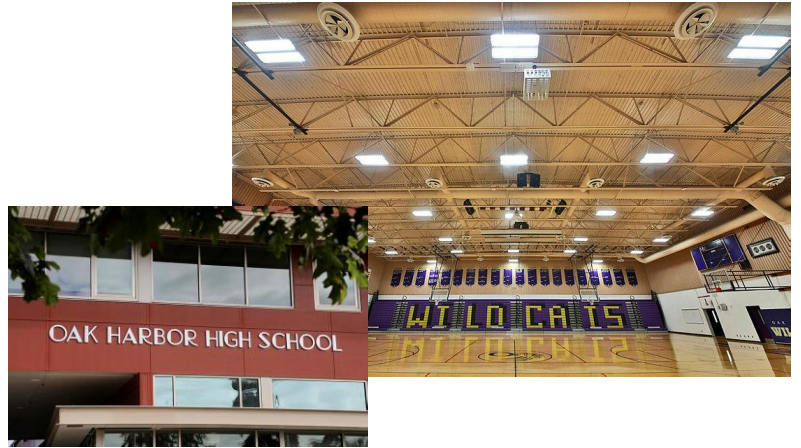


2020 Annual Report Of Energy Conservation Accomplishments

April 9, 2021



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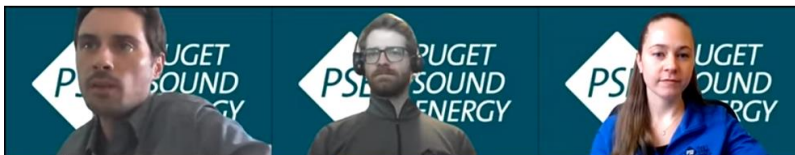




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Supporting Documentation

The Exhibits, Supplements and Appendices to the 2020 Annual Report contain a significant amount of program detail, including savings, financial, measures, UTC filings, and compliance.

Exhibits Included in the 2020 Report of Conservation Accomplishments

Exhibit 1: 2020 Conservation Targets and Budgets versus Actual Savings and Expenditures.

Exhibit 2: Program Cost Effectiveness Results.

Exhibit 5: Prescriptive measures offered in 2020.

Exhibit 9: Requirement Compliance Checklist.

Exhibit 10: NEEA 2020 Report of Activities and Initiatives.

Note: Exhibits not included are either retired or used for planning not reporting.

Supplements

Exhibit 1 (*Table of savings and expenditures*)

Supplement 1: 2020 Actual Expenditures Compared to Anticipated Spends.

Supplement 2: Portfolio Measure Category Counts.

Exhibit 2 (*Cost Effectiveness*)

Supplement 1: Non-Energy Impact Identification, Valuation and Distribution

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

Supplement 1: Evaluation studies with their associated Evaluation Report Responses (ERRs) performed in 2020



I. EXECUTIVE SUMMARY

Puget Sound Energy's (PSE's or The Company's) Energy Efficiency department presents this Report of 2020 Conservation Accomplishments (Annual Report or Report), satisfying WAC 480-109-120(3). This Report details 2020 initiatives, activities, and adaptive management steps employed to be responsive to the expectations of PSE customers and meet savings goals of PSE's energy efficiency programs funded by the Electric and Natural Gas Conservation Riders.

A key consideration that influenced every element of program performance in 2020 was the COVID-19 global pandemic. Readers will note the extensive adaptive management that program staff applied to address a wide variety of pandemic related issues, including building load revisions, construction delays, labor furloughs, product shortfalls, and significant impacts to customers.

A. 2020 Results

Overall, electric conservation fell short of the total savings goal by 25 percent and natural gas programs fell short of the total savings goal by 11 percent. PSE provides detailed savings and expenditure information by program in Exhibit 1: *Savings and Expenditures*.

PSE's reported Total Utility Conservation Achievement include Pilots with Uncertain Savings, Schedule 449 Customer Savings and Northwest Energy Efficiency Alliance (NEEA) savings. PSE excludes these savings from its EIA Penalty Threshold per agreements reached with PSE's Conservation Resource Advisory Group (CRAG) and the Washington Utilities and Transportation Commission (UTC, or Commission).

Table I-1 presents the 2020 Total Utility Conservation Achievement results, and the Total Resource Cost (TRC), and Utility Cost (UC) benefit-to-cost (B/C) ratios for electric and natural gas conservation programs excluding Low Income Weatherization.

Table I-1: Energy Efficiency 2020 Savings and Cost-Effectiveness Results

2020	Savings	Expenditures	Total Resource Cost	Utility Cost
Electric (MWh)	221,001 (25.2aMW)	\$67,290,592	2.38	3.32
Percent	74.7%	68.9%		
Goal/Budget	295,926 (33.8 aMW)	\$97,609,804		
Natural Gas (Therm)	4,102,810	\$15,079,957	1.67	2.30
Percent	88.6%	86.7%		
Goal/Budget	4,628,547	\$17,399,032		

Savings are stated in terms of first-year figures, at the customer meter, without line loss.

1) Key 2020 Results Drivers

Program reviews in Chapters 2 through 5 contain extensive discussions on the key drivers of programs’ savings and expenditure results. Supporting functions, such as the Verification team, Energy Efficient Communities, and Energy Advisors, discussed in Chapters 6 and 7, also provide important contributions to the Portfolio’s savings and adaptive management efforts. PSE provides high-level summaries here.

a. Extraordinary Circumstances: Impacts of COVID-19

The COVID-19 pandemic had a major negative influence on 2020 operations. At the onset of the pandemic, and in response to state restrictions and guidelines, all onsite activities were halted in March. This effectively shut down program operations and staff immediately pivoted to adapting program plans around new safety guidelines and rapidly evolving circumstances. Program staff also refocused efforts on supporting customers through this extraordinary time as usage patterns across all sectors drastically shifted.

In order to resume operations, program staff developed COVID-19 safety protocols and transitioned to no-contact or virtual formats where possible. For programs that could

not operate remotely, like Low Income Weatherization, PSE followed Washington State Department of Commerce guidance, obtained personal protective equipment (PPE), and required training before staff and contractors were allowed to re-enter customer homes and businesses.

Despite adaptive measures to resume program operations, there were continuing impacts of COVID-19 across sectors and the pandemic greatly influenced the overall marketplace. In many building sectors, construction timelines continued to be put on hold or significantly altered throughout the year, compounded by increased safety requirements, labor allocations and supply constrictions on key measures like LED lamps. And in the case of restaurants, theaters, and fitness centers, some businesses closed permanently or re-opened with dramatically reduced capacity. Additionally, Energy use analysis were made especially challenging as businesses that implemented telecommuting guidelines had reduced energy use due to lower occupancy.

Program staff continued adaptively managing programs through the end of 2020. PSE doubled marketing, outreach, and events efforts while also recognizing the need to expand beyond traditional tactics and adapt to virtual options during the pandemic. Activities included: virtual events such as “Ask an Expert” with an Energy Advisor and Business Lighting “Coffee and Conversation” with subject matter experts; increased email and social media marketing; Limited Time Offers (LTOs) and increased measure incentives; as well as contractor and partner outreach. Additionally, field services were adapted to new safety guidelines and sales associate training was adapted for virtual participation.

b. Savings

In the following section, Energy Efficiency highlights key contributors to 2020 electric and natural gas savings in both the Residential Energy Management (REM) and Business Energy Management (BEM) Sectors. Individual and comprehensive program reviews are provided in Chapters 2 and 3.

i. *Contributors to Higher Than Expected Savings*

- The Multifamily New Construction program exceeded its natural gas goal by 39 percent, or more than 17,000 therms.
- The Commercial Industrial Retrofit program exceeded its natural gas goal by 34 percent, or more than 110,000 therms.

- The Commercial Industrial New Construction program exceeded its electric savings goal by 5 percent, or more than 800 MWh.
- The Commercial Midstream program exceeded its natural gas savings goal by 26 percent, or 96,000 therms.

Despite the extraordinary circumstances presented by COVID-19, program staff proactively utilized data analysis, customer surveys, and marketing intelligence to tailor their offerings, adjust incentives—including limited-time-offers—to maximize market demand, and respond to customer service expectations. Energy Efficiency program staff adaptively managed their customer offerings and maximized services in both the Residential and Business Sectors.

The Multifamily New Construction program exceeded natural gas savings primarily due to more projects than anticipated including natural gas water heating. Unexpectedly, condensing gas water heaters were the most common measure in this program.

The C/I New Construction team continued to work in conjunction with the Multifamily New Construction program to improve marketing and outreach in 2020. As a part of continuous improvement efforts, program staff also created the EUI Performance Method to expand program eligibility and drive savings.

The Commercial Midstream program exceeded its natural gas savings goal in large part due to increased customer adoption and participation. In 2020, PSE continued to engage distributors in the region and increased distributor participation by 21 percent. Impressively, the midstream commercial gas water heating participation continued to grow despite the pandemic.

Many existing projects in the C/I Retrofit program were either delayed or postponed in 2020, due to the COVID-19 pandemic. However, the program exceeded its natural gas savings goal due to the completion of several projects, such as a large project with the University of Washington, which were not expected to complete in 2020. Further discussion is also found in Chapter 3: Section A, subsection 2:d.

ii. *Drivers of Lower Than Expected Savings Results*

- The Multifamily Retrofit program fell short of its electric savings goal by 51 percent, or over 7,900 MWh lost.
- The Commercial Industrial Retrofit program only fell short of its electric savings goal by 21 percent but accounted for over 14,500 MWh lost.

- Within the Commercial Rebates program, Small Business Direct Install fell short of its electric savings goal by 51 percent, or over 9,000 MWh lost; and Commercial Foodservice & Laundry fell short of its natural gas goal by 69 percent, accounting for over 172,000 therms lost.

An overwhelming majority of programs experienced lower-than-expected electric and natural gas savings in 2020. Drivers included the direct impact of COVID-19 on program operations due to shutdowns, restrictions and evolving safety guidelines, as well as the indirect impact of COVID-19 on the local, national and global economy and customer capacity or ability to participate. Additionally, implementation delays, marketplace and cost variability, and supply chain issues were all significant factors.

For safety reasons, PSE ended all in-unit activity including in-person and onsite verification for both the Multifamily Retrofit and C/I Retrofit programs. Where possible, operations resumed in no contact or virtual formats and limited time offers helped boost savings for 2020, however a number of projects won't finish until 2021.

Within Commercial Rebates, the Commercial Foodservice program faced many challenges in 2020. The foodservice industry was drastically disrupted by COVID-19 and many commercial foodservice customers were forced to permanently shut their doors, following a national trend of nearly 17 percent of restaurants facing permanent closures in 2020. Additionally, the SBDI program reported no savings for three months of the year while in-person installations halted due to COVID-19. While the adaptations to safely perform work during the pandemic have been effective to complete projects, it is a slow climb to reclaim the lost months, even while maxing out available labor

c. Expenditures

The majority of Energy Efficiency organizations' 2020 electric and natural gas expenditures finished the year under budget, with a few key exceptions. Exhibit 1, Supplement 1: *2020 Actual Expenditures Compared to Anticipated Spends*, provides a program-level comparison of costs incurred by budget category. It is notable that although some budget variances appear proportionately significant—as compared to their budgeted amounts—the overall impact was negligible, as PSE finished 2020 under-budget in both the electric and natural gas portfolios.

Nearly all savings programs that varied from their anticipated expenditures also realized a commensurate increase (or reduction) in their planned savings, resulting

in Direct Benefit to Customer (DBtC) variances. Program staff continuously improved efficiencies and proactively managed expenses, resulting in lower-than-expected ancillary costs, such as the Marketing, Materials, and Miscellaneous categories.

Many costs were below their anticipated spending levels, in part, because of implementation delays and project holds due to COVID-19. For instance, the Low Income Weatherization program was 40 percent below budget, which can be attributed to the temporary shutdown of the program between March and June at the onset of COVID-19 and then further hindered by subsequent production delays later in the year. Similarly, the Smart Thermostats program ended the year 42 percent under budget primarily due to COVID-19 and related economic impacts to residential customers which influenced purchasing behavior.

Other factors also played a role in lower than expected spending. The Single Family New Construction program, for example, ended the year 84 percent below spending budget. Lower spending was majority due to COVID-19 and delays in rater verification due to related safety protocols. There were, however, also challenges incentivizing builders above the Washington State Energy Code (WSEC) due to PSE adding a 10 percent above code measure to its offerings in 2020 in anticipation of the stricter 2018 WSEC requirements.

Very few programs ended the year over budget but two are of note. The Weatherization program ended the year at 24 percent over expected budget, despite lower than expected savings. This variance can be tied to Efficiency Boost (formerly Moderate Income Residences) incentives that were added to the program after annual targets were set. Likewise, the Commercial HVAC program ended the year above budget in natural gas. This variance can be attributed to staff labor costs associated with program management coverage and turnover.

d. Pilots and Pilot-Analogous Initiatives

Throughout the year, Energy Efficiency staff pursued several measures and program innovations that PSE classifies as pilot-analogous or pilots with uncertain savings. At the end of 2020, PSE launched the pilot analogous Efficiency Boost initiative and provided enhanced rebates on approximately 60 measures to moderate income customers. PSE also launched the Efficient Product Guide pilot in late 2020. This online platform is designed to help residential customers compare and choose energy efficiency products and has launched to a test group of approximately

120,000 residential customers.

The Space and Water Heat program welcomed Seattle City Light in an initiative to streamline the residential midstream HVAC and Water Heat offerings. The Weatherization program extended its bundled rebate incentive and increased the number of measures completed by 8-10 percent per retrofit project. The Multifamily Retrofit program created a custom drop-off program to provide residents with custom kits matching the bulb types in each unit, claiming over 1 million kWh in four months. The Commercial/Industrial Retrofit program launched a limited time offer to incentivize projects completed by December 2021 and received over 100 applications.

e. Portfolio Support

The work performed by Energy Efficiency's Program Support teams as well as Marketing, Energy Efficient Communities, Events, and Energy Advisors contributed to conservation savings achievements in 2020. These organizations managed to successfully adapt to changing markets and pivot tactics to virtual formats in response to COVID-19 restrictions and impacts to customer segments.

At the onset of the pandemic, the Verification team acted quickly and within weeks was able to move to a 100 percent virtual operation. While some program targets shifted, approximately the same amount of overall verifications were conducted in 2020 as in 2019.

The Energy Efficient Communities (EEC) team delivered over 40 virtual and in-person presentations, connected with the SBDI team to nearly 50 small businesses for energy assessments, conducted direct promotion with over 300 businesses for a Small Business Makeover Contest, and invited over 100 business to participate in the Elevate Your Efficiency campaign.

In 2020, the Market Integration team launched a robust energy efficiency advertising campaign across its service area, designed to drive broad awareness of the solutions. The campaign highlighted PSE's rebates, incentives, and low-cost/no-cost tips, especially timely information to help customers manage the financial impacts of the COVID-19 pandemic. The team also increased its use of digital content, allowing connections through email, social media and pse.com to replace what were formerly in-person engagements. All marketing campaigns used a data-driven approach, targeting specific customer segments with interest in energy efficiency. One

measurement of customer interest is the click through rate, or links clicked within an email. Click through rates indicate customer intent to take specific actions, like signing up for an event or purchasing a product, and help inform future engagement strategies.

The Events team also pivoted to digital platforms and shifted to virtual events for both residential and business customers. PSE leveraged digital channels to design events with a strong call to action and drive awareness, customer engagement and participation in energy efficiency programs. These efforts resulted in nearly 1 million impressions.

f. Customer Experience

In 2020, customers across all segments faced unprecedented challenges due to COVID-19, whether due to the economic downturn, new restrictions, or the uncertainty posed by a global pandemic. Customer interaction with online tools increased significantly in response to the COVID-19 pandemic. To enhance the customer experience during this time, program staff focused on creating virtual opportunities to stay engaged while providing no/low-cost tips for energy savings and adding recommendations to help reduce the impact of rising bills. Additional efforts to enhance the customer experience and reach more customers include the following.

- The Data and Systems Services team streamlined DSMc, PSE's processing system, for many of the commercial grant programs and improved contractor tracking across these programs.
- Customer Awareness Tools' Unusual Usage Alerts (UUAs) open rates were higher than industry standards: of the more than 536,782 alerts sent, customers opened 50 percent. This matches results from customer surveys showing over 50 percent of customers take some action as a result of UUAs.
- The Energy Efficient Communities team utilized regional business networks to promote a Small Business Makeover Contest and expanded networks to ensure awareness within Black, Indigenous, and People of Color business owners. The team also partnered with 24 non-profit organizations to promote low and moderate income offerings.

- The Energy Advisor team interacted with over 60,000 PSE customers in 2020 and focused on promoting self-service tools and screening low to moderate income customers for eligibility of enhanced rebates through PSE's Efficiency Boost program.
- In partnership with program and outreach staff, the Events team reached out to foodbanks and provided awareness, education and resources for accessing energy savings through PSE's low income and weatherization programs.
- The Commercial Foodservice program launched an email campaign for foodservice and restaurant customers, especially hard hit by COVID-19. The email was sent to 4,500 customers and focused on low/no-cost actions. The click through rate for the campaign exceed the industry benchmark by almost 50 percent.
- PSE also coordinated with Seattle City Light and began engaging Snohomish PUD and Tacoma Power in the Commercial Midstream HVAC and Water Heat program as well as the Manufactured Home New Construction program to align incentives and requirements. Streamlined regional efforts lead to greater distributor satisfaction and engagement.

g. 2020 Adaptation through Continuous Improvement

Energy Efficiency program staff continued their ongoing work to enhance processes and program offerings—especially customer-facing processes—through its consistent application of continuous improvement principles. Continuous improvement activities in 2020 focused on removing barriers to effectiveness, improving productivity, optimizing measure offerings, and creating experiences that enrich customers' lives.

In 2020, program staff made extraordinary efforts to adaptively manage offerings as well as awareness and marketing tactics in the wake of an unprecedented global pandemic. Improvements and adaptations undertaken due to COVID-19 are summarized at the beginning of this chapter. The following list highlights some of the key improvements and adaptations Energy Efficiency implemented in 2020 that were not directly tied to COVID-19. Readers will find details in the chapters that follow.

- The LIW program also demonstrated continuous improvement by partnering with internal and external stakeholders to develop the PSE Low-Income Household Needs Assessment, releasing a final report in October 2020.
- The Single Family Existing team conducted shelf surveys and collaborated with neighboring utilities in a sampling of retail locations to stay informed of the impact to LED market share from House Bill 1444 and consequent program revisions.
- PSE created and launched a new PSE Marketplace in 2020 in response to the loss of instant rebates in the Smart Thermostat program when Nest integrated with the Google

Marketplace. The new PSE Marketplace improves access to instant discounts across several measures and provides customers a no-contact platform.

- The Multifamily New Construction (MFNC) program added several measures in 2020 and increased targeted outreach to townhome developers, a previously untapped market for MFNC.
- Commercial/Industrial Retrofit increased awareness of its commissioning programs by offering trainings to customers and contractors.
- Commercial/Industrial New Construction developed the EUI Performance Method that offers a grant based on whole building performance to any commercial new construction building regardless of building size.
- In alignment with the Business Lighting program, PSE increased Tubular LEDs from \$2 to \$4 to help drive the market to replace linear fluorescent lamps with LEDs. Program staff also added exterior fixture incentives to capture smaller purchases not participating in the custom program.
- PSE extended the useful life of the MyData software, a free online tool that allows customers to receive whole building energy usage data and comply with state regulations. Staff rebuilt the backend and reconfigured the underlying data streams to align with PSE's current IT cloud infrastructure.

2) Compliance

In addition to PSE's reporting and planning compliance filings, Energy Efficiency's key compliance reporting vehicle is Exhibit 9: *Requirement Compliance Checklist*. Each requirement type (according to docket number) is highlighted in a different color in the Exhibit for easier reference.

Exhibit 9 contains the comprehensive list of satisfied requirements.

The below list outlines the primary conservation-related requirement documents¹ that govern Energy Efficiency's operations:

- A. RCW 19.285 and WAC 480-109;

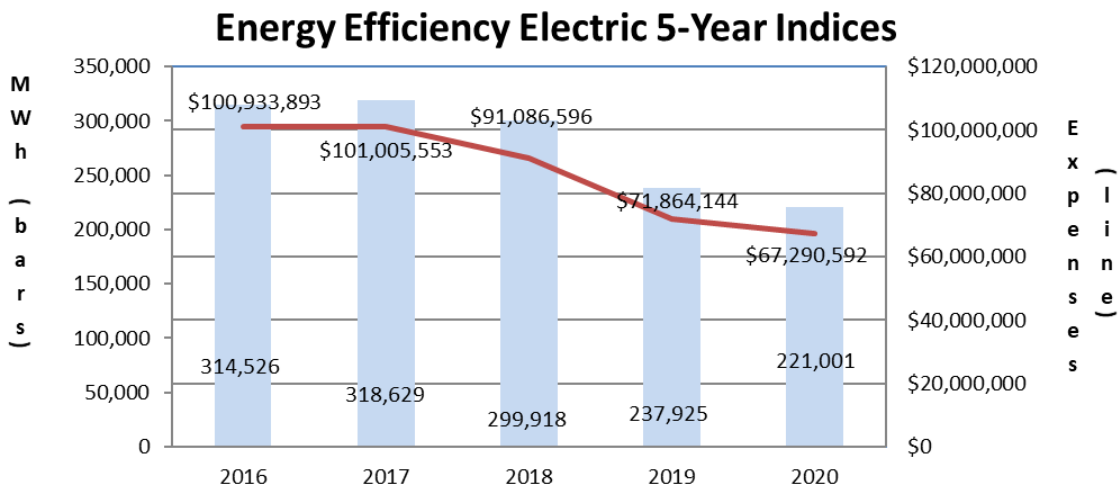
¹ PSE also discusses Settlements and Orders related to the 2008 Merger Agreement, the 2017 General Rate Case Agreement, and the 2018 Macquarie Settlement in specific program reviews.

- B. Exhibit F, the 2002 Stipulation Agreement, Docket UG-011571;²
- C. The 2010 Electric Settlement Agreement, Docket UE-100177; and
- D. Order 01, Attachment A of Dockets UE-190905 and UG-190913.

B. Five-Year Trends

As represented in Figure I-1, the Portfolio’s electric savings have decreased an overall 30 percent from 2016 to 2020. 2020 savings were approximately 7 percent lower than the previous year. PSE reduced the electric expenses an overall 33 percent from 2016 to 2020, with a 2020 reduction of more than 6 percent from the previous year’s expenditures. This trend reflects, but is not limited to: effects of the COVID-19 pandemic; the market saturation of several key measures; annual downward revisions to measure UES values; updated energy codes; administration costs associated with data management and reporting requirements; and evolving customer demand. These and other ancillary contributors drive increased costs to acquire savings. It should be noted that the 2020 line and bar would have been more similar to earlier years had savings and spending goals been achieved.

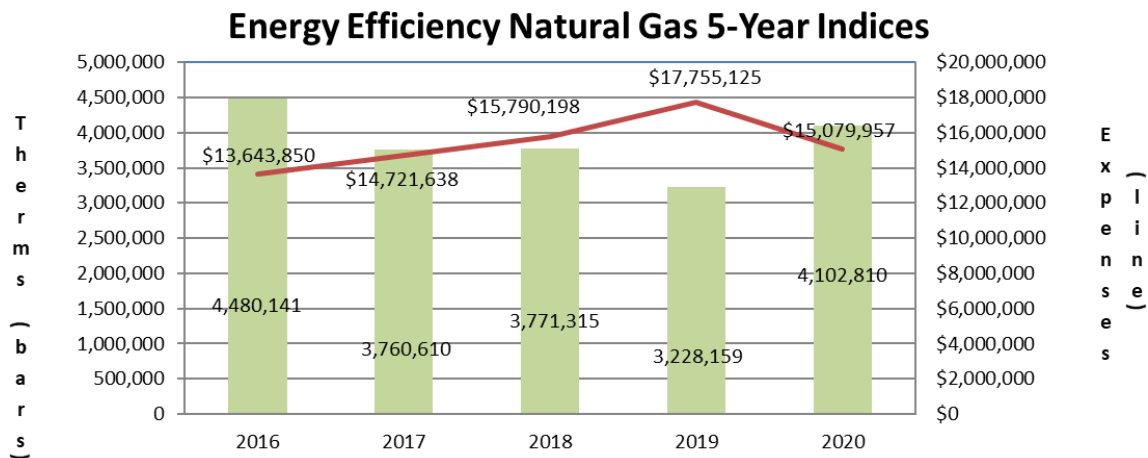
Figure I-1: Energy Efficiency Electric Programs; Five-Year Trends



² The electric Stipulation Agreement, Docket UE-011570, was vacated by Order 05 in Docket UE-100177.

