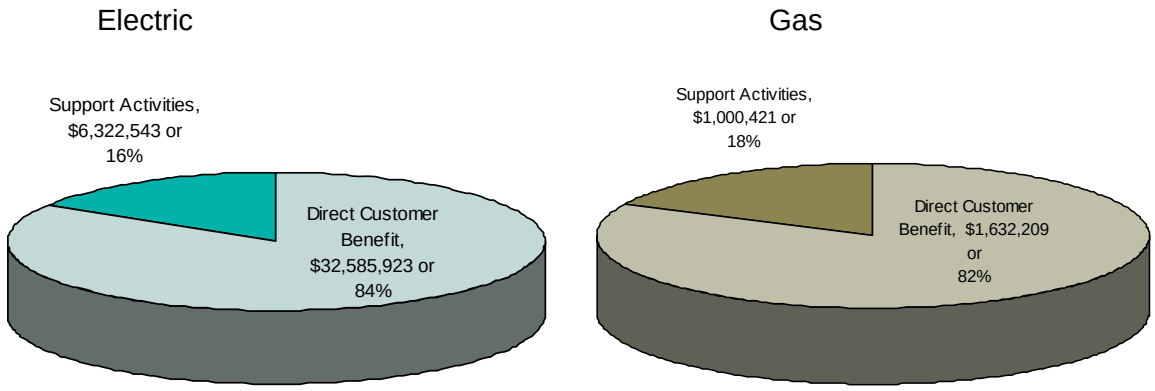
## Direct Benefit to Customer

As a measure of how effectively PSE is using ratepayer dollars, PSE considers Direct Benefit to Customer to be defined as rebates, grants, credits or services that are of value to customers. The Business Sector aggregate DBtC ratios are represented in Figure 5f.

Services can include, but aren't limited to, credits on equipment purchases at point of sale, payments to contractors for direct installation of efficiency measures at customer facilities and online access to energy interval data. For example, customers may receive a commercial rebate applied as a point of sale discount when they purchase high-efficiency commercial kitchen equipment or compact fluorescent lamps from a commercial supplier.

The Figure 5f charts represent the overall Business Sector ratios for electric and gas. As noted, the DBtC for electric programs is 84 percent and the gas DBtC is 82 percent. Program-specific ratios are noted in the applicable program overviews.

**Figure 5f: Business Sector Direct Benefit to Customer Ratio**




Support activities include a certain amount of administrative functions necessary to efficiently operate the department and maintain accurate recordkeeping, provide required reporting and maintain good customer service. Additionally, the noted Support Activities include, but are not limited to, marketing—including the creation and distribution of energy efficiency brochures, web and media content—market research, all program support functions, including rebate processing, reporting, systems support and analyses. Evaluation functions, EME project evaluation and verification analyses, trade ally/contractor training, community event participation and customer renewable program support is included in this category. Each of these is critical to providing ratepayers with cost-effective, value-added energy efficiency programs.

## Business Cost-Effectiveness

Table 5c represents the Utility Cost and Total Resource Cost benefit-to-cost ratios for the Business Sector.

**Table 5c: Business Sector Cost Effectiveness Tests**

| Benefit to Cost Ratios | | |
|---|---|---|
| | Utility Cost | Total Resource Cost |
| **Electric** | 4.27 | 3.19 |
| **Gas** | 2.84 | 1.62 |

Table 5d and Table 5e provide highlights of data[49] used to determine the Sector's UC B/C and TRC B/C, respectively. The complete UC and TRC tables are presented in Appendix D of this report.

[49] Some fields in the TRC tables which do not affect overall indicated cost-effectiveness figures and are included in the Appendix D Cost-Effectiveness tables, are hidden in Table 5e in order to preserve the report formatting.

## Table 5d: Business Sector UC Cost Effectiveness Data

**Electric**

| Sch. No. | Program Name | Meas Life | Electric End-Use Type | kWh Savings | Program Overhead Cost | Incentive Payments | Total Program Administrator Cost | Levelized Program Administrator Cost per kWh | Cost Eff. Standard Value per kWh | UC B/C Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| **250** | C&I Retrofit | 13 | CILTG | 83,707,532 | $ 2,562,180 | $19,804,719 | $ 22,366,899 | $ 0.034 | $ 0.144 | **4.20** |
| **251** | C&I New Construction | 15 | CILTG | 16,791,573 | $ 187,000 | $ 4,535,188 | $ 4,722,188 | $ 0.033 | $ 0.148 | **4.44** |
| **253** | Resource Conservation Manager (RCM) | 2 | CILTG | 20,168,854 | $ 619,567 | $ 301,759 | $ 921,326 | $ 0.026 | $ 0.105 | **4.09** |
| **255** | Small Business Energy Efficiency | 12 | CILTG | 25,178,226 | $ 572,478 | $ 6,676,069 | $ 7,248,547 | $ 0.039 | $ 0.142 | **3.67** |
| **257** | LED Traffic Signals | 7 | CILTG | 334,470 | $ 741 | $ 13,360 | $ 14,101 | $ 0.008 | $ 0.130 | **15.96** |
| **258** | Large Power User - Self Directed | 13 | CILTG | 604,218 | $ 17,965 | $ 288,643 | $ 306,608 | $ 0.065 | $ 0.144 | **2.21** |
| **260** | Commercial Information Services | | | - | $ 101,741 | $ - | $ 101,741 | | | |
| **262** | C&I Incentive Program | 7 | FLAT | 18,873,914 | $ 523,172 | $ 2,047,111 | $ 2,570,283 | $ 0.026 | $ 0.110 | **4.17** |
| | Total Business Efficiency Programs | 11 | | 165,658,787 | $ 4,584,845 | $33,666,849 | $ 38,251,693 | $ 0.033 | $ 0.140 | **4.27** |

**Gas**

| Sch. No. | Program Name | Meas Life | Gas End-Use Type | Therm Savings | Program Overhead Cost | Incentive Payments | Total Program Administrator Cost | Levelized Program Administrator Cost per Therm | Cost Eff. Standard Value per Therm | UC B/C Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| **205** | C&I Retrofit | 17 | CISH | 757,564 | $ 587,736 | $ 3,475,532 | $ 4,063,268 | $ 0.60 | 1.34 | **2.25** |
| **208** | Resource Conservation Manager | 2 | CISH | 1,125,704 | $ 358,616 | $ 190,836 | $ 549,453 | $ 0.27 | 0.96 | **3.48** |
| **251** | C&I New Construction | 14 | CISH | 100,631 | $ 71,802 | $ 422,713 | $ 494,515 | $ 0.60 | 1.30 | **2.14** |
| **260** | Commercial Information Services | | | - | $ 71,888 | $ - | $ 71,888 | | | |
| **262** | C&I Incentive Program | 5 | CISH | 389,893 | $ 131,297 | $ 322,209 | $ 453,506 | $ 0.29 | 1.11 | **3.78** |
| | Total Business Efficiency Programs | 8 | CISH | 2,373,792 | $ 1,221,340 | $ 4,411,290 | $ 5,632,630 | $ 0.42 | 1.18 | **2.84** |

## Table 5e: Business Sector TRC Cost Effectiveness Data

**Electric**

| Sch. No. | Program Name | Meas Life | kWh Savings | Program Overhead Cost | Incentive | Customer Cost | Incremental Measure Cost | Total Resource Cost | Total Benefits per kWh | TRC B/C Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| **250** | C&I Retrofit | 13 | 83,707,532 | 2,562,180 | $ 19,804,719 | $ 14,544,936 | $ 31,086,476 | $ 33,648,656 | 0.158 | **3.07** |
| **251** | C&I New Construction | 15 | 16,791,573 | 187,000 | $ 4,535,188 | $ - | $ 4,535,188 | $ 4,722,188 | 0.163 | **4.88** |
| **253** | Resource Conservation Manager (RCM) | 2 | 20,168,854 | 619,567 | $ 301,759 | $ 1,037,054 | $ 1,338,813 | $ 1,958,380 | 0.116 | **2.12** |
| **255** | Small Business Energy Efficiency | 12 | 25,178,226 | 572,478 | $ 6,676,069 | $ 1,745,069 | $ 8,421,138 | $ 8,993,616 | 0.156 | **3.25** |
| **257** | LED Traffic Signals | 7 | 334,470 | 741 | $ 13,360 | $ 95,129 | $ 108,489 | $ 109,230 | 0.143 | **2.27** |
| **258** | Large Power User - Self Directed | 13 | 604,218 | 17,965 | $ 288,643 | $ 100,031 | $ 388,674 | $ 406,639 | 0.158 | **1.84** |
| **260** | Commercial Information Services | | | 101,741 | | | | $ 101,741 | | |
| **262** | C&I Incentive Program | 7 | 18,873,914 | 523,172 | $ 2,047,111 | $ 3,873,997 | $ 5,921,108 | $ 6,444,280 | 0.121 | **1.83** |
| | Total Business Efficiency Programs | 11 | 165,658,787 | 4,584,845 | $ 33,666,849 | $ 21,396,216 | $ 51,799,886 | $ 56,384,731 | 0.154 | **3.19** |

**Gas**

| Sch. No. | Program Name | Meas Life | Therm Savings | Program Overhead Cost | Incentives | Customer Cost | Incremental Measure Cost | Total Resource Cost | Total Benefits per Therm | TRC B/C Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| **205** | C&I Retrofit | 17 | 757,564 | 587,736 | $ 3,475,532 | $ 3,206,052 | $ 6,681,583 | $ 7,269,319 | 1.473 | **1.38** |
| **208** | Resource Conservation Manager | 2 | 1,125,704 | 358,616 | $ 190,836 | $ 818,422 | $ 1,009,258 | $ 1,367,875 | 1.047 | **1.53** |
| **251** | C&I New Construction | 14 | 100,631 | 71,802 | $ 422,713 | $ - | $ 422,713 | $ 494,515 | 1.419 | **2.35** |
| **260** | Commercial Information Services | | | 71,888 | | | | $ 71,888 | | |
| **262** | C&I Incentive Program | 5 | 389,893 | 131,297 | $ 322,209 | $ 1,152,764 | $ 1,474,973 | $ 1,606,270 | 1.215 | **1.17** |
| | Total Business Efficiency Programs | 8 | 2,373,792 | 1,221,340 | $ 4,411,290 | $ 5,177,238 | $ 9,588,528 | $ 10,809,867 | 1.296 | **1.62** |

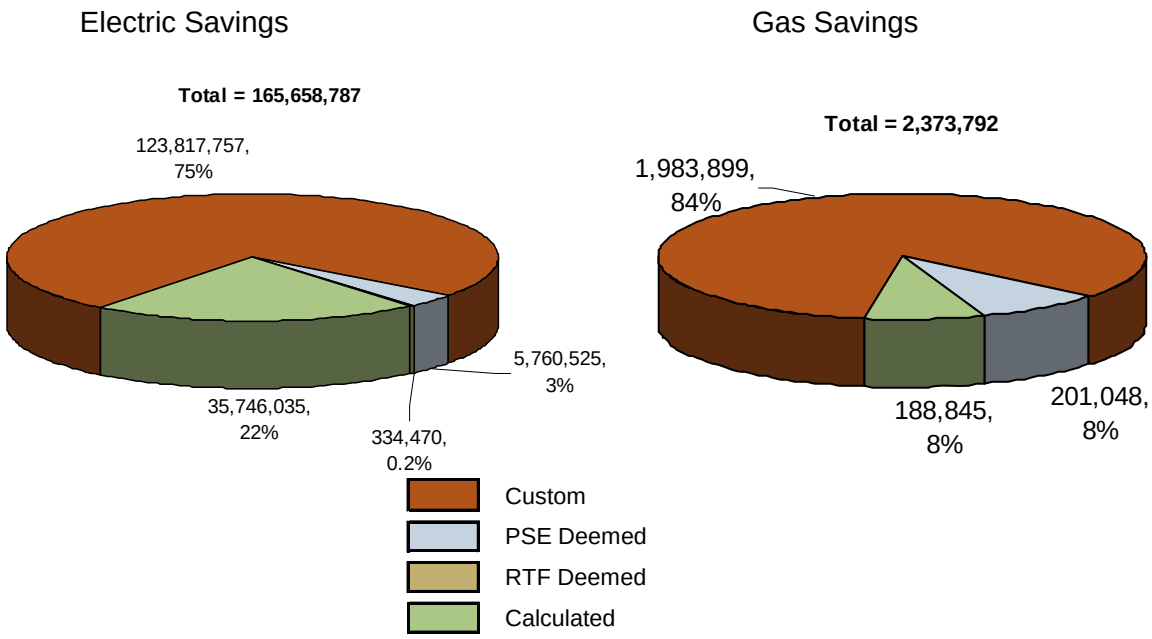
## Savings Distributions by Measure Type

Figure 5g illustrates the distribution of savings in the Business Sector by measure type. Since the RTF does not deem gas prescriptive savings, all prescriptive gas measures are considered PSE Deemed, Calculated or Custom. In contrast to the savings distribution in the Residential Sector[50], it is apparent that the majority of Business savings are derived from custom measures[51].

[50] A similar chart is included in the Residential Sector Overview, beginning on page 38

[51] In contrast to prescriptive measures, custom measures are determined on a project-by-project basis and are calculated and verified in a multi-step process by EES Energy Management Engineers.

**Figure 5g: Business Sector Savings Distributions by Measure Type**




## Continuous Improvement

With increased goals in 2010 and significant growth in demand for services and incentives, the Business team took several significant steps throughout the year to increase productivity while maximizing quality:

- We improved project management tools, developed standardized calculations and reviewed processes to improve worker efficiency and throughput
- We implemented more stringent QC review requirements and trained additional senior-level engineers to conduct project reviews
- We developed simplified incentive structures for several programs
- We revised our program offerings in response to changing market conditions.

Details of these changes and improvements are included in the following Business Programs review, Section 6.

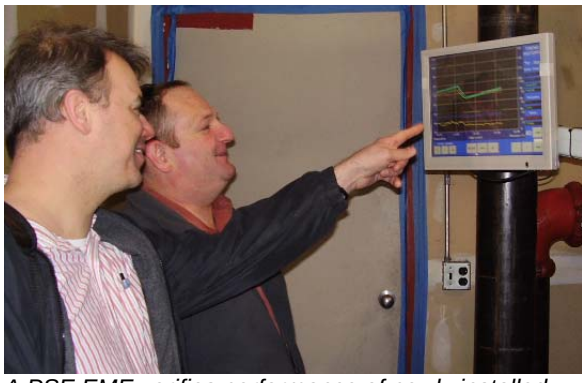
# BUSINESS PROGRAMS

## Commercial/Industrial Retrofit

Schedules E250/G205

A typical large commercial pump motor.
unit.

Installing a commercial rooftop HVAC



*A PSE EME verifies performance of newly installed equipment.*

### Description

PSE works with commercial and industrial customers to provide incentives for cost-effective energy efficiency upgrades to equipment, building shell, industrial process, and select O&M improvements. These services are provided on the customer's behalf and, where specified by the customer, will be developed in conjunction with design engineers, contractors, and/or vendors.

PSE conducts site visits to determine savings opportunities and makes recommendations to customers. PSE also reviews third-party savings estimates and analyses, and when required, performs in-house analyses to validate energy savings. PSE works with financial decision makers at the customer's facility to ensure the customer is aware of cost-savings opportunities, including review of energy saving projections that can help obtain favorable financing rates.

Commercial/industrial retrofit projects commonly include: lighting system upgrades, HVAC equipment upgrades, HVAC controls improvements, commercial refrigeration measures, and industrial process modifications. Additionally, incentives for existing building commissioning (O&M) improvements are provided through the Building Energy Optimization Program offered under C/I Retrofit.

C/I Retrofit offerings include the Energy Smart Grocer Program, a contracted program, managed by Portland Energy Conservation, Inc. (PECI). The program provides energy audits and prescriptive incentives focused on refrigeration, controls, and lighting in supermarkets and grocery stores.

Upon a customer's decision to proceed with a project, PSE issues a standardized Conservation Grant Agreement that establishes terms and conditions for participation in PSE's Custom Grant Program. After the agreement is signed by both parties, a customer is given notice to proceed with the energy efficiency project. Following completion of the project, PSE verifies the installation and energy savings via an on-site inspection, review of equipment operation and trend log data where necessary, and collection of project invoicing and specifications of installed equipment.

**Program Performance**

Tables 6a and 6b provide a summary of 2010 expenditures and energy savings for the Commercial/Industrial Retrofit program.

**Table 6a: Business Retrofit 2010 Expenditures**

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| E250 C/I Retrofit | | $ 11,709,016 | $10,657,883 | **$22,366,899** | 102.4% | $ 21,850,000 |
| G205 C/I Retrofit | | $ 1,805,873 | $2,257,395 | **$4,063,268** | 203.2% | $ 2,000,000 |

**Table 6b: Business Retrofit 2010 Savings**

| 2010 | Savings | 2010 Quarterly View: MWh and Therms | | | | 2010 Goal |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Goal | |
| Electric | Electric | Electric (MWh) | | | | Electric |
| Gas | Gas | Gas (Therms) | | | | Gas |
| E250 C/I Retrofit | | 44,544 | 39,164 | **83,708** | 126.8% | 66,000 |
| G205 C/I Retrofit | | 300,648 | 456,916 | **757,564** | 222.8% | 340,000 |

**2010 Program Revisions**

PSE revised incentive structures in March 2010 to present a simple, clear calculation for customers and contractors, to align with current market conditions and compensate for external factors, such as economic stimulus programs and tax incentives that are driving increased implementation of energy efficiency retrofits. The revision resulted in reduced incentives for less cost-effective projects, in order to maintain program cost-effectiveness. Applications received after March 1, 2010 were funded based on the criteria below:

| Measure Type | Incentive Rate | Incentive Cap |
|---|---|---|
| Electric Lighting | $0.20 per kWh of annual savings | 50% of Measure Cost |
| Electric Non-Lighting | $0.30 per kWh of annual savings | 70% of Measure Cost |
| Natural Gas | $5.00 per Therm of annual savings | 70% of Measure Cost |

In the latter half of 2010, PSE reviewed all electric and gas retrofit projects to evaluate the impacts of funding formula revisions. For electric projects, the number of measures installed and the savings achieved were at least as high, or more than were achieved in previous years. The average cost of projects to PSE ($/kWh) declined after the new incentives went into effect, returning to levels seen in prior years. This suggests that contractors have been submitting more competitive proposals since this revision and projects are more cost effective.

For natural gas projects, the number of measures installed is approximately the same as it was in the 2008-2009 period. Energy savings has increased, suggesting that projects are more cost effective; however, a few large, very cost effective projects contributed to this trend. More data is needed to fully evaluate the impact of the new funding level on gas program participation and cost effectiveness.

**Process Improvements**

PSE improved productivity tools used by staff to streamline workflow. For example, PSE created and deployed a standardized Boiler Savings Calculation Spreadsheet for common gas retrofit measures. PSE Energy Management Engineers received training, and it was put into use in October 2010.

In May 2010, Energy Efficiency Services started requiring Gas Form 3719[52], requesting the size of gas equipment and the required gas delivery pressure, for all projects where gas equipment would be installed. This facilitated early involvement of PSE's Construction Management team to ensure the gas service and meter would be adequate for the new equipment.

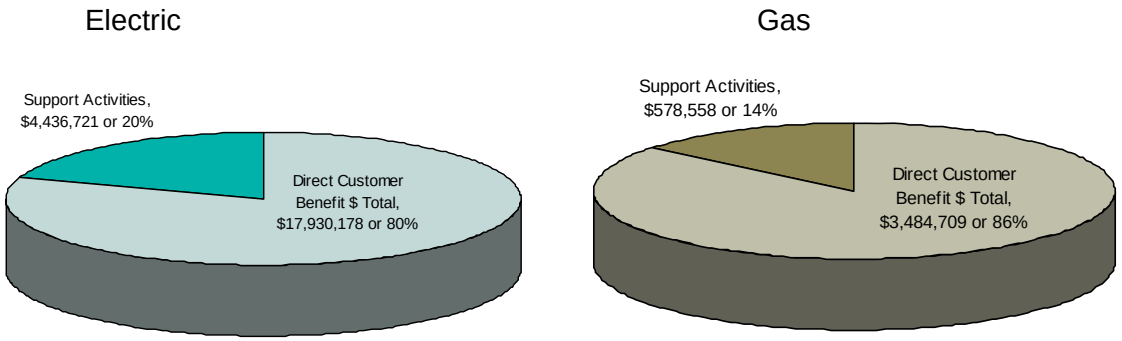
In August 2010, Energy Efficiency Services added an additional quality control step in the grant payment process. All projects with a grant more than $100,000, and any project with a significant change in final verified savings or measure cost compared to the original proposal and grant agreement, required a second engineering review prior to payment.

[52] This is an internal PSE document reference number.

### Direct Benefit to Customer

PSE considers Direct Benefit to Customer to be defined as rebates, grants, credits or services that are of value to customers. Figure 6a indicates that the Commercial/Industrial Retrofit program maintained a DBtC ratio of 80 percent in electric offerings and 86 percent in gas offerings through in 2010.

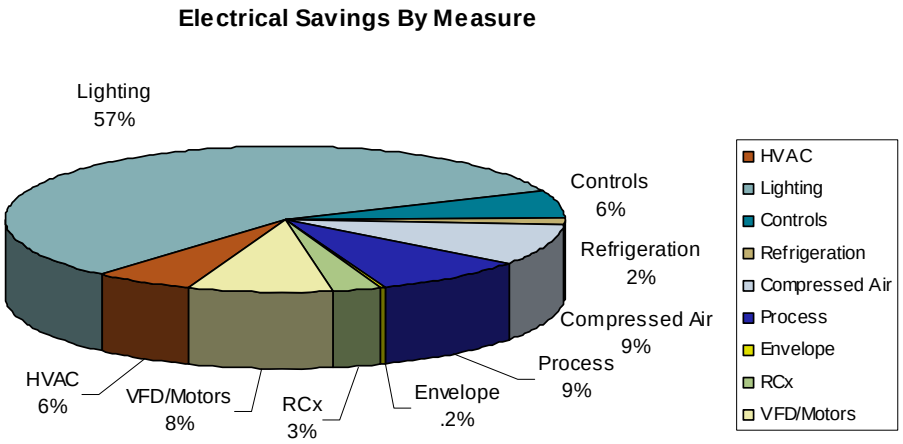
**Figure 6a: Business Retrofit Direct Benefit to Customer Ratio**




### Savings Distribution by Measure Type

Figure 6b reflects the distribution of savings by end-use measure type for the Business Retrofit program.

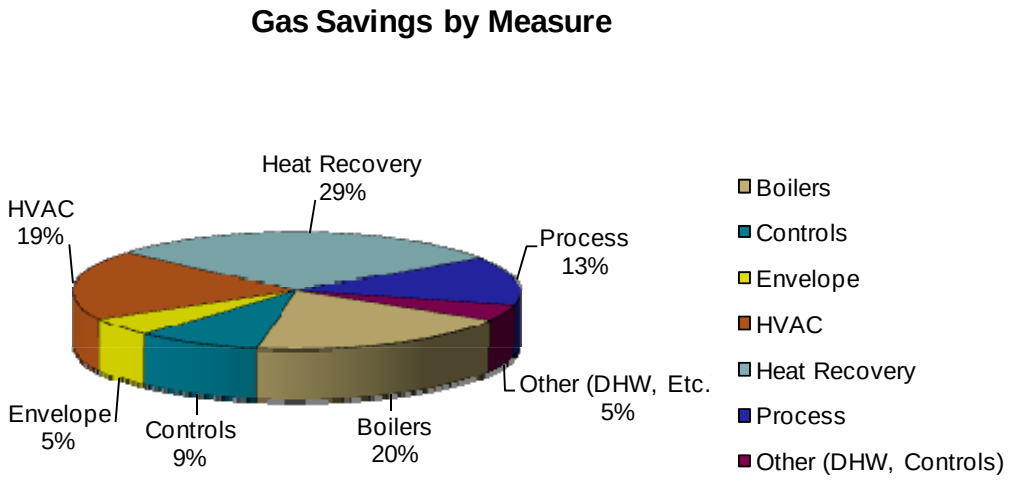
**Figure 6b: Electric Savings by Measure Type**




The above figure includes savings for custom grants under the Business Retrofit program, but does not include savings for the contracted Energy Smart Grocer Program.

Figure 6c shows natural gas savings by measure type.

**Figure 6c: Gas Savings by Measure Type**




**2010 Accomplishments and Activities:**

***Electric***

PSE experienced increased program activity in 2010. Significant influencing factors included:

- Increased contractor interest in PSE's incentive programs to help market their services during the economic downturn.
- Increased program activity resulting from economic stimulus programs, especially Office of the Superintendent of Public Instruction (OSPI) programs in which many public schools applied for PSE incentives.
- Completion of the first full year of the Building Energy Optimization (BEOP) program. Four projects were completed for a total savings of 1,700,000 kWh.
- Completion of 7 large projects saving a total of 10,390,000 kWh. Data center projects accounted for 3,500,000 kWh of this savings value and an energy recovery generation project at a wastewater treatment plant contributed 2,295,000 kWh.
- The Energy Smart Grocer Program achieved over four times the energy savings achieved in 2009. Total 2010 savings was 25,100,000 kWh.

***Gas***

- PSE experienced increased program activity in 2010, from economic stimulus programs.
- A few exceptionally large heat recovery projects and industrial process efficiency improvements contributed to a significant increase in savings from the C/I Retrofit program.

## Commercial/Industrial New Construction

Schedules E251/G251

*The PSE campus's EST building under construction.*

### Description

PSE works with designers and developers of any large or small new Commercial / Industrial facilities or major remodels, to propose cost-effective energy efficient upgrades that exceed energy codes or standard practice where minimum efficiency requirements are not prescribed by code. Three paths may be followed to qualify for assistance and/or funding for New Construction energy efficiency measures. New Construction Commissioning is also offered in addition to the building paths.

The first path is a prescriptive approach applicable to office, school and retail facilities less than 100,000 square feet. PSE recommends standardized packages of efficiency measures that typically yield savings of 10 percent or more versus a facility constructed to the minimum requirements of Washington State Energy Code 2006 Edition. Buildings permitted under WSEC 2009 Edition are not eligible for the prescriptive approach. However, due to the time required for design and construction, these projects typically take two or more years to complete and a significant number of projects utilizing this approach were awarded grant agreements in 2010.

