Energy Efficiency

2013 Annual Report of Energy Conservation Accomplishments

Volume 1:

- Annual Report
- Exhibit 1: 2013 Savings & Expenditures
- Exhibit 2: Cost-Effectiveness
- Exhibit 5: Measure Data
- Exhibit 9: Condition Compliance

PSE PUGET SOUND ENERGY

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PSE Customer photo credits:

Top left: PSE customers The Marcus Family.

Second from top: Re-Energized by Design runners-up the Reillys at their home in Bellingham

Third from top: Commercial customer Fine Balance Imaging on Whidbey Island

Bottom left: Barbara Atterberry, co-owner of Bob’s Chowder Bar in Anacortes.

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Supporting Documentation

Please note that the Exhibits listed below align with the Exhibit numbering system established in the 2011 Annual Conservation Plan, and continued into all subsequent Energy Efficiency conservation reporting. This maintains continuity between PSE filings, and provides Stakeholders with the ability to perform direct comparisons more effectively.

As this report is a review of past accomplishments, some Exhibit numbers may be omitted, as they are plans, and are not directly applicable to a review of performance. For instance, the 2013-2013 BCP Exhibit 3 contains program details. In this report, those details are contained within the body of the report, rather than as a separate Exhibit. Exhibit 3 is therefore omitted from this report.

Rather than create ***new*** Exhibits, Appendices or Attachments for this report, which may cause confusion, PSE employs Supplements to established Exhibit (maintaining the Exhibit numbering system from report-to-report).

Established Exhibits Included in the 2013 Report of Conservation Accomplishments

Exhibit 1: 2013 Conservation Targets and Budgets versus Actual Achievements and Spending.

Exhibit 2: Program Cost Effectiveness.

Exhibit 5: Prescriptive measures offered in 2013.

Exhibit 9: Condition Compliance Checklist.

Exhibit 10: NEEA report of annual accomplishments. (Effective with the 2013 Annual Conservation Plan, this is a new Exhibit. Formerly, the NEEA review was included within the body of the PSE Annual Report.)

Exhibits Excluded from the 2013 Report of Conservation Accomplishments

Exhibit 3: Program Details *(these are updated and refreshed for inclusion in this report).*

Exhibit 4: Energy Efficiency List of Measures, Incentives & Eligibility *(this is an ongoing, "living" document).*

Exhibit 6: Evaluation Plan. *(Omitted, as this is a forward-looking document. A Supplement to this Exhibit is noted below.)*

Exhibit 7: Marketing Plan. *(Omitted, as this is a forward-looking document.)*

Exhibit 8: EM&V Framework. *(Omitted; provided in the 2014-2015 Biennial Conservation Plan)*

Supplements

Exhibit 1 *(Table of savings and expenditures)*

- Supplement 1: Expenditures by Cost Element Group (2013-2013 BCP view).
- Supplement 2: 2013 Savings adjustments.
- Supplement 3: 2013 Sponsorships and Memberships.
- Supplement 4: Portfolio Measure Category Counts.

Exhibit 5 *(Energy Efficiency' Prescriptive and selected calculated measures)*

- Supplement 1: 2013 Energy Efficiency Measure Revisions.
- Supplement 2: Measures Retired in 2013.

Exhibit 6 (The Evaluation Plan is excluded from this report)

- Supplement 1: Evaluation studies with their associated Evaluation Report Responses (ERRs) performed in 2013.

EXECUTIVE SUMMARY

Puget Sound Energy's Annual Report of 2013 Conservation Accomplishments

Puget Sound Energy's ("PSE's" or "The Company's") Energy Efficiency[1] Department presents this Annual Report of 2013 Energy Efficiency program accomplishments and activities, satisfying condition (8)(g) of Commission Order 01, Docket No. UE-111881, and requirements enumerated in the Commission's second supplemental order in Docket No. UE-970686. The report is associated with the Electric and Gas Conservation Riders Conservation funding. It discusses activities, initiatives and accomplishments completed in the second year of this 2013-2013 biennium.

Table 1a presents 2013 Portfolio-level savings and expenditure figures for electric and natural gas conservation programs. The Portfolio-level Total Resource Cost (TRC) benefit-to-cost ratios, including a 10 percent conservation credit, are also presented.

Table 1a: Energy Efficiency 2013 Savings, Expenditures and TRC Results

2013	Savings	Expenditures	Total Resource Cost
Electric (MWh)	361,400 41.3 aMW	$98,616,000	1.74
Goal/Budget	333,497 (38.1 aMW)	$94,036,000	
Percent	*108.4%*	*104.9%*	
Gas (Therm)	6,538,000	$11,920,000	1.64
Goal/Budget	4,649,000	$13,130,000	
Percent	*140.6%*	*90.8%*	

361,400 MWh divided by 8,760 hours = 41.3 aMW
Savings are stated in terms of first-year annual figures, at the customer meter, without line loses.

[1] Prior to 2013, the Energy Efficiency department was known as Customer Solutions/Energy Efficiency or Energy Efficiency Services.

2013 Results

In 2013, Energy Efficiency exceeded energy savings goals[2] while effectively and prudently managing costs. PSE exceeded its electric savings goal by 8.4 percent, at 361,400 MegaWatt-hour (MWh), or 41.3 average MegaWatts (aMW) while electric expenditures finished the year only 5 percent over expected costs, at $98.6 million. Gas savings surpassed savings goals for year by over 40 percent; 6.5 million therms, while gas expenditures were 10 percent under the planned spending amount, at $11.9 million.

Portfolio cost-effectiveness results finished the year with an electric Utility Cost (UC) benefit-to-cost (B/C) ratio of 3.08 and a Total Resource Cost (TRC) B/C ratio of 1.74. On the gas side, PSE finished the year with a UC of 2.94 and a TRC of 1.64. The electric and gas TRCs include a 10 percent conservation credit. The gas TRC B/C is 1.50 without the credit.

Continued Encouragement of Customer Conservation Efforts

Building on past years' achievements, each Energy Efficiency department demonstrated its commitment to exceeding customer expectations throughout 2013. PSE engaged customers with new and innovative energy-efficiency marketing campaigns, a new look and feel of its energy-efficiency messaging, and creative retailer presentations of energy-efficiency applications for PSE customers.

Continuous Improvement & Total Quality Management

Energy Efficiency Program Staff continued its long-established and ongoing work to enhance processes—especially those impacting PSE customers, remove barriers to effectiveness, and create experiences that enrich its customers' lives. Through its commitment to TQM and adaptively managing its business, PSE enhanced efficiencies throughout the business, added new measures to its program portfolio, reduced rebate processing time for customers, and optimized its savings reporting accuracy and transparency by implementing process and system improvements in every Energy Efficiency organization.

[2] PSE reserves the word "target" for biennial references while "goal" references a single-year conservation achievement objective.

Notable Deliverables

Highlights of notable 2013 accomplishments, detailed in the following program-specific discussions include:

- PSE continued to be an industry leader in its offerings of LED lighting products.
- PSE continued to be a key contributor to Washington utility cooperation initiatives.
- Significant gas conservation achievements in both Residential and Business Sectors; Multifamily Retrofit exceeded its gas goal by over 130 percent, while several Business Sector programs finished the year over 50 percent above goal.
- The Company's relationship with the Conservation Resource Advisory Group (CRAG) remains strong, while continuing to make significant advancements in operational transparency and information exchange. The 2014-2015 Biennial planning process was the best yet, with a high degree of collaboration and synergy.

Compliance

By the end of 2013, the Company has achieved compliance with all 2012-2013 deliverables. The primary conservation-related requirements are outlined in:

1) RCW 19.285 and WAC 480-109,
2) The Second Supplemental Order of Docket No. UE-970686,
3) The 2002 Stipulation Agreement, Docket No. UG-011571,
4) The 2010 Electric Settlement Agreement, Docket No. UE-100177, and
5) Order 01, Docket No. UE-111881.

Report Organization

The report provides three degrees of information: First, a Portfolio-level discussion of overall Energy Efficiency 2013 accomplishments. Next, PSE provides Sector-level overviews.

These are Residential, Business, Regional, Portfolio Support, Research & Compliance and Other Electric Programs.[3] The most detailed discussion follows, with business-unit and program-level performance reviews.

The report provides several views of program financial and savings data, cost-effectiveness summaries, measure category tables, program descriptions, and program accomplishments. Programs are organized in the report according to their Sector presentation in Exhibit 1: Savings & Expenditures and Schedule numbers with the Sector for easy reference.

[3] Sector headings outlined in Exhibit 1: 2013 Savings and Expenditures details.

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ENERGY EFFICIENCY 2013 ACCOMPLISHMENTS SUMMARY

Report Contents Summary

PSE will detail within this report:

- Energy Efficiency results, at a Portfolio level:
  - Savings and expenditures , both portfolio and sector views,
  - Five-year trends,
  - Cost-effectiveness summaries by fuel type,
  - Measure Savings by type,
- Residential Energy Management and Business Energy Management Sector details,
  - Expenditures and Savings , both portfolio and sector views,
  - Five-year trends,
  - Cost-effectiveness summaries by fuel type,
  - Measure Savings by type,
  - Individual program accomplishment summaries,
- Portfolio Support, Research & Compliance, and Other Electric Program recaps,
  - Details for each function and activity, including Evaluation, Measurement and Verification, and Renewables programs,
- PSE compliance with regulatory requirements,
- Stakeholder Relationships,
  - Utilities and Transportation Commission, (WUTC or UTC)
  - Conservation Resource Advisory Group (CRAG).

Continuing Focus on Energy-Efficiency Customers

Throughout 2013, the dedicated men and women in every Energy Efficiency organization and those departments that support the Energy Efficiency department, continued their long-standing focus on surpassing our customers' energy-efficiency expectations at each of our customer touch points while also exceeding accelerated conservation goals. As noted in the program discussions throughout this report, PSE focused on increasing customer participation in energy-efficiency programs through examining internal business flows and processes, as well as ways to maximize external, customer-facing opportunities.

Several processes were enhanced, leading to simpler rebate applications and quicker incentive payments, for instance. Staff training resulted in better energy-efficiency customer solutions. New and innovative program delivery provided customers with a much broader suite of energy-efficiency offerings, better suited to their tastes and expectations. Verification techniques and tactics also improved customers' rebate processing and instilled greater customer confidence in Energy Efficiency. In 2013, every Energy Efficiency department maintained their dedication to maximize customer participation in PSE energy-efficiency programs.

This emphasis on customer service is prominent in our dealings with our trade allies; those contractors and third-party entities that represent PSE when installing or servicing energy-efficiency measures.

PSE holds its representatives to very high customer service standards, and their performance is regularly reviewed to ensure that they also meet customer expectations.

This commitment to exceeding customer expectations also extends to another set of PSE customers; its Regulatory Stakeholders. This report is designed to exceed their expectations, by providing critical information, based on their previous requests, comments and ideas—expressed in data requests, Commission open meetings and communications and CRAG meetings.

Specific program discussions in this report will provide examples of PSE's commitment to providing an outstanding energy efficiency experience for its customers.

Customer Energy Management 2013 Results Summary

The following discussions provide Portfolio summaries of key performance areas for the Energy Efficiency department; savings and expenditures, five-year trends, cost-effectiveness ratios and savings by measure type.

Savings and Expenditures

PSE maximized electric and gas conservation savings while prudently and effectively putting its customers' Conservation Rider funding to work in 2013.

Key drivers of savings and expenditure results include the incorporation of new technologies and measures, application of innovative customer communications, implementation of system and reporting enhancements, and the engagement of value-chain constituents. These results are discussed in the program detail chapters that follow.

Tables 2a and 2b provide Sector-level views of electric and gas savings results, and electric and gas expenditures, respectively.

Table 2a: Energy Efficiency 2013 Savings Results by Sector

2013	Residential	Business	Regional	Total
Electric (MWh)	172,900	167,700	20,700	361,300
2013 Goal	149,000	157,000	27,500	333,500
Percent	116.0%	106.8%	75.3%	108.3%
Gas (Therm)	1,601,000	4,937,000	na	6,538,000
2013 Goal	2,006,000	2,643,000		4,649,000
Percent	79.8%	186.8%		140.6%

Please note that the "Total MWh" indicated in Table 2a is a result of adding already-rounded Sector totals. This operation causes an apparent discrepancy with Table 1a, which indicates a Portfolio savings amount of 361,400 MWh. The actual 2013 electric savings is 361,392 MWh.

Table 2b: Energy Efficiency 2013 Expenditures by Sector

2013	Residential	Business	Regional	Portfolio Support	Research & Compliance	Other Electric	Total
Electric	$50,107,000	$37,588,000	$4,575,000	$2,585,000	$3,297,000	$464,900	$98,616,900
2013 Budget	$42,477,000	$38,522,000	$5,261,000	$3,203,000	$3,739,000	$835,000	$94,037,000
Percent	118.0%	97.6%	87.0%	80.7%	88.2%	55.7%	104.9%
Gas	$6,313,000	$4,649,000	na	$427,300	$529,500	na	$11,918,800
2013 Budget	$6,865,000	$4,987,000		$499,500	$778,600		$13,130,100
Percent	92.0%	93.2%		85.5%	68.0%		90.8%

Overall total amounts may be different that those presented in Exhibit 1 due to multiple rounding.

Five – Year Trends

As indicated in Figures 2b, electric savings have increased an overall 18 percent from 2009 to 2013, with a 2013 increase of 6.5 percent over 2012. The electric expenses for the corresponding timeframe increased an overall 42 percent, with a 2013 increase of 7.5 percent from 2012 expenditures.

Figures 2c shows that gas savings have increased an overall 26 percent from 2009 to 2013, with a 2013 increase of 25 percent from 2012. The gas expenses for the corresponding timeframe have declined over 28 percent from 2009 to 2013, while gas expenses declined over 12 percent from 2012 to 2013.

Figure 2b: Energy Efficiency Electric Programs; Savings and Expenditures – Five-year Trends

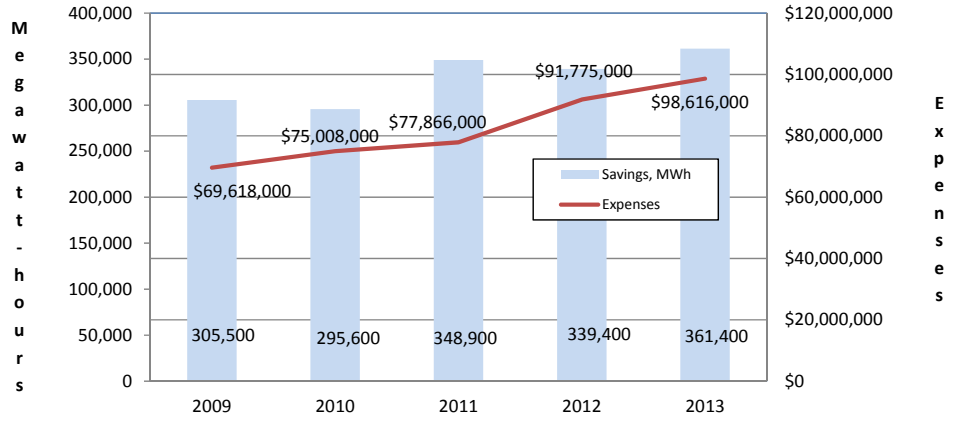
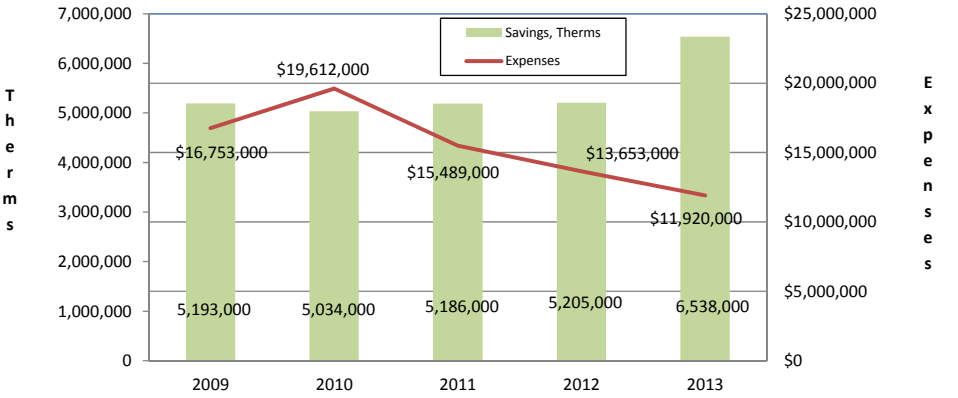


Figure 2c: Energy Efficiency Gas Programs; Savings and Expenditures – Five-year Trends



Cost-Effectiveness Ratios

Table 2c provides the Portfolio view Utility Cost and Total Resource Cost test results for 2013.

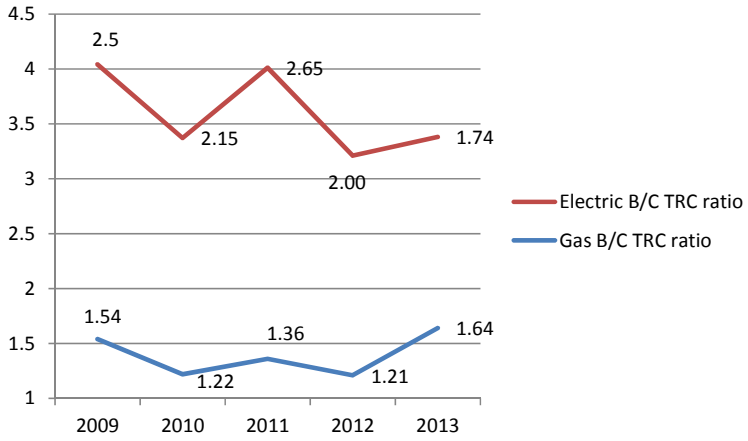
Table 2d represents PSE's five-year Portfolio Total Resource Cost results. All TRC figures are indicated with a 10 percent conservation credit adder included.

Table 2c: Overall Energy Efficiency Cost-Effectiveness Benefit/Cost Ratios

Benefit to Cost Ratios Portfolio		
	Utility Cost	**Total Resource Cost**
Electric	3.08	1.74
Gas	2.94	1.64

Indicated TRC for both electric and gas represents the B/C ratio with the conservation credit value applied.

Figure 2d: Electric and Natural Gas TRC[4] Ratios – Five-year Trends



[4] The 2013 gas TRC is presented with the addition of a 10 percent conservation credit. Without the credit the TRC B/C ration is 1.50.

Incentives as a Percent of Customer Energy Management Expenditures

In addition to program-level budget groupings such as labor, employee expense, materials, etc., Exhibit 1, Supplement 1: Actual Expenditures Compared to Budgets, provides results of incentives paid to customers. Certain expenditures that are not specifically classified as "incentives" also carry a value to the customer, albeit not necessarily monetary. PSE denotes these expenditures as "Direct Benefit to Customer" (DBtC).

This distinction represents that most customers derive many more benefits than simply remuneration; customers who receive a refrigerator decommissioning rebate also realize a benefit of an avoided trip to the transfer station to recycle their unused refrigerator themselves. Commercial Retrofit customers realize the benefit of engineering evaluation and verification in addition to any custom grant received. It would be impractical—and very inefficient—to attempt to track the time an energy management engineer spends on these tasks. Taking these considerations into account, it is therefore an inaccuracy to attempt to categorize expenditures as simply "administrative" and "incentives" in order to imply a measure of how effectively a program is using ratepayer funds.

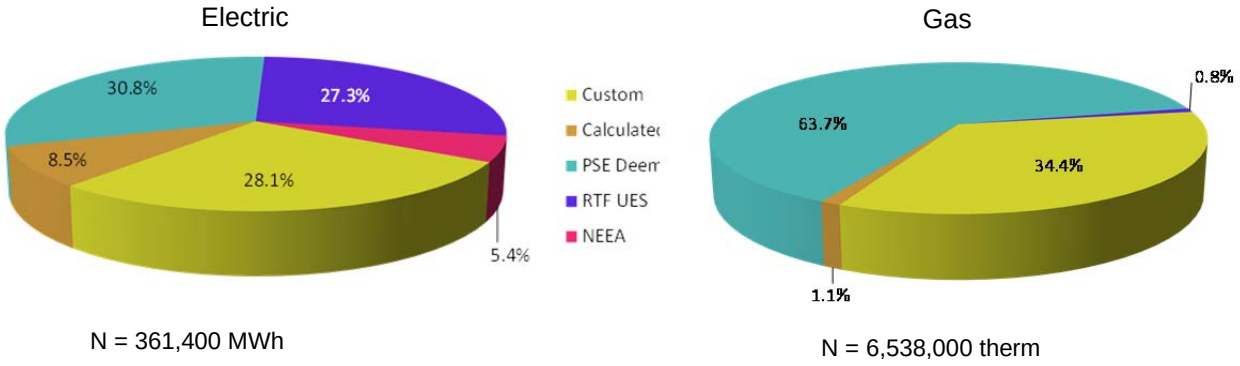
As represented by the total portfolio incentives paid versus the total CEM-specific[5] expenses, PSE achieved the notable figures of 79 percent for electric programs and 74 percent for gas programs. This is impressive, considering the Program Staff effort required to respond to increased regulatory reporting and third-party data-request requirements. PSE accomplished this sustained level of DBtC through process maximization and rigorous attention to continuous improvement throughout the organization, as discussed in the program-specific chapters to follow.

[5] The Customer Energy Management organization is comprised of Residential and Business Energy Management groups.

Savings by Measure Type

Figure 2e illustrates the overall Energy Efficiency electric and gas savings, distributed by measure savings type. Measure types include RTF UES (Unit Energy Savings), PSE Deemed, Calculated and Custom.[6] NEEA deemed is also included as a representation of savings estimates deemed by NEEA during biennial planning periods.[7]

Figure 2e: 2013 Savings Distributions by Measure Savings Type



N = 361,400 MWh

N = 6,538,000 therm

Measure Details

An discussion of the Measure Metrics archival system is contained in Chapter 8, M&V Discussion on page 113. Prescriptive measures and certain calculated measures[8] that were available for use in 2013 are noted in Exhibit 5, Supplement 1. Measures that were retired[9] in 2013 are listed in Exhibit 5, Supplement 2.

[6] Each of these terms is defined in the Glossary, starting on page 176.

[7] It is interesting to note that 2013 is the last year of determining NEEA savings using the current methodology.

[8] Only measures that were originally included in the Measure Metrics database at the time of its creation, or measures that have a deemed savings value are archived. For instance, LED MR-16 lamps in the Commercial Lighting program. Their 2013 deemed value was 159 kWh/yr. In commercial applications, though, that value is modified by the number of operating hours within a certain building. This measure is therefore classified as "calculated".

[9] It is important to note that measures are never cancelled in the Measure Metrics archive. For historical reference, measures that are no longer offered, were archived with the incorrect savings value or incentive amount, put on hiatus, etc., are retired. Retired measures are noted in Exhibit 5, Supplement 2.

Measure Counts by Program

A high-level summary of measure counts is provided in Exhibit 1, Supplement 4: Portfolio Measure Category Counts. Program-specific measure tables are included in the report in each program discussion. It is important to note that indicated figures are provided to afford a sense of program scale and customer impact, and they are not intended to be used to audit or reconcile actual tracking records.

Memberships and Sponsorships

Energy Efficiency Staff derives value for customers by engaging in memberships and sponsorships. For instance, a key PSE membership is that of the Regional Technical Forum (RTF). As illustrated in Exhibit 1, Supplement 3: Sponsorships and Memberships,

Compliance

A complete discussion of PSE regulatory compliance is contained in Chapter 15, beginning on page 162. This 2013 PSE Annual Report of Conservation Accomplishments is consistent with the Commission Second Supplemental Order in Docket No. UE-970686, and condition (8)(g) of Order 01 of Docket No UE-111881.

It is noteworthy that in the interest of brevity and to avoid repetition, PSE will use the terms "condition (N)(x)" or "Section M(y)" when referencing deliverables outlined in Exhibit F to Stipulation Agreement, Docket Nos. UE-011570[10] and UG-011571, the 2010 Electric Settlement Terms, Docket No. UE-100177,[11] and Order 01 of Docket No. UE-111881, rather than "…condition K(n)(n) of the 2010 Electric Settlement Terms, Docket No. UE-100177…" at each instance.

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

[10] Specific electric deliverables outlined in Docket No. UE-011570 was vacated by Commission Order 05 in Docket UE-100177.

[11] Within the 2010 Electric Settlement Terms, "Conditions" apply specifically to Section K. There are also specific PSE deliverables in applicable sections of the above-noted requirement documents.

2013 Continuous Improvement

As has been the case for many years, the skilled professionals of Energy Efficiency consistently employ generally-accepted management techniques that result in continuous improvement. Regardless of the terminology assigned to their management processes—adaptive management, Total Quality Management (TQM), or other management quality principles, their efforts resulted in the outstanding outcomes noted throughout this report.

Figure 2a represents the basic steps of TQM, as practiced within Energy Efficiency.[12] While this general outline doesn't portray all discrete steps, timelines, and process flows, it very clearly depicts the basic adaptive management principles continuously applied within each program and Energy Efficiency function.

PSE makes each management decision with:

- Meeting customer expectations to drive continued program participation,
- Prudently using customer funds on cost-effective conservation,
- Maximizing Staff productivity,
- Ensuring rigorous program execution and metrics; savings, financial, and compliance uppermost in mind,
- Continuously maximizing process efficiency and effectiveness.

[12] Of course, in actual TQM practice, steps don't always occur linearly or distinctly. In a dynamic environment, some may take place concurrently, in ancillary departments, may involve sub-flows between steps, etc.

Figure 2a: Generally-Accepted Total Quality Management Iterative Steps

Every organization's focus on adaptively managing its program execution resulted in numerous process improvements, reductions in duplications of efforts, increased management transparency, optimized data and information access. PSE's focus and continuous improvement efforts yielded optimal savings results while the business was managed with due diligence, treating PSE customer funding with prudence and cost-effectiveness.

Sector Overview

REM Customers

The Residential Energy Management (REM) Sector is designed to provide and enhance programs and services for a wide range of residential energy-efficiency customers. Through the sector's four Channels, discussed in detail below, REM furnishes the marketplace, customers, and contractors with incentives, rebates, referrals, and other value-added services with the intention of surpassing customer expectations and to meet prescribed savings goals and planned spending expectations. REM provides benefits for single family, manufactured homes, multifamily, and low income dwellings.

Suite of Offerings

The residential team strategies include offering customers direct install services, instant and mail in rebates. REM also offers full-service measures, including refrigerator replacement and decommissioning programs. In order to enhance its customers' understanding of the important role that they play in the region's conservation efforts, REM offers training and outreach gatherings with customers, contractors, and other constituents, and energy-auditing services throughout PSE's service territory.

PSE also collaborates with the region's retailers, contractors and manufacturers to offer limited-time promotions. These promotions require agile program management, and may consist of giveaways, special one-time pricing on selected measures or cross-merchandising with similar measures.

Constituents

The success of the REM programs relies heavily on partners that assist PSE in making informed, pro-active decisions. These partners—who are established parts of the distribution channels and value chain—consist of vendors, contractors, distributors, manufacturers, builders, developers, retailers, audit companies, and other groups that directly engage REM's customers.

PSE leverages these relationships to assist in effectively managing existing, and nimbly developing future, programs so that implementation is seamless to its customers.

REM holds all of its partners to a very high customer experience standard. Their performance is regularly monitored and reviewed to ensure compliance with PSE and customer expectations.

One of the primary tools used to provide maximum exposure to energy conservation programs and ensure a maximum level of customer engagement is REM's training expertise. REM Staff conduct several vendor seminars throughout the year to ensure that all customer touch points have the most up-to-date information and customer satisfaction skills. Through our extensive training programs, contractors are certified in customer service, rigorous insulation installation techniques, combustion safety, HVAC installation, and code standards.

PSE trains retailers in the process of providing product mark-downs at the point of sale,[13] and the benefit of energy-efficiency products to its shared customers. HomePrint™ audit contractors are provided stringent guidelines on home review techniques.

Organizational Structure

Residential Energy Management's programs are managed within four channels. Channel Staff manage the performance of third-party vendors and other REM constituents, and are supported by other Energy Efficiency staff, as well as other departments in PSE, such as Accounts Payable and Purchasing.

[13] Product mark-downs at the point of sale (POS) eliminate the need for rebate forms and a separate transaction for customers.

In order to optimize REM effectiveness in 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 Figure 3a. Channel goals and operations are discussed in the REM program detail chapter.

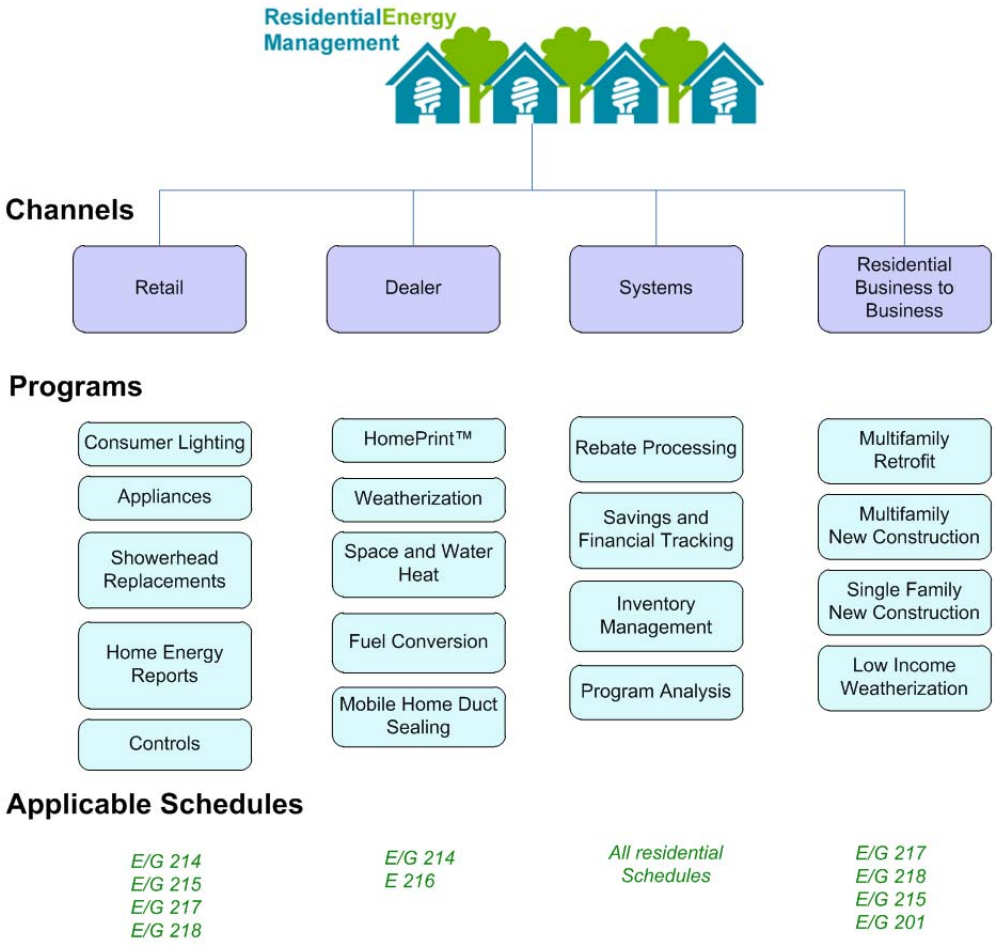
REM Staff

REM is comprised of a department manager, market managers, program managers, coordinators, implementers, analysts, an administrative specialist and a consulting engineer.