Figure II-2 shows that natural gas savings have decreased less than 9 percent from 2016 to 2020. Natural gas savings in 2020 were higher than the 2019 value: an increase of approximately 27 percent. The natural gas expenses for the 5-year timeframe have increased 10 percent from 2016 to 2020, while natural gas expenses decreased 15 percent from 2019 to 2020.

Figure I-2: Energy Efficiency Natural Gas Programs: Five-Year Trends



These indicators reflect the significant impact of continued low natural gas avoided costs and consolidation over time of higher-cost measures within Energy Efficiency programs: more high-cost measures make up a larger proportion of the overall Portfolio as savings achieved become more costly.



II. RESIDENTIAL PROGRAMS

The following program discussions address specific results and accomplishments in the Residential Energy Management Sector. Process and tactical improvements that enhance the customer's energy efficiency experience and prudently utilize Conservation Rider funding are outlined within the discussion.

The discussion flow aligns with Energy Efficiency's Exhibit 1: *Savings and Budgets*.

A. Low Income Weatherization

Schedules E/G 201

1) Description

The Low Income Weatherization (LIW) program assists low-income residential customers to improve the energy efficiency of single family residences, multifamily structures and manufactured/mobile homes.

In 2020, the goal of Puget Sound Energy's LIW program was to continue to lessen the energy-cost burden of lower-income customers by improving the energy efficiency of their residences and educating these consumers on routine ways to reduce their energy use and costs. Program efforts built on the existing model and continues to focus on partnerships with assistance agencies and leveraged PSE programs such as bill-payment assistance.

Key stakeholders include: 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.

2) Low Income Weatherization Funding

For those projects receiving PSE funding combined with other State and Federal funding, income eligibility is determined in accordance with Department of Commerce Policies and Procedures. Residential Low Income Weatherization provides funding of many cost-effective home weatherization measures for low-income customers receiving gas and/or electric heat from PSE.

Funds are used for single-family, multi-family and mobile home residences. Some measures that do not meet standard cost-effectiveness tests may also be approved. Measures funded may include conservation measures that are cost effective consistent with the Department of Commerce's *Weatherization Manual* and those measures identified through the priority matrix in the *Weatherization Manual*.

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.

a. Sources of Funding

Sources of Low Income Weatherization funding include, but are not limited to, Conservation Rider, Company funds (Shareholder), BPA credits or other federal or state government programs.

Other ad-hoc funding may include, but are not limited to:

i. *Special Contract Funding*

Per stipulations outlined in the special contract between Microsoft and PSE and approved by the Commission, established as a part of the Settlement Agreement in Docket UE-161123, PSE started to accrue dollars that the LIW program will manage for energy efficiency projects, emerging technology, distributed generation, or repairs necessary to install energy-efficiency measures.

ii. *Manufactured Home Replacement Community Energy Efficiency Program (CEEP) Grant*

CEEP issued a total grant for \$350,000 which was leveraged with PSE and Commerce Weatherization program dollars for a total of four manufactured home replacements. The grant funding has been extended through June 2021.

iii. *Macquarie Transfer Settlement Commitment #46*

On March 7, 2019 The Washington Utilities and Transportation Commission issued a Final Order³ approving and adopting without condition a full multiparty settlement, of which commitment #46 states:

“46. Puget Holdings shall make a one-time contribution from shareholder funds in the amount of \$2 million to the Low-Income Weatherization Program to be disbursed over a five-year period.”

b. 2020 Ad-Hoc Funding Disposition

In 2020, the Low Income Weatherization program met all funding requirements.

i. *Special Contract Funding*

PSE accumulated slightly over \$68,000 in 2020 to be applied to future Energy Efficiency projects, bringing the combined total of 2019 and 2020 funds to \$132,000. In 2020, PSE vetted proposals under consideration for the use of the dollars.

ii. *Manufactured Home Replacement Community Energy Efficiency Program (CEEP) Grant*

Of the four scheduled manufactured home replacements, two were completed in 2019 and one more was completed in 2020. Delivery and installation of the fourth home was delayed due to COVID-19, which caused factory delays. The fourth home is expected to be delivered and installed the first half of 2021.

iii. *Macquarie Transfer Settlement Commitment #46*

PSE and agency stakeholders agreed to distribute approximately \$400,000 in

³ Docket U-180680.

Macquarie funds across agency contracts in 2020. By the end of December 2020 the program had spent just over \$92,000, much less than originally planned, due to program and production delays related to COVID-19. Although 2019 did not yield firm plans for the required spending, PSE continued consultations with stakeholder in 2020.

3) 2020 Program Review

The 2020 LIW program electric savings met 63 percent of the target and natural gas savings finished the year at 88 percent of the target. Both electric and natural gas savings were below target largely due to COVID-19 delays and production impacts. The LIW program served 909 housing units. Of those, 16 percent were single family, 73 percent were multi-family, and 11 percent were manufactured home residences. Additionally, PSE met reporting requirements as mandated by Section 12 of the Clean Energy Transformation Act (CETA), to which the LIW program contributed.

4) Adaptive Management

Program staff adaptively managed LIW over the course of 2020 in response to COVID-19 related program delays and production impacts. In response to the pandemic, partnering agencies developed COVID-19 safety protocols (per Washington State Department of Commerce guidance), obtained personal protective equipment (PPE), and required training before staff and contractors were allowed to re-enter customer homes. PSE developed a COVID-19 service invoicing process that allowed agencies to charge shareholder dollars for staff training and other non-project expenses during the initial shutdown and subsequent ramp up through the second half of 2020.

The LIW program also demonstrated continuous improvement by partnering with internal and external stakeholders to develop the PSE Low-Income Household Needs Assessment, releasing a final report in October 2020. The report was issued in response to commitment #44 of the March 7, 2019 Washington Utilities and Transportation Commission Final Order⁴ approving and adopting without condition a full multiparty settlement:

⁴ Docket U-180680.



44. PSE shall contribute financial and staff resources to assist in conducting a low-income needs assessment study which study is intended to provide better understanding of the needs related to energy affordability of low-income households in PSE's service territory, including data related to energy efficiency/weatherization needs and opportunities.

5) Pilot-Like Initiatives

Manufactured Home Replacement Pilot (MHRP)

Of the four scheduled manufactured home replacements, two were completed in 2019 and one was completed in 2020, with the final one scheduled for completion in 2021.

6) Hard to Reach and/or Proportionately Underserved Segments

By design, the LIW program is completely focused on a Hard-To-Reach segment of PSE customers: those that meet a specific income criteria. The program also reached other Hard-To-Reach Segments, including Rural, Manufactured Home, Multi-family, and Renters. For example, the program served over 660 multifamily units and nearly 100 manufactured home units in 2020.

Additionally, the PSE Low-Income Household Needs Assessment provided insights and data to help PSE better understand Hard to Reach customers who meet income eligibility standards and other priority criteria. In 2020, PSE committed to a Phase 2 study scheduled for release in 2021. The study will be a qualitative analysis with community stakeholder interviews and surveys targeted to the highest-need and most underserved census blocks identified in Phase 1.

7) Key Variance Drivers

In 2020, the LIW electric and natural gas program savings both finished the year under target. The primary driver for both electric and gas variances, as well as the less-than-projected spending of the Macquarie Transfer Settlement dollars, was the temporary shutdown of the program due to COVID-19 and subsequent production delays later in the year.

8) Measure Summary

Table II-1 provides a high-level summary of LIW measures installed in 2020. The figures represent unique dwelling units (homes, apartments, manufactured homes, etc.), and don't always correlate to the total number of measures installed. For instance, for each "LED Lamp" category indicated, there could be substantially more than one LED lamp installed. Indicated values also include measures approved through the agencies' application of the SIR test in certain instances.

Table II-1: Low Income Weatherization Measure Highlights

Low Income Weatherization Measure Counts				
Measure Type	Measure	Electric	Dual	Natural Gas
Barrier	Vapor Barrier	30	1	2
Combined	Integrated Space and Water Heat	2		50
Insulation	Door: weather strip, sweep	30		
	Attic Insulation	185,600	35,600	20,200
	Duct Insulation	220		2,000
	Floor Insulation	85,100	1,600	13,500
	Pipe Insulation	40	7	8
	Wall Insulation	43,700	3,400	24,700
	Lighting	LED Lamp	720	
Refrigerator	Refrigerator Replacement	20	5	
Sealing	Air Sealing	260		
	Duct Sealing	20	1	20
	Shell Sealing	47,100	340	17,800
Space Heat	Programmable Thermostat	1	50	20
	Furnace Replacement	9		30
	Ductless Heat Pump	300	20	
	HVAC Boiler		6	
	Combined		7	
Ventilation	Mechanical Ventilation	60	8	10
	Whole House Ventilation	90	5	
Water	Heat Pump Water Heater	1		
	Tankless Water Heater		10	20
	Water Heater			1
	Water Heater Insulation	1		
	Water Heater Replacement	1	2	
	Residential Use Aerator	4		
	Single Pane to Double Pane	980		120
	Triple Pane	3,400		
Mobile Homes	Mobile Home Replacement	2		

B. Single Family Existing

Schedules E/G 214

1) Description

Single Family Existing programs implement cost effective, targeted, residential energy savings using a menu of prescriptive and calculated efficiency measure incentives, including rebates for single family existing structures. Existing single family structures are defined as residential dwellings which include: structures with four or less units that are attached by a contiguous roofline; 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, manufacturers, retailers, developers, and trade allies. They also provide administrative efficiencies for PSE in meeting energy efficiency goals.

Note: Multifamily campuses which 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 offered to eligible natural gas and/or electric PSE Single Family Existing customers include a variety of end-use classifications, not limited to:

- Light-Emitting Diode (LED) lighting including indoor and outdoor fixtures, T8 fixtures, T8 retrofit bulbs, and string lights.
- Appliances—including Energy Star® clothes washers and dryers, heat pump dryers, and others through PSE’s partnership with NEEA.
- Retail, online, leave-behind, and engagement LEDs and water-savings products.
- Refrigerator and Freezer Decommissioning – both secondary and primary units manufactured in 1992 or earlier.
- Home Performance activities that may include home energy assessments, audits, and all-inclusive home retrofit services.
- Weatherization, including windows, insulation, air sealing, whole house ventilation and duct sealing, with targeted measures for manufactured home and moderate income customers.
- Space heating including integrated space and water heating systems, high

efficiency furnaces, high efficiency boilers, heat pumps, and system controls, such as web-enabled thermostats.

- Water heating, including heat pump water heaters, natural gas tankless and storage water heaters, and efficient showerheads.

Program staff regularly review incentive amounts and savings values and base them 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, market conditions, or changes in Federal appliance efficiency standards or State codes.

2) Customer Engagements

In 2020 the Single Family Existing programs collaborated to develop and execute unique customer engagement campaigns focused on driving customer awareness of and participation in PSE's single-family residential energy efficiency programs. The following discussions highlight some of the key 2020 customer awareness initiatives.

a. Retail Store Awareness and Field Services

In 2020, Puget Sound Energy successfully implemented retail field services in 308 locations. From awareness of campaigns to the daily maintenance of signage, the field services team provided a connection between PSE, the rebate programs, and customers. The suite of products serviced by the field team in retail locations included lighting, appliances, smart thermostats, and heat pump water heaters.

i. Field Visits

The field team filed 1,601 field reports for retail store visits in 2020. Due to the COVID-19 pandemic, the field team was required to transition many in-person visits to a virtual format, largely via phone, email, or Zoom. Of these 1,601 field reports, 1,287 of them occurred in-person, while 336 of occurred via virtual calls/emails. These two numbers are slightly higher than the 1,601 total due to some field reports containing both an in-person visit and a virtual follow-up.

ii. Trainings

The field team conducted 566 trainings in 2020, totaling 679 staff members trained. These numbers represent both in-person trainings as well as virtual trainings

conducted over Zoom.

iii. Events

The field team hosted four pop-up events in January and February of 2020 before COVID-19 and corresponding stay-at-home order deemed further events impossible.

3) Program Reviews

The following discussions provide 2020 recaps for the individual programs that comprise the Single Family Existing suite of offerings.

a. Retail Lighting

PSE offers incentives to purchase energy efficient lighting measures through instant rebates and limited time offers. PSE continues to educate customers and sales associates on the variety of LEDs available in the market as well as the benefits of selecting an LED bulb over an incandescent or halogen bulb. PSE deploys in-store signage designed for this purpose.

i. 2020 Program Accomplishments

PSE established several new partnerships with manufacturers for participation in the 2020 Residential Retail Lighting program. New Claymation marketing images were created to feature the 2020 eligible measures for use in various marketing tactics. Eligible lighting products were also included in the new online PSE Marketplace.

ii. Adaptive Management

Washington State House Bill 1444 (HB 1444) was effective January 1, 2020. This new law impacted the Retail Lighting program by requiring retailers to sell only high-efficient lighting products in several major categories. To align with this law and PSE's Memorandum of Understanding cycle, PSE ended rebates on impacted LED bulb products on February 1, 2020. Program management worked diligently with manufacturer and retail partners to encourage participation in the revised 2020 Retail Lighting program. PSE conducted shelf surveys in a sampling of retail locations within the service territory to stay informed of the impact to LED market share from HB 1444 and consequent program revisions. PSE collaborated with neighboring utilities who also deployed shelf surveys in order to gain a greater perspective of the local lighting

market. Additionally, field services for the Retail Lighting program were adapted to COVID-19 state guidelines. In-store events were suspended and sales associate training was adapted for virtual participation.

iii. *Key Variance Drivers*

The Retail Lighting program completed 2020 under savings target and under budget, primarily due to the reduced rebate program offerings and the impact of COVID-19 on customer retail behavior and purchasing. As the Retail Lighting program adjusted to HB 1444, some manufacturer and retail partners chose to decline program participation in the absence of bulb rebates. In total, six measures were impacted by HB 1444 and the related rebates ended after February 1, 2020. Additionally, program marketing was suspended in the first half of 2020 while the impacts of COVID-19 on customer retail behavior were assessed. Furthermore, updated reduced measure savings values were implemented in 2020 which were not available in 2019 when setting the 2020 targets. This resulted in measures recording fewer energy savings than planned.

iv. *Pilot-Like Initiatives*

There are no pilot-like initiatives to report for the Retail Lighting program in 2020.

v. *Hard-to-Reach and/or Underserved Communities*

The Retail Lighting program makes instant discounts on lighting available in a wide variety of stores that serve all customer groups and geographies within the PSE service area. Geographic coverage of retailers can be viewed at www.pse.com/retailers-map. It is worth noting that the PSE Marketplace, an online shopping platform, was launched at the end of 2020 and expands access to all residential customers with internet access.

b. Space and Water Heating

The Space and Water Heating programs deliver incentives and drive installations of heating and water heating systems, including but not limited to: natural gas furnaces and boilers, heat pumps, hydronic systems, and domestic water heaters.

i. *2020 Program Accomplishments*

In April 2020, PSE launched its midstream electric HVAC and electric heat pump water

heat (HPWH) program. By June, sales of qualifying HVAC units surpassed expectations and remained steady for the remainder of 2020. Midstream HPWH participation was slower than anticipated but steady from May through the end of year.

In September 2020, PSE also launched a retail HPWH effort in coordination with other regional utilities, participating manufacturers and retail stores such as Lowe's and Home Depot. The program provides customers with an instant rebate for qualifying HPWH purchases at the point of sale.

Despite launching both programs during the pandemic when distributors and retailers were navigating COVID-19 restrictions, PSE was able to enroll and train 33 HVAC and 38 HPWH distributor branches, and engage over 30 retailers to promote and upsell high efficiency equipment.

ii. *Adaptive Management*

When launching new programs and initiatives, there are always learning opportunities and adjustments to improve customer satisfaction, increase access to rebates, and streamline program operations. In the first months of the midstream and retail space and water heat efforts, PSE adapted point of purchase and marketing materials to appropriately represent the rebates to distributors, contractors, and customers.

Similar to its Commercial Midstream program, PSE continues to monitor and improve the cross-over interaction with whole building programs that PSE also operates.

iii. *Pilot-Like Initiatives*

Program staff worked to coordinate efforts with other local utilities and in April welcomed Seattle City Light in joining the residential midstream HVAC and water heat program. PSE also engaged Snohomish PUD and Tacoma Power to further streamline distributor participation and increase energy savings.

iv. *Hard-to-Reach and/or Proportionately Underserved Segments*

As an extension of 2019 efforts, PSE continued to offer increased water and space heating rebates for manufactured home customers in 2020. In addition, PSE launched its Efficiency Boost initiative, which provides increased incentives to moderate income customers in the Single Family Existing category. In coordination with other programs, PSE also funded and organized trainings and workshops for space and water heating

Trade Allies and other stakeholders to better address the low and moderate income customer segments. One workshop brought contractors, PSE's Energy Advisors and Weatherization Assistance partners together to improve data sharing, messaging, and operations to better serve low-to-moderate income customers.

Midstream programs can have a higher impact on underserved communities as they affecting stocking and all sales going into a region. Program staff continue to engage all distributors so all areas of PSE's service territory have access to discounted high efficiency equipment.

v. Key Variance Drivers

With the exception of natural gas water heating, PSE's Space and Water Heating programs underperformed in 2020 compared to electric and natural gas savings and spending targets. There are multiple interrelated factors involved in the savings variance, although COVID-19 is the most common element.

- Contractor referrals, issued through PSE's Trade Ally Network, were suspended for several months in the initial stages of the pandemic, which cut off a key intake channel for the programs.
- The loss of the Home Energy Assessment program, a key intake channel for the Space and Water Heat programs, also contributed to decreased participation.
- Trade Allies also initially reported lower customer interest in the initial months of the pandemic, and many faced COVID-19 related restrictions.
- Midstream and retail efforts were similarly delayed due to COVID-19 in 2020.

c. Home Energy Assessments

Home Energy Assessments provided customers with a no-cost in-home service performed by PSE-qualified Home Energy Assessment Specialists. The program was intended to increase the awareness of customers regarding their home's energy consumption and identify cost-effective ways to use less energy. Participants received a detailed Home Energy Assessment report which provided guidance on cost-effective upgrades and associated PSE rebates available. Additionally, eligible customers benefited from instant energy savings from the direct installation or distribution of leave-behind high-efficiency products to include, but not limited to: light bulbs, showerheads, and faucet aerators.

After "pausing the program in March 2020 at the onset of the pandemic, PSE officially ended the Home Energy Assessment program in July 2020 due to ongoing restrictions

related to COVID-19 and reductions in energy savings. For customer and staff safety, PSE could no longer provide in-home services safely and cost-effectively.

i. 2020 Program Accomplishments

Prior to ending, the HEA program served 3,367 residential customer in 2020, providing an average of eight products per customer, 373 kWh in savings per residential electric customer, and 21 therms in savings per residential natural gas customer. Overall customer satisfaction for the program was steady at 8.5 points out of 10.

ii. Adaptive Management

Prior to ending the HEA program, PSE explored multiple avenues for pausing or continuing the program. PSE started a wait-list for customers who were unable to receive an HEA and routinely communicated with key internal and external partners about the status of the program. As the pandemic developed, PSE explored virtual options for delivering residential home assessments with the HEA vendor as well as modified in-home assessments with adopted COVID-19 safety practices. Unfortunately, neither option proved cost-effective. The program could not generate adequate savings from post-assessment participation without direct installation of measures. Additionally, the operational costs of modified in-home assessments during COVID-19 was too high to remain cost-effective. PSE continues to offer residential customers an existing web-based assessment on pse.com which generates relevant energy saving tips.

Once it was clear that the HEA program would be completely suspended, PSE worked to unwind the program. PSE Energy Advisors contacted all waitlisted customers and helped identify energy savings opportunities in lieu of an in-home assessment. PSE also provided contractor referrals through the Trade Ally Program to customers who were interested in deeper retrofit opportunities. PSE updated pse.com and other customer materials to communicate the decision and direct customers to further resources such as the existing online self-assessment. PSE also contacted internal and external partners to apprise them of the situation and understand the impacts.

iii. Hard-to-Reach and/or Proportionately Underserved Customers

Originally, PSE intended to provide customer intake to Low Income Weatherization and Efficiency Boost programs. After the HEA program ended, intake responsibilities were shifted to PSE Energy Advisors, who continue to provide screening and

recommendations to this hard-to-reach segment.

iv. *Key Variance Drivers*

Savings and spending targets were not met for the HEA program. All in-home assessment activities were halted in March 2020 due to COVID-19. After incurring ongoing program maintenance expenses, program cost-effectiveness suffered significantly. While PSE is no longer incurring expenses related to the Home Energy Assessment program, the program only achieved roughly 27 percent of its electric savings target in 2020.

d. **Home Appliances**

In 2020, this program offered incentives on a variety of residential appliances for customers. These include:

- Refrigerator & Freezer Decommissioning;
- ENERGY STAR Front Loading Clothes Washers;
- Heat Pump Dryers; and
- ENERGY STAR Dryers.

i. *2020 Program Accomplishments*

Despite the challenges COVID-19 restrictions presented in 2020, PSE was able to recruit and partner with manufacturer Samsung Electronics to promote energy efficient appliances to customers. PSE hosted two online sweepstakes to successfully increase customer awareness of and drive interest in ENERGY STAR or higher rated energy efficient laundry equipment.

PSE also partnered with the non-profit Food Lifeline, leveraging the Appliance Decommissioning program to raise money to address hunger in the community while promoting the environmental responsibility of recycling old refrigerators and freezers.

ii. *2020 Adaptive Management*

PSE temporarily paused the Appliance Recycling program from March to June 2020. PSE switched to a contact-free curbside model in July 2020 in order to maintain safety during the pandemic while continuing to offer the Appliance Decommissioning program. Customers placed the appliance outside the home, leaving paperwork inside the appliance. Customers either left the appliance plugged in with their own extension

cord or the program administrator drivers supplied one from their own truck. The new contactless service procedures allowed PSE to safely restart and continue offering recycling services in 2020.

Additionally, the Samsung Energy Efficient appliances promotion was originally scheduled to launch in May 2020. However, the promotion was moved to August due to fluctuations in state COVID-19 restrictions. The date change enabled PSE to promote the offer during a time when customers would hopefully feel more comfortable and safe either entering stores or letting appliance retailer deliver to their homes. PSE also extended the promotion for two weeks to promote ENERGY STAR Day, as well as accommodate appliances stocking shortages related to COVID-19.

iii. *Key Variance Drivers*

The PSE Home Appliance program completed 2020 under savings target and under budget, primarily due COVID-19 and temporary program shutdowns. Program marketing tactics were also suspended in the first half of 2020 as the impacts of COVID-19 on customer retail behavior were assessed. Despite considerable marketing promotions for the second half of 2020, the program was not able to drive enough participation to offset the limited engagement during the March through June timeframe.

e. **Smart Thermostats**

PSE offers rebates for ENERGY STAR certified smart thermostats. Customers must heat their homes with a PSE fuel source to be eligible to participate in the program.

i. *2020 Program Accomplishments*

In response to a 2019 evaluation, PSE created an educational email in collaboration with Smart Thermostat manufacturers. The email was targeted to customers that applied for a rebate with PSE within the past year and contained tips to achieve maximum savings with their smart thermostat. The email was sent to approximately 12,000 customers with a 1.83% click through rate. Additionally, PSE re-established the instant rebate offering for the program through its new online marketplace. A smart thermostat was the first official purchase when the PSE Marketplace launched in December 2020.

ii. *Adaptive Management*

In 2019 PSE lost the ability to do instant rebates for the Smart Thermostat program when Nest integrated with the Google Marketplace. Instant rebates were no longer available to PSE through nest.com. The loss of instant rebate severely impacted program volume and participation. As a result, PSE focused its effort in 2020 on creating its own marketplace. Although the marketplace launched at the end of 2020, early results were positive and hold promise to impact program participation in 2021.