The second path utilizes building energy simulation to demonstrate improvement over energy code requirements. PSE will work with designers to incorporate measures that produce at least 10 percent overall savings beyond applicable energy code, including local jurisdiction amendments. Given the time required for planning and construction, these projects typically take several years to complete and a many projects completed in 2010 were started during the peak of the recent construction boom.

The third path, or "Component Approach," is similar to the retrofit program where measures are evaluated individually and funding is based upon cost-effectiveness. Under this approach, customers may receive up to 70 percent of the incremental cost over a code-compliant baseline option.

New Construction Commissioning includes three phases: Design, Construction, and Post-Occupancy. The total incentive available for all three phases combined is up to $0.50/square foot. The maximum incentive for each phase is as follows:

- $0.10/SF if the commissioning agent participates during the Design Phase of a project
- $0.15/SF for participation during Construction
- $0.25/SF for participation during Post-Occupancy

A detailed and thorough PSE scope, which is focused on energy related commissioning work, is required in the commissioning agent's contract with the customer.

Customers assume full responsibility for utilizing their design teams and contractors to provide information to PSE for evaluation for grant funding. Projects must be approved for funding prior to installation/implementation to be eligible.

### Program Performance

Tables 6c and 6d provide a summary of 2010 expenditures and energy savings for the Commercial/Industrial New Construction program.

**Table 6c: Business New Construction 2010 Expenditures**

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| E251 C/I New Construction | | $ 1,479,993 | $3,242,195 | **$4,722,188** | 219.2% | $ 2,153,846 |
| G251 C/I New Construction | | $ 225,281 | $269,233 | **$494,515** | 72.7% | $ 680,000 |

**Table 6d: Business New Construction 2010 Savings**

| 2010 | Savings | 2010 Quarterly View: MWh and Therms | | | | 2010 Goal |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Goal | |
| Electric | Electric | Electric (MWh) | | | | Electric |
| Gas | Gas | Gas (Therms) | | | | Gas |
| E251 C/I New Construction | | 4,178 | 12,614 | **16,792** | 335.8% | 5,000 |
| G251 C/I New Construction | | 51,261 | 49,370 | **100,631** | 100.6% | 100,000 |

### 2010 Program Revisions

PSE revised incentive structures in March 2010 for projects using the Component Approach. The incentive is similar to the retrofit program, but for new construction it is based on the incremental cost over a code-compliant option. The new incentive structure presents a simple, clear calculation for customers and contractors. The incentives are shown in the following table:

| Measure Type | Incentive Rate | Incentive Cap |
|---|---|---|
| Electric Lighting | $0.20 per kWh of annual savings | 50% of Measure Cost |
| Electric Non-Lighting | $0.30 per kWh of annual savings | 70% of Measure Cost |
| Natural Gas | $5.00 per Therm of annual savings | 70% of Measure Cost |

A new Washington State Energy Code was scheduled for adoption on July 1, 2010, which would have potentially necessitated some revisions to the New Construction program, since we compare costs and savings to a code-compliant option. However, code adoption was delayed by the Governor due to its potential impact on the State's economy. Throughout the year, there was some uncertainty as to when it would actually be implemented. The adoption date was finally set for January 1, 2011. Therefore no changes were implemented to address the new code during 2010.

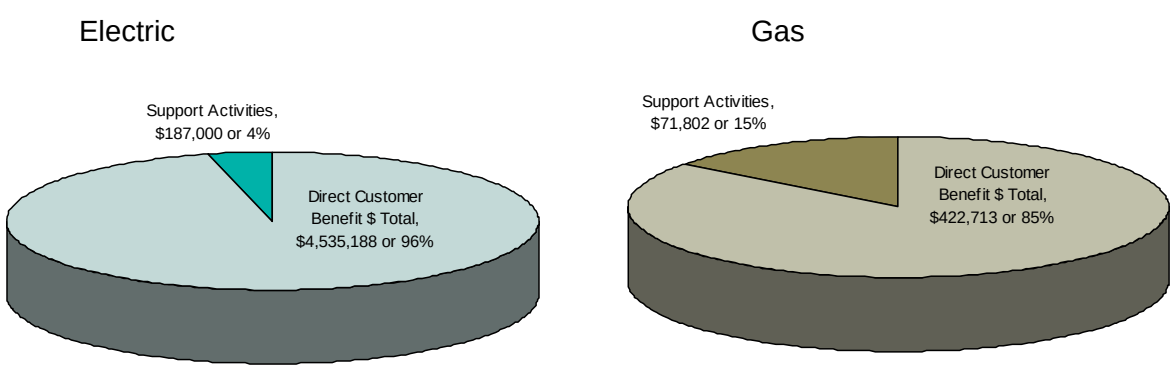
**Process Improvements**

For commissioning grants, a grant template, quality control checklists and a grant allocation calculator were developed to improve consistency, completeness and verification.

**Direct Benefit to Customer**

PSE considers Direct Benefit to Customer to be defined as rebates, grants, credits or services that are of value to customers. Figure 6d below indicates that the Commercial/Industrial New Construction program maintained a DBtC ratio of 96 percent for electric and 85 percent for gas in 2010.

**Figure 6d: Business New Construction Direct Benefit to Customer Ratio**




**2010 Accomplishments and Activities:**

The program significantly exceeded the initial goal for the year, with electric savings of more than three times expected results. Project completion dates are uncertain and difficult to predict due to changes in construction schedules, and the time required to fully commission and verify that proposed measures are installed and performing as proposed.

Some very large projects with uncertain completion and occupancy dates were completed in 2010, contributing to significantly higher electric savings than targeted for the New Construction program.

### *Electric*

The Commercial New Construction program activity remained steady by completing 47 projects in 2010, versus 52 completed in 2009. With the exception of six large projects (over 1,000,000 kWh each), the average grant amount per project was $21,500, with average savings of 81,000 kWh. The average grant for each of the six large projects was more than $600,000 and contributed more than 2.2 million kWh of savings, accounting for approximately 80 percent of the total program kWh savings and grants paid.

New Construction completion dates depend on the construction schedule and on completion of commissioning and reporting of all functional performance tests and trend data to verify that the measures are installed and operating as proposed. Close-out can take many months on complex projects. This creates challenges in predicting when major projects will be paid and savings claimed. Many projects started during the construction boom are just now reaching the final stages of closeout.

### *Gas*

The Commercial New Construction program gas efficiency projects were more uniform in their level of energy savings, averaging 5,300 therms per project, and the most for a single project was 34,000 therms (approximately 1/3 of the annual total). There were 19 projects that included gas-saving measures. Gas measures ranged from commissioning to high-efficiency packaged HVAC equipment, condensing boilers, and HVAC controls.

## Resource Conservation Manager

Schedules E253/G208


*A facility manager checks thermostat settings during RCM walk-through training.*

*An RCM customer receives recognition for outstanding database management at the 2010 Annual RCM meeting.*

### Description

PSE offers Resource Conservation Manager Services (RCM) to any school district, public-sector government agency, and commercial or industrial (C/I) customer with sufficient energy use to ensure program cost-effectiveness. The RCM program focuses on larger customers with multiple facilities. An RCM customer employs or contracts with someone who has designated resource- management responsibilities, including accounting for resource consumption and savings.

Customers qualify for the RCM program based on their annual PSE energy purchases. A typical customer baseline for a fulltime equivalent (1 FTE) program is 20,000,000 kWh for electric-only service or 2,700,000 therms for gas-only service from PSE. Funding levels are prorated based on the amount of staff a customer would need in order to achieve cost-effective savings from RCM efforts. Figure 6e illustrates the types of RCM customers participating in 2010. Figure 6f represents historical trends of RCM contract activity since 2003.

Monetary grants include a "start-up" grant for completion of deliverables associated with building the program foundation: hiring an RCM, setting up an energy-accounting database, writing a company resource management plan, and completing facility action plans. Once start-up deliverables are complete, the customer may qualify for "performance grants" based on achieving pre-established energy-reduction targets. Salary guarantees are available for customers with a full-time program on an as-needed basis.

The RCM agreement is valid for three years. Over this time, PSE anticipates a 10-12 percent reduction in overall energy use. Savings are calculated for each site in a customer's portfolio, using a linear regression model to normalize for dependent variables such as weather, square-footage or similar energy-driving factors. Reported annual savings are a variance from the previous year.

PSE may elect to renew a customer's RCM agreement in three-year increments to provide continued support and additional performance incentives.

**Figure 6e: Types of participating RCM customers**

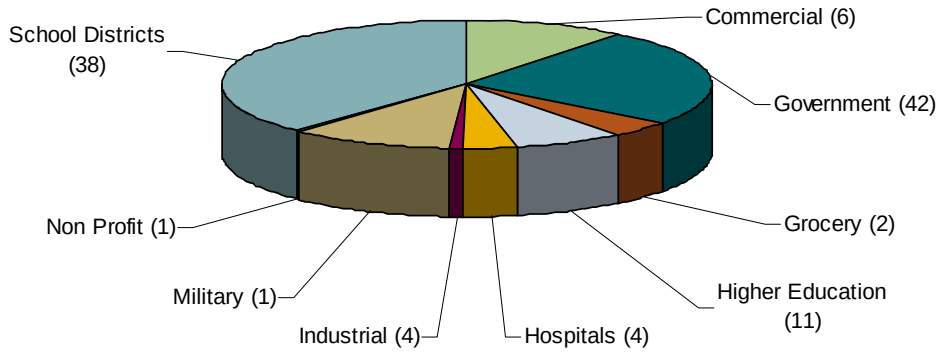
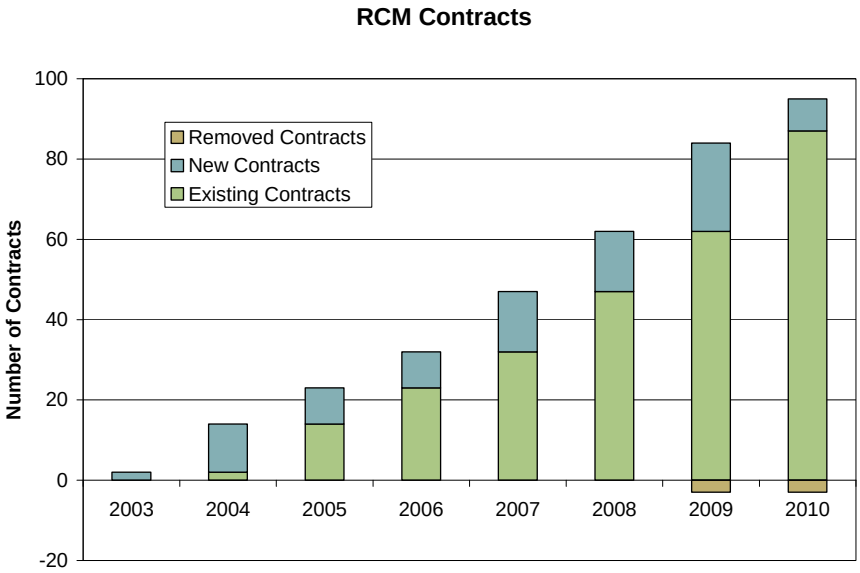



**Figure 6f RCM Contracts**




## Program Performance

Tables 6e and 6f provide a summary of 2010 expenditures and energy savings for the Resource Conservation Manager program.

### Table 6e: Resource Conservation Manager 2010 Expenditures

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| E253 | Resource Conservation Manager - RCM | $ 428,538 | $492,787 | **$921,326** | 76.8% | $ 1,200,000 |
| G208 | RCM | $ 259,540 | $289,912 | **$549,453** | 137.4% | $ 400,000 |

### Table 6f: Resource Conservation Manager 2010 Savings

| 2010 | Savings | 2010 Quarterly View: MWh and Therms | | | | 2010 Goal |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Goal | |
| Electric | Electric | Electric (MWh) | | | | Electric |
| Gas | Gas | Gas (Therms) | | | | Gas |
| E253 | Resource Conservation Manager - RCM | 6,870 | 13,299 | **20,169** | 168.1% | 12,000 |
| G208 | RCM | 271,569 | 854,135 | **1,125,704** | 469.0% | 240,000 |

## 2010 Program Revisions

There were no revisions to the Resource Conservation Manager program during 2010.

## Process Improvements

The team continues to focus on refining the RCM grant, QC, and data-supply process to improve clarity, consistency and efficiency. Below are examples of improvements made in 2010.

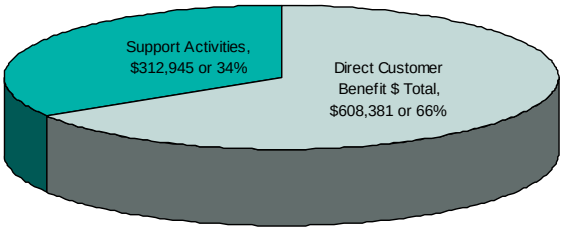
- Worked closely with customers to improve their performance calculations and reporting through training, clear communications, standardized forms & reports, and the use of refined calculation tools to adjust for un-related facility changes and production schedules.
- Streamlined the process of preparing and providing monthly bill data and Energy Interval Services to customers.
- Streamlined internal tracking of program status.

## Direct Benefit to Customer

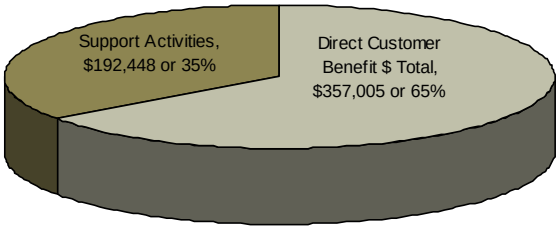
PSE considers Direct Benefit to Customer to be defined as rebates, grants, credits or services that are of value to customers. Figure 6g below indicates that the Resource Conservation Manager program maintained a DBtC ratio of 66 percent in electric and 65 percent in gas service during 2010.

**Figure 6g: Resource Conservation Manager Direct Benefit to Customer Ratio**

Electric




Gas




The RCM program DBtC ratio needs to be viewed with respect to the unique nature of the services offered. Unlike most other programs, the RCM Program focuses on operation & maintenance and behavior efforts, rather than equipment efficiency investments. RCM Support includes a suite of services for designing and implementing an RCM program that can be tailored to meet the specific needs of the customer. Typical support activities include assisting a customer in hiring or identifying an RCM, drafting program policies and plans, helping to identify PSE accounts and meters, supplying monthly billing and interval data, training staff on core RCM competencies, providing on-site technical assistance for audits, and a variety of other related assistance. Although the service is a distinct value to customers, these support activities have not been quantified as "direct customer benefits."

**2010 Accomplishments and Activities:**

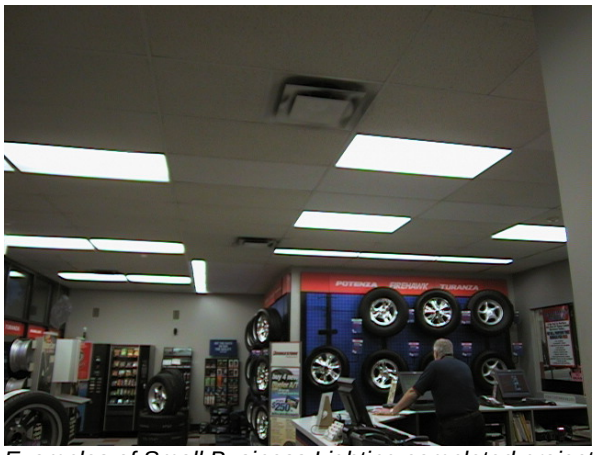
- The RCM program has grown by an average of 32 percent each year since its formal adoption in 2003. In 2010, we added 15 new customers under eight RCM contracts for a total of 110 customers and 85 contracts. Across all customers, the program impacts over 156 million square feet of facility space and nearly 9,000 PSE accounts.
- Four of the 2010 contracts are "shared" programs where multiple agencies have joined together to hire an RCM for program implementation. The four new shared programs add to four existing shared programs such that PSE's RCM team is now facilitating a total of eight programs with multiple agencies. These types of programs cause multiple challenges for our team, including writing the contract, tracking and reporting, and ensuring policy and procedures are adopted across multiple organizations.
- In 2010, PSE's RCM team closed out a total of 143 projects which reported savings of over 20 million kWh and 1.1 million therms.
- In addition to our annual RCM program meeting, a total of seven unique training seminars were offered to RCM customers this year. Over 80 customers attended the RCM program meeting, and 239 participated in the training seminars. An average of 17 customers attended each seminar.

High RCM gas savings results for the January to June period occurred due to high program participation rates and several factors that resulted in delayed reporting of savings from the prior year:

- Reporting of 2009 savings results was delayed awaiting completion of customers' Start-Up Grant deliverables
- Turnover of customer RCM employees resulted in delayed completion of deliverables (PSE does not claim savings until deliverables are completed; training of new RCMs delays completion of deliverables)
- Gas rate schedule conversions temporarily interrupted billing data reporting for the RCM tracking program, delaying final true-up and verification of savings until 2010. Savings are not claimed until verified and "trued-up", e.g. corrected for weather influences, linear regression analysis performed, etc. which requires accurate data.

## Small Business Lighting Rebates

Schedule E255



*Examples of Small Business Lighting completed projects.*

*An example of next-Generation LED lighting. (Image used with Permission of* CREE LED Lighting.*)*

### Description

The Small Business Lighting program provides a menu of lighting retrofit rebate options that meet the needs of most small business customers and maintains a network of lighting contractors and vendors that effectively serve small businesses. Eligibility is limited to Schedule 24 and Schedule 8 electric customers. Rebates cover a wide variety of efficient conversions for incandescent, fluorescent, high intensity discharge (HID), exit lights, and lighting controls.

### Program Performance

Tables 6g and 6h provide a summary of 2010 expenditures and energy savings for the Small Business Lighting program.

### Table 6g: Small Business Lighting 2010 Expenditures

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| E255 | Small Business Lighting Rebate | $ 3,881,252 | $3,367,295 | **$7,248,547** | 189.6% | $ 3,822,222 |

### Table 6h: Small Business Lighting 2010 Savings

| 2010 | Savings | 2010 Quarterly View: MWh and Therms | | | | 2010 Goal |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Goal | |
| Electric | Electric | Electric (MWh) | | | | Electric |
| E255 | Small Business Lighting Rebate | 13,038 | 12,140 | **25,178** | 209.8% | 12,000 |

## 2010 Program Revisions

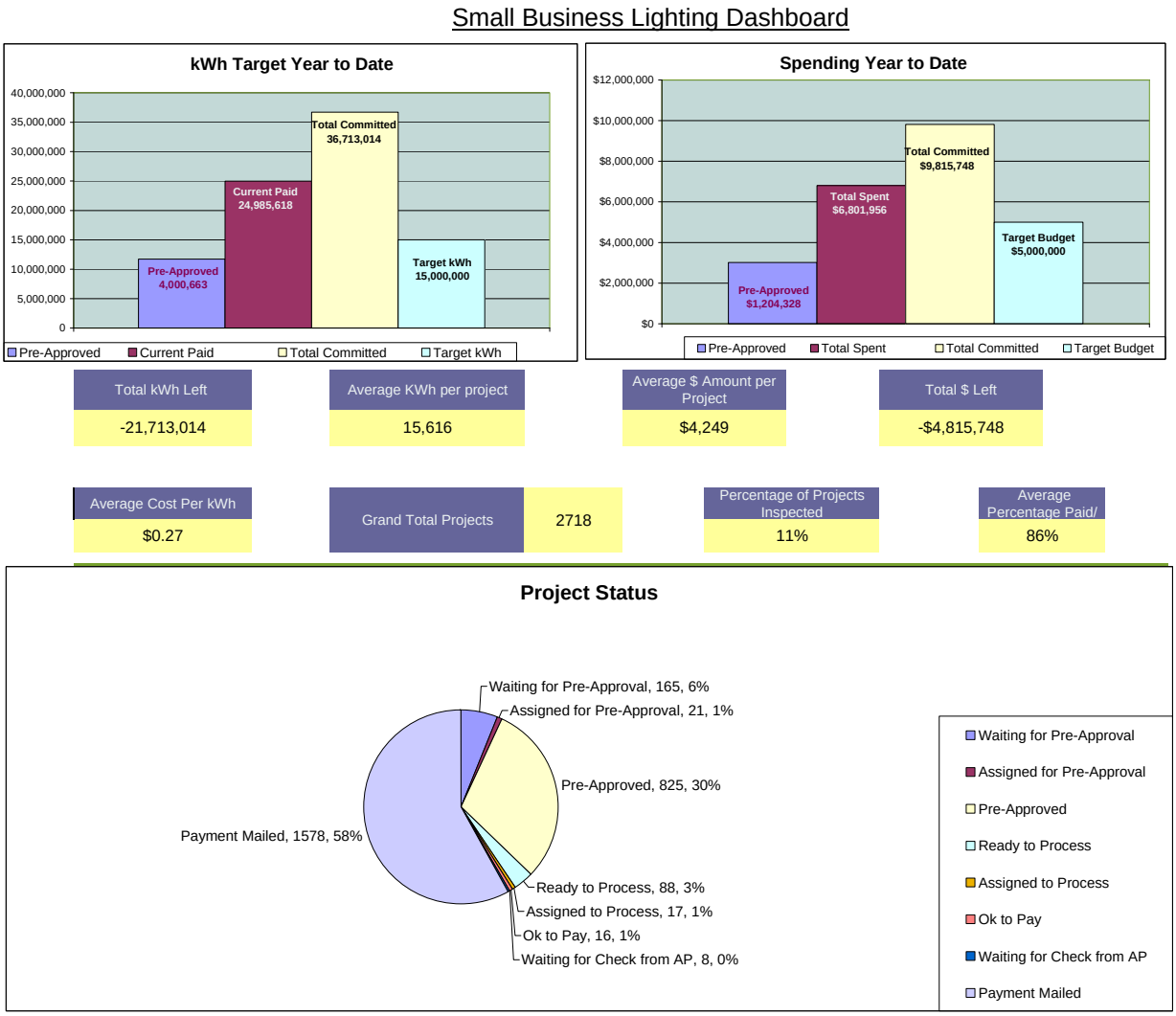
Program incentive levels were revised slightly based on a high incidence of projects that were completed with no cost to the customer. We believed it would be likely that a lower incentive would produce still lower costs for small business customers without adversely affecting the number of projects received. Incentives for the most common measures in the program were reduced (T-12 to T-8 retrofit measures and others) to a level that is equal to approximately 60 percent of a typical project cost in the C/I Retrofit Program. In order to encourage more comprehensive projects, measures that reduce overall lamp count, total lamp linear feet, and measures common to exterior lighting were left at the higher incentive rate (approximately 70 percent of typical project cost in the C/I Retrofit Lighting Program).

## Process Improvements

PSE developed a Small Business Lighting Process Workshop to train contractors on how to fill out paperwork and report proposed savings correctly. Reducing the number of contractor errors resulted in a very significant improvement in the efficiency of processing rebate applications.

Another significant program revision, as noted during the Public Counsel October 20 field trip, was the development of the Small Business Lighting project tracking tool, colloquially referred to as our “dashboard”. This tool, illustrated in Figure 6h, tracks all projects in every stage of the approval and payment process.

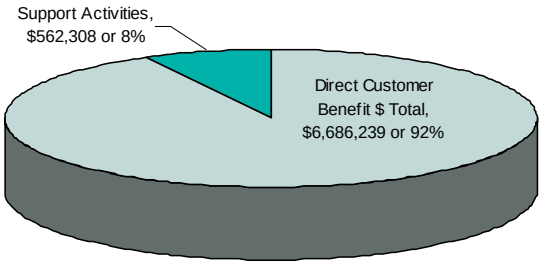
**Figure 6h: A Screen Shot of the Small Business Lighting Dashboard**




## Direct Benefit to Customer

PSE considers Direct Benefit to Customer to be defined as rebates, grants, credits or services that are of value to customers. Figure 6i below indicates that the Small Business Lighting program maintained a DBtC ratio of 92 percent in 2010.

**Figure 6i: Small Business Lighting Direct Benefit to Customer Ratio**




**2010 Accomplishments and Activities:**

The Small Business Lighting program savings was double its annual goal for 2010. The tremendous increase in demand was due to a large increase in contractor participation and streamlining of the rebate processing system. In these economically challenging times, contractors have turned to the Small Business Lighting program incentives to keep their businesses open and their people employed. Contractor participation increased over 50 percent in 2010 due to the struggling economy.

A Small Business Lighting Process Workshop was developed and trained 176 contractor representatives by the end of the year on how to fill out paperwork and report proposed savings correctly. The workshop comes with a well designed Training Workbook and process checklists so that all of the contractors are sending in projects correctly.

## LED Traffic Signals

Schedule E257

*Examples of LED traffic signals.*

### Description

The program educates public-sector customers with traffic control authority (cities, counties, and DOT's) on the benefits of installing red, green and yellow LED traffic signals. PSE provides an LED informational packet along with a rebate application by mail or in person. Customers must receive electric service from PSE to qualify for the rebates, and customers with unmetered accounts must document all connected load at the intersection.

### Program Performance

Tables 6i and 6j provide a 2010 summary of expenditures and energy savings for the LED Traffic Signals program.

**Table 6i: LED Traffic Signals 2010 Expenditures**

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| E257 | LED Traffic Signals | $ 13,360 | $741 | **$14,101** | 56.4% | $ 25,000 |

**Table 6j: LED Traffic Signals 2010 Savings**

| 2010 | Savings | 2010 Quarterly View: MWh and Therms | | | | 2010 Goal |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Goal | |
| Electric | Electric | Electric (MWh) | | | | Electric |
| E257 | LED Traffic Signals | 334 | 0 | **334** | 66.9% | 500 |

### 2010 Program Revisions

There were no revisions to the LED Traffic Signals program during 2010.