These professionals receive continuous and rigorous training to provide added value to PSE customers, trade allies and other internal and external stakeholders. Licenses and certification of REM Staff bring a higher level of professionalism, designed to better serve PSE customers.

Figure 3a is a graphical representation of the Residential Energy Management organizational structure.

Figure 3a: Residential Energy Management Organizational Structure



Retail Channel

Primary Products/Services: ·Consumer lighting, showerheads, home appliances; such as freezers, refrigerators, clothes washers, replacement and decommissioning services.

Partners: ·Include “Big-box” stores,·large and small retailers and resellers, appliance stores, home improvement stores, and·recyclers.

The Retail Channel’s role is to promote the use of programs and services that affect the marketplace’s retail sector, and provide customers with increased accessibility, and a wide variety of easy-to-use and understand incentive opportunities.

Some of the strategies the Channel utilizes include:

- In-store Point of Purchase material,
- Training for sales associates,
- Program awareness campaigns,
- Store and community events,
- Recycling information and product pick up services.

The Retail Channel has a high visibility and access at key customer touch points throughout PSE's service territory. Because of this, their channel is leveraged to create additional awareness, educate consumers, and promote many other PSE energy-efficiency offerings. The Channel provides services that apply under Schedule 214, 215, 217, 218 Electric and Gas.

Dealer Channel

Primary Products and Services: ·A wide variety of weatherization products, including air sealing, duct sealing, attic, wall, and floor insulation, HomePrint™ assessments,·HVAC (Heating, Ventilation Air Conditioning) Products, Water heating,·Windows, and Fuel Conversion (to high-efficiency natural gas equipment).

Partners: Include HVAC and plumbing contractors, energy audit companies, weatherization and window contractors, manufacturers, and suppliers.

The Dealer Channel develops and leverages relationships with contractors that provide product installations and services directly to customers throughout PSE's service territory. These partnerships allow the channel to provide the best possible direct in home services for our customers, and work to the mutual benefit of all parties; contractors, customers and PSE. The relationships are managed through staff interaction, in-person and online training sessions, and the channel's CAN (Contractor Alliance Network). The channel also promotes participation indirectly through suppliers, community groups, manufacturers, distributors, and trade associations.

The channel operates primarily within the structures of Schedules (electric and gas) 214 and (electric only) 216, and uses the relationships they have developed to provide value to other energy-efficiency groups to meet customer needs and achieve conservation goals.

Systems Channel

The Systems Channel plays an important support role within Energy Efficiency. This group provides the organization with the right tools, resources, and people to assist in pro-actively managing their respective businesses, allowing Program Staff to make management decisions that optimize their business. Rebate processing, customer fulfillment, program analysis, and savings reporting are some of the critical services this team provides.

The group has staff dedicated to processing many of the residential rebates offered by the Dealer Channel as well as the Single Family New Construction Program, and developing business revisions to enhance the effectiveness of internal processes. Rebates for windows, heat pumps, furnaces, water heaters, gas conversion, and new construction are all processed in-house.

The Systems Channel oversees the ongoing improvements to the department's customer management system (CMS). This system enables the group to effectively handle customer inquiries, requests for brochures, contractor referrals, and internal requests for brochures and supplies for program-related events. The team also provides key support to Energy Efficiency's Measure Metrics system.

The group's analysts process research and data requests, track program savings and expense s, and provide program analysis and systems support for all groups within Energy Efficiency. In 2013, the Systems' team has developed a system to aggregate customer participation data that is collected by its residential program teams. This effort has improved the efficiency and accuracy of the monthly reporting process by greatly reducing the need for manual data input in the EES Tracking and Reporting System. This new system and accompanying processes has also enabled the team to respond more quickly to both internal and external data requests.

Residential Business to Business (RB2B) Channel

Primary Products and Services: This Channel—formerly referred to as the Multifamily Channel, includes the Single Family New Construction, Multifamily Retrofit, Multifamily New Construction, and Low Income Weatherization programs.

The Channel provides weatherization services, customized grants, residential and commercial lighting products, HVAC-related products, water heating, appliances, showerheads, windows, manufactured home rebates, whole house fans, and several other measures.

Partners: The Channel's constituents include builders, developers, contractors, low income agencies, building management companies, building owners, associations, suppliers, manufactures, and architects.

The Channel develops and implements programs for businesses that provide direct services and benefits to PSE customers. The Single Family and Multifamily New Construction Staff rely heavily on their relationships with the building industry and related trade allies like NW Energy Star Homes, to ensure that measures are incorporated in the design and construction of a wide spectrum of multifamily building types. The Multifamily Retrofit program collaborates with variety of stakeholders and provides outreach services to increase customer and constituent awareness of and maximize the benefits of PSE services, to building owners. The Low Income Weatherization program works with social service agencies to satisfy the need of our customers that meet low income guidelines.

The group provides services under Electric and Gas Schedules 215, 217, 218 and collaborates with PSE's Business Energy Management sector when multifamily projects include a combination of residential and commercial custom measures. The Low Income Weatherization program operated under the terms of Electric and Gas Schedule 201.

REM Five-Year Trends

As illustrated in Figure 3b, the five-year trends indicate an average annual increase in electric savings of slightly over 1 percent, with a 12.8 percent increase from 2012 to 2013. REM electric expenditures have risen slightly over 60 percent from 2009 to 2013, with a 24 percent increase from 2012 to 2013. Figure 3c illustrates an average annual decrease in gas savings of 6.6 percent, with a decrease of slightly over 8 percent from 2012 to 2013. REM gas expenditures have decreased over 43 percent from 2009 to 2013, while expenditures from 2012 to 2013 increased by 3.4 percent.

Key results drivers are discussed later in this chapter and also in program discussions in Chapter 4.

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

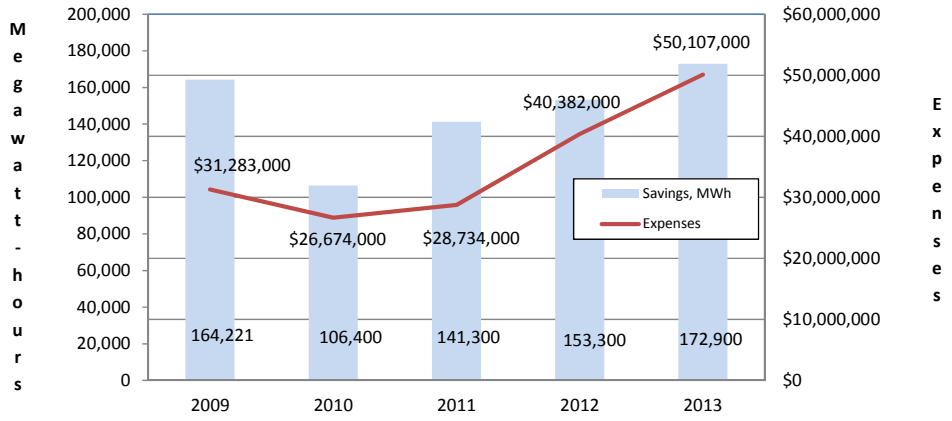
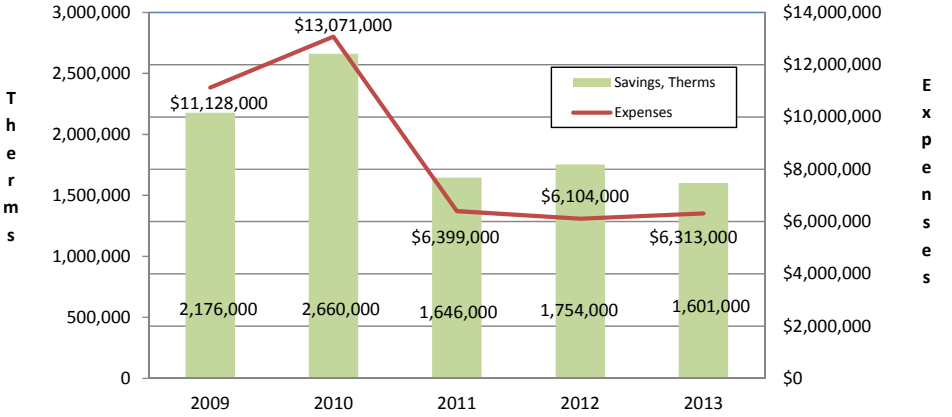


Figure 3c: Residential Gas Savings and Expenditures Five-Year Trends



2013 Residential Energy Management Sector Summary

Consistent with its commitment to TQM and continuous improvement approach, the Residential Energy Management (REM) sector made revisions to several measure offerings in order to meet its 2013 savings targets.

In 2013, REM enhanced its suite of offerings by adding:

- Additional LED offerings to include MR-16 and an LED Engagement Bulb,
- All levels of Energy Star® refrigerators in the Appliances program,
- A new Clothes Washer Replacement for electric water heat/electric dryers, and
- A streamlined matrix of Fuel Conversion eligibility, among others.

Tables 3a and 3b represent electric and gas expenditures, and electric and gas savings achieved in 2013, respectively.

Table 3a: 2013 Residential Electric and Gas Expenditures

2013 Expenditures		2013 Actuals		2013 Budget
Schedule	**Programs**	**Total**	**% of Budget**	
Electric	Electric			Electric
Gas	Gas			Gas
E201	Low Income	$ 2,373,466	97.9%	$ 2,425,463
E214	Single Family Existing	$ 33,710,664	111.7%	$ 30,182,712
E215	Single Family New Construction	$ 1,798,942	144.0%	$ 1,249,037
E216	Single Family Fuel Conversion	$ 649,666	60.0%	$ 1,083,575
E217	Multifamily Existing	$ 10,952,743	159.6%	$ 6,861,821
E218	Multifamily New Construction	$ 621,227	92.1%	$ 674,421
E249	Pilots	$ -		$ -
	Total Electric Programs	**$ 50,106,708**	118.0%	$ 42,477,029
G201	Low Income	$ 372,176	123.5%	$ 301,309
G214	Single Family Existing	$ 5,417,428	88.4%	$ 6,128,498
G215	Single Family New Construction	$ 10,035	-	$ -
G217	Multifamily Existing	$ 206,731	175.1%	$ 118,083
G218	Multifamily New Construction	$ 306,921	96.8%	$ 316,966
G249	Pilots	$ -		$ -
	Total Gas Programs	**$ 6,313,290**	92.0%	$ 6,864,856

Table 3b: 2013 Residential Electric and Gas Savings

2013 Savings		2013 Actuals		2013 Goal
Schedule	Programs	Total	% of Goal	
Electric	Electric	MegaWatt-Hours		Electric
Gas	Gas	Therms		Gas
E201	Low Income	1,591	132.5%	1,201
E214	Single Family Existing	144,763	114.9%	125,947
E215	Single Family New Construction	2,457	160.6%	1,530
E216	Single Family Fuel Conversion	1,623	61.3%	2,649
E217	Multifamily Existing	21,256	126.9%	16,747
E218	Multifamily New Construction	1,237	129.5%	955
E249	Pilots			
	Total Electric Programs	**172,927**	116.0%	149,029
G201	Low Income	32,948	155.6%	21,179
G214	Single Family Existing	1,441,851	75.1%	1,920,051
G215	Single Family New Construction	612		
G217	Multifamily Existing	64,927	366.1%	17,736
G218	Multifamily New Construction	60,857	130.3%	46,713
G249	Pilots			
	Total Gas Programs	**1,601,195**	79.8%	2,005,679

Key Results Drivers

Electric Programs

REM exceeded its electric savings goal through a concerted effort by Program Staff in each Channel to maximize customer exposure to new technologies, including advanced IR power strips, newer LED lamps, and a wide range of appliance offerings. Their initiative maintained PSE's leadership role in the utility-sponsored LED marketplace, where PSE is often the first utility in the country to incentivize LED products. Expansion of appliance programs beyond the Retail Channel also contributed to maximized electric savings.

PSE also demonstrated its forward-thinking in the Dealer Channel, where REM added a whole-house air sealing measure.

The Sector also adaptively managed its suite of measure savings value, in accordance with its Measure Revision Guidelines by adjusting applicable RTF UES values at the prescribed interval.[14]

[14] Other savings types, such as PSE Deemed, were adjusted as a result of impact evaluations as well.

Natural Gas Programs

REM's gas savings achievement was, as expected, affected by the continued low gas avoided costs. Despite this fact, REM's Web-Enabled Thermostat measure was quite successful in 2013, meeting its installation forecast, and was a contributor to the Sector's overall gas savings. The Multifamily Retrofit program achieved a substantial amount of gas savings by partnering with PSE's neighboring utilities. Retail showerhead measures were slightly shy of their savings goal.

Gas measures savings values were also adjusted in observance of PSE Measure Revision Guidelines.

REM Cost Effectiveness

Table 3c represents the actual calculated Utility Cost and Total Resource Cost benefit-to-cost (B/C) tests for the Residential Sector. The complete UC and TRC tables, showing cost-effectiveness calculations by program, are presented in Exhibit 2 of this report.

Table 3c: 2013 Residential Sector Cost-Effectiveness Tests

Benefit to Cost Ratios Residential Sector		
	Utility Cost	Total Resource Cost
Electric	3.49	1.71
Gas	2.53	1.29

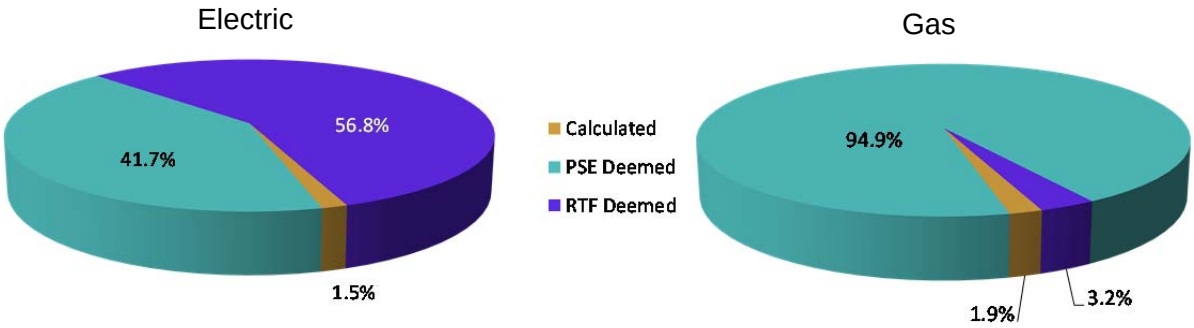
Indicated TRC for both electric and gas represents the B/C ratio with the conservation credit value applied.

Savings Ratios by Measure Type

Figure 3d 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. The RTF deems a select number of gas prescriptive savings.

The majority of prescriptive gas measures are considered PSE Deemed, Calculated or Custom. In contrast to the savings distribution in the Business Sector,[15] it is apparent that the majority of Residential savings are derived from RTF Deemed (UES) measures.

Figure 3d: Residential Sector Savings Distributions by Measure Type



N = 172,900 MWh

N = 1,601,000 therms

Continuous Improvement

Each Channel contributed to process and productivity enhancements through their application of TQM principles. These initiatives applied equally to electric and gas fuel types. 2013 initiatives included the consolidation of material orders (for instance, LED lamps) across programs, which will reduce costs and redundancies in 2014.

Application and project forms in the Channels were also simplified and made more consistent, which also resulted in improved customer response turnaround time. Electric and gas savings were also affected by the increased activity supporting the Commercial Energy Efficiency Program (CEEP) and ARRA programs as they worked to exhaust remaining funding prior to termination.

The Channels also used a high degree of creativity and innovation by executing exciting energy-efficiency campaigns, such as the ReEnergized by Design webcast, making energy-efficiency presentations to a variety of constituents, and making trainings available to builders and contractors.

[15] A similar chart is included in the Business Sector Overview on page 67.

The following program discussions In Chapter 4 outline process and tactical improvements that enhance the customer's energy-efficiency experience and prudently utilize Conservation Rider funding, along with program results and accomplishments.

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RESIDENTIAL PROGRAM DETAIL DISCUSSIONS

Single Family Existing

Schedules E/G 214

Description

The Single Family Existing group is comprised of two Channels (highlighted in the Residential Sector Overview in the previous chapter) that are detailed in the following pages:

1. Retail and Consumer Channel
2. Dealer Channel

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, manufactured or factory built homes permanently affixed to a concrete foundation, and manufactured or factory-built homes that are transportable. 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.

It is important to note that multifamily campuses that have a mixture of existing residential building types, including buildings with four attached residential units or less, are served under the Multi-Family Retrofit Program; schedules E217 & G217.

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.
- Light-Emitting Diode (LED) lighting including A-line and downlights.
- Lighting Controls, including but not limited to occupancy sensors.
- Appliance—including refrigerators, freezers and clothes washers—rebates.
- Refrigerator and Freezer Decommissioning – both secondary and primary units.

- Refrigerator and Clothes Washer Replacement – focus on older inefficient models to encourage early retirement.
- Weatherization, including windows, insulation air and duct sealing.
- Space heating including hydronic systems, high efficiency furnaces, high efficiency fireplaces, heat pumps, and system controls, such as web-enabled thermostats.
- Water heating, including tank water heaters, heat pump 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.

Program Performance

Tables 4a and 4b provide a 2013 summary of expenditures and energy savings for the Single Family Existing group, which consists of multiple single-family programs.

Table 4a: Single Family Existing 2013 Expenditures

2013 Expenditures		2013 Actuals		2013 Budget
Schedule	Programs	Total	YE % of Budget	
Electric	Electric			Electric
Gas	Gas			Gas
E214	Single Family Existing			
	Home Energy Reports	$ 864,288		
	HomePrint	$ 960,033		
	Water Heat	$ 500,414		
	Residential EE Lighting Rebate	$ 17,520,974		
	Space Heat	$ 3,275,154		
	Home Appliances	$ 6,872,639		
	Showerheads	$ 250,857		
	Weatherization	$ 1,448,859		
	Mobile Home Duct Sealing	$ 1,169,806		
	ARRA Weatherization	$ 847,640		
Subtotals		**$ 33,710,664**	111.7%	$30,182,712
G214	Single Family Existing			
	Home Energy Reports	$ 344,235		
	HomePrint	$ -		
	Water Heat	$ -		
	Space Heat	$ 1,612,308		
	Showerheads	$ 219,363		
	Manufactured Homes	$ 150		
	Weatherization	$ 2,601,139		
	Mobile Home Duct Sealing	$ -		
	ARRA Weatherization	$ 3,085		
	Home Appliances	$ -		
	Web-Enabled Thermostats	$ 637,148		
Subtotals		**$ 5,417,428**	88.4%	$6,128,498

Table 4b: Single Family Existing 2013 Savings

2013 Savings		2013 Actuals		2013 Goal
Schedule	Programs	Total	YE % of Goal	
Electric	Electric	MegaWatt-Hours		Electric
Gas	Gas	Therms		Gas
E214	Single Family Existing			
	Home Energy Reports	6,769		
	HomePrint	1,796		
	Water Heat			
	Residential EE Lighting Rebate	103,551		
	Space Heat	8,085		
	Home Appliances	9,122		
	Showerheads	4,664		
	Weatherization	3,675		
	Mobile Home Duct Sealing	3,137		
	ARRA Weatherization	3,090		
Subtotals		**144,763**	114.9%	125,947
G214	Single Family Existing			
	Home Energy Reports	251,283		
	HomePrint			
	Water Heat			
	Space Heat	571,028		
	Showerheads	131,949		
	Weatherization	422,735		
	Mobile Home Duct Sealing			
	ARRA Weatherization			
	Home Appliances	9,560		
	Web-Enabled Thermostats	55,296		
Subtotals		**1,441,851**	75.1%	1,920,051

Retail Channel

The Retail channel focuses on services targeted to a wide variety of retail entities, including but not limited to; “big box” chains, drugstore/grocery chains, warehouse stores, online retailers, and other local and independent resellers. The channel manages several programs—most of which are consumer-oriented—including refrigerator/freezer decommissioning, showerheads, appliances, and of course, energy efficient lighting.

The Retail Channel provides incentives and promotions for efficient products to PSE's residential customers through agreements with retailers and manufacturers of energy efficient products – such as lamps, light fixtures, lighting controls, showerheads, electronics, and appliances to ensure that customers have access to a wide variety of efficient product options.

Residential Retail Program

This program collaborates with retailers and manufacturers of energy efficient products – including lamps, light fixtures, lighting controls, showerheads, and appliances such as water heaters, clothes washers, refrigerators and freezers – 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 through agreements with retailers and manufacturers; PSE also provides field services to educate retail employees on our products, detail qualifying products, and ensure compliance with PSE agreements.

2013 Continuous Improvement

As detailed in the 2013 semi-annual report, PSE's Retail Channel successfully concluded two revolutionary campaigns launched within the first half of the year.

The first was first Re-Energized by Design, a weekly online series following six PSE families going head-to-head in five energy-efficient room makeover challenges. The campaign had a huge presence throughout PSE's service territory. Post-campaign survey results indicated that 20 percent of PSE's customers knew of the campaign. It also showed that customers aware of PSE's Re-Energized by Design campaign were more aware of PSE's energy-efficiency programs and rated them better, than customers that were not aware of the campaign.

The second campaign creatively tied the conclusion of Re-Energized by Design to the launch of an LED campaign called PSE's Lighting Makeover Takeover, a campaign where six lucky PSE residential electric customers were surprised with home lighting makeovers that included light emitting diode (LED) bulbs. The Makeover Takeovers included limited-time offers on LEDs for PSE customers. Five of the LED upgrades were filmed for a short segment and featured online showcasing best practices and handy tips for success with LEDs. This campaign helped create the biggest uptake of LEDs from any previous limited time offers; also making 2013 the biggest year for LEDs as detailed below under lighting accomplishments.

In addition to campaigns, PSE continues to look for new and innovative ways to market its programs, touch customers, and provide them with the best possible customer experience.

Some highlights are discussed below.

Retail Sales Associate Trainings

Puget Sound Energy engaged a professional sales trainer to co-develop a lighting and showerhead product sales training program that was designed to educate retail sales associates that instant rebates are provided by PSE, instill key product benefits, and sell more rebated products. The training emphasized behavioral change techniques and was customized to employees at Lowe's, The Home Depot®, and McLendon Hardware Inc.® stores. After the training, associates were mailed manufactured donated products (energy efficient lighting & a showerhead carried at the store) to encourage them to test out the products and recommend them to their customers.

The training series was successful and resulted in the following notables:

- PSE field reps learned sales techniques, giving them an additional perspective on how to train associates and ultimately help sell more energy-efficient products.
- Associates and managers were satisfied and the techniques were reported as being used to help customers. The majority of respondents (both associates and managers), through a post-training survey, indicated they thought the training was helpful and would attend more. PSE now has the basis for a customized training program that is in line with each chain's own sales techniques, which reinforces the associates' sales training and aids in manager approval and backing of PSE trainings.
- PSE field reps were able to identify and begin development of store "champions" who will continue to help disseminate information and materials, teach techniques, and work towards staff adoption in the sale of efficient products to customers.

Online e-tailer Updates

PSE updated its online e-tailer website to be more user-friendly and to only focus on energy-efficient showerheads and bulbs. To promote PSE's re-launched online retail store, marketing efforts have focused on driving traffic to the site primarily through bill inserts, customer emails, and other online advertising. Monthly deals are showcased to create a sense of urgency to make a purchase. Start shopping today at www.pse.com/shopPSE.

Thank You Kits

A small energy-efficiency "Thank You" kit was sent to 1,500 "ineligible" PSE customers. The "ineligible" customers are PSE customers who previously submitted an energy-efficiency rebate, but were rejected for payment due to qualifying factors. The kit contained four CFL bulbs, a WaterPik® Showerhead, and other informative information about PSE's energy-efficiency programs.

A test and control group of "ineligible" customers was set up and surveyed to measure the receptiveness of these kits. After receiving the results, customers that received the kit showed a 10 percent higher favorability toward PSE's energy-efficiency programs over those that did not get the kit.

Increased Awareness in Retail Stores

In addition to the usual PSE rebate signage, PSE further increased in-store visibility within The Home Depot® and McLendon Hardware Inc®. PSE worked with McLendon Hardware Inc® to produce and install quarterly endcap displays that showcased energy-efficient products in a room design. For The Home Depot®, PSE collaborated to install energy-efficiency banners within lighting aisles that alerted customers to lighting rebates provided by PSE.

2013 Accomplishments and Activities

Residential Retail Lighting

Due in part to campaigns like Re-Energized by Design, the LED Makeover Takeover and the mainstream introduction of lower cost LEDs, 2013 exceeded the program's forecasts, mostly resulting from strong LED unit sales.

LEDs make up over 20 percent of the residential lighting savings and still continue to gain market share. PSE achieved uptake nearly four times the original LED unit forecast. This was a great achievement but it did come at a cost, as LED incentives have been markedly higher than CFL. This accounts for the 33 percent increase in program spending. The increased incentives spend and the additional efforts in the field for LED promotions are the makeup of the additional costs. To help keep administrative costs down, Program Staff continue to look at its operational processes to find efficiencies. In 2013, Staff implemented several changes to its contractual agreement process to save time and resources spent for PSE and its partners.

Through analysis of PSE's incentive sales data, Program Staff have found that when the utility incentive can bring the price of an LED below $6.00 for product merchandized in high profile placements, the sales lift can be as high as 2,000 percent when compared to a $10.00 to $15.00 retail price in the same conditions.

PSE continues to be a leader within the industry on its LED program, incentivizing 1,500,000 residential units since the start of its LED measure in 2011. Because of PSE's strong reputation and innovative approach, PSE is often the first utility in the country to offer incentives on the latest LED products. Notably, bulb manufacturer CREE Inc.®, and retailer The Home Depot® partnered with PSE to become the first utility to offer incentives on their new innovative and cost-competitive LED bulb product, making PSE's service territory the first in the country to do so. PSE's forward-thinking approach allows its customers greater access to LED products as manufacturers and retailers choose where to direct their limited inventory.

Residential Appliances

2013 offered a variety of appliance programs for residential customers. These include:

- Refrigerator & Freezer Decommissioning,
- CEE Tier 3 Energy Star Clothes Washers,
- Energy Star Refrigerators,
- Energy Star Freezers,
- Refrigerator & Clothes Washer Replacements.

The Clothes Washer replacement measure was very successful in 2013 and exceeded forecasted numbers. Due to the team's diligence and effectiveness, they were able to meet the demands of PSE customers and optimize customer satisfaction for this measure.

As older refrigerators become more and more scarce, the refrigerator replacement measure struggled during the first half of the year to meet forecast. However, due to successful marketing efforts, that included several live news media mentions, PSE was able to reach its goal for the year. Due to the high visibility, but hard-to-find older units, PSE branded the delivery vehicles to further increase the measure awareness within the neighborhoods receiving the deliveries.

The refrigerator & freezer decommissioning program had similar issues that resulted in a lull for the first half of the year. In order to increase the participation, a limited-time offer was implemented.

This tactic, coupled with an increased marketing push, proved to be successful in acquiring 33 percent more measure participants over the prior months. Despite the efforts, the year ended below forecast.

PSE was one of several utilities that make up the Western Regional Utility Network (WRUN). Collectively, WRUN collaborated with Sears® and Samsung® to develop a limited-time offer on select CEE Tier 3 clothes washers. The deal was a great opportunity for PSE customers to receive an additional manufacturer discount in addition to PSE's standard rebate. The limited-time offer provided a 300 percent increase in sales when compared to a similar period of time; both before and after the promotion.

Despite these successes, the overall Residential Appliance program ended slightly below forecasts for the year. This is largely the result of reduced participation in the clothes washer measures and refrigerator & freezer decommissioning measures.

Residential Showerheads

Residential showerhead electric savings exceeded PSE forecasts for the year, while showerhead gas savings were a slightly shy of savings goals for the year.

Near the mid-year point of this year, PSE made an effort to understand the energy-efficient showerhead market and how to further drive participation. To aid in this effort, PSE solicited the help from a consumer behavioral scientist Philip Graves, pH.D. Dr. Graves conducted a qualitative survey of customers who recently have updated a bathroom in their home to understand the thought process behind purchasing a showerhead. The results the team received from the research he conducted will assist PSE's marketing efforts, and help it transition its program in a direction to drive better product to its customers, with higher customer participation and maximum satisfaction.

Web-Enabled Thermostats

As mentioned in the 2013 Semi-Annual Report, PSE contracted with Honeywell® to install a web-enabled thermostat management solution for PSE dual-fuel customers that primarily heat with natural gas. The program successfully reached its goal of 1,000 installations before the end of November. PSE is testing the energy-savings and customer acceptability and results will be available in 2015.

Home Energy Reports

2013 was the fifth year of PSE's Home Energy Report program. Additionally, PSE confirmed a pilot to expand its learning agendas for the Home Energy Reports program that will launch in 2014. The approval of the additional tests was the result of thoughtful review of the current Home Energy Reports program and what PSE and Opower jointly felt could be learned by addressing additional customer groups. In an effort to launch our expanded tests in the first quarter of 2014, PSE incurred unbudgeted costs associated to initializing the program.

Retail Channel Measure Highlights

Table 4c provides an overview of Retail Channel measures reported in 2013 by measure types. It is important to recognize that these figures are rounded and intended to convey the scale and scope of measure types reported in this channel, rather than to provide the precise number of measures installed.

Table 4c: Overview of 2013 Retail Channel Measure Activity

Category	Measure Type	Electric	Gas
Appliances			
	Clothes Washers	10,700	
	Refrigerator Replacement	4,700	
	New Refrigerators	7,000	
	Refrigerator/Freezer Decommissioning	6,500	
	Clothes Washers Replacement	1,600	
Water Heat			
	Showerheads	27,900	14,600
Lighting			
	CFL Bulbs	3,300,000	
	CFL Fixtures	31,500	
	LED Bulbs	1,100,000	
	LED Fixtures	109,000	

Figures are in units, unless otherwise specified in description.

The Dealer Channel's Staff actively manage their programs using forecasting, data analyses, and relationships with key market actors to proactively meet customer needs and ensure market trends are adaptively managed. Its target market constituency consists primarily of resellers and contractors that sell, install and service HVAC systems, water heating systems, windows, insulation, and provide energy assessments. 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.

HomePrint™

HomePrint™ Assessments provide customers with a free in-home service performed by a PSE qualified independent HomePrint™ Specialist. The program is intended to increase the awareness of customers regarding their home's energy consumption and identify cost-effective ways to use less energy. Additionally, customers benefit from instant energy savings from the direct installation of compact fluorescent and LED light bulbs, and leave-behind showerheads.

2013 Continuous Improvement

Apart from revising 2013 showerhead savings values to align with updated RTF values, another notable program modification this year was the introduction of LED A-Lamps as a product that could be directly installed in customers' homes by certified specialists. This product was included based on customer and trade partner feedback, as well as to expand opportunities to replace incandescent lamps in dimmable and other fixtures where CFL application was not possible.

Additionally, an RFP process was successfully implemented to allow PSE to redesign the HomePrint™ lighting material distribution process to operate as a consignment model, resulting in a significant reduction in material and administrative expenditures.

Accomplishments and Activities

Participation in the HomePrint™ Assessment program was strong through the end of the first quarter, and then slowed throughout the remainder of 2013 as ARRA and CEEP (Commercial Energy Efficiency Program) programs adversely impacted contractor resources. This was a major contributor to spending expectation variances. The market for home assessments continues to strengthen and is more frequently being implemented as a part of the bid for services process.

Weatherization

The weatherization program oversees the "shell" of residential structures; installation of windows, insulation, air and duct sealing.