PSE highlighted manufacturer discounts and promotions, reminding customers of additional savings through applying for the smart thermostat rebate. PSE did record increased rebate applications compared to previous months in 2020 with this strategy.

iii. *Key Variance Drivers*

The PSE Smart Thermostat program completed 2020 under savings target and under budget, primarily due to the impacts of COVID-19 on marketing tactics and consumer purchasing. Traditional program marketing tactics were suspended in the first half of 2020 as the impacts of COVID-19 on customer retail behavior were assessed. Despite targeted marketing strategies for the second half of 2020, the program was not able to drive enough participation to offset the limited customer engagement earlier in the year.

f. Residential Showerheads

PSE offers instant incentives on WaterSense labeled showerheads to customers through retail stores, targeted emails, and through PSE Marketplace. PSE continued to look for ways to build and strengthen its showerhead program portfolio in 2020.

i. *2020 Program Accomplishments*

PSE continued its partnership with Costco in 2020 to offer instant discounts on WaterSense showerheads to customers. PSE was also able to recruit a new manufacturer and retailer to the program. Evolve, which produces ShowerStart thermostatic valve adapters joined the MOU program to offer online instance rebates. Select Walmart retail stores also joined the MOU program towards the end of 2020. Both new program participants enabled PSE to offer rebates to customers on more innovative products and in more locations in the PSE service territory. Home Depot and Lowes were both solicited and declined to participate in the MOU program. It's worth noting non-instant rebates for showerheads and aerators are not cost-effective

and instant rebates are only available through retailers enrolled in PSE's MOU program.

ii. *Adaptive management*

Field services in stores were suspended temporarily in 2020 and PSE relied on search engine marketing, targeted emails and social media to advertise the Residential Showerhead program and influence customer participation. PSE partnered with manufacturer Evolve to promote showerhead products to customers. The promotion was well received, with a 6.42 percent conversion rate and 200 percent increase in sales from the week prior to the promotion. Additionally, field services for the PSE Residential Showerheads program were revised and adapted to COVID-19 state guidelines. In-store events were suspended and sales associate training was revised for virtual participation.

iii. *Key Variance Drivers*

The PSE Residential Showerheads program completed 2020 under savings target and under budget, primarily due to COVID-19 which impacted customers' retail behavior and purchases. Additionally, the Regional Technical Forum retired all measures for Residential Showerheads in 2020. As a result, PSE advised its MOU program participants that the MOU program would end in 2021. The announcement caused some manufacturer and retail partners to decline participation in the 2020 MOU program, including the second largest retailer in the MOU program which had a significant impact on savings claims. Program marketing tactics were also suspended in the first half of 2020 as the impacts of COVID-19 on customer retail behavior were assessed. The loss of program participants and reduced marketing resulted in the program recording fewer energy savings than planned and reduced spending.

g. **Weatherization**

The Single Family Existing Residential Weatherization Program provides rebates for the "shell" of existing residential structures, including windows, insulation, air sealing whole house ventilation, and duct sealing. There are a wide variety of weatherization offerings, some directed specifically to mobile homes or moderate income customers, while others focus on site-built residences.

i. *2020 Program Accomplishments*

The Weatherization program continues to provide top quality weatherization services, delivered through PSE’s Trade Ally Network. In 2020, PSE expanded weatherization rebate offerings with new measures and increased rebates for qualified moderate income customers through the Efficiency Boost initiative, in coordination with other Single Family Existing Residential programs. Additionally, a virtual verification process for the Weatherization program was launched, allowing PSE to verify Weatherization projects remotely. Finally, PSE continued a successful bundled rebate incentive designed to encourage deeper weatherization retrofits.

ii. *Adaptive Management*

Due to state COVID-19 restrictions and safety guidelines, PSE was no longer able to conduct in-home project verification services. In the interim, the Weatherization program created a virtual verification process in coordination with PSE’s Verification team and Trade Allies. Amid the pandemic, PSE also partially suspended testing requirements for the whole house air sealing measure in alignment with Washington State Department of Commerce recommendations. Contractors were similarly concerned that blower door testing would unnecessarily expose customers and contractors to potential disease vectors.

Due to the limitations of traditional marketing, events and outreach tactics during the pandemic, PSE pivoted to virtual options for promoting the Weatherization program. Activities included virtual events such as “Ask an Expert,” increased email marketing, and social media marketing, as well as contractor and partner outreach.

iii. *Pilot-Like Initiatives*

In 2020, the Weatherization program extended its bundled rebate incentive aimed at driving deeper retrofits in customer homes. During this pilot, if a customer completed any three weatherization measures, PSE provided an additional \$250 rebate. If a customer completed any four weatherization measures, PSE provides an additional \$400 rebate. The bundled rebate has proven effective in increasing the number of measures completed per project, which were 8-10 percent higher during the bundle period than the previous year. It also encouraged deeper retrofits since the expiration of the Home Performance with ENERGY STAR program left a gap in 2019.

iv. *Hard-to-Reach and/or Proportionately Underserved Segments*

As an extension of efforts in 2019, PSE continued to offer increased weatherization rebates for manufactured home customers in 2020. In addition, PSE launched the Efficiency Boost initiative, which provides additional incentives to moderate income customers in the Single Family Existing category. In coordination with other programs, PSE also funded and organized trainings and workshops for weatherization Trade Allies and other stakeholders to better address the low and moderate income customer segments. One workshop brought contractors, PSE's Energy Advisors and Weatherization Assistance partners together to improve data sharing, messaging, and operations to better serve low-to-moderate income customers.

v. *Key Variance Drivers*

The Weatherization program underperformed in 2020 compared to both electric and natural gas savings targets. There are multiple factors involved in the savings variance, although COVID-19 is common element. Contractor referrals, issued through the Trade Ally Network, were suspended for several months in the initial stages of the pandemic, which cut off a key intake channel for the Weatherization program. The loss of the Home Energy Assessment program in 2020—another key intake channel for the Weatherization program—also contributed to a decrease in participation. Trade Allies also initially reported lower customer interest in the initial months of the pandemic, and many were similarly impacted by COVID-19 restrictions.

Despite lower savings, the Weatherization program was significantly over budget on electric incentives. Efficiency Boost incentives were added to the program after the annual targets were set. These incentives significantly increase rebates for qualified moderate income customers but contributed to the program's budget variance. Additionally, PSE continued to offer the bundled rebate in higher quantities than originally expected.

h. **Home Energy Reports**

The Home Energy Reports program successfully delivered 1,286,267 print reports and 1,487,745 email reports. PSE's 2020 Customer Engagement Tracker survey revealed that 91 percent of customers read the reports. More specifically, 97 percent from the 2008 (the first HER pilot group), 91 percent of the 2018 manufactured home group, and 92 percent of customers from the nearly launched 2020 wave recall reading the reports.

i. *Adaptive Management*

In 2020, the Home Energy Report expanded the amount of customers by 100,000 to refill the program in response to an expected decline in participation due to customers moving out of the home. In January 2020, PSE added nearly 100,000 dual fuel customers and gave these customers personal energy efficiency recommendations for their home type.

The Home Energy Report program did not pause during the COVID-19 pandemic, instead adding messaging to address resources and energy tips as many began working from home. Similar to years past, the actual 2020 savings will be “trued up” following the next impact evaluation.

ii. *Key Variance Drivers*

The Home Energy Report program does not expect a large variance for 2020, however savings impact will be determined by PSE’s third party evaluator and may reveal a small variance due to COVID 19.

4) Single Family Existing Measure Highlights

It is interesting to note that many of the water-savings measures indicated in the following table (such showerheads, aerators, etc.) are often reported in PSE’s electric-only, natural gas-only, or combined territories. The latter figures are presented in the “Dual” column. PSE presents measures, grouped by types reported in 2020, in Table II-2.

Table II-2: Overview of 2020 Single Family Existing Measure Activity

Single Family Existing Program Measure Counts					
Program Measure Type	Measure	Electric	Dual	Natural Gas	
Retail Lighting	Fixtures and Lamps	1,400,700			
	Thank You kits	1,700			
Space Heat	Heat Pump	-			
	Ductless Heat Pump	1,400			
	Air Source Heat Pump	1,400			
	Boiler	100			
	Combined	-			
	Furnace	4,900			
			-		
Water Heat	Water				
	Heat Pump Water Heater	400			
	Natural Gas Water Heater	-		1,400	
		-		-	
Home Energy Assessments		-		-	
	Energy Assessment	Home Assessment	2,600		700
	Lamp	LED Lamp	19,900		-
	Water	Residential Showerhead	1,600		1,700
		Residential Aerator	1,000		1,300
	Controls	Web-Enabled Thermostat	100		300
	Water	Water Heater Insulation	200		-



Single Family Existing Program Measure Counts, <i>continued</i>				
Program	Measure	Electric	Dual	Natural Gas
Measure Type				
Home Appliances				
Appliances	Dryers	3,000	-	-
	Clothes Washer	1,700	2,200	-
		-	-	-
Web-Enabled Thermostats				
	Web-Enabled Thermostat	900	-	4,800
		-	-	-
Residential Showerheads				
	Residential Aerator	1,900	3,200	300
	Showerhead	4,900	14,300	100
		-	-	-
Weatherization				
Sealing	Insulation and Duct Sealing	200	-	1,000
	Air Sealing	445,400	-	1,690,700
	Duct Sealing	-	-	100
Insulation	Attic Insulation	211,500	-	807,500
	Floor Insulation	298,100	-	800,400
	Wall Insulation	34,000	-	143,100
Window	Single Pane to U30	64,200	-	142,700
	Double Pane/Metal Frame to U30	10,300	-	400
Home Energy Reports		280,000		180,000

C. Single Family New Construction

Schedules E215 and G215

1) Description

The following discussion applies to new construction, both “stick-built” single family homes and manufactured homes. Conservation Schedule terms and conditions, as outlined in the above-noted Schedule numbers, govern the applicability, measure types, funding, analyses and general rules and provisions for each structure classification. Where there are specific requirements, service offerings, measures, incentives, marketing, or outreach applicable to the specific structure type, they are noted in each of the following sections.

The New Construction program acquires cost-effective energy savings from single-family new construction (single, duplex, and townhomes) and manufactured home new construction. The goal of each program is to increase the installation of energy efficient measures into new electric and natural gas-heated buildings constructed in the PSE service territory.

In the new construction marketplace, high-efficiency measures need to be specified and installed during design and construction. Otherwise, it may be many years before energy efficient changes to the buildings take place. Rebates and incentives are offered to eligible natural gas and electric PSE new construction developers, contractors, trade allies and customers (cumulatively, the program refers to these as “partners”). The program also works with these partners to market energy efficient equipment to their customers. The programs encourage the purchase and installation of energy efficient products for their construction projects.

This program provides financial incentives to the above audience for both natural gas and electric residential and commercial meters. PSE provides a single “point of contact” to development teams for all energy efficient measures and/or upgrades. This allows PSE to maximize the energy savings opportunity in each development and reduce multi-program confusion for the customer.

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.

2) Program Review

In its third year of implementation since re-launching, the Single Family New Construction (SFNC) program continued to utilize Northwest Energy Efficiency Alliance's (NEEA) Next Step Homes Performance Path program. Performance Path follows the Regional Technical Forum (RTF)-approved standard modelling protocol, which provides a simplified method for estimating reliable whole-home savings through rate energy modeling. In addition to Performance Path, SFNC continued to offer a standalone ENERGY STAR smart thermostat measure, which was introduced late in the program year in 2019.

PSE incentivized 18 Performance Path projects in 2020, representing a lower uptake of the whole-home Performance Path measures than in 2019. Lower uptake was primarily due to COVID-19, which caused a temporary shutdown of new construction, enhanced safety protocols that limited the number of contractors on site at one time, and delays in rater verification due to aforementioned safety protocols. In addition to COVID-19, incentivizing builders above an already strict Washington State Energy Code continues to be a challenge.

For the standalone ENERGY STAR smart thermostat measure, PSE saw much higher uptake in 2020. While the measure was introduced in late 2019, and therefore saw no 2019 rebates, the program incentivized 310 standalone thermostats in 2020.

The Manufactured Home New Construction (MHNC) program continued to offer two tiers of rebates in 2020: one for ENERGY STAR manufactured homes, and one for the more efficient ENERGY STAR with NEEM+ home. In 2020, new field service efforts began to see success. PSE rebated 64 ENERGY STAR manufactured homes (compared to 38 in 2019), and 6 ENERGY STAR with NEEM+ manufactured homes (compared to 1 in 2019). Incidentally, there was also an increase in number of sales incentives paid to manufactured home retail staff, indicating more retailers promoting the rebates.

3) Adaptive Management

In order to drive more participation in SFNC, a 10 percent above code measure was added in late 2020. Previously, the entry point was 20 percent above code.

For MHNC, the rebate for ENERGY STAR with NEEM+ was increased from \$1500 to \$2000, and the sales incentive was increased from \$300 to \$400. This efficiency level

of manufactured home is still struggling to gain traction in the region, partly due to few manufacturers that construct this level of home. PSE also updated the MHNC rebate application, website, and marketing materials. The field services partner distributed updated collateral to all ten retailers that have been targeted by PSE's field services efforts. Finally, towards the end of 2020, PSE and Snohomish PUD began a partnership to align MHNC requirements and incentives, facilitating promotion of both program for retailer staff.

4) Hard-to-Reach and/or Proportionately Underserved Segments

Manufactured home customers are listed as a potentially hard-to-reach customer segment in the 7th Power Plan. The new MHNC program helps increase service to this sector and prevent a lost opportunity.

5) Key Variance Drivers

The SFNC program ended 2020 below both savings and spending budget. While it was anticipated that there would be higher uptake of the SFNC whole home rebates, both builder reluctance to building above code as well as COVID-19, played significant roles in program underperformance.

The MHNC program was close to target in both spending and savings. The program anticipated more uptake in 2020 due to more retailer engagement through field services and this was largely realized.

6) Measure Overviews

PSE provides a general overview of prescriptive measure categories reported in the 2020 Single Family and Manufactured Home New Construction programs in Table II-3: Single Family New Construction 2020 Prescriptive Measure Summary and Table II-4: Manufactured Home New Construction 2020 Prescriptive Measure Summary.

Table II-3: Single Family New Construction 2020 Prescriptive Measure Summary

Single Family New Construction Measure Counts				
Measure Type	Measure	Electric	Dual	Natural Gas
SFNC	Built Green - 4 Star or Equiv. - 20% above WSEC	3		8
	Built Green - 5 Star or Equiv. - 30% above WSEC	7		
Thermostat	Smart Thermostat			310

Table II-4: Manufactured Home New Construction 2020 Prescriptive Measure Summary

Manufactured Home New Construction Measure Counts		
Measure Type	Measure	Count
Manufactured Home	Incentive - Sales - NEEM 1.1	13
	MHNC: NEEM 1.1 Rated - EnergyStar	60
	MHNC: NEEM 2.0 Rated - EnergyStar	6
	MHNC: Sales Incentive - NEEM 1.1 Rated - EnergyStar	31
	MHNC: Sales Incentive - NEEM 2.0 Rated - EnergyStar	30

D. Multifamily Retrofit

Schedules E/G 217

1) Description

The objective of the Multifamily Retrofit program is to increase the installation of cost effective energy efficient measures into existing multifamily (MF) buildings with PSE natural gas and/or electric service.

The Multifamily Retrofit program is designed to increase the uptake and 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, trade ally contractors, tenants, and condominium Home Owners Associations (HOAs) to encourage program participation. The program also serves multifamily campuses which have a mixture of building types including buildings with less than five units. Multifamily structures and campuses typically have opportunities for upgrades in the units, common areas, and building envelope.

Measures may include: windows, insulation, and air sealing enhancements; appliances, interior and exterior lighting, and HVAC upgrades; O&M improvements; behavioral modification; and calculated commercial upgrades such as central boilers, HVAC controls, and solar pool heaters. This program targets installation of energy efficient measures occurring during planned retrofit and replace upon failure. PSE updates current measures list and incentives as needed.

The program continually researches and develops new and innovative means to achieve cost effective energy savings. Examples may include behavioral based programs such as web-enabled thermostats and Strategic Energy Management (SEM).

Web-enabled thermostats empower customers with both knowledge and control of their heating costs through a simple user-interface accessed on their smart phone. SEM provides a holistic approach to multifamily property portfolios by engaging managers, maintenance staff, and residents to achieve energy cost savings through behavioral changes, operational improvements, facility maintenance, and attention to utility

accounting.

Through effective customer education and implementation, PSE is continually exploring the impacts of how new technologies and energy management plans can contribute to the quantification of behavioral based energy savings.

2) Program Review

Overall the Multifamily Retrofit program served roughly half of the properties and dwelling units compared to 2019. The COVID-19 pandemic had a significant impact on the multifamily sector for both condo and large property owners. Many multifamily customers halted planned projects due to safety and spending concerns as the pandemic unfolded. The program team was also retired the traditional in-unit direct install program that had been running for over 10 years.

a. Air Sealing

Air Sealing continues to be an important measure for the deep retrofit of multifamily buildings and 2020 was a successful year as interest spread to new management groups. Air sealing projects can take up to 12 months to complete, meaning some projects will be completed in 2021. Overall five sites completed air sealing work across almost 700 apartments in 2020. The program's field team works very closely with its certified air sealing contractors to offer refresher training and coordinates project verification.

3) Adaptive Management

The COVID-19 pandemic affected the program in a number of ways that required adaptive management. For safety reasons, PSE ended all in-unit activity including in-person and onsite verification and the program field team began using the virtual tool, Stroom, to conduct remote verification. The Stroom application enables interactive video calls with contractors and customers. A key advantage of Stroom is that customers are not required to download an app or establish an account to use the platform. The customer can be sent a link via text that opens the web application and allows the customer to talk with and share video or pictures of a completed project. This tool was particularly helpful when verifying customer installed items, but also became standard practice for contractors to include photos of completed projects along with final documentation.

In order to help restart projects that had stopped due to early COVID-19 restrictions, PSE offered two Limited Time Offers (LTO's). Note that the increased incentives still met cost effectiveness criteria. The Multifamily Retrofit program offered a double incentive for window projects and the program also replicated the LTO offered through the Business Lighting program, which spurred a number of additional projects. While these LTO's helped boost savings for 2020, a number of these projects will finish in 2021 (it is standard practice that the Multifamily program allows up to 12 months to complete projects due to their size and complexity). While the LTOs were cost-effective and successful, PSE did not reset the incentive level permanently because some of the measures balanced across the MFR program been active for over a decade and acquisition costs are soon expected to increase in pursuit of harder to find savings. That, combined with recent market fluctuation due to supply chain issues, influenced the decision to keep the higher incentive as an LTO option for 2021.

4) Pilot-Like Initiatives

Due to the COVID-19 pandemic, the Multifamily Retrofit program pivoted the in-unit direct install program into a custom kit drop-off program called "DI(Y)" where residents installed LEDs provided to them. Program staff coordinated with site personnel to help inform residents of the chance to opt-in for a custom kit of LED's matching the bulb types in each unit. Site staff coordinated collection of the old CFLs and incandescent bulbs for recycling by housing unit, which also served as verification that the LEDs had been installed. Program staff also utilized photos and in some cases the team was able to conduct remote verification via web-based video with residents. The program was able to claim just over 1 million kWh from the DI(Y) offering from August to December, a period when in-unit work had been stopped due to COVID-19 restrictions. It should also be noted that the bulbs that couldn't be verified as installed were claimed at a reduced savings rate. The reduced savings value ranged from 0.3 to 0.8 kWh depending on the bulb type, as determined from the "by request" measure savings provided within the RTF residential lighting workbook. This type of savings reduction is considered normal to account for products that are delivered upon request but installation cannot be verified.

5) Hard-to-Reach and/or Proportionately Underserved Segments

By definition, the Multifamily Retrofit program serves the Hard-to-Reach multifamily customer segment. In 2020 the program served 216 apartment properties and 66 condo



properties totaling over 10,000 apartments and over 1,200 condos. The direct install program has been an important tool for reaching this population and was a large reason for transitioning to a DI(Y) model discussed above.

6) Key Variance Drivers

Overall the program reached almost half of the electric savings targeted for 2020, and achieved 98 percent of the natural gas target. Likewise, the program budget was underutilized. The cost per kWh increased due to the three month hiatus of less expensive direct install measures and subsequent reduced production of the DI(Y) offering, both impacted by COVID-19 restrictions and safety precautions. The overall cost per therm decreased due to the direct install program for natural gas ending in March 2020, which had contained more expensive measures.

7) Measure Highlights

Table II-5: Multifamily Retrofit 2020 Measures provides a general overview of measure categories reported in the Multifamily Retrofit program in 2020.

Some measures, indicated by asterisks, are indicated in terms of square feet installed (for instance, insulation), dwelling units treated, or number of buildings.

Table II-5: Multifamily Retrofit 2020 Measures

Multifamily Retrofit Measure Counts			
Measure Type	Measure	Electric	Natural Gas
Fireplace	Gas Fireplace		80
Lighting	LED Lamp	68,300	
HVAC	Gas Furnace	1	4
	Heat Pump Conversion	20	
Insulation	Attic Insulation	125,000	6,100
	Floor Insulation	116,600	
Power Strips	Advanced Power Strips	130	
Thermostat	Elect. Line Voltage Thermostat	560	
Ventilation	Mechanical Ventilation	800	
Water	Showerhead	1,700	220
	Residential Use Showerhead Restrictor	380	5
	Residential Use Aerator	4,000	340
	Heat Pump Water Heater	1	
	Water Heater Insulation	290	
Window	Tankless Water Heater		1
	Double Pane	5	8,900
	Triple Pane	16,100	5,200

E. Multifamily New Construction

Schedule E218, G218; applicable to Multifamily construction

1) Description

Eligible customers for multifamily new construction include owners, developers, or agents acting on behalf of a responsible party of service receiving electricity or natural gas through PSE. This program provides financial incentives to the above audience for both natural gas and electric residential and commercial meters. The incentives offered are both prescriptive and calculated.

In the new construction marketplace, high-efficiency measures need to be specified and

installed during design and construction. Otherwise, it may be many years before energy efficient changes to the buildings take place.

PSE offers rebates and incentives to eligible natural gas and electric PSE new construction developers, contractors, trade allies and customers (cumulatively, the program refers to these as “partners”) who are constructing new single-family residential structures and multifamily buildings. The program also 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.

For new multifamily construction projects, PSE packages financial incentives under one grant and are structured to work in accordance with current Business Energy Management programs. PSE provides a single “point of contact” to development teams for all energy efficient measures and/or upgrades. This allows PSE to maximize the energy savings opportunity in each development and reduce multi-program confusion for the customer.

Structures include but are not limited to single-family dwellings, duplexes, apartments, town homes, condominiums, dormitories, affordable housing, low-income housing, workforce housing, and assisted living residences with four or more attached units.

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

- Lighting: Exterior, Common area, and in-unit.
- Appliances: Clothes washers, refrigerators, dishwashers, dryers.
- Ventilation; in-unit whole-home or common area.
- HVAC equipment upgrades.

For all of the conservation Measures installed, Energy Efficiency receives measure installation data directly from builders, developers, showrooms and distributors, which allows for the tracking of specific measure details.