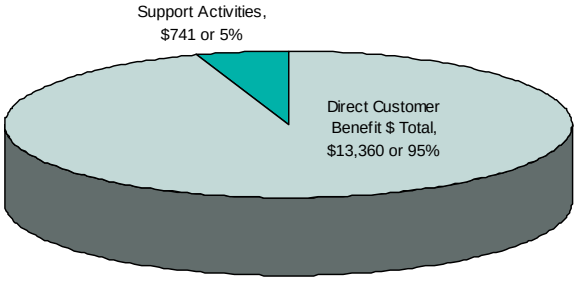
### Process Improvements

There were no process changes in 2010.

**Direct Benefit to Customer**

PSE considers Direct Benefit to Customer to be defined as rebates, grants, credits or services that are of value to customers. Figure 6j below indicates that the LED Traffic Signal program maintained a 95 percent DBtC ratio through the first half of the year.

**Figure 6j: LED Traffic Signals Direct Benefit to Customer Ratio**




**2010 Accomplishments and Activities:**

This program started the year off strong and it appeared that we would easily meet the 2010 goal of 500 MWh with the benefit of ARRA funding. During the second half of the year, however, the participating municipalities did not complete their paperwork in time to meet the deadline for our 2010 savings goal. These projects would have contributed more than enough to meet the 500 MWh target. Savings for 2011 will start out very strong as these projects are completed.

## Large Power User - Self Directed

Schedule E258

### Description

This program solicits electric energy efficiency upgrades through a Request for Proposal (RFP) process. C/I customers receiving electric service under Schedule 40,46,49 or 449 receive a funding allocation based on electric usage and are responsible for proposing cost-effective projects to utilize their allocation. Proposals are evaluated by PSE engineering staff for technical soundness, cost-effectiveness and compliance with energy code and tariff requirements. Customers sign a standard PSE Conservation Grant Agreement, defining project cost, PSE incentive amount, and verification requirements prior to installation of project measures.

The Large Power User Self-Directed program is implemented in 48-month cycles, with the current program spanning January 1, 2010 to December 31, 2013. Customers have until March 30, 2012 to propose projects to utilize their incentive allocations. Customers not designating projects to fully utilize their allocation forfeit their remaining balance to a competitive phase, in which remaining funds are available to all program participants via competitive bid.

### Program Performance

Tables 6k and 6l provide a summary of 2010 expenditures and energy savings for the Large Power User/Self-Directed program.

**Table 6k: Large Power User/Self Directed 2010 Expenditures[53]**

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| E258 | Large Power User - Self Directed | $ 544,133 | $520,989 | **$1,065,122** | 255.6% | $ 416,667 |

**Table 6l: Large Power User/Self Directed 2010 Savings**

| 2010 | Savings | 2010 Quarterly View: MWh and Therms | | | | 2010 Goal |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Goal | |
| Electric | Electric | Electric (MWh) | | | | Electric |
| E258 | Large Power User - Self Directed | 0 | 604 | **604** | 60.4% | 1,000 |

[53] Schedule E258, Large Power User/Self-Directed Program expenses shown in the table are not a direct reflection of 2010 program activity. Expenses related to actual 2010 program activity total $306,608. Additional amounts shown in Table 6k are related to close-out of the 2006-2009 program cycle and include a large grant payment that was delayed until January 2010 and a $235,622 charge (transfer) to the NEEA program as required for Schedule 449 participants.

**2010 Program Revisions**

The Large Power/Self-Direct program is a 4 year program cycle with 2010 being the first year of the 2010-2013 cycle. Under the new cycle, the incentive structure was revised to include a maximum incentive of $0.50 per kWh saved, up to 100 percent of the measure cost. This incentive is available for both lighting and non-lighting measures.

**Process Improvements**

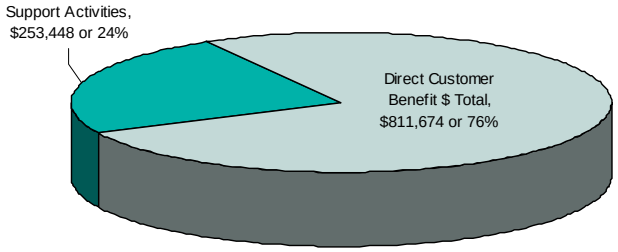
The self-directed program has historically provided funding for capital projects that upgrade existing equipment to higher efficiency. To encourage additional savings measures by this customer class, the 2010-2013 RFP allows eligible customers to utilize their incentive allocation for measures and services offered under any of PSE's C/I program offerings including the Retrofit, New Construction, RCM and Commercial Rebate programs.

To prevent delay of project implementation, participating retail customers (Schedules 40, 46, 49) may opt to participate in non-self-directed programs before using their allocation. In previous program cycles, retail participants were required to use their entire self-directed program allocation before participating in other PSE programs. This resulted in some customers delaying projects until additional funding became available through the competitive phase or open access was granted to non-self-directed programs after closure of the non-competitive phase.

**Direct Benefit to Customer**

PSE considers Direct Benefit to Customer to be defined as rebates, grants, credits or services that are of value to customers. Figure 6k indicates that the Large Power User program maintained a DBtC ratio of 76 percent in 2010, including a significant number of 2006-2009 program closeout expenses described below.

**Figure 6k: Large Power User/Self Directed Direct Benefit to Customer Ratio**




The above pie chart includes expenses for Support Activities and DBtC associated with 2010 activities as well as 2006-2009 program costs posted in 2010. Most of the amount shown for Support Activities includes a transfer to the NEEA Program as required for Schedule 449 participants. The DBtC amount includes a large incentive payment from the 2006-2009 program cycle that was processed in January 2010. The Support Activities amount for 2010-2013 program activities is $17,965 and the DBtC amount for grant payments under the 2010-2013 program cycle is $288,643. Thus, the DBtC ratio reflecting program activities in year one of the 2010-2013 program cycle is 94 percent.

**2010 Accomplishments and Activities:**

Program activity is typically limited in year one of the four year cycle as customers develop projects and proposals. The Large Power/Self Directed Program RFP was released on April 1, 2010.

Five projects were completed in the 2010-2013 program cycle. Some projects, originally scheduled to close in the fourth quarter, were pushed into the first quarter of 2011 due to customer scheduling issues. This caused the program to miss year-end projections.

A total of 11 additional grants were signed but not completed in 2010.

## Business Information Services

Schedule E260/G260

### Description

A comprehensive description of EES's Information Services is provided in the Residential Programs section, beginning on page 52 of this report. Most functions and services outlined in the Residential Programs discussion are duplicated in the Business Sector, including:

| | |
|---|---|
| Energy Advisors | Answering questions about a wide variety of business-specific questions and issues |
| On-Line Services, including: | Figure 6l shows a view of Energy Efficiency Services' Business Website on PSE.com |
| On-Line Business Energy Profile | Applicable to small businesses |
| Events | Trade shows and specific events that pertain primarily to Commercial or Industrial customers |

Figure 6l: EES Business Website on PSE.com


*PSE staff members stand ready to answer questions at a recent Energy Management Conference.*

## Program Performance

Table 6m represents 2010 summaries for Business Information Services.

**Table 6m: Business Information Services 2010 Expenditures**

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| E260 | Commercial Energy Efficiency Information | $ 66,099 | $35,642 | **$101,741** | 47.9% | $ 212,500 |
| G260 | Commercial Energy Efficiency Information | $ 43,964 | $27,924 | **$71,888** | 35.9% | $ 200,000 |

## 2010 Accomplishments and Activities:

<u>January through June events</u>
The 28th annual West Coast Energy Management Congress (EMC), hosted by PSE, was a great success - attracting record attendance to the Washington State Convention and Trade Center. Attendees were treated to informative sessions presented by top energy experts from around the region on topics including energy auditing, power quality and carbon reduction.

Business Energy Management has been visible at other industry events including the Energy Facilities Connection in Leavenworth, Washington. BEM presented a utility perspective as part of a panel on Innovative Utility Energy Programs at the Council of Educational Facilities Planners International.

July through December events

The Group Health Exhibit Hall in Spokane Convention Center hosted an event that was conducted to allow vendors to market and showcase equipment relevant to school food services. The event provided a way to be hands on, helping to influence purchasing decisions in the direction of efficiency, both directly to the foodservice professionals and to the vendors themselves.

The Building System Overview in Everett provided an energy course for resource conservation managers, building administrators and maintenance staff occupants interested in the operation of commercial buildings. Participants gained a basic understanding of how energy and other resources are used in institution buildings. The course included a “behind the scenes” tour of commercial buildings to give attendees a close up look at systems.

The Naval Station in Everett was showcased for the Energy and Water Exposition. Business and residential customers attended the event to learn about ways to conserve energy.

PSE facilitated a session on natural gas efficiency measures at the Future Energy Conference held at the Washington State Convention Center to showcase PSE natural gas programs and gas savings. The event was attended by policymakers and research institutions.

## Commercial Rebates

Schedules E262/G262

*Hot food holding cabinet*

*High efficiency motor*

*Premium HVAC service*

*Faucet aerators*

### Description

PSE offers fixed rebates for select, commonly-applied measures to commercial customers. Rebate measures are those with energy savings that can reasonably be standardized over a wide variety of applications, and that have competitive market pricing to ensure cost-effectiveness. Rebates are available, but not limited to the following categories: appliances, cooking equipment, controls, drives & motors, hospitality, HVAC, lighting, refrigeration, water heating. Rebate amounts are updated as market conditions change.

### Program Performance

Tables 6n and 6o provide a summary of 2010 expenditures and energy savings for the Business Rebates program.

### Table 6n: Business Rebates 2010 Expenditures

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| E262 | Commercial Rebates | $ 1,652,050 | $918,233 | **$2,570,283** | 100.6% | $ 2,555,556 |
| G262 | Commercial Rebates | $ 266,508 | $186,998 | **$453,506** | 74.8% | $ 606,667 |

### Table 6o: Business Rebates 2010 Savings

| 2010 | Savings | 2010 Quarterly View: MWh and Therms | | | | 2010 Goal |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Goal | |
| Electric | Electric | Electric (MWh) | | | | Electric |
| Gas | Gas | Gas (Therms) | | | | Gas |
| E262 | Commercial Rebates | 13,647 | 5,227 | **18,874** | 94.4% | 20,000 |
| G262 | Commercial Rebates | 251,620 | 138,273 | **389,893** | 21.4% | 1,820,000 |

## 2010 Program Revisions

Premium HVAC Service: The program implemented a minimum unit size requirement to increase the program cost effectiveness. We set requirements relating to contractor participation to ensure consistent service and quality of work. The program now requires a minimum service contract to provide confidence in measure persistence.

PC Power Management: The program discontinued this offering due to questions regarding savings potential reduction related to technology changes. Based on recent results of an evaluation study to measure the impact, we will re-launch the offering.

Gas Boiler Tune-up Program: We discontinued this offering due to the inconsistent ability of contractors to provide reliable boiler efficiency test results. We plan to research a more robust set of efficiency measures resulting in a program that is more beneficial to customers and yields more energy savings.

Pre-Rinse Spray Head Program: We discontinued this offering due to changing market conditions.

## Process Improvements

A Master Tracking Spreadsheet was created to track projects through the process. This allows better management of workflow and the ability of anybody on rebate team to update customers or contractors on the status of any project. It also gives us the ability to more readily be able to determine the rebate programs status in relation to savings goal and budget.

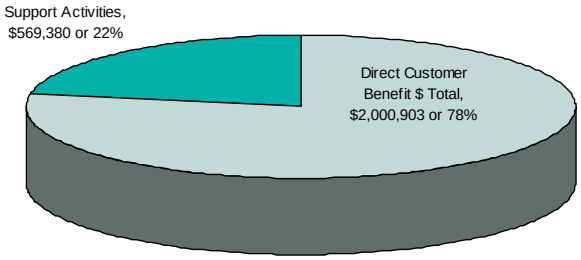
The QC process was improved for all rebate payments, and to reduce the potential for data entry errors, payment request forms were standardized for greater consistency.

**Direct Benefit to Customer**

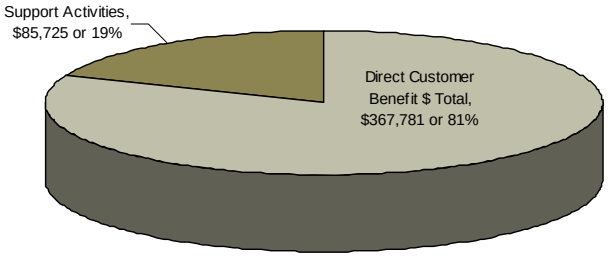
PSE considers Direct Benefit to Customer to be defined as rebates, grants, credits or services that are of value to customers. Figure 6m below indicates that the Business Rebates program maintained a DBtC ratio of 78 percent in electric offerings and 81 percent in gas offerings in 2010.

**Figure 6m: Business Rebates Direct Benefit to Customer Ratio**

Electric




Gas




**2010 Accomplishments and Activities:**

**Electric**

In 2010, the Commercial Rebate Program achieved approximately two-thirds of its year-end goals for both budget and savings. Contractor participation increased significantly, partly because PSE's programs helped them to stimulate new business as the economy slowed, and partly due to efforts to streamline relationships with contractors as the work flow increased. We also started a new point of sale incentive program that was more successful than expected. Throughout the second half of 2010, activity was more in line with expected goals.

**New Commercial CFL Markdown Program:** A new program added this year is called the CFL Markdown Program. The CFL Markdown Program allows participating distributors to give rebates at the point of sale for Compact Fluorescent Lamps. The program was much more successful than anticipated, so new vendor participation rates were managed to control the program budget.

Lighting rebates for exit signs, lighting controls, and CFLs have seen higher than expected participation as well.

**Commercial Kitchen Program:** This program teams up with six other utilities in the Puget Sound region to offer a consistent program to commercial customers in qualifying areas. 2010 saw this group effort solidify, and maintaining this consistent solidarity has helped streamline the process for both customer and vendor. Training new vendors in the Point of Sale Program has increased vendor participation immensely. Within the first four months of this year the program had exceeded both savings and rebates paid in 2008 and by the end of 2010 the program exceeded 2009 savings by more than 50 percent.

**Premium HVAC Service Program:** This program has seen tremendous growth in 2010 in overall savings and in the number of contractors joining the program. In order to better handle the increased workflow and manage program budgets, a number of changes were instituted. New contractors may enter the program during two training sessions (one in the fall and one in the spring) for a total of 12 new contractors per year. The initial technician trainings are still free, but there is a charge for additional trainings to cover PSE's expenses. In order to ensure that the technicians maintain their level of understanding of the program protocols, contractors must regularly provide service to new customers or they may be dropped from the program. Contractors must also have a year-long maintenance agreement with the customer to ensure that the proper settings for efficiency are maintained. In order to maintain program cost-effectiveness, units smaller than four tons are no longer eligible.

**High Efficiency Heat Pumps and A/C:** This program was changed in 2009 to encourage customers to replace older inefficient units, instead of repairing them. As a result, the 2010 program achieved many times more savings than in years past.

**PC Power Management**: This very cost effective program continued to grow during the first half of the year, contributing over 2 million kWh. The program was suspended in late 2010 to evaluate cost effectiveness and accurate savings claims. Findings were positive, and the program will be re-launched.

**Pre-rinse Spray Heads:** The direct install portion of this program has been discontinued in response to changing market conditions.

**Gas**

The Commercial Rebate Program achieved 21 percent of the 2010 savings goal, while program expenses were 94 percent of the year-end goal. More projects included costlier measures during this period, resulting in a noticeable difference between percent expenses and percent savings. Discontinuation of the Pre-Rinse Spray Head program had a significant impact on 2010 savings and program cost effectiveness.

**Commercial Kitchen Program:** This program teams up with six other utilities in the Puget Sound region to offer a consistent program to commercial customers in qualifying areas. 2010 saw this group effort solidify, and maintaining this consistent solidarity has helped streamline the process for both customer and vendor. Training new vendors in the Point of Sale program in 2009/2010 has increased vendor participation.

**Premium HVAC Service Program:** Units that only receive natural gas service from PSE are no longer eligible for incentives in order to maintain program cost effectiveness.

**Pre-rinse Spray Heads:** The direct install portion of this program has been discontinued in response to changing market conditions.

**Gas Boiler Tune-up Program:** An internal evaluation of this program raised questions regarding the ability of contractors to consistently comply with boiler testing procedures required to accurately quantify energy savings achieved from boiler tune-ups. Since program changes are needed to ensure a high confidence level in savings results, the program was discontinued until appropriate modifications can be developed.

# REGIONAL EFFICIENCY PROGRAMS AND RELATIONSHIPS

## Northwest Energy Efficiency Alliance

Schedule E254

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Description

The Northwest Energy Efficiency Alliance (NEEA) is a non-profit organization working to maximize energy efficiency to meet our future energy needs. NEEA is supported by, and works in collaboration with, the Bonneville Power Administration, Energy Trust of Oregon and more than 100 Northwest utilities on behalf of 12 million energy consumers. NEEA uses the market power of the region to accelerate the innovation and adoption of energy-efficient products, services and practices.

Puget Sound Energy benefits from NEEA's market transformation work to accelerate the market adoption of energy efficient products, services and practices, and to fill the energy efficiency "pipeline" with emerging technologies. NEEA's "upstream" work to expand the market for energy efficiency complements utility programs, but does not compete with them. NEEA's regional advantage allows Northwest utilities to leverage the market power of the entire region to realize economies of scale. Working together, the Northwest can achieve results that no individual utility could achieve on its own.

As a partner with NEEA, PSE contributes funding for regional programs that have benefits in the PSE service territory, and actively participates on NEEA's Board of Directors and advisory committees. NEEA's 2010-2014 business plan focuses on creating lasting change in energy efficiency in the Northwest through strong partnerships with the region's utilities and market actors. It was informed by NEEA's 2010 – 2014 Strategic Plan, developed through a participatory strategic planning process with the NEEA Board and region as a whole. The Business Plan has a five-year regional savings goal of 200 aMW. NEEA received $192 million in funding for 2010 – 2014 market transformation initiatives from Northwest utilities. More information about NEEA's value, history, structure and recent initiatives is available on neea.org.

PSE also participates in NEEA's Cost Effectiveness Committee in order to:

- Conduct an annual review of NEEA cost effectiveness and aMW savings information for reporting purposes
- Review market transformation cost and savings measurement and estimation methods.

## Program Performance

Tables 7a and 7b provide a year-to-date summary of expenditures and energy savings for the Northwest Energy Efficiency Alliance program.

### Table 7a: NEEA 2010 Expenditures

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| E254 | NW Energy Efficiency Alliance | $ 2,551,762 | $2,394,698 | **$4,946,460** | 107.0% | $ 4,625,000 |

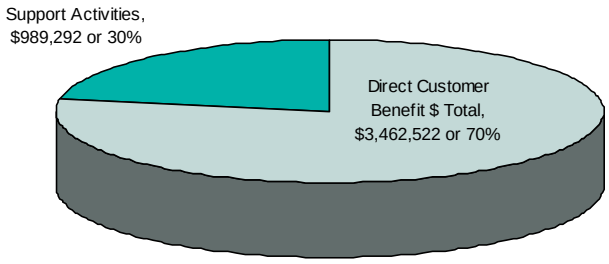
### Table 7b: NEEA 2010 Savings

| 2010 | Savings | 2010 Quarterly View: MWh and Therms | | | | 2010 Goal |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Goal | |
| Electric | Electric | Electric (MWh) | | | | Electric |
| Gas | Gas | Gas (Therms) | | | | Gas |
| E200 | Residential Information Services | 11,750 | 11,750 | **23,500** | 100.0% | 23,500 |

## Direct Benefit to Customer

As a measure of how effectively PSE is using ratepayer dollars, PSE considers Direct Benefit to Customer to be defined as rebates, grants, credits or services that are of value to customers. Figure 7a illustrates that the DBtC ratio for the NEEA program is 70 percent.

### Figure 7a: NEEA Direct Benefit to Customer Ratio




## 2010 Accomplishments and Activities:

This report summarizes activities and outcomes and regional initiatives in the areas of emerging technologies, residential, industrial, commercial, codes and standards, partner services and evaluation by the Northwest Energy Efficiency Alliance in the service area of Puget Sound Energy (PSE) from January 1 through December 31, 2010.

**Emerging Technologies**

NEEA identifies, develops and helps commercialize emerging technologies for wider market adoption. NEEA provides a mechanism for the region to invest in emerging technologies in a way that minimizes risk to any single funder and maximizes potential benefits.

In Q1, 2010 NEEA formed the Emerging Technologies group and developed a Regional Energy Efficient Technology Roadmap with the Regional Emerging Technologies Advisory Committee comprised of senior managers from utilities, the Bonneville Power Administration and national laboratories. NEEA also re-launched its unsolicited proposal process to engage the region in dialogue and facilitate stakeholder innovation, receiving 28 proposals for emerging technologies.

This collaborative process produced a Roadmap identifying the top 10 emerging technology initiatives with the greatest energy savings potential for the Northwest. The Roadmap prioritizes top emerging technology opportunities and will provide an avenue for their visibility, funding and market adoption. Informed by the Roadmap, twenty-two NEEA projects are underway with a 20-year savings potential estimate of 1,700 aMW, assuming full adoption of these technologies. They include:

- **High Performance Windows –** In 2010, NEEA worked with the region to develop a new strategic market intervention strategy for the next generation of high performance windows. These R5 windows have the potential to save the region 68 aMW each year and are nearly 30 percent more efficient than current ENERGY STAR® windows on the market. Local utilities have begun providing incentives for these R5 windows, which are being produced by a handful of manufacturers. However market share for these products is still well below one percent. NEEA is working with the region and manufacturers to identify the existing barriers and implement strategies to accelerate their adoption.

- **Cold Climate Ductless Heat Pumps (DHPs) –** Northwest utilities and NEEA have been working since 2008 to accelerate the adoption of DHPs through the Northwest DHP Project. For colder climates, new models of DHPs are now available that are capable of providing comfortable heating even when the outdoor temperature falls as low as -13F. NEEA is working with Northwest utilities to install, test, and meter several Mitsubishi cold climate ductless heat pumps to verify energy savings in severe climates. If these models prove effective, they will greatly increase the range of locations where DHPs can be used to replace baseboard heaters.

  NEEA is working in collaboration with Bonneville Power Administration, Lawrence Berkeley National Laboratory and contractors to develop heat pump water heaters for the Northwest with the goal of influencing a Federal standard change in 2015. Efforts include lab testing, field testing, computer modeling, test standard development, supply chain training, consumer training and manufacturer engagement.

- **Green Pumps –** With the Green Motors program, NEEA and the region have proven that it is possible to save significant energy by refurbishing used motors back to their original, more efficient states. Building on that effort, NEEA is now moving toward standardizing emerging techniques for refurbishing large industrial pumps, which could save the region another 40 aMW annually. NEEA is working with more than 40 service companies interested in using this standard and participating in the Green Motors program.

- **Solid State Lighting, Network Outdoor Lighting Controls –** Solid state street lights use 50 percent less energy than traditional street lighting technologies. Adding control systems to these public lighting sources adds another 50 percent of savings potential, creating an energy savings of up to 150 aMW annually for the Northwest. Outdoor lighting technology has been implemented throughout Europe, but until recently has not been viable for use in America due to the distance between transformers and electricity poles. The cities of Anchorage, Palo Alto, Prince George, BC, San Francisco and San Jose recently conducted testing on combining LED lighting with network controls. NEEA will be leveraging these findings to test visual acuity and cost-effectiveness of combining LED lighting with network control systems in a few locations across the Northwest. NEEA is also providing technical support to the Illuminating Engineering Society, which sets standards for acceptable outdoor lighting illumination levels, to help influence illumination standards associated with use of LEDs in solid state lighting.

- **Agricultural Market Study –** NEEA is conducting a market study to look at trends in regional crop locations, growth rates and irrigation, as well as energy trends with dairies and ranches. This should provide direct benefit and opportunities to regions with major agricultural loads. Through this initiative, NEEA will partner with rural utilities to understand their specific needs.

- **Industrial refrigeration –** NEEA's Emerging Technologies group is collaborating with the Northwest Food Processors Association (NWFPA) to develop a refrigeration initiative to support its energy intensity reduction goal of 25 percent in 10 years. The initiative will support introduction of new refrigeration technologies to the food processing industry and dissemination of refrigeration best practices among NWFPA membership.

- **Communication and training –** NEEA hosted a successful webinar on solid state lighting with the U.S. DOE and Pacific Northwest National Laboratory that attracted 200 participants, and issued two editions of the new "Tech Talk" Bulletin.

**Residential Initiatives**

NEEA's residential work supports and maintains regional upstream delivery platforms for energy-efficient products and services. NEEA's unique regional role leverages resources to influence the market through collaboration. To remove market barriers to distribution and use of energy-efficient solutions, NEEA collaborates with utilities, builders, manufacturers, large and small retailers and dealer networks to fill the pipeline with highly energy-efficient products, services and practices.

1. **Efficient Homes –** NEEA accelerates market adoption of energy-efficient homes by builders, the real estate community and homebuyers through its Northwest ENERGY STAR Homes initiative.

    - NEEA anticipates a regional market share for Northwest ENERGY STAR Homes of between 11.5 to 15 percent for 2010. In PSE's territory, in 2010 583 homes were certified ENERGY STAR. Regionally in 2010, 3201 homes were certified.

    - The success of the Northwest ENERGY STAR Homes initiative was critical in preparing the market for adoption of a new Washington residential energy code effective January 1, 2011 and the related new ENERGY STAR specification. The code includes a majority of Northwest ENERGY STAR specifications in its requirements or options. NEEA worked with PSE on potential future incentives for the new specification.

    - To further strengthen the market capacity and infrastructure to deliver Northwest ENERGY STAR Homes, in 2010 NEEA trained 98 builders and 64 verifiers in PSE's territory on topics including the new ENERGY STAR specification for 2011. These trainings are critical in advancing the knowledge and technical capabilities of the builder/verifier infrastructure. Regionally, NEEA continues to support certification infrastructure.

    - NEEA worked to support builder sales of Northwest ENERGY STAR Homes and to increase homebuyer awareness through Realtor training and promotional activities. In 2010, NEEA trained 86 Realtors in PSE service territory. As a result of these and related activities, consumer awareness of ENERGY STAR Homes rose from 37 percent in 2007 to 51 percent, pointing to long-term residential energy savings in Washington.