2013 Continuous Improvement

Measure allocation and associated savings values for insulation measures were revised in 2013 as a result of the 2012 Cadmus Single Family Existing Weatherization impact evaluation. The program added PTCS Duct Sealing and Whole Home Air Sealing Measures in the 2013 program year. The electric-heated home window replacement measure qualifications were revised to remove the "fully insulated" requirement, which mitigated customer participation limitations.

2013 Accomplishments and Activities

Participation in the electric Weatherization program slowed throughout the second half of 2013 as ARRA and CEEP (Commercial Energy Efficiency Program) programs adversely impacted contractor resources. This was a contributor to variances of cost expectations. Additionally, the electric weatherization program realized a higher-than-forecasted participation rate from homes primarily heated with heat pumps. This negatively impacted savings targets as the incremental kWh savings for this heating type is lower than for other electric primary heat sources, however the applicable rebate levels do not change.

Efforts to implement the whole-house air sealing measure for both gas and electric heated homes continued with trainings to qualified Contractor Alliance Network (CAN) contractors throughout the PSE service territory during the first quarter. PSE referrals for whole-house air sealing began during the second quarter, and resulted in steady customer and contractor participation throughout the end of the year.

PTCS (Performance Tested Comfort System) duct sealing measure specifications for both gas and electric heated homes were finalized by the end of Q1 and PSE is leveraging the BPA's online portal to serve as the mechanism for project submittals for the measure. Participation in this measure was lower than anticipated, as PSE engaged in additional contractor training and market awareness building in the latter part of the year.

Space and Water Heating

The program manages incentives and installations of heating and water heating systems, including but not limited to gas furnaces, heat pumps, hydronic systems, and domestic water heaters.

2013 Continuous Improvement

Measure allocation and associated savings values were revised in 2013 as a result of RTF savings updates in applicable instances.[16] This tenet is consistent with tenets outlined in PSE's Measure Revision Guidelines, which indicate that savings revisions to RTF Deemed (also, "Unit Energy Savings", or UES) will be made annually, at the beginning of each year to ensure the most accurate savings reporting.

The gas fireplace measure qualifications were revised to remove the "primary gas space heat" requirement which created customer participation limitations, and a new measure for Ductless Heat Pumps for manufactured homes was introduced in Q3 of 2013.

Accomplishments and Activities

The space and water heat electric programs both finished the year on target with regard to savings goals and planned spending expectations. The space heat program fell short of its gas savings goals.

Manufactured Home Duct Sealing

PSE's manufactured home duct sealing program achieves measurable, cost-effective energy savings within PSE's electric service territory for existing single-family manufactured homes by supporting duct sealing upgrades, direct install of CFLs, and leave-behind efficient shower heads, at no cost to qualifying customers.

[16] Prescriptive and certain calculated measure revisions are listed in Exhibit 5, Supplement 2 of this report.

Accomplishments and Activities

PSE successfully leveraged Community Energy Efficiency Program grant funding, awarded by the Washington State Department of Commerce, administered by Washington State University's Energy Extension Program, through the second quarter of 2013 to expand the number of customers served by this program.

Upon exhaustion of the grant funding, PSE was able to allocate surplus funding to continue to serve additional customers which was a contributor to savings and cost expectation variances.

Dealer Channel Measure Highlights

Table 4d represents the measures, grouped by types that were reported in 2013. It is important to note that the rounded figures are intended to convey a sense of scale and scope of project activity, rather than to provide an audit tool.

Table 4d: Overview of 2013 Dealer Channel Measure Activity

Group	Measure Type	Electric	Gas
Mobile Home			
	Duct Sealing	5,000	
	Showerheads	5,100	
	CFL Lamps	38,400	
HomePrint			
	Showerheads	800	
	LED Bulbs	1,900	
	CFL Lamps	66,600	
Space/Water Heat			
	Water Heaters	780	
	Furnaces		4,500
	Boilers		40
	Integrated Space and Water Heat		70
	Heat Pumps	3,700	
	Fireplace		800
	Direct Install Showerhead	230	
Weatherization			
	Attic Insulation (SqFt)	373,000	1,400,000
	Wall Insulation (SqFt)	55,700	526,000
	Floor Insulation (SqFt)	533,000	1,700,000
	Air Sealing (SqFt)	102,000	91,000
	Prescriptive Duct Sealing and Insulation	200	1,400
	Windows (SqFt)	129,000	

Figures are in units, unless otherwise designated in the description

Single Family Fuel Conversion

Schedule E216

> *This program discussion is presented out of Schedule-number sequence. This is because it is managed within the Dealer Channel. Presenting it in numeric sequence would also interrupt the program sequence of the Residential Business-to-Business (RB2B) Channel, which also includes the Single Family New Construction program, Schedule E/G 215.*

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[17] and/or high-efficiency natural gas domestic water heating equipment.

2013 Continuous Improvement

In the second quarter 2013, the incentive structure and eligibility qualifications for the Fuel Conversion program were streamlined to make the program more transparent to our customers and easier to implement for the contractor market.

While these modifications didn't result in immediate increased participation, comments from both customers and participating contractors throughout the remainder of the year indicate that removing the multiple qualification tiers reduced the barriers to participation and should make the conversion proposition much easier to communicate.

2013 Accomplishments and Activities

The majority of the savings for the program continue to come from electric to gas water heater conversions. This is due to the relative ease of converting water heaters when there is already gas service to the house.

[17] 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…"

The under-performance of forecasted space-heat conversions was a major contributor to anticipated cost variances.

Table 4e illustrates a summary of measure types installed in the Single Family Fuel Conversion program during 2013. Please note that the figures are rounded.

Table 4e: Key Fuel Conversion Measures

Measure Categories	Electric
Space and Water Heat	60
Water Heat Only	190
Space Heat Only	10

Residential B2B Channel

The Residential Business-to-Business ("B2B") Channel develops and implements programs for businesses that provide direct services and benefits to PSE customers, and is comprised of the Single Family New Construction, Multifamily Retrofit, Multifamily New Construction, and Low Income Weatherization programs.

The Single Family and Multifamily New Construction Staff rely heavily on their relationships with the building industry and related trade allies like NW Energy Star Homes, to ensure that measures are incorporated in the design and construction of a wide spectrum of multifamily building types. The Multifamily Retrofit program collaborates with variety of stakeholders and provides outreach services to increase customer and constituent awareness of and maximize the benefits of PSE services, to building owners. The Low Income Weatherization program works with social service agencies to satisfy the need of our customers that meet low income guidelines.

The group provides services under Electric and Gas Schedules 215, 217, 218 and collaborates with PSE's Business Energy Management sector when multifamily projects include a combination of residential and commercial custom measures. The Low Income Weatherization program operated under the terms of Electric and Gas Schedules 201.

Low Income Weatherization

Schedules E/G 201

Description

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, multifamily and mobile home residences. Some Measures that 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 a repair 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.

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.

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.

For those funds that must meet 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.

2013 Accomplishments and Activities

This year, low-income agencies continued to focus on completing projects. Several agencies requested additional funds to complete those projects by end of year. Electric savings exceeded targets at 132 percent and gas savings at 156 percent of goals. With the addition of a new payment structure that allowed the agencies to fund more mission-critical measures, they were able to exceed 2013 targets.

Table 4f provides a high-level summary of Low Income Weatherization measures installed in 2013. The figures represent unique counts per customer, per measure, and are rounded to indicate a general sense of program scope, rather than precise totals to be used for auditing. It is also interesting to note that the indicated number of units doesn't always correlate to the total number of measures installed. For instance, Table 4f indicates that 130 units received CFL lamps, whereas the actual number of CFLs installed were over 1,000 in 2013.

Table 4f: Low Income Weatherization Measure Highlights

Measure *(Stated in number of units served unless otherwise specified)*	**Electric**	**Gas**	**Total**
Attic Insulation	200	70	270
CFL Fixtures	400		400
CFLs	100		100
Common Area HVAC		500	500
Common area lighting	100		
Duct Insulation	30	30	60
Duct Sealing	100	30	130
Ductless Heat Pump	50		50
Electric Water Heater	1		
Electronic Thermostat	1		
EnergyStar Whole House Ventilation	300		300
Floor Insulation	300	60	360
Gas Furnace Replacement >90%		50	50
LED fixtures	20		
LED lamps	300		
Refrigerator Replacement	200		200
Showerheads	300		300
Structure Sealing	200	50	250
Wall Insulation	300	50	350
Water Heater Pipe Insulation	400	20	420
Windows	50	50	100

Single Family New Construction

Schedule E/G 215

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 developers, 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).

Energy Efficiency works with these partners to market energy efficient equipment to their customers. Energy Efficiency 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 Energy Star® CFL fixtures,
- Appliances: Clothes washers, refrigerators,
- Whole House Ventilation,
- HVAC equipment upgrades
- Northwest ENERGY STAR Homes incentive bonus
- Manufactured homes: And Energy Star® or EcoRated Manufactured homes, which is unique to this program.

For all of the conservation measures installed, Energy Efficiency receives measure installation data directly from builders, developers, showrooms and distributors. It is therefore possible to precisely track measure details.

2013 Accomplishments and Activities

As a result of the building requirements stemming from the implementation of the 2012 WSEC, it was determined during PSE's 2014-2015 planning process that the Single Family New Construction incentive program was no longer cost-effective for the next biennium.[18]

[18] Planning for an upcoming biennium begins very early the previous year. 2014-2015 planning commenced in December 2012.

The second half of 2013 was committed to educating PSE's single-family builder partners and trade allies of the program sunset. As a result of this effort, the program saw a significant increase in customer participation. Eight out of ten of PSE's region's top builders participated in PSE's Advanced Lighting Package (ALP 80) program. This contributed to a significant increase in program savings and incentive payouts over original forecasts.

Communication of program changes to the program's builders, contractors, showrooms, distributors and electrical contractors was top priority. PSE incentives play a key role in the supply chain, so ensuring its partners had enough time to adjust was pivotal. By doing so, the Program Staff were able to continue the positive customer experience to which PSE's builder partners have become accustomed.

The team's efforts proved to be a success and all incentive claims were received within the assigned timeline. In summary, PSE exceeded its savings targets for the year.

Table 4g represents a summary of measures, grouped by type, reported in 2013.

Table 4g: Single Family New Construction 2013 Measure Summary

Measure Categories	Electric	Gas
Whole House Fan	550	
Furnace		4
Refrigerator	250	
Clothes Washers	130	
CFL Fixtures	36,000	
LED Fixtures	5,500	
Heat Pumps (Air Source and Ductless)	100	
Heat Pump Water Heater	20	
Manufactured Homes	20	1

Multifamily Existing

Schedules E/G 217

Description

The Multifamily 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 these installations. The program also serves multifamily campuses which have a mixture of building types including buildings with less than five units ("single family").

Multifamily structures and campuses 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.

2013 Continuous Improvement

The program added measures throughout the year, including the advanced IR-detecting power strip. With the addition of the Tier 1 CAN contractor network, over 150 contractor referrals were provided to multifamily customers resulting in increased weatherization production.

The program streamlined the condominium owner participation process by reducing requirements; instead of in-person site assessments, phone audits are now conducted and pre-approval paperwork is no longer needed for single applicant condo customers.[19] This helped remove barriers for participation and the remediate confusion over single family versus multifamily building classification. Furthermore, this also maximizes staff productivity by reducing time and resources for processing additional paperwork and in-person site assessment visits.

[19] Verifications are required for each project.

2013 Accomplishments and Activities

Overall, the program served over 550 multifamily properties in 2013 and exceeded its electric savings targets by almost 30 percent. This resulted in an increase in Direct Benefit to Customer spending.

On the electric side, the Multifamily appliance replacement program proved to be highly successful in 2013, especially with the addition of clothes washer replacements in the second quarter. Property managers were very receptive to these measures which also helped leverage the program's directly installed measures for showerheads, CFLs/LEDs, and water heater pipe wrap. Moreover, tier 2 advanced power strips with infrared sensing capabilities were introduced into the direct install program during the fourth quarter.

The Multifamily Contractor Alliance Network (CAN) has continued to grow, providing contractors with sales tools to complete more transactions. Many proactive single family CAN contractors have been trained up to also serve the multifamily sector. The multifamily program field staff are actively promoting the value of the CAN to prospective customers, which in turn increased awareness and customer participation.

The Multifamily Air Sealing program air sealed 20 buildings in 2013, totaling over 50 buildings in the program's 2-year existence. In some cases, the building infiltration levels were reduced by 60 percent. Property manager and tenant survey results prove that this measure helps save energy on heating bills and dramatically improves tenant comfort levels. DNV Kema® provided preliminary evaluation of the Air Sealing measure results, and the findings are showing realization rates 35 percent higher than originally estimated.

The gas program also exceeded savings targets by over 250 percent, thus being a key contributor to increased Direct Benefit to Customer spending. In addition to the planned program offerings of showerheads, attic insulation (R-0 to R-38), and custom calculated measures, PSE coordinated its direct installations with Seattle City Light. This partnership resulted in the installation of gas-savings measures in gas-heated apartment complexes in Seattle throughout 2013. An additional benefit was the energy-efficiency leads that this activity generated for both utilities, driving increased savings achievement.

In order to increase customer engagement and tenant education efforts, the program team organized three outreach events at three different apartment and condo campuses. These events occurred during the direct installation of energy saving measures, allowing tenants the opportunity to talk to Program Staff at the sites and learn more about the products installed and ask general energy savings questions.

Table 4h provides a general overview of measure categories reported in the Multifamily Existing program in 2013. For this discussion, these figures are intended to provide a perspective of the scale and scope of Multifamily Existing activity, rather than a precise count of every measure installed.

Table 4h: Multifamily Existing 2013 Measures

Measure Categories	Electric	Gas
Calculated (Projects)	over 5	over 3
Hot Water Pipewrap	5,800	
Boilers (Calculated)		
Attic Insulation (SqFt)	2,500,000	15,700
Floor Insulation (SqFt)	358,000	
Wall Insulation (SqFt)		
Windows (SqFt)	180,000	
Common Area Lighting (projects)	60	
CFL Fixtures	2,000	
CFL Lamps	153,000	
LED Lamps	41,000	
LED Fixtures	360	
Showerheads	8,200	4,000
Refrigerators	280	
Refrigerator Replacements	2,900	
Clothes Washer Replacement	2,300	
Smart Power Strips	3,800	
Ventialtion Fans	30	
Water Heaters (in unit)	5	
Air Sealing (SqFt)	125,000	
Air Sealing with Insulation (SqFt)	114,000	

Figures are in units unless otherwise designated in the descriptions.

Multifamily New Construction

Schedules E/G 218

Description

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 through PSE's residential schedules 7 (including 17, 27, 37 and 47) and 7A; and commercial schedules 8, 11, 12 and 24; and / or natural gas service through PSE's residential schedule 23 and commercial schedule 31.

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

1. Low/mid-rise wood-framed construction, 5 stories or less.
2. High rise construction above 5 stories.

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

2013 Continuous Improvement

Program Staff expanded the number of presentations made to its constituents which maximized the generation of energy-efficiency project leads.

2013 Accomplishments and Activities

The 2013 Multifamily New Construction program achieved electric savings of 30 percent over the year goal and was 8 percent under expected expenditures. For natural gas, savings were 33 percent over the year target with spending 3 percent below anticipated costs.

Natural gas savings were achieved primarily through grants written in 2011 and paid in 2013 at the completion of construction and verification. Only a very few Grants were written in 2013 due to the lower price of natural gas and custom gas measures not being cost effectiveness, even though project incremental costs remained fairly constant.

Electric savings benefited from the increased construction activity and from more new projects completions, located outside of natural gas-only territory.

Program Staff participated in a joint presentation on October 30 with PSE's Energy Efficiency's Commercial New Construction, Seattle City Light new construction program staff, and the Integrated Design Lab.

The topic was incorporating utility incentives early into the new construction projects design process. Program Staff also made a similar presentation on November to architects attending the AIA+2030 Series, along with a December 13 presentation to an architectural firm located in Bremerton, Washington. These presentations help maintain program awareness that in turn lead to new projects and energy savings.

Table 4i provides a general overview of measure categories reported in the Multifamily New Construction program in 2013. For this discussion, these figures are intended to provide a perspective of the scale and scope of Multifamily Retrofit activity, rather than a precise count of every measure installed.

Table 4i: Multifamily New Construction 2013 Measure Summary

Measure Categories	Electric	Gas
Refrigerators	800	
Clothes Washers	600	
Dishwashers		
Windows (SqFt)	39,000	
Garage CO DCV w/ VFD fan control	100	
CFL Fixtures	5,800	
Corridor Lighting Reductions (SqFt)	412,000	
Stairwell Bi-level Lighting	110	
Garage Lighing Reduction (SqFt)	7,500,000	
Showerheads	530	3,200
Boilers (calculated)		
Water Heat (calculated)		
Calculated		
Heat Pumps		
Air-to-Air Heat Pumps (SqFt)	21,000	
Ductless Heat Pumps (Projects)	2	
Fuel Switch (Projects)	-	-
Boiler - Heating (Projects)		2
Boiler - Water Head (Projects)		10
Heat Recovery (SqFt)		89,000

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 condition (7)(d), pilots will only claim energy savings that achieve energy savings sufficient to demonstrate cost effectiveness by passing the TRC test.

The Residential Energy Management group did not pursue any pilot measures in 2013.

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Readers will find that Customer Solutions uses the term "Business" and "Commercial/Industrial (C/I)" interchangeably within this report. There are many more business classifications than only "Commercial" or "Industrial"; therefore PSE refers to these programs as "Business" programs to communicate inclusivity to schools, institutions, farms and other customers less likely to identify themselves as strictly "commercial" or "industrial."

Sector Overview

The following discussions provide a brief summary of the BEM sector. Detailed program discussions are located in Chapter 6: BEM Program Details.

Customer Base

BEM serves a diverse set of clientele. Its 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. BEM's programs also serve agricultural customers such as farms, food storage and food processing.

Types of Incentives, Measures and Services

BEM exerts significant effort in developing and maintaining programs that serve all classes of business customers. The team constantly monitors the participation and energy management needs of all customer categories and modifies programs as required to ensure attractive program offerings are available to all business customers. PSE has incentives for efficiency improvements for both existing and new buildings and equipment.

Prescriptive rebates are used for small lighting projects, kitchen equipment, heating/cooling equipment, etc. Other prescriptive incentives are available for more complex projects such as tune-ups of 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, PSE trains contractors to make effective use of its programs; BEM sponsors workshops, conferences and provides incentives for customers to attend regional training programs such as Building Operator Certification. BEM Staff often give presentations at local conferences and events to educate and encourage participation in its energy efficiency programs. 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.

BEM Constituents

BEM Staff work directly with a wide range of entities to promote and deliver business efficiency programs, to solicit feedback regarding the effectiveness of programs in fulfilling customer needs, and to seek guidance in program structure and design. Some of them include:

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

BEM's Organization and Staff

The Business Sector is comprised of more than 40 engineers, managers, analysts and accomplished professionals who participate in large construction project engineering, collaborate with contractors and vendors and exceed PSE 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.

Employees in the Business Sector hold over 60 relevant professional licenses and certifications including 11 licensed Professional Engineers, 21 Certified Energy Managers, 6 Certified Lighting Efficiency Professionals, and 8 LEED Accredited Professionals. Some BEM staff hold multiple credentials. During 2013, Business Sector staff earned 17 new certifications as they continued their professional development and worked to remain current in energy analysis, engineering, facilities management and lighting design.

The engineering teams, led by three supervising engineers, are responsible for administering custom grants and managing sector-specific programs such as Energy Smart Grocer, Data Center Energy Efficiency Program, Industrial Systems Optimization Program, 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 Business Rebates team, led by a market manager, consists of a mix of engineers, program managers, coordinators, and an implementer to deliver prescriptive rebates and programs. A business analyst and administrative specialist process commercial rebates and track rebate projects and participation.

The Building Performance Team, led by a supervising engineer, 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 Simplified Building Tune-Up (SBTU) program, and the Comprehensive Building Tune-Up (CBTU) program.

Business support staff consists of a 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,
- Contracted Third Party Program Providers (Energy Smart Grocer, Data Center Energy Efficiency Program, Industrial System Optimization Program, Simplified Building Tune-Up, Small Business Direct Install, Premium HVAC Service, Pre-Rinse Spray Head & Aerator Direct Install).

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 Bellingham, Bothell, Bellevue, Bremerton, Kent, and Olympia.

Detailed program descriptions are discussed in Chapter 6: BEM Program Details.

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 its services worthwhile and its participation requirements well-defined and easy to navigate.

Upon completion of custom grant projects and delivery of many prescriptive rebate payments, customers are provided a Project Evaluation Form requesting feedback on the service provided by PSE, suitability of efficiency programs to specific project needs, and recommendations for program modifications and changes. Energy Management Engineers receive customer service scores from the evaluations, which are tied to annual performance appraisals to encourage excellent customer service.

PSE gains insights and high-level guidance for its programs from its Integrated Resource Plan, but program design and implementation is where "the rubber meets the road," where offerings and delivery mechanisms are aligned with customer needs.

Constituent Engagement

The Business Energy Management team consistently applies a great deal of rigor to resolve 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.

The team relies heavily on support from others who are experts in the field when designing new programs or modifying existing programs. They value suggestions from customers and trade allies because they are most directly involved in the process. The team also relies on the experience of other utilities and players in the energy efficiency field. Furthermore, PSE programs are evaluated by third party evaluators who make recommendations for program improvements. Applying generally-acknowledged TQM principles, after launching a program, the team constantly looks 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, BEM Staff make use of extensive regional and national information resources to help enhance and refine our program offerings; (for example 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).

BEM Staff also make use of our Energy Efficient Technology Evaluation tariff as needed to research specific technologies or new applications that show significant potential.

The oversight function is important in order to assure that BEM programs continue to stay on track, achieve its goals and do so cost effectively. PSE's Evaluation Staff reviews BEM savings, delivery methods, measure costs and program cost effectiveness. It assures accurate reporting of BEM results and helps to improve its processes.

The Conservation Resource Advisory Group (CRAG) also provides valuable guidance and advice regarding BEM programs.

Five-Year Trends

As illustrated in Figure 5a, Figure 5b, the average annual electric savings increase is 11 percent, with a 1 percent overall change from 2012 to 2013. The average annual gas conservation increase is 16 percent, with a 43 percent increase from 2012 to 2013.

Figure 5a: Business Sector Five-year Electric Savings (MWh) and Expenses

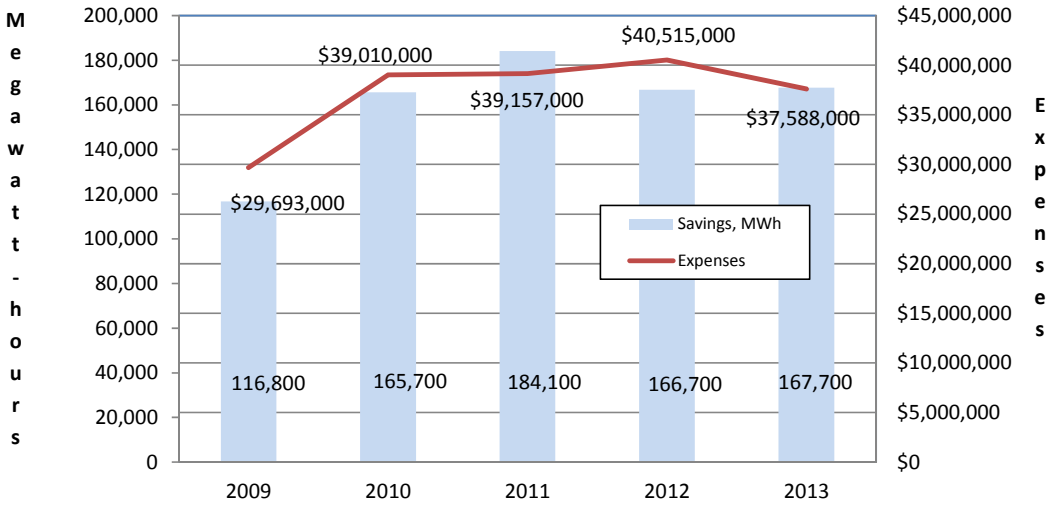
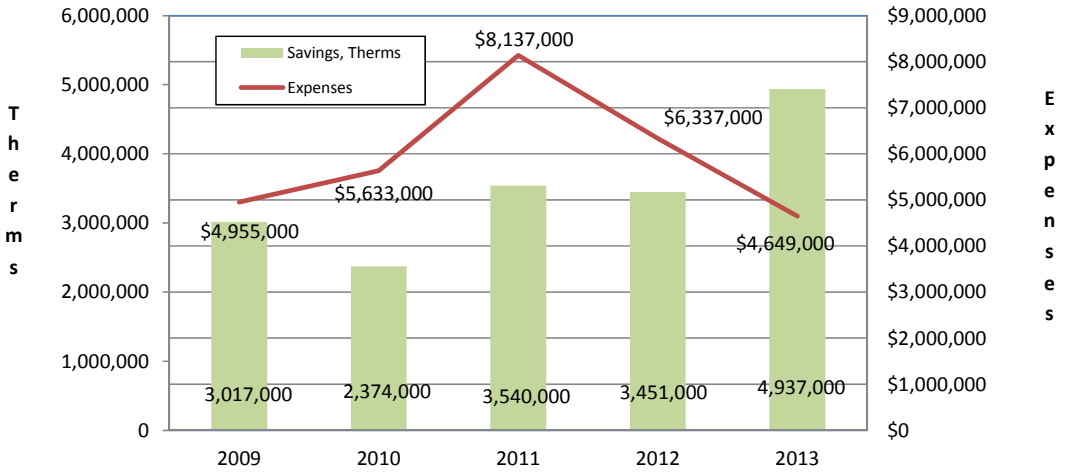


Figure 5b: Business Sector Five-year Gas Savings (Therms) and Expenses



2013 Business Energy Management Sector Summary

Tables 5a and 5b provide, at a program level, BEM savings and expenditure figures, presented in a semi-annual view. Details of Business Sector results are included in the program overviews in Chapter 6.

Table 5a: Business Sector 2013 Expenditures

2013 Expenditures		2013 Actuals		2013 Budget
Schedule	**Programs**	**Total**	**% of Budget**	
Electric	Electric			Electric
Gas	Gas			Gas
E250	C/I Retrofit	$ 17,831,194	93.9%	$ 18,985,765
E251	C/I New Construction	$ 1,366,570	92.9%	$ 1,470,370
E253	Resource Conservation Manager - RCM	$ 1,225,833	78.7%	$ 1,557,700
E255	Small Business Lighting Rebate	$ 3,685,147	65.3%	$ 5,640,130
E258	Large Power User - Self Directed	$ 5,159,352	123.2%	$ 4,189,000
E261	Energy Efficiency Technology Evaluation			$ 30,600
E262	Commercial Rebates	$ 8,319,853	125.1%	$ 6,648,120
	Total Electric Programs	**$ 37,587,949**	97.6%	$ 38,521,685
G250	C/I Retrofit	$ 3,037,634	112.4%	$ 2,702,330
G251	C/I New Construction	$ 299,462	48.1%	$ 622,050
G253	RCM	$ 651,480	76.6%	$ 850,920
G261	Energy Efficiency Technology Evaluation			$ 27,700
G262	Commercial Rebates	$ 660,920	84.3%	$ 784,041
	Total Gas Programs	**$ 4,649,496**	93.2%	$ 4,987,041

Table 5b: Business Sector 2013 Savings

2013 Savings		2013 Actuals		2013 Goal
Schedule	**Programs**	**Total**	**% of Goal**	
Electric	Electric	MegaWatt-Hours		Electric
Gas	Gas	Therms		Gas
E250	C/I Retrofit	74,916	105.0%	71,375
E251	C/I New Construction	3,059	87.4%	3,500
E253	Resource Conservation Manager - RCM	16,881	90.0%	18,750
E255	Small Business Lighting Rebate	12,524	78.1%	16,040
E258	Large Power User - Self Directed	13,831	106.4%	13,000
E261	Energy Efficiency Technology Evaluation	-		
E262	Commercial Rebates	46,526	135.6%	34,311
	Total Electric Programs	**167,737**	106.9%	156,976
G250	C/I Retrofit	886,608	182.0%	487,100
G251	C/I New Construction	56,384	36.1%	156,000
G253	RCM	1,305,271	217.5%	600,000
G261	Energy Efficiency Technology Evaluation			
G262	Commercial Rebates	2,689,003	192.0%	1,400,163
				0
	Total Gas Programs	**4,937,266**	186.8%	**2,643,263**

Electric Programs

While Business Energy Management programs demonstrated strong performance during 2013, the Sector was required to focus a significant amount of effort on supporting program evaluations and planning programs for the 2014-2015 Biennial Conservation Period. Fortunately, 2013 was a continuation of 2012 programs having solid momentum with minimal course corrections required, allowing Program Staff to focus on evaluation and planning efforts.

During 2013, the following programs that comprise nearly 50 percent of electric energy savings underwent process and impact evaluations:

- Resource Conservation Management,
- C/I New Construction,
- Small Business Lighting, and
- Commercial Rebates.

These evaluations, combined with supporting the 2012-2013 Biennial Electric Conservation Accomplishments Review (BECAR) consumed significant quantities of program staff time.

Natural Gas Programs

In 2013, Business Energy Management programs continued to deliver strong results amidst concerns of natural gas cost-effectiveness, which influenced program planning and design for the 2014-2015 Biennial Conservation Period. Staff continued to seek out and structure programs around cost-effective natural gas measures, while Energy Management Engineers continued their efforts to assist customers and trade allies in developing more cost-effective proposals for Custom Grant funding. In addition to program planning, program staff exerted much effort in 2013 supporting process and impact evaluations of the Resource Conservation Management, C/I New Construction and Commercial Rebates programs.

Key Results Drivers

Electric Programs

In the Business sector, lighting programs continued their robust performance in 2013, with customers taking advantage of lighting incentives through multiple channels including Custom Grants, the Small Business Lighting Program, Small Business Direct Install measures, Commercial Rebates, and point-of-sale discounts via the Commercial Lighting Markdown program. Small Business Lighting program participation was lower than anticipated for 2013, primarily as a result of trade allies shifting focus to supporting PSE's Small Business Direct Install Program, which significantly exceeded planned electric savings for 2013.

Additionally, a significant increase was experienced in customers taking advantage of new incentives for the conversion of customer- and company-owned street and area lighting to high-efficiency LED technology. In addition to continued solid participation by customers in the Custom Grant and Resource Conservation Management programs, third-party implemented programs serving specialty sectors such as the Data Center Energy Efficiency Program, Industrial Systems Optimization Program, and the Energy Smart Grocer program all performed solidly in 2013, resulting in the Business sector slightly exceeding planned energy savings for 2013.

Business Energy Management came in slightly less than $1 million below its electric programs anticipated costs in 2013, with lower operating costs balancing out increased Direct Benefit to Customer costs associated with high participation levels. BEM labor costs trended slightly low due to a number of vacancies and leaves occurring during 2013.

Marketing labor was below forecasted costs in 2013 as the result of a Communications department reorganization, which reduced marketing activities during a portion of the year and changed the charging structure for Communications activities. Expenses reported in the Miscellaneous category were greater than budget expectations in 2013 as a result of operating costs previously budgeted in overhead shifting to direct cost-center billing.

Natural Gas Programs

In the Business Sector, natural gas programs demonstrated strong performance throughout 2013. In the Custom Grant sector, a significant pipeline of existing legacy projects yielded strong program performance that was enhanced by gas savings delivered through the Energy Smart Grocer program.

Resource Conservation Management program participants delivered higher gas savings than anticipated, and additional installers were added to the low-flow pre-rinse spray valve and aerator direct install program resulting in strong performance by Business Rebates programs.