2) 2020 Program Review

The Multifamily New Construction (MFNC) program continued to prove successful with developers in 2020. The Excel based MFNC whole-building calculator allows developers

to choose from over 40 measures across five different categories: HVAC, Envelope, Lighting, Domestic Hot Water, and Appliances. This semi-prescriptive whole building approach maximizes flexibility and allows developers to procure incentives without doing costly energy modeling.

In 2020, the program completed fewer project rebates than the previous year. This was largely due to project delays related to COVID-19 restrictions and safety protocols. The lower project volume resulted in lower electric and natural gas savings for the MFNC program in 2020. The program also experienced a reduction in savings per project due to measure attrition. One contributor was crossover with midstream; as more local distributors join PSE's midstream program, MFNC rebates on heat pump, heat pump water heater, and condensing gas water heater equipment are invalidated. Additionally, the loss of showerheads due to higher efficiency standards from HB 1444 significantly impacted natural gas savings for the program.

In preparation for the change to the next Washington State Energy Code cycle (2018 code), the program updated the MFNC calculator to match the new baselines required by code.

3) 2020 Achievements

In 2020, the MFNC program incentivized 35 projects and almost 6000 housing units. Approximately 10 percent of projects were for affordable multifamily developments. The other 90 percent were market-rate developments. In addition to paid projects, the MFNC program held four Early Design Assistance Meetings and 20 Lunch and Learns. The program also presented at the Behavior, Energy and Climate Change Conference to promote advances in serving affordable multifamily projects in the Puget Sound region.

4) Adaptive Management

The program added the following measures to the MFNC calculator in 2020: connected line voltage thermostats, ENERGY STAR certified electric vehicle chargers, and a bundle incentive for projects that install an ENERGY STAR appliance package (washer, dryer, and refrigerator). The program also increased targeted outreach to townhome developers. This is an untapped market for MFNC, and the program team continues to find ways to adapt MFNC offerings to better suit their needs.

5) Hard-to-Reach and/or Proportionately Underserved Segments

The program continues to forge good partnerships with affordable multifamily developers. The stipulation by the Washington State Housing Finance Commission to require all projects seeking the Low Income Housing Tax Credit to contact utilities for incentive opportunities has increased engagement with the MFNC program.

The majority of Early Design Assistance meetings thus far have been with affordable housing developers.

Finally, PSE has a higher incentive rate for affordable multifamily projects, with both the electric and natural gas savings incentive at 50 percent higher than for market-rate projects.

6) Key Variance Drivers

The close of many projects were delayed due to COVID-19 restrictions, which lowered savings. Additionally, the midstream program and HB 1444 cut into savings for various measures, causing per project savings to decline from the previous year. While the program ended the year under target for electric savings, the program exceeded natural gas savings. This was primarily due to more projects than anticipated including natural gas water heating. Unexpectedly, condensing gas water heaters were the most common measure in this program.

7) Multifamily New Construction Measures

The Excel based whole building calculator continues to be the most utilized pathway for multifamily developers. As mentioned above, the calculator has over 40 measures across five different categories: HVAC, Envelope, Lighting, Domestic Hot Water, and Appliances. In addition to the MFNC calculator, the program also has a pathway for programs to show energy savings with an energy model. This pathway is more utilized by commercial projects, since energy models can be cost-prohibitive for multifamily developers. Finally, the MFNC program has a custom approach pathway that offers a custom analysis by a PSE Energy Management Engineer to determine savings and incentives for more nascent equipment. An example of this would be a project submitting a centralized heat pump hot water system for a mid-rise multifamily building.

III. BUSINESS PROGRAMS

The following program discussions address specific results and accomplishments in the Business Energy Management Sector. Process and tactical improvements that enhance the customer's energy efficiency experience and prudently utilize Conservation Rider funding are outlined within the discussion.

The discussion flow aligns with Energy Efficiency's Exhibit 1: *Savings and Budgets*.

A. Commercial/Industrial Retrofit

Schedules E/G 250

1) Description

PSE works with Commercial and Industrial customers to provide incentives for cost-effective energy efficiency upgrades to lighting, 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 building commissioning (O&M) improvements are provided through multiple building commissioning programs.

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, the 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.

2) C/I Retrofit: Custom Grants (Non-Lighting)

PSE provides discussions of notable C/I Retrofit program accomplishments in the following sections.

a. Adaptive Management

In response COVID-19 restrictions, PSE adjusted its site visit and verification requirements to allow for increased remote site evaluation and post-installation project verification.

In 2020, PSE partnered with Nexant to increase awareness of its commissioning programs. Under this partnership, Nexant provided outreach and training to customers and contractors with the goal of increasing participation in its commissioning programs.

b. Pilot-Like Initiatives

PSE spent significant time in 2020 creating, launching, and managing the Elevate Your Efficiency Challenge (the Challenge). The Challenge is a Limited Time Offer (LTO) that provides customers with increased incentives for qualifying energy efficiency projects completed before December 2021. PSE received in excess of 100 inquiries and applications for this offering. At the close of 2020, applications were being evaluated for acceptance into the Challenge.

c. Hard-to-Reach and/or Proportionately Underserved Segments

PSE continued to evaluate projects that do not meet rebate eligibility requirements for custom grant opportunities. These projects typically involve small businesses with specific needs that are difficult to categorize into a specific business type.

d. Key Variance Drivers

Many existing projects in the C/I Retrofit program were either delayed or postponed in

2020, due to the COVID-19 pandemic. New project applications dropped drastically in March 2020 as commercial customers adjusted to empty buildings and changing work-from-home and safety policies due to COVID-19. Project application quantities began to increase near the end of 2020 but overall energy savings and spending fell short of goals. However, the program exceeded its natural gas savings goal due to the completion of several projects, such as a large project with the University of Washington, which were not expected to complete in 2020. Additionally, an HVAC controls project completed with higher than expected savings.

3) Business Lighting Program

The Business Lighting Grants program serves customers as a part of the Commercial/Industrial Retrofit Conservation Schedule 250. To simplify the customer experience, PSE offers only one Business Lighting grant program. This single program addresses customers' needs by providing custom calculated incentives for lighting and lighting controls measures.

a. Program Accomplishments

The Business Lighting program paid approximately 450 projects in 2020. The average project size was just under 93,500 kWh per project. Additionally, a Business Lighting Express subprogram was created to serve small lighting maintenance projects. Program staff also designed new incentivize levels, presented them to customers, and modified the Business Lighting Application in preparation for 2021.

b. Adaptive Management

The Business Lighting team consistently monitors lighting market trends. A major driver in 2020 was the COVID-19 pandemic and a subsequent slowdown in the lighting retrofit market. In March 2020, the Business Lighting team decided to launch a Limited Time Offer (LTO) that increased the incentives by 50 percent to help stimulate new lighting projects. The LTO ran from June through the end of 2020 and generated over 460 new projects for an average of 66 per month, exceeding the 2020 goal of 55 per month. Additionally, there were over 90 projects processed into the system in January 2021 as a direct result of the LTO in 2020.

c. Hard-to-Reach and/or Proportionately Underserved Segments

Small businesses often fall into the hard-to-reach category due to their cost-flow requirements. The Business Lighting program classifies smaller projects as projects on rate schedule 24 or similar.

In 2020, the program paid over 156 of these projects, which accounted for approximately 34 percent of the total project count and 10 percent of program savings. Additionally, 16 Relight Washington (small Washington cities) street lighting projects were completed in 2020.

d. Key Variance Drivers

The Business Lighting program fell short of savings and direct benefit to customer incentive goals in 2020, primarily as a result of the COVID-19 pandemic and subsequent slowdown in the lighting retrofit market.

4) Industrial Programs

In addition to Commercial/Industrial Retrofit Custom Grant offerings, PSE has developed and implemented a set of offerings targeted at Industrial customers. Measure-specific incentives are provided through these programs.

a. Industrial Energy Management (IEM)

The Industrial Energy Management program serves customers as a part of the Commercial/Industrial Retrofit Conservation Schedule 250. A targeted offering was developed to better serve Industrial customers by consolidating and expanding PSE's offerings available to these customers.

i. Program Accomplishments

In 2020, PSE launched the targeted sub-program Industrial Energy Management, consolidating existing offerings while allowing for more targeted offerings for Industrial customers. Offerings previously managed by third-party contractors are now managed in-house to improve program flexibility and to enable use of multiple implementers to augment PSE program capacity. The COVID-19 pandemic significantly slowed the number of applications but the program was able to recruit and launch an industrial strategic energy management cohort comprised of waste water treatment customers by pivoting to a fully remote program implementation

format.

ii. *Adaptive Management*

Offerings that typically required site visits, such as industrial systems optimization, were converted to remote implementation in order to adjust to COVID-19 restrictions and safety protocols. Multiple successful projects were initiated in 2020 as a result.

iii. *Pilot-Like Initiatives*

There were no pilot-like initiatives to report for the IEM program in 2020.

b. Industrial Systems Optimization Program (ISOP)

The Industrial Systems Optimization program (ISOP) focuses on operational and maintenance (O&M) measures verified through custom analysis on an individual project or site basis. Incentives are based on actual savings achieved and customers agree to continue monitoring and verification following implementation to assure savings persistence.

i. *Program Accomplishments*

Early in 2020, PSE started the new Industrial Energy Management (IEM) Program to take a more comprehensive approach to the industrial sector. ISOP became a component of the IEM program. See the IEM program section for more details.

ii. *Adaptive Management*

PSE started the ISOP program in 2012 and the program was successful through several program cycles. In 2020 ISOP became a component of the IEM program, launched in the same year. IEM is managed in-house with the use of several third party engineering service contracts to better serve the customers' needs in a comprehensive approach

iii. *Pilot-Like Initiatives*

There were no pilot-like initiatives to report for the ISOP in 2020.

5) 2020 Project and Measure Type Summary

PSE provides the following Commercial/Industrial Retrofit tables to give readers a sense of programs’ custom grant activity and scale of custom projects. A project may consist of a single structure or multiple structures. It should be noted that in this specific table, the column “Both Electric and Natural Gas” isn’t indicative of adding the “Electric” and “Natural Gas” columns together. Rather, these are projects in which both electric and natural gas measures were installed.

Table III-1 provides a representative number of Commercial/Industrial Retrofit projects completed in 2020.

Table III-1: Commercial/Industrial Retrofit Projects

Commercial/Industrial Retrofit Custom Grants		Number of Custom Grant Projects		
Program		Electric	Natural Gas	Both Electric & Natural Gas
Project Classification				
Commercial/Industrial Custom Grants				
	Commercial & Industrial Retrofit	41	28	12
C/I Lighting Grants				
	Business Lighting Grants/Express	450	0	0
Contracted Programs				
	ISOP	10	0	0
Total Project Count		501	28	12

PSE presents a representative number of electric and natural gas measure categories installed in their respective programs in Table III-2.

It is important to clarify that these are measure categories, not individual measures, and it is important to note that indicated measures may include substantially more than a

Chapter III: Business Programs

single unit. Furthermore, custom grants may consist of a combination of prescriptive measures, calculated measures, and efficient equipment installed following detailed engineering analyses.

Table III-2: (a) Highlights of C/I Retrofit and Lighting Grants Measure Categories

Highlights of Measure Categories by Program	Count of Measure Categories		
	Electric	Natural Gas	Total Measure Count
Commercial & Industrial Retrofit			
<i>(All custom grants)</i>			
Boiler - Hot Water - Custom	0	1	1
Chiller - Custom	1	0	1
Combined Heat and Power - Custom	1	0	1
Compressor or Dryer or Receiver - Custom	1	0	1
Data Center - UPS - Custom	1	0	1
EBCx - Assessment Phase - Custom	0	1	1
Fan - VFD - Custom	1	0	1
Generic Measure - Custom	1	0	1
HVAC - Central Equipment - Custom	1	1	2
HVAC - Other - Custom	4	1	5
HVAC - VRF - Custom	1	0	1
HVAC Control - Base - Custom	7	4	11
HVAC Control - Only - Custom	2	6	8
HVAC Control - Performance - Custom	6	2	8
Insulation - Exterior Roof - Custom	0	4	4
Motor - Custom	1	0	1
Process - Modification - Custom	5	4	9
Pump - Custom	1	0	1
Pump - VFD - Custom	1	0	1
Refrigeration - Custom	15	12	27
RTU Control - Advanced - Custom	1	0	1
Unitary Equipment - Custom	4	3	7
Water Heater - Commercial - Custom	0	2	2
Total Measures	55	41	96
Commercial & Industrial Lighting Grants			
Lighting - Base - Custom	12	0	12
Lighting - Performance Custom	12	0	12
Lighting - Custom	417	0	417
Lighting - Street - Custom	9	0	9
Total Measures	438	0	438
Industrial System Optimization			
Field Services - Custom	10	0	10
Total Measures	10	0	10

Table III-2: (b) Highlights of C/I Contracted Program Measure Categories

Highlights of Measure Categories	Count of Measure Categories		
	Electric	Natural Gas	Total Measure Count
Contracted Programs			
ISOP			
Compressed Air System - Custom	0	0	0
Fan or Pump or Blower - Custom	0	0	0
Field Services - Custom	10	0	10
Generic Measure - Custom	0	0	0
Total Measures	10	0	10

B. Commercial/Industrial New Construction

Schedules E/G 251

PSE works with designers and developers of any large or small new Commercial / Industrial (C/I) 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. Four paths may be followed to qualify for assistance and/or funding for New Construction energy efficiency Measures. New Construction Post-occupancy Commissioning is also offered in addition to the building paths.

1) Building Paths

The first path is similar to the retrofit program where component 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. There is a streamlined process for lighting projects that have lighting power density values listed in the applicable code.

The second path is a whole-building approach that 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 is an energy use intensity (EUI) performance method that uses metered building usage data during a performance period to determine savings compared to an industry standard baseline EUI. Baseline EUI metrics were developed by the Washington State Department of Commerce for different building types in Western Washington. Customers submit their proposed building type and square footage so PSE can determine the baseline EUI metric and electric and natural gas usage. Once construction is complete and the building is occupied, a 12 month performance period begins during which the customer can demonstrate good building design and operation. The total usage for the performance period is used to determine the project savings and final grant amount. The building must use at least 10 percent less than the baseline EUI metric to qualify for a grant

The fourth path includes Prescriptive Basis incentives for Measures that are eligible for rebates under Schedule E/G 262, Business Rebates. The incentive amount for a

Measure is the same as that which is available under Schedule E/G 262, but energy savings may be calculated based on actual Site-Specific conditions and Code Baseline adjustments, if necessary.

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

2) 2020 Accomplishments

In 2020, the C/I New Construction team continued to work with CLEAResult in conjunction with the Multifamily New Construction program to improve marketing and outreach. Program staff engaged directly with members of the design community, including developers, architects, and designers to improve awareness of the program. As a part of continuous improvement efforts, program staff created the EUI Performance Method to expand program eligibility and offer an option that captures whole building savings without requiring an energy model. Staff also updated the Lighting Power Density (LPD) workbook in preparation for the new 2018 WSEC to ensure a smooth transition when the code goes into effect.

3) Pilot-Like Initiatives

C/I New Construction staff continued to work with CLEAResult on marketing and recruiting customers to participate in the Early Design Assistance program. This program will incentivize developers to consider their buildings' energy consumption holistically and early in the design process.

4) Adaptive Management

Program staff continued to focus on creating a culture of collaboration and transparency with customers participating in the new construction program, and actively sought feedback from customers, the design community, and other utilities on the grant process. Staff also continued to seek feedback from Energy Management Engineers (EMEs) to update program guidelines, especially training.

With this feedback in mind, program staff developed the EUI Performance Method as an additional option to existing offerings. The EUI Performance Method offers a grant

based on whole building performance to any commercial new construction building regardless of building size. This allows smaller projects to have the option to capture savings at a whole building level without requiring an energy model. Using baseline EUIs developed by the Department of Commerce allowed PSE to create a streamlined approach that requires less submittals from the customer to create a savings estimate and grant agreement. There is no energy model requirement which saves the customer time and money as well as reduces the cost to PSE to review the project. This approach also uses actual meter data to determine the final savings and grant which encourages good building operation as well as design. Looking at the building holistically allows the customer to implement energy savings strategies that work for them, and reduces the internal process for EMEs who no longer have to verify individual pieces of equipment.

5) Hard-to-Reach and/or Proportionately Underserved Segments

The C/I New Construction program serves Small Business, Commercial Tenant, and Industrial customers. The EUI Performance Method creates another option for small new construction projects that did not qualify for the whole building energy model approach.

6) Key Variance Drivers

C/I New Construction ended 2020 with significantly lower than expected natural gas savings. Multiple projects with substantial natural gas savings were delayed or cancelled due to COVID-19. Construction was delayed for several months due to COVID-19 restrictions, which decreased the overall number of projects that could close in 2020 for the C/I New Construction program. Although spending was lower than budgeted, it was not necessarily proportional to the decrease in savings because outside services (primarily the CLEAResult contract) were a fixed cost.

Electric savings for this program slightly exceeded the yearly target, however the total spending was well below the targeted budget. This is in part due to smaller spending on marketing and sponsorships. In addition, the majority of electric new construction projects were lighting projects which align with the business lighting incentive rates rather than C/I custom grant rates. Business lighting standard rates were \$0.175/kWh and \$0.225/kWh for lighting with controls (compared to C/I custom grant rate of \$0.35/kWh). The incentive budget most likely assumed more projects to fund at the \$0.35/kWh rate, however, in 2020 the majority of projects were lighting only.

7) 2020 Project and Measure Type Summary

The C/I New Construction representative number of projects completed in 2020 are shown in Table III-3.

Table III-3: Commercial/Industrial New Construction Projects

Commercial New Construction		Number of Custom Grant Projects		
Program		Electric	Natural Gas	Both Electric & Natural Gas
Project Classification				
Commercial/Industrial New Construction				
	Commercial/Industrial New Construction	42	2	5
Total Project Count		42	2	5

PSE presents the number of electric and natural gas measures installed in Table III-4.

Table III-4: Commercial/Industrial New Construction Measure Categories

Highlights of Measure Categories by Program	Count of Measure Categories		
	Electric	Natural Gas	Total Measure Count
Commercial/Industrial New Construction			
<i>(All custom grants)</i>			
Boiler - Hot Water - Custom	0	1	1
Commissioning - Custom	2	0	2
Compressor or Dryer or Receiver - Custom	1	0	1
Generic Measure - Custom	1	0	1
HVAC Control - Only - Custom	1	0	1
Lighting - Custom	20	0	20
Lighting Power Density Reduction - Custom	8	0	8
Unitary Equipment - Custom	2	0	2
Water Heater - Commercial - Custom	0	1	1
Whole Building Design - Custom	6	5	11
Total Measures	41	7	48

C. Commercial Strategic Energy Management

Schedules E/G 253

1) Description

PSE offers Commercial Strategic Energy Management Services (CSEM) to any Commercial or Industrial (C/I) customer, school district, and public-sector government agency with a minimum portfolio baseload to meet cost-effective thresholds. The CSEM program targets larger customers with multiple facilities such that the cost of implementation can be recovered through savings achieved. Schedule 448, 449, 458, and 459 customers may utilize their Schedule 258 funding allocation for CSEM Services. While the CSEM program is specific to commercial and industrial customers, however PSE has offered Strategic Energy Management options for Multi-Family customers and Industrial customers through other program offerings.

Customers qualify for the CSEM program based on their annual PSE energy purchases. A typical customer baseline for maximum program funding 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 CSEM efforts. At a minimum, the customer needs to use 1,000,000 kWh or 135,000 therms, or the equivalent to participate in the program.

A CSEM customer employs, contracts, or designates existing staff to implement CSEM 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. The start-up deliverables include identifying an Energy Manager, 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 energy savings associated with CSEM practices and "target grants" for meeting or exceeding pre-established energy-reduction targets.

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

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

a. Program Start Up

- Designing and implementing a CSEM program.
- Developing baselines, policies and guidelines, and facility action plans.

b. 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.

c. 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.

d. Energy Data Services

- Review of existing databases for inclusion of all facilities, accounts, meters, and overall data integrity.
- Historical and on-going monthly PSE billing data and access to MyData Manager software.
- Energy Interval Services for internet viewing of facility gas and electric interval meter data.

e. Cash Incentives

- "Start-up" incentive intended to share the cost of program start-up that is paid upon satisfactory completion of deliverables.
- Performance grants for customers who achieve energy savings after completing their deliverables.
- Target grants for customers who achieve a pre-established targeted amount of energy savings after completing their deliverables.

The CSEM 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 CSEM customers to facilitate greenhouse gas accounting and other climate change and sustainability initiatives. The value of this service routinely exceeds those stated in the CSEM program scope of work.

PSE continues to explore ways to make the CSEM program cost-effective for smaller customers. PSE efforts will continue to work with CSEM consultants, customers, and other support agencies to develop this market.

2) 2020 Accomplishments

The CSEM program captures savings from operations, maintenance, and behavioral activities realized over 12 months. Savings in 2020 primarily used the 12 month energy consumption data that was in 2019 calendar year, which was not impacted by occupancy and building operation changes from COVID-19. It's important to note that 2021 savings will reflect the COVID-19 impacts from 2020. CSEM baselines and savings for 2021 will be adjusted with the M&V procedures outlined by the Efficiency Evaluation Organization's (EVO's) IPMVP Non-Routine Adjustment procedure outlined in their October 2020 publication.

The CSEM program completed 36 projects in 2020 and achieved 95 percent of the electric savings target and 83 percent of the natural gas savings target for 2020. Although under target, this performance is remarkable considering the impact of COVID-

19 restrictions, which shut down most buildings for three months and shortened the performance period by a quarter.

Additionally, the CSEM program recruited four new large customers in four market segments: healthcare, corporate office, municipality, and school district.

Finally, the full scale implementation Continuous Engagement Credit system which is an alternative to the Target Incentive system, significantly increased customer engagement in the CSEM program in 2020.

3) Adaptive Management

Managing the impacts of COVID-19 was a significant challenge to the CSEM program in 2020. Occupants deserted most buildings due to state restrictions and safety guidance, causing building to transition into no-occupancy operational mode and dropping the baseline energy use.

Customer education and technical support was also adjusted in 2020 to accommodate COVID-19 health and safety consideration. Educational training that traditionally took place in person was shifted to virtual webinar format. Additionally, the program team recognized that first year and traditionally hard to retain customers would face additional barriers to participate during the pandemic. The CSEM program team leveraged third-party implementers to provide technical assistance to new customers during their first year in the program. This approach resulted in a better customer experience and a more successful CSEM start-up phase.

The program also worked to mitigate the impact of COVID-19 on the measurement and evaluation (M&V) of savings. The program hired a third party M&V engineering firm to make non-routine adjustments to the savings methodology. That ongoing work adapts to the dynamic influence the pandemic yields on building occupancy and energy usage profile.

4) Key Variance Drivers

The program finished 22 percent below the electric budget and 10 percent below the gas budget due to less incentive paid. The effects of the COVID-19 pandemic made it uniquely challenging for customers to achieve their respective energy savings targets and thus receive their target incentive. However, 11 of the completed CSEM projects

that PSE staff processed did not meet their savings target but did meet the requirement to receive their target incentive under the Continuous Engagement Credit system.

5) 2020 Results by Customer Sector

Table III-5 below shows the number of RCM program projects. Table III-6 presents a representative summary view of 2020 incentive and allowance categories paid.

Table III-5: Number of CSEM Projects

	Project Count Per Program			
	Electric	Gas	Both Electric & Gas	All Projects Combined
CSEM	14	7	18	40
Total Measure Count:	14	7	18	40

Table III-6: Representative CSEM Incentives & Allowance

	Measures Per Sector
	Count
CSEM	
Performance Incentive - Year 1	12
Performance Incentive - Year 2	15
Performance Incentive - Year 3	13
Start Up Incentive - Year 1	2
Target Incentive - Year 1	12
Target Incentive - Year 2	15
Target Incentive - Year 3	13
Training Allowance - Year 1	15
Training Allowance - Year 2	11
Training Allowance - Year 3	12
RCM	
Performance Incentive - Year 2	1
Performance Incentive - Year 3	5
Performance Target Incentive - Year 2	1
Performance Target Incentive - Year 3	5
Start Up Incentive - Year 1	1
Training Allowance - Year 2	2
Training Allowance - Year 3	5
Total Customers	140

*Custom Grant project counts often consist of more than a single measure.