    - The Puget Sound "Be an Energy Star" campaign featured a $10,000 cash give-away to homebuyers who toured an ENERGY STAR Home and completed an educational game cards. Four ENERGY STAR® Homes builders and 182 consumers participated. The promotion was part of the "Fresh Ideas Home Tour." These efforts delivered an estimated $182,575 in media value within the PSE territory in 2010.

    - In Q1, NEEA developed minimum energy efficiency specifications for *Built Green* in Washington to expand its impact in residential new development.

2. **Ductless Heat Pumps –** NEEA's Northwest Ductless Heat Pump Pilot project is designed to accelerate market adoption of ductless heat pumps (DHPs) and to increase the market capacity to deliver this energy-efficient technology. With the potential for approximately one million installations in the Northwest, DHPs can result in significant long-term savings by displacing less energy efficient electric resistance heat.

- In the PSE service territory, NEEA helped build the DHP delivery infrastructure by training contractors, hosting project orientations at PSE facilities and piloting a new technical training approach with Mitsubishi. NEEA partnered with PSE to include program elements, highlight best practice installations and develop a Master Installer program. NEEA provided thousands of sales collateral to Local PSE trade allies, and coordinating with PSE to develop project marketing.

- NEEA coordinated with Washington State's "Cash for Appliance" program to include DHPs in its incentive offerings, and to inform the trade ally network of new incentive offerings. NEEA coordinated a regional Q4 heating season campaign, utilizing KOMO news websites to place timely DHP Web ads during periods of extreme weather.

- To increase market adoption of DHPs, NEEA submitted code clarification to the Washington Dept. of Labor and Industries to eliminate the need for internal disconnect switches on DHP applications in Washington. NEEA coordinated and submitted the proposal on behalf of Washington utilities, Bonneville Power Administration, and participating manufacturers and distributors.

3. **Consumer Electronics –** Through its Consumer Electronics initiative, NEEA helps increase market availability of "super-efficient" televisions, desktop computers and monitors within the Northwest. In the PSE service territory, the initiative helped increase market availability and consumer adoption of the most energy efficient TVs, computers and monitors.

    - NEEA helps increase consumer awareness of the most efficient flat-screen TVs, computers and monitors by increasing retail stocking and through retailer and marketing interaction within PSE's territory. NEEA facilitated numerous retailer trainings and point-of-purchase labeling in 68 participating retail locations.

    - To help retail customers identify the most efficient products, NEEA launched the "Energy Forward" campaign in Q4, rolling out new "Most Efficient" messaging to participating retailers. In PSE's service territory in Q4, NEEA delivered 145 retailer visits; trained 205 sales associates; and provided point of purchase (POP) materials for 1728 TVs. The campaign also consists of a regional press release, Facebook social media support kits, and in-store promotional materials.

    - Regional market share for these super-efficient TVs has surged by 15 percent since launch of the Consumer Electronics initiative in 2009. Market data for 2010 is pending. NEEA, in partnership with California and Midwest utilities, presented the TV initiative to retailers and manufacturers at the ENERGY STAR Partners Meeting in Denver, CO. to promote the initiative.

    - NEEA is working with major "big box" retailers to reward sales of highly-efficient TVs, computers and monitors—including ENERGY STAR version 5.0 TVs—two years before the spec goes into effect. NEEA initiated upstream incentive plans for retailers to participate in the 2010 Consumer Electronics initiative.

- To promote energy efficiency standards, NEEA actively participates in national initiatives to raise voluntary specifications and standards for consumer electronics, as described in the Codes and Standards section of this report.

**Industrial**

Within the industrial sector, NEEA helps facilitate the setting of industry-wide energy efficiency goals, working with industry groups to adopt Strategic Energy Management, and coordinates regional stakeholders to advance best practices. Outcomes of these initiatives are described below.

1. **Continuous Energy Improvement (CEI) –** NEEA has developed Continuous Energy Improvement as a widely-accessible energy efficiency methodology and validated energy savings that results in validated energy savings of two percent on average, year over year, in participating industrial facilities. NEEA continued development of an improved version of its CEI methodology. To help ensure persistence of savings within 14 industrial facilities in the PSE service area, NEEA delivered targeted industrial training to 31 regional employees to accelerate and sustain energy improvement opportunities uncovered by earlier CEI work.

2. **Strategic Energy Management –** In 2010 NEEA increased outreach for its Strategic Energy Management initiative to companies with fewer than 500 employees. In the PSE service area, as part of the Superior Energy Performance Training pilot sponsored by NEEA and the U.S. Department of Energy, one food processing facility comprising 1.3 percent of the target market has been embedding NEEA's CEI system in their operations since 2008. The pilot will conclude in 2011.

    - In an effort to bring energy efficiency to the small to medium business sector, NEEA has engaged the four regional Manufacturing Extension Partnership (MEP) groups to integrate energy efficiency into their strong productivity work. In Q4, the effort kicked off with Impact Washington and was supported and attended by PSE's Energy Efficiency group.

    - PSE co-sponsored two NEEA-coordinated industrial training events. Twenty-one employees from 12 facilities in PSE territory attended seven trainings; one employee from one facility attended multiple events.

    - In Q1 the Oregon Association of Nurseries joined an executive-level energy intensity goal- setting project to become the second industry group after the Northwest Food Processors Association to undertake an energy intensity reduction effort.

**Commercial**

NEEA helps expand the commercial market's capacity to deliver energy efficient products, services and practices and helps stimulate the demand for these services and practices by demonstrating their benefits to business leaders. These voluntary programs prime the market to later "lock in" savings through codes and standards. Highlights for NEEA's commercial initiatives in 2010 follow.

1. **Commercial Real Estate —** NEEA promotes energy-efficient design and operations of commercial buildings. In the PSE service area in 2010, NEEA worked with Puget Sound commercial real estate firms Wright Runstad, Metzler North America, Henbart and Vulcan to plan and implement energy efficiency business strategies. NEEA recruited Kidder Matthews as a market partner for 2011-2012. This large property management company has significant influence in the suburbs of Seattle and PSE's service territory.

   Through its Commercial Real Estate and new Existing Building Renewal initiatives, NEEA supported staffing by Architecture 2030 for the Seattle 2030 District project.

   NEEA sponsored the commercial real estate "Kilowatt Crackdown" energy management challenge in partnership with BOMA Seattle, with over 140 area buildings signed up in the second wave of registration. The competition engages building owners and operators to reduce energy use and carbon emissions. Past contests have engaged dozens of commercial properties and resulted in new energy savings. In 2009, the King County, WA competition resulted in combined energy savings from participating buildings equal to the annual electric consumption of 1,000 Northwest homes each year.

2. **Healthcare —** NEEA partnered with state healthcare engineering associations, the national chapter of the American Society of Healthcare engineers and ENERGY STAR to develop the ASHE Energy Efficiency Commitment ("E2C") Campaign. This program challenges healthcare facility directors to benchmark the energy performance of their building and work to improve their ENERGY STAR scores 10 percent over the next 18 months through operational improvements. In the PSE service territory, eighteen healthcare facilities are participating in the campaign including Bastyr University, Evergreen, St. Joseph, Swedish Medical Center and University of Washington Medical Center.

   NEEA provided a market specialist and technical advisor support to PSE's resource conservation manager based at St. Joseph Hospital. Technical advisor support focused on oversight of a retro-commissioning project, monitoring energy performance and evaluation of energy savings impacts.

   Also as of Q1, 2010 Northwest hospitals with 30 percent of total beds have adopted strategic energy management plans with energy savings goals of 10-30 percent.

3. **Building Operations —** In 2010, NEEA worked with service contractors MacDonald Miller, McKinstry, Sunset Air and Merit Mechanical to develop their energy efficiency service packages. These service contractors work on buildings throughout the Puget Sound market and provide building tune up and enhanced operations and maintenance services.

4. **New Building Design —** To deliver a powerful suite of building services statewide to designers, owners and operators, NEEA supports the Seattle Integrated Design Lab (IDL) with Puget Sound Energy. The IDL brings the highest energy performance considerations to the design table. Among its 2010 offerings, the IDL Seattle offered a lighting seminar series serving four PSE locations. In 2010, the IDL also provided integrated design assistance to two new construction projects and delivered ongoing technical assistance to seven other projects representing 1.1 million square feet.

   The Seattle IDL worked on 37 projects in PSE's territory. As a result, Swedish Hospital Issaquah is targeting to use 40 percent less energy than a typical Northwest hospital.

5. **Training and Education —** The NEEA BetterBricks website continues as a valuable regional resource for energy management and technical information. The website's traffic increased 52 percent in Q4 2010 over 2009. BetterBricks provided education session content in energy benchmarking and building tune-up. The conference served 400 facilities professionals working for Washington State agencies, K-12, and local government.

   - NEEA hosted the "2010 BetterBricks Awards" honoring energy efficiency leaders in the commercial building market. The event was attended by over 175 utility and building professionals. Winners included PSE customers and service providers.

   - NEEA sponsored the Puget Sound West Coast Energy Management Congress and helped develop several educational tracks on energy management best practices. NEEA sponsored a 4-part BOC Technical Webinar series on Building Energy Tune-Ups, which was attended by over 50 PSE customers. NEEA provided four guest speakers for the UW Extension Certificate program in Facility Management serving 10 PSE customers.

NEEA joined the steering committee for the Office of the Future Project, led by the New Buildings Institute. This is a national effort by utilities to build program strategies related to the tenant improvement cycle in commercial buildings. The consortium will create and implement integrated design strategies that improve energy performance and reduce operating costs for existing, multi-tenant commercial offices.

**Codes & Standards**

Since 1997, NEEA has supported code development, training, and education in Washington in partnership with the Department of Commerce, the WSU Energy Extension Program and the Northwest Energy Efficiency Council. Codes and standards can be viewed as the end game of NEEA's market transformation effort by permanently "locking in" savings through regulatory requirements. NEEA is currently ramping up codes and standards work to reflect increased utility and state interest related to I-937, SB5854 and the governor's Climate Action Taskforce. Activities and outcomes for 2010 follow.

**Residential and Commercial Energy Codes**

1. As a regional convener, NEEA facilitated multiple meetings between Washington utilities, BPA and other stakeholders on current and pending energy code issues and opportunities for utility participation. These helped formulate consensus approaches to I-937 and to help inform utilities about the often contentious code adoption process and subsequent delay of the energy code.

2. In NEEA's role to promote energy-efficient codes and standards, it funded Washington energy code training for over 3,000 people in 2010. Many hundreds of these attendees, for both residential and non-residential codes, were in PSE territory. NEEA funded more than 70 residential trainings with 1,500 participants in Q1-Q2. Three trainings were held in PSE facilities, with the general code training event attracting 200 attendees.

   In May, NEEA funded three webinars on the commercial energy code that were attended by several hundred participants. These will be followed with topic-specific trainings.

3. NEEA is a national thought leader in codes and standards. "The Future of Energy Codes," a publication co-authored by NEEA Manager of Codes & Standards David Cohan, is being used as the basis for the Codes & Standards Working Group of the U.S. DOE-funded Zero Energy Commercial Buildings Consortium. NEEA is beginning to drive a national dialogue on outcome-based codes, based on actual building performance rather than predicted performance.

**Federal Standards**

1. NEEA is taking an increasing role in federal standards development, adding a new staff member whose main responsibility is federal standards. NEEA actively participates in a variety of rule makings including furnace fans, walk-in coolers and heat pumps as described below.

2. As part of a group of energy efficiency stakeholders, NEEA began negotiations with industry representatives to significantly expand standards coverage for electric motors as part of the second round of efficiency standards for large electric motors (1-500 horse power).

3. Working with a group of manufacturer stakeholders, NEEA proposed a significant change in the regulatory framework for walk-in coolers and freezers. The change proposed would provide a simpler and lower testing burden, which would better facilitate compliance and enforcement. This proposal is now being considered seriously by the U.S. DOE.

4. NEEA participated in a proposal to make a significant change in U.S. DOE's proposed test procedures for fluorescent lamp ballasts to include simpler, lamp load-based, lower testing burden and more accurate results.

5. NEEA organized funder support for federal legislation to codify stakeholder agreements on standards for refrigerator-freezers and freezers, clothes washers and dryers, dishwashers, room air conditioners, heat pump and air conditioning systems, and furnaces and boilers. Legislation has broad support in Congress, in part thanks to strong Northwest delegation support.

6. NEEA provided input on eight separate rulemakings in Q4 and participated in four additional rulemaking processes. Comments are due in Q1, 2011.

**Partner Services**

NEEA delivers services that support its utility funders and regional stakeholders' energy efficiency efforts. During NEEA's 2010-2014 business planning process and other recent regional planning activities, stakeholders consistently expressed the desire for greater communication, collaboration and shared resources that would help the region accelerate the adoption of energy efficiency. In response to these regional needs, in 2010 NEEA formed a Partner Services effort to support the region's utilities and other energy efficiency organizations to promote energy efficiency through market research, collaboration and information sharing.

These initiatives help increase the efficiency of stakeholder efforts through economies of scale associated with regional information services, events and training; provide services for utilities with fewer resources to deliver on the promise of regional equity; and deliver a mechanism for the region to share information and accelerate learning.

The following are the group's recent initiatives:

1. **EFFICIENCY CONNECTIONS NORTHWEST** is the region's energy efficiency conference, the only event developed by and for Northwest utility professionals from both public and investor-owned utilities. Developed in partnership with regional utilities, program staff and executives, the conference facilitates sharing of information, experiences and best practices, providing the opportunity to increase regional coordination and collaboration. PSE was co-chair of the Program Committee and provided in-depth input to ensure the conference was relevant for PSE staff and the region. The event sold out and received a positive evaluation. Additionally NEEA is planning several collaborative workshops to tackle specific issues or challenges to the region.

2. **ConduitNW.org –** Developed in partnership with regional utilities with additional support from Bonneville Power Administration, "Conduit" is an online community that will facilitate information-sharing, coordination and collaboration among energy efficiency stakeholders in the Northwest. Available in spring, 2011, the website will enable PSE and other Northwest utilities to benefit from the collective knowledge of the region. Conduit will help PSE energy efficiency staff to share best practices, discuss current topics, collaborate and share documents, promote events, learn about new technologies, network with peers, and keep up with energy efficiency trends. NEEA is currently piloting Conduit with selected regional groups. See http://neea.org/participate/conduit.aspx for more information.

   Conduit's design is informed by stakeholder outreach and will provide NEEA's partners efficient access to market data, research, evaluations, program materials and best practices, as well as information on emerging technologies, regional program summaries, trainings and conferences.

3. **Northwest Research Group –** To conduct and coordinate regional market research and facilitate knowledge-sharing, NEEA re-established the Northwest Research Group in Q1. The Northwest Research Group is facilitated by NEEA and fosters information-sharing, collaboration and peer review among the region's evaluators, market researchers and planners. Individuals from PSE are participating.

**Evaluation and Market Research**

NEEA is committed to having both its current and past initiatives evaluated by objective third-party evaluators in order to continuously validate and refine its market transformation work. NEEA's Market Research and Evaluation group issued the following third party reports during Q1-Q4 2010.

1. 2009 Northwest Commercial Building Stock Assessment (1/2010)
   The 2009 Commercial Building Stock Assessment contains building characteristics information on over 2000 Northwest buildings, making it by far the largest source of such information and a valuable resource for regional energy planners and researchers. The assessment, which updated and expanded a similar effort in 2003, contains over 200 fields including both physical information and energy consumption histories. Key findings include that the total Pacific Northwest commercial floor space is estimated at 2.7 billion square feet, a 60 percent increase over 1987. The predominant heating fuel for regional heated commercial floor space is natural gas (68 percent of heated floor space). Further, lighting power densities (watts/square foot) have decreased by approximately 13 percent since 2003 and the saturation of automatic lighting controls has increased significantly.

2. Home Appraisers Qualitative Market Research Study (3/2010)
   Over the last six years, the Northwest Energy Efficiency Alliance (NEEA) has promoted energy-efficient homes through its Northwest ENERGY STAR Homes program. However the program has little knowledge of the workings of appraisers in the marketplace. In order to better understand this segment and how it could work with the program, NEEA conducted several focus groups with active home appraisers in the fall of 2009.

Findings indicate that energy efficiency of a home is not a priority or taken into much consideration by appraisers in the course of a home appraisal. Appraisers believe that ENERGY STAR homes are green homes and therefore more expensive to build. It appears there is a willingness on the part of participants to learn more about ENERGY STAR homes and the certification process. Appraisers also suggested that NEEA consider working closely with realtor boards to update property forms to include consistent information on energy efficiency.

3. Evaluation of Codes and Standards Program, Market Progress Evaluation Report #3 (2/2010)
   In the third Market Progress Evaluation Report, the Cadmus Group finds that NEEA has played a critical role in the region's adoption of more stringent energy codes for residential and non-residential buildings, as well as in supporting codes implementation via training and infrastructure support. Further, NEEA has provided training to building code officials that serve the majority of counties (both urban and rural) with housing starts in Northwest states. The Cadmus Group also identified three challenges that future implementation should address. First, a slowing construction market will both limit the amount of energy savings from this source and diminish the pool of trained code officials that enforce code compliance. Second, this initiative would benefit from a logic model that articulates desired outcomes and a clear path toward those outcomes.

4. Northwest ENERGY STAR Homes - Market Progress Evaluation Report #7 (5/2010)
   The seventh Market Progress Evaluation Report of Northwest ENERGY STAR Homes concludes that the program continued to make progress toward market transformation in the new homes market in 2009. Market share increased from 8 percent (in 2008) to 11.5 percent at the end of 2009 (the program goal was 14 percent). Homebuyer awareness of the ENERGY STAR label for homes increased steadily since the program began in 2004 through 2009 (19 vs. 51 percent). Builders are using the label to differentiate themselves. Program builders interviewed for this evaluation said that the ENERGY STAR label provided them a sales advantage in a slow, competitive housing market.

5. Northwest Ductless Heat Pump Pilot Project - Market Progress Evaluation Report #1 (5/2010)
   The first Market Progress Evaluation report of the Northwest Ductless Heat Pump Pilot Project (pilot), the evaluation concludes that the pilot exceeded its installation goal of 2,500 units across the region. As of Dec. 2009, 3,899 ductless heat pumps (DHPs) were installed region wide. The pilot also succeeded in its initial goal to displace rather than replace existing electric heat. Sixty-five percent of installations were single systems (one compressor with a single indoor unit) in the main living area. Nearly all participants (99 percent) interviewed said they used their units to displace existing electric heating equipment, and that it was now their primary heating source. Participants also reported high levels of satisfaction with DHPs, the installation process and ease of locating an installer (between 80-90 percent said they were "very" or extremely satisfied.") In addition, the majority of installer respondents reported high ratings regarding pilot trainings and orientation sessions.

6. 2009-10 Residential Lighting Market Research Study (7/2010)
   This is the second lighting tracking study of Compact Florescent Lights (CFLs) conducted since NEEA discontinued funding the ENERGY STAR Consumer Products Lighting Project in early 2008. In the Northwest, overall sales of residential ENERGY STAR CFLs declined by one-fourth between 2008 and 2009. Sales in 2009 were just under 18.2 million lamps, similar to the number sold in 2007. CFL suppliers expressed concern that a depressed economy has slowed the pace of CFL sales, and cite this decline within economically depressed areas as well as areas without utility incentives. With regard to availability and diversity of CFLs, there was a slight drop in shelf space dedicated to CFLs (5 percent), but a larger drop in all lighting shelf space (13 percent) between 2008 and 2009. Almost all Northwest lighting retailers are stocking CFLs. Based on self-reported data, awareness of CFLs remains high (96 percent), up from 86 percent in 2006.

   Further, the purchaser base has also increased since 2006 (67 vs. 81 percent). Currently purchasers cite an average of 11 CFLs installed in their homes and an additional five in storage. The evaluation contractor concludes that sales in the Northwest were still higher than in the rest of the nation. Additionally it is noted that CFL sales surpassed most expectations in 2008 and may represent an anomalous spike in sales between 2007 and 2009. The rate of increase over the past several years may not in fact have been sustainable (by 69 percent between 2006 and 2007 and by 34 percent between 2007 and 2008) even during a robust economy. In fact recent sales may reflect a "leveling off" of the CFL market.

7. Northwest ENERGY STAR Homes Energy Analysis Report: 2006-2007 (8/2010)
   The purpose of this report is to provide a comprehensive analysis of Energy Star certified homes in the Northwest. The evaluation is based on a comparison of a sample of 345 Energy Star homes that were constructed in 2006 - 2007 to a sample of 604 non-Energy Star homes (baseline) built between in 2004 – 2005. The report sheds light on some interesting findings with several pronounced differences between the two samples. As expected, the report findings demonstrate that the energy efficiency characteristics of certified homes are superior to those of non-certified homes. The report found a higher saturation of compact fluorescent lighting (CFLs) in Energy Star homes compared to the baseline (69 percent vs. 22 percent). This exceeds the Northwest ENERGY STAR homes program requirement that CFL's comprise at least 50 percent of each home's lighting. Nearly all gas furnaces (over 96%) met standard program efficiency level of AFUE 90 (with 38.5 percent exceeding that efficiency level) compared to 5.1 percent that met standard of efficiency in baseline. However, electric load savings from billing analysis was lower than planning estimates 1,224 vs. 1,449 kWh.

8. Long Term Monitoring and Tracking Report on 2009 Activities (10/2010)
   In the Long Term Monitoring and Tracking report, Navigant Consulting examined the post-funding market effects of 8 projects: Building Operator Certification, MagnaDrive, Commissioning, Energy Star Home Products, Energy Star Windows, Evaporator Fan VFD's, Verdiem energy management software and the Drive Power Initiative. Per the logic of most market transformation efforts, the bulk of any energy savings tends to occur in these post-funding periods.

Navigant estimates these projects have yielded an incremental 8.5 aMW in 2009 with the most significant savings associated with Commissioning (3 aMW); Building Operator Certification (1.9 aMW) and the Drive Power Initiative (1.4 aMW).

9. The Market for Energy Efficient Electronics: Pre-Program Findings on Consumer Perceptions and Retail Shelf stocking Practices (11/2010)
   In 2009, NEEA decided to expand its consumer product platform to include several consumer electronic products that affect load as part of its residential business plan for 2010-2014. This report provides a market assessment of high efficiency consumer electronics (specifically televisions and computers) in the northwest, prior to NEEA's involvement with the market place. The results of this study will inform future program activities.

   Findings indicate that although consumers are receptive to high efficiency TVs (that exceed ENERGY STAR® standards) there is low demand and overall lack of awareness regarding these products. However, 59 percent of shelf space is dedicated to ENERGY STAR® TVs, of which 20 percent are ENERGY STAR® +30 percent. (or 30 percent higher efficiency than presently available ENERGY STAR® models). Further evaluation of the program will begin in late 2010.

**Regulatory Compliance / Staff Interaction**

NEEA is committed to serving its regional stakeholders across diverse geographic areas and markets. We encourage stakeholder participation in our processes. During the reporting period, PSE staff interacted with NEEA as follows:

**NEEA Board, Advisory Committee and Other Public Meetings**

- **NEEA Board Meetings:** Vice President of Energy Efficiency Services and NEAA Board Member Calvin Shirley attended 2010 NEEA Board of Directors Meetings: Q1 – Feb. 25 in Seattle, Wash.; Q2 - May 26 in Portland, Ore.; Q4 – Dec. 10 in Portland, Ore. Please see agendas attached.

- **NEEA Advisory Committees:** *NEEA Industrial Advisory Committee*: Supervising Industrial Energy Management Engineer Chao Chen attended meetings Feb. 23 and May 11.

  *NEEA Residential Advisory Committee:* Manager of Residential Energy Management Todd Starnes attended March 4. Market Manager Rem Husted, Marketing Specialist Mandy Davis and Program Manager Dennis Rominger attended May 18. Market Manager Jeff Tripp also serves on this committee.

  *NEEA Emerging Technologies Advisory Committee:* Rem Husted serves on this committee.

  *NEEA Commercial Advisory Committee:* Supervising Engineer David Landers serves on this committee.

  *NEEA Regional Portfolio Advisory Committee:* Director of Customer Energy Management Bob Stolarski attended meetings Jan. 2 and April 22.

*NEEA Cost Effectiveness Advisory Committee:* Senior Evaluation Analyst Eric Brateng attended meetings June 2 and March 3.

*Northwest Research Group:* Eric Brateng, Market Researcher Bob Yetter and Senior Evaluation Analyst Bobbi Wilhelm attended bi-monthly meetings,

- **EFFICIENCY CONNECTIONS NORTHWEST:** PSE staff was essential to the success of region's inaugural energy efficiency conference for utility professionals Dec. 1-2 in Seattle.

    - Bob Stolarski, EES Director, Customer Energy Management, served as Co-Chair of the 2010 Program Committee, providing many hours of valuable guidance. In addition, the following PSE staff members presented in highly relevant breakout sessions: Bob Stolarski, Supervisor EME Lori Moen, Senior Evaluation Analyst Bobbi Wilhelm, Senior Energy Management Engineer David Montgomery, Supervising Engineer David Landers, Residential Consulting Engineer Rem Husted, Manager of Budget & Administration Dan Anderson, Director of Customer Market Strategies Grant Ringel, Manager of Strategic Planning & Research Bill Hopkins and EES Program Coordinator Kyle Webley.

**Regulatory and Compliance Participation**

NEEA staff participated in these activities with regulatory bodies during the reporting period:

- **WUTC Commissioners workshop, docket 100522:** Jeff Harris, NEEA Director of Emerging Technologies, participated in the Conservation Incentive Inquiry - 2nd Work Session June 29, 2010 in Olympia, Wash. NEEA contractor Ken Keating, Ph.D. also attended.

- **WUTC Commissioners workshop, docket 100829:** Jeff Harris, NEEA Director of Emerging Technologies, presented to WUTC Commissioners June 21, 2010, in Olympia. PSE Vice President of Energy Efficiency Services and NEAA Board Member Calvin Shirley; and Sarah Hall, NEEA Communications Manager, attended.

- **WUTC Shareholder Incentives workshop, docket 100052:** Jeff Harris of NEEA attended this workshop June 30, 2010, as did Cal Shirley of PSE.