While gas savings goals were exceeded, Business Energy Management came in very close to its overall budget expectations in 2013. This is due to a significant portion of the additional savings coming from low-cost direct-installed measures. Similar to electric program performance, BEM labor costs trended low due to a number of vacancies and leaves occurring during 2013. Marketing labor was below anticipated costs in 2013 as the result of a Corporate Communications department reorganization, which reduced marketing activities during a portion of the year and changed the charging structure for Communications activities. Expenses reported in the Miscellaneous category were greater than budgeted in 2013 as a result of operating costs previously budgeted in Overhead shifting to direct cost center billing.

BEM Cost Effectiveness

Table 5c represents the Utility Cost and Total Resource Cost benefit-to-cost ratios for the Business Sector. A complete listing of cost-effectiveness ratios by program is presented in Exhibit 2: Program Cost Effectiveness.

Table 5c: Business Sector Cost-Effectiveness Tests

Benefit to Cost Ratios Business Sector		
	Utility Cost	Total Resource Cost
Electric	3.12	1.92
Gas	4.12	2.42

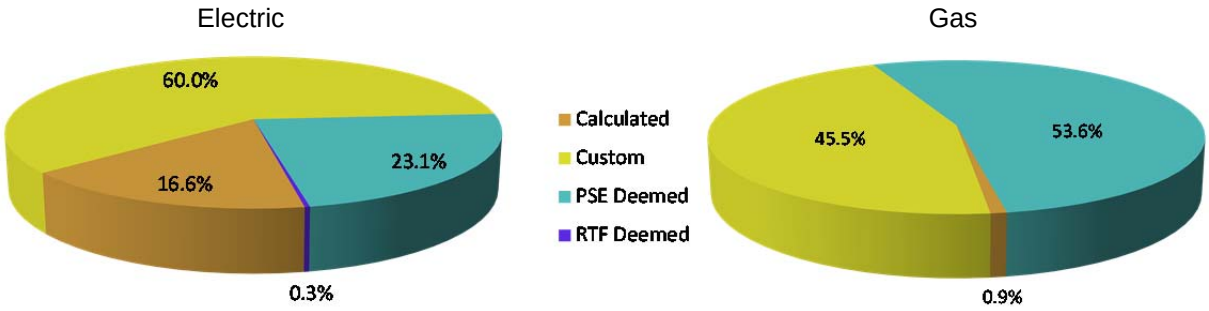
Indicated TRC for both electric and gas represents the B/C ratio with the conservation credit value applied.

Savings Distributions by Measure Type

Figure 5c illustrates the distribution of savings in the Business Sector by measure type.

Since the RTF does not deem gas prescriptive savings,[20] all prescriptive gas measures are considered PSE Deemed, Calculated or Custom. The majority of Business savings are derived from custom measures.[21]

Figure 5c: Business Sector Savings Distributions by Measure Type



N = 167,700 MWh

N = 4,937,000 therm

[20] There are some selected residential measures, such as showerheads and clothes washers, that are RTF deemed.

[21] 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 BEM Energy Management Engineers.

Program Measure Tables

In the following chapter's BEM program detail discussions, the majority of the program measure tables consist of two sets of information: the top part of the table provides a general overview of the quantity of projects. The bottom part of the table provides additional information about the types of measures. When reviewing these tables, it is important to consider that BEM emphasizes a comprehensive approach to efficiency projects, often resulting in multiple measures per project. There is rarely a one-to-one, project-to-measure relationship. Each measure table will reference back to this page for easy column recognition. Below is a high-level description of the data elements:

Projects section

- "Electric Only": This column represents projects where there were only kWh savings.
- "Gas Only": This column represents projects where there were only therm savings.
- "Electric & Gas Only": These projects are not accounted for in the "electric only" or "gas only" classifications. When the projects are sorted in CSY,[22] these specific projects are neither "electric only" nor "gas only". That is, the included both electric and gas-saving measures.
- "All Projects Combined": add "Electric Only", "Gas Only", and "Electric & Gas Only" contents.

Measures Section

As noted above, it isn't unusual for the number of measures to not equal to the number of projects. Projects—especially custom grant project—often have more than one measure or measure type installed. For example, one lighting project will more often than not consist of many measure types, such as linear fluorescent troffer[23] upgrades, recessed can light conversions, automatic lighting controls, etc.

- "Electric Only", "Gas Only", "Electric & Gas Only" have the same meanings as those representing projects. In the Measure Section, however, the rounded figures apply to the number of measures, not to the number of projects.

[22] CSY is discussed in the Measurement & Verification chapter on page 113.

[23] A troffer is an enclosure into which linear fluorescent lamps are installed, and fits into modular drop-ceiling applications (for example, a 2'x4' or 4'x4' grid). They can fit into recessed areas or be installed as a surface-mount box.

- "Measure Count per Type": (Rounded) number of measures installed, by fuel type. The numbers of measures don't necessarily correlate to the number of projects, as one project usually has more than one measure installed.
- "Project Count per Measure": a guide for the approximate number of projects that included those measures. It is important to consider that one project may include more than one (or several) measure types. For instance, in Table 6a, there were 15 combined Building Shell measures installed among 10 total projects in 2013. Furthermore, other measure types could have been installed in those same projects. The same could be said for the other measure types listed. These counts present a representation (rather than a precise count) of how a particular measure was distributed. The indicated amounts are not cumulative.

Continuous Improvement

Consistently employing Total Quality Management principles, BEM Staff made incremental enhancements, program and measure revisions, process improvements, cost-saving adaptations, and adjustments focused on maximizing customer satisfaction with PSE's energy-efficiency offerings.

Throughout 2013, Program Staff continued to make incremental process improvements to improve productivity and reduce risk of data entry errors.

The Customer Management Solutions (CMS) database module for Small Business Lighting was placed into service, and additional improvements were made to the CSY database used for tracking all energy savings and conservation incentive payments.

The greatest electric program enhancement taken on in 2013, which goes into effect in 2014, was the planning and design of a new unified Business Lighting Program for 2014-2015. This effort involved numerous hours by supervisory staff, Energy Management Engineers, Program Managers, Program Coordinators, Business Analysts and Administrative Specialists from BEM to ensure all elements of program delivery and operations were fully vetted in the new program design.

Additional program-specific details are discussed in the following chapter.

BUSINESS PROGRAM DETAIL DISCUSSIONS

Commercial/Industrial Retrofit

Schedules E/G 250

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 assessments to identify savings opportunities, verify existing equipment and system operations, 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 Comprehensive Building Tune-Up (CBTU) Program offered under C/I retrofit.

Upon the customer's decision to proceed with a project, PSE issues a standardized Conservation Grant Agreement and Grant Attachment that establishes terms and conditions for participation in PSE's Custom Grant Program and also explains how the measure will be verified. After the agreement is signed by both parties, 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.

In addition to Commercial/Industrial Retrofit Custom Grant offerings, PSE contracts with industry experts to develop and implement cost effective programs tailored to the unique needs of target markets. Other C/I Programs offered in 2013 included:

- Energy Smart Grocer Program (ESG)
- Data Center Energy Efficiency Program (DCEEP)
- Industrial System Optimization Program (ISOP)
- Simplified Building Tune-Up (SBTU)

Energy Smart Grocer Program (ESG)

This program provides audits, technical assistance and measure-specific financial incentives to grocers who wish to purchase and install energy efficient lighting, refrigeration and HVAC systems.

Data Centers Energy Efficiency Program (DCEEP)

This program focuses on various types of efficiency improvements; for example, server virtualization, hot/cold aisle isolation, airflow upgrades, and cooling upgrades. Program provides site assessments to identify cost effective energy savings opportunities and offers measure-specific incentives.

Industrial Systems Optimization Program (ISOP)

This program focuses on operational and maintenance (O&M) Measures to be verified through custom analysis on an individual project or site basis. Incentives are based on actual savings achieved. Customers agree to continue monitoring and verification following implementation to assure persistence of the savings.

Simplified Building Tune-Up

The program focuses on low-cost operational and maintenance (O&M) improvements. Commercial customers are provided with an energy use analysis and expert advice on cost-effective improvements that can be determined through a building survey and analysis of energy use. Customers who implement improvements receive incentives during the post implementation year based on actual energy savings.

2013 Continuous Improvement

There were numerous in-house process improvements to the CSY project tracking and savings reporting database, which continued to improve operational efficiency, reporting accuracy and customer satisfaction.

Some of these collective enhancements to the CSY tool include:

- Monthly Program Reports that engineers can now generate to share with Customer Account Reps and Community Relations Staff. These reports are an important tool for improving communications of customer participation in PSE's Energy Efficiency Programs.
- QC Reviewers' queues are now viewable. This allows Engineers the ability to assign projects based on current workloads and can now balance the workload throughout the available QC Reviewers, reducing project turnaround time.
- Overall grant package accuracy and quality has been improved by incorporating project verification requirements into the database.
- Scopes of Work templates are now available in CSY, which has streamlined creating Grant Packages. This also allows the user to copy and edit existing Scopes of Work for similar projects, thus reducing time while creating consistency.
- Enhanced reporting options are now available in CSY. Reports can be generated by program, which allows for faster data extraction and more accurate forecasting.

The **Comprehensive Building Tune-Up Program (CBTU)** updated the program and incentive structure to simplify and clarify documentation and reporting requirements for trade allies as well as internal staff. The new incentive structure is also easier for customers to understand. New forms provide customers and trade allies with a clearer understanding of the program process and timelines. A whole building sub-metering incentive was added to improve savings verification and on-going energy tracking for customers and PSE.

Program improvements were based on input from a PSE-hosted meeting with participating trade allies, and from a broad internal team. A lack of local qualified providers continued to be a challenge. To address this and make it easier for companies to meet the customer demand for the program, PSE provided a simplified and fast track method for qualifying junior staff for companies which already had an approved provider. This included co-sponsoring local training on existing building commissioning. In-house training was provided to all engineers to increase their understanding of the program and commissioning so they could better promote this very cost-effective measure with customers.

Data Center Energy Efficiency Program (DCEEP) implemented an important process improvement to the program in 2013, which concerned the audit report that is normally required at the beginning of a project. It was determined that if a customer decided to pursue a second project at the same site, PSE would not require a second audit to be performed and thus reduce overall cost.

The assumption is that the audit from the first project combined with post-installation M&V data provides all the information necessary to analyze a second project.

The **Energy Smart Grocer** program was enhanced to include new measures that increased gas savings in 2013. This addition of natural gas efficiency measures to the Energy Smart Grocer program was a recommendation of the C/I Retrofit evaluation completed by Navigant Consulting in 2012

2013 Accomplishments and Activities

Electric

There was strong customer participation particularly in the second half of the year that allowed the C/I Retrofit Program to exceed its 2013 electric target, while finishing the year slightly under budget expectations. Lighting efficiency projects continue to remain the major contributor to program savings with HVAC measures making up the second largest category of savings.

Other noteworthy completed work included LED Street Lighting upgrades utilizing new incentives for customer- and company-owned street and area lighting, economic stimulus and OSPI projects—delivering a small contribution to the overall savings target.

The **Enhanced Lighting Program** performed well, delivering robust electric energy savings. The program was recognized in 2013 by the ACEEE as an Exemplary Energy Efficiency Program in the commercial sector.

The program was selected:

> "[…] as an example of leading designs and practices for energy efficiency programs offered by utilities and related organizations serving utility customers. … Programs recognized by ACEEE are judged to be models for emulation by other utilities and organizations. […] ACEEE selected programs that demonstrate success in helping customers increase the energy efficiency of their homes, offices, businesses, and industries. […] ACEEE selected these leading programs from numerous nominations received by ACEEE in a national solicitation."[24]

Program efficiency has been increased through the incorporation of contractor training.

The **Comprehensive Building Tune-Up Program (CBTU)** continued to deliver very cost-effective energy savings with several projects completing the bonus phase. CBTU delivered more savings than anticipated. To handle increasing demand for this program, additional engineers were trained to manage projects and additional approved individuals were added in companies with already approved commissioning providers. Major updates to the program were kicked off in trade ally and staff meetings, including a new incentive structure with a whole-building sub-metering incentive.

The **Data Center Energy Efficiency Program (DCEEP)** finished 2013 with lower than forecast savings and expenditures as a result of completing fewer projects than anticipated. The biggest obstacles in completing projects were working within the customers' timeframes and ensuring the customers' understanding and knowledge operating their new systems. Examples include waiting for customers to install blanking plates in their server racks and making sure they were comfortable with any revisions made to HVAC system set points. The lower savings coincided with lower overall cost, and the total cost/kWh for the program was in line with expectations.

Customer response to the DCEEP has been very positive. One customer not only undertook a second project, but was also pleased enough with the results that PSE was mentioned favorably in a national publication regarding the customer's success in regards to data center efficiency.

[24] Extracted from the ACEEE website: http://www.aceee.org/press/2013/03/aceee-recognizes-exemplary-energy-ef.

Industrial Systems Optimization Program (ISOP) completed 2013 under planned costs and achieved the program's energy savings target. A total of eighteen customers signed up to participate in the program in 2013. Of those, six participants completed the program, reported energy savings and received incentives. The remaining participants will complete program requirements and contribute energy savings to the 2014 program year. On projects completed in 2013, the customer's simple payback, after incentive, was less than five months, indicating the high cost-effectiveness of this program. 2013 included significant progress in obtaining more detailed customer-supplied documentation to support claimed energy savings.

Energy Smart Grocer (ESG) continued to pursue cost effective electric savings in the grocery and convenience store sectors in 2013. The program also saw an increased interest in new construction energy efficiency measures, implemented under the Schedule 251 C/I New Construction program.

Simplified Building Tune-up Program (SBTU) delivered electric savings in the second half of 2013. The recurring lack of quality in 15-minute interval data available through Energy Interval Service at a significant number of customer sites was a barrier to participation, with the contractor unable to offer SBTU without a continuous stream of consistently reliable metered interval data. A readily-available, economical solution to this issue does not currently exist; therefore the program was discontinued in PSE's 2014-2015 Biennial Conservation Plan.

Gas

The gas C/I retrofit program significantly exceeded the 2013 target due in large part to the completion of numerous large legacy projects contracted in previous years. C/I Retrofit Gas direct benefit to customer spending paralleled the trend in savings and exceeded planned costs as incentives were paid out as these legacy projects were completed.

Changes to gas avoided costs had a considerable impact on the quantity and type of new projects that qualified for grant funding in 2013. As a result, the pipeline of gas retrofit projects in progress has diminished. Completions of stimulus-funded projects decreased in the second half of the year, but still contributed in a large way toward the 2013 gas target.

The **Comprehensive Building Tune-Up Program (CBTU)** continued to deliver very cost-effective energy savings. **CBTU** delivered more gas savings than anticipated in 2013.

The **Energy Smart Grocer** program added several natural gas measures to the program mix in 2013. One of these measures was the installation of glass doors to open refrigerated cases. This measure saves both electricity and natural gas by reducing refrigeration system load and cold air spillage into the heated store space. This in turn reduces HVAC natural gas consumption.

2013 Project and Measure Type Summary

Table 6a below shows the number of projects completed and the number of electric and gas measures installed. The indicated amounts are presented to provide a sense of scale and scope of program activities, rather than a precise count of all measures installed.

Table 6a: Commercial/Industrial Retrofit Projects and Measures[25]

Projects				
Program	**Electric Only**	**Gas Only**	**Electric & Gas Only**	**All Projects Combined**
Commercial/Industrial Retrofit	600	90	40	730
Data Center Energy Efficiency	5	0	0	5
Energy Smart Grocer	300	100	30	430
Industrial System Optimization	5	0	0	5
Simplified Building Tune-Up	2	0	0	2
Total Project Count	**over 900**	**almost 200**	**over 50**	**over 1,100**
Measures				
Measure Type	**Electric**	**Gas**	**Measure Count per Type**	**Project Count per Measure**
Building Shell	10	5	15	10
Heat Recovery	0	3	3	3
HVAC & Controls + Core Services	90	90	180	150
Boilers & Water Heating	5	20	25	25
Motors & Variable Frequency Drives	10	0	10	10
Commissioning	30	5	35	25
Process	70	5	75	75
Refrigeration	5	0	5	5
All Lighting	570	0	570	450
Data Center Energy Efficiency	5	0	5	5
Energy Smart Grocer--HVAC VFD	10	3	13	10
Energy Smart Grocer--Lighting	360	0	360	330
Energy Smart Grocer--Refrigeration	250	90	340	220
Industrial System Optimization	10	0	10	5
Simplified Building Tune-Up	2	0	2	2
Total Measure Count	**over 1,400**	**over 200**	**over 1,600**	**over 1,300**

It is important to remember that custom projects usually consist of more than a single measure.

[25] Please see the discussion on measure table data elements in the BEM Sector Overview chapter, page 68.

Commercial/Industrial New Construction

Schedules E/G 251

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 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 100 percent of the incremental cost over a code-compliant baseline option.

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.

The third path includes Prescriptive Basis incentives for Measures that are eligible for rebates under Schedule E262/G262; Commercial and Industrial Incentive Program. The incentive amount for a Measure is the same as that which is available under Schedule E262/G262, but energy savings may be calculated based on actual Site-Specific conditions.

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. A complete listing of available incentives is provided in Exhibit 4: Energy Efficiency Measures, Incentives & Eligibility.

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.

2013 Continuous Improvement

A key improvement to the program in 2013 was the establishment of a partnership with the Seattle Integrated Design Lab (iDL) to support PSE customer new construction projects. The iDL consists of University of Washington research, faculty, staff and students well known and respected in the design community who support development of high-performance commercial and institutional buildings.

While the iDL is funded by NEEA BetterBricks, U.S. Department of Energy, The National Science Foundation and other entities, PSE's direct sponsorship in 2013 guaranteed PSE customers dedicated access to this local resource to assist design teams in evaluating energy efficiency opportunities and incorporating PSE incentives to financially drive efficiency upgrade opportunities. On nearly one dozen major development projects in 2013, assistance was offered to the customer for the iDL to come alongside the design team, customer, and other relevant parties to provide energy analysis, product and system investigation, and provide written feedback to the team to help support critical energy efficiency investment decision-making. Customers were very appreciative to have this resource available to them through PSE.

As part of the 2014-2015 program planning effort, in 2013 the New Construction program team put forth significant effort to evaluate the feasibility of creating a LED general-area lighting incentive. Research showed however, that current costs of LED general interior area lighting were still too high for this to be a financially attractive and cost-effective measure compared to an energy efficient fluorescent lighting system with Energy Code required controls.

2013 Accomplishments and Activities

A program impact and process evaluation was completed in 2013, conducted by Navigant Consulting. Realization rates for "As-Reported" savings were approximately 100 percent for both electric and gas, indicating PSE engineers tended to take a conservative approach to savings at time of analysis and project completion due to uncertainties in how newly constructed facilities would be utilized once fully occupied. Additionally, Navigant Consulting prepared "As-Evaluated" savings realization rates which were more than 100 percent, indicating energy savings reported under new construction measures were being exceeded under the observed building operating conditions at time of evaluation.

Completing the evaluation was a considerable accomplishment for the year, given the significant time spent by PSE Program Staff supporting the evaluation work, reviewing draft submittals, and working through iterations of the final report to ensure sufficient documentation of recommendations to support program improvements moving forward.

Electric

The electric program ended slightly below savings target and at approximately half of the 2013 budgeted amount. Certain key projects expected to close in 2013 encountered delays. If completed per construction schedule, the program would have exceeded the 2013 savings target.

Gas

The gas program ended slightly higher than one-third of the savings target. A very large industrial project, mentioned in the 2013 Semi-Annual Report, experienced a completion delay and significantly reduced gas savings achievement for 2013. Had the project completed on-schedule, the New Construction program would have exceeded its savings target while remaining within the spending forecasted. These savings and incentives should post to the program totals for 2014 when the project completes.

2013 Project and Measure Type Summary

Table 6b shows the number of projects completed and the number of electric and gas measures installed.

Table 6b: Commercial/Industrial New Construction Projects and Measures[26]

Projects				
Program	**Electric Only**	**Gas Only**	**Electric & Gas Only**	**All Projects Combined**
Commercial New Construction	20	3	10	33
Energy Smart Grocer	1	0	0	1
Total Project Count	**21**	**3**	**10**	**34**
Measures				
Measure Type	**Electric**	**Gas**	**Measure Count per Type**	**Project Count per Measure**
Heat Recovery	0	2	2	2
HVAC & Controls	4	4	8	6
Boilers	0	3	3	3
All Lighting	15	0	15	15
Motors & Variable Frequency Drives	2	0	2	2
Commissioning	5	3	8	8
Process	2	1	3	3
Refrigeration	3	0	3	2
Whole Building	5	3	8	6
Energy Smart Grocer--Lighting & Refrigeration	5	0	5	1
Total Measure Count	**41**	**16**	**57**	**48**

It is important to note that custom projects usually consist of more than a single measure.

Resource Conservation Management

Schedules E/G 253

Description

PSE offers Resource Conservation Management Services (RCM) to any school district, public-sector government agency, and Commercial or Industrial (C/I) customer with a minimum portfolio baseload to meet cost-effective thresholds. The RCM program targets larger customers with multiple facilities such that the cost of implementation can be recovered through savings achieved.

[26] Please see the measure table description in the BEM Sector Overview, page 68.

Schedule 448, 449, 458, and 459 customers may utilize their Schedule 258 funding allocation for Resource Conservation Management Services (RCM).

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 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 to allocate in order to achieve cost-effective savings from RCM efforts.

An RCM customer employs, contracts, or designates existing staff to implement RCM responsibilities, including accounting for resource consumption, assessing facilities, recommending actions, monitoring progress, calculating savings and communicating program information to organization stakeholders.

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 using industry standard practices and energy accounting methodologies. 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.

Puget Sound Energy's RCM support program is comprised of a "menu" of services, which can be tailored to meet the specific needs of the customer. Typical RCM services include, but are not limited to, the following assistance and support:

Program Start Up

- Designing and implementing an RCM program;
- Hiring or contracting a Resource Conservation Manager;
- Developing baselines, policies and guidelines, and facility action plans;

Resource Accounting Software

- Purchase and implementation of resource accounting software;
- Audits of existing databases to review for inclusion of all facilities, accounts, meters, etc., sufficient facility details, missing data, and overall data integrity.

Technical Assistance

- On-site walk-through audits to train customer staff to identify waste and opportunities for improved efficiency;
- Analysis and reporting of savings relative to established baseline;

Education & Training

- Training in fundamental concepts for designated RCM and support personnel such as custodial, maintenance, and facilities staff
- Educational materials for classroom or building occupant use including checklists, fact-sheets, and calculators;
- Training stipend to support professional development in Building Operation or Energy Management. (Training stipend is based on achieving the Building Operator Certification Levels I & II.)

Energy Data Services

- Historical and on-going monthly PSE billing data in electronic format for import into resource accounting software;
- Energy Interval Services for internet viewing of facility gas and electric interval meter data;

Cash Incentives

- ”Start-up” intended to share the cost of program start up provided there is a mutual agreement that the customer will match the “start-up” funding support. Grant is paid upon satisfactory completion of “start-up” deliverables.
- Performance grants for customers who achieve a pre-established targeted amount of energy savings after completing their first year and “start-up” deliverables.
- Salary guarantee for customers implementing a program with one or more full-time RCM employees
- Site-based incentives for specific actions by occupants and staff which reduce energy consumption in individual facilities.

The RCM program has also assisted customers in establishing Energy Star Benchmarks for their facilities using EPA's Portfolio Manager. PSE will continue to help customers to identify potential targets, improve energy efficiency to meet award qualifications, coordinate the application and inspection process, and submit material to EPA for Energy Star awards.

Additionally, access to energy accounting software has allowed PSE RCM customers to facilitate greenhouse gas accounting and other climate change and sustainability initiatives. The value of this service routinely exceeds those stated in the RCM program scope of work.

2013 Continuous Improvement

The RCM program underwent significant continuous improvement efforts in order to streamline processes in 2013. This included the development of a Microsoft® Excel™ tool that imports monthly data from the RCM accounting database and performs a whole-building analysis for customers. The tool has the ability to quickly flag anomalies and provides an improved way to subtract savings from PSE-incentivize projects based on installation date (which is now tracked in the program database) and load curve type.

Continuous improvement efforts also included updated electric and gas cost allocation procedures per the 2013 Annual Conservation Plan (ACP).

For example, the program allocated cost and new grant incentives based on avoided costs by fuel type rather than units of energy (BTUs), which provided better alignment of RCM program costs with the avoided costs of the resources being saved. The RCM program also started tracking the actual implementation date of PSE-incentivized measures instead of using the measure paid date, providing for better measurement and verification analysis. Finally, the program revised the renewal grant cost structure and the quantification of FTEs per the 2013 ACP.

2013 Accomplishments and Activities

The RCM program successfully completed a program evaluation with a third-party consultant (SBW Inc.). This evaluation provided valuable feedback for future improvements and noted that the "program is at the vanguard in the area of commercial behavioral programs." The evaluation also found that the RCM program "is yielding significant levels of verified energy savings and non-energy benefits, as well as high levels of participation satisfaction." PSE program staff were heavily involved in providing data, documentation, and answering questions for SBW.

The RCM program continued to support training opportunities for customers and program staff. In 2013, there were 10 training opportunities, which included a variety of topics ranging from benchmarking to water saving strategies.

The program has also leveraged partnerships to help with the implementation of the training. In the summer, the program partnered with the Cascade Water Alliance to provide irrigation training to RCM customers and their staff.

To further help customers, the RCM program upgraded the Energy Interval Service (EIS) software in March 2013. The new software provides RCM customers an easy-to-use interface to better understand meter consumption and recognize energy saving opportunities. The program staff hosted an in-person training opportunity and simultaneous webinar in conjunction with the software upgrade to help customers with the transition. In addition, the program started working with internal staff on the development of a software replacement for the aging utility accounting software currently utilized by RCM customers.

Electric

The RCM electric program fell below the target level for savings and planned spending. Part of the reason for the shortfall is due to the nature of the program, which is difficult to predict given that savings are based on annual behavioral-based improvements.

The RCM staff also received a significant quantity of RCM reports in the latter part of 2013, which coincided with the finalization of the third-party evaluation, resulting in delays of processing savings claims until all reports could be thoroughly reviewed. Another contributor to the lower performance is due to larger customers that did not generate as much savings as anticipated in 2013.

The program was below the planned expense amount in 2013 due to significantly less expense than planned on software development.

The planned spending was allocated toward internal development of utility accounting software, but this project was severely delayed due to a precedent project that experienced unforeseen delay caused partly by the 2013 federal government shutdown and postponement of required coordination work with EPA's Energy Star®. The delayed software development expenditures are evident in reduced labor and outside services expenses reported for 2013.

Gas

The RCM gas program exceeded the savings target and had overall expenditures below the planned amount for the year. The additional savings is predominately attributed to large gas customers finding significant opportunities for improvement, and incentive payments beyond the forecasted amount accompany these higher savings.

Similar to the electric portfolio, the gas expenditures were below planned spending amounts from the software implementation delay.

2013 Results by Customer Sector

Table 6c below shows the number of customers participating in the RCM program, and the total facility area in each major customer sector.

Table 6c: Number of RCM Customers and Facility Area by Sector[27]

Resource Conservation Management				
Program	**Electric Projects Only**	**Gas Projects Only**	**Electric & Gas Projects Only**	**All Projects Combined**
253 - RCM	25	13	44	82
Total Project Count	**25**	**13**	**44**	**82**
Customer Sector	**Customer Count**	**Electric Measures**	**Gas Measures**	**Measure Count per Sector**
School Districts	29	30	25	55
Government	19	30	20	50
Higher Education	3	3	2	5
Commercial	2	5	5	10
Hospitals	2	3	2	5
Manufacturing	1	1	1	2
Non Profit	1	1	1	2
Total Measure Count	**57**	**73**	**56**	**129**

Please consider that custom projects usually consist of more than a single measure.

[27] Please see the measure table description in the BEM Sector Overview, page 68.

Small Business Lighting Rebates

Schedule E255

Description

The Small Business Lighting (SBL) Rebate program provides a menu of Standard Lighting retrofit rebate options as well as a "Custom Analysis" path allowing a rebate to install the non-standard lighting retrofit products. The program is designed to meet the needs of most small business customers and maintains a network of lighting contractors and vendors that effectively serve small businesses.

The rebates offered cover a wide variety of energy efficient conversions including Fluorescent, Light Emitting Diode (LED), High Intensity Discharge (HID), Exit Signs, and Lighting Control options.

2013 Continuous Improvement

For 2013, Small Business Lighting released an updated version of the 2012 application and held five training sessions (including one in Ellensburg to support increased program participation by Kittitas County contractors). The updated 2013 SBL application encouraged comprehensive projects and resulted in larger, more comprehensive, projects being submitted. SBL also continued integration into the Contractor Alliance Network (CAN) during 2013 and helped train contractors at the semi-annual CAN training sessions.

Staffing increases implemented in 2012 allowed the SBL team to provide quicker turn-around on project Pre-Approvals, payments and quality checks (QCs) in 2013. By being current with SBL processing, Staff were able to spend more time in the field working with contractors to improve understanding of the program and project documentation requirements, resulting in greater accuracy and quality of project submittals.

For improved project management, tracking and reporting, the SBL program was integrated into PSE's Customer Management System (CMS) database in April. This eliminated the need to rely on an Excel™ tracking spreadsheet for project tracking, and worked very well in 2013 for imputing and tracking project processing, as well as quality control and coordination of project verification.

To provide timely resolution of issues identified by enhanced verification and inspection processes, a PSE Staff member was added to the team to coordinate processing of inspections results and follow-up with customers and contractors for all rebate programs. Significant coordination efforts were made with the Verification Team to improve coordination of inspections so that disruptions to customers are minimized and better feedback is provided to installing contractors.

2013 Accomplishments and Activities

Small Business Lighting (SBL) did not meet the savings target planned for 2013 due to fewer projects being submitted to the program. Many factors appear to have contributed to the slowdown in project submissions, including contractors working in competing PSE programs, such as Small Business Direct Install (SBDI) and Commercial Lighting programs instead of SBL. For example, three contractors supporting lighting installation work by the SBDI program in 2013 had completed large numbers of SBL project numbers in 2012, but their quantity of SBL project completions significantly declined in 2013 as their SBDI installation work increased.

To counteract the reduction in project quantities, SBL program staff worked diligently to process all projects as quickly as possible so contractors received timely payments for project completions, enabling them to submit additional projects and purchase materials.

Overall, the SBL program was below its spending target in 2013 due to the lower-than-planned number of projects, which translated into reduced incentive payments and less labor costs associated with processing SBL projects.

The effects of T12 federal lighting standards were evident in the SBL program during 2013, with prescriptive incentives provided for T12 to T8 retrofits lower compared to 2012, but still making up approximately 45 percent of the kWh saved by SBL. This demonstrated that a significant quantity of T12 lamps remain in service in the PSE territory, particularly in the small business sector.

A process and impact evaluation of the Small Business Lighting program was supported during 2013. While yet to be finalized, initial results showed positive customer satisfaction with the Small Business Lighting program.

In addition to operating the SBL program, in 2013 a team spent significant time working to combine four PSE lighting incentive programs into one unified program for implementation in 2014-2015, as described in PSE's 2014-2015 Biennial Conservation Plan (BCP).

The four programs combined into the unified program were Commercial Lighting, Small Business Lighting, Custom Grants (Lighting) and Enhanced Lighting.

In additional to preparing all program design and documentation for the BCP, the team conducted multiple contractor training sessions across the PSE service area during the second half of 2013 to introduce the program and solicit trade ally feedback. Training locations included Bellevue, Olympia and Burlington.