D. Large Power User/Self Directed

Schedule E258

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.

1) Description

The Large Power User/Self-Directed program operates in a 4-year cycle, with two phases in each cycle. The current program cycle spans from January 1, 2020 to December 31, 2022. The above-noted RFP process is the first phase, and is classified as the non-competitive phase. Customers are given until April of the third year of the cycle to propose projects that utilize their incentive allocations under the non-competitive phase. Customers who do not designate projects that fully utilize their allocation by April of the third year forfeit their remaining balance to a competitive phase, in which remaining funds are available to all program participants via competitive bid.

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.

In the Competitive Phase, eligible customers respond to a new RFP in order to obtain remaining incentive funding that was unclaimed during the non-competitive phase. In this phase, eligible customers may have access to funds beyond their original allocation. The competitive phase RFP is issued in May of the third year of the cycle. PSE ranks proposals received based on cost-effectiveness and other criteria specified in the RFP. Funding is awarded in order of project ranking, until either all competitive phase funds are allocated, or all qualified proposals are funded, whichever happens first. Any remaining money is transferred to the general Energy Efficiency program budget at the end of the program cycle.

2) Program Accomplishments

In 2020, eight projects were completed, saving approximately 3,900,000 kWh/yr. An additional 21 projects were in progress at the end of 2020, representing a savings potential of approximately 20,000,000 kWh/yr. Two of these projects were for Engineering Studies, a measure offered for the first time in this current program cycle (which began in 2019).

3) Key Variance Drivers

Program spending in 2020 was approximately \$1.5 million for the 449 customers (\$955,000 in incentives, and \$508,000 in labor and NEEA funding), and approximately \$593,000 for schedule 40 & 46 customers (\$49,000 in incentives, \$544,000 in labor and NEEA funding). It's important to note that customer allocations are adjusted annually by 7.5 percent to cover PSE program administration costs and 10 percent to support NEEA costs.

Overall program spending was lower in 2020 compared to 2019. This is due to the large end of cycle true-up that occurred in 2019 to account for unspent allocations from the end of the 2015-2018 program cycle. These unspent allocations were transferred to the general Energy Efficiency budget (specifically, Schedule 250: C/I Retrofit) and showed as an expense to the Large Power User Program. This true up only occurs in the first year of the program cycle.

Disregarding the end of cycle true up, spending on incentives was significantly higher in 2020 (\$1 million) than in 2019 (\$223,000) due to a higher number of completed projects.

4) 2020 Project and Measure Type Summary

Table III-7 shows the distribution of projects by customer rate schedule. Table III-8 indicates a representative number of measure types installed to provide a sense of program scale. A project may include substantially more than one measure.

Table III-7: Large Power User/Self-Directed Number of Projects

PROGRAM	Project Count Per Program
	Electric Only
High Voltage 40 46 49	43
High Voltage 449	18

Table III-8: Large Power User/Self-Directed Measure Classifications

PROGRAM MEASURE CATEGORY	Count
Pump	5
Lighting	27
Process	6
Fan	5
HVAC	12
RTU	1
Custom Grant	2
CTBU	1
Total Measure Count	59

E. Commercial Rebates

1) Description

PSE offers prescriptive incentives for select, commonly-applied measures to commercial and industrial customers. These rebates have been developed for measures in which energy savings can be standardized over a wide variety of applications, and where a competitive market pricing structure exists to ensure cost-effectiveness.

PSE program staff develops program design, monitors program performance, results, and trends. Programs are coordinated closely with the electric and gas Commercial Retrofit program. Staff review program refinements and cost-effectiveness with Engineering Staff, the Evaluation Team, and the Manager of Business Energy Management as necessary on an ongoing and adaptive basis. Incentive measures, marketing and the fulfillment process may be modified, as needed, to respond to developments in technology, market conditions, customer acceptance and/or changes in supplier/contractor delivery and pricing.

These programs offer prescriptive rebates to qualifying commercial and business customers:

- Commercial Midstream Lighting – Lighting to Go
- Commercial Foodservice Equipment & Laundry (includes Commercial Midstream Foodservice Equipment*)
- Commercial HVAC,
- Commercial Midstream HVAC and Water Heat Rebates*,
- Commercial Midstream Foodservice Equipment*, and
- Small Business Direct Install Program* (includes: lighting, refrigeration, basic HVAC and water saving for small businesses, small lodging and small agriculture customers).

*PSE contracts with industry experts to implement to these measures, tailored to the unique needs of target markets.

2) Commercial Midstream Customer Engagements

In 2020 the Commercial Rebates programs developed and executed unique customer engagement campaigns focused on driving customer awareness of and participation in PSE’s Commercial Midstream Rebate programs. The following discussion highlights some of the key 2020 customer awareness initiatives.

In 2020 PSE successfully implemented field services for midstream programs in 172 locations, including corporate headquarters, online-only locations, and traditional brick and mortar distributors. From awareness of campaigns to the daily maintenance of signage, the field services team provided a connection between PSE, the rebate programs, and the PSE customer. The suite of products serviced by the field team in wholesale locations included lighting, heat pump water heaters, HVAC, and a wide range of commercial foodservice equipment. Overall, outreach resulted in 1,317 personal touch points over the course of the year.

Table III-9: Commercial Midstream Customer Engagements

Location Type	# of Locations	Total Number of 2020 Touch Points	Touch Points per Location	Avg. Touch Points per Month
Brick and Mortar	138	1178	8.5	98
Corporate	19	44	2.3	4
Online Only*	15	95	6.3	8

*Online only includes partners that have no physical storefront, out of state chains with no physical storefront in Washington, and distributors representing multiple companies. Online only partners often require more effort to engage in relationship building due to the lack of opportunity for live conversation.

Note: the table above (and subsequent tables) includes some locations that did not end up as active partners, and some locations that were added later in the year. Active and engaged partners were most often engaged on a monthly basis, and more frequently as needed.

3) Program Reviews

The following discussions provide 2020 recaps for the individual programs that comprise the Commercial Rebates suite of offerings.

a. Commercial Midstream Lighting to Go

PSE's Lighting to Go program provides instant point-of-sale rebate savings to lighting contractors and commercial customers who purchase qualified equipment from approved distributors for use in commercial customers' businesses. The Lighting to Go program covers LED replacement lamp measures including: Tubular LED (TLED) measures, CFL replacements, HID replacements, and exterior LED fixtures

i. Program Accomplishments

In 2020, LED screw-in measures that replace screw in CFL, Incandescent and halogen lamps were eliminated. This was due to the increased baseline requirements of HB 1444. PSE replaced those measures with HID, CFL bi-pin, and T5 replacement lamp incentives.

Program staff also transitioned incentive processing to a more comprehensive third party midstream mode. With the implementation of a new rebate processing platform, distributors gained visibility into rebate submission status. This allowed distributors to more quickly address submission errors and speed up the incentive processes, ensuring reimbursement was received within two weeks of submission. Additionally, a new implementer provided deeper industry relationships and three new distributors. The new distributor partnered with the field services provider to continue local relationships and enhance the distributor's interactions with the program. Field services delivery is discussed as follows:

Field Visits

In 2020, the field team filed 536 field reports for Lighting to Go location visits. Due to the COVID-19 pandemic, the field team transitioned many in-person visits to a remote format, either via phone, email, Zoom, or other virtual platforms. Of these 536 field reports, 169 of them occurred in-person, while 367 of them came via virtual calls/emails. In person visits and calls/emails led to a total of 519 personal

interactions with staff over the course of the year.

Trainings

The field team conducted 194 trainings in 2020, totaling 204 staff members trained. These numbers represent both in-person trainings as well as virtual trainings conducted over Zoom

Events

No events were hosted in 2020 due to COVID-19 restrictions and safety guidelines.

ii. *Adaptive Management*

In alignment with the Business Lighting program, PSE increased TLEDs from \$2 to \$4 to help drive the market to replace linear fluorescent lamps with LEDs. Program staff also added exterior fixture incentives to capture smaller purchases not participating in the custom program. The team also encouraged upgrade fixtures to LED as a safer project during COVID-19 restrictions due to restrictions or safety protocols in interior occupied spaces.

iii. *Key Variance Drivers*

In March 2020, the COVID-19 pandemic caused a pause on all construction which resulted in reduced lighting sales. Additionally, this caused many distributors to furlough employees, primarily administrative roles that typically performed the rebate reimbursement submission tasks. PSE noted an increase in submissions when those staff returned to work, but the overall impacts to the construction industry from the pandemic continue to cause a lag in lighting sales, which results in far less savings achieved than projected for this program.

b. Commercial Foodservice & Laundry

PSE continued to offer cost-effective prescriptive Downstream and Midstream Foodservice rebate incentives to 8,000 foodservice customers in 2020, allowing for equitable participation opportunity across the region.

PSE also continued the historical regional delivery method of this program: six neighboring utility partners offering a joint utility application across all participating utilities with a single point of contact (PSE). The six utility partners make it easier for customers to navigate the robust measure offering with shared qualifying product lists, shared local distributors, and coordinated outreach across all territories.

The Commercial Laundry program continued to offer a fuel-specific, pro-rated option to nearly 1,500 laundromat, lodging, and multi-family customers for upgrading their washing machine equipment.

i. Program Accomplishments

In order to increase customer adoption and participation, a third party implementer was engaged in 2020 to deliver the Midstream model for the Commercial Foodservice (CFS) program. Historically, the CFS Midstream instant rebates were managed internally by PSE staff. The third party implementer, which also delivers PSE's Commercial Midstream HVAC, Water Heat, and Lighting to Go programs, brought focused expertise within the equipment manufacturing and distribution channels. This assisted in expanding and improving the program during a uniquely challenging year.

In 2020, there was a focus on onboarding participating equipment distributors into the upgraded program model, streamlining outreach efforts and materials, and training the distributor-base in a new online platform. Distributor participants gained access to a new online application portal to submit rebate reimbursement claims, upload sales invoices, verify equipment eligibility, and view rebate reimbursement status. This allowed Midstream rebate claims to transition to online submission exclusively, bypassing physical paperwork completely and providing increased visibility across the process. Distributors noted that the new model is an improvement over old processes and the program saw increased participation, especially notable amidst a challenged sales environment due to COVID-19.

With the new third party implementer, the CFS Midstream program expanded to bring on new national dealers that were already in the implementer's network. For example, Restaurant Depot, hasn't historically participated in regional rebate programs. The new program implementer and online platform allowed PSE to gain access to Restaurant Depot, and three local stores are now participating in the Midstream program. Before participating, these local Restaurant Depot stores had never stocked high-efficiency equipment and by August 2020 had sold only four special-ordered qualified units to customers. These units were then rebated through PSE's CFS

Downstream program. Between September and December, local Restaurant Depot locations began stocking and selling energy efficient fryers and submitted 30 rebated units through the CFS Midstream program.

Overall, the Midstream proportion of the overall Foodservice program increased from 30 percent to over 50 percent. With the addition of Restaurant Depot and other new distributors in 2020, PSE ended the year with 17 active distributor locations for the Midstream program, accounting for nearly 100 individuals trained on the program.

Another advantage of the CFS Midstream partnership was a program integration with AutoQuotes, which allows the CFS Midstream program to gain visibility among dealers. AutoQuotes is a platform that provides 98 percent of sales in the foodservice industry. The CFS Midstream program's qualifying products list was uploaded to the platform and all distributors that use it now see rebates eligible for those products. Non-participating distributors can easily sign up for the program through the platform and, in the future, participating dealers will be able to automatically apply rebates to their sales within the platform.

To support customers as the impact of COVID-19 related restaurant closures caused devastating dips in revenue, field services took a more granular approach to assisting distributor sales staff in 2020. Staff routinely reviewed open quotes for potential rebates in order to finalize sales, and expanded training efforts to customer service support staff so non-sales staff could be more knowledgeable of program offerings. This tactic also opened up additional time for sales teams to focus more heavily on sales lead generation. Midstream CFS field services delivery is discussed as follows:

Field Visits:

In 2020, the field team filed 317 field reports for retail store visits. Due to COVID-19 restrictions and safety guidelines, in-person visits transitioned to a virtual format, either via phone, email, Zoom, or other virtual platforms. Of these 317 field reports, 60 of them occurred in-person, while 262 of them were via virtual calls/emails. When adding these two numbers, the total is slightly higher than 317. This can be explained due to some field reports containing both an in-person visit as well as a follow-up call/email, accounting for two visits within one report. In person visits and calls/emails led to a total of 368 personal interactions with staff over the course of the year.

Trainings:

The field team conducted 57 trainings in 2020, totaling 94 staff members trained. These numbers represent both in-person trainings as well as virtual trainings conducted over Zoom.

Events:

No events were hosted in 2020 due to COVID-19 restrictions and safety guidelines.

ii. *Hard-to-Reach, and/or Proportionately Underserved Segments*

Most restaurant customers are considered underserved or hard-to-reach due to many factors including lack of upfront capital, renting of their space, uncertainty as to the longevity of their business, and reduced awareness of energy efficiency. These foundational challenges were expounded upon by the COVID-19 pandemic.

The program continued to reach these customers in unique ways that work for them. Due to COVID-19, door-to-door outreach, industry expo, and conference tabling were put on hold. However, regional and segmental presentations as well as midstream rebate delivery through local equipment distributors continued.

To mitigate the impacts of COVID-19, the program launched a Search Engine Marketing campaign encompassing numerous subjects and terms relating to the program. Launched in late 2020, web traffic to PSE's Foodservice program webpage increased by 593 percent within a month.

The program also sent an email campaign to 4,500 restaurant customers, focused on education of low/no-cost actions, many related to COVID-19 circumstances. The click through rate for the campaign exceed the industry benchmark by almost 50 percent.

The Laundry program also sent an email campaign to 100 laundromat customers. The email sent them directly to PSE's website for Laundry rebates, which typically see lower participation than other programs. Results of the campaign far exceeded industry standards for both open rate and click through rate.

iii. *Pilot-Like Initiatives*

Many Commercial Kitchen initiatives noted in the Accomplishments and Hard to Reach discussions could also be consider analogous to pilots.

iv. *Adaptive Management*

The CFS Program faced many challenges in 2020. The CFS industry was drastically disrupted by COVID-19 restrictions, particularly in foodservice as many businesses were required to move to a takeout-only model. Many commercial foodservice customers were forced to permanently shut their doors, following a national trend of nearly 17 percent of restaurants facing permanent closures in 2020.

Program staff proactively initiated comprehensive outreach to global, national, and regional market actors to gather data and forecasts from the CFS supply chain. Beginning in March 2020, the program began gathering data regarding product availability, equipment sales, and status of both the foodservice industry and equipment dealers. Throughout the year, product availability varied as factories were still operational but equipment and parts orders from overseas were delayed, distributors cited supply chain issues causing nationwide sales hurdles, and demand for new foodservice equipment waned. Foodservice distributors themselves also faced modified hours, reduced staff, staff working from home, company downsizing, or even temporary or permanent closure. It was estimated that the CFS sales volume impact at end of year was down 30 percent across all sales channels.

The program team adapted by implementing a phased approach launching the new Midstream partner model. Phase 1 began in April 2020 and included: a Time & Materials (T&M) payment structure, new program processes, and outreach to and onboard national market actors. Phase 2 will take place in 2021 and includes the launch of the new online platform and implementation of a performance-based payment (PBP) structure.

Also in 2020, the program designed a plan to prepare the commercial foodservice market for implementation of baseline changes in appliance standards related to HB 1444.

v. *Key Variance Drivers*

Though the challenges mentioned above heavily impacted program participation, the CFS Midstream program launch on the new online platform was successful and provided timely ease of access to distributor participants. Despite the impacts of COVID-19, the program remained functional and began to see returns near the end of 2020 resulting from both the new Midstream model and increased digital marketing

tactics. However, savings targets remain unmet for 2020.

c. Commercial HVAC

The Downstream Commercial HVAC program provides rebates on Advance Rooftop Controllers (ARC), web-enabled thermostats, and ductless heat pumps. Commercial HVAC retrofit rebates are designed to help PSE's small and medium commercial customers reduce their energy usage without the requirement to upgrade costly rooftop equipment. The program is an ideal next step for small commercial customers that have participated in the SBDI or Business Lighting Grants programs.

i. *Program Accomplishments*

Program staff continued to work with a joint utility group to standardize and strengthen PSE's Advanced Rooftop Control (ARC) rebate structure. These efforts will simplify the application process for contractors in 2021 and increase customer awareness of PSE's offerings. PSE also developed a pilot to use data collected from ARC equipment to improve savings assumptions, discussed below.

Additionally, staff worked extensively to improve clarity and consistency across customer facing marketing to improve the customer experience. In addition to updates to all program collateral, PSE partnered with other I-5 utilities to develop a universal ARC rebate application form in order to enhance customer experiences in overlapping service territories.

ii. *Hard-to-Reach and/or Proportionately Underserved Segments*

The Electric Resistance to Ductless Heat Pump incentive continued to be targeted to small business customers. This measure is particularly beneficial for small business customers because ductless heat pumps are easier to install in small business spaces that currently have high energy cost baseboard or in-wall electric heaters.

iii. *Pilot-Like Initiatives*

In 2020, PSE began work on establishing an ARC data monitoring and collection pilot, which will be a collaboration between PSE, Energy Solutions, and the National Renewable Energy Laboratory (NREL). Its purpose is to gather the energy monitoring data captured by Advanced Rooftop Controls (ARCs) for further analysis.

Advanced Rooftop Controls are designed by the manufacturer to collect usage data

for the customer. Customers participating in the pilot will be asked to allow the manufacturers to share this data with Energy Solutions, who will then analyze the data. NREL awarded Energy Solutions a grant to run this pilot and PSE is participating as a utility partner. PSE will help recruit pilot participants through its ARC rebate program.

The goals of this pilot are to improve the energy savings assumptions of ARC products, demonstrate the value of device data for promoting energy efficiency, and determine whether the data generated by different manufacturers can be standardized into a common format.

iv. *Adaptive Management*

Adaptive management efforts in 2020 included continued revision to the Advanced Rooftop Controls rebate. Program staff worked with regional utilities to add a small unit incentive as well as restructuring incentive payments so that they are calculated on a per rooftop unit basis as opposed to a per ton basis. Additionally, PSE increased the project cost cap tied to incentive levels from 70 percent to 100 percent. These changes will launch in 2021, and are expected to streamline and strengthen the customer value proposition for this measure.

v. *Key Variance Drivers*

In 2020, Commercial HVAC electric ended the year at 17 percent of the goal and natural gas at 8 percent of the goal. Savings fell short of expectations as the program struggled to gain traction with the Advanced Rooftop Control and commercial connected thermostat rebates.

The COVID-19 pandemic lowered demand and dampened marketing opportunities. Small and medium businesses, a primary target for these rebates, struggled financially and were in a reduced position to invest in energy upgrades. Additionally, many of the ARC models in the rebate program feature Demand Control Ventilation (DCV) technology. The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) specifically discouraged the use of DCV in its *Guidance for Building Operations During the COVID-19 Pandemic*. This may have also affected the market appetite for this product.

d. Commercial Midstream HVAC and Water Heat

Commercial Midstream HVAC and Water Heat is designed to influence the market by providing incentives at the distributor level for HVAC and water heat equipment, encouraging those distributors to stock high efficiency equipment that is readily available upon unplanned equipment failures.

i. *Program Accomplishments*

In 2020, PSE continued to work with Energy Solutions, the program midstream HVAC and water heat implementation contractor, to engage distributors in the region and increased distributor participation by 21 percent. PSE now interacts with 90 percent of all commercial high efficiency HVAC and water heat equipment in its service territory. An advantage to the midstream channel is the ease of participation through the instant rebate process and lack of paperwork. This allows the program to influence and capture market activity, particularly the emergency replacements, that might otherwise not occur in downstream rebate programs. Midstream HVAC and Water Heat field services delivery is discussed as follows:

Field Visits:

The field team filed 464 field reports for retail store visits across the 2020 calendar year. Due to the COVID-19 pandemic, the program faced the challenge of transitioning many in-person visits to a virtual format, either via phone, email, Zoom, or other social-distancing friendly platforms. Of these 464 field reports, 134 of them occurred in-person, while 336 of them came via virtual calls/emails. When adding these two numbers, the total is slightly higher than 464. This can be explained due to some field reports containing both an in-person visit as well as a follow-up call/email, accounting for two visits within one report. In person visits and calls/emails led to a total of 658 personal interactions with staff over the course of the year.

Trainings:

The field team conducted 119 trainings in 2020, totaling 303 staff members trained. These numbers represent both in-person trainings as well as virtual trainings conducted over Zoom.

Events:

Despite the challenges of the pandemic, the field team was able to host 1 virtual event

in collaboration with Johnstone-Sadler. Attendees included inside/outside sales staff and contractors. Content included program details, avenues of participation, product offerings, and a Q&A session. Overall, there were approximately 40 individuals in attendance.

ii. *Hard-to-Reach and/or Proportionately Underserved Segments*

Midstream programs can have a higher impact on underserved communities as they affecting stocking and all sales going into a region. Program staff continue to engage all distributors so all areas of its service territory has access to discounted high efficiency equipment.

iii. *Pilot-Like Initiatives*

Program staff coordinated efforts with other local utilities and in April 2020 welcomed Seattle City Light to the midstream HVAC and water heat program. PSE also engaged Snohomish PUD and Tacoma Power and reports that Snohomish PUD is expected to join the program in early 2021. The industry has shown that a streamlined regional effort leads to greater distributor satisfaction and engagement, and ultimately greater savings.

iv. *Adaptive Management*

PSE continues to monitor and improve the cross-over interaction with whole building programs that PSE also operates. The process for checking if whole building programs have participated in midstream is cumbersome and can occasionally result in adjusted savings on select projects. Overall, the savings and market integration benefits of the midstream model have been shown to increase savings and allow PSE to work closer with the equipment market.

v. *Key Variance Drivers*

In 2020, the midstream program model for its commercial HVAC and water heat measures saw mixed participation results with natural gas. Water heat exceeded expectations and the more complex and costly HVAC electric measures fell short. Despite the pandemic, midstream commercial gas water heating participation continued to grow. And though midstream retrofit HVAC participation has grown year over year, new construction was severely impacted by COVID-19. Additionally, there was a significant drop in HVAC sales greater than 20 tons in retrofit and new construction

markets. This is thought to be largely due to COVID-19 restrictions, which caused slowdowns in construction and property managers and owners to defer large building improvements in 2020.