- **Washington State Building Code Council:** NEEA organized Washington utilities to testify at the State Building Codes Council to ensure that the new energy code was implemented as quickly as possible. Five utilities, including PSE, testified in person. This level of participation has not been seen for over 15 years.

    Also in 2010 NEEA Manager of Codes and Standards David Cohan gave testimony at the State Building Code Council. He was part of a discussion group convened by the governor's office to facilitate communication between efficiency advocates and homebuilder organizations on code-related issues.

**Additional Information**

For additional information please see the "NEEA 2011 Update" submitted to PSE. NEEA organizational reports are available online. See the NEEA 2010 Quarterly Performance Reports and 2006-2009 Annual Reports.

NEEA is committed to serving its regional stakeholders across diverse geographic areas and markets. NEEA encourages stakeholder participation in their open input processes. Interaction is encouraged at NEEA Board meetings, Advisory Committee meetings and energy efficiency events around the region. The next NEEA Board of Directors meeting is February 18, 2011 in Seattle, Wash. and the general public is invited. Please contact Lis Saunders at 503-688-5495 for meeting time and location details.

Questions or comments on this report? Please contact Aaron Cohen, Sr. Manager of Corporate Communications, acohen@neea.org

## Regional Technical Forum (RTF)


**Background**

In 1996, Congress required the Northwest Power Planning Council (Council)[54] to convene a Regional Technical Forum (RTF) to develop standardized protocols for verifying and evaluating conservation. Congress further recommended that the RTF's membership include individuals with technical expertise in conservation program planning, implementation, and evaluation and that its services be made available to all utilities in the Northwest.

At its April 1999 meeting the Council voted to form the RTF to facilitate the development of the conservation and renewable resources identified in the Council's Plan and to assist the Bonneville Power Administration in implementing a Conservation and Renewable Resources Rate Discount.

Specifically, the four goals adopted by the Council for the RTF corresponding to its original charge from Congress and the Comprehensive Review are to:

- Develop standardized protocols for verification and evaluation of energy savings and the performance of renewable resources.
- Track regional progress toward the achievement of the region's conservation and renewable resource goals.
- Provide feedback and suggestions for improving the effectiveness of the conservation and renewable resource development programs and activities in the region.
- Conduct periodic reviews of the region's progress toward meeting its conservation and renewable resource goals at least every 5 years, acknowledging changes in the market for energy services and the potential availability of cost-effective conservation opportunities.

Consistent with these goals, the RTF would also be called upon to make recommendations to Bonneville to facilitate the operation of the conservation and renewable resources discount program. These recommendations would include:

- A list of eligible conservation measures and programs, the estimated savings associated with those measures and programs, and the estimated regional power system value associated with those savings.

[54] At the time, the Northwest Power Planning Council, now the Northwest Power and Conservation Council.

- A process for updating the list as technology and standard practices change and an appeals process through which customers can demonstrate that different savings and value estimates should apply.
- A set of protocols by which the savings and system value of measures/programs not on the list could be estimated. These would include complex commercial or industrial projects.
- Criteria for eligible renewable resource projects.
- Recommended protocols for measurement and evaluation of savings or production.

The Council Chairperson (Tom Eckman, the Council's Manager of Conservation Resources), in consultation with the Chair of the Power Committee and Director of the Power Division, appoints the RTF's members.

**Members and Invitees**

The RTF has 28 Voting members and approximately 45 Corresponding members. A current list of Voting and Corresponding members may be found on the RTF website:

http://www.nwcouncil.org/rtf/

**The RTF and PSE**

Where possible and applicable, EES will use RTF Deemed measure savings in order to comply with the 2010 Settlement Agreement conditions in section K(6):

> (6) **Approved Strategies for Selecting and Evaluating Energy Conservation Savings.**
>
> (b) Except as provided in Paragraph (6)(c) below, PSE must use the Council's Regional Technical Forum's ("RTF's") "deemed" savings for electricity measures. As of the date of this Agreement, the RTF maintains a Web site at http://www.nwcouncil.org/energy/rtf/.

PSE is a funding provider of the RTF and regularly engages the RTF and other constituents in savings analyses. PSE has provided and will continue to provide measure savings data for RTF input when applicable. Some measures have deemed savings values or deemed savings protocols that are specific to the PSE service region, which are compared to RTF values. PSE shares these data with the RTF to provide additional data points for analyses.

**2010 Accomplishments and Activities**

January through June

PSE is participating with the RTF effort to refine Ductless Heat Pump savings values. PSE also provided valuable input to the RTF in the revision of CFL savings values at the beginning of the year. In addition, PSE is active in the RTF's Fuel Conversion subcommittee.

July through December

PSE continues its participation with the RTF. Several EES staff members are involved in RTF measure related subcommittees. An EES staff member, who is a voting member of RTF, also serves on the RTF's standing Operations Subcommittee, which considered the RTF Charter with the NPCC and began discussions about creating a Bylaws document and an Operations Manual in conjunction with evolving NEET recommendations. This Operations Subcommittee also provided input to the RTF's 2011 Business Plan.

## The Northwest Research Group

The Northwest Research Group (NWRG) was formed to bring together research and evaluation staff from Northwest utilities to share research findings, methodologies and identify common needs where parties can benefit from combining efforts. Two meetings were held in 2010.

Staff from PSE, Seattle City Light, Snohomish County PUD, Avista, Idaho Power, Pacific Corp, Energy Trust of Oregon (ETO), Northwest Energy Efficiency Alliance (NEEA), and the Washington and Idaho utility commissions have attended. The current chair of the NWRG is a NEEA staff member. To date, the group has benefited from regional input for NEEA's Residential Building Stock Assessment and the Non-Residential Building Stock Assessment. Participants look forward to greater awareness of research and evaluation activities throughout the region.

## Regional Utility Cooperation

Throughout 2010, PSE partnered with several Puget Sound utilities, including Tacoma Power, Snohomish County PUD and Seattle City Light on energy efficiency initiatives. Where economies of scale could be achieved and rebate information for all customers could be simplified, the partnering utilities launched successful cooperative consumer programs, such as WashWise, Cash for Appliances Washington, Restaurant Pre-rinse Sprayheads and many others. In 2010, PSE took great pride in making significant contributions to many successful programs, including a few noted below:

### WashWise

PSE collaborated with Snohomish County PUD, Tacoma Power, Seattle City Light, as well as over 30 municipal and city water utilities including the Saving Water Partnership, Seattle Public Utilities Cascade Water Alliance, the City of Bonney Lake and the City of Renton to deliver a regional energy and water saving rebate program on resource-efficient clothes washers.

### Cash for Appliances

PSE provided leadership in developing the region's *Cash for Appliances*, a statewide program that leveraged ARRA funding that applied to energy efficient appliances. PSE provided guidance on program criteria, delivery structure and incentive levels. PSE worked closely with the Department of Commerce, who selected a utility model[55] for the program. PSE provided in-kind services that enabled the State to receive federal funding. It is noteworthy that the program was so successful, funding was exhausted five months prior[56] to plan.

### Pre-Rinse Sprayheads

PSE initiated contractual relationships with several utilities, water districts and municipalities in order to provide business customers throughout Puget Sound pre-rinse sprayhead conversions. The partnerships include Snohomish County PUD, Cascade Water Alliance, City of Everett Water District, Tacoma Water and Tacoma Power to name a few, provide for cost-sharing for sprayhead installations and ensure that services are consistently provided. Where utility territories overlap, (in Snohomish County, PSE provides the gas service, while Snohomish County PUD provides electric service) each utility pays the measure installation cost for the applicable fuel type. For instance, if sprayheads are installed in an Everett location where gas is the primary water heating source, then PSE would pay the installation costs. If sprayheads were installed in an Everett customer whose water heating source is electric, though, Snohomish County PUD would pay.

[55] The WA Department of Commerce had a choice to choose a manufacturer or retailer rebate model.
[56] The program was originally planned to run through April 2011. Demand was so high, though, that funding was depleted by November 2010.

**Commercial Kitchens**

Applicable to all kitchen-related equipment, PSE leads a more informal group than for its pre-rinse sprayhead program—there are no contractual arrangements between utilities. PSE and other utilities—including Tacoma Power, Snohomish County PUD and Cascade Natural Gas—regularly meet to agree on consistent incentive levels, savings amounts offering strategies.[57] PSE led the way to an agreement to share the same application form. PSE acts as clearinghouse for all utilities' applications, enabling all customers within the Puget Sound to have a single point of contact. Once received, PSE forwards the application form to the appropriate utility. Participating utilities don't reimburse PSE for administrative costs and all websites link to the same website (PSE's).

**Commercial Lighting**

Generally applicable to all commercial lighting and especially focused on small businesses, PSE began using the CEE high-performance T-8 lamps and ballasts as criteria for quality lighting installations. While not code and not required, PSE's recommendations to contractors nevertheless influenced the market to make the better product available for all business customers, thanks to the increased demand from lighting contractors. Other utilities have shared with PSE that their contractors use this solutions in their lighting programs thanks to PSE's influence.

[57] The recent decision to retire commercial refrigerators is an example of this cooperation. PSE was alerted that the RTF value was a negative incremental cost, which made the measure no longer cost-effective. After rigorous research, PSE provided regional leadership in recommending that this measure be retired at year-end 2010, which provided consistency for all regional customers.

## PSE's Contributions Beyond its Service Territory

In 2010, PSE took great pride in making contributions to and engaging with a wide variety of constituents at the state, region and even national levels. Highlights of the Company's achievements include:

- ✓ PSE's Small Business Lighting program initiated an effort to minimize lesser-quality LED technology and identify high-quality LED products in the market. Beginning in 2009, the team recognized the need to identify standards and develop a PASS/FAIL tool that allowed utilities to qualify products for rebates and incentives that were not already on the Energy Star® or Design Light Consortium qualified lists. Thanks to PSE's efforts, the resultant tool, launched in December of 2010, the Energy Trust of Oregon, Tacoma Power, Snohomish County PUD, Seattle City Light and BPA have all adopted this new method of qualifying LEDs for their programs. It is also supported by NEEA and there is now a regional qualified LED list which appears on the Lighting Design Lab's website. Several national webinars have been conducted by PSE on this innovative tool. Figure 7b is a screen shot of the Solid State Lighting Pass/Fail Form.

**Figure 7b: LED Lighting Qualification Tool**

Save Data

Clear Data

Solid State Lighting Pass/Fail Form

*Commercial/Industrial* *vs. 2010.3e*

| Section I- Photometrics | | | |
|---|---|---|---|
| **MANUFACTURER SPECIFICATION SHEET** | | **Date** | **1/25/2011** |
| Lamp Type | Integral Directional LED | | |
| | | | |
| Lamp/Fixture Manufacturer | | Model Number | |
| Color Temperature Listed on Product Package | 3000 K | | |
| SKU Number | | | |
| Certified by a NRTL (nationally recognized testing laboratory such as Underwriters Laboratories—UL) | Yes | **PASS** | |
| Lamp Diameter | ≤ 20/8 Inch | MR16 or R20? | MR16 |
| **WARRANTY** | | | |
| Warranty | 3 yrs | **PASS** | |
| **LM-79 REPORT (Electrical and Photometric Measurements)** | | | |
| LM 79 Test Number | | | |
| Lamp Input Voltage | 12 | | |
| Lamp Current (A) | 0.385 | | |
| Input Wattage | 4.6 | | |
| | | | |
| Initial Lumen Output | 230.5 | | |
| Efficacy Lumens/Watt | 32.00 | **FAIL** | |
| CRI | 81.8 | **PASS** | |
| R9 Value | 24 | **PASS** | |
| Correlating Color Temperature (CCT) | 3013 | **PASS** | |
| Duv Tolerance | 0.0002 | **PASS** | |

- ✓ Beginning in 2009, the team recognized the need for a tool that allowed contractors, resellers and consumers to receive consistent information so as to make a cost-effective and informed application of this emerging technology. Thanks to PSE's efforts, the resultant tool, launched in December of 2010, the Energy Trust of Oregon, Tacoma Power, Snohomish County PUD, Seattle City Light and the BPA have all adopted this new standard. It is also supported by NEEA and there is now a regional qualified LED list, which also appears on the Lighting Design Lab website. Several national webinars have also been conducted by PSE on this innovative tool.

- ✓ PSE hosted the 28th Western Energy Management Conference (EMC) at the Washington State Convention and Trade Center in June. The conference attracted more than 2,200 industry professionals and 200 exhibitors; record numbers for this event. EMC featured four concurrent tracks presented by 60 of the nation's foremost authorities in the energy disciplines; access to hundreds of vendors, product demonstrations, and AEE certification seminars

- ✓ In February, PSE supported the Pacific Northwest Chapter of AEE in offering the 5-Day Certified Energy Manager (CEM) training and exam at the PSE Bellevue campus Auditorium conference room. A total of 46 local professionals registered for the training, which included 10 staff from PSE. Of the registered attendees, 44 students sat the certification exam following the review seminar. The class pass rate for the exam was 88% and the average test score was 835; the highest average score seen on the exam in 2010. Needless to say, the seminar was a great success for the local energy community.

*An AEE instructor addresses the class on the first day of the 5-day CEM review seminar. Eligible participants sat a 4-hour certification exam on the final day of the training.*

- ✓ EES was represented by 10 speakers and moderators at the December 1 & 2 NEEA "Efficiency Connections Northwest" conference, where over 300 utility professionals, representing more than 20 utilities attended. Six knowledge-transfer sessions and 20 breakout sessions addressed topics such as codes & standards, understanding energy trends and barriers to public perception of energy efficiency

- ✓ EES's Evaluation staff made a presentation to the Consortium of Energy Efficiency (CEE) in the spring on tracking and verifying the results of behavior-based programs.

- ✓ In December, the RCM program was selected for the Association of Energy Services Professionals (AESP) 2011 award for Outstanding Achievement in Non-Residential Program Design and Implementation.

- ✓ PSE participated in the development of the Northwest Energy Efficiency Technology Roadmap. Along with 34 participants from 19 organizations throughout the region, including BPA, NEEA, Idaho Power, Energy Trust of Oregon, partnering regional utilities and members of the newly formed Regional Energy Technology Advisory Committee (of which PSE is a member), PSE assisted in documenting tactical plans, identifying long-term technology gaps and regional priorities for extended energy needs.

- ✓ PSE played an important role facilitating communication between the Executive Co-chairs for the Northwest Energy Efficiency Taskforce (NEET) work group on energy efficiency workforce development and the Pacific Northwest Center for Clean Energy Technology (PNCECE) to implement NEET's recommendations. Cal Shirley, VP Energy Efficiency Services, serves as one of the Executive Co-chairs. PSE provided support for the grant application that funded PNCECE. PSE has a representative on the Education Task Force of PNCECE work in order to continue implementing the NEET work group's recommendations.

- ✓ PSE supported the Edmonds Community College (ECC) National Science Foundation (NSF) application for an Energy Management workforce training and development project. That grant was awarded in August, 2010 in the amount of $600,000. The DOE and NSF projects offer leveraged opportunities to expedite the work and build on the NEET request to provide strategic coordination for regional Energy Efficiency workforce development.

# EFFICIENCY SUPPORT ACTIVITIES

## Overview

Comprised of 45 dedicated individuals in marketing, research, support, community interaction, administrative and evaluation activities, this sector provides critical input, information and services to a variety of EES programs. We ensure that efficiency programs are cost-effective and that a regular schedule of review is established for them. We also help program management target their efficiency messaging; through market research and establishment of exciting, compelling messaging. It is with this sector's input that a significant portion of PSE's IRP is developed and published. These support functions are specific enough to warrant separate entries in PSE's Appendix B, the biennial budgets and goals table.

The overall sector is meeting all expectations at this point of 2010. Expenditures overall are at 50 percent through the first half and research, evaluation, marketing and community projects are on track. Several community alliances have been established with excellent progress on ARRA-related projects. The efforts within this sector have also developed effective marketing programs, completed significant evaluation projects and refined internal support processes.

### Program Performance

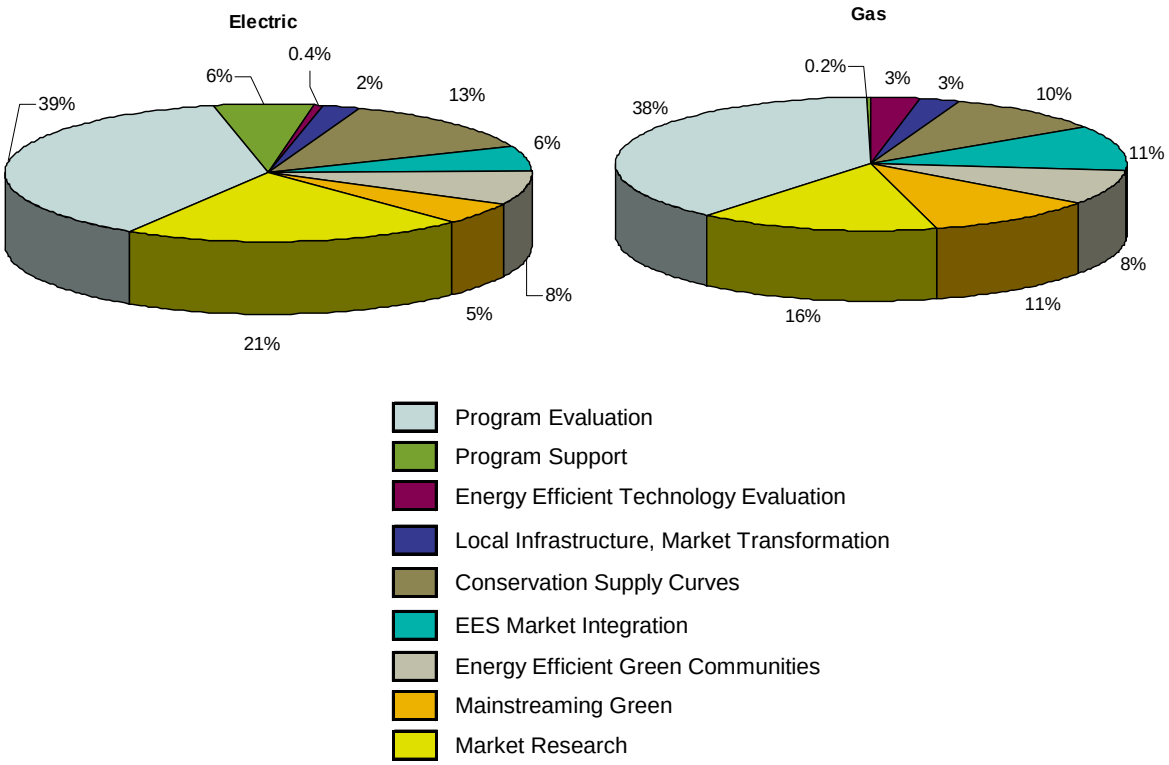
Table 8a provides a year-to-date summary of expenditures and energy savings for Support Activities.

**Table 8a: Support Activities 2010 Expenditures**

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | | Electric | | | Electric |
| Gas | Gas | | Gas | | | Gas |
| E241 | Community Efficiency Manager | $ - | $0 | **$0** | | $ 72,500 |
| E261 | Energy Efficient Technology Evaluation | $ 6,650 | $5,575 | **$12,225** | 11.1% | $ 110,000 |
| E270 | Local Infrastructure, Mkt Transformation | $ 54,671 | $10,071 | **$64,742** | 105.6% | $ 61,330 |
| | Conservation Supply Curves | $ 87,815 | $270,697 | **$358,513** | 85.6% | $ 418,800 |
| | EES Market Integration | $ 77,408 | $80,359 | **$157,767** | 69.2% | $ 228,000 |
| | Energy Efficient Green Communities | $ 101,884 | $116,365 | **$218,249** | 100.0% | $ 218,210 |
| | Mainstreaming Green | $ 17,867 | $123,880 | **$141,747** | 23.6% | $ 600,000 |
| | Market Research | $ 264,846 | $315,206 | **$580,052** | 66.7% | $ 869,866 |
| | Program Evaluation- Elec | $ 504,633 | $521,708 | **$1,026,341** | 140.7% | $ 729,403 |
| | Program Support | $ 83,906 | $86,431 | **$170,337** | 55.9% | $ 304,503 |
| | **Total Electric** | $ 1,199,682 | $1,530,291 | **$2,729,974** | 75.6% | **$ 3,612,612** |
| G241 | Community Efficiency Manager | $ - | $0 | **$0** | | $ - |
| G261 | Energy Efficient Technology Evaluation | $ 6,590 | $20,005 | **$26,595** | 53.2% | $ 50,000 |
| G270 | Local Infrastructure, Mkt Transformation | $ 14,805 | $10,011 | **$24,816** | 51.0% | $ 48,653 |
| | Conservation Supply Curves | $ 23,969 | $66,203 | **$90,172** | 85.9% | $ 105,000 |
| | EES Market Integration | $ 47,527 | $53,731 | **$101,258** | 66.6% | $ 152,000 |
| | Energy Efficient Green Communities | $ 39,100 | $35,418 | **$74,518** | 102.4% | $ 72,737 |
| | Mainstreaming Green | $ 11,109 | $86,751 | **$97,860** | 24.5% | $ 400,000 |
| | Market Research | $ 63,093 | $77,858 | **$140,951** | 74.3% | $ 189,654 |
| | Program Evaluation and Research- Gas | $ 126,300 | $223,759 | **$350,059** | 144.8% | $ 241,701 |
| | Program Support | | $2,145 | **$2,145** | | |
| | **Total Gas** | $ 332,494 | $575,882 | **$908,376** | 72.1% | **$ 1,259,745** |

Figure 8a is a representation of proportions of EES Support Activities spending for electric and gas.

**Figure 8a: Support Activities expenses as percents of totals**




EES support activities are those that are necessary to implement conservation measures, perform Evaluation, Measurement and Verification (EM&V) functions, increase consumer awareness of EES programs and review potential new energy efficient technologies. The activities described in the following pages are set apart from the Residential and Business Sectors because they influence and impact a wide variety of EES initiatives and are not program-specific.

These activities do not directly result in electric or natural gas savings, although they do have a significant bearing on savings, insofar as identifying target customers, influencing energy efficiency behavior, evaluating installation rates and billing histories, validating savings assumptions and ensuring accurate compilation and reporting of EES results. Support Activities expenses are spread over the portfolio for purposes of calculating cost-effectiveness. Only Other Electric Programs expenditures are excluded from cost effectiveness calculations.

It is noteworthy that three of these activities have a corresponding Schedule: 241, 261 and 270. This is because, although there are no associated savings claims, they directly affect customers by either offering a service, information or a benefit and they have a specific budget line item in the Company's Appendix B; Budgets and Savings Goals.

## Continuous Improvement

Programs within the Support Activities Sector focused on continuous improvement throughout the year, implementing several process revisions to improve efficiencies, reduce costs and maximize customer satisfaction. From the marketing activities that improved program synergies to rigorous evaluation process steps, the following program-specific reviews will outline key EES achievements and revisions.

# SUPPORT ACTIVITIES

## Community Efficiency Manager

Schedules E241/G241

Funding for the Community Efficiency Manager was suspended in 2010, pending a review of ARRA funding effects on demand for this service in the PSE territory. The program may be restored and funded at a future date, pending a review with the Company's Stakeholders.

## Energy Efficient Technology Evaluation

Schedules E261/G261

### Description

The purpose of Energy Efficiency Technology Evaluation is to identify new, energy efficient technologies and products for our program offerings. Ideally, we would identify cost effective technologies and measures with significant savings potential, which are commercially available. However, there are many emerging technologies that range from "commercially available, but not used in the Northwest," to "conceptual" or "prototypical" technologies still in the development phase.

It is relatively simple to determine whether new, commercially available technologies are suitable, as long as generally accepted engineering calculations can be used, and manufacturers can provide reliable data. For example, vendors frequently approach us with new, improved products, claimed to save more energy than their older models, or their competition. Usually these proposals are evaluated by the Energy Management Engineer or program manager, who then shares his/her experience with others in the group.

Some technologies are not so simple to evaluate. Those that are truly new typically have little experiential history, or there is no generally accepted method to calculate the performance. Clearly, it would be risky to broadly offer incentives through our programs - risky with regard to uncertain savings and risky for our customers due to unforeseen product issues. If the potential savings look significant, we may try the technology on one or two projects, especially if we are working with a customer who understands the risks and would like to be an "early adopter." Sometimes the most prudent approach is to monitor the progress of the technology, especially if the savings potential appears limited. Our effort is not intended for basic research, or product development, but to identify technologies that are available and suitable for our programs.

The most challenging situations arise when vendors propose products that are "too good to be true." Often their savings claims are supported by testimonials from satisfied customers, with little or no reliable test data. Many technologies, such as transient voltage suppressors, power factor correction devices and paint with high R-Value, have been known for years to save little or no energy, but the vendor may insist that his product is different, even though it may only have a different name on the box. Fortunately we have experience with many of these products, or can readily find others who have had experience. It is important, however, to distinguish between the bogus claims and those that might truly be the new emerging technology that deserves attention.

### Program Performance

Table 9a provides a summary of 2010 expenditures for the Technology Evaluation activity.

### Table 9a: Technology Evaluation 2010 Expenditures

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| E261 | Energy Efficient Technology Evaluation | $ 6,650 | $5,575 | **$12,225** | 11.1% | $ 110,000 |
| G261 | Energy Efficient Technology Evaluation | $ 6,590 | $20,005 | **$26,595** | 53.2% | $ 50,000 |

## 2010 Accomplishments and Activities:

### Electric

Enhanced control for small commercial rooftop systems: A few products have been introduced which enhance the functionality of the conventional wall thermostat for rooftop heating/cooling equipment. Some enhanced features include improved economizer operation, demand controlled ventilation, fan cycling or variable speed fan operation, and Web-based access to remotely adjust setpoints and schedules. While not as powerful as a Building Energy Management control system, these enhanced controls appear to be a reasonable, cost effective option for small to medium size commercial buildings. PSE monitored performance of several installations at retail stores in 2010.

Heat recovery unit for rooftop equipment: Air to air heat exchangers are not a new technology; however, one manufacturer has a model that is intended to be a cost effective option for individual rooftop units. Heat recovered from exhaust air is used to preheat outside ventilation air, with effectiveness claims exceeding 90 percent. We interfaced with one customer, who is interested in trying the technology, but who has yet to proceed with an installation.
Farm Worker Housing project update: Construction of the sustainable and energy efficient demonstration houses is delayed, awaiting additional funding; PSE's contribution is being held in trust.