In transition to the new lighting program, SBL was closed to new projects as of December 31, 2013. Projects received prior to the program closing date will be processed during 2014. A significant surge of last-minute submittals occurred during the month of December.

Table 6d below presents a representative number of measures installed, intended to impart a sense of program scale and scope, rather than a precise audit tool.

Table 6d: Number of Small Business Lighting Measures Installed[28]

Projects		
Program	**Electric Only**	
Small Business Calculated Rebates	Over 750	
Measures		
Measure Type	**Electric Measures**	**Project Count per Measure**
T8 Retrofit	1,400	600
LED	190	125
CFL	200	160
T5	30	30
Sensors & Controls	130	100
EXIT Signs	100	100
High Presure Sodium or Metal Halide	15	15
Custom	560	300
Specialty Lamps & Other	100	100
Total Measure Count	**Over 2,700**	**Over 1,500**

It is important to note that custom projects usually consist of more than a single measure.

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, 448, 449, 458, or 459 receive a funding allocation based on their electric usage and are responsible for proposing cost-effective project(s) to utilize their allocation. This is classified as the non-competitive phase.

[28] Please see the measure table description in the BEM Sector Overview, page 68.

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 cycles, with the current program cycle spanning January 1, 2010 to December 31, 2014. Customers had until March 29, 2013 to propose projects that utilize their incentive allocations under the non-competitive phase. Customers not designating projects that 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.

In the Competitive Phase, eligible customers respond to an RFP in order to obtain remaining incentive funding that was not claimed during the non-competitive phase. In this phase, eligible customers may have access to funds beyond their original allocation. All projects submitted by the required deadline will be ranked based on cost effectiveness. Competitive funding will be awarded, in order of project ranking, until all funds are allocated to projects.

2013 Accomplishments and Activities

The Large Power User, Self-Directed program passed many key 2010-2014 program cycle milestones in 2013. The non-competitive phase closed in March with great success in regards to overall customer participation and utilization of incentive allocations.

The competitive phase RFP was released on May 15 with $2.4 million available in remaining incentives, which is approximately 13 percent of total incentives available in the current program cycle. This RFP closed July 16 with great customer interest as 24 projects were submitted for evaluation totaling $6.6 million in potential incentives and 19.3 million kWh in savings. Given the available funding, this made for a highly competitive phase. Finally, five projects accepted funding with an estimated total savings of 10.3 million kWh.

The program's reported 2013 expenditures were over the anticipated costs due to the annual program administration and market transformation true-up journal entries that occurred in March. These annual true-up journal entries have been given greater attention in 2014-15 budgeting to provide a closer alignment of actual expenditures with the planned spending in each reporting period.

2013 Project and Measure Type Summary

There were more than 60 projects completed in 2013. Table 6e below shows the number of measures installed. A project may include more than one measure.

Table 6e: Large Power/Self-Directed Number of Measures[29]

Program Type	Electric Only	
High Voltage/Self-Directed	66	
Measure Type	**Electric Measures**	**Project Count per Measure**
HVAC & Controls	22	22
Lighting	32	32
Motors & Variable Frequency Drives	7	7
Process	5	5
Total Measure Count	**66**	**66**

Energy Efficient Technology Evaluation

Schedules E/G 261

Description

The purpose of Energy Efficiency Technology Evaluation is to identify new, energy efficient technologies and products for our program offerings. Ideally, PSE 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.

[29] Please see the measure table description in the BEM Sector Overview, page 68.

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 PSE 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 who is managing the project, 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 PSE's programs - risky with regard to uncertain savings and risky for PSE customers due to unforeseen product issues. If the potential savings look significant, PSE might try the technology on one or two projects, especially if it is 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. PSE's 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 PSE has 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.

2013 Accomplishments and Activities

There were no program expenditures in 2013. PSE Program Staff continued to actively monitor emerging technologies and the significant quantity of regional and national initiatives that focus on advancing new innovations in energy efficiency and moving products to the marketplace.

PSE participates in the Regional Technical Forum (RTF) and other regional efforts to identify and prioritize emerging technologies, as well as national organizations such as CEE. PSE also participated in regional efforts alongside NEEA to identify new emerging technologies, and participated in BPA's technology evaluation efforts. Through this participation, PSE contributed to the regional effort and enhanced PSE's awareness and understanding of new and emerging technologies.

Commercial Rebates

Schedules E/G 262

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. The following measure categories are managed in-house by PSE Staff:

- High Efficiency HVAC (new and retrofit),
- Variable Speed Drives,
- Electronically Commutated Motors (ECMs),
- Commercial Washers, gas and electric,
- Commercial Laundry Water Heating,
- Commercial Kitchens, gas and electric,
- Commercial Lighting Rebates (lamps and controls),
- Hospitality Rebates,
- Portable Classroom Controls,
- PC Power Management,
- LED Traffic Signals.

PSE contracts with industry experts to develop and implement cost-effective measures tailored to the unique needs of target markets. The following measure categories are offered through contracted programs:

- Premium HVAC Service Program, gas and electric,
- Pre-rinse Spray Valves and Aerator Direct Install,
- Green Motor Rewind,
- Small Business Direct Install Measures.

The Program Staff collect tracking data, monitor program performance, and report results and trends. The Program Staff work with equipment suppliers/vendors and this program is coordinated closely with the electric and gas Commercial and Industrial Retrofit Program.

Program refinements and cost-effectiveness are reviewed with Engineering Staff, the Evaluation Team, and the C/I manager as necessary on an ongoing basis. Incentive measures, marketing and the fulfillment process may be modified, as needed, to respond to developments in technology, customer acceptance and/or changes in supplier/contractor delivery and pricing.

2013 Continuous Improvement

In addition to focusing on program delivery to customers and continuing to build trade ally relations, the Business Rebate team supported the integration and expansion of Measurement and Verification (M&V) processes by incorporating additional rebate measures into PSE's Verification Team inspection portfolio. To provide timely feedback to program managers and resolution of issues identified by enhanced verification and inspection processes, a PSE staff member was added to the Business Rebate team to coordinate communication of Verification Team inspection results and follow-up with customers and contractors for all Business Rebate programs.

Rebate processing procedures were streamlined throughout 2013, which reduced time required for reimbursement payments, which in turn further increased vendor participation in marketing the program to PSE customers.

A key process improvement implemented in the Small Business Direct Install program was having site auditors install screw-in lighting measures not requiring an electrical permit during audits conducted as part of community blitz events.[30] A community blitz in Kingston was the first time the SBDI program implemented this process improvement, giving customers immediate results from participating in the program.

Focusing SBDI activities in concentrated areas through community blitzes, coordinated by PSE's Energy Efficient Communities team created greater customer awareness of program offerings and decreased time between the audit and measure installations.

[30] Community blitzes are also discussed in further detail in the Energy Efficiency Community section of the Portfolio Support Chapter on page 136.

A business owner who participated in the Kingston blitz was so pleased with the results they began looking at upgrading lighting in their remaining store locations. In 2013 the SBDI Community Blitzes became an excellent method of supporting communities wishing to come together and make a concerted effort towards becoming more energy efficient.

2013 Accomplishments and Activities

The Business Rebate Program continued offering its successful prescriptive rebates in lighting, kitchen, hospitality and other programs and contracting the delivery of specialty programs such as Premium HVAC Service, low-flow pre-rinse spray head/aerator installations and green motor re-winds.

The Business Rebate portfolio for both gas and electric exceeded projected savings targets for the year. The electric savings accomplishments were mainly due to the success of its lighting programs and Small Business Direct Install Program. Gas programs exceeded savings targets largely due to the direct install aerator and spray head program. Overall spending for electric programs exceeded the planned amounts, while gas spending was less than expected in the plan, as explained in the respective discussions that follow.

In 2013 the Business Rebates team supported an impact and process evaluation covering the entire suite of measures, requiring responses to numerous data requests and lending of assistance in coordinating on-site inspections of measures and interviews with customers and trade allies. Draft results of the evaluation were available by year-end, but additional work was requested of the evaluation consultant to better inform program enhancements, which resulted in delay of final completion until 2014.

Electric

The **Commercial Lighting Rebate & Lighting Markdown Programs** exceeded annual program forecasts due in large part to the addition of new vendors in the markdown program who had success leveraging the PSE incentive to drive their sales of energy efficient LED lighting products. As noted in the Continuous Improvement discussion, streamlined rebate processing procedures increased vendor participation in marketing the program to PSE customers.

Increased customer acceptance of LEDs also led to higher-than-expected performance of these programs. This increased level of program performance in 2013 was the key driver behind Business Rebates exceeding its planned spending amounts for electric programs, with cost overages consisting of incentive payments.

Being cognizant of program expenditures and budget expectation impacts of increased program performance, PSE continued to proactively monitor LED retail pricing which dropped significantly over the course of 2013, allowing some vendors to offer select lamp models at zero cost to the customer after applying the PSE rebate.

PSE responded to this by realigning incentive levels to market as part of the 2014-2015 program planning process, but did not make mid-2013 incentive level changes to avoid creating new forms, updating web content, and creating customer and trade ally communications while simultaneously preparing the launch of an entirely new redesigned lighting program for the start of 2014.

Businesses with a large volume of light sockets continued to be attractive marketing targets for vendors and the primary drivers of program savings in 2013. However, an increase in the number of relatively smaller projects at different business types indicated the program was starting to be promoted more heavily to a broader array of businesses.

A **Small Business Direct Install** (SBDI) program management change at mid-year led to improved coordination with the third party implementer, allowing the program to greatly exceed electrical savings targets for 2013. The program served small businesses throughout the service area and helped business owners save money and energy.

As indicated previously, overall spending for Business Rebates electric programs exceed budget expectations due to customer incentive payments accompanying high uptake of Lighting Markdown incentives for energy efficient LED lighting. Costs trended lower than budgeted in the categories of labor and accompanying overhead, as well as outside services. Vacancies and leaves during 2013 significantly reduced labor expenses. Outside services costs were less than those anticipated due to delays in development and deployment of database enhancements, therefore reducing IT consultant charges.

Gas

The third party direct installation program for **Pre-Rinse Spray Valve** and **Low-Flow Aerator** measures was the main driver of success in exceeding gas targets for the year. Additional installers were added to the program, which enabled greater gas savings to be achieved than expected.

Overall spending for the Business Rebates gas programs was below anticipated spending levels. This was due to the low cost of direct-installed measures and lower in-house labor and overhead costs than planned due to vacancies in staffing.

Outside services costs exceeded planned spending from consulting services acquired during 2013 to assist Business Rebates staff with development of Verification Team processes and training materials, as well as updating deemed unit energy savings for gas efficiency measures planned for implementation in the 2014-2015 Biennial Conservation Plan.

Table 6f below shows the number of measures, by category, installed in 2013.

Table 6f: Number of Business Rebate Measures Installed by Type[31]

Projects				
Program Grouping	**Electric Only**	**Gas Only**	**Electric & Gas Only**	**All Projects Combined**
Commercial Cooking Equipuipment	125	170	15	310
Commercial Washer Dryer Rebate	75	4	10	89
Portable Classroom Control Rebate	3	0	0	3
Pre Rinse Spray Head	0	4	10	14
Premium HVAC Service	10	0	60	70
Variable Speed Drives	20	0	0	20
Commercial Laundry Boilers Water Heaters	0	1	0	1
Commercial Lighting Rebate	350	0	0	350
Commercial CFL Mark Down Program	1,100	0	0	1,100
Cooler Miser Program	3	0	0	3
ECM Motors	2	0	0	2
High Efficiency Heat Pump & Air Conditioner	80	1	20	101
Hospitality Rebates	20	0	0	20
LED Traffic Signals	15	0	0	15
PC Power Mgmt Rebate	15	0	0	15
Small Business Direct Install	970	60	10	1,040
Total Project Count	**over 2,700**	**240**	**over 120**	**over 3,100**
Measures				
Measure Type	**Electric**	**Gas**	**Measure Count per Type**	**Project Count per Measure**
Commercial Kitchens	150	200	350	300
Water Heating	290	150	440	340
HVAC	240	80	300	225
Lighting	4,600	0	4,600	2,400
Misc. Equipment	20	0	15	15
Total Measure Count	**over 5,000**	**over 400**	**over 5,000**	**over 3,000**

It is important to remember that custom projects usually consist of more than a single measure.

[31] Please see the measure table description in the BEM Sector Overview, page 68.

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REGIONAL EFFICIENCY PROGRAMS AND RELATIONSHIPS

Northwest Energy Efficiency Alliance

(The NEEA trademark is used with permission.)

Schedule E254

Description

The Northwest Energy Efficiency Alliance (NEEA) is a non-profit organization working to maximize Energy Efficiency to meet the future energy needs of the Northwest. NEEA is supported by, and works in collaboration with, the Bonneville Power Administration, Puget Sound Energy 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 works "upstream" to expand the market for Energy Efficiency and complements utility programs without duplicating efforts. NEEA's regional advantage allows Puget Sound Energy and other Northwest utilities to leverage the market power of the entire region to realize economies of scale.

PSE also participates in NEEA's Cost-Effectiveness Committee 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.

This report summarizes NEEA's 2013 value delivery to Puget Sound Energy. For additional information about NEEA's unique value to the region, history, structure and recent initiatives, please visit www.neea.org.

2013 Accomplishments and Activities

Exhibit 10 of 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 PSE's service area from January 1 through December 31, 2013. It is important to recognize that NEEA compiles final electric savings figures for several months after the conclusion of a program year. Thus, 2013 savings results are unavailable from NEEA until late May or early June 2014.

PSE recognizes and appreciates the considerable effort demonstrated by NEEA to assemble the contents of Exhibit 10.

Please see Exhibit 10 for the complete NEEA recap of 2013 accomplishments.

Production and Distribution Efficiency

Schedule E292

Description

The purpose of the Production and Distribution Efficiency program is to evaluate and implement energy conservation measures that prove cost-effective, reliable and feasible within PSE's own generation and distribution facilities.

Within generation facilities, conservation measures reduce ancillary loads at the site and exclude efficiency improvements made to the generating equipment itself. The measures are focused on equipment powered by the grid when the site is not generating. These measures may include, but are not limited to, lighting upgrades, variable speed drives and compressor upgrades.

For distribution efficiency, improvements are implemented at PSE's electric substations. These improvements can involve reducing the energy use within the substation itself and the distribution of energy from it. They can range from on-site measures like lighting and heat pumps to system measures like phase balancing and conservation voltage regulation (CVR), which is also referred to as voltage optimization (VO).

This program requires coordination between the Energy Efficiency Program Manager and staff in other PSE departments to collect project specific details for program tracking and reporting.

2013 Accomplishments

With no conservation funding available, the Production and Distribution Efficiency program was able to successfully complete projects and claimed savings in 2013 for the first time. These projects occurred at both production and distribution facilities requiring effective communication and coordination between Energy Efficiency staff and other PSE departments.

For the distribution component of this program, CVR was the measure implemented and represented the majority of the savings claimed this year. To enhance the savings and follow the RTF M&V protocol for VO, phase balancing for the three substations planned in 2013 was completed in February.

In June, AMI (Automated Meter Infrastructure) meters, the first in PSE's service territory, were installed at the end-of-line (EOL) for the three substations to allow for pre and post CVR EOL voltage monitoring. Two of the three substations went live with CVR in 2013 and the verified energy savings was claimed. The third will be completed in 2014 as all work for implementation, measurement & verification could not be completed in 2013. The savings from these two substations were tracked under a single measure, as noted in Table 7a, which indicates the measure types installed in 2013 as a part of this program.

For the generation sites, a concerted effort was made to claim savings in 2013. This effort resulted in nine completed projects from eight different in-state sites. All but two of the projects were lighting upgrades. There continues to be an effort to build relationships and educate PSE's non-Energy Efficiency Staff on reporting requirements necessary to quantify and claim energy savings for PSE's conservation efforts at these sites.

With no Conservation Rider (Schedule 120) funding, the largest contributor to the program's savings, CVR, was reduced in scope from six substations to three and only two were completed in time to claim savings for 2013. While savings at generation sites helped offset some of this reduction, it was the main reason for the program missing its target.

Table 7a: Number of Generation/Distribution Measures Installed by Type[32]

Generation--Transmission & Distribution		
Program Type	**Electric Only**	
292 Generation/ T & D	10	
Total Project Count	**10**	
Measure Type	**Electric Measures**	**Project Count per Measure**
Compressor	1	
Conservation Voltage Regulation (CVR)	1	
HVAC Unitary Equipment	1	
VFD, pumps	1	
Lighting	8	
Total Measure Count	**12**	**10**

It is important to remember that custom projects usually consist of more than a single measure.

[32] Please see the measure table description in the BEM Sector Overview, page 68.

MEASUREMENT & VERIFICATION DISCUSSION

A discussion on Measurement & Verification (M&V) is provided at this point in the report as it is important that readers understand the rigor with which PSE manages its key conservation metrics. Energy Efficiency and its supporting organizations devote staffing, processes, training, and systems with an eye toward consistently improving efficiencies, productivity and transparency, while ensuring the highest degree of savings and financial accuracy. PSE selected the placement of this discussion because it relates directly to the savings programs reviewed in the previous chapters.

In addition to Measurement & Verification functions and activities that are performed by REM and BEM Staff, two other supporting organizations also are responsible for executing elements of these functions. These activities are discussed in the Research & Compliance chapter; Program Evaluation and Verification Team reviews. The remaining departments; Energy Advisors, Energy Efficient Communities, Strategic Planning, Marketing Research, etc., also contribute to Energy Efficiency's M&V efforts.

Accounting, Tracking and Reporting

Energy Efficiency's Measurement and Verification processes, most of which are long-standing elements of conservation programs, are consistent with the requirements outlined in condition (6)(f):

> *"Puget Sound Energy must perform EM&V annually on a four-year schedule of selected programs such that, over the EM&V cycle, all major programs are covered. The EM&V function includes impact, process, market and cost test analyses. The results must verify the level at which claimed energy savings have occurred, evaluate the existing internal review processes, and suggest improvements to the program and ongoing EM&V processes."*

The following discussions will highlight key areas of measurement and verification resources, tools, and processes implemented by Energy Efficiency Staff to ensure the highest level of accuracy and transparency of PSE's conservation expenditures and savings reported.

PSE uses several processes and systems to accurately measure and track not only electric and gas measure savings, but Energy Efficiency expenditures as well. Systems illustrated in Figure 8a, are enterprise-level systems, and proprietary systems, including tracking databases that were developed within the Energy Efficiency department.

Where applicable, many conservation programs track the number of rebates processed, measures installed, grants paid, contracts or MOUs executed, and invoices paid using tools built specifically for those programs.

Measure Savings

A key outcome of the measurement function is the accurate counting of measures and accounting for conservation savings as they are determined by prescriptively setting the savings value, by estimating the savings value using engineering calculations, formally evaluating the actual savings realization rates or, in some instances (primarily associated with custom grants) measuring savings at the customer meter or equipment locations.

Savings Values

Exhibit 5, Supplement 1 of this report lists the savings values for all prescriptive, (RTF Unit Energy Savings [UES] and PSE Deemed) and selected calculated measures by program (most often associated with a Schedule number) and fuel type. 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 Energy Efficiency's *Guidelines for Measure Revisions* and *Guidelines for Measure Creation.*

These processes provide outlines of all required documentation, approvals and archiving necessary to ensure that PSE is compliant with conditions (6)(b) (6)(c) and can demonstrate prudence for all savings claimed.

Residential measures and their savings values are determined by RTF-sponsored evaluations as a part of a program's suite of offerings during a routine Energy Efficiency evaluation,[33] independent impact evaluations, engineering studies, etc. Conservation measures installed as a part of Commercial/Industrial custom grants are unique, in that every grant project is evaluated by a PSE EME, and subsequently verified for confirmation of savings by a senior EME.

Ex-post and Ex-ante savings estimate types are discussed on page 12 of the EM&V Framework.

[33] The EM&V Framework includes a four-year evaluation cycle table, where every Energy Efficiency program will be evaluated.

Savings Reporting

A key component of PSE's EM&V processes is the assurance of savings reporting accuracy. Since 2008, PSE has implemented several processes and guidelines to ensure that the accuracy of its savings reporting, both electric and gas, maintain the highest standards. The most significant of these outlines the methods of vetting, justifying, counting and reporting measure savings, is titled *Guidelines for Ensuring the Accuracy of Electric and Gas Savings Claims*.

This comprehensive document ensures consistency across programs and sectors, outlines rounding rules for savings values and measure counts, applicable reporting periods, and how retired measures are tracked, reported and archived. In this document, Energy Efficiency also outlines the guidelines for tracking savings derived from rebate applications, directly-installed measures and savings from retailers, resellers and dealers.

Energy Efficiency maintains key recording systems, such as the EES Tracking Database and the Summary Tracking Master that are consistently reviewed and double-checked by Program Staff to validate their accuracy.

Savings Adjustments

Although Energy Efficiency's programs maintain robust processes and systems that undergo continuous improvements to ensure accurate savings and financial tracking, there are infrequent instances when an adjustment is necessary. Exhibit 1, Supplement 2 lists and describes each electric and gas savings adjustments, along with its respective adjustment value, and an aggregate total of all adjustments that were performed throughout 2013. The savings adjustment process is included in the *Guidelines for Ensuring the Accuracy of Electric and Gas Savings Claims*.

An example of a necessary savings adjustment may involve a case where a PSE vendor may mistakenly identify some clothes washers from a previous month and add them into the current month's total. Another may be a data entry error, which also occurs infrequently and is corrected as soon as they are found (for example, "a total of 69 refrigerators were entered in the EES Tracking System when there were actually 96").

The Energy Efficiency Compliance team manages a formal and detailed adjustment process, which includes documenting answers to the following five questions (hypothetical simple responses are in parentheses.

Actual responses are typically much more detailed):

1) What happened? ("savings were overstated by 10,000 kWh last month", etc.)
2) How was the need for adjustment discovered? ("During a routine monthly review by the Systems Staff…")
3) Why it happened ("10 manufactured home rebates were counted twice", etc.)?
4) 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.)?
5) 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 Energy Efficiency management for approval. The applicable tracking system is then updated to reflect the accurate savings value and the adjustment is logged and archived for historical records.

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 Energy Efficiency management. 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 8a represents a hypothetical savings adjustment circumstance. In this example, it is assumed that an inconsistency was discovered, and an adjustment was considered necessary in September.

This hypothetical circumstance illustrates several overriding tenets of proper savings accounting; the key principal being that savings are not adjusted in a past month (even if making the adjustment results in a negative value in the current month). 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 Energy Efficiency Tracking Master. The savings claims are adjusted pursuant to Energy Efficiency's *Guidelines for Measure Revisions*.

Table 8a: Hypothetical September Savings Adjustment

	(A) Per-unit kWh value	(B) No. of Units	Total Claimed value (kWh) (A * B)	Comment	
Jan - Aug cumulative claims	162	1,000	162,000	*Six of the eight monthly values have already been entered into the EE Tracking Systems.*	
September Correction					
Adjusted cumulative value	**131**	1,000	**131,000**	*This is the savings value - what should have been claimed*	
Total adjustment required (kWh)			**-31,000**	*This is the amount that was overstated from January through August. This will be incided in Exhibit 1, Supplement 2:2013 Savings Adjustments.*	
September Savings Reporting					
Using correct kWh value	131	100	13,100	*1) In the adjustment month, we first ensure that the correct value is being referenced.*	
Less Jan-Aug corrected values (kWh)			**-31,000**	*2) Add the adjustment amount.*	
Adjusted September claims (kWh)			-17,900	*3) Sometimes, the adjusted monthly total results in a negative value.*	
Result					
Adjusted cumulative YTD-through September savings (kWh)				*Correct Jan-Aug: 162,000 + (-31,000) =*	131,000 kWh
				Correct Sept =	+ 13,100 kWh
				Correct Cummulative =	**144,100 kWh**

Illustrative of a hypothetical UES value.
The remaining months will use the correct per-unit value.

Each savings adjustment, electric and gas, is logged and presented in Exhibit 1, Supplement 2: 2013 Savings Adjustments.

Expenditures

All Program Staff are responsible for ensuring the accuracy of invoices and financial charges to their programs. These can include charges from other PSE departments; marketing department labor charges for Retail Channel collateral development for instance. Program Staff are required to reconcile their program's SAP[34] records on a monthly basis to ensure accuracy.

[34] SAP is discussed in more detail on page 111.

All Energy Efficiency Staff are required to attend accounting training. Staff members who approve invoices are required to attend training and sign a due diligence affirmation, consistent with PSE Corporate Policy.

Expense accounting in SAP is used as the basis for PSE's annual Schedule 120 filing, PSE's funding mechanism for conservation programs. PSE hosts UTC Staff and welcomes CRAG members each April to review Energy Efficiency expenses in preparation for its annual Schedule 120 Commission hearing.

As noted in the measure savings discussion above, the below-referenced process discussions are intended only to provide an overview, rather than a comprehensive process review. The financial accounting applies equally to expenses incurred as a part of executing conservation programs (labor, incentives, employee expense), as well as paying third-party evaluators, vendors, printers, etc.

Expense Tracking

SAP accumulates charges and credits them to Energy Efficiency order numbers.[35] Within each order number, there are cost elements, that are used to log the specific type of account to which the expense is recognized.[36] SAP provides functionality that allows authorized users to "drill down' into expenses; accessing specific invoices, charges from supporting departments, etc.

Expenditure Reporting

Each month, SAP records for all Energy Efficiency order numbers are downloaded and entered into the EES Summary Master Tracking workbook. The EES Tracking and Forecasting Database also archives expense data, using a feed from SAP. The two systems are intentionally separate, to ensure segregation of duties, thus providing an additional point of reconciliation.

[35] The order numbers used by Energy Efficiency programs are listed in the "Sector Views" of the Exhibit 1: 2013 Budgets and Savings workbook. Order numbers are used to account for program costs in SAP.

[36] Cost elements can include, but are not limited to categories such as labor, overhead, outside services, employee expenses, etc.

Financial Adjustments

Similar to measure savings adjustments, expenses that have already been logged into SAP erroneously must be adjusted to reflect the correct accounting.[37] The process used to effect those infrequent adjustments is similar to that discussed in the measure savings adjustment section above. Moving expenses from an incorrect account to the correct account is accomplished by the use of a journal entry. This process is strictly controlled by the Company, and has a rigid segregation of duties requirement.

Energy Efficiency Tracking and Reporting

As briefly referenced in the previous discussions, Energy Efficiency employs a combination of proprietary and enterprise software applications to accumulate, validate, report, and where necessary as discussed above, adjust financial and energy savings figures with a high degree of integrity and accuracy.

SAP (described in the highlight discussion on the following page) is an enterprise system and is used throughout PSE. SAP provides all financial information, including vendor contracts, material orders,[38] staff pay and expense reporting, and overhead allocations. Figure 8a is a graphical representation of high-level Energy Efficiency system relationships.

[37] An example may be where a natural gas rebate was entered into CSY as an electric rebate. In this case, a savings adjustment (reclassify therm savings as kWh savings) and a financial adjustment are required.

[38] Material orders sometimes include lamps used in Energy Efficiency events, carbon monoxide detectors used in weatherization projects, etc.

Explanations of Functions indicated in Figure 8a

SAP (Systems, Applications, and Products in Data Processing) – The PSE SAP system is used mainly for HR, Contracting, inventory control and General Accounting. In 2013, all customer data was also migrated to SAP. Energy Efficiency interacts with the system thru timesheets, contract/invoicing, material orders, and by assigning costs against order numbers.

CIS (Customer Information System—an element of SAP –used for managing customer billing information, meter data (meter readings, ID numbers, structure history, etc.) and tracking outages. 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 rebate; for both Energy Efficiency sectors.

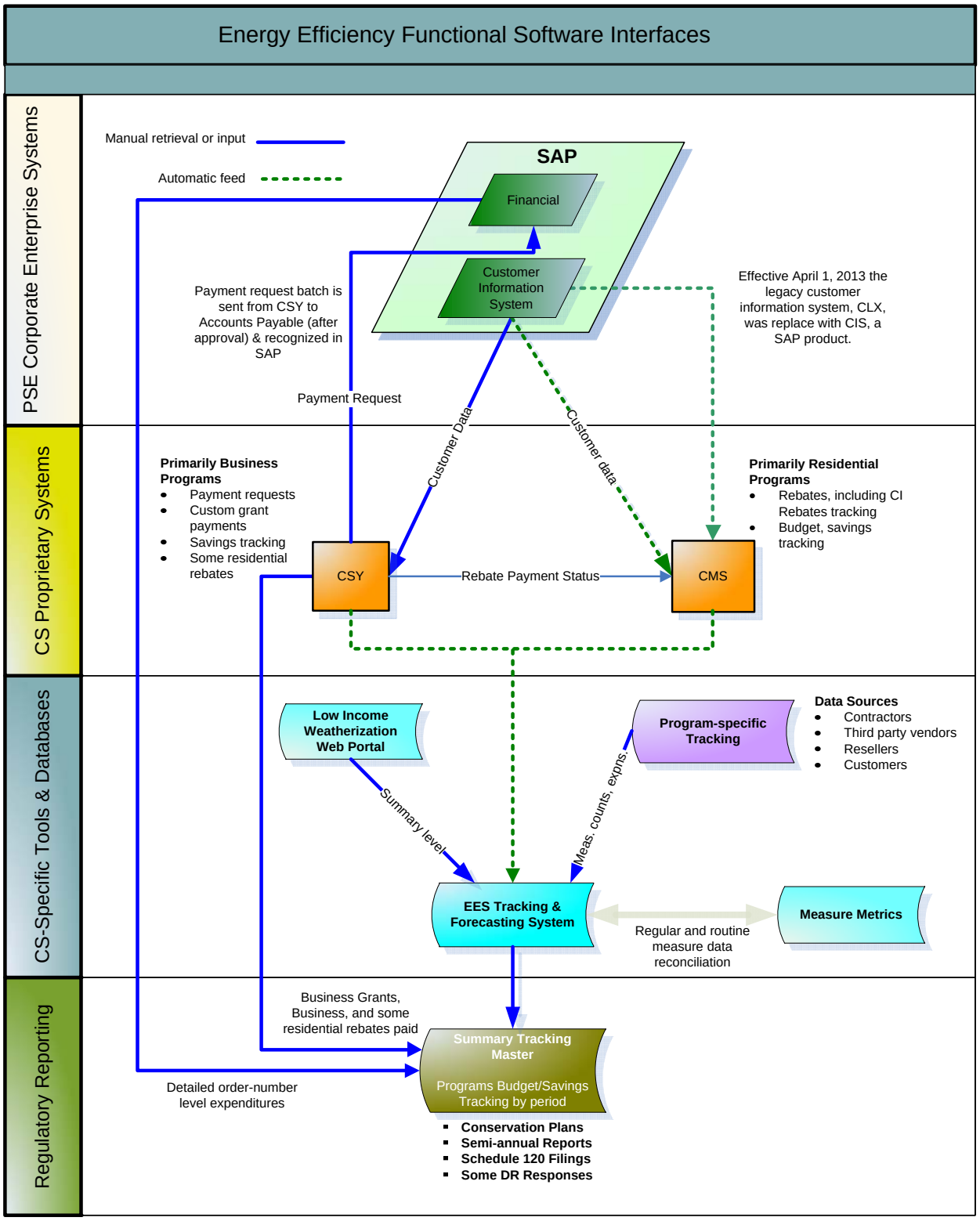
CMS (Customer Management System) – Energy Efficiency Customer Management System is the primary interface for fulfilling and tracking customers' interactions with Energy Efficiency residential programs and services. Modules include: Literature & Rebate Fulfillment, Contractor Referrals, Rebate qualifying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

EES Tracking Database – Interfacing with CMS, SAP and Measure Metrics, the Tracking Database is used for forecasting and to accumulate and report all savings and expenditures for Energy Efficiency.