It's important to note for the electric HVAC midstream measures that PSE mistakenly used the total biennium electric savings and electric spending for each year of the biennium in its original filing. This has been corrected for 2021, which reflects PSE's anticipated savings and spending.

e. Small Business Direct Install

The Small Business Direct Install (SBDI) program is designed to encourage hard-to-reach small business customers to complete energy efficiency upgrades in their facilities and buildings through lighting, refrigeration, and HVAC retrofits. The program focuses on providing business energy assessments to identify basic and complex retrofit opportunities and facilitate participation in PSE's other commercial rebate programs, with special attention to specific segment needs, such as hospitality, grocery and agriculture. Because this customer group tends to include residential customer as well, residential rebate programs are often discussed during the business's energy assessment maximizing this in person point of contact.

i. Program Accomplishments

In March 2020, all construction and in person activity was stopped to COVID-19. The program pivoted to a virtual assessment model utilizing readily available technologies like FaceTime and Skype. This enabled staff to stay connected with customers and help them manage their energy consumption during the pandemic. It also gave customers a personal connection with PSE and available resources in a time of uncertainty and isolation, and allowed program staff to develop a "ready to go" pipeline of projects to enable when COVID-19 restrictions were eased. Program staff returned the field in mid-2020, following safety guidelines to work in outdoor or vacant spaces, and outside normal occupied business hours. PSE also continued offering virtual assessments for customers.

ii. Hard-to-Reach and/or Proportionately Underserved Segments

The small business customer was disproportionately impacted by COVID-19 restrictions. Through virtual assessments, increased incentives on fixtures in

alignment with increases through Lighting to Go and Business Lighting, and by modifying install schedules to off hours and weekends, PSE remained engaged with small business customers and helped them reduce their energy consumption.

iii. *Pilot-Like Initiatives*

PSE reports no pilot-like initiatives in the SBDI program in 2020.

iv. *Adaptive Management*

PSE renegotiated the third party contract to time and materials, allowing the implementer to retain the necessary staff to perform virtual assessments and conduct necessary business tasks such as program management and customer service. This allowed program staff to return to work without delay once COVID-19 restrictions were eased and a comprehensive safety plan was in place.

v. *Key Variance Drivers*

The SBDI program reported no savings for three months of the year while in-person installations were halted due to COVID-19. Program staff continued to help customers through the virtual assessments while building a solid pipeline. Once the restrictions were lifted staff returned to field work following a very specific safety plan. While the adaptations to safely perform work during the pandemic have been effective to complete projects, it is a slow climb to reclaim the lost months, even while maxing out available labor.

4) Commercial Rebates 2020 Measure Highlights

PSE presents a high-level view of the Commercial Rebates projects managed in 2020 in Table III-10.

It is interesting to note that in this organization, more than one measure type may be installed in a single project.

Table III-10: Number of Commercial Rebate Projects Managed in 2020

Business Rebates		Number of Projects		
Program		Electric	Natural Gas	Both Electric & Natural Gas
Project Classification				
Business Rebates				
	Commercial Kitchen/Laundry	20	60	1
	Commercial HVAC	50	0	5
	Commercial Midstream (NEW)	140	380	0
	Small Business Direct Install	950	0	0
	Business Lighting Markdown	2,780	0	0
Total Project Count		3,940	440	6

In Table III-11, PSE indicates the number of measures, by category, installed in 2020 for three of the Business Rebates programs: Business Lighting Markdown (also referred

to as “Lighting to Go”), Commercial Kitchen & Laundry, and Commercial HVAC. Some measures within this organization are calculated on a per-ton, by building type, (in the case of HVAC Retrofit, many variables factor into each measure) or by individual unit (such as the familiar “per lamp” for most lighting measures).

Table III-11: Number of Commercial Rebate Measures Installed by Type

Business Rebates Measure Counts				
Program Measure Type	Measure	Electric	Dual	Natural Gas
Business Lighting Markdown (Lighting To Go) Lighting	LED Retrofit Kit	43,000		
	LED Lamp	45,000		
	TLED Lamp	78,000		
Commercial Kitchen & Laundry Commercial Kitchen	Fryer			120
	Ice Maker	20		
	Oven	40		70
	Steam Cooker	2		
	Dishwasher	3	1	5
	Water	Commercial Dishwasher Commercial Water Heater		
Commercial HVAC Heat Pump Thermostat Ventilation	Ductless Heat Pump	70		
	Thermostat Web-Enabled	3	7	
	Supply Fan VFD and Controller	90	120	
Commercial Midstream HVAC Water Heat	Heat Pump	250		
	Air Conditioner	250		
	Boiler			40
	Water Heater - Storage Water Heater - Tankless			420 4

Table III-12 provides a summary of measure counts installed in 2020 for the Direct Install programs.

Table III-12: Number of Commercial Rebate Measures Installed by Type, Direct Install Programs

Business Rebates Measure Counts - Direct Install Programs				
Program	Measure	Electric	Dual	Natural Gas
Small Business Direct Install				
Controls	Occupancy Sensor, Lighting	30		
	Programmable Thermostat	2		
Lighting	Refrigeration Lighting	70		
	LED Fixture	1,500		
	Tubular Fixture	2,600		
	LED Lamp	8,600		
	TLED Lamp	21,000		
Refrigeration Control	Compressor	50		
Sealing	Auto Closer	1		
	Gasket	4		
	Strip Curtain	4		
Signage	LED Sign	3		
Water	Commercial Use Aerator	10		4
	Commercial Use Showerhead			
	Commercial Use Sprayhead	10		9

IV. PILOTS

Primary Schedule: E249. Also, E/G 253

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.

A. Pilot-Analogous Initiatives

PSE discusses programs or measure offerings that could be considered analogous to pilots—but have a reasonable expectation of savings achievement—in this Chapter as well as applicable REM and BEM program sections in the previous Chapters.

1) Efficiency Boost

PSE launched the Efficiency Boost initiative in August 2020 in order to target rebates specifically to moderate-income residential customers. Efficiency Boost offers enhanced rebates to moderate income customers for measures across three programs: Space Heat, Water Heat, and Weatherization. PSE defines moderate income as between 60 and 80 percent of State Median Income (SMI), as designated by the Washington State Department of Social and Health Services. The lower income limit, 60 percent SMI, aligns with the upper income limit for Low Income Weatherization assistance. The goal of this alignment is to provide an option for customers that do not qualify for LIW assistance but still need help to pursue efficiency upgrades.

In order to qualify for Efficiency Boost rebates, the customer must discuss income qualification with a PSE Energy Advisor and self-declare income eligibility via an Income Verification. This ensures that the customer is informed about other PSE resources available to them, such as bill payment and LIW assistance. If qualified, the customer is encouraged to pursue the LIW program first as it generally provides more resources to the customer.

At the end of 2020, the Efficiency Boost initiative provided enhanced rebates on approximately 60 measures across 28 customers. PSE promoted Efficiency Boost

rebates with the following tactics: a media release in October 2020; community newsletters; an ongoing search engine marketing campaign; and targeted emails.

B. Pilots with Uncertain Savings

Although Pilots appears in Exhibit 1 after REM and BEM Sectors, it is presented in the Report at this point because both REM and BEM may share similar Pilot measures. PSE discusses pilots that have uncertain savings potentials in this Chapter.

1) Commercial Pay for Performance

In 2020, PSE continued the Commercial Pay for Performance (P4P) pilot with the goal of enlisting at least five additional existing buildings with at least 15 percent energy savings potential, coming from capital projects.

In 2020, PSE contracted on three additional buildings, bringing the total to five contracted projects. PSE has received positive feedback on the program from the four different service providers that work on these projects.

Feedback gathered in 2019 outlined the following barriers to the P4P program:

- Customers struggled to secure sufficient capital funds to implement projects of this size within the one-year contract stipulation.
- While some in the energy efficiency industry are familiar with the term “pay for performance”, this is a new concept and program design for building owners.
- PSE has incentives available for almost any efficiency measure, where a known incentive is determined up front. Contractors and customers needed a clearer understanding of the benefits of choosing the P4P model.

As a result, PSE took the following actions in 2020:

- PSE has been active in the Clean Buildings Law (HB1257) rulemaking to help customers leverage extra funds from the Early Adoption Incentive program being offered by Washington State.
- PSE has used the Clean Buildings Law as a platform for offering P4P. In 2020, PSE hosted six customer webinars, positioning P4P as a program that can help provide incentives for deep retrofits needed to comply with the law. Almost 100 participants, representing dozens of organizations, attended these webinars.

- PSE created a program flyer that focuses on the benefits of P4P and published it on pse.com.

2) Retail Choice Engine

The Efficient Product Guide (EPG) was launched in October 2020 and is designed to help PSE residential customers choose an energy efficient appliance. The online platform provides an “energy score” along with pricing and customer ratings that are designed to help customers:

- Find information quickly and easily about what appliances best meet their unique needs,
- Compare energy efficient products side-by-side, and
- Make confident and informed decisions.

The EPG is currently being piloted in a test group of approximately 120,000 residential customers in order to evaluate the efficacy of market based savings approach, (i.e. customers choose a more efficient product than they would have without the platform.)

Between October and December 2020 customers took over 1,200 engaged actions, averaging four engaged actions per visitor in the EPG.

3) Single Family AMI

PSE is piloting a program to offer its customers a rebate on the EMU-2 In-Home Display with the potential of transitioning to a full program with claimed savings. The EMU-2 has the ability to display real-time kW consumption, current electricity cost, and some recent consumption history. The device is a dashboard that customers purchase online and have delivered to their home already provisioned to pair with an AMI smart meter. Participating customers can access current energy usage and take action to reduce consumption, and see their energy usage respond.

In 2020, the EMU-2 device was made available to small test group for a fixed amount of time and will be rolled out to all eligible PSE customers during the pilot in 2021.

4) Small and Medium Business AMI

In 2020, PSE contracted with Power TakeOff to launch a SMB AMI pilot using virtual commissioning. The goal of this pilot is to recruit 100 customers over a two-year period of time and then, using 15-minute interval data, identify opportunities to modify schedules, set points, and more in order to save energy.

The program was slated to launch in November 2020, but due to IT challenges in delivering data to the third party, and due to COVID-19 restrictions, the program launch date was moved to 2021. The contract will likely be extended in order to maintain the proposed savings.

5) Home Energy Assessments (HEA) Behavioral Savings

In 2020, the HEA program was designed to test behavioral savings resulting from the assessment and related communications. These tests were to include various educational pieces, different post-assessment follow-up efforts, and coordination with the Home Energy Report program. The pilot was designed to focus on reaching and serving vulnerable communities and customers. The costs for the program would be split between the Home Energy Assessment Program and the Pilots budget.

However, because the HEA program ended prematurely in July 2020, PSE was unable to collect adequate data to evaluate behavioral savings. Since the effort required at least one complete year of behavioral data, PSE has effectively ended the HEA Behavioral Savings Pilot.

V. REGIONAL EFFICIENCY PROGRAMS

A. Northwest Energy Efficiency Alliance

Schedule E254

1) Description

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, PSE and more than 100 Northwest utilities on behalf of 12 million electric customers.

PSE and its customers 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 PSE and other Northwest utilities to leverage the market power of the entire region to realize economies of scale.

PSE staff represent ratepayers and Energy Efficiency programs on several NEEA committees, including the:

- Regional Products Portfolio Advisory Committee;
- Integrated Systems Collaboration Committee;
- Products Collaboration Committee;
- Regional Emerging Technology Steering Committee;
- Cost Effectiveness Advisory Committee; and
- Natural Gas Advisory Committee.

These committees and their respective sub-committees require a significant commitment; meetings are often all-day, and are held quarterly at a minimum. PSE staff closely engage in upstream/midstream channel partnership strategies, cost-effectiveness calculation development, product training and technology portfolio determination, and, in cooperation with Washington State IOUs, develop improved, consistent savings reporting tenets.

In 2020, PSE staff collaborated with NEEA regularly. This included several distributor training initiatives, limited-time-offers (LTOs), new construction efforts, and a regional instant rebate offering for heat pump water heaters.

PSE Energy Management Engineers (EMEs) also worked with NEEA on the XMP pump initiative by providing support on the research project completed in 2020. PSE continues to support the ongoing pilot program. Staff also took part in NEEA's strategic energy management (SEM) working group, and focused on setting priorities for the next five year cycle. PSE staff also participated in NEEA's Coordinating Committees (both Industrial and Products) where energy-saving devices, strategies, and collaboration on NEEA's programs are discussed. NEEA also facilitates conferences and meetings with industry experts, such as the Gas Technology Institute (GTI).

Exhibit 10: *NEEA Activities and Accomplishments* of this Report summarizes NEEA's 2020 value delivery to PSE for both its electric transformation efforts, as well as the new Natural Gas Advisory Committee. PSE extends its sincere appreciation to the NEEA staff for their extensive work to provide this level of detailed information outside of its normal reporting cycle. For additional information about NEEA's unique value to the region, history, structure and recent initiatives, please visit www.neea.org.

2) NEEA Savings

NEEA provided its savings forecasts during PSE's 2020-2021 Biennial Conservation Plan (BCP) development in the latter part of 2019, and updated its 2020 forecast in the latter half of 2020. In consultation with the CRAG, PSE adapted the source figures provided by NEEA. The revised 2020 electric savings figure is noted in Exhibit 1. NEEA's final 2020 electric savings results will include NEEA initiatives started in 2020. The results from those initiatives aren't available at the time of PSE's standard Annual Report publication, and so PSE reports the deemed savings value in the Annual Reports. NEEA finalized its 2019 and 2020 savings calculations in April 2020. It is worth noting that NEEA incorporates policy and code changes into their savings estimates, but NEEA's reporting cycles do not always line up with these changes and current year estimates may not reflect the latest bills or code changes.

3) NEEA Expenses

Exhibit 1 indicates an apparent under-spend in the NEEA electric category of approximately \$805,000. Actual payments that PSE made to NEEA totaled \$3.651

million in 2020. One driver of the difference is a funder's share adjustment made by NEEA in March. The NEEA budget was based on PSE's quarterly funder share of \$1.114 million. The main difference in spend is the unbudgeted NEEA Cycle 5 trueup of just over \$700k credit. The remaining was underspent is due to the Sch. 258 NEEA credit and PSE's participation in unbudgeted NEEA initiatives (Strategic Energy Management and End Use Load Research).

4) NEEA's Natural Gas Market Transformation Collaborative

NEEA provides a more comprehensive discussion of its 2020 natural gas market transformation activities in Exhibit 10. PSE ratepayers are major funders of NEEA's collaborative, with a 41.25 percent share of the overall 5-year budget of \$18.3 million. 2020 was the final year of the initial 5-year NEEA business plan. The NEEA Natural Gas Market Transformation 2020 expenses of \$955,000 were within the budget of \$983,000.

Similar to the NEEA electric initiatives, Energy Efficiency staff who worked on NEEA's Natural Gas Market Transformation efforts charged their time to this order number (18230660) in 2020.

NEEA works in concert with Energy Trust of Oregon, Avista Utilities, NW Natural, and Cascade Natural Gas Corporation. It coordinates the evaluation, testing, codes and standards initiatives, contacts with manufacturers, scanning for alternative measures, and developmental status of five pilot natural gas measures.

The measures that received the primary focus in 2020 included:

- Natural gas-fired heat pump water heaters,
- Rooftop HVAC,
- Water/space heat combination systems.

In 2020, there was progress made on the Energy Efficient Water Heater and Condensing Roof Top Units (RTUs). More manufacturers became engaged with natural gas heat pump water heater technologies, and the initial RTU failures were overcome, with new manufactures enlisted for four pilots, starting in 2020.

NEEA also funded Next Step Homes, which is a new construction initiative in both the electric and natural gas sectors. NEEA reported regional natural gas savings derived from this initiative in early 2020. NEEA reported the first savings estimates from the

region's natural gas collaborative, with PSE's declining to claim savings based on the geographical location of the savings.

This amount represents PSE's 41.25 percent funding share of NEEA's Natural Gas Collaborative. Condensing Rooftop Units savings are derived from four pilot measures installed throughout the NW Region in 2020, two of which are located in PSE's service territory.

5) Exhibit 10: NEEA 2020 Report of Activities and Initiatives

Exhibit 10 of this Report summarizes 2020 activities, regional initiatives, and outcomes 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.

B. Targeted Demand Side Management (TDSM)

Schedule 219

1) Description

Targeted DSM (TDSM) is an initiative designed to identify localized conservation and demand response potential, develop plans to achieve a defined percentage of that potential, then implement those plans to deliver identified energy efficiency and capacity savings.

The Targeted DSM program uses avoided costs for a specific municipality to calculate the cost-effectiveness of conservation measures. This allows PSE to offer rebates and incentives to PSE customers in these locations that are higher than those in its broader service territory. These rebates and incentives are available only during the duration of the specific NWA Project, as determined by PSE.

2) 2020 Accomplishments

Near the end of 2020 the TDSM team released an RFP for Targeted Energy Efficiency (TEE) and Targeted Demand Response (TDR) directed at pilot programs on Bainbridge Island and in the city of Duvall. PSE is planning, through non-wired alternatives (TEE, TDR), to reduce winter peak electrical usage on Bainbridge Island 3.3 MW by 2029. Additionally, the Duvall pilot plans to reduce winter peak natural gas usage 3000 MBH by 2029.

C. Production and Distribution Efficiency

Schedule E292

1) Description

The Production and Distribution Efficiency program involves implementing energy conservation Measures within PSE's own production and distribution facilities that prove cost-effective, reliable and feasible. Within production facilities, conservation Measures reduce ancillary loads at the site and exclude efficiency improvements made to the generating equipment itself.

These Measures may include, but are not limited to, lighting upgrades, variable speed drives and compressor upgrades.

For transmission and distribution (T&D) 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 reduction (CVR) (also referred to as voltage optimization [VO]).

2) 2020 Accomplishments

In 2020, PSE claimed 404,700 kWh electric savings for implementing CVR, and 23,557 kWh savings for completing energy-efficient lighting retrofits at power generation facilities.



Of the five CVR projects that PSE completed in 2020, three were installed late in December 2020. PSE could not complete their post-monitoring verification of savings by the end of the year. PSE will claim the savings from those three projects in 2021.

3) Adaptive Management

Completion of each CVR project requires extensive collaboration between program staff and staff within other PSE departments to overcome numerous challenges and setbacks at various project steps. Program staff maintained a regular flow of communication across departments (from planning, permitting, and customer outreach to sub/relay operations, system operations, and construction management). These efforts included performing lighting quality and energy efficiency assessment at six power generation plants.

VI. EFFICIENCY PORTFOLIO SUPPORT

A. Overview

The organizations that comprise the Portfolio Support 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 key elements of the Energy Efficiency department) implements and offers to customers depends on the work performed by these teams.

The teams' activities do not directly result in electric or natural gas savings, although the Portfolio Support activities expenses are spread over the portfolio for purposes of calculating cost effectiveness. The groups collaborate with program staff to ensure that (1) they engage and represent all customer classes, (2) incentives are properly set, and (3) 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 the communities that PSE serves and with its trade allies, the teams' contributions cannot be overstated.

B. Data and Systems Services

The Data and Systems Services organization performs the critical role of planning, development, support, and enhancement of Energy Efficiency systems and tools. The team manages the ongoing support of the department's Demand Side Management central (DSMc) system, which:

- Compiles and tracks Energy Efficiency programs, projects and measures, and
- Processes Residential, Commercial Rebates and Commercial Grants through structured workflows to provide a consistent review, approval and payment process.
- Provides a rebate submission portal for customers and contractors to submit and track HVAC and weatherization rebates online.
- Creates reporting, forecasting, and business performance metrics.

This group also oversees the department's EES Tracking and Forecasting system which is used to track and forecast program savings and expenses. This system allows the department to better monitor its progress towards meeting annual savings and spending targets for the entire EES portfolio of programs.

The Data and Systems Services organization also conducts analytics by understanding and



presenting program data as meaningful knowledge and insights. The team is responsible for reviewing and ensuring data integrity from a wide variety of sources, including vendors, program staff, and contractors.

1) 2020 Accomplishments and Activities

In 2020, the D&SS team added Single Family Weatherization rebates to its online submission portal. This replaced a previous online submission portal that was managed by an external vendor. Although development and testing took several months, the transition to an internally managed submission portal provides significant cost savings to the Single Family Weatherization program.

The D&SS team also responded to many program changes throughout 2020 as programs were adjusted to gain more savings in 2020. The team added several new programs in its DSMc platform including: Business Lighting Express, Residential Midstream Home Heating, and Residential Midstream Home Water Heating.

Finally, the D&SS team worked throughout the year on the development and testing of a new Appliance Rebate program in its DSMc system so those rebates will be processed internally. This new process will launch at the beginning of 2021.

2) Adaptive Management through Continuous Improvement

The D&SS team made incremental improvements to the residential rebate programs (Space Heat, Water Heat, and Weatherization) to benefit both customers and contractors who submit rebates online as well as internal staff who review and process these rebate applications. The team updated email notifications, implemented a duplicate checking function in all rebate programs, and worked with the DSMc software vendor to make a number of improvements to the online rebate submission portal.

The team also streamlined many of the commercial grant programs and improved contractor tracking across these programs. This effort allowed more consistent data entry and processing of these programs and reduced the overall number of input points required from staff.

C. Rebate Processing

Rebates Processing functions include intake, qualification, payment and customer service, as well as process improvement in the customer experience. Improvements include, but are not limited to, redesigning rebate forms for clear instructions and qualifying criteria, analyzing rejection reasons for the root cause of non-qualified rebates, and simplifying the application process for customers.

The Rebates Processing budget is predominantly labor and includes training, planning and development costs projected by Rebate Processing staff.

Rebates Processing roles include:

- Intake, qualifying, data entry, and incentive payment processing;
- Communicating with customers regarding the rebate submittal, including status and payment;
- Collaborating with the Energy Advisors to provide a seamless and efficient customer experience;
- Demonstrating best practices and continuous improvement; and
- Coordinating timely customer payments with PSE Accounts Payable.

The Rebates Processing team perform a critical verification step in Energy Efficiency. While a selected sample of applications are directed for onsite inspection by the Verification team, all must go through several verification steps prior to payment authorization.

Key attributes include:

- 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?
- Etc.

Table VI-1 provides a summary of rebates processed by Energy Efficiency Rebate Processing 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 activity within the Rebates Processing group.

Table VI-1: 2020 In-House Residential Rebates Paid

Program	Count	Electric Incentives Paid	Gas Incentives Paid
Electric Home Heating	2,780	\$3,421,200	\$0
Electric Water Heating	370	\$188,300	\$0
Natural Gas Home Heating	5,010	\$0	\$1,801,900
Natural Gas Water Heating	1,370	\$0	\$318,200
Residential Windows	2,890	\$423,900	\$401,100
Single Family Weatherization	4,400	\$331,500	\$1,233,100
Totals	16,820	\$4,364,900	\$3,754,300

1) 2020 Continuous Improvements and Accomplishments

The Rebate Processing team successfully managed processing over 14,000 rebates for residential and commercial customers. The team have revamped its Public User Interface; which has greatly streamlined the overall process by providing more ease and options for PSE customers and contractors alike. All of PSE's trade ally partners are now using the online portal to submit their rebate claims. This greatly enhances their experience regarding the tracking and reporting of their submittals. It also speeds up the processing timeframe so that customers and contractors promptly receive their payment.

D. Verification Team

The 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.

As the "V" in EM&V, PSE's Verification team performs on-site inspections and confirmations of randomly-selected participating homes and businesses to assure energy efficiency measures are properly installed. Combined with other Evaluation and Measurement functions, the Verification team seeks to secure both confidence in claimed energy savings and improvements in program quality.

1) Composition

The Verification team consists of three quality assurance specialists and one business analyst. The QA verification inspectors are 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. The team's Business Analyst is responsible for data and systems, forecasting and working closely with program staff on a regular basis. The Business Analyst is also responsible for preparing the reporting, tracking, and communicating program findings and other related information from the field verifications to the program staff.

2) 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 sampling⁵ 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.

When performing onsite inspections, QA verification inspectors routinely engage customers in several Energy Efficiency elements about which the customer may not have been aware. For instance, the QA verification inspector may provide a referral to a CAN contractor, alert the customer that they may be eligible for a weatherization rebate,

⁵ 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 2020.

etc. These efforts lead to increased customer satisfaction and raise customer awareness.

3) 2020 Team Accomplishments

Due to the COVID-19 pandemic, it became necessary to cease all in-person, on-site verifications as of mid-March 2020. While virtual verification options for several programs had previously been established, most programs relied on in-person or on-site verification. Within a matter of weeks, the Verification team was able to move to a 100 percent virtual operation. While some program targets shifted, the Quality Assurance specialists were able to conduct approximately the same amount of overall verifications as in 2019. Table VI-2 highlights the overall verification totals per program.