E Source: A portion of the 2010 budget was allocated to monthly E Source dues. E Source has been a good source of initial information on energy efficient technologies, but availability of information on the World Wide Web and through other organizations and relations led to a decision to withdraw from E Source membership at the end of 2010.

### Gas

Enhanced control for small commercial rooftop systems: See comment above.

Heat recovery unit for rooftop equipment: See comment above.

NEEA natural gas market transformation: PSE and several other utilities provided seed money to NEEA to develop a plan to expand its market transformation activities to include natural gas opportunities that would benefit the region.

## Local Infrastructure & Market Transformation

Schedules E270/G270

### Description

PSE participates with or utilizes the services of many organizations to support the local delivery, management, and promotion of a broad range of energy efficiency programs. Measures primarily deal with education and information about energy efficiency and Puget Sound Energy's energy efficiency services. These can include participation in conferences and energy efficiency trade shows aimed at reaching a broad array of customers and trade allies. Similar to but narrower than Program Support, the Local Infrastructure and Market Transformation budget line item gives visibility to the annual membership dues PSE pays to trade associations and research organizations who support ongoing development and implementation of the wide variety of both Residential and Business energy management programs. There are no other substantive charges to this line item.

### Program Performance

Table 9b provides a 2010 summary of expenditures for the Infrastructure and Market Transformation activity.

**Table 9b: Infrastructure and Market Transformation 2010 Expenditures**

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| E270 | Local Infrastructure, Mkt Transformation | $ 54,671 | $10,071 | **$64,742** | 105.6% | $ 61,330 |
| G270 | Local Infrastructure, Mkt Transformation | $ 14,805 | $10,011 | **$24,816** | 51.0% | $ 48,653 |

### 2010 Accomplishments and Activities:

January through June

Specifically, expenses include electric-pertinent and general program support segment dues for E-Source, CEE (Consortium for Energy Efficiency), Electric League of the Pacific Northwest, and BOMA (Building Owners and Managers Association). All of these organizations provide a variety of benefits to EES. These include advocacy for energy efficiency, a variety of training and education opportunities for PSE staff and our customers and trade allies, market research, and technology assessments.

One example of a unique benefit involves BOMA of Seattle & King County and the implementation of their kiloWatt Crackdown Program. BOMA challenges the commercial real estate community to reduce energy, save costs, and position commercial office buildings for the future. The current program will recognize and reward buildings that will save the most energy in 2010 and 2011.

Participants are asked to benchmark their energy use utilizing the ENERGY STAR Portfolio Manager tool. Qualifying buildings are then eligible to receive a free scoping study and a list of energy-saving opportunities.

Multiple awards will be given in multiple categories in the spring of 2011 and 2012. This program provides multiple benefits to PSE: it 'raises the bar' re: awareness of energy efficiency among commercial customers, provides valuable marketing of PSE EE resources, offers concrete technical support and data analysis in helping customers understand and prioritize no and low cost energy efficiency opportunities.

The first annual kiloWatt Crackdown, launched in early 2008, involved 53 competing properties, representing over 18 million square feet or 20 percent of the Puget Sound office market. The combined energy savings from the participating buildings is equal to the annual electric consumption of 1,000 Northwest homes or over 700,000 gallons gasoline.

July through December

It was decided near the end of this year to forego E-Source membership in 2011. E-Source reflects the greatest expense in the LI&MT budget, and their services are expected to be replaceable at lesser cost in other venues. E-Source provides a broad array of valuable research services for their Energy Efficiency clients, and, depending on future circumstances, we may need to renew this membership at a future time. The current decision will reduce expenses to the LI&MT budget by approximately $45,000 in 2011. Fifty percent of E-Source dues are also allocated to specific program benefits, hence an equivalent reduction will be reflected in pertinent electric and gas programs.

Other memberships and activities with BOMA (Building Owners & Managers Association of Seattle and King County), CEE (Consortium for Energy Efficiency) and Electric League of the Pacific Northwest, with benefits as described above, are planned to continue in 2011.

## Mainstreaming Green and Market Integration

No Conservation Schedule

### Description

The Mainstreaming Green and Market Integration initiatives are designed to significantly improve the ability of the Energy Efficiency effort to communicate the "Why and How" of energy efficiency. This is being accomplished in two ways:

*Market Integration*

The Market Integration initiative consists of salary costs of employees working on Mainstreaming Green-related items. This is being done to increase the transparency of the work being done on marketing-related items. These include the enhancement of the energy efficiency web capability and the Re-Energize effort (both detailed below).

*Mainstreaming Green*

Mainstreaming Green consists of unified graphic standards, research and the initiative to make the PSE Energy Efficiency web tools effective in delivering electricity and gas savings, especially as we progress toward anticipated higher targets in the future. Research has shown that PSE customers are more web-savvy than average and have high expectations of doing business on the web. The web enhancement plan under Mainstreaming Green is designed to provide significant new tools for customers to be able to do this. Figure 9a illustrates the incorporation of the Re-Energize platform into the PSE.com website.

**Figure 9a: PSE.com Website Incorporating Re-Energize Concept**


Specifically, the new web tools will fully-integrate and more effectively organize on-line messaging, merchandising and the ability to up-sell energy-efficiency products and services to PSE's residential and business customer base, community partners and trade allies. This site will also allow for on-line, self-service customer rebate and application transactions. The new capability includes:

- Fillable rebate application forms, sign-up forms and info request forms
- Searchable retailer, contractor, etc. lists and maps, by zip, city, etc.
- Interactive house, featuring dynamic rebate and promotion information
- Easy to use, more sophisticated navigation
- Integrated Aclara home and business energy use calculators
- Content ratings and content merchandising functions
- Newsfeed and featured blog content and integrated social media tools

The updated features within the energy efficiency section of the website will help EES to capitalize on advanced online marketing opportunities not currently available within PSE's current web environment.

Dynamic, energy efficiency-identified content pages and features will also eventually allow EES to measure, track and quantify customer browsing and buying preferences and energy usage, in order to provide targeted, relevant information and education about energy efficiency and customer renewables, using a variety of analytical tools.

The second component of Mainstreaming Green involves research, Re-Energize umbrella graphic standards and outreach. Figure 9b is one example of a Re-Energize graphic.

**Figure 9b: A Sample Re-Energize Graphic**


The Re-Energize graphic standards are designed to make all PSE Energy Efficiency promotions consistent so all programs can better leverage the attention other Energy Efficiency programs generate with customers. This results in doors being opened more easily when new program promotions are put before customers. The Re-Energize graphic standards are now being utilized on program promotions.

Originally, the outreach component of Mainstreaming Green anticipated the need for paid advertising to generate additional customer attention for energy efficiency and establish the Re-Energize umbrella in the minds of PSE customers so they would be familiar with it when follow-on promotions arrived. The paid advertising component has been cancelled because federal stimulus funding and the overall economic downturn have significantly increased customer interest in energy efficiency, negating the need for an incremental PSE investment to get customers' attention.

Research was utilized in the development of the web and the Re-Energize components of Mainstreaming Green and was utilized to test the Re-Energize final product before it was implemented.

## Program Performance

Table 9c provides a 2010 summary of expenditures for the Mainstreaming Green and Market Integration activities.

**Table 9c: Mainstreaming Green and Market Integration 2010 Expenditures**

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| Mainstreaming Green | | $ 17,867 | $123,880 | **$141,747** | 23.6% | $ 600,000 |
| Mainstreaming Green | | $ 11,109 | $86,751 | **$97,860** | 24.5% | $ 400,000 |
| EES Market Integration | | $ 77,408 | $80,359 | **$157,767** | 69.2% | $ 228,000 |
| EES Market Integration | | $ 47,527 | $53,731 | **$101,258** | 66.6% | $ 152,000 |

## 2010 Accomplishments and Activities:

### *Mainstreaming Green:*

January through June
Re-Energize umbrella graphic standards and web plan complete. Program promotions now utilize the standards and reflect the consistent energy efficiency message. Work to implement the web plan has begun.

July through December
Phase One technical web components to improve existing system backend functionality are 80 percent complete. The EES-Renewables Energy website logged over 3,700,000 page views.

### *Market Integration:*

January through June
PSE EES labor dollars to support Mainstreaming Green development and implementation are on-track.

July through December
PSE EES labor dollars to support Mainstreaming Green development and implementation were utilized to realize program objectives noted above and came in under budget.

## Energy Efficient Communities

No Associated Conservation Schedule

### Description

Puget Sound Energy's Energy Efficient Communities (EEC) program aims to increase participation in PSE's Energy Efficiency programs by linking up local governments with EES programs to increase efficiency in their facilities, their residents' homes and their businesses. The program partners with cities, counties and other community entities to discover locally-appropriate ways of engaging the communities by leveraging PSE's resources, community knowledge and partner support.

With communities taking responsibility for their energy usage and carbon emissions, they are looking to partner with PSE expertise. There is great emphasis on energy efficiency in the American Recovery and Reinvestment Act of 2009 with local governments receiving funds for said purpose. PSE is working with its communities to help them utilize their Federal stimulus dollars to work in tandem with PSE's programs. With local governments directly receiving these funds, there is ample opportunity to create new delivery mechanisms that can utilize a Federal resource to make PSE's programs go further with our customers and achieve more savings.

### Program Performance

Table 9d provides a 2010 summary of expenditures for the Energy Efficient Communities program.

**Table 9d: Energy Efficient Communities 2010 Expenditures**

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| | Energy Efficient Green Communities | $ 101,884 | $116,365 | **$218,249** | 100.0% | $ 218,210 |
| | Energy Efficient Green Communities | $ 39,100 | $35,418 | **$74,518** | 102.4% | $ 72,737 |

### 2010 Accomplishments and Activities:

January through June

To date the Energy Efficient Communities program staff has worked with approximately 47 cities and counties that received stimulus funding for energy efficiency projects. The program staff has been the conduit to PSE's Energy Efficiency programs, to ensure the funds are utilized for cost effective measures. Some of the projects communities have utilized or plan to utilize their funds for include PSE's Home Energy Reports pilot expansion, HVAC system upgrades for municipal buildings, Resource Conservation Manager Program, Variable frequency drive retrofits for city water pump stations and more. The EEC program has also been working closely with four recipients of the Washington State University Extension Energy "Community Energy Efficiency Pilot Program," also funded through the stimulus package.

These organizations are utilizing and promoting PSE's residential and commercial efficiency programs, including HomePrint home energy assessments, small business lighting program, and other residential and commercial incentives. These programs provide more hands-on support for customers, and therefore help guide them through the energy assessment, contractor referrals, utility incentives and project financing to help increase the measure installation in homes and businesses.

The Energy Efficient Communities program has also worked on linking up communities with EES programs such as the CFL recycling box program in local city halls and other public buildings, Green Power promotion, and ensuring municipal customers are aware of what EES programs PSE has to assist them in reaching their energy efficiency goals.

July through December

To date, in excess of $63 million of Federal Stimulus money has been allocated to cities and counties in PSE service territory, some which was targeted for energy efficiency projects. PSE has provided or plans to provide to those projects that meet our energy efficiency criteria existing Residential or Business rebates, grants or incentives in amounts that match ARRA funds received by various community groups. Currently, $1.7 million is committed, with an estimated additional $6.4 million planned in 2011. The Energy Efficient Communities has worked with local governments to raise awareness of available PSE rebates and grants to leverage their Federal awards.

We continue to work with our partners, Community Energy Efficiency Pilot Program (CEEP) recipients of Washington State University Extension funding as they deliver energy efficiency measures to their communities. Table 9e outlines the accomplishments of our partners through the end of 2010.

**Table 9e: 2010 Community Activity**

| | Community Partners | | | | |
|---|---|---|---|---|---|
| | Sustainable Works | Opportunity Council | Thurston Energy | SnoPUD Community Power! | TOTALS |
| # HomePrint trained staff | 1 | 6 | 5 | N/A | 12 |
| # HomePrint Audit incentives paid | 119 | 36 | 364 | N/A | 519 |
| # Non-HomePrint Audits | 197 | 180 | N/A | 0 | 377 |
| # PSE Residential Measures installed | 183 | 5 | 350 | 0 | 538 |
| # PSE Commercial Measures installed | N/A | 52 | 37 | 0 | 89 |
| # of Loans completed | 12 | 16 | 20 | 0 | 48 |

**Small Business Outreach**


*A PSE Energy Efficient Communities Program Coordinator performs a walk-through energy assessment.*

In 2010, the Energy Efficient Communities team partnered with Business Energy Management to help local small businesses learn more about energy efficiency. In select counties, coordinators are available to conduct walk-through energy assessments for interested businesses and make recommendations for increasing their energy efficiency. This service is being offered by PSE to learn more about the needs of our small business customers and it includes:

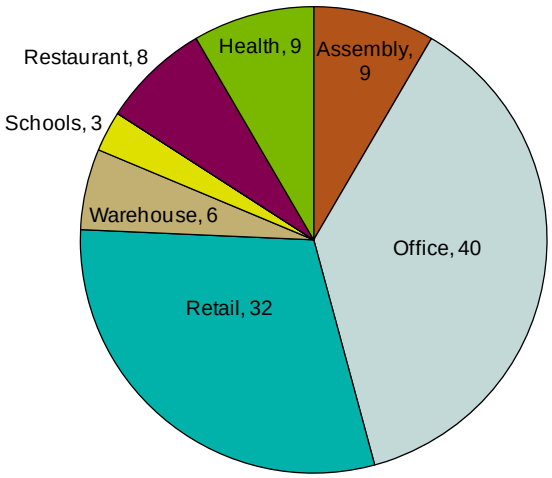
- A brief survey to learn more about a small business customer's energy needs and usage
- Customer registration on "My PSE Account", an online tool for tracking energy usage, paying bills online, etc.
- On-site walk-through to review a customer's lighting, heating/cooling, and equipment systems
- Free direct installation of sink aerators and up to 12 CFLs and
- A detailed 'findings and recommendations' letter highlighting PSE's applicable programs and services.

Outreach results:

- 92 Completed Walk-Through assessments
- 70 MyPSE.com signups
- 530 Lamps installed
- 89 Aerators installed
- 64 Customer Surveys taken

Figure 9c illustrates the distribution of business types that received a walk-through assessment as a part of Small Business Outreach.

**Figure 9c: Business Types Visited**



## Conservation Market Research and Conservation Supply Curves

No Associated Conservation Schedule

### Description

The focus of the EES Conservation Market Research function is on acquiring data on residential and commercial/industrial customer characteristics, customer satisfaction with energy efficiency services, community-level analyses and evaluating the effectiveness of the Mainstreaming Green program. We collect and analyze information about customers that is relevant for the development of programs, educational materials and promotional campaigns that will be effective in encouraging program participation.

Through various techniques such as surveys and focus groups, market research provides understanding of customer perceptions, motivations and barriers to adoption of energy-efficient behavior, as well as demographic, structural, and end use equipment characteristics.

As EES expands its efforts to respond to the increasing demand to provide value to communities, Market Research has been called upon to provide a significantly increased amount of analysis based on a community's behavior and energy usage trends, necessitating more geographically targeted research.

The research plan is built using a "bottom up" approach. As a part of the program planning efforts that occur prior to biennial conservation filings, Market Research works closely with program evaluation, marketing communications, and program implementation to identify research needs that support the effective development, delivery, and evaluation of energy efficiency programs. These program research needs are then coordinated, leveraged, and result in a slate of research projects.

Market research is planned in close coordination with the program evaluation, marketing communications, and program implementation functions to ensure that there is no duplication and that market research activities are responsive to the needs of EES.

Market research expenses are driven by the customized nature of the work and the large sample sizes required for results to be valid for multiple market segments and geographic areas. Commercial/industrial customer characteristics are particularly costly to collect because some on-site visits will likely be necessary. Lastly, it will be necessary to conduct research on new and expanded initiatives to gauge customer perceptions and measure their effectiveness.

#### Components

Baseline Research for Program Design and Promotional Campaign Development: 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. Examples of this research are end use characteristics studies and research aimed at understanding customer decision-making with respect to taking energy efficiency actions.

Program-Specific Market Research Support: This research will support the development and evaluation of specific energy efficiency program promotion and communications campaigns, including message testing, campaign target markets, and campaign effectiveness studies, as appropriate. This type of research is focused on specific programs or promotional initiatives and often involves analysis of existing databases and qualitative research from focus groups.

The Conservation Supply Curve function focuses on identifying the amount of energy savings potential that is technically and economically achievable over the 20-year planning horizon of PSE's Integrated Resource Plan (IRP). The IRP, which is filed every two years, is the basis for PSE's electric and gas energy resource acquisition strategy, including our energy efficiency programs. PSE has been conducting these analyses since 2003. Starting this year, the conservation potential from PSE's most recent IRP (completed in 2009) was used to derive the ten-year conservation potential and two year electric conservation target required to comply with the Washington Energy Independence Act (commonly referred to as I-937). PSE's next IRP and conservation potential assessment are due in 2011.

**Components**

Demand-Side Resource Market Potential: The Company will conduct an assessment of the long-term market potential for energy savings from energy efficiency and other demand-side resources, covering the twenty year period 2012-2031. The result of this market potential assessment will be the development of conservation supply curves that will be included in the Company's 2011 Integrated Resource Plan and be a key component is establishing program savings targets for 2012-2013.

**Program Performance**

Table 9f provides a 2010 summary of expenditures for the Market Research and Supply Curves activities.

**Table 9f: Market Research and Supply Curves 2010 Expenditures**

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| | Market Research | $ 264,846 | $315,206 | **$580,052** | 66.7% | $ 869,866 |
| | Market Research | $ 63,093 | $77,858 | **$140,951** | 74.3% | $ 189,654 |
| | Conservation Supply Curves | $ 87,815 | $270,697 | **$358,513** | 85.6% | $ 418,800 |
| | Conservation Supply Curves | $ 23,969 | $66,203 | **$90,172** | 85.9% | $ 105,000 |

**2010 Accomplishments and Activities:**

### Conservation Market Research

January through June
Base studies on residential customer barriers to adoption of energy efficiency and impacts of incentive levels on consumer interest in purchasing energy-efficient equipment were completed. Tactical research studies include focus groups on customer perceptions about the Re-energize concept for Mainstreaming Green and profiling Bainbridge Island customer characteristics and energy use to support community energy initiatives

Started a residential characteristics study, which will collect basic end use appliance and building characteristics data from approximately 5,000 customers using a mail/online survey. Work included sample and survey questionnaire development. The results will provide statistically representative data at the county level. This study will eventually be complimented by PSE's participation in the region-wide Residential Building Stock Assessment being conducted by NEEA, which will collect detailed end use information using on-site visits (see Section 7, Regional Programs). In addition to the homes that would be visited as part of the overall regional sample, PSE will be over-sampling an additional 170 homes in order to have more detailed data bout its service area.

July through December
A number of tactical research projects were completed. Customer surveys were conducted for a variety of programs, including residential rebates, LED lighting (L-prize), power cost monitor borrowing program, a local credit union's energy efficiency loan program, and the Re-energize Your Block community-based retail energy efficiency campaign. PSE also conducted customer focus groups on the receptivity of residential customers to energy efficiency information from PSE through social media channels.

The residential characteristics survey was fielded in the last half of 2010, with data collection completed in December. Results will be available in the first quarter of 2011. PSE also continued to actively participate in the NEEA Residential Building Stock Assessment.

### Conservation Supply Curves

January through June
PSE engaged Cadmus Group to conduct the conservation supply curve assessment, which will determine the amount of achievable savings potential that is available to offset long-term resource needs for the 2011 IRP. In addition to updating the previous conservation supply curves with updated information, PSE will be refining its analysis of peak impacts and the ramp rates for acquiring the conservation potential over time. The analysis is currently in progress.

July through December

Cadmus Group completed the assessment of technical potential, providing PSE with a set of conservation supply curves to be included in PSE's 2011 IRP electric and gas resource portfolio analyses to determine the amount of conservation potential that is economic and achievable. Results were presented to the IRP Advisory Group in November.

## Program Support

No Associated Conservation Schedule

### Description

This function includes administrative activities necessary to enable and enhance the strategic and tactical execution of the wide variety of both Residential and Business programs.

Program Support is not listed in Appendix A because it is not a "program" in the conventional sense. This budget line item includes administrative activities that are necessary to enable and enhance the strategic and tactical execution of the wide variety of both Residential and Business programs.

The Program Support budget category includes labor costs by New Program Development staff responsible for developing and improving program delivery processes in Customer Energy Management.

Typical functions include internal and external review, adoption/rejection, development and integration of: new EE industry research, end-use technologies and applications; pre-pilot program proposals; construction codes; equipment standards; software and similar tools applications. Other examples include: support for biennial and strategic program planning; coordinating IRP DSM RFP and related development and bidding activity; supporting work with regional EE organizations and initiatives; and managing program benchmarking studies, best practices, continuous improvement and related support activities.

The majority of charges (labor) to this line item in the first half of 2010 have been by a single dedicated staff member.

### Program Performance

Table 9g provides a 2010 summary of expenditures for the Program Support activity.

**Table 9g: Program Support 2010 Expenditures**

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| Gas | Gas | Gas | | | | Gas |
| | Program Support | $ 83,906 | $86,431 | **$170,337** | 55.9% | $ 304,503 |
| | Program Support | | $2,145 | **$2,145** | | |

**2010 Accomplishments and Activities:**

January through June
2010 accomplishments to date include extensive work with the Small Business Lighting program to improve program processes, design and implement a training program for participating contractors, and redesign the program tracking and reporting processes. Program support services also managed the assessment and bidder response for Demand Side Management proposals received through our 2009 Integrated Resource Plan.

Similarly they provided coordination of EES roles in the development of Generating Plant and T&D system efficiency improvement proposals called for by Merger Stipulation 47. Support staff also worked closely with the Energy Advisors group to identify and adopt improvements to internal business practices and customer services in the first half of 2010.

July through December
While work described above diminished in the second half, a heavy focus was placed on EM&V-related development support stemming from the I-937 conditions agreement completed in September. Particularly for Program Support functions, this effort included M&V processes and costs as described in Agreement section K.6(f)(ii). An RFP designed to best inform all of these interests was drafted in the fourth quarter, and is expected to go out to bid in mid-January. The CRAG will be briefed with updates and request for review and advice on all EM&V initiatives early in 2011.

Program Support activities also included development of an internal training manual and general curricula we refer to as Energy Efficiency University or EEU. EEU is designed to provide a comprehensive overview of Energy Efficiency fundamentals from IRP, cost-effectiveness and tariff guidance to source of savings validation, program design and EM&V.

Additional work throughout 2010 was directed toward defining and designing a Program Metrics application to help program managers optimize implementation. Other work has been done on financing alternatives for efficiency program participants with special needs or interests.

## Program Evaluation

No Associated Conservation Schedule


**Description**

The EES New Program Development and Evaluation Team is committed to the verification of claimed energy savings and the continual improvement of energy efficiency service delivery to customers. The Evaluation Team validates the cost effectiveness of both Residential and Business programs. Utility Cost and Total Resource Cost benefit-to-cost ratios are the two primary cost-effectiveness tests performed.

The Evaluation staff manage the evaluation of programs and measures with input from program staff to develop the evaluation plans, including evaluation criteria, accumulation of customer data, conducting customer surveys performing other evaluation methodologies and make program recommendations. These include savings claim figures, delivery methods, incentive levels and actual savings verification. As outlined in the tables below, the Evaluation staff develops a strategic evaluation plan, which ensures that all programs receive review on cyclic basis. The details of how the evaluation plan is developed are outlined in PSE's Appendix D, Evaluation Plan.

The Evaluation staff is also closely engaged in the Measure Metrics process. Using the Evaluation Report Response (ERR), Evaluation and Program staff ensure that study results are addressed in program implementation. Once an evaluation study is complete, the findings are reviewed with the program staff, along with key recommendations. The program staff then complete their input on the ERR, indicating what actions will be taken as a result of the findings. This ensures a closed-loop system.

Key evaluation data are archived in the Measure Metrics system, such as measure cost, measure life, incentive value and delivery method. The Evaluation staff also tracks a measure's "sunset date", which indicates that a particular measure is due for a renewed review.

In addition, PSE is monitoring Regional Technical Forum (RTF) work on Commercial Refrigeration, and the Direct Use of Natural Gas. A member of the evaluation staff continues to serve on the RTF, attending meetings and providing input to RTF discussions. PSE relies on the RTF for many of its Deemed measures. The RTF also practices the use of a sunset date for RTF approved measures to ensure that measures are updated within a reasonable timeframe.

PSE regularly provides critical evaluation data for the RTF and has been asked to review RTF data from time to time. PSE's evaluation presented data to the RTF that resulted in an adjustment of Retail CFL savings.

## Program Performance

Table 9h provides a 2010 summary of expenditures for the New Program Development and Evaluation activities.

**Table 9h: New Program Development and Evaluation 2010 Expenditures**

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | | Electric | | | Electric |
| Gas | Gas | | Gas | | | Gas |
| | Program Evaluation- Elec | $ 504,633 | $521,708 | **$1,026,341** | 140.7% | $ 729,403 |
| | Program Evaluation and Research- Gas | $ 126,300 | $223,759 | **$350,059** | 144.8% | $ 241,701 |

## 2010 Accomplishments and Activities:

The 2010 – 2011 Evaluation Plan, presented at the June 22nd CRAG meeting, identified Impact and Process Evaluations for 27 new and existing programs and measures. Completion of some evaluations, as indicated, may be deferred to 2012 – 2013 pending timing of program marketing and customer participation rates. An updated listing of evaluation projects for 2010-2011 is shown in Table 9i (electric) and 9j (gas). At this time it appears that impact evaluation of Gas Fireplaces and Tankless Water Heaters will be delayed until 2012 due to low customer participation.