Measure Metrics – An archival system that references detailed source of savings documentation for every prescriptive and selected calculated conservation measures.

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

Figure 8a: Energy Efficiency Management Tracking and Reporting Interface



Energy Efficiency Systems

This discussion focuses on the major systems used in measuring, verifying and reporting PSE Energy Efficiency savings and expenses. These systems, indicated in Figure 8a on the previous page are primarily proprietary and apply only to Energy Efficiency activities.

The first system is CSY. CSY tracks primarily custom grants; both customer incentives paid and the associated savings. Access to CSY is limited to authorized staff only, and the type of access is also limited according to PSE strict segregation of duties rules.

The EES[39] Tracking and Forecasting System (sometimes referred to as the EES Tracking Database) tracks measures installed and expenses incurred; primarily for Residential programs. It also, though, accumulates BEM savings and financial information, used for internal forecasting and monitoring.

CMS (Customer Management System) is a proprietary system used to inform PSE customers as to the status of a rebate application, energy-efficiency measure installation history (as determined by rebates paid) and other useful, customer-centric information. CMS interfaces with the EES Tracking Database and SAP.

The Measure Metrics archival system serves both a Measurement and Verification role in Energy Efficiency. Its primary purpose is to archive detailed measure information. It also functions as a reference to ensure accurate savings reporting, and provide easy retrieval and reporting of pertinent data. It is important to note that the archival system is not intended to track or report on accumulated savings.

Measure tables included in Exhibit 5, Supplement 1 are generated from the Measure Metrics database. The database archives all prescriptive and some selected calculated rebate measures; those that have deemed savings values, in addition to other factors that make them "calculated". For instance, hours of operation, tonnage (some HVAC systems), business type (retail, school, office), etc.

[39] Prior to 2012, the Energy Efficiency department was named Energy Efficiency Services. In some databases, this name carried throughout system updates, avoiding complicated table/query/report references and re-programming.

Systems Channel

Although represented as a part of Residential Energy Management,[40] the Systems Channel plays an important support role for all of Customer Energy Management. This group provides the department with the right tools, resources, and people to assist in pro-actively managing their respective businesses, allowing Program Staff to make management decisions that optimize their business. Rebate processing, customer fulfillment, program analysis, and savings reporting are some of the critical services this team provides.

The team has staff dedicated to processing many of the residential rebates offered by the Dealer Channel as well as the Single Family New Construction Program, and developing business revisions to enhance the effectiveness of internal processes. Rebates for windows, heat pumps, furnaces, water heaters, gas conversion, and new construction are all processed in-house.

The Systems Channel manages the ongoing improvements to the department's customer management system (CMS), and manages the EES Tracking Database. The group's analysts address research and data requests, savings and expense tracking, systems support, and perform program analysis for all groups within Energy Efficiency. An additional discussion about the Systems Channel is located in the Residential Energy Management Sector Overview Chapter, starting on page 16.

2013 Measurement Accomplishments and Activities

System Channel

The Systems Channel implemented a new process and system for tracking program savings in 2013. It centers on a process where program data is reviewed and aggregated in a single system on a monthly basis to coincide with existing program reporting schedules. Program data is used to directly input program activity into the group's EES Tracking System where program managers use the information to validate against vendor supplied invoices and other data sources. This new process has substantially helped reduce reporting errors (and their associated savings corrections).

[40] Please reference the REM channel overview graphic on page 19.

The new aggregation system allows the team to respond to internal and external data requests efficiently and accurately, and has spawned several new analysis tools to provide managers expanded access and analysis of their program's data.

In 2013 PSE replaced its legacy customer information system (CLX) with a new SAP based system. This transition required changing many of the existing processes for customer look-up and validation used throughout Energy Efficiency. The Systems team worked closely with IT to ensure that Energy Efficiency data needs were met and the transition went smoothly. These efforts minimized the effect of that these large systems changes had on PSE's rebate approval and payment process.

The Rebate Processing team conducted a thorough process review in 2013 to determine areas where efficiencies could be gained and where the customer experience could be enhanced. One of the suggested improvements led to a complete revision of the rebate application form, made available to customers in December of 2013. Additional changes that are planned for implementation include additional automated messaging to customers and contractors, enhancements to internal tracking systems, and the alignment of commercial rebates processes to those in place for residential customers.

Savings Adjustments

Through the continuous improvement efforts of the System Channel Staff and Program Staff, the number of savings adjustments declined from the 2012 total of 34. In 2013, there were 28 savings adjustments in total; 19 electric, 9 gas. This is a positive trend since PSE started tracking savings adjustments, and reflect customer-facing process and rebate application refinements, and continued emphasis on thorough data review prior to reporting. The overall savings reported in Exhibit 1 reflect those adjustments.

Cost-Effectiveness Calculations

Through a series of process improvements and data accumulation methodology, the turnaround time for calculating all portfolio cost-effectiveness benefit-to-cost ratios continues to decline.

Program Verification Activities

Specific descriptions and accomplishments of the Verification Team are discussed in the Research & Compliance chapter. This discussion provides general highlights of additional verification activities that Energy Efficiency Staff regularly perform.

Apart from Verification Team activities, Energy Efficiency verifies electric and gas conservation savings and expenditures using a wide range of processes, tools, systems, and reports.

There are essentially five different elements of verification:

1) Baseline reference: Is it possible to determine and measure the pre-installation energy usage?
2) Customer eligibility: Does the customer receive service from PSE?
3) Measure counts: Are the measures being counted accurately?
4) Savings values: Are the correct kWh or therm savings being applied, as noted in Measure Metrics or other archives?
5) Measure installation: Is it possible to prove that the measure was installed, as claimed?

Data sources include but aren't limited to vendors, contractors, customer rebate and grant applications, telephone surveys, and reseller invoices. Energy Efficiency also verifies that the savings values indicated by evaluation studies, engineering analyses, or the RTF are correctly applied, that the savings values are properly archived, that all tracking systems are accurately counting the number of measures and applying the correct savings values, and, when a correction is required, it is recorded using standard accounting procedures.

This range of verification activities are executed by several groups within Energy Efficiency, including Program Staff, Systems Channel Staff—including rebate analysts, Budget & Administration Staff, third-party reviewers, etc.

Some of the activities are unique to one particular team or function. Some departments, though, perform more than one verification activity throughout the course of managing energy grants.

Measure Verification

Of the general steps outlined in the above discussion, two of the most critical verification elements necessary to ensure savings accuracy are the verification of measure installation and the verification of the savings associated with those measures.

Measure Count Verification

In addition to verifying the savings value of installed measures, and attributes such as "is the applicant a PSE customer?", "Is this the correct fuel type?", "Is the customer receiving service under the applicable Rate and Conservation Schedule?", "Did the customer submit a valid receipt (rather than one that's been used before)?", "Is the equipment eligible?", all measure counts processed through the Systems Channel and by the Business Sector Rebates team are reconciled against CSY and the EES Tracking Database through a rigorous review of monthly reporting data prior to its system archiving.

Measure Savings Verification

A key reference in the assurance of measure savings verification is PSE's reliance on the information archived in the Measure Metrics system, which is discussed in the above Energy Efficiency Systems section. The savings information archived in the Measure Metrics System is routinely compared against the savings data residing in the EES Tracking Database, which is used to accumulate and record year-to-date and aggregate savings. Similarly, those Deemed and Calculated savings values that are archived in Measure Metrics can also be compared to measure savings values in CSY to verify accurate reporting of savings values. When necessary, PSE follows a rigorous savings adjustment process if it is discovered that a savings adjustment is necessary.

Rebate Processing

There is also an element of verification at the time that a rebate application is processed for payment. While a selected sample of these are directed for onsite verification by the Verification Team, all must go through several verification steps prior to payment authorization.

These steps include, but are not limited to:

- Customer eligibility: is the customer a PSE customer? Have they applied for this rebate before?
- Fuel type: If the rebate can only be paid if the space heat is electric only, has the customer indicated that?

- Model number/type; Is the indicated equipment model eligible for the applicable rebate?
- Serial number; Is the indicated equipment serial number eligible for the applicable rebate?
- Others, as applicable to the rebate type.

Table 8b provides a summary of rebates processed by Energy Efficiency System Channel staff. The totals are not inclusive of all rebates, instant point of purchase markdowns, etc. paid within the REM sector. As with program measure counts, the totals are rounded and are intended only to provide a sense of the scale of rebate processing activity within the Systems Channel.

Table 8b: 2013 In-House Residential Rebates Paid

Residential Rebates Processed			
Program	**Count**		**$ Paid**
Energy Star® Manufactured Homes	20	$	6,500
Fuel Conservation Rebates	280	$	405,000
Residential Calculated Rebates[1]	780	$	581,000
Residential New Construction	780	$	132,000
Residential Retrofit Rebates[2]	9,400	$	4,600,000
HomePrint Assessment	4,300	$	385,000
TOTAL	**15,560**	**$**	**6,109,500**

[1] *Windows, unique measure adjustments.*

[2] *Furnaces, heat pumps, Water heaters, etc.*

Business Sector Custom Projects

The full range of verification activities is conducted when an energy management engineer (EME) manages a custom grant; either in the Commercial/Industrial (C/I) Retrofit, C/I New Construction, or Large Power/Self-Directed programs. Similarly, a large number of Small Business Lighting projects are selected for engineer review, and a calculated number of projects are reviewed by the Verification Team for on-site verifications. Exhibit 1, Supplement 1: 2013 Actuals versus Budgets provides a view, by program, of incentives paid for custom grants and Business Rebate measures.

All Business incentives were processed through the CSY system.

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EFFICIENCY PORTFOLIO SUPPORT

Overview

The teams that comprise the Support Activities group play a critical role in Energy Efficiency's success of consistently achieving conservation targets within expected cost parameters. Much of what Residential Energy Management and Business Energy Management (who make up the Customer Energy Management [CEM] department) implements and offers to customers is dependent on the work performed by these teams.

The Portfolio Support Activities teams help ensure that efficiency programs are cost-effective and that a regular schedule of performance review is established for them. They also collaborate with program management to ensure that all customer classes are engaged and represented, incentives are properly set, and that program staff are targeting their efficiency communication effectively. Through market research and planning, the establishment of compelling messaging, easy-to-navigate and intuitive web content, and visible conservation presence within our communities, the teams' contributions cannot be understated. It is also with certain functions within this sector 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 Exhibit 1, the biennial savings targets and budgets table. The activities described in the following pages are set apart from the Residential and Business Sectors because they influence and impact all conservation 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 Energy Efficiency results. Portfolio Support activities expenses are spread over the portfolio for purposes of calculating cost effectiveness. Only Other Electric Programs[41] expenditures are excluded from cost-effectiveness calculations.

[41] Net Metering, Renewable Energy Education and Demand Response pilots.

Functional Group Performance

Table 9a provides a 2013 year-to-date summary of expenditures and energy savings for the Support Activities team.

Table 9a: Support Activities 2013 Expenditures

2013 Expenditures		2013 Actuals		2013 Budget
Schedule	**Programs**	**Total**	**% of Budget**	
Electric	Electric			Electric
Gas	Gas			Gas
	Customer Engagement and Education	**$ 1,092,488**	***71.9%***	**$ 1,519,182**
	Energy Advisors	*$ 799,910*	*73.8%*	*$ 1,083,272*
	Events	*$ 194,324*	*65.3%*	*$ 297,419*
	Brochures	*$ 43,307*	*79.8%*	*$ 54,250*
	Education	*$ 54,947*	*65.2%*	*$ 84,241*
	Web Experience	**$ 958,557**	***151.7%***	**$ 632,000**
	Customer Online Experience	*$ 497,970*		*$ -*
	Automated Benchmarking System	*$ 169,440*		*$ -*
	Market Integration	*$ 291,147*	*79.4%*	*$ 366,686*
	Energy Efficient Communities	$ 264,034	69.3%	$ 380,885
	Trade Ally Support	$ 30,955	49.7%	$ 62,300
	Market Research	$ 238,971	39.3%	$ 608,239
	Total Electric	**$ 2,585,005**	**80.7%**	**$ 3,202,606**
	Customer Engagement and Education	**$ 125,340**	**54.1%**	**$ 231,679**
	Energy Advisors	*$ 61,161*	*37.8%*	*$ 161,692*
	Events	*$ 48,047*		*$ 48,329*
	Brochures	*$ 7,776*	*95.2%*	*$ 8,169*
	Education	*$ 8,355*	*61.9%*	*$ 13,489*
	Web Experience	**$ 198,813**	**209.3%**	**$ 95,000**
	Customer Online Experience	*$ 77,265*		*$ -*
	Automated Benchmarking System	*$ 71,530*		*$ -*
	Market Integration	*$ 50,019*	*91.3%*	*$ 54,792*
	Energy Efficient Communities	$ 71,253	125.2%	$ 56,915
	Trade Ally Support	$ -	0.0%	$ 25,000
	Market Research	$ 31,883	35.1%	$ 90,883
	Total Gas	**$ 427,289**	**85.5%**	**$ 499,477**

Continuous Improvement

Programs within the Portfolio Support 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 energy advisors' direct interaction with customers in regional offices providing energy-efficiency advice, the following program- specific reviews will outline key Energy Efficiency achievements and revisions.

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PORTFOLIO SUPPORT DETAIL DISCUSSIONS

Customer Engagement and Education

This Energy Efficiency Sector performs functions and activities that are customer-facing; via telephone, PSE's web portal, literature, or various forms of media. For a large part, the organizations and the staff initiatives discussed in the following sections are the first exposure that customers have to PSE's energy-efficiency programs.

Energy Advisors

The Energy Advisor Department is a unique, customer solution operation within Energy Efficiency. The energy advisors are often the first contact that a customer has with PSE's Energy Efficiency department, and to customers, the energy advisors *are* PSE.

An energy advisor's focus is to ensure that both residential and business customers have a positive impression of PSE and its energy-efficiency suite of services, and feel that all of their energy-efficiency questions are addressed by a trusted source.

All energy advisors must be knowledgeable about the full scope of energy-efficiency programs and offerings; the expertise of this talented group brings efficiency into PSE customers' homes by guiding them to make energy efficient choices, in addition to providing energy advice such as low-cost and no-cost savings tips. Unlike transaction-based customer care departments, the energy advisors provide expertise and deliver solutions tailor-made for customers' homes.

There are slight differences in how energy advisors process residential- versus business-customer inquiries. Energy advisors field questions and help customers with commercial inquiries specific to Small Business Lighting, the Pre-Rinse Spray Head Program, the Vending Miser Program, and Commercial Rebate Programs. Special Energy Advisor assignments also include billing history requests.

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.

2013 Continuous Improvement

To keep up with customers' growing expectations and the complexity of inquiries, the energy advisors are encouraged to broaden and expand their knowledge base and skills. Several of the energy advisors enrolled in the Everblue® BPI Building Analyst /Energy Auditor Training and became certified energy auditors. The energy advisors learned critical skills for energy auditing, weatherization, insulation, heating and air conditioning, home construction, home inspection, air quality abatement, as well as energy efficient design and engineering.

The Regional energy advisors continue to increase PSE employee awareness of energy efficiency across the company with cross-departmental training and presentations. Currently there are two regional energy advisors located in the Freeland and Bellingham business offices to increase visibility and offer an on-site contact for Energy Efficiency. An energy advisor is also working closely with Business Services to provide PSE's Business and Commercial customers with Energy Efficiency offerings. The energy advisor also provides billing and energy analysis, and cross-departmental training and energy-efficiency related process improvement opportunities with the Business Services Department.

Table 10a presents highlights of key energy advisor metrics.

Table 10a: Key Energy Advisor Metrics

Energy Advisors	
Metric	**Number**
Phone calls	76,500
Events staffed	90
Email responses	5,300

The metrics noted in Table 10a denote:

- Phone calls are both Residential Sector, and a portion of Business Sector activity.
- Events staffed are those home shows, municipal gatherings, etc., where energy advisors are on-hand during all or a portion of the event to share a wide range of Energy Efficiency information directly with PSE customers. Event metrics are presented below.
- Email responses include a wide variety of actions taken by energy advisors in response to emails sent to the general energy advisor email link.

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. The event audience consists of general public, businesses, builder/contractors, multifamily property owners, city leaders, students/teachers. PSE business objectives include; program leads, customer awareness of PSE's programs/services, education, partnership with other utility/s and communities. This provides unique opportunities for Energy Efficiency Staff to interact directly with customers and discuss a variety of products, programs and services that PSE offers. Energy Efficiency 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 Energy Efficiency programs with emphasis on presence, affiliation and relevance. Each event holds a particular value to stakeholders and relates to objectives of PSE conservation programs. The Events team organizes events using an event management data system to improve communication and 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.

2013 Continuous Improvements

The Events Team improved its events structure through identifying key criteria; event types, deliverables and metrics for success, as a part of the events planning process. The Events Team collaborated with a number of departments involved in various events to ensure that PSE is demonstrating consistency, efficiency and effectiveness in its approach. The Team also reviewed event requests and identified ways to maximize efficiency and impact on energy savings.

2013 Accomplishments

In 2013, the Events Team added value to the event deployment functions by coordinating events including over 150 trade shows, community gatherings, and retail functions. The Events team worked in partnership with the Energy Efficiency Community team by supporting community events. This was accomplished by collaborating with the BEM & REM teams to identify Energy Efficiency Critical-Mission Events. The Critical-Mission events were identified by program managers where events met criteria based on achieving energy saving targets- program enrollment/program participation.

The Events Team also managed the coordination of internal "trade shows", which were introduced to PSE employees and PSE customers as a way to elevate awareness of PSE's energy efficiency products and services. These trade shows focus primarily on internal customer-facing departments, including Customer Renewables, IntoLight and Gas First Response. These groups are frequently asked energy-efficiency questions by customers. The events enhance the team effort, promoting a common goal of energy-efficiency education and optimizing the customer relationship. Departments will often request this type of trade show for their own internal event, such as leadership meetings.

Highlights of Residential Events

The Multifamily New Construction (MFNC) program presented at a seminar sponsored by AIA Seattle. The event featured PSE MFNC, PSE Commercial New Construction, Seattle City Light, and the Integrated Design Lab. The presentation focused on teaming up energy conservation incentives offered by regional utilities with project designs. MFNC Staff also presented at the Colorado State University Carbon Footprint Metric Research Project focus group sponsored by the National Science Foundation.

The Multifamily Retrofit program sponsored and exhibited at the annual TRENDS conference in December at the Washington State Convention Center. This is the largest multifamily industry trade show in the Northwest and generated several program participation leads. PSE led a workshop at the conference on "Energy Efficiency Improvements Made Easy" which highlighted the program participation and retrofit process. Additionally, the program organized one "open house" tenant engagement event at a condominium complex where we provided energy education resources, safety information, and program collateral.

The Events Team also arranged *Residential lighting events*, where customers can purchase Energy Star lighting products and high-efficiency showerheads throughout PSE's service territory. Please see the Single-Family Existing discussion for additional details on these events." PSE collaborated with external vendors to participate in residential energy efficiency events.

Highlights of Business Events

The *Powerful Business Energy Conference* was held at the Meydenbauer Center in Bellevue, WA. The bi-annual conference was sponsored by PSE, NEEA, Seattle City Light and Snohomish County PUD and was facilitated by Electric League of the Pacific Northwest.

Conference content provided the business community with the information necessary to find partnerships and solutions that save energy and money, improve comfort and enhance productivity in their facilities.

PSE presented at the *Hotel and Restaurant Energy Expo*. Among other general utility presentations, the attendees heard presentations regarding PSE's new Business web page and energy efficiency products.

Tim Altier, Chief Engineer from The Westin™ in Bellevue,[42] provided an overview of his experience working with PSE's Energy Efficiency organization and on how his company is benefiting from the energy saving projects.

PSE was a Utility Sponsor of the *Washington Industrial Energy Leaders, Second Annual Awards Ceremony,* held on December 10, 2013. Governor Jay Inslee presented awards to companies in Washington that are making exceptional progress towards improved energy efficiency. Major PSE commercial customers were awarded.

Table 10b provides a summary of 2013 events in which PSE presented energy-efficiency information.

Table 10b: Total Events

2013 Energy Efficiency Events	
Type	**Count**
Home Shows	5
Residential Energy Management	36
Business Energy Management	14
Residential Business to Business	9
Efficient Community	95
TOTAL	**159**

[42] Mr. Altier is featured in PSE's 2012 Annual Report on Energy Efficiency Accomplishments, "Building Tune-Up and Tracking", pages 127 and 128.

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 website. Where required by tariff, brochures are included as bill inserts.

PSE completed a redesign of its suite of core-information services collateral to make the content more consumer-friendly. These are brochures that describe energy efficiency concepts, home energy usage, and are not program-specific, etc.

PSE distributed more than 200,000 residential and commercial brochures, guides, coupons and educational materials to customers during 2013. Table 10c provides additional details of energy-efficiency brochures distributed to customers in 2013. The "Number of Brochures Mailed" indicates those that were specifically requested by a customer over the course of 2013. Brochures Distributed at Events includes the events listed in Table 10b, and other community meetings, field visits, or other internal or customer presentations. It is important to note that, while the number of brochures indicated decreased from 2012, the number of customers requesting brochures from PSE.com energy-efficiency websites increased by more than 20 percent from 2012.

Table 10c: Brochure Distribution

Brochures	
Brochures Mailed	**over 78,000**
Brochures Distributed at Events	**more than 135,000**

Energy Education

Description

The Energy Efficiency Energy Education program provides opportunities to broaden knowledge of conservation and renewable energy, and increase participation in efficiency programs. PSE's energy education provides a forum for positive customer and community interaction and involvement that will inform, inspire, and empower with the understanding that individual choices do make a difference.

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.

Energy Education creates a forum to provide information to leaders and educators who can leverage the knowledge to a greater audience and will also tie directly to the company's existing EE opportunities, active resource conservation efforts, and commitment to the community channel. The program focuses on strengthening community actions by developing and preserving local relationships with customers and other education and community-based organizations.

2013 Accomplishments and Activities

Independent Colleges of Washington Efficiency Education is an energy-efficiency initiative that manages research projects related to energy efficiency and conservation. PSE has provided annual energy-efficiency grants to this college association for a number of years. Through an RFP process, provided to Washington college students and administered through ICW, projects are selected for a utility grant consideration.

In 2013, PSE presented an energy-efficiency grant of $10,000 to a student research team from a PSE-territory college. The students presented a report to PSE staff on small-wind electric generators that implement an integrated flow module.[43] The award-winning student research team presented ways to simulate the range of wind conditions needed to operate the system, and the thought-provoking ways that the technology could be utilized in other countries.

[43] Flow modules increase the efficiency of small-wind electric generators by regulating voltages of battery banks charged by wind turbine systems. Constructed power systems noted herein operated by comparing the voltage of battery banks to set comparison voltages through a logic circuit.

Customer Online Experience

The Customer Online Experience and Market Integration initiatives are designed to significantly improve customer awareness of energy efficient home and business solutions and inform customers about energy-efficient products and services they can apply to their properties.

Description

Customer Online Experience consists of coordinated graphic and messaging standards and the initiative to make PSE's energy-efficiency web tools effective in delivering electricity and gas savings. Research has shown that PSE customers are more web-savvy than average, have high expectations of learning about efficient products and services and want access to online energy-management tools. Continuous improvement of these tools is necessary as technology, interactivities, online community building, and customer expectations evolve.

Market Integration

The Market Integration initiative consists only of salary costs of employees and temporary contractors working on energy efficiency-related items. This is to make marketing efforts more transparent. Tasks include the enhancement of the energy efficiency web content and tools and work on energy efficiency promotions.

Investment in Online Tools

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.

Customer Engagement and Impact

Since the new website's launch in 2011, the "Savings & Energy Center" has seen a significant uptick in page traffic and overall engagement with customers. Table 10d provides several highlights of PSE's online metrics.

Table 10d: Energy Efficiency On-Line Metrics

Energy Efficiency Online Services
PSE.com saw more than 3.2 million unique visitors in 2013, an increase of almost 10% over the year prior.
The Savings & Energy Center received more than 1,634,000 page views, an increase of more than 27% over the year prior.
There were more than 335,000 views of the residential Rebates & Offers page, an increase of almost 10% over the same period in 2012. The business Rebates & Incentives page received more than 18,000 page views.
There were more than 27,000 views of the Ask an Energy Advisor inquiry form page, an increase of 12% over the year prior.
There were nearly 38,000 views of the Contractor Referral Service referral page, an increase of 17% over the year prior.
There were more than 32,500 views of the efficient product retailer and dealer locator maps and more than 180,000 views of the energy-efficiency Tips Tools & Ideas resource pages, an increase of 117% over 2012

Figure 10a presents a screen image of PSE's new myRebates web page.

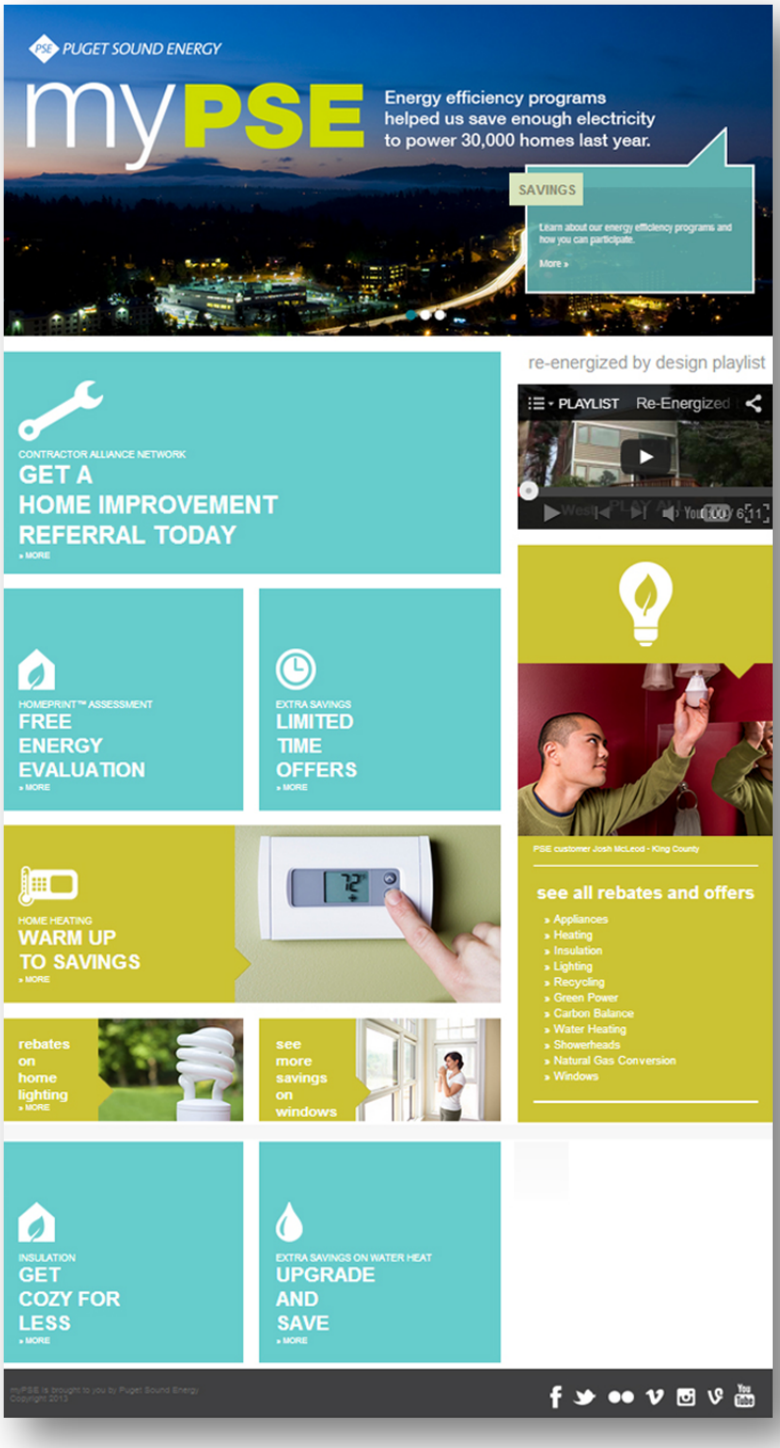
Automated Benchmarking System

In 2013, PSE developed an online tool called MyData to provide whole-building energy usage data. MyData offers building owners a self-service process that can provide their whole-building usage data in a few easy steps. Requestors simply open a MyData account and provide either meter numbers or addresses for their building. PSE creates a summary of their building, the user verifies the accuracy of the information, and PSE fulfills the request for the aggregated data. To protect customers' data, PSE requires signed release forms from each customer when there are less than 5 tenants in the building. This measure prevents data disaggregation by unauthorized parties.

Once the MyData account is set up, PSE provides automated updates of the building usage data on a monthly basis. MyData uses PSE's new Customer Information System (CIS) to enable us to monitor any changes in participating buildings such as tenant or meter changes, and provides more accurate data than ever before.

For those building owners reporting to EPA's Energy Star Portfolio Manager, MyData can also automatically send their usage data directly to Portfolio Manager on a monthly basis.

Figure 10a: PSE's myRebates Web Page



2013 Customer Online Experience Accomplishments and Activities

In 2013, Customer Online Experience financed the remainder of a sophisticated analytics pilot discovery launched in 2012, PSE's online energy-efficiency analysis tools for residential and small business customers, updated web content, and the development framework for new personalized energy management and analysis tools for desktop and mobile.

A very small percentage of funds were allocated to software and image licensing and production to support Energy Efficiency marketing programs. Funds were slightly under spent due to not pursuing the analytics pilot project further in 2013.

The Market Integration anticipated spending level was allocated entirely to Energy Efficiency marketing labor costs.

Online Tools and E-Newsletter Report

Functional activities met expectations in 2013, delivering more than 2.25 million energy-efficiency email communications to more than 245,000 opt-in subscribers.

Energy Efficient Communities

Description

The Energy Efficient Communities (EEC) team is responsible for direct to customer outreach for efficiency programs and other PSE customer offerings. The team is integrated into the energy management program teams as well as the regional customer and community engagement teams to deliver optimal energy opportunities to the customers and communities PSE serves. They do this by matching the local needs with PSE programs and services through partnerships with cities, counties and other community entities to discover locally-appropriate ways of engaging the communities.

The program staff consists of a market manager, five outreach leads, and a program coordinator, who interface with customers and communities throughout the entire PSE service area.

2013 Continuous Improvement

Highlights of organizational and process enhancements made throughout the year include the team collaborating with Program Staff to determine geographic areas where there were fewer contractors supporting energy efficiency programs. The team then helped organize contractor training sessions with the program teams. This helped broaden the reach of our energy-efficiency programs for customers through contractors in more remote areas. Other significant program enhancements included the creation of community "blitzes"[44] and direct-to-customer outreach, described in the following discussion.

2013 Accomplishments and Activities

In 2013, the EEC team conducted outreach to contractors, community groups, government entities, PSE employees and direct to customers on behalf of the various residential and commercial programs. The team also worked with other PSE departments to leverage corporate initiatives to promote energy efficiency programs, as appropriate. This provides increased exposure to programs and improved customer service.

In partnership with the various programs, the EEC team members promoted the ReEnergized by Design initiative, the Lighting Makeover Takeover, the Appliance Replacement program, the Small Business Direct Install program, Small Business Lighting program, HomePrint™, Commercial Grants and Weatherization among others.