Table VI-2: Summary of Verifications by Measure Type

Measure Category	Count
Appliance Decommissioning	13
Electric Home Heating	708
Electric Water Heating	42
Natural Gas Home Heating	959
Natural Gas Water Heating	148
Residential Windows	23
Retail Appliances	42
Single-Family Weatherization	103
Small Business Direct Install	35
Web-Enabled Thermostats	25
TOTAL VERIFICATIONS	2,098

E. Programs Support

Programs Support functions include data management, employee engagement, communications, and integration work by Programs Support staff, and all supporting implementation of Residential and Business Energy Management customer programs. The Programs Support budget is predominantly labor and includes training, planning and development costs projected by Programs Support staff.

Program Support roles include, but aren't limited to:

- Collaboration with Energy Efficiency stakeholders on internal employee and customer communications;
- Biennial and strategic program planning support;
- Customer experience – Energy Efficiency program participation surveys;
- Operational strategy and implementation;
- Organizational change management;
- Information technology;
- Developing program manuals, policies, document control and department presentations;
- Integration liaisons with Marketing, Outreach, Digital Experience, and other PSE internal departments;
- Trade Ally support; and
- Best practices and continuous improvement.

1) 2020 Accomplishments and Activities

In 2020, Programs Support created and filled three new roles to support program staff and energy efficiency initiatives. These roles perform a variety of duties, including: communications, technology support, data analysis, product positioning and integrated go to market strategy. The three roles are outlined below.

The Sr. Market Analyst role covers product positioning and integrated go to market strategy. The Sr. Market Analyst works closely with the program teams to develop and clearly articulate product marketing strategy, positioning, target audience, and value propositions to drive adoption and growth of PSE energy efficiency programs. In addition, the role interfaces closely with marketing communications to articulate product strategies to enable messaging and tactical execution across channels.



The Sr. Business Technology Analyst acts as a liaison between business program leaders and Information Technology. This role brings strong experience in providing innovative industry solutions, broad technical competency, business analysis, and complex process and systems design.

The Sr. Technical Communicator position is responsible for developing and implementing a strategic internal and external communications plan to raise awareness and promote energy efficiency programs. The position creates relevant industry communications including reports for various audiences, regular newsletters, articles, announcements and overall improves customer communications and strategies.

F. Trade Ally Support

Trade Ally Support manages PSE membership costs in Energy Efficiency (EE) trade associations. These organizations stand apart from other trade memberships managed in individual Energy Efficiency programs in that they provide comparatively broad-based EE research, training and/or implementation support services.

This function is the key difference that distinguishes this organization from the next group to be discussed (the Contractor Alliance Network, or soon to be re-named the Trade Ally Network), which manages direct relationships and referral processes for CAN.

1) Description

Trade Ally Support organizations provide education, information and related services for:

- The adoption or expansion of energy-efficiency products, services, and practices; and
- Conducting research toward the development of new, or improved validation or delivery of existing conservation measures, programs and services.

The Trade Ally Support line item budgets and tracks only annual membership dues or Energy Efficiency services subscriptions PSE pays to broad-based industry trade and research organizations who perform and support ongoing development and implementation of Residential and Business Energy Management programs. PSE participates in and utilizes the services of many such organizations to support delivery,

management, and promotion of energy efficiency services.

Utility, customer, and service provider benefits primarily include education and information exchange on end-use technologies, energy legislation, efficiency services, and related industry trends.

PSE budgets and tracks other Trade Ally expenses not related to dues, for example conference attendance by PSE Energy Efficiency staff, with the pertinent efficiency program(s) receiving the benefit.

2) Memberships and Subscriptions

As discussed in Chapter 10: *Measurement & Verification*, PSE applies a great deal of rigor to ensure that Conservation Rider customer funds are used appropriately to add value to Energy Efficiency conservation offerings when considering memberships.

Memberships paid from the Trade Ally Support account in 2020 focused mainly on local or regional conservation efforts. 2020 memberships included:

- Association of Energy Services Professionals – AESP;
- Consortium for Energy Efficiency – CEE;
- Electric League of the Pacific Northwest;
- ESource;
- Energy Solutions Center – ESC; and,
- Northwest Energy Efficiency Council – NEEC.

PSE also enhanced its resources by subscribing to eSource in 2020.

This extensive industry database provides an additional insight for program staff to ensure that they maintain awareness in utility and efficiency developments. 2020's subscription included additional tools for technology assessment and eliminated access to customer journey mapping tools (essentially, a process flow diagram of the customer experience with a utility).

G. Trade Ally Network

The Trade Ally Network (TAN) connects PSE customers with pre-screened, independent contractors committed to helping customers make safe, dependable and efficient energy choices. This ensures their business and home energy improvement projects are successful



and handled with a high level of customer service. This customer service is the key difference that distinguishes this organization from the Trade Ally Support group, which manages memberships with industry trade organizations.

To determine if a specific contractor is participating in PSE's Trade Ally Network customers can call an Energy Advisor at 1-800-562-1482. Additionally, the Trade Ally Connect web portal assists customers with referrals to member contractors, who service their respective areas, for energy efficient equipment installations.

1) 2020 Program Accomplishments

During 2020, the Trade Ally Network managed 180 active Trade Allies (contractors) enrolled in the program. The number of Trade Allies in the network did not increase, however, the team maintained the existing contractor base while serving customers in need of reliable contractor referrals.

Despite COVID-19 challenges, the TAN generated over 14,000 referrals, 1,600 of which converted to successful customer projects and accounted for almost \$4 million in energy efficiency upgrades. PSE's Trade Allies also completed over 6,000 rebated projects.

In coordination with the Clean Energy Solutions team, the Trade Ally Network launched a new customer referral product for electric vehicle charger installations in response to the customer needs for reliable contractors.

In the second half of 2020, the program also completed market research on financing options for customers. PSE identified local financial institutions, as well as Trade Allies, that offer financing options to customers. The TAN was able to implement new processes to the customer referral workflow related to financing options for future use.

2) Continuous Improvement through Adaptive Management

In 2020, the recently launched Trade Ally Portal was improved by integrating PSE's Rebate Portal with single-sign-on access and rebate project data.

In March 2020, contractor referrals were limited to emergency situations due to COVID-19 restrictions. The team worked with stakeholders and developed COVID-19 safety protocols that allowed the TAN relaunch all referral products in June 2020. Another example of adaptive management was virtual estimates for customers. PSE researched and engaged Trade Allies to understand the resources used in the field and integrated

virtual estimates in the new processes. Many contractors incorporated virtual estimates into their business models as a result and continue to have success.

While the customer referral program was heavily impacted by COVID-19, PSE continued to identify improvements. The TAN team provided the Multifamily Retrofit team with access to the Trade Ally Portal in order to streamline customer referrals, improve referral tracking and reporting, and overall improve the customer experience

3) Hard-to-Reach and/or Proportionately Underserved Segments

The Trade Ally Network continued to support the manufactured home campaign in 2020. Over 600 contractor referrals were generated for manufactured home customers and Trade Allies completed over 450 rebated customer projects.

The TAN team also supported the low to moderate income customer segment in 2020. These customers often times fall outside of the qualifications of the Low Income programs and may not be able to participate in the standard PSE rebate programs. The Efficiency Boost initiative was created to support this customer segment with increased rebates and a streamlined process to be partnered with Trade Allies participating in the program. The Trade Ally Network supported the Efficiency Boost initiative with contractor engagement & enrollment, hosted contractor training and program support, and implemented changes to the customer referral process to ensure eligible customers were connected to participating Trade Allies.

4) Key Variance Drivers

The COVID-19 pandemic largely impacted an overall decrease in referral volume for roughly six months out of the year. Combining the lower than expected referral revenue in 2020 and the implementation costs for the Trade Ally Portal which was carried over from 2019, the Trade Ally Network saw an overall program deficit for the year.

H. Automated Benchmarking System: MyData

MyData was created in 2013 by PSE in order to provide PSE compliance with the City of Seattle benchmarking mandate. This free web-based tool enables users to set up automated monthly reporting of their building's usage, to track energy usage for a portfolio of buildings, develop Energy Star® ratings and comply with state regulations including required reporting in the [City of Seattle](#) via Energy Star Portfolio Manager.



In 2020, the need for MyData software expanded with the passage of the Washington State Clean Buildings bill (House Bill 1257) into law. The HB 1257 bill requires PSE to provide energy consumption data in a format compatible for uploading to Energy Star Portfolio Manager. MyData is the only tool that can provide usage automatically to Portfolio Manager so that PSE customers can remain compliant with HB 1257.

1) Program Accomplishments

PSE continued to see an increase in the use of MyData in 2020 and fulfilled over 1,300 requests, a total of over 10,000 requests since the implementation of MyData.

2) Hard-to-Reach and/or Proportionately Underserved Segments

MyData is available to all customers and program staff continued working to expand the scalability of MyData in order to serve new users in accordance with House Bill 1257, estimated at 7,000 new users.

3) Adaptive Management

PSE extended the useful life of the MyData software by rebuilding the backend and reconfiguring the underlying data streams to align with PSE's current IT cloud infrastructure. The software is expected to last another year, and PSE has begun efforts to find a software replacement.

Program staff continues to use customer feedback to plan for future improvements as PSE searches for a replacement software to MyData. Staff are also working with PSE's in-house IT team to build a backend that will allow for a smooth transition into a new tool. PSE expects MyData to play an essential role in enabling customers to comply with HB 1257; program staff have been active participants in the preliminary rulemaking discussions for HB 1257.

I. Energy Advisors

The Energy Advisor Department is a unique, customer solution operation. This expert group brings efficiency into PSE's customer homes by guiding them in changing behaviors, understanding their energy use, and assisting them in using PSE's programs that are best suited for the customer's individual circumstances. Energy Advisors also promote and explain PSE's renewable energy programs, community challengers, available promotions and tax incentives. The Energy Advisors assist customers with these services over the phone, email, and in person.

Unlike transaction-based customer care departments, the Energy Advisors (EA) provide expertise and deliver solutions tailor-made for customers' homes. The Energy Advisors perform research, conduct analyses, provide resolution, and respond to customer inquiries. They follow-up on requests related to energy efficiency and conservation that inform customers, and make suggestions on how customers can reduce their energy use. Energy Advisors represent PSE in an effort to promote and cross-market energy-efficiency products and services by presenting and providing educational materials to employees, organizations and community groups.

Energy Advisors receive training and instruction in departmental procedures, current programs, building science, and customer service. They are expected to use good judgment in independently responding to recurring customer issues and/or complaints. Unique, difficult or unusual customer service issues are referred to Senior Energy Advisors.

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.

1) 2020 Accomplishments

The Energy Advisor team interacted with over 60,000 PSE customers in 2020. The continued development of online self-service options has led to a decrease in customer calls to the Energy Advisor line. Additionally, a pause in contractor referrals due to COVID-19 also led to a decrease in calls. Energy Advisors created a waitlist for these customers and followed up via email once referrals were available again. The online Public User Interface has also made it easier for customers to submit rebate applications without having to contact an EA.

A significant accomplishment in 2020 was the EA team's focus on promoting self-service tools and their benefits during every customer interaction and screening low to moderate

income customers for eligibility of enhanced rebates through PSE’s Efficiency Boost program. The EA team also supported the design and implementation of the Efficiency Boost program and an enhanced process for supporting customer who were missing information on their rebate applications.

Table VI-3 provides a summary of key Energy Advisor customer-focused metrics.

Table VI-3: Key Energy Advisor Metrics

2020 Energy Advisors	
Calls Answered	42,400
Emails	4,700
Events Staffed	10
Contractor Referrals Generated	9,400

The metrics noted in Table VI-3 denote:

- Calls Answered are both Residential Sector, and a portion of Business Sector incoming 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 in the following section. Approximately half of the events staffed in 2020 were virtual.
- Emails include a wide variety of actions taken by energy advisors in response to emails sent to the general energy advisor email link.

2) 2020 Adaptation and Continuous Improvement

In 2020, energy advisors began proactively contacting customers having difficulty completing their rebate applications. This has resulted in a decrease in the number of calls, complaints, and uncompleted rebate applications. They are also promoting the Public User Interface (PUI) so customers can submit their rebate applications and check rebate statuses online.

PSE continues to improve its information distribution to customers based on their evolving requirements. For example, PSE makes use of emails with PDF attachments and hyperlinks via its energy advisors, as well as mailed hardcopy brochures and rebate applications through its brochure fulfillment process.

J. Energy Efficient Communities

Energy Efficient Communities (EEC) is a program-support channel to deliver Energy Efficiency program information directly to residential and commercial customers and through partnerships with community organizations and municipalities at the local level. The program works to leverage community resources to connect with, educate and move customers to Energy Efficiency program participation.

1) Description

Puget Sound Energy's EEC channel works to generate participation in PSE's Energy Efficiency programs through direct-to-customer outreach and through partnerships at the local level. The team works to discover locally-appropriate ways of engaging with customers by leveraging PSE's resources, community knowledge and partner support.

The EEC team works closely with the Energy Efficiency programs to determine whether a broader partnership with a community organization or a more targeted, direct-to-customer approach is needed, such as a door-to-door initiative. As an outreach team for both residential and commercial programs, the EEC team also works on cross-program promotion, where appropriate.

The following discussions provide reviews of key 2020 Energy Efficient Communities' areas of focus. As can be inferred from the list of accomplishments and activities, a significant portion of the team's efforts was focused on potentially hard-to-reach customer segments. Thus, they were not highlighted in a separate category.

2) Program Accomplishments

In spite of challenges presented by COVID-19, in 2020 the EEC team accomplished a variety of customer outreach initiatives in support of various energy efficiency programs, including the following:

- Delivered more than 40 presentations (virtual and in-person, as appropriate) to

service organizations, homeowners associations, downtown associations, non-profit organizations, etc. Prior to COVID-19, the ECC team tabled at a dozen local events to promote select energy efficiency programs.

- Conducted small business meet and greets – following all COVID-19 safety protocols – in Kent, Tacoma and Olympia. The purpose of this tactic is to have a light touch with PSE’s small business customers to drive awareness of its energy efficiency programs and to check in on the health of the businesses community after several months of COVID-19 restrictions. The team engaged with a few dozen businesses in these communities and targeted areas.
- Connected the SBDI team with nearly 50 businesses for energy assessments on potential upgrades for interior systems (as appropriate) and exterior lighting needs.
- Utilized regional business networks to promote a Small Business Makeover Contest and expanded networks to ensure awareness within Black, Indigenous, and People of Color (BIPOC) business owners. Connected with more than 300 individual businesses and organizations over email and phone, and gained over 1,400 views on social media. Additionally acted as local media contact for this campaign, including a promo spot to explain the value of energy efficiency measures. Although demographic information was not collected within the applications, PSE estimates 20 percent of the businesses contacted either served BIPOC communities or were BIPOC-owned. Two of the four Small Business Makeover contest winners were businesses owned by women of color.
- Built awareness of a limited time “Elevate Your Efficiency” campaign. More than 100 businesses were invited over email & phone, and social media channels earned 7,728 views and 78 engagements. Invitations garnered questions from about a third of the businesses and resulted in five applications.
- Connected with nearly 200 multifamily property managers to advertise a limited time offer. This effort was especially helpful in reaching limited-income and “hard to reach” customer segments.
- Partnered with 24 non-profit organizations, through PSE’s Powerful Partnerships program, that specialize in supporting vulnerable and limited-income populations or environmental protection. The team promoted select energy efficiency programs through monthly digital/print/web/social outlets, as well as a few virtual presentations. These efforts resulted in over 600,000 digital impressions and 27,000 digital engagements.
- Created county profiles to showcase the number of residential and commercial rebates processed, as well as the total residential and commercial incentives that

were paid each year. These profiles are available on pse.com and are used during presentations to a variety of audiences, such as city councils, homeowners' association meetings; and tabling events. These profiles show that customers are participating in energy efficiency programs at a local level.

- Authored community newsletters that featured local highlights of energy efficiency projects and promoted limited time opportunities. Emails were segmented by community to increase relevancy.
- Identified completed projects that showcase energy efficiency measures for use in case studies on social media, video, web and collateral. The EEC team facilitated customer interviews and coordinated photography and video shoots.

3) Continuous Improvement and Adaptation

Prior to COVID-19, the majority of EEC's work was done in person through presentations. With safety guidelines in place, the team began tracking direct outreach efforts made utilizing digital tools email, phone calls and social media accounts.

In 2020, over 1,000 email exchanges were conducted, 300 phone call meetings were handled, 67 social media posts garnered more than 23,000 views and almost 300 likes, shares and comments.

The EEC team also revised and streamlined their tracking and reporting systems. The new tools enable a granular look into the results of EEC work. Excluding results shared in "Accomplishments," EEC referred 55 customers to various energy efficiency programs for further education and development of potential projects.

4) Pilot-Like Initiatives

In 2020, the team tested efforts for direct prospecting of customers utilizing lists provided by the Business Energy Management (BEM) team. The contact list was made up of customers with high potential for energy efficiency savings. The team was able to make meaningful connections with 60 percent of customers, 18 percent were referred back to the BEM team with potential projects.

The team also began working on how to engage with the building and contractor community. While outreach to these organizations did not begin until 2021, time was

spent on education and research in 2020.

K. Customer Digital Experience

The focus of the Customer Digital Experience initiatives is to significantly improve Energy Efficiency’s ability to communicate the “how and why” of energy efficiency, using new technologies and engaging interactive methods. Ongoing work includes the design of web tools and mobile-friendly apps that are effective in delivering electricity and natural gas savings. Research has shown that PSE customers are more web-savvy than average and have high expectations when doing business on the web. Customer Digital Experience supports interactive content development, e-newsletters and other miscellaneous software applications, including online form, database and web hosting services.

In 2020, customer interaction with online tools increased significantly in response to the COVID-19 pandemic. PSE also added personalized recommendations to help reduce the impact of rising residential bills due to more time spent at home. These tools continue to help customers understand the specifics behind their energy usage, show neighbor comparisons (residential customers),⁶ notify customers of higher than usual usage, and provide new ways to encourage efficient behaviors, by suggesting personalized tips, tools, ideas and checklists, based on a customer’s automated energy usage profile and self-assessment information.

PSE’s “Savings & Energy Center” continues to see significant page traffic and overall engagement with customers.

PSE provides several highlights of its 2020 online metrics in Table VI-4.

Table VI-4: Energy Efficiency Online Metrics

2020 Customer Online Experience Metrics	Web Page Views 2020
Savings & Energy Center <i>[all EE-related content pages on pse.com]</i>	Over 1.23 million
PSE digital account Energy Center tools <i>[pse.com Energy center landing page and Oracle tools]</i>	Over 1.2 million

⁶ Specific customer details; addresses, names, account information, etc. are rigorously protected. Instead, only general, non-specific comparisons will be provided.

Ask an Energy Advisor inquiry form page [https://www.pse.com/rebates/ask-advisor-form]	More than 18,000
Recommended Energy Professional information page [https://www.pse.com/rebates/find-a-contractor]	Nearly 50,000

1) Customer Awareness Tools

The Customer Awareness Tools category is comprised of four electronic services provided to PSE customers via a variety of media, designed to fit customers' communication expectations. The services include:

a. Unusual Usage Alerts (UUA)

- Available for residential customers with an AMR or AMI meter and 12 or more months of data at the current address.
- Delivered to customers when their energy usage is abnormal compared to the previous year.
- More than 536,000 UUA reports were delivered to customers in 2020.
- Unusual usage alerts are triggered when a customer is trending to use more than 30 percent of they used for the same billing cycle the year prior.

b. My Energy Usage

- When PSE customers log onto their PSE digital account, they can view their energy usage center, which is moderated by PSE's contractor.
- Additionally, the energy usage center also allows customers to select ways to be more energy efficient to help them save energy.

c. Seasonal Readiness Emails (SRE)

- PSE's contractor sends up to 300,000 reports to customers twice a year during the changing seasons, once in the summer and once in the winter.

d. Customer Engagement Tracking (CET)

The Customer Engagement Tracker (CET) survey is an instrument designed to explore utility customer reactions to the Home Energy Reports program and other related outreach. The survey aims to accomplish the following key objectives:

- Explore customer interaction with and reception of the Home Energy Reports; for both those in PSE's legacy deployments as well as the groups from 2014 through 2020,

- Gauge overall impact of the program on the PSE customer relationship, both via self-reported influence and by measuring differences in engagement between program participants and non-participants (controls).
- Compare results between PSE deployments and to those of other contractor utility partners, with an eye towards potential program improvements.

2) PSE Marketplace

In 2020, PSE ended its ShopPSE offering due to challenges with the business model. At the end of 2020, PSE launched the PSE Marketplace as the new online retail shopping platform with a new vendor. The PSE Marketplace offers instant discounts to eligible customers on smart thermostats, ShowerStart thermostatic shut-off valves, and LED products such as indoor and outdoor fixtures. Additionally, online retail rebates is a valuable service to PSE customers due to COVID-19 restrictions and safety guidelines that present barriers to visiting brick and mortar stores. The PSE marketplace provides instant rebates on products for qualifying PSE customers. Visitors to the site can quickly and easily see which rebates they are eligible for by answering a short list of questions.

3) Customer Digital Experience Accomplishments

In 2020, Customer Digital Experience continued to provide digital tools in the myPSE Account Energy Center to help customers understand the specifics behind their energy usage and show neighbor comparisons (residential customers).⁷

The Customer Digital Experience team also assisted customers in saving energy through email engagement messaging. For example, unusual usage alerts (UUA) notified customers when usage trended more than 30 percent higher compared to the same time of the previous year and provided tips on how to curb usage and save energy. In 2020, PSE sent 536,782 unusual usage alerts to customers with an open rate of 50 percent, which is significantly higher than the industry standard.⁸

⁷ Specific customer details; addresses, names, account information, etc. is rigorously protected. Instead, only general, non-specific comparisons will be provided.

⁸ Per Oracle's year-end report to PSE.

4) Hard-to-Reach and/or Proportionately Underserved Segments

Digital tools continue to be available to all PSE residential customers, including low and middle income customers. These tools provide low, no cost personalized tips on how to save energy.

5) Adaptive Management

In late 2020, the UUA threshold was changed from 30 percent to 50 percent in order to provide a better customer experience in response to COVID-19 radically altering residential energy consumption. Once a new baseline usage pattern is established in 2021, thresholds will return to 30 percent.

PSE also adjusted customer messages within alerts and digital channels to provide reassuring energy tips and support during the pandemic.

L. Market Integration

Market Integration consists of salary costs of employees and contractors working on energy efficiency marketing and promotional support activities, which makes marketing efforts more transparent. Tasks include the enhancement of online energy-efficiency tools and features social media, digital content creation, and email communications. Other tasks include traditional marketing that centers on awareness-based promotional channels used across all programs, such as advertising, collateral, and websites.

In 2020, PSE launched a robust energy efficiency advertising campaign across its service area, designed to drive broad awareness of the solutions PSE provides to help residential and commercial customers save on their energy costs. The campaign highlighted PSE's rebates, incentives, and low-cost/no-cost tips, especially timely information to help customers manage the financial impacts of the COVID-19 pandemic.

Tactics included television, digital display banners and video, social media, email, print, radio and streaming audio, and garnered more than 62 million impressions over six months:

- 58,909,118 total residential campaign impressions
- 3,341,441 total commercial campaign impressions

Additionally, PSE increased its use of digital content as a way to engage and educate customers during COVID-19 restriction. This allowed the team to use connections through



email, social media and pse.com to replace what were formerly in-person engagements, including events.

M. Events

The Energy Efficiency department participates in community, local, and regional events, including home shows, trade shows, seminars, corporate events and community events. The event audience consists of general public, businesses, builder/contractors, multifamily property owners, city leaders, homeowner associations, and students/teachers. PSE's event strategy serves as one piece of a robust communications strategy for educating and engaging residential and commercial customers about energy efficiency programs offerings. Events provide a unique opportunity for staff to interact directly with customers, discussing a variety of products, programs and services and acting as the face of PSE to answer questions and provide resources. Events staff match customer interests and needs with energy efficiency programs, and gather customer feedback to inform and influence future programs.