## Table 9i: Electric Evaluation Project Status

**2010 - 2011 *Electric* Evaluation Project Details** Rev 1-14-11

| Customer Sector | Project Name | Schedule | 2009 Program Savings (kWh) | % of Total 2009 Program Savings | Study Type | Contractor (3rd Party) | Est Contractor Cost | Est PSE Analyst Cost | Est Total Cost | Complt / Est Complt Date | Status |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Pilots** | | | | | | | | | | |
| C&I | Commercial Demand Response | E249A | N/A | N/A | Impact & Process | Navigant | $ 87,250 | $ 2,585 | $ 89,835 | Sep-10 | Complete |
| Res | Home Energy Reports - 12 Month PSE Evaluation | E249 | N/A | N/A | Impact | NA | $ - | $ 4,400 | $ 4,400 | Apr-10 | Complete |
| Res | Home Energy Reports - 18 Month 3rd Party Evaluation | E249 | N/A | N/A | Persistence & Impact | KEMA | $ 61,152 | $ 1,100 | $ 62,252 | Oct-10 | Complete |
| Res | Ductless Heat Pumps | E249 | 1,389,500 | 0.5% | Impact & Process | Ecotope | (NEEA) | $ 1,000 | $ 1,000 | Nov-11 | In Progress |
| Res | Residential Demand Response | E249 | N/A | N/A | Impact & Process | TBD | $ 90,000 | $ 2,695 | $ 92,695 | Sep-11 | In Progress |
| Res, C&I | Other Pilots / Contingency | E249 | N/A | N/A | Impact & Process | TBD | $ 110,000 | $ - | $ 110,000 | Dec-11 | Pending |
| | **Existing Programs & Measures** | | | | | | | | | | |
| C&I | VFD Market Assessment Study | E250 | 1,041,678 | 0.3% | Process | Summit Blue | $ 16,757 | $ 18,000 | $ 34,757 | Mar-10 | Complete |
| C&I | Commercial Sprayhead Metering | E262 | 6,055,000 | 2.0% | Impact | SBW | $ 44,800 | $ 4,400 | $ 49,200 | Dec-10 | Complete |
| C&I | PC Power Management (Software) | E250 | 3,700,000 | 1.2% | Impact | Cadmus | $ 170,000 | $ 5,500 | $ 175,500 | Jan-11 | In Progress |
| C&I | C&I Retrofit | E250 | 51,700,000 | 16.8% | Impact & Process | TBD | $ 300,000 | $ 30,000 | $ 330,000 | Dec-11 | In Progress |
| C&I | Large Power/Self Directed | E258 | 16,240,000 | 5.3% | Impact & Process | TBD | $ 150,000 | $ 14,000 | $ 164,000 | Dec-11 | In Progress |
| C&I | LED Traffic Lights | E257 | 590,000 | 0.2% | Impact & Process | TBD | $ 20,000 | $ 1,000 | $ 21,000 | Dec-11 | In Progress |
| C&I | C&I Retrofit Programs | E250/E257 /E258 | 68,518,510 | 22.3% | Impact, Process & Market | Navigant | $ 262,700 | $ 10,000 | $ 272,700 | Aug-11 | In Progress |
| Res | Project Porchlight Follow-up | E214 | 4,300,000 | 1.4% | Impact | Innovative Research | $ 4,250 | $ 2,200 | $ 6,450 | May-10 | Complete |
| Res | MF Weatherization - Retrofit | E217 | 4,193,000 | 1.4% | Impact & Process | SBW | $ 107,086 | $ 7,700 | $ 114,786 | Mar-11 | In Progress |
| Res | Residential Duct Sealing | E214 | 17,580 | 0.0% | Impact & Process | Navigant | $ 67,856 | $ 11,550 | $ 79,406 | Jul-11 | In Progress |
| Res | Low Income Program | E201 | 1,890,000 | 0.6% | Impact & Process | TBD | $ 300,000 | $ 11,550 | $ 311,550 | Dec-11 | In Progress |
| Res, C&I | Regional Technical Forum (RTF) | All | N/A | N/A | Impact | Various | $ 192,000 | $ 6,050 | $ 198,050 | | Annual |
| Res, C&I | 2010-11 3rd Party Portfolio Review (**Jan - Aug *2010* kWh Savings)** | All | N/A | N/A | Impact & Process | TBD | $ 250,000 | $ - | $ 250,000 | Jun-12 | In Progress |
| | **Total *2009* Electric Savings, all Programs:** | | **307,887,979** | | | **Cost Totals:** | **$ 2,233,851** | **$ 133,730** | **$ 2,367,581** | | |

## Table 9j: Gas Evaluation Project Status

**2010 - 2011 *Gas* Evaluation Project Details** Rev 1-14-11

| Customer Sector | Project Name | Schedule | 2009 Program Savings (Therms) | % of Total 2009 Program Savings | Study Type | Contractor (3rd Party) | Est Contractor Cost | Est PSE Analyst Cost | Est Total Cost | Complt Date | Status |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Pilots** | | | | | | | | | | |
| Res | Home Energy Reports - 12 Month PSE Evaluation | G249 | N/A | N/A | Impact | NA | $ - | $ 4,400 | $ 4,400 | Apr-10 | Complete |
| Res | Home Energy Reports - 18 Month 3rd Party Evaluation | G249 | N/A | N/A | Persistence & Impact | KEMA | $ 26,208 | $ 1,100 | $ 27,308 | Oct-10 | Complete |
| Res, C&I | Other Pilots / Contingency | G249 | N/A | N/A | Impact & Process | TBD | | $ - | $ - | Dec-11 | Pending |
| | **Existing Programs & Measures** | | | | | | | | | | |
| Res | Gas Water Heaters | G214 | 70,200 | 1.4% | Impact | KEMA | $ 37,069 | $ 2,200 | $ 39,269 | Jun-10 | Complete |
| C&I | Commercial Sprayhead Metering | G262 | 1,756,000 | 33.8% | Impact | SBW | $ - | $ 2,200 | $ 2,200 | Dec-10 | Complete |
| Res | MF Weatherization - Retrofit | G217 | 24,350 | 0.5% | Impact & Process | SBW | $ 45,984 | $ 3,300 | $ 49,284 | Mar-11 | In Progress |
| Res | Residential Duct Sealing | G215 | 7,030 | 0.1% | Impact & Process | Navigant | $ 126,018 | $ 4,950 | $ 130,968 | Jul-11 | In Progress |
| C&I | C&I Retrofit | G205 | 666,908 | 12.8% | Impact, Process & Market | Navigant | $ 100,000 | $ 10,000 | $ 110,000 | Dec-11 | In Progress |
| Res | Low Income Program | G203 | 24,702 | 0.5% | Impact & Process | TBD | $ 100,000 | $ 4,950 | $ 104,950 | Dec-11 | In Progress |
| | **Total 2009 Gas Savings, all Programs:** | | **5,192,390** | | | **Cost Totals:** | **$ 435,279** | **$ 33,100** | **$ 468,379** | | |

## Special Projects and Support Roles

In addition to the projects listed above the evaluation staff is involved in special projects and support roles. Of note, PSE has engaged Research into Action to conduct a review of evaluation functions and roles within EES and provide recommendations to improve the effectiveness of program evaluation at PSE. Two additional projects include examination of PSE practices and best practices for setting incentives and a project to assess and document PSE's programmatic M&V activities. Also note PSE's estimated funding contribution to RTF activities. Table 9k includes additional details of other projects undertaken by the Evaluation group this year.

**Table 9k: Evaluation Special Project Status**

| Task Name | Project Lead | Completion Date | Contractor (3rd Party) | Status | 2010-2011 Estimated Cost (ELECTRIC) | 2010-2011 Estimated Cost (GAS) |
|---|---|---|---|---|---|---|
| **Other Projects** | | | | | | |
| Industrial Program M&V Guidelines | Feinstein | 02/26/10 | NA | Complete | $ - | $ - |
| ARRA Grant Research | Feinstein | 04/09/10 | NA | Complete | $ - | $ - |
| Diffusion Modeling | Feinstein | 06/23/10 | Cadmus | Complete | $ 59,006 | $ 19,669 |
| Home Print Support | Wilhelm | 09/30/10 | NA | Complete | $ - | $ - |
| Home Print Program Support | Wilhelm | 9/30/10 | NA | Complete | $ - | $ - |
| Program Metrics | Feinstein | 12/31/10 | NA | Complete | $ - | $ - |
| Evaluation Process Project | Feinstein | 12/31/10 | Research Into Action | Complete | $ 56,000 | $ 24,000 |
| Incentive Assessment Project | Brateng | 9/31/11 | TBD | In Progress | $ 50,000 | $ 40,000 |
| Programatic M&V Assessment & Documentation Project | Hazzard | 9/31/11 | TBD | In Progress | $ 50,000 | $ 40,000 |
| **Ongoing Support Roles** | | | | | $ - | $ - |
| Program & Measure Cost Effectiveness | Brateng | 1/2 Year & Annual | NA | Ongoing | $ - | $ - |
| NEEA | Brateng | NA | NA | Ongoing | $ - | $ - |
| RTF | Brateng | NA | NA | Ongoing | $ 348,100 | $ - |
| Energy Codes | Feinstein | NA | NA | Ongoing | $ - | $ - |
| NW Research Group | Brateng | NA | NA | Ongoing | $ - | $ - |
| Measure Metrics | Brateng | NA | NA | Ongoing | $ - | $ - |
| | | | | | $ 563,106 | $ 123,669 |

# OTHER ELECTRIC SECTOR

## Other Electric Programs Overview

There are four electric conservation programs for which savings are not claimed; Net Metering, Small Scale Renewables and two Demand Response pilots. This team is comprised of 11 expert professionals that positively interact with customers to demonstrate the effectiveness of demand response and small-scale renewables.

Net Metering and Small Scale Renewables primarily focus on customer-side generation, including solar, wind, anaerobic digesters (biogas, etc.) and small-scale hydro. These systems are smaller than 2 megawatts (MW).[58] The Commercial/Industrial Load Control Pilot and the Residential Demand Response Pilot are differentiated from the other pilots due to their longevity, specificity and potential effect on the overall utility.

PSE saw an incredible rise in the number of net metering customer applications over the course the year and the response received on our solar school initiative has been gratifying. The Demand Response pilots have been very successful, with results meeting expectations.

### Program Performance

Table 10a provides a year-to-date summary of expenditures and energy savings for Other Electric Programs.

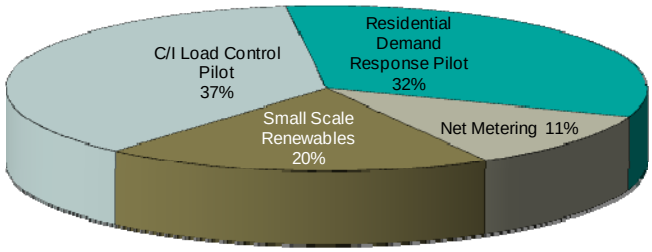
**Table 10a: Other Electric Program 2010 Expenditures**

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| E150 | Net Metering | $ 83,042 | $101,530 | **$184,572** | 110.7% | $ 166,753 |
| E248 | Small Scale Renewables | $ 129,064 | $194,884 | **$323,948** | 81.4% | $ 398,039 |
| E249A | C/I Load Control Pilot - Elec | $ 263,219 | $339,260 | **$602,479** | 126.6% | $ 476,000 |
| E249A | Residential Demand Response Pilot | $ 336,184 | $200,037 | **$536,221** | 152.6% | $ 351,400 |
| | **Total Electric** | $ 811,509 | $835,711 | **$1,647,220** | 118.3% | **$ 1,392,192** |

[58] Larger systems fall under the considerations of PSE's Schedule 91, Cogeneration and Small Power Production.

Figure 10a represents proportions of EES Other Electric programs' spending.

**Figure 10a: Other Electric Programs expenses as percents of totals**



# OTHER ELECTRIC PROGRAMS

## Net Metering

Schedule E150

*A typical residential solar installation, interconnected under terms of Schedule 150.*

### Description

Schedule 150, Net Metering for Renewable Energy Services, became effective February 11, 1999. Subsequently, Schedule 150 was revised on June 8, 2000 in response to legislative action[59], which modified certain aspects of the net metering program.

As revised, the schedule applies to customers who operate fuel cells or hydroelectric, solar or wind generators of no more that 100 kW.[60] Service under this schedule is limited to a total of 4.5 MW of cumulative nameplate generating capacity, of which no less than 2.25 MW of cumulative nameplate generating capacity shall be attributable to net metering systems that use either solar, wind, or hydroelectric power as its fuel. Customer generation can be used to offset part or all of the customer-generator's electricity use under Schedules 7, 24, 25 or 29 of Electric Tariff G.

### Program Performance

Table 10b provides a 2010 summary of expenditures for the Net Metering program.

[59] On March 27, 2000, Engrossed House Bill 2334 relating to the definition of net metering systems and amending RCW 80.60.010, 80.60.020 and 80.60.040 was signed into law. The revised law became effective June 8, 2000.

[60] Revisions to Schedule 150, including increasing the maximum generator capacity to 100kW became effective June 12, 2006.

**Table 10b: Net Metering Program 2010 Expenditures**

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| E150 | Net Metering | $ 83,042 | $101,530 | **$184,572** | 110.7% | $ 166,753 |

### 2010 Program Revisions

Significant changes have been drafted for the application, making it much easier for the customer while providing the information that the company needs to ensure safety and reliability. These changes are expected to be approved by the WUTC in Q1 of 2011.

### Process Improvements

Some of the meter installation and tracking responsibility has been passed over to the program manager which ensures that the meter installation request is entered into the data system at the earliest date and allows for the maximum benefit to the customer.

## Production Metering

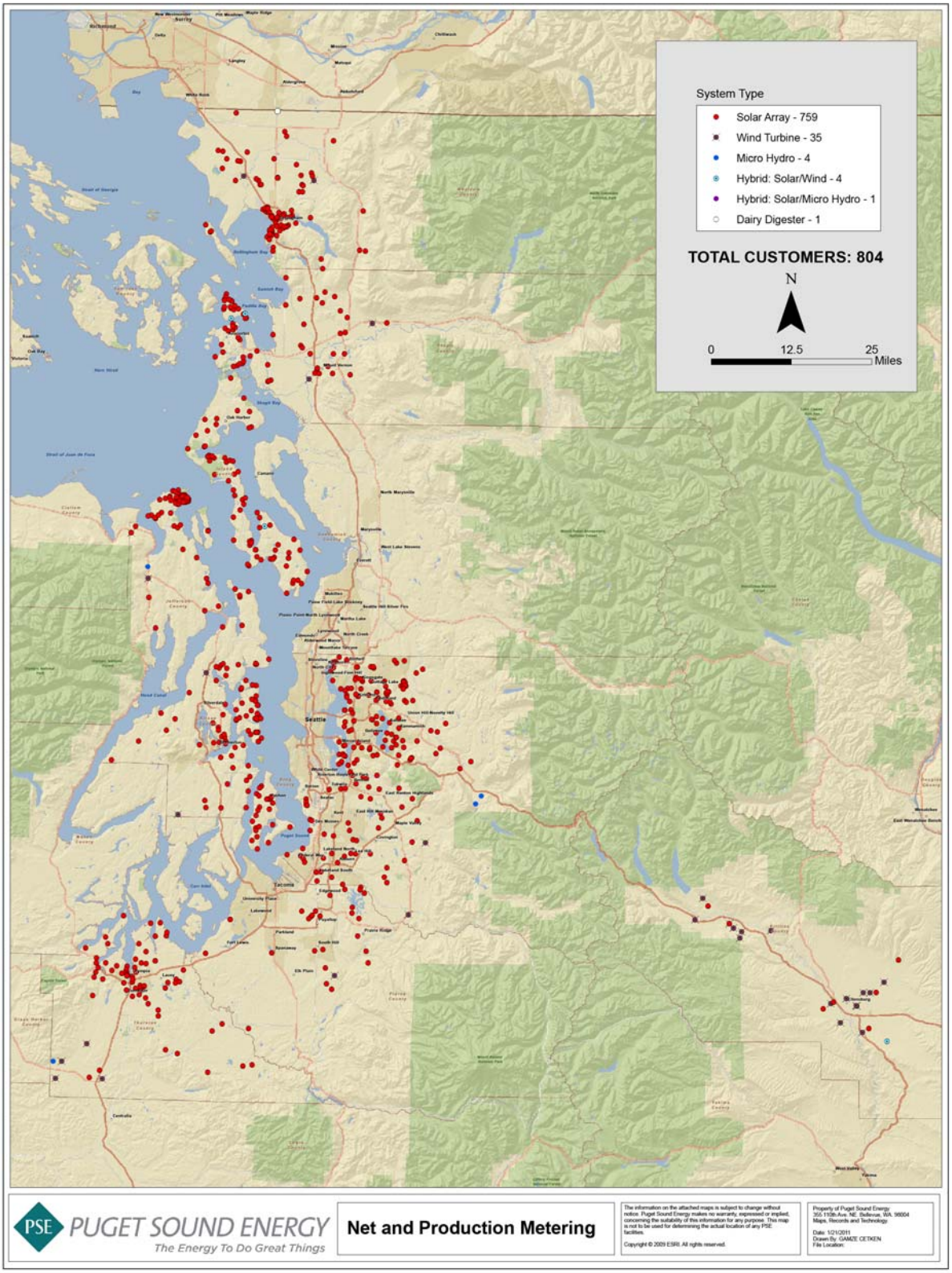
Schedule 151

Schedule 151 is the venue through which PSE administers the state-authorized production payment. The program is also known as the renewable energy system cost recovery program in WAC 458-20. In the most recent program year, from July 1 2009 to June 30 2010, the payments totaled $270,000.

Figure 10b[61] is an illustration of net metered locations within the PSE service territory as of this reporting date.

[61] The map was printed for this report in Mid-January 2011with the then-current count of net metered customers, 804. The figure noted on page 198 (791) was the 2010 year-end correct number of net metered customers.

**Figure 10b: Map of Net Metered Customers**



**2010 Accomplishments and Activities:**

January through June
PSE added 109 new Net Metered customers in Q1 and Q2, 2010. That brings the total customer count to to 657. Together they represent over 2.6 MW of capacity. 94 percent are Solar PV and the remaining six percent represent wind and micro-hydro. Of the new Net Metering customers, all are electing to participate in the State's Renewable Energy Production Incentive Program.

July through December
PSE added 134 new Net Metered customers in Q3 and Q4, 2010. That brings the total customer count to to 791. Together they represent over 3.3 MW of capacity. 2010 second half figures continue to be 94 percent Solar PV and six percent wind and micro-hydro. Of the new Net Metering customers, all are electing to participate in the State's Renewable Energy Production Incentive Program.

## Small-Scale Renewables (Renewable Energy Education)

Schedule E248

### Description

Small Scale Renewables, Schedule 248, was added to Schedule 120 funding when the Residential Exchange Credit was cancelled by the Ninth Circuit Court in May, 2007.

This program provides a solar rebate equal to the cost of the required production meter under terms of PSE's Production Metering schedule. Second, PSE offers a grant program for small scale renewable energy education demonstration projects which are tied in with both a curriculum and energy efficiency services. Further, PSE will encourage customers to make investments in small scale renewable electricity generating systems.

Under terms of Schedule 248, PSE rebated back the cost of Production Meters for net metered customers, so there is no additional cost from PSE for the customer when interconnecting a renewable energy system. $43,055 was rebated back to customers on this program in 2010.

### Program Performance

Table 10c provides a 2010 summary of expenditures for the Small Scale Renewables program.

**Table 10c: Small Scale Renewables 2010 Expenditures**

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| E248 | Small Scale Renewables | $ 129,064 | $194,884 | **$323,948** | 81.4% | $ 398,039 |

### 2010 Program Revisions

PSE re-named the program at year-end to *Renewable Energy Education*. PSE took greater involvement in managing and implementing demonstration projects at schools. Historically, PSE let its partner, Bonneville Environmental Foundation (BEF), be responsible for selecting the systems, installers and the final product. In 2010 PSE did the project management and worked closely with the schools to select and implement the demonstration projects. PSE also increased its involvement with the teachers and the curriculum for more effective learning. The program was modified to achieve more educational experiences by providing a limited number of schools with teacher training, science kits and curriculum only (no permanent photovoltaic hardware).

**Process Improvements**

In 2010 the program maximized available funds by taking on a project management role and leveraging in-kind contributions from schools. All five schools that received permanent hardware installations contributed some of their own funds. The grant was made available for an online application process which is making it easier for both schools to submit and PSE to manage.

**2010 Accomplishments and Activities:**

Renewable Energy Education Program

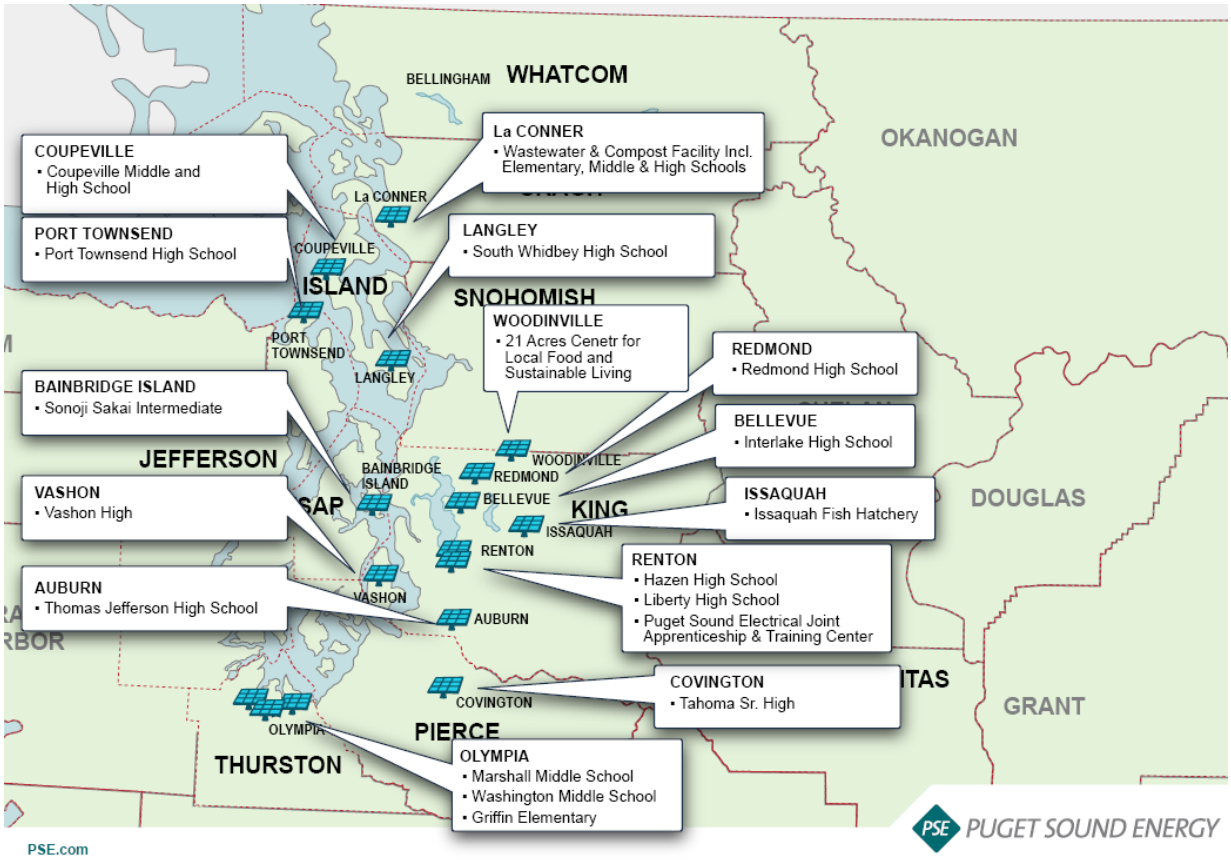
January through June
Starting in 2010, the *Solar Schools Grant* program was renamed the *Renewable Energy Education* Program to include the potential for wind power demonstration in schools. The program mission is to educate the public about renewable energy and continues to implement live web weather and power monitoring data, teacher training, classroom curriculum and an extensive renewable energy science kit for the classroom.

Awardees have taken advantage of at least one PSE energy efficiency program, and are either in or are partnered with a local school district. These 2010 projects are located at Griffin Elementary School near Olympia, Tahoma High School in Covington, Vashon Island High School, 21 Acres Center for Local Food in Woodinville (partnered with both Cascadia Community College and Northshore School District), the Town of La Conner Wastewater Treatment and Compost Facility, Sunrise Elementary School in Redmond and Echo Glen School, a juvenile rehabilitation facility in Snoqualmie. Both the Vashon Island High School and 21 Acres projects will host electric vehicle charging station monitoring in conjunction with their solar demonstration projects.

Dedication ceremonies were held at Coupeville Middle and High Schools on Whidbey Island, Liberty High school in the Issaquah School District and Hazen High School in the Renton School District. The Liberty High project is unique in that they received a grant from Issaquah Schools Foundation for $10,000 for a dual axis solar tracking array. Liberty students will compare the results to a similar installation at nearby Hazen High School with a fixed tilt solar array. Typically, these are high visibility events with a PSE Vice President, Mayors, School Superintendents, as well as local, State and Federal government officials in attendance. Figure 10c illustrates renewable energy education demonstration project locations.

July through December
Teacher trainings were held at six schools and a dedication was held at Tahoma Senior High. Conversations and planning with the project at 21 Acres will result in a more comprehensive display and educational interaction with Cascadia Community College, UW Bothell and Northshore School District schools.

**Figure 10c: Renewable Energy Education Demonstration Sites**



## Demand Response Pilots

Schedule E249A

### Description

PSE's 2007 and 2009 Integrated Resource Plans (IRP) presented achievable estimated demand response capacity potential for residential, commercial and industrial customer sectors. Pilots under this schedule are being undertaken to strengthen the Company's capability to responsively and effectively offer cost-effective demand response options to all customer classes in the future. At the outset, some members of the CRAG expressed a preference for demand response pilots involving "direct load control" by the Company, as opposed to pilots which involve pricing signals to elicit demand response from consumers.

The Company's primary focus is to pilot direct load control during times of high peak loads, focusing on the customer communication needed, as well as the information and incentives needed to get the customer to agree to respond. PSE will evaluate the effects of these pilot demand response options on its electrical system.

Attributes being evaluated include technologies, demand reduction performance, customer behavior and preferences, impact and integration of demand response with PSE operations, demand reductions achieved, energy savings achieved, and local distribution system benefits derived.