Outreach for these programs was accomplished through a combination of:

- Hosting information at the regional offices,
- Presentations to community groups,
- Staffing at community events,
- Direct outreach to community groups to promote the programs,
- Door-to-door to customers' homes and businesses,
- and other methods.

[44] Community Blitzes are also mentioned in the Small Business Direct Install (SBDI) program discussion in the BEM Program Details chapter on page 95.

The Small Business Direct Install program direct-to-customer outreach included small community "blitzes," where the EEC team worked closely with the program service provider to coordinate a focused outreach initiative in communities with small-to-medium commercial districts. These "blitzes" focused on getting maximum possible engagement with the program through various outreach tactics and partnerships with community organizations, like Chambers, Downtown Associations and business leaders to promote the program to their peers.

The HomePrint™ direct-to-customer outreach included a multiple-city effort to create a "buzz" in the community about the program by a combination of sending direct mail, going door-to-door, and by having a presence at a local community coffee shop to allow for customers to engage with PSE employees about the program and sign up to participate. By contacting customers multiple times in various formats, they are more apt to get their questions answered and then sign up to participate.

Part of the EEC team work is to educate PSE employees on the energy efficiency programs available so they are able to better serve customers who could potentially be interested in participating in one of the programs. One way of doing so is through employee-focused "trade shows," where the team engages with PSE employees on the various residential and commercial energy efficiency programs that they can promote to the customers they work with.[45]

Another is through short presentations to various employee groups, where energy efficiency program information is provided and question-and-answer sessions allow for employees to truly understand which programs in which they and the customers they work with can participate.

The team also organized training and created handout materials for the Gas First Response team to talk with customers about PSE's energy efficiency programs when they are working with customers in their homes and businesses.

In August, one of the Efficiency Outreach Managers left the EEC team to work in a different department at PSE, therefore leaving a vacancy until early December when it was filled. Therefore, the labor, overhead and associated employee expenses ended the year being under spending expectations.

[45] Employee "trade shows" are also discussed in the Events overview in the previous discussion on page 127.

The team also conducted more outreach for PSE's energy efficiency gas programs than anticipated, based on opportunities that arose throughout the year.

Trade Ally Support

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 services. Customer and service provider benefits primarily include education and information. These can include end-use training workshops, 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 Trade Ally Support expected spending 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.

Memberships

As discussed in Chapter 8: Measurement & Verification, PSE applies a great deal of rigor to ensure that Conservation Rider ratepayer funds are used appropriately to add value to Energy Efficiency conservation offerings when considering memberships.

Memberships paid from the Trade Ally Support account in 2013 focused mainly on local or regional conservation efforts. During this period, these memberships included:[46]

- Building Owners and Managers Association of Seattle & King County – BOMA,
- Electric League of the Pacific Northwest,
- Northwest Energy Efficiency Council – NEEC.

[46] These are included in Exhibit 1, Supplement 3 of this report, which lists all 2013 expenditures for memberships and sponsorships.

Marketing Research

Description

Marketing Research conducts a variety of research studies and analyses to support program design, marketing strategies, and development of effective program promotion and customer communications for energy efficiency.

The focus of the Marketing Research function is on acquiring 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, focus groups, and analysis of existing databases, Marketing Research provides understanding of customer perceptions, motivations and barriers to adoption of energy-efficient applications and behavior, as well as tracking customer awareness of program offerings and satisfaction with non-program specific education and information services. Marketing Research is also called upon for analysis of localized characteristics, attitudes, behavior, and energy usage trends, necessitating more geographically targeted research. Marketing Research expenses are driven by the customized nature of the work and the large sample sizes required in quantitative studies for results to be valid for multiple market segments and geographic areas.

Marketing Research Staff works closely with program evaluation, PSE's communications department, and program implementation staff to identify research needs that support the effective development, delivery, and evaluation of energy efficiency programs. These research needs are then coordinated and leveraged to result in a slate of research projects that are responsive to internal client needs, eliminate duplication of effort, and are cost-efficient.

PSE's conservation market research activities are divided into two basic components:

1) Baseline Research with Broad Applications: This type of research provides strategic, foundational information about PSE customers that will be a common source of knowledge for the general planning and design of all energy efficiency programs and promotional campaigns.

2) Application-Specific Research: This research is focused on specific programs or promotional initiatives. It includes research that supports specific energy efficiency program promotion and communications campaigns. Other research efforts will be focused on tracking customer satisfaction with information services. Finally, research may be conducted to provide customer input on the design and implementation of specific programs, primarily using qualitative methods such as focus groups.

2013 Accomplishments and Activities

In 2013, PSE Energy Efficiency Marketing Research examined four broad areas: customer satisfaction with PSE energy efficiency products and services, marketing effectiveness of energy efficiency products & services, trade allies' satisfaction with participation in PSE energy efficiency programs, and new product/service development. Studies completed included:

- Ongoing follow-up surveys measuring customer satisfaction after engaging in energy efficiency rebate offers or calling an energy advisor.
- Surveys of customer awareness, effectiveness, and other impressions of two energy efficiency marketing initiatives; the "Re-Energized by Design" contest and the "Rock the Bulb" campaign.
- Survey of trade ally contractors to determine their level of satisfaction with working in partnership with PSE.
- Conducted a focus group of homebuilders to investigate how to increase builder participation in energy efficiency offerings, potential new products, and their outlook on the home building industry.
- Surveyed homeowner interest in a conceptual new end-to-end service to provide comprehensive energy efficiency improvements, from identification of efficiency opportunities through contractor selection and installation of measures.
- Ongoing follow-up surveys measuring customer satisfaction after engaging in energy efficiency rebate offers or calling an energy advisor.

- Examined customer preferences when shopping for showerheads and their interest in low-flow showerheads that have LED lighting. Included qualitative research around customer behavior and preferences around showerheads and what messaging would be most effective.
- Survey among residential customers about their knowledge and preference of lighting types and likelihood to adopt LED lighting.
- Survey of Gas First Responders about their experience sharing EE program information with customers while on service calls.

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EFFICIENCY RESEARCH & COMPLIANCE

Overview

Functions of this group include:

- Conservation Supply Curves,
- Strategic Planning,
- Program Evaluations,
- Verification Team,
- Program Support.

Table 11a provides a 2013 summary of expenditures for the Research & Compliance group.

Table 11a: Research & Compliance 2013 Expenditures

2013 Expenditures		2013 Actuals		2013 Budget
Schedule	**Programs**	**Total**	**% of Budget**	
Electric	Electric			Electric
Gas	Gas			Gas
	Conservation Supply Curves	$ 166,347	65.2%	$ 255,293
	Strategic Planning	$ 118,392	49.9%	$ 237,429
	Program Evaluation	$ 2,212,512	102.5%	$ 2,159,039
	Verification Team	$ 582,914	92.0%	$ 633,401
	Program Support	$ 216,337	47.7%	$ 453,610
	Total Electric	**$ 3,296,502**	88.2%	$ 3,738,772
	Conservation Supply Curves	$ 34,703	91.0%	$ 38,147
	Strategic Planning	$ 15,867	44.7%	$ 35,478
	Program Evaluation	$ 315,182	57.3%	$ 550,292
	Verification Team	$ 105,810	104.4%	$ 101,357
	Program Support	$ 57,934	108.7%	$ 53,276
	Total Gas	**$ 529,496**	68.0%	$ 778,550

As will be discussed in the following chapter, there were significant Evaluation and Verification Team activity and accomplishments in 2013.

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EFFICIENCY RESEARCH & COMPLIANCE DETAIL DISCUSSIONS

Conservation Supply Curves and Strategic Planning

Description

One of the primary responsibilities of the Conservation Supply Curves and Strategic Planning functions are to complete a Conservation Potential Assessment for the company's Integrated Resource Plan (IRP). The Conservation Potential Assessment identifies the amount of energy savings potential that is technically and economically achievable over the 20-year planning horizon of PSE's IRP.

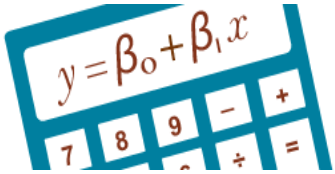
The IRP, which is filed every two years, is the basis for PSE's electric and gas energy resource acquisition strategy, as well as the targets for our energy efficiency programs. The IRP analysis may also be used to derive the ten-year conservation potential and two year electric conservation target required to comply with the Washington Energy Independence Act (often referred to as I-937). The function also provides other program planning support, regulatory filings, and legislative review.

2013 Accomplishments and Activities

PSE completed the conservation supply curve assessment for the 2013 IRP by incorporating the technical achievable potential, developed by the Cadmus Group, into its electric and gas resource portfolio analyses. The results are reported in 2013 IRP chapters 5 and 6 (for electric and gas respectively), with the Cadmus Group's detailed report on conservation potentials in Appendix N of the IRP. The IRP results provided guidance for setting overall 2014-15 conservation savings targets.

The Strategic Planning area continued to provide IRP and program planning support, regulatory filings and legislative review, as well as high level oversight of the evaluation function. Actual expenditures were about half of the amount budgeted in 2013, due to deferral of work to supplement the regional Commercial Building Stock Assessment being conducted by NEEA.

Evaluation



Description

This organization is a key element of PSE's overall Evaluation, Measurement & Verification (EM&V) initiative.

As described in the EM&V Framework, PSE conducts and utilizes Impact, Process, Market and Market Effects evaluations. The EM&V Framework contains extensive discussions on evaluation protocols, processes, and strategies.

PSE's Evaluation Staff is committed to the evaluation of energy savings and the continual improvement of energy efficiency service delivery to customers. PSE program implementation teams work together with the Evaluation Team to inform the development of evaluation scopes of work. The Evaluation Team then develops and maintains a strategic evaluation plan, in accordance with the Framework, ensuring that all programs receive review on a four year cyclic basis.

The Evaluation Team investigates the cost effectiveness of all Energy Efficiency programs. Avoided costs are developed consistent with PSE's most recent Integrated Resource Plan and with the Northwest Power and Conservation Council. Utility Cost and Total Resource Cost benefit-to-cost ratios are the two primary cost-effectiveness tests calculated and are performed at the program level and measure level as appropriate.

The Evaluation Staff is also closely engaged in the Measure Metrics process. Using the Evaluation Report Response (ERR), the Implementation and Evaluation Teams ensure that study results are implemented in the program. When an evaluation study is completed, findings are reviewed along with key recommendations. The Implementation Team then completes their input to the ERR, indicating what actions will be taken as a result of the evaluation findings. This ensures a closed-loop system with Evaluation findings and Implementation reactions and adjustments being documented in the Measure Metrics database.

In addition, the Evaluation Team monitors the Regional Technical Forum (RTF) and the Northwest Research Group (NWRG) for opportunities for collaboration with RTF interests, and among regional utilities with common evaluation needs. A spending reserve is also maintained for prioritized other projects that come up over the course of the year.

Evaluation Studies

Pursuant to condition (6)(f), Exhibit 6, Supplement 1 of this report contains all evaluation studies completed, either by Customer Solutions Evaluation department staff or third-party consultants, in 2013. A portfolio evaluation of the Commercial & Industrial Retrofit Program was completed in February 2013, followed by an evaluation of the Low-Income Weatherization Program, a Home Energy Report Evaluation, a Clothes Washer Savings Review, and an Energy Efficient Communities Program Evaluation. Evaluation Report Responses (ERRs) have been completed for these studies, and incorporated into the final evaluation reports.

Evaluations begun in 2013 for completion in 2014 include Multifamily New Construction and Commercial Rebates and Small Business Lighting.

Additionally, the independent third-party review of PSE's 2012-2013 electric conservation energy savings, performed by SBW Consulting Inc., was also conducted during 2013, pursuant to condition (6)(g). The Biennial Electric Conservation Achievement Review 2012 Interim Report was provided to CRAG members in September 2013.

Evaluation Report Responses (ERRs)

Each evaluation included with this report has its corresponding ERR attached. The ERR describes the actions that will be taken by Program Staff in response to the evaluation.

The ERR process ensures that there is a direct link between evaluation studies, program staff and their savings tracking systems, and the Measure Metrics archival system.

As an evaluation study is completed, it is reviewed with the applicable program staff. The results are discussed as they related to 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 of the study. Actions may include, but aren't limited to, revising the delivery method,[47] adjusting the incentive level or revising the savings value at a prescribed interval.

Cost-Effectiveness

Cost-effectiveness modeling and calculations are also conducted within the Evaluation Team. PSE's program-level detailed view of electric and gas cost-effectiveness results for 2013 is attached to this report as Exhibit 2.

2013 Evaluation Accomplishments and Activities

Evaluation staff completed the following studies for the Residential and Business Sectors:

- Commercial And Industrial New Construction Grant Programs
- CFL and Showerhead Engagement Program
- Manufactured Home Duct Sealing (MHDS) Program
- Home Energy Reports (HER) Program
- PSE Refrigerator Programs
- Resource Conservation Manager Program
- Tankless Water Heater Program

The Multifamily New Construction impact evaluation study, originally scheduled for 2013 is now set for 2014. This revision caused a slight variance in the Evaluation budget expectation-vs-actual amount.

With UTC Staff, Evaluation Staff managed the 2012-2013 Biennial Electricity Conservation Achievement Review. A portion of the BECAR expenditures, originally anticipated for 2013, were rolled over to 2014.

At the regional level, Evaluation staff also actively served on technical and policy committees of the Regional Technical Forum.

[47] 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".

Verification Team

Energy Efficiency's Verification Team serves as another key element of its EM&V efforts. The Verification Team provides PSE program staff with an overarching process to improve the quality of program implementation and validate energy savings with a high degree of rigor by incorporating higher levels of measurement and verification activities.

Composition

The Verification Team consists of four dedicated Energy Efficiency staff members responsible for conducting on-site inspections and related activities to verify installation of Energy Efficiency measures for rebated equipment. This team confirms installed measure quantities, model numbers, site qualifications, equipment settings, and other related installation parameters through review of primary documentation, phone surveys, and onsite inspections. Energy Efficiency measures include those installed and reported by trade allies, PSE contractors, and other third parties.

Objective

The team strives to positively contribute to program quality implementation and validate energy savings by combining detailed and documented statistical methods of analysis and sampling[48] with individualized field inspection protocols and documentation requirements tailored to each specific program.

Additionally, the Verification Team assists with other quality assurance interests in residential and business efficiency programs; including non-random visits and reviewing retail stores' advertisements and inventory in the stores. Non-random visits, typically performed at the request of program managers for case-specific interests, are considered quality assurance reviews, and may also result in documented findings for program management follow-up.

The Verification Team meets with the program teams on a quarterly basis to present reports on summary of verifications, findings, and program updates.

[48] Sampling methods for randomly identifying measures or projects for verification, and a sampling tool to determine sample size for verification of each program was developed in collaboration with DNV KEMA and deployed throughout 2012 and 2013.

2013 Continuous Improvement

In 2013 the Verification Team implemented several system and process enhancements, leading to further efficiencies and team effectiveness. Some key highlights are discussed below.

Data & Systems

- Streamlined the tracking and reporting of commercial and residential jobs process through the verification database.
- Enhanced reporting features and views to the verification database.
- Improved verification field forms to better align with program requirements and assist communication between program and verification teams.
- Automated verification findings notification to program teams through the verification database, providing a streamlined process for follow-up and resolution.

Verification Scope

The Verification Team implemented new verification programs; nine commercial, four appliance, and started a quality control review on retail stores.

The nine commercial programs that were introduced are Cooking Equipment, Lighting, CFL Mark Down, Laundry, Premium HVAC, Variable Speed Drives, Electronically Commutated Motors (ECM), Heat Pump & Air Conditioner, and the PC Power Management Rebate. PSE coordinated trainings with field requirement materials alongside to launch these programs. The four residential appliance programs that were introduced were Clothes Washers, Refrigerators, Refrigerator Replacement, and Refrigerator Decommissioning. This consisted of a third-party vendor conducting random telephone surveys to appliance program participants.

The Team launched the Retail Store Verification program in the second half of 2013 in support of the Residential Retail Channel by visiting the retail stores to do a quality check on the inventory and advertisements of PSE materials displayed in the retail stores throughout the PSE territory. The Verification Team visited over 220 such stores in PSE territory.

Verification Manual

The Verification Manual documents Verification Team procedures and provides transparency across all Verification Team activities. The Verification Team updated the Manual with new procedures and programs.

2013 Accomplishments

2013 program participation forecasts at the beginning of the year indicated that approximately 1,400 random verifications were needed by year-end to meet 90/10 confidence/precision requirements.[49] Verification sampling rates and site visit targets are based on installation forecasts, anticipated compliance, and verification finding rates.

In 2013 the Verification Team achieved the 90/10 verification targets, completing over 1,600 on-site field verifications, including random verifications.

Additional verifications were performed in the way of phone samples, program manager requests (considered QA reviews), and some intermittent oversampling.

The Team also successfully completed the 2012 Biennial Electric Conservation Achievement Review (BECAR) verification review this year. The team earned high praise from SBW Staff, who—during the course of "ride-alongs", indicated that they didn't need to complete the full complement of scheduled appointments as a result of the Team's impeccable reviews. The staff member went on to observe that the Verification team exhibited a great deal of measure knowledge and concern for customer satisfaction.

Highlights of additional accomplishments include:

- Supported EM&V requirements through field verifications of rebated measures.
- Provide a consistent, standardized and documented verification process across Energy Efficiency programs.
- Support quality and workmanship standards throughout PSE's territory and industry.
- Enhanced quality assurance of contractors – enable program teams to provide feedback to our trade allies (for example; recognition for quality work; resolve issues for non-quality work, etc.).
- Customer engagement: obtain feedback from customers on program satisfaction & educate them of other PSE offerings.
- Inform of program realization rates.

Table 12a represents on-site project inspections completed by the Verification Team through 2013. It is important to note that verification by a home, project, business or dwelling can involve more than 100 individual measures.

[49] 90/10 (confidence/precision) relates to the random inspection sample size required of a population to yield 90% confidence, plus or minus 10%, in verification results reflecting the whole population.

Please note that indicated figures are rounded to provide a sense of scale and scope, and are not intended to be used for audit purposes.

Table 12a: Residential Verifications by Program

Program	Unit Definition	Total Number Verified
HP - Air Source	PSE Random	90
HP-Lockout Control	PSE Random	90
HP-Geothermal	PSE Random	10
FAF to HP Conversion	PSE Random	60
WH- Storage, electric	PSE Random	50
Waste Water Heat Recovery	PSE Random	1
Gas Boiler	PSE Random	30
Gas Furnace	PSE Random	60
Gas Fireplace	PSE Random	70
Integrated SpWH	PSE Random	30
Hot Water HP	3rd Party - PSE QA	60
Ductless HP	3rd Party - PSE QA	65
Fuel Conversion	PSE Random	55
Assessment--Phone Verification	3rd Party (phone V)& PSE QA review	140
Windows	PSE Random	100
Single Family Weatherization	3rd Party - PSE QA	10
SFNC - HVAC and Appliances	PSE Random	70
SFNC - Advanced Lighting Package	PSE Random	110
Multi Family New Construction	3rd Party- PSE QA	5
Multi Family Retrofit	3rd Party - (Ecova) PSE QA	5
Low Income Weatherization	3rd Party - (agencies) PSE QA	25
Clothes Washer New	3rd Party Random (Arca) (phone V)	65
Refrigerator New	3rd Party Random(Helgeson) (phone V)	65
Refrigerator Replacement	3rd Party Random (Arca)(phone V)	60
Refrigerator Decommissioning	3rd Party Random (Jaco)(phone V)	65
Retail Stores	PSE QA	230
Small Business Lighting	PSE Random	125
Comml Cooking Equip	PSE Random	50
Comml Laundry	PSE Random	15
Premium HVAC Service	PSE Random	25
Variable Speed Drives	PSE Random	10
Commercial Lighting Rebate	PSE Random	50
Comml CFL Mark Down Program	PSE Random	60
ECM Motors	PSE Random	1
HE Heat Pump & Air Conditioner	PSE Random	40
PC Power Mgmt Rebate	PSE Random	5
Totals		**2,002**

Program Support

Description

This function includes management and support activities necessary for the strategic and tactical execution of the wide variety of both Residential and Business programs.

The Program Support spending forecast includes labor costs by New Program Development Staff responsible for supporting, developing and improving program delivery processes in customer Energy Management.

Typical functions include internal and external review, adoption/rejection, development and integration of: new energy efficiency 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; participation in regional initiatives and organizations including RTF, NWRG and NEEA; assessment, documentation, development and implementation of Measurement & verification and quality assurance/quality control protocols and methodologies; coordinating IRP DSM RFP and related development and bidding activity; and managing program benchmarking studies, best practices, continuous improvement and related support activities.

2013 Accomplishments and Activities

Highlights of Program Support projects, leading to process enhancement and maximization of productivity in 2013 can be categorized according to Regional Initiatives, Portfolio Reporting & Planning, Program Development & Enhancement, Analyses, etc. The following summary isn't a comprehensive listing, nor is it representative of all of the team's value-add activities.

Regional Initiatives

- Energy Codes – SBCC TAG (State Building Code Council Technical Advisory Group) Facilitating and maintaining EE staff awareness of new code adoption and implementation;
- Energy Efficiency Awards – Supported program nominating processes for AEE, AESP, and Energy Star® national awards,

- NEEA Savings – Facilitated plan & forecast, PSE attribution, accounting and reporting;
- OTOC (Oversupply Technical Oversight Committee) – Contributed to assessment of PSE load-shifting potential for regional Oversupply Committee;
- Pacific NW Demand Response Project – PNDRP & NPCC (Northwest Power & Conservation Council) Planning presentations;
- Powerful Business Conference – Facilitated and participated in Electric League Program Committee;
- RTF – Facilitated sub-committee participation, savings assessment & related support functions.

Program-Specific Development

- Small Business Lighting – Supported database automation work;
- Web-enabled thermostats – Supported development of residential RFP.

Portfolio Reporting & Planning

- 2014-15 Biennial Plan – Development roadmap and Open RFI for new/enhanced EE programs/services;
- Benchmarking – Upgraded PSE customer bill data tool meeting new EPA standard;
- Demand Response, Draft IRP content, ancillary services – Participated in resource potential and cost assessment and ongoing assessment of PSE & customer potential;
- Contracts Review – Led Energy Efficiency delivery/services contracts summary review/report.

Analyses

- BECAR (Biennial Electric Conservation Achievement Review) – Participated in review process development, SBW implementation support, and review/comment on draft reports;
- Capacity Value (PSE peak MW reduction impacts from EE Programs) – Provided tracking/reporting support;
- Cost-Effectiveness Calculator – Maintained tool, supported staff access and use;
- Gas Boiler Cost Study – Produced incremental $/efficiency relational database for gas boilers;
- Verification Databases – Supported development, enhancements, training & support.

OTHER ELECTRIC PROGRAMS OVERVIEW

There are four electric Energy Efficiency programs for which conservation savings are not claimed; Net Metering, Energy Renewable Energy Education and two Demand Response programs. These programs are managed by teams comprised of five expert professionals that engage with customers to promote the effectiveness of these programs.

Net Metering and Renewable Energy Education primarily focus on customer-side generation, including solar, wind, anaerobic digesters (biogas, etc.) and small-scale hydro. These systems are smaller than five megawatts (MW).[50] In 2013, the Demand Response programs were essentially on hiatus, as discussed in the following chapter.

Sector Performance

Table 13a provides a 2013 summary of expenditures and energy savings for Other Electric Programs.

Table 13a: Other Electric Program 2013 Expenditures

2013 Expenditures		2013 Actuals		2013 Budget
Electric	Electric			Electric
Gas	Gas			Gas
E150	Net Metering	$ 369,302	80.1%	$ 461,000
E248	Renewable Energy Education	$ 50,876	42.4%	$ 120,000
E271	C/I Load Control	$ 44,598	18.3%	$ 244,000
E249A	Residential Demand Response Pilot	$ 166	1.7%	$ 10,000
	Total Electric	**$ 464,941**	55.7%	$ 835,000

[50] Larger systems fall under the considerations of PSE's Schedule 91, Cogeneration and Small Power Production.

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OTHER ELECTRIC PROGRAM DETAIL DISCUSSIONS

Net Metering

Schedule E150

Description

The Net Metering program provides interconnection services for qualifying customer-generators who employ a variety of renewable generating equipment—such as solar photovoltaic (solar PV), micro-hydro, wind, etc. Schedule 150, Net Metering for Renewable Energy Services, became effective February 11, 1999.

While the schedule applies to customers who operate fuel cells or hydroelectric, solar or wind generators of no more than 100 kW, the reality is that 97 percent of net metering systems are solar PV with a median size of 4.8 kW. Service under this schedule is limited to a total of 22.4 MW of cumulative nameplate generating capacity as of January 1, 2014. Customer generation can be used to offset part or all of the customer-generator's electricity use.

At the time a customer enrolls in the Net Metering program, they are also provided the necessary information to receive annual benefits from the Production Metering, or the Renewable Energy Advantage Program, which is described in Schedule 151.

No direct customer incentives are provided as a part of these programs. As described in the following section, the Conservation Rider only funds administrative expenses, as provided by the indicated requirements.

Energy produced by customer-generator systems directly reduces energy used in the home or business from the grid. When energy generated exceeds home or business electrical loads, the excess energy flowing to PSE is separately metered and credited to the customer at the retail rate for future use.

The Net Metering Program’s year runs May 1 to April 30. Any excess credit each month is rolled forward to the following month. When the new program year ends on April 30, the credit is reset to zero.

Net Metering Expenses

The 2002 Stipulation Agreement, Section H.25 provides the authority to PSE to charge reasonable Net Metering administrative costs to its Conservation Rider:

> "Tariff-rider funds shall only be used on programs and their associated administrative costs that result in energy savings through Energy Efficiency investments or fuel switching. This may include reasonable administration costs for PSE's net metering program."

Further, as part of the 2008 Merger Agreement, Docket No. U-072375, the parties agreed to dedicate resources to market and promote net metering.

2013 Accomplishments and Activities

Table 14a provides the final net metering totals for 2013. These numbers are provided to the Energy Information Agency (EIA) which is part of the federal Department of Energy.

Table 14a: Net Metering 2013 Totals

2013 End-of-Year Total		RESIDENTIAL (a)	COMMERCIAL (b)	INDUSTRIAL (c)	TOTAL (d)
Solar PV	Installed Capacity (MW)	8.171	2.300	0.024	10.495
	Number Customers	1670	182	1	1853
Wind	Installed Capacity (MW)	0.101	0.011	0.000	0.113
	Number of Customers	32	5	0	37
Other	Installed Capacity (MW)	0.098	0.056	0.000	0.154
	Number of Customers	12	4	0	16
Total	Installed Capacity (MW)	8.371	2.367	0.024	10.762
	Number Customers	1,714	191	1	1,906

Production Metering

Schedule 151

Schedule 151 is the venue through which PSE administers the state-authorized production payment to qualifying customer-generators. 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 2012 to June 30 2013, the payments totaled over $1.8 million, which is significantly greater than the previous year's payment total of $1.1 million. It is important to note that the indicated payments were not funded by the Conservation Rider.

Renewable Energy Education

Schedule E248

Description

Renewable Energy Education provides grants for small scale renewable energy demonstration and education projects and to promote the acceptance of local energy development through brochures and displays. The program also provides unbiased subject matter expertise that customers may call on.

2013 Accomplishments and Activities

Schedule E248

Puget Sound Energy's Renewable Energy Education Program ("REEP," formerly the Solar Schools Program) was created to promote solar photovoltaic and small wind demonstration projects at educational facilities throughout PSE's electric service area.

In 2012, PSE closed the REEP grant program to focus on wind energy education, providing opportunities for students to delve into the science, technology, engineering and mathematics (STEM) complexities of wind power. PSE sponsored an event for grades 4 through 12 in Kittitas County in the spring of 2012 and 2013. In both years, approximately 120 students packed the Fluke Interdisciplinary Lab at Central Washington University's Hogue Hall to test their wind turbine designs in a wind tunnel.

Demand Response

Commercial/Industrial Load Control

Schedule E271

Residential Demand Response

Schedule E249A

Description

The Company developed, conducted and evaluated demand response pilot programs for both commercial/industrial and residential customers from 2007 through 2011. The pilots demonstrated that demand response programs, during peak market periods, could acquire demand-side capacity resources cost-effectively in the commercial-industrial sector. Subsequently, the 2011 IRP identified 50 MW of cost-effective capacity resource potential which could be acquired from a commercial-industrial demand response program over the period 2013 through 2015. The following provides a description of the type of demand response program that the Company would consider.

The purpose of this voluntary program would be to acquire short-term, dispatchable kW demand reduction from targeted large Commercial and Industrial (C/I) electric service customers. Program demand reductions can be a cost effective, emission-free resource during periods of peak electrical system demand or a reduction in available generation. Secondarily, the program may test the value-added and effectiveness of dispatchable customer demand reductions during temporary periods of localized transmission and distribution capacity constraint.

This program would be offered to qualifying customers to meet demand response targets identified in the Company's current Integrated Resource Plan. Customers would be targeted for enrollment based on kW load reduction value, time of day and seasonal availability, duration potential, willingness to use automated controls, and, in some cases, geographic location. Customer participation would be voluntary. Demand reduction performance would be incentivized.

Program implementation would utilize an experienced, competitively-selected, third-party demand response services provider (Aggregator). The service provider would execute capacity contracts with qualifying customers, provide detailed site assessments and enablement, interval meter data management and analysis, as well as performance reporting. The program would integrate customer information and initial site assessments with existing Energy Efficiency measures and services offered by PSE.

2013 Accomplishment and Activities

Commercial/Industrial Load Control Pilot

The 2012-2013 IRP Demand Side Resource RFP, for a Demand Response (DR) program targeting Commercial/Industrial (C/I) business customers, yielded competitive bids in expected price ranges. However the bids were found to be non-competitive with IRP supply-side resource bids under review in the first quarter of 2012. As market prices for peaking resources continue to evolve, conventional (system peak) DR resources from mainstream C/I customers will be explored as needs and costs align with market opportunities. As such PSE continues to monitor DR markets and technologies closely, and it is keeping all options open for a future C/I Load Control program.

Due to postponement of this program within the 2012-2013 biennium, the 2013 anticipated spending level for this item is $1.2 million less than shown in the original BCP.

In developing the 2013 IRP, for the 2014-2015 biennium, PSE analyzed five separate DR programs in an optimization model, as follows:

1. Residential Direct Load Control (DLC) Space Heating and Water Heating,
2. Residential DLC Room Heating and Water Heating,
3. Residential Critical Peak Pricing (CPP),
4. Commercial and Industrial CPP, and
5. Curtailment.

A complete discussion of this modeling can be found in Appendix N of the 2013 IRP. The capacity and costs model can be found in Appendix K, starting on page K-64. The optimal measures chosen for each scenario can be found on page K-68.

While potentially cost-effective DR resources are identified in the IRP, a need for additional capacity resources is not projected until 2017. PSE continues to keep all options open for a future C/I Load Control program as market conditions warrant.

Concurrently however, PSE is continuing consideration of an Ancillary Services (energy imbalance and operating reserves)-based remote load control pilot for interested and suitable customer(s).

Such service agreements are conceptually viable with PSE stakeholders, and informal outreach to a small number of potentially suitable customers began in the 4th quarter of 2013.

Residential Demand Response Pilot

There is no new activity to report on the Residential Demand Response (DR) Pilot since its evaluation and closure in 2012. PSE continues to monitor new residential DR technology developments and market trends closely, and looks forward to new program development activity as resource needs and costs align with DR market opportunity.

2013 COMPLIANCE

PSE achieved compliance with all 2013-2013 regulatory deliverables, consisting of over 60 distinctly enumerated requirements.