### Program Performance

Table 10d provides a year-to-date summary of expenditures for the Demand Response Pilots program.

**Table 10d: Demand Response Pilots 2010 Expenditures**

| 2010 | Expenditures | 2010 Quarterly View: Dollars | | | | 2010 Budget |
|---|---|---|---|---|---|---|
| Schedule | Programs | Q1 & Q2 | Q3 & Q4 | Total 2010 | YE % of Budget | |
| Electric | Electric | Electric | | | | Electric |
| E249A | C/I Load Control Pilot - Elec | $ 263,219 | $339,260 | **$602,479** | 126.6% | $ 476,000 |
| E249A | Demand Response Pilot Programs - Elec | $ 336,184 | $200,037 | **$536,221** | 152.6% | $ 351,400 |

### 2010 Accomplishments and Activities:

Tables 10e (by business type) and 10f (by residential load type) indicate the types of Demand Response pilot participants by business and load type, organized by city. It is noteworthy that the grand total of residential participants in Table 10f is not an aggregate of the "End Point" totals, as there is considerable overlap of participants.

**Table 10e: Commercial/Industrial Load Control Pilot Participants, 2010**

| Customer | Type | Nominated Winter kW | Nominated Summer kW | City |
|---|---|---|---|---|
| 1 | Hospitality | 150 | 250 | SeaTac |
| 2 | Education | 75 | 100 | Auburn |
| 3 | Manufacturing - Food | 250 | 250 | Kent |
| 4 | Manufacturing - Metal Products | 200 | 300 | Kent |
| 5 | Office Building - Large | 200 | 300 | Bellevue |
| 6 | Education | 300 | 300 | Kirkland |
| 7 | Manufacturing - Aggregate Products | 150 | 150 | Snoqualmie |
| 8 | Manufacturing - Aggregate Products | 300 | 300 | DuPont |
| 9 | Education - Large campus | 100 | 300 | Auburn |
| 10 | Large Office Building | 225 | 75 | Bellevue |
| 11 | Education - Large Campus | 300 | 300 | Lacey |
| 12 | Manufacturing - Chemicals | 25 | 40 | Anacortes |
| 13 | Education - Large Campus | 250 | 300 | Des Moines |
| 14 | Manufacturing - Medical Technology | 100 | 175 | Redmond |
| 15 | Manufacturing - Extruded Building Products | 300 | 300 | Kent |
| 16 | Education - Large campus | 125 | 300 | Bothell |
| 17 | Office Building - Large | 250 | 250 | Bellevue |
| 18 | Office Building | 200 | 250 | Bellevue |
| 19 | Office Building | 150 | 60 | Bellevue |
| 20 | Office Building - Large | 250 | 250 | Bellevue |
| 21 | Office Building | 60 | 60 | Eastgate |
| 22 | Office Building | 35 | 35 | Bellevue |
| 23 | Office Building - Government | 15 | 35 | Auburn |
| 24 | Manufacturing - Food | 150 | 150 | Bellevue |
| 25 | Education - Large Campus | 300 | 300 | Bellingham |
| | | 4615 kW | 5130 kW | |
| | Total Nominations - MW | **4.6** | **5.1** | |

**Table 10f: Residential Demand Response Pilot Participants, 2010**

| Device Type | End Point | Winter kW Potential | Summer kW Potential | Approx Number of Participants |
|---|---|---|---|---|
| Load Switch | Hot Water Heaters | 283 | 283 | 472 |
| Load Switch | Baseboard Heat / Wall Fan | 56 | N/A | 56 |
| Load Switch | Electric Forced Air Furnace | 45 | N/A | 45 |
| Load Switch | Air Conditioner | N/A | 0 | 0 |
| Thermostat | Heat Pump | 214 | 214 | 214 |
| | | 612 | 511 | 515 |
| | Total Load Potential - MW | **0.6** | **0.5** | |

**2010 Accomplishment and Activities**

**Commercial/Industrial Load Control Pilot**

January through June

Five pilot curtailment events were called during the 2009-10 (November thru February) winter season. December 8th and 9th (2009) events took place under severe cold weather conditions. Nominated capacity for both events was 2.92 MW or about 70 percent of maximum due to selected test geography. Curtailment performance (unaudited) was 7.0 MW on 12/8, or 241 percent, and 4.2 MW on 12/9, or 141 percent, of the 2.92 MW nominated capacity. An evaluation contractor for this pilot, Navigant, was selected from respondents to a national competitive RFP in January 2010, and a detailed approach and plan was developed with them in February. Navigant's work on the process and impact components of the evaluation continued though June.

July through December

Four warm weather events were called during this 2010 summer season. Nominated summer curtailable capacity for the 25 participant facilities totaled 5.1 MW and curtailment performance (unaudited) averaged 7.8 MW, or 153 percent of the nominated capacity. Thus far, two cold weather control events were called during the 2010-11 winter season. Nominated winter curtailable capacity for participating customer sites totals 4.5 MW and unaudited curtailment performance averaged 8.8 MW, or 198 percent of nominated capacity.

Navigant Consulting, Inc. completed a full impact and process evaluation of this pilot in September. Analysis of the pilot events conducted from early 2008 through August 2010, resulted in an average winter event realization rate of 83 percent of nominations. It was determined conducting winter events with short, one-hour ahead notifications, would produce a higher average realization rate – 88 percent. Summer averaged a realization rate of 148 percent given the higher levels of discretionary electric load typically curtailable in customer facilities during hot (compared to cold) weather conditions.

**Residential Demand Response Pilot**

January through June

The residential DR program has 515 enrolled customers on Bainbridge Island. The first winter season of the residential pilot concluded in February 2010, with two additional demand response events called on the mornings of January 27th and February 9th, with approximately 380 customers participating in each event. Reporting and data collection improved in February with the contractor's "Apollo" management system, but the 2009-2010 winter season evaluation will rely heavily on customer 15-minute interval data collected via PSE's AMR meters. Approximately 80 percent of end points (thermostats, load switches) respond to curtailment signals and the team continues to work on ways to improve participation and reduce technology barriers. The first summer season of the pilot runs May through September, though the months of May and June proved unseasonably cool and no events were called.

July through December

The remainder of the summer event season continued through September 2010, with five curtailment events called in July and August. Hot water heaters appear to provide the largest load reduction during the summer of just over a quarter megawatt. Heat pumps are also included in summer curtailment events; however, it is unknown how many participants use their heat pumps for air conditioning and maximum reduction potential is approximately 150 kW.

Pilot participants received a $50 incentive payment and newsletter update in October 2010. The second winter curtailment season began in November. Four curtailment events were called on back-to-back days in late November. However, due to a long and widespread power outage on Bainbridge Island, data was collected only for the November 22nd event. Approximately 70 to 75 percent of end points (thermostats, load switches) are responding to curtailment signals. The winter curtailment season will continue through the end of February 2011.

Reporting capabilities improved in the Intellisource (formerly Apollo) system, but are still lacking detail. Due to the lack of detail presented in the Intellisource reporting features, 15-minute AMR interval data is being utilized to view energy use at the individual customer level to analyze load drops, snap back effects, etc. during curtailment events, as well as view baseline energy use days prior and following a curtailment event. An evaluation RFP is planned for release in early first quarter 2011 to analyze process and impact for the pilot.

Another item of note is that PSE was notified in mid-September of a safety issue with the White-Rodgers thermostats that were provided by Comverge and installed in customer homes with heat pumps. The batteries in the units receive a back charge of current, causing them to leak and ultimately are a potential fire hazard. PSE took immediate action in early October and notified all affected participants via email, postal mail and phone to remove the batteries from the thermostat. A safety release on the Consumer Products Safety Commission website planned by White-Rodgers for December 2010 was delayed; a full repair kit and press release is anticipated in January 2011. Following the end of the pilot program in September 2011, PSE plans to replace all of the White-Rodgers thermostats with the customer's original unit or other viable programmable thermostat; this being due to the fact that the thermostats will not operate properly without battery backup.

# 2010 STAKEHOLDER RELATIONSHIPS

## Washington Utilities and Transportation Commission

### PSE Filings

The Energy Independence Act of 2006 (I-937)
The Company filed its Ten-Year Conservation Potential and its Biennial Conservation Target, Docket number UE-100177 on January 29, in compliance with RCW 19.285 and WAC 480-109.

On June 18, per Commission Order number 4, PSE re-filed its Ten-Year Conservation Potential and its Biennial Conservation Target, based on the Company's 2009 IRP.

Schedule 120, Electric Conservation Service Rider
With the successful conclusion of the WUTC Staff investigation (Docket # U-091954), the Commission approved the Company's Schedule 120 at the March 25 Commission open meeting.

Schedule 254 (NEEA)
The Company, at the Commission's request during the December 2009 biennial filing, clarified cost-effectiveness calculation standards in its NEEA Schedule in early May 2010. Additional clarification was requested and the Company filed its amended Schedule 254 as this report started publication.

Tariff Revisions
As a part of the 2010-2011 biennium, several conservation Schedules received some level of revision; most to clarify terminology or provide updated references. As the controlling Schedules, 83 (Electric) and 183 (Gas) receive routine evaluation and updating. This continues to be the case in PSE's recently approved 2011 Annual Conservation Plan, reviewed and approved by the Commission in December 2010.

The following Conservation Schedules were revised in 2010, for inclusion in the 2011 Annual Conservation Plan:

| Schedule | Program | Notes |
|---|---|---|
| Electric 83 | Overall conservation program rules | Added language for on-site measurement of savings |
| Electric 201 | Low Income Weatherization | Added language to address REC funding |
| Electric 202 | Energy Education | Revised language to reflect change in program delivery |
| Electric 248 | Renewable Energy Education | Revised Schedule name to better reflect deliverables |
| Electric 254 | Northwest Energy Efficiency Alliance | Clarified NEEA roles and cost-effectiveness |
| Gas 183 | Overall conservation program rules | Added language for on-site measurement of savings |
| Gas 207 | Energy Education | Revised language to reflect change in program delivery |

## WUTC Investigation

PSE's December, 2009 biennial filing of its 2010 – 2011 conservation tariff was approved by the Commission with the condition that WUTC Staff be allowed to open an investigation—under Docket number U-091954—of the Company's filing and appendices, focusing primarily on four areas:

1. NEEA funding, savings and governance
2. Home Energy Reports pilot program
3. Information-only activities
4. Providing additional details to substantiate 2010-2011 budgets.

As a condition of approval of the Company's Schedule 120 in March 2010, it was necessary that WUTC Staff was satisfied with the additional details provided.

The Company provided the Staff and CRAG detailed responses to all questions pertaining to each area over the course of January through March 2010, as outlined below:

- January 27: several NEEA documents to the CRAG.
- February 2: budget summaries, detailed work papers and seven Home Energy Report program documents to the CRAG.
- February 9: summaries, highlights and details relative to information-oriented programs.
- February 18: responses to additional Fuel Conversion program, Home Energy Report follow-up and budget clarification and cost-effectiveness questions to the CRAG.

All questions raised during the investigation were satisfactorily addressed[62].

## WUTC Compliance

EES published and distributed its biennial notification in a Conservation Report Card, illustrated in Figure 11a, in May 2010 to all customers, in compliance with the 2002 General Rate Case Stipulation Agreement, section M.44.

[62] Excerpted from WUTC Staff's March 25 open meeting memo in reference to Docket U-091954, paragraph 1: "Staff investigated several aspects of the company's program descriptions, budgets, cost-effectiveness, and evaluation, particularly in relation to Northwest Energy Efficiency Alliance (NEEA) programs and Home Energy Reports.[62] Staff is satisfied that the NEEA programs in which the company invested are cost-effective. …[ ].

And excerpted from paragraph 2: "Concerning Home Energy Reports, staff is satisfied that the company has justified this program for inclusion in its 2010 budget."

**Figure 11a: EES Biennial Notification: Conservation Report Card**

## *2008-2009 Energy Efficiency Performance Report Card*

Your efforts in saving energy have helped raise the region's focus on environmental responsibility and stewardship.

In 2008 and 2009, you made your homes and businesses even more energy efficient, helping to make Puget Sound Energy a leader in energy efficiency.

Every other year, we evaluate how effective we are at doing our part to encourage you to save energy. We match the amount of energy saved against set targets. Over the 2008-2009 period, your efforts exceeded the targets. Here are the results.

| KEY MEASUREMENT | TARGET | 2008-2009 PERFORMANCE | ACHIEVED |
|---|---|---|---|
| Electricity savings | 53.3 average megawatts | 66.4 average megawatts—enough electricity to serve more than 49,000 homes in one year. | ☑ |
| Natural gas savings | 5.6 million therms | 8.9 million therms— enough natural gas to serve more than 10,000 homes in one year. | ☑ |

* During 2008-2009 Puget Sound Energy was required by state regulators to meet a certain threshold of cost-effective energy savings. If electric conservation goals were not met, PSE could have incurred a penalty of more than $10 million per year and up to $750,000 per year if natural-gas conservation goals were missed.
Since the electric conservation goals were exceeded at the noted levels above, PSE qualified for incentives of $4.24 million in 2008 and $4.38 million in 2009 under its pilot electric incentive program approved by the Washington Utilities and Transportation Commission.

In 2010, we will continue to provide you ways to help you achieve greater energy efficiency in your homes and businesses. Here are some of the ways.

### *For homes*

PSE offers a wide array of rebates and incentives for home improvements and equipment that reduce energy use and lower bills.

Many of these same measures could also qualify for as much as $1,500 in federal tax credits and $100 from Washington state's appliance rebate program for energy efficient clothes washers.

In addition to saving money through rebates, lower bills and tax credits, customers can lower their carbon footprint by using less energy and support the local jobs that service energy conservation programs like these.

### *For businesses*

PSE offers rebates and incentives to businesses that make qualifying energy-efficient upgrades and improvements to their facilities.

We also offer incentives for energy-efficient construction.

We have more than a dozen rebate programs with more than 100 options for commonly applied efficiency upgrades.

PSE's grant program helps businesses and organizations fund energy efficiency measures applied to the construction and upgrades of buildings and facilities. Our grants can provide businesses with a custom incentive and funding up to 100 percent of the installed cost for any energy-efficiency project for upgrades of existing buildings or new construction.

Our grants also help fund a Resource Conservation Manager, an energy expert, to help your business or organization implement energy-efficiency measures to bring about reduced use of energy.

Visit PSE.com or call a PSE Energy Advisor at 1-800-562-1482 to find out more about rebates and incentives for purchasing energy-efficient products like lighting, heating, and water heating equipment for residences and technical assistance and custom incentives for businesses.

Through your efforts, we intend to continue the momentum for achieving energy savings. Over the next 20 years, the energy savings achieved by our customers is expected to offset the need for building four midsized, 250-megawatt power plants.

Printed with soy ink on recycled paper.
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PSE PUGET SOUND ENERGY
The Energy To Do Great Things

## 2010 Settlement Terms for Electric Conservation

On September 3, 2010, PSE and associated parties filed a Settlement Agreement as a part of Docket No. UE-100177. On October 13, the Commission issued Order 05, approving and adopting the Electric Conservation Settlement Agreement, approving PSE's revised report identifying its ten-year conservation potential and biennial target and granting a motion to modify the twelfth supplemental order in Dockets UE-011570 and UG-011571.

In compliance with the Settlement's condition K(8)(b), PSE filed its 2011 Annual Conservation Plan with the WUTC on December 1, 2010. The plan was approved by the Commission on December 30, 2010.

PSE earned noteworthy praise from parties contributing statements to the Joint Narrative Supporting (the) Settlement Agreement in September, 2010, including Public Counsel, who said:

"… Since the time of the 2002 Conservation Stipulation, PSE has become the leader among Washington utilities in the design and implementation of conservation programs. In general, Public Counsel has found that PSE's conservation programs are well-run, executed in a professional manner, and have operated in accordance with the requirements of the 2002 Conservation Stipulation."[63]

[63] Section IV. Statements of Parties' Views About Why the Proposed Conditions Satisfy Their Interests and the Public Interest. Part C(1)(a), pg 21 of the Narrative.

# Conservation Resource Advisory Group

## Background

The Conservation Resource Advisory Group (CRAG), was formed as a condition of the 2001 General Rate Case Stipulation Agreement and was put into effect in 2002. It consists of 15 stakeholders and represents a wide variety of interests, including consumers, industry, regional concerns and includes members of the Washington Utilities and Transportation Commission Staff. The CRAG works closely with EES on a variety of conservation initiatives, most notably conservation tariff filings, savings goal setting and long-term conservation strategies.

## 2010 Process Improvements

PSE implemented a number of steps to improve communications with the CRAG including:

- Email notifications -
  In May, EES began the process of prioritizing CRAG communications. Subject lines now contain indicators such as "***Action Requested***", "***Follow-up Needed***" or "***Information Only***". An executive summary approach is also used, so that busy CRAG members can quickly ascertain the nature of a particular communication.
- Meeting conduct -
  - Always review activities between meetings
  - Meeting summaries are published within three days of the meeting
- Meeting summaries
  - Publish meeting summaries within 3 days of meeting
- Establish a single point of PSE contact
- The CRAG meeting presentation materials are shared with the CRAG at least one day prior to the meeting
- PSE activities pertaining to a Settlement conditions will cite the condition number.

## CRAG Vision

In May of 2010, the CRAG and PSE agreed that there is mutual benefit in working towards a common vision. It is the cornerstone to establishing a superior collaborative, whose primary goal is to enhance services provided to PSE ratepayers. Development began on a vision statement, working within the context of the 2002 Stipulation Agreement.

*Members actively participate in CRAG processes*
*and provide advice on PSE decisions so that ratepayer funds are being used to achieve all cost-effective energy conservation in the most prudent, beneficial manner.*

## CRAG Activities

### Field Trips

In May, a small group of CRAG members participated in a Residential Sector field trip, where duct sealing, blower door testing and ductless heat pumps were observed. An EES Manager hosted the group in his home, where the group donned protective outerwear and convened in the home's crawlspace to observe duct sealing operations. The group then observed, on a Forward Looking Infrared Radar (FLIR) camera, the effects of air leaks presented during the blower door test.

After reconvening at the PSE corporate office, a ductless heat pump system was demonstrated.


*Public Counsel analysts and PSE staff receive a demonstration of a ductless heat pump in the PSE office.*

In June, that same group, along with WUTC Staff members, observed several Business Sector measures at two PSE customer sites, including the LOTT (Lacey, Olympia, Tumwater & Thurston) Alliance Budd Inlet waste treatment facility, where EES provided a grant for the installation of a new generator that uses formerly discharged methane for fuel to generate electricity. The lead EME also provided background on energy-efficient aeration blowers that were scheduled to be installed within the near future. After a short tour of the facility, the group then traveled south to Tumwater, were they reconvened at Cardinal Glass Factory in Tumwater. There, they observed energy-efficient pumps used to create vacuum in chambers that apply silver and anti-reflective coatings. These pumps were installed with the help of a PSE grant.

*WUTC Staff, Public Counsel analysts and PSE staff start their tour of the LOTT Alliance Budd Inlet waste treatment facility, led by the facility's operations supervisor (facing away from the camera).*

*WUTC Staff and PSE staff receive a pictorial overview of the LOTT Alliance waste treatment plant from its operations supervisor.*

Our last field trip of 2010 was conducted on October 20 in the PSE main office and PSE's call center offices consisted of a review of EES's Residential Sector rebate processing and the Small Business Lighting program in the Business Sector. Attendees were able to view the process steps and systems used to process residential rebates as well as the separation of duties; ensuring that staff with approval authority could not also enter rebates, for example, was emphasized.

*The Residential rebate staff review preparations for their October 20 presentation to Public Counsel.*

In the call center offices, the attendees received background information on the development of the Small Business Lighting program and were able to get an in-depth view of the tools that are now used to monitor lighting projects and PSE vendors. Attendees were also treated to a fairly comprehensive display of various lighting applications and technology in which the SBL program routinely engages.

*Members of EES's Small Business Lighting Team prepares its presentation for Public Counsel's October 20 meeting.*

**Seminars**

On April 14, a small group of CRAG members participated in a meeting to review Measure Metrics processes and how they interface with Evaluation and Program Implementation processes. A key takeaway was that the Company employs a closed-loop process of managing its conservation measures, their savings claims and the accuracy of their reporting.

**Audits**

On March 8, a member of Public Counsel and a member of the WUTC Staff conducted a simple audit of Residential sector programs. There were no audit findings at the conclusion of the exercise.

## Publication Updates

EES notified the CRAG of its first quarter revisions of Attachment 1, which focused on adding electric and gas Weatherization measures and clarifying Business Sector offerings in early April 2010. EES also updated its Business Sector program descriptions (Appendix A) concurrent with the Attachment 1 revision. PSE's second update of measures and offerings occurred in August[64].

These documents are always updated on the PSE.com website the business day immediately following CRAG notification.

## CRAG Meetings

**May 6 meeting summary:**

The first CRAG meeting of the year was facilitated by an expert in creating collaboration and focused on building upon past successes. The group spent the day identifying developmental areas, creating collaboration and agreeing that together, we can achieve a Best in Class organization.

Key Outcomes

Establishment of a CRAG draft vision[65]:

> Members have confidence that ratepayer funds
> are being used for all cost-effective energy conservation
> in the most prudent, beneficial manner.

Ensure effective participation of CRAG members [by],

- Better scheduling of CRAG meetings,
- Include a thematic approach to meetings,
- Clarify meeting objectives and outcomes,
- Provide as much meeting material prior to meetings,
- Considering offering webinars, teleconferences, etc.

[64] In its 2011 Annual Conservation Plan, filed with the WUTC on December 1, 2010, Attachment 1 was re-named "Exhibit 4", to align with other addenda to the Plan.
[65] The CRAG Vision Statement was further refined in subsequent meetings & emails, resulting in the final version, presented on page 211.

Encourage more effective communications at meetings [by],

Recording minutes without attribution.

**June 22 meeting summary:**

Our second meeting of the year continued the momentum established in May, with a higher-than-expected CRAG member turnout, with active participation all around. Members expressed enthusiasm for the renewed focus and process commitment demonstrated by PSE. There was general consensus that the meeting was productive and the issues discussed were topical and relevant.

Key Outcomes

Establishment of CRAG meeting standardization:

Previous meeting summarization,
Review of the CRAG action item status,
Electronic polling for setting 2011 meetings,
Key points on CRAG roles.

Review of key strategic issues:

Decoupling, which the group agreed to discuss in more detail in upcoming meetings,
EM&V; definitions, goals and standards,
2010 year-end forecasts; should PSE curtail conservation achievement efforts or exceed budgeted

Deliverables:

Meeting summary,
PSE internal Home Energy Report one-year evaluation report,
Updated CRAG vision statement[66].

**July 27 meeting summary:**

This meeting focused entirely on documenting and strategizing an approach to addressing I-937 conditions. Subsequent conference calls occurred during August that focused on resolving issues around the new conditions and incorporating applicable sections of the 2002 Stipulation Agreement.[67]

[66] The current CRAG vision statement is noted at the bottom of page 211.
[67] Docket Nos. UE-011570 and UG-011571.

Key Outcomes

PSE produced a matrix of Energy Independence Act conditions that compared Avista and PacifiCorp conditions with PSE's 2002 Stipulation Agreement sections. The assembled group identified which conditions could be adapted for PSE and which would require additional focus. This provided a common platform from which consensus could be built.

**September 9 meeting summary:**

This CRAG meeting was split into two sections; the morning focused on the interactions and relationships between members and PSE during the formation of the Settlement Agreement conditions; what was learned and what can we leverage for future collaboration?

The second half of the meeting was used to provide program updates and preview, as much as possible at the time, the upcoming 2011 Annual Conservation Plan (ACP).

Key Outcomes

PSE agreed to provide a proposed format for the ACP to the CRAG by October 1. PSE provided follow-up on several questions that arose during the program overviews, specifically, the Low Income Weatherization funding for repairs, modifications to the HomePrint and Energy Education programs and ARRA activity. PSE also agreed to provide preliminary information on calculating which programs and activities should be included as a part of condition K(7)(d).

**November 4 meeting summary:**

At our last meeting of the year, PSE reviewed the draft 2011 Annual Conservation Plan that was presented to the CRAG the previous Monday, November 1[68]. The group reviewed the content of the ACP, with each CRAG member receiving a hard-copy binder of the package. Major program revisions were reviewed, with each department manager providing an overview. While not reviewing the actual budget items, the group reviewed the improved budget detail format and some of the program description revisions. We reviewed the potential impact of the 2010 conservation performance on 2011 customer bills, provided a brief summary of the development status of PSE's Measurement & Verification (M&V) documentation initiative and finally, we provided a review of IRPAG and CRAG interactions as they relate to the conditions.

Key Outcomes

During the meeting wrap-up, the group participated in a "what worked, what could be improved" exercise. There was general consensus that the ACP review was a success, although, it would have been valuable to have been able to review a couple of programs in-depth.

[68] Pursuant to condition K(8)(b).

We agreed that our next meeting (not on our original 2011 meeting schedule) would be on January 27, 2011. The primary topic will be a review of how PSE sets its rates, per Settlement Agreement sections F and H and condition K(11)(a).

Several studies that were currently underway or nearing completion at the time of the meeting were also to be forwarded to CRAG members when completed[69].

[69] At the time of the report's publication, these studies will have been completed and disseminated to CRAG members.

# CONCLUSION

This concludes the Energy Efficiency Services 2010 Annual Report of Energy Conservation Accomplishments.

Please refer to the Report's Appendices for additional EES details:

Appendix A: Tables of electric and gas energy conservation expenditures and savings to date,
Appendix B: List of prescriptive and selected calculated measures,
Appendix C: List of prescriptive and selected 2010 measure revisions,
Appendix D: EES cost-effectiveness,
Appendix E: Electric Conservation Incentive Mechanism calculation table
Appendix F: Savings adjustments made in 2010
Appendix G: EES evaluation studies made in 2010
Appendix H: 2010 Electric Conservation Settlement Agreement Terms and conditions.

EES looks forward to providing our 2011 Semi-annual Report in the third quarter of 2011.

Respectfully submitted,

PSE PUGET SOUND ENERGY
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Puget Sound Energy
Energy Efficiency Services