These include those that are outlined in the 2002 Stipulation Agreement, Docket Nos. UE-011570[51] and UG-011571, all Sections of the 2010 Electric Conservation Settlement Terms, Docket No. UE-100177 that are still in effect, and the subsequent 2012-2013 Commission Order 01 in Docket No. UE-111881. The conditions listed in Order 01 only update the conditions listed in Section K of the 2010 Settlement. Accordingly, Sections A through J and Section L of the 2010 Settlement still apply, along with gas-specific deliverables listed in the 2002 Stipulation Agreement.

PSE rigorously tracks each of these regulatory deliverables and reports on its compliance progress to its Stakeholders regularly. Additional discussions that highlight Energy Efficiency's interactions with our Regulatory Stakeholders can be found in Chapter 16, Stakeholder Relations, beginning on page 166.

This chapter presents an overview of PSE's compliance with conservation-specific requirement deliverables provided in 2013.

RCWs and WACs

In 2013, PSE complied with RCWs and WACs applicable to conservation; RCW 19.285 and WAC 480-109. In compliance with RCW 19.285.070(1), and WAC 480-109-040(1), the Company filed its mid-term Biennial Conservation Report with the Department of Commerce and the UTC on June 1, 2013. The report is available on the PSE website at:

http://pse.com/savingsandenergycenter/About/Pages/default.aspx

PSE also filed its 2014-2015 BCP on November 1, 2013, consistent with RCW 19.285.040(1) and WAC 480-109-010(2).

[51] UE-011570 was vacated in Commission Order 05, Docket No. UE-100177. Exhibit F, the Stipulation Agreement may be cited as a 2002 document, although its origin was the 2001 General Rate Case. PSE may refer to the year of those requirements outlined in the Agreement as either 2001-or 2002.

Commission Orders

This 2013 Energy Efficiency Report of Conservation Accomplishments is consistent with the Commission's Second Supplemental Order, Docket No. UE-970686, and condition (8)(g) of Order 01, Docket No. UE-111881.

By the end of 2013, Energy Efficiency completed all requirements enumerated in Order 01 of Docket No UE-111881. This total includes 17 Sections or conditions that Energy Efficiency considers "standard business practice".

These include conditions that describe the need for line extension policies, or require PSE to continue to honor Commitments 22 and 23 from U-072375,[52] describe the makeup of the Conservation Resource Advisory Group (CRAG), etc. They describe no set deliverable date, or have no specific CRAG role. Energy Efficiency routinely reviews these to ensure that there are no updates or revisions. Where there are none, the conditions are notated as "completed".

In the attached Exhibit 9: Condition Compliance Checklist, these are noted in the "Deliverable Provided Date" column as "ongoing", or "No specific deliverable—ongoing business practice." The status of any deliverable can be quickly referenced via these icons:

Since the implementation of the 2002 Stipulation Agreement,[53] PSE has demonstrated diligence and precision in keeping the CRAG appraised as to Commission order compliance progress.

Exhibit 9

Exhibit 9 of this report provides detailed information on PSE's deliverable compliance for the complete 2012-2013 biennium. The Exhibit is a "living" document; it is updated throughout it's applicable biennium, and lists all deliverables; actionable and otherwise, in the 2013-2013 Order 01, along with those Sections still in effect from the 2010 Electric Settlement Agreement. In keeping with its continuous improvement/TQM principles, PSE incorporated the gas-specific requirements enumerated in the 2002 Stipulation agreement.

[52] This requirement is regarding funding levels for Low Income Weatherization programs.

[53] Exhibit F, Docket No. UG-011571.

This significant enhancement provides Stakeholders a way to view the status of all conservation-specific deliverables in a single document.

Several key deliverables that were satisfied in 2013 are highlighted in Table 15a.

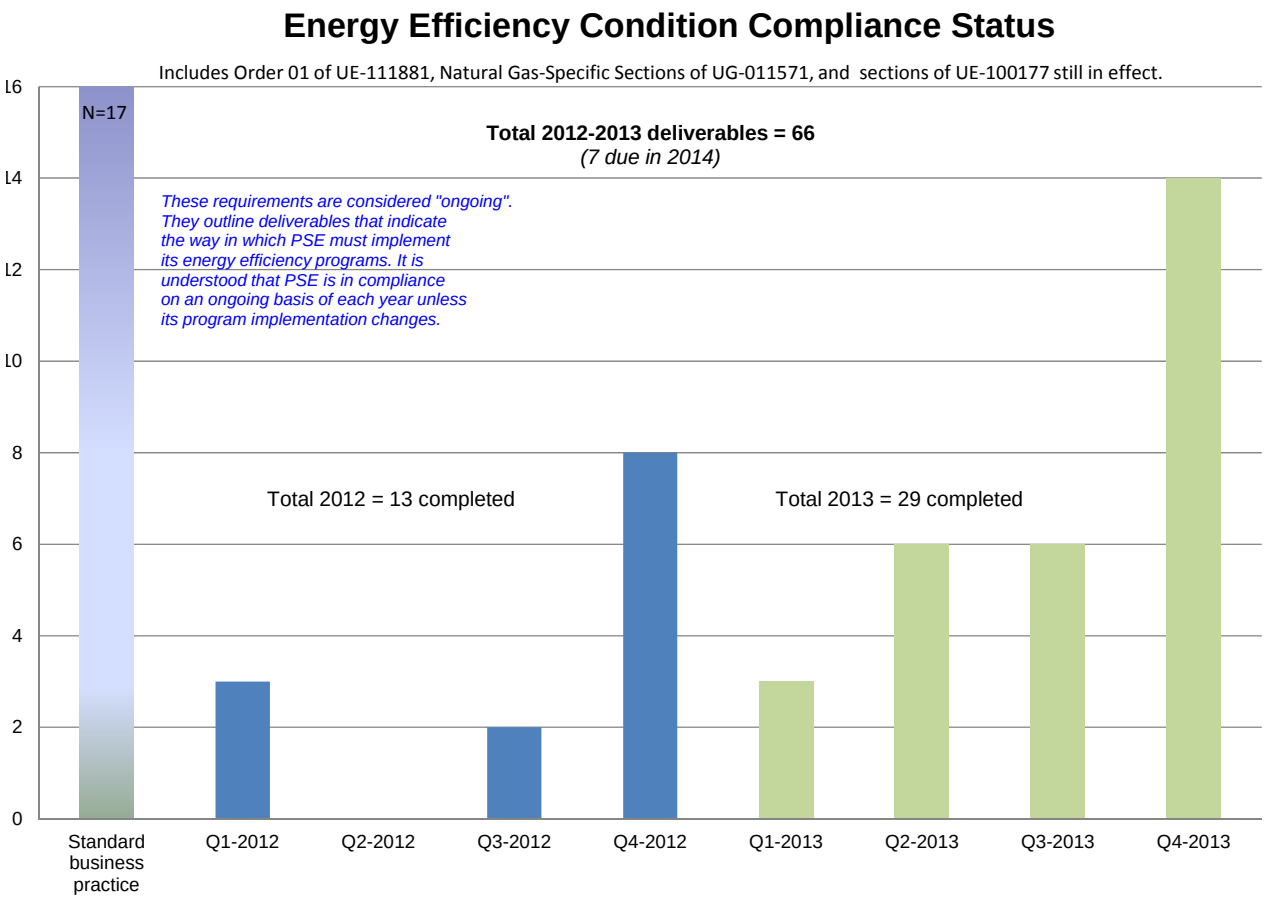
Table 15a: Highlights of Key 2013 Requirement Compliance

Section	Requirement, UG-011571	Status
E.14	Completed—Gas conservation annual savings targets and budgets will be periodically adjusted. […]	✓
Section	**Requirement, UE-100177**	
C(5)	Completed–PSE shall set the ten-year conservation potential and the biennial conservation targets as required by the Energy Independence Act (RCW 19.285) and WAC 480-109 and consistent with this Agreement.	✓
C(6)	Completed–In general each individual energy efficiency program shall be designed to be cost-effective.	✓
E(9)	Completed–To determine which energy efficiency programs and measures are cost-effective, PSE shall rely on a calculation of avoided cost consistent with the Council methodology and with the Energy Independence Act.	✓
F(11)	Completed—Annual and biennial budgets built from the bottom through the development of a mix of programs […]	✓
G(14)	Completed–PSE will continue to honor Commitments 22 and 23 from U-072375 with regard to the future funding levels for low-income energy conservation programs […]	✓
Condition	**Requirement, UE-111881**	
(3)(a)(viii)	Completed–(The Advisory Groups shall address but are not limited to the following issues:) Program achievement results with annual and biennial targets.	✓
(3)(b)	Completed–The CRAG shall meet face-to-face at least semi-annually to hear updates, review program modifications, or consider need for revisions. In addition, the CRAG shall meet at least two additional times per year… […]	✓
(4)(b)	Completed–PSE must provide its proposed budget in a detailed format with a summary page indicating the proposed budget and savings levels for each electric conservation program, […]	✓
(6)(f)	Completed–PSE must spend a reasonable amount of its conservation budget on EM&V, including a reasonable proportion on independent, third-party EM&V. […]	✓
(8)(f)	Completed–A report identifying its ten-year achievable potential and its biennial conservation target (Biennial Conservation Plan), […]	✓
(10)(c)	Completed–Overall conservation cost-effectiveness must be evaluated at the portfolio level. […]	✓
(11)(a)	Completed–Annual filing — PSE's annual Electric Conservation Service Rider filing, required under (8)(d) above, will recover the future year's budgeted expenses and any significant variances between budgeted and actual income and expenditures during the previous period.	✓

Conditions noted as completed exclude those that are classified as "standard business practice" In Exhibit 9: Condition Compliance Checklist.

Figure 15a is another view of completed requirements, and presents—by quarter—the deliverables that were satisfied in 2012 and 2013. The figure indicates that all requirements were fulfilled during the past biennium.

Figure 15a: 2013-2013 Condition Compliance by Quarter



2013 STAKEHOLDER RELATIONS

Puget Sound Energy, along with its primary constituents, the UTC Staff and the Conservation Resource Advisory Group (CRAG) sustained the momentum established in 2010. In keeping with our emphasis on meeting customer expectations, PSE implemented a number of process improvements to increase the clarity of information provided to Staff and the CRAG.

Throughout 2013 PSE reduced redundancies, and optimized the value of each interaction; this included tailoring PSE's required filing documentation to the needs of its constituents. PSE received feedback, both directly and through casual reference, that its efforts were recognized and appreciated. Similarly, PSE recognizes that UTC Staff and the CRAG expended significant effort to understand, become involved with, and help resolve several strategic and policy issues faced in 2013.

Washington Utilities and Transportation Commission

PSE filings presented below are summaries of routine annual filings. Following the date and description of each filing the UTC Docket Number is presented for straightforward reference.

Energy Efficiency-Specific Filings

February 15, 2013: 2012 Annual Report of Conservation Accomplishments UE-111881

On February 15, 2013, PSE filed its annual review of 2012 conservation savings and expenditure results, consistent with the Commission Second Supplemental Order #1 in Docket No. UE-970686 and condition (8)(c). This report represented a significant step and continuous improvement in providing an ever-increasing level of program details and value-add information relative to Energy Efficiency accomplishments and activities for its Stakeholders.

March 1, 2013: Schedule 120, Electric Conservation Service Rider UE-111881

Consistent with condition (8)(d) applied, requiring PSE to file its electric cost recovery Schedule on March 1, with an effective date of May 1.

June 1, 2013: 2012-2013 Mid-Term Biennial Conservation Achievement Report UE-131071

Consistent with RCW 19.285.070, WAC 480-109-040, PSE filed its mid-term BCR with the UTC and Department of Commerce.[54]

August 15, 2013: 2013 Semi-Annual Report of Conservation Accomplishments UE-111881

On August 15, 2013, PSE filed its six-month review of conservation savings and expenditure results through June, consistent with the Commission Second Supplemental Order #1 in Docket No. UE-970686 and condition (8)(e).

November 1, 2013: 2014-2015 Biennial Conservation Plan UE-132043 & UG-123044

PSE filed the 2013 Biennial Conservation Plan (BCP). The plan includes an electric conservation savings target of 55.5 average MegaWatts, with planned electric expenditures of $188.8 million. The 2014-2015 gas savings goal is 6.9 million Therms, with planned gas expenditures of $24.1 million. This filing satisfied condition (8)(f).

Other Filings

In addition to these condition-specific requirements, several other noteworthy filings that had a direct or ancillary effect on Energy Efficiency were also made in 2013.

April & September 2013: Exhibit 4: CS/EE List of Measures UE-111881

These filings represented updates to PSE's suite of measure offerings, consistent with total quality management principles.

[54] It is important to note that condition (8)(i) in Order 01 of Docket No UE-111881 only applies to PSE's 2012-2013 two-year Biennial Conservation Report, not the mid-term report required by the IEA and its rules.

April, 2013: Tariff Revision UG-130614

On April 25, 2013 Puget Sound Energy filed with the Commission a request to change the name of the gas-specific Schedule 120 from a Gas Tracker to Conservation Rider, to match the electric Schedule 120. (The specific funding mechanism, converting the gas tracker to a rider, was revised in a previous Docket.)

November, 2013: Revised Conservation Tariff Schedules UE-132032 & UG-132033

PSE filed with the Commission on November 1, 2013 several Conservation Tariff Schedules, updating expiration dates, clarifying terminology, adding language to eligibility, etc.

November, 2013: Net Metering Services UE-132163

A revision to Schedule 150 was filed to implement the amended interconnection rule, WAC 480-108 and General Order R-571, as well as doubles the maximum allowable net metering capacity on the Company's system.[55]

Tariff Schedule Revisions

As part of its on-going continuous improvement practices, all Conservation Schedules receive routine review and updating. Highlights of Energy Efficiency Schedule revisions include:

Schedule 120

- Adjusted Conservation Rider rates that became effective May 1, 2013.

Schedules 83 and 183

- Added subscription language to the Availability section,
- Added the 2014-2015 anticipated spending figures in Section 10.

[55] Although the majority of Net Metering activity is funding through O&M, the administration of the program is recovered through the Conservation Rider, per Section H.25 of the 2002 Stipulation Agreement; Exhibit F of Docket No. UG-011571. That is why this Docket is mentioned in the Energy Efficiency Annual Report of Energy Conservation Accomplishments.

Schedule 248

- The Renewable Energy Education program was cancelled effective January 2014.

Schedule 253

- PSE updated the name of the program from Resource Conservation *Manager* to Resource Conservation *Management*.

Schedule 292

- Added provisions that allow for funding of Conservation Voltage Regulation (CVR) by the Conservation Rider.[56]

Schedules 207

- PSE revised this Schedule number to align with the program's electric counterpart; E202. Effective January, 2014.

Conservation Resource Advisory Group

PSE acknowledges and is very appreciative for the amount of work and committed engagement demonstrated by the Conservation Resource Advisory Group (CRAG) throughout 2013. Through the collaborative process initiated by PSE, significant milestones were achieved during the past year.

Background

The Conservation Resource Advisory Group (CRAG) was formed in response to a condition of the 2002 General Rate Case Stipulation Agreement. It consists of up to 15 Stakeholders and represents a wide variety of interests, including consumers, industry, and regional concerns. It also includes members of Commission Staff. The CRAG works closely with Energy Efficiency on a variety of conservation initiatives, most notably conservation tariff filings, savings goal setting and long-term conservation strategies.

[56] This tariff revision was suspended by the Commission in their recessed open meeting of December 18, 2013.

CRAG Vision

Throughout 2013, the CRAG consistently demonstrated qualities of the CRAG vision, established in May, 2010. All PSE – CRAG interactions were conducted with the utmost respect for potentially alternative views, all participants were fully engaged, and with customer benefit and continuous improvement uppermost in mind.

2013 Continuous Improvement

Building on efficiencies that PSE implemented in 2010, PSE executed a number of new steps to improve efficiencies for CRAG members including:

- Enhancement of the Energy Efficiency Regulatory Timeline into a more detailed two-year overview.
- Conserved resources and minimized printing and mailing costs by reducing the size of the ACP documentation to CRAG members.
    - Key filing documents are now offered to CRAG members on USB flash drives for their convenience and reduced archive volume.

Highlights of continuous improvement examples, continued:

- Development and publication of an enhanced CRAG compliance calendar. This new calendar incorporates Microsoft® Excel™ formulas to create a customizable calendar program.
- Quarterly updates of the Condition Compliance Checklist (discussed in detail in the Compliance Chapter).
- Publication of the CRAG meeting action item list at each meeting.
- Use of GoToMeeting® to more easily facilitate remote meeting participation.
- Addition of presentation page numbers in meeting summaries to facilitate easier reference.
- A measure summary table that accompanies each Exhibit 4[57] update filing, which indicates the revision impacts, and reasons for the revision.

[57] The Energy Efficiency List of Measures, Incentives & Eligibility.

CRAG Activities

Apart from CRAG meetings and various sub-committee meetings, PSE and the CRAG typically participate in other value-add activities. In addition to providing program background discussions in formal, scheduled CRAG meetings, PSE initiated other ad-hoc gatherings, including:

- September 12 : Energy Efficiency Staff conducted a review of many Exhibit 1 enhancements and navigational tools for three interested CRAG members.
- November: Two meetings with interested CRAG members to finalize the draft 2014-2015 conditions.

Publication Updates

PSE provides the CRAG with several document drafts prior to filings. For instance, tariff Schedule revisions, Program Details (Exhibit 3) and the List of Measures, Incentives & Eligibility (Exhibit 4).

It has been a long-standing practice of providing the CRAG with a mark-up version and clean version of the documents, which enhances the ability to quickly view the applicable modifications. PSE also provides a summary of the changes in the notifying email.

Accompanying the mark-up and clean copies of Exhibit 4, a spreadsheet is provided, which outlines every measure that is updated in that iteration. The measure's former and new savings value, incentive amount, and delivery method is noted, along with a short narrative that substantiates the revision reason. The list is cumulative, with the previous quarter's updates color-coded to avoid confusion.

These documents are always updated on the PSE.com website the business day immediately following the UTC filing.

CRAG Meetings

In 2013, PSE met the requirements of condition (3)(b), by convening five CRAG meetings during the year. PSE places emphasis on ensuring a rigorous meeting record is maintained, where agreements, action items and issue resolutions can be referenced in several related documents.

PSE also provides a very long lead time for meeting schedules to avoid conflicts. Every CRAG meeting includes several standing agenda items, including:

- Activities that have occurred since the previous meeting,
- CRAG meeting action item status,
- Attendees participating via conference call are emailed the meeting materials prior to the meeting call to order.

Each meeting is also followed by publication and distribution of meeting summary notes, which summarize meeting topics, agreements, and resulting action items.

The 2013 meetings focused primarily on 2014-2015 BCP filing readiness. The following discussions provide summary views of the 2013 CRAG Meetings. Detailed meeting summaries are provided to CRAG members within one week of the meeting conclusion.

April 2 meeting summary:

After reviewing the recently-filed 2012 Annual Report of Conservation Accomplishments and the Schedule 120 filing, the group engaged in a two-hour discussion on distribution efficiencies and Conservation Voltage Regulation (CVR). This included a variety of technical elements and a review on how PSE planned to use Conservation Rider funding for strictly-limited instances of phase balancing that results in customer conservation.

There was also a review of High Voltage/Self-Directed project, savings, and accounting status. PSE also provided the assembled an overview of its planned expansion of Home Energy Reports (HER). PSE also reviewed the planning steps that led to the filing of the 2014-2015 Biennial Conservation Plan (BCP), a change in leadership at PSE, and the status of the electric service transition to JPUD in Jefferson County.

<u>Key Outcomes</u>

1) The CRAG Vision, Measures of Success, and Meeting Guidelines and Principles are still relevant and applicable. The attendees agreed that they don't require modification.
2) The 2012-2013 Biennial Electric Conservation Acquisition Review (BECAR) matrix was started.
3) The Schedule 120 audit, performed by Commission Staff and other invited CRAG members was scheduled.

June 6 meeting summary:

PSE provided a status on 2013 year-to-date savings and expenditures, both of which were on-track at that point of the year. An extensive presentation of PSE's Conservation Potential Assessment was also presented, and PSE provided an overview of how the IRP guidance provides a foundation for its two-year conservation target. Non-Energy Benefits (NEBs) and behavior-based savings were also discussed at this meeting.

PSE reviewed the NEEA savings joint proposal with the group, with discussion ensuing about the potential NEEA savings figure, along with the circumstances that may impact the figure that would impact PSE's final two-year conservation target.

After providing a HER expansion status and a status update on the BECAR development, PSE shared the first draft of proposed 2014-2015 conditions. PSE also engaged CRAG members in several substantial enhancements planned for the 2014-2015 BCP formatting.

Key Outcomes

1) PSE volunteered to coordinate the updating of the conditions list for the time being.
2) The CRAG agreed to notify PSE if there was any discomfort in including the HER expansion in the 2014-2015 BCP.
3) PSE provided additional background slides from IRPAG meetings that indicated additional information on the bundles that were considered and demand response considerations.

July 18 meeting summary:

PSE continued to review several substantial BCP revisions, designed to improve ease of use. It was agreed that PSE would conduct an Exhibit 1 overview with invited CRAG members to enhance navigation comfort and skill immediately after the presentation of the draft budgets.

This meeting was the first BCP deliverable; presenting the draft two-year electric conservation target. The meeting built on the IRP highlights provided to the CRAG in June and presented a "top-down" view of how the two-year target will be developed. The discussion also included extensive discussion around how NEEA savings would affect the overall target. The group also discussed several elements around how the decoupling agreement would affect the target.

After some discussion around natural gas cost-effectiveness calculation methodologies, PSE then presented the CRAG with its draft savings goals by program. PSE also provided some summary mid-year performance reviews, and there was some discussion on the 2014-2015 conditions revisions.

Key Outcomes

1) The first BCP deliverable was met.
2) Although the word "draft" is missing from the 2012-2013 condition for BCP deliverables, all CRAG members agreed that it's understood that this deliverable was a draft two-year electric target.
3) Work continued on determining an accurate estimate of 2014-2015 NEEA savings.
4) PSE would indicate the gas cost-effectiveness test attributes that it applied to its gas programs.
5) There was a better understanding of the HER measure life.

August 22 meeting summary:

The key element of this meeting was the second BCP deliverable; draft budgets and program details. PSE added clarity to the development of the two-year electric target and the additional savings elements that will be reported for the 2014-2015 biennium. PSE reviewed the current status of the development of the NEEA savings estimate, and indicated that the way PSE reports HER savings has evolved. After some discussion, the attendees agreed that legacy Home Energy Report savings should be included in the target, while pilot energy reporting programs would be excluded from the penalty target.

PSE then provided the CRAG with detailed budget expectation discussions, by program. PSE provided a summary on navigating the 90-page Exhibit 1 (budgets & savings) and set up a date to provide time for specific, one-on-one questions about the workbook. Additionally, PSE provided an overview of the status of 2014-2015 condition revision development, including PSE suggestions submitted to date. It was agreed at this point that Commission Staff would assume responsibility for remaining condition development.

Key Outcomes

1) Saving printing and mailing costs, PSE will now provide planning documents and reports to requesting CRAG members via flash drive, rather than printed binders.
2) There was general agreement that legacy HER values would be included in the penalty target, while Energy Reporting (ER) pilot savings will be reported outside of the penalty target.

3) The formatting of the various elements (ER, NEEA, decoupling), along with the penalty target was substantially completed.
4) The CRAG agreed that PSE's measure revision process, that establishes an annual re-alignment to RTF values, is sound and should continue.

October 1 meeting summary:

This meeting satisfied the third 2014-2015 deliverable; PSE provided the CRAG with draft tariff schedule revisions. Following a status update on PSE's progress on meeting the biennial saving target, PSE presented its proposed final electric savings target, along with the ancillary elements of electric savings. There was further discussion on the NEEA savings adjustment, with PSE presenting several steps taken to ensure the accuracy of its adjustment to NEEA's original estimate. CRAG members were satisfied with PSE's methodology.

As a part of the tariff revision discussion, PSE led a follow-on discussion on generation plant efficiencies and Conservation Voltage Regulation. A key element of the discussion centered on plants that generate power for PSE, but may be located in other utilities' territory.

The third-party evaluator provided an overview of their interim BECAR, with a key observation being that PSE's Verification Team has a very positive impact on the veracity of PSE's reported savings. PSE provided an update on Verification Team activities and accomplishments to date, with CRAG members affirming their support of this critical function.

The attendees reviewed the current revisions of the 2014-2015 conditions and confirmed that there were only a couple open issues that could be resolved via conference call over the next month, prior to the November 1 filing of the 2014-2015 BCP. Lastly, PSE provided an overview of the proposed Electric Vehicle (EV) charger rebate filing.

<u>Key Outcomes</u>

1) It was agreed that the electric savings targets, as presented, are what should be filed in the 2014-2015 BCP.
2) PSE will proceed with filing a request to use a small amount of Conservation Rider funds for CVR, despite some members' opposition.
3) PSE agreed that it will work with the other IOUs to make NEEA baseline savings methodology more consistent.
4) The 2014-2015 condition revisions only require one or possibly two additional conference calls to finalize the filed draft.

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[58] have the below noted meanings. Definitions or glossaries contained in other Energy Efficiency documents, policies or guidelines referring to specific processes or unique functions shall have the meanings noted in those documents, policies or guidelines.

Definitions

A-line	A bulb with a rounded cover that has the same basic appearance as a standard incandescent bulb. A-line bulbs are a good option if you have a light fixture that doesn't conceal the bulb or a lamp with a shade that attaches directly to the bulb. A-Line bulbs disperse light at a wide angle and are ideal for fixtures used to spread light throughout the room. LED A-line bulbs are a good choice for: • Room area lighting • Reading lamps • Hallways The "A" itself stands for arbitrary.
Calculated Savings	This savings type is different than deemed or UES 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 Energy Efficiency 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.

[58] Some acronyms, such as "ECM" have a different connotation outside the purview of PSE or conservation activities. For instance, beyond Energy Efficiency, "ECM" may mean "Electric Conservation Measure". In context of PSE conservation programs, though, it means "Electronically Commutated Motor".

Definitions, continued

Conditions	Also "2010 Electric conservation Settlement Agreement Terms conditions", "Energy Independence Act conditions" or "Order 01, Docket No. UE-111881 conditions". Specific deliverables and stipulations by which the Company must operate or produce through the course of operating and managing Energy Efficiency programs during a specified biennium. In addition to compliance requirements outlined in Sections A through J and L, of the 2010 Settlement Agreement, 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, and paragraphs 30 through 41 of Order 01. There are also 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.
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 hypothetical deemed value of 23 kWh per year.) This classification applies to both RTF and PSE deemed.
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 PSE's 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; either a PSE Staff member, a PSE contractor or PSE contractor—rather than a PSE customer—into a qualifying structure.
Electric Savings	Savings 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. Savings are counted at the customer meter, not the busbar.
Energy Efficiency	A department of Puget Sound Energy that implements energy conservation programs. Formerly referred to as Energy Efficiency Services or Customer Solutions.
Hydronic	A system of heating using fluid (usually water) as the conductive material to transfer heat to the desired area. This type of system is usually applied in a radiant floor system.

Definitions, continued

IntoLight	A division within PSE that manages all street lighting projects in the PSE territory.
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.[59] 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 condition (6)(c). This term is used in the Savings Type field in Appendix B, List of Measures.
RTF Deemed	Former reference to the RTF's UES (Unit Energy Savings). Relative to PSE savings types (Custom, Calculated, PSE Deemed or RTF Deemed), supported by RTF analyses, in compliance with Settlement Agreement condition (6)(b). This term is used in the Savings Type field in Exhibit 5, Supplements 1 and 2.
System	In this document, System may have the following meanings: 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. 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.

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

Acronyms

The below-listed acronyms are found throughout program discussions in this report. Where possible, PSE has defined these acronyms within the discussion. As a courtesy, PSE also provides them in the below list for easy reference.

ACEEE	American Council for an Energy-Efficient Economy
AEE	Association of Energy Engineers
AESP	Association of Energy Service Professionals
AIA	American Institute of Architects
AMI	Automated Meter Infrastructure
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.
ARRA	American Recovery and Reinvestment Act
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
BOMA	Building Owners and Managers Association
BPA	Bonneville Power Administration
CEE	Consortium for Energy Efficiency
CEEP	Commercial Energy Efficiency Program
CMS	Customer Management System. A PSE proprietary software application that tracks customer activities, inventory and rebate processing.
CRAG	Conservation Resource Advisory Group
CVR	Conservation Voltage Regulation
DSM	Demand-Side Management. Typically used as an acronym for energy conservation.
EC Motor (ECM)	Electronically Commutated Motor
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

Acronyms, continued

HID	High Intensity Discharge (lamp type)
HVAC	Heating, Ventilation and Air Conditioning
IR	InfraRed. A technology typically used in remote-control devices.
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)
LEED	Leadership in Energy and Environmental Design
MWh	Megawatt-hour. 1,000 kWh = 1 MWh
NEEA	Northwest Energy Efficiency Alliance
NEEC	Northwest Energy Efficiency Council
NPCC	Northwest Power and Conservation Council (also, "Council")
NWEEA	
O&M	Operations & Maintenance
PTCS	Performance Tested Comfort Systems
PV	PhotoVoltaic. Primarily applies to solar renewable energy generation systems. PV converts solar energy into Direct Current (DC) electricity.
RCW	Revised Code of Washington
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.
SAP	Systems, Applications, Products in data Products. A very large, enterprise-wide financial, HR, workflow-tracking accounting system.
SPIF	Also "SPIFF" or "SPIV". A slang term associated with sales incentives, sometimes considered a "Sales Performance Incentive Fund"; any of the acronyms refer to a small bonus or award, usually paid to a sales staff, in recognition of achieve a certain sales goal.
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).[60]

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

Acronyms, continued

UC	Utility Cost: The Company's costs of administering programs included, but not limited to, costs associated with incentives, audited, analysis, technical review and funding specific to the Measure or program and evaluation.[61]
VO	Voltage Optimization
WAC	Washington Administrative Code
WAMOA	Washington Association of Maintenance and Operations Administrators
WRUN	Western Regional Utility Network
WSEC	Washington State Energy Code
WUTC	Washington Utilities and Transportation Commission. Also referred to as UTC.

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

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CONCLUSION

This concludes the Energy Efficiency 2013 Annual Report of Energy Conservation Accomplishments.

Please refer to the Report's Exhibits and Supplements for additional Energy Efficiency details:

Exhibits Included in the 2013 Report of Conservation Accomplishments

Exhibit 1: 2013 Conservation Targets and Budgets versus Actual Achievements and Spending
Exhibit 2: Program Cost Effectiveness
Exhibit 9: Condition Compliance Checklist
Exhibit 10: Northwest Energy Efficiency Alliance 2013 report of accomplishments

Supplements

Exhibit 1 *(Table of savings and expenditures)*
- Supplement 1: Expenditures by Cost Element Group
- Supplement 2: 2013 Savings adjustments
- Supplement 3: 2013 Sponsorships and Memberships
- Supplement 4: Portfolio Measure Category Counts

Exhibit 5 *(Prescriptive & selected calculated measures)*
- Supplement 1: PSE Prescriptive and Selected Calculated Measures Offered during 2013
- Supplement 2: 2013 PSE Prescriptive Measure Revisions

Exhibit 6 *(The Evaluation Plan is excluded from this report)*
- Supplement 1: Evaluation studies with their associated Evaluation Report Responses (ERRs) performed in 2013

Energy Efficiency looks forward to providing our 2013-2013 Biennial savings status on June 1, 2013.

Respectfully submitted,

The Men and Women of Energy Efficiency