PSE employs a third-party vendor to augment its dedicated events staffing to ensure maximum energy efficiency exposure. The purpose of this is to increase awareness and uptake of PSE energy efficiency programs, drive energy savings, and reach a broad and diverse audience base through door-to-door outreach, open houses, and community events. Due to COVID-19, all in-person events were put on hold in March 2020 and therefore, PSE used only a fraction of the allocated budget for staffing services in 2020 resulting in a variance in outside services.

1) 2020 Accomplishments

In 2020, the Community Involvement team planned to host in-person events to drive awareness and engagement for PSE's programs and products throughout. In March 2020, all plans were put on hold due to the onset of the COVID-19 pandemic, preventing face-to-face engagement. The Events team pivoted to digital platforms and shifted to PSE-owned virtual events for both residential and business customers, resulting in nearly 1 million impressions. PSE leveraged digital channels to design events with a strong call to action and drive awareness, customer engagement and participation in energy efficiency programs.

2) Highlights of Residential Events

The Community Involvement team created robust, integrated virtual events, leveraging

event opportunities to connect with community stakeholders, increasing energy efficiency awareness, education, and participation. Customer data and segment based approach was used to target audiences and tailor messaging, making events high impact. These virtual events included:

- Find your Savings Challenge
- Save a Watt Bingo
- Save Energy challenge
- Take a Spin
- Navy NW Energy Drive-Thru Virtual Event
- Take an Energy Efficiency Pledge Virtual Event
- Virtual Presentations

3) Reaching into PSE Businesses

The Community Involvement team, continued the ongoing practice of engaging PSE employees, vendor partners, and businesses to educate them on PSE's energy efficiency programs and services aimed to drive participation and investment in energy efficiency. These efforts included:

- AEE West Virtual Conference
- Coffee & Conversations; Business Lighting:
Live PSE webinars with PSE's Energy Efficiency experts with live Q&A and chat with business customers.
- TRENDS virtual conference to reach large and small property owners, multifamily property owners and managers, personnel and representatives
- Smart Building Exchange virtual event

4) Hard-to-Reach and/or Proportionately Underserved Segments

Due to COVID-19, all tabling events were cancelled in 2020. However, the team shifted to virtual platforms in order to engage with this vulnerable community segment. In partnership with program and outreach staff, the events team reached out to foodbanks and provided awareness, education and resources for accessing energy savings through PSE's low income and weatherization programs.



Table VI-5 provides a summary of 2020 events in which PSE presented energy-efficiency information.

Table VI-5: Total Events

2020 Event	Count
REM	26
BEM	15
Residential Door-to-Door	0
Contractors, partners in community	25
Total	66

VII. EFFICIENCY RESEARCH & COMPLIANCE

A. Overview

Functions of this group include:

- Conservation Supply Curves,
- Strategic Planning,
- Market Research,
- Program Evaluations and
- Biennial Electric Conservation Achievement Review (BECAR).

In addition to playing a critical role in Energy Efficiency's overall measurement and verification functions, the work of these teams assists Energy Efficiency program staff in designing innovative conservation offerings, evaluating processes and savings calculations, verifying cost-effectiveness, and building the Company's biennial IRP. They ensure that there is a regular schedule of program performance review, consistent with applicable requirements.

B. Conservation Supply Curves and Strategic Planning

Although separately listed in PSE's Exhibit 1: *Savings and Budgets*, the Conservation Supply Curves and Strategic Planning functions are managed in the same Energy Efficiency organization, and tend to have overlapping goals and focus.

1) Conservation Supply Curve Description

The purpose of the Conservation Supply Curve function is to complete a Conservation Potential Assessment (CPA) or the company's Integrated Resource Plan (IRP). The Conservation Potential Assessment, conducted by a third-party consultant, identifies the amount of energy savings potential that is technically available, and of that, what portion is achievable over the 20-year planning horizon of PSE's IRP. PSE then determines the amount of conservation potential that is economic (that is, cost effective) relative to supply-side options in its overall resource portfolio analysis for the IRP. The IRP, which is filed every two years, is the basis for PSE's electric and natural gas energy resource acquisition strategy, as well as the targets for its energy efficiency programs. The IRP analysis is also used to derive the ten-year conservation potential and two year electric conservation target required to comply with the Washington Energy Independence Act.

Development of the natural gas conservation target follows a similar process.

2) Strategic Planning Description

The Strategic Planning function is responsible for providing support and guidance to a variety of regulatory and other strategic initiatives. Responsibilities include regulatory compliance filings, federal and state legislative review, policy analysis, end-use research, or other strategic efforts related to energy efficiency.

Strategic Planning roles include, but are not limited to:

- Internal and external research, planning and development,
- Biennial and strategic program planning support,
- Development and maintenance of avoided costs and cost-effectiveness models,
- Legislative and regulatory policy analysis,
- Coordination with regional organizations including NEEA and RTF,
- Supporting energy efficiency third-party program bidding activities.

3) Cost-Effectiveness

Cost-effectiveness modeling and calculations are also conducted within the Strategic Planning team. PSE comprehensively addresses program-level detailed views of electric and natural gas cost-effectiveness results for 2020 in Exhibit 2.

4) 2020 Accomplishments and Activities

In 2020, Cadmus provided the conservation supply curve data for input in the 2021 IRP portfolio models. These included both electric and natural gas energy efficiency, electric demand response, and distributed (customer-sited) generation for multiple scenarios, including: with and without intra-year ramping; varying weighted average cost of capital (WACC) values for discounting the present value of benefits; and extrapolations of retrofit potential beyond the traditional 10-year retrofit ramping period. Finally, Cadmus provided the final conservation potential assessment (CPA) report.

Other notable accomplishments by the Conservation Supply Curves and Strategic Planning team in 2020 included:

- Review and feedback on legislation, including the Healthy Homes and Clean Buildings and the Climate Commitment Act;
- Added focus to the Energy Codes, both the State and the City of Seattle, both of which have significant impacts to PSE programs;
- Supporting pilot development related to Targeted Demand Side Management including demand response scenarios and outreach on Bainbridge Island;
- Supporting company strategy development for Distributed Energy Resources; and
- Supporting the development of the new Heat Pump Water Heater program.

C. Market Research

Market 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.

1) Description

The focus of the Market Research function is on acquiring information about customers that is relevant for the development of energy-efficiency 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, Market 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. Market Research is also called upon for analysis of localized characteristics, attitudes, behavior, and energy usage trends, necessitating more geographically targeted research. Market 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.

The Market Research staff works closely with program evaluation, marketing communications, 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:

Baseline Research with Broad Applications: This type of research provides 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.

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, such as message testing, target markets, and campaign effectiveness studies. Other research efforts will be focused on tracking customer satisfaction with information services, such as the Energy Advisors. 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.

2) 2020 Results

In 2020, PSE Energy Efficiency Market Research efforts focused on a variety of effort to improve Energy Efficiency marketing effectiveness.

a. Program Accomplishments

In 2020, the organization completed the following:

- Migrated customer research support to PSE's new platforms, providing analysis across digital channels and creating digital dashboards for energy efficiency programs from these new resources;
- Supported energy efficiency program initiatives including PSE Marketplace;
- Provided analysis for marketing channel evaluation to raise efficacy and overall channel performance;

- Completed ad hoc queries utilizing propensity models and customer segmentation targeting customers who would benefit or participate in new and existing program offerings.

b. Hard-to-Reach and/or Proportionately Underserved Segments

In 2020, PSE coordinated research for PSE's *Macquarie Transfer Multiparty Stipulation Agreement* (Docket U-180680) which required PSE to conduct a low-income needs assessment study to "...provide a better understanding of the needs related to energy affordability of low-income households in PSE's service territory, including data related to energy efficiency, specifically weatherization needs and opportunities." The Market Research team used the data and findings to develop new program supports for PSE's Low Income Weatherization program and supporting public agencies.

Additionally, PSE conducted research to identify customers in the Low/Moderate income segment for program marketing to customers whose income exceeds low-income program qualifying thresholds, but still may face barriers to program participation. Finally, PSE also Conducted research to identify Small/Medium Business segments.

c. Adaptive Management

In 2020 Market Research's contributions to adaptive management are included in the organization's accomplishments listed in the previous sections. The staff's adaptive management efforts were part of continuous improvement efforts included more proactively in the front end of the research process.

d. Key Variance Drivers

Market Research slightly exceeded its budget in 2020 due to nominal variances between labor cost estimates and actual labor costs.

D. Program Evaluation

The Program Evaluation function is focused on implementing PSE's overall Evaluation, Measurement & Verification (EM&V) function in compliance with applicable regulatory conditions to achieve the continual improvement of energy-efficiency service delivery to customers.



1) Description

PSE Evaluation staff are 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 (Exhibit 6), in accordance with the guiding Evaluation Framework (Exhibit 8), ensuring that all programs receive review on a maximum four-year cyclic basis.

Evaluations are conducted by third-party evaluation consultants that are selected by a competitive Request for Proposals (RFP) process. For 2020-2021, PSE contracted with one third-party evaluator, DNV GL, to conduct evaluations across the program portfolio. This approach facilitates greater efficiency and integration of data and results than would evaluations conducted by multiple firms.

In 2020, evaluation resources focused on commercial and residential programs. The level of detail at which each program is evaluated was determined by prioritizing each program into evaluation tiers. All levels of rigor will be consistent with the principles, objective, and metrics prescribed in the guiding Evaluation Framework (Exhibit 8) in PSE's 2020-21 Biennial Conservation Plan. In prioritizing programs for evaluation, PSE considers the regulatory timing requirements, level of energy savings, significant program changes, results of prior evaluations and whether a program is new or never been evaluated before.

In 2020, the Commercial & Industrial Retrofit, Large Power User Program Evaluations, Home Energy Reports, and Multifamily New Construction programs received comprehensive evaluations, consistent with regulatory requirements and CRAG guidance. Other programs received various levels of market and process evaluations and engineering reviews of energy savings.

After an evaluation deliverable is completed, members of the EES program team participate in the Evaluation Report Response (ERR) process to ensure that evaluation results are implemented in the program. The Program Team completes the ERR, indicating what actions will be taken in response to evaluation findings and recommendations. This ensures a closed-loop system with Evaluation findings and Implementation responses and adjustments being documented in the Source of Savings database.

Final evaluation reports with appended ERRs are posted to the Conduit Northwest website (<https://conduitnw.org>).

PSE frequently shares the results of its evaluations with the RTF to support continuous improvement of measure energy savings values widely used in the region. In addition, PSE monitors the Regional Technical Forum (RTF), NEEA, and the Northwest Research Group (NWRG), as well as directly reaching out to neighboring utilities, for opportunities to collaborate on common evaluation needs.

2) Evaluation Studies

The Evaluation team completed the following impact evaluations in 2020, which are included in this Report as Exhibit 6, Supplement 1:

- Commercial & Industrial Retrofit,
- Large Power User Program Evaluation,
- 2019 Home Energy Reports Evaluation, and
- Multifamily New Construction Evaluation.

3) 2020 Activities and Accomplishments

In addition to the activities listed above, the Evaluation team also accomplished the following in 2020.

- Represented PSE in the NEEA Regional Smart Thermostat Study and NEEA Residential Building Stock Assessment III;
- Represented PSE in the Department of Commerce Multifamily Line Voltage Thermostat Study and the Manufactured Home Replacement Study;
- Conducted evaluability assessments for the Multifamily Direct Install program and the PSE Marketplace (Enervee) pilot; and
- Advised the PSE Low Income Needs Assessment.



4) Adaptive Management through Continuous Improvement

In 2020, PSE continued implementing the Adaptive Management strategy initiated in 2018. Evaluations completed for Commercial and Industrial Retrofit, Large Power User, Home Energy Reports, and Multifamily New Construction programs examined performance based on program theories and related Key Performance Indicators (KPIs), and deemed and measured savings values; as well as identified opportunities to update and improve these programs. Programs have undertaken specific improvement actions in response to evaluation findings. Evaluation staff also played key roles in developing COVID-19 related safety strategies for the Multifamily Direct Install and Multifamily New Construction programs.

5) Key Variance Drivers

Energy efficiency evaluations progressed as expected; however, spending was lower than originally forecasted for 2020. As noted previously, a handful of program evaluations were completed in 2020 and were largely carryover from 2019. The active program evaluations are at various stages in their expected lifecycle and there is potential for additional scope to be added to investigate additional questions or research topics that provide a breadth of understanding necessary for program insights and improvements.

VIII. OTHER CUSTOMER PROGRAMS

A. Overview

In 2020, the only program (partially) funded by the Conservation Rider, for which conservation savings are not claimed, was Net Metering. Net Metering primarily focuses on customer-side generation, including solar, wind, anaerobic digesters (bionatural gas, etc.) and small-scale hydro. Net Metered systems are smaller than 100 kilowatts (kW).⁹ Only Other Electric Programs are excluded from Energy Efficiency's cost-effectiveness calculations.

B. Net Metering

Schedule E150

PSE's Net Energy Metering (NEM) program provides interconnection services for qualifying customer-generators in accordance with State legislation enacted into law in February 11, 1999 and most recently amended July 28, 2019 (see RCW 80.60).

1) Description

PSE provides interconnection services to qualifying customer-generators who operate fuel cells, hydroelectric, solar, wind, or animal waste gas generators of no more than 100 kilowatts (kW). In accordance with 80.60 RCW, PSE offers Schedule 150 (revised July 28, 2019) on a first-come, first-served basis until cumulative generating capacity taking part in this schedule reaches 179.2 megawatts (MW). Net Metered customer-generation can be used to offset part or all of the customer-generator's electricity use under Schedules 7 through 49 of Electric Tariff G.

Energy produced by customer-generator systems directly reduces energy used in the home or business from the grid. When the energy generated exceeds home or business electrical loads, the excess energy flowing to PSE is credited against the customer's consumption. In accordance with RCW 80.60, PSE also allows net metered customers to aggregate net excess generation from their net metered service to offset consumption at one other electric service meter on the same or contiguous property and in the same

⁹ Larger systems fall under the considerations of PSE's Schedule 91: Cogeneration and Small Power Production.

account holder's name.

The Net Metering program's year runs April 1 to March 31. Any excess credit each month is rolled forward to the following month. When the new program year ends on March 31 the credit is reset to zero, with no compensation to the customer.

While schedule 150 Net Metering applies to customers who generate electricity using water, wind, solar energy or biogas from animal waste as fuel; in 2020 100 percent of new net metered systems were solar PV (photovoltaic) with a median size of 11.3 kW DC and 10.4 kW DC for residential systems alone.

No direct customer incentives are provided by PSE as a part of this program. As described in the following section, the Conservation Rider only funds administrative and applicable distribution expenses, as provided by the indicated requirements.

2) Net Energy Metering Expenses

The 2002 Stipulation Agreement, Exhibit F, UE-011570 and UG-011571, Section H.25 provides the authority for 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."

Additionally, in January 1999, the UTC issued an accounting order under Docket UE-990016, which requires the collection of unbilled distribution costs from all customers through Schedule 120. In 2020, the actual costs collected under that order exceeded the program's budgeted amounts by 40 percent. The difference is due to a higher number of system installations than anticipated, as well as an increase in the average system size, which leads to a higher output of solar energy.

The number of customers interconnecting on-site generation to PSE's grid has continued to grow, as has the size and complexity of their systems. This impacts how PSE plans for and meets customer tracking, accounting, and reimbursement expectations. The Customer Connected Solar Team coordinates with other Washington State utilities and industry groups to stay informed on best practices, and to gain access to national experts to help address interconnection and net-meter billing challenges faced by a rapidly maturing market.

3) 2020 Program accomplishments

In 2020, 1,519 customers joined PSE's Net Metering program, with a combined 15.4 MW AC of added generating capacity. In August 2020, PSE celebrated its 10,000th solar customer: (<https://youtu.be/pVnHPz77aIE>)

At the close of 2020, PSE was net metering 10,792 customers for a combined generating capacity of over 86.5 MW AC.

Figure VIII-1 provides a program view of cumulative year-end number and capacity of net metered systems.

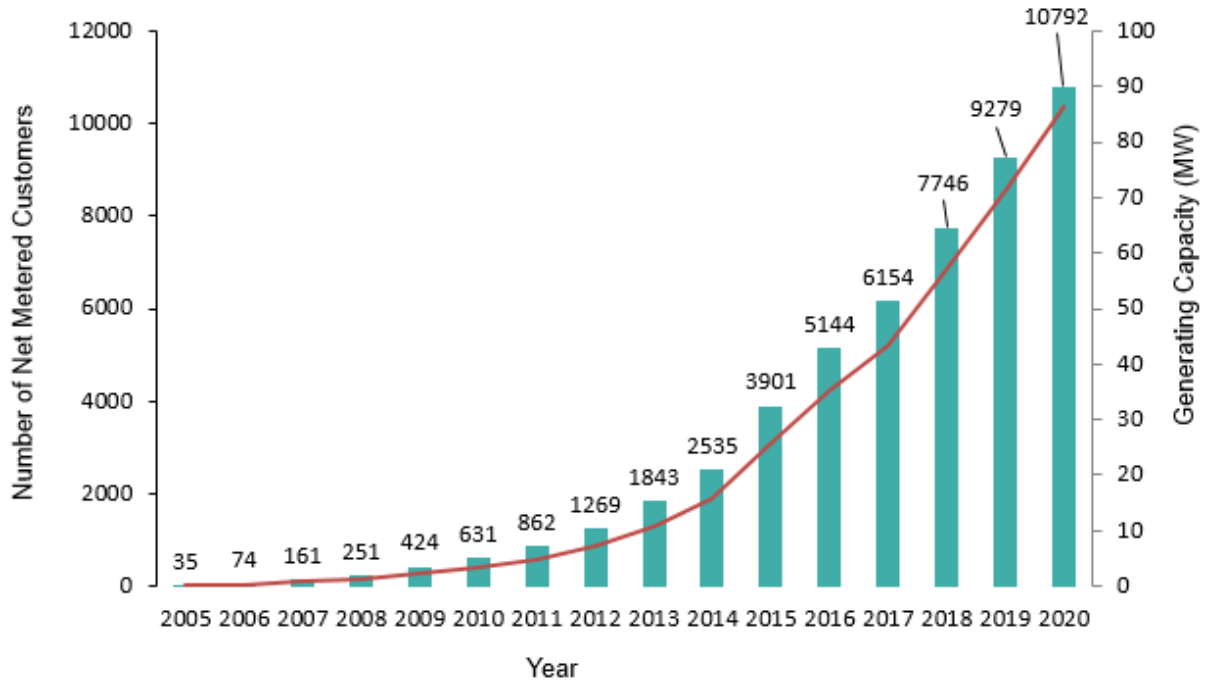
4) Adaptive Management

Interconnection and net metering processes, standards, data management, and communication are constantly evolving as PSE strives to make the solar customer experience better and more scalable. In 2020, PSE focused on educating installers and customers about changes made to PSE's standards and application process, as Net Metering Law and the State Production Incentive Program both saw substantive revisions.

In March 2020, PSE shifted focus to serving customer needs through the COVID-19 pandemic. Interconnection requires PSE Journeymen, as essential workers, to operate at customers' properties. Managing this safely required new prioritization of work, new protocols for PSE staff, new communications and scheduling with customers, and sometimes longer delays in getting meter orders completed. By summer 2020, operations had been fully adjusted for new solar interconnections.

Additionally, 2020 was the first year without state production incentives for new solar installations. This combined with COVID-19 restrictions, economic fallout, and other wide reaching impacts of the pandemic. Remarkably, the growth of PSE's net metering program in 2020 was still in line with the strong growth of the previous two years.

Figure VIII-1: Net Metering Customer-Generator System Count, 2005-2020



C. Production Metering

Schedule 151

PSE administers the Washington State Renewable Energy Production Incentive Program, which provides qualifying Customer-Generators with production payments in accordance with State legislation and WAC 458-20-273. PSE receives tax credits for renewable production payments, as outlined in RCW 82.16. No direct customer incentives are provided by PSE as a part of this program. As described in the following section, the Conservation Rider only funds administrative and applicable distribution expenses, as provided by the indicated requirements.

Most customers enrolled in PSE's Net Metering program who have solar systems installed before June 2019 were also enrolled in the Washington State Renewable Energy Production Incentive Program (RESIP). Eligibility, incentive rates, terms, and annual payments are determined by the Washington State University Energy Program for participants in both RECRIP (a legacy program) for systems enrolled prior to October 2017 and RESIP for systems enrolled between October 2017 and the close of the program to new PSE solar customers in 2019. The terms of PSE's administration of payments to customers in both versions of the program, are described in Schedule 151.

In 2020, PSE administered \$19 million to 7,897 customer participants in this program, for the generation of more than 76 million kilowatt-hours. Of this amount, \$14.5 million represented the last annual payments to be made to the roughly two-thirds of participants enrolled in the RECRIP legacy program. To date, PSE has issued over \$90 million in Schedule 151 production incentive payments.

D. Targeted Demand Response

Schedule E/G 249A, E/G 271

The purpose of the Targeted Demand Response (Targeted DR) pilot is to evaluate DR options applicable to identified non-wired alternative (NWA) projects in specific, targeted localities. This pilot program evaluates several attributes, including technology requirements and performance; customer behavior and preferences; impacts and integration of DR to company operations; program costs; demand reductions achieved; energy savings achieved; and localized distribution system benefits. PSE expects to gain experience with DR technologies, a greater understanding of customer acceptance and tolerance of Demand control, the need for customer incentives (financial or other), and demand reduction effectiveness and reliability.



1) 2020 Program accomplishments

In 2020, Targeted DR was included in a system wide DR RFP that was eventually withdrawn due to the lower, updated, load forecast. An RFP for Targeted DR, along with Targeted EE, collectively referred to as Targeted Demand Side Management (TDSM), was issued in December 2020.

IX. 2020 STAKEHOLDER RELATIONS

PSE, along with its primary constituents, the Commission Staff and the Conservation Resource Advisory Group (CRAG) sustained its emphasis on continuously maximizing the value, clarity, impact, and transparency of information provided to Commission Staff and the CRAG. PSE received feedback from CRAG members, both directly and through casual reference, that its efforts were recognized and appreciated. PSE also recognizes and appreciates that Commission Staff and the CRAG expended significant effort to understand, become involved with, and help resolve strategic and policy issues in 2020.

A. Washington Utilities and Transportation Commission

Energy Efficiency values its working relationship with Commission staff and appreciates their level of thoroughness, thoughtfulness, and adaptability. PSE was able to complete its 2020 initiatives as a result of the cooperation between its Energy Efficiency staff and Commission Staff. The following discussion outlines the key conservation-related UTC filings that PSE made in 2020. In the list, PSE presents the date and description of each filing the UTC Docket number for straightforward reference.

All conservation-specific filings complied with WAC 480-109-110(3): CRAG members received draft copies of each of the filings.¹⁰

1) Energy Efficiency-Specific Filings

- February 28, 2020: Filed electric Schedule 120, UE-200142. Effective May 1, 2020, the updated Schedule 120 represents an average decrease of the electric Conservation Rider portion of affected customer bills by 0.8 percent.
- February 28, 2020: Filed natural gas Schedule 120, UG-200143. Effective May 1, 2020, the updated Schedule 120 represents an average increase of the natural gas Conservation Rider portion of affected customer bills by 0.3 percent.
- April 15, 2020: Filed Petition to Modify 2020-2021 Electric Savings Target, UE-190905. Revisions to the savings target to account for the social cost of greenhouse gas emissions as required by the Clean Energy Transformation Act.
- June 1, 2020: Filed 2019 Annual Report of Conservation Accomplishments, UE-171087. Consistent with requirements in WAC 480-109-120(3), this report

¹⁰ Schedule 120, PSE's cost-recover adjustment filing, is the exception, as also noted in WAC 480-109-110(3).

represented the evolution and continuous improvement in providing Energy Efficiency program accomplishments, activities, and value-add information for PSE's Stakeholders.

- July 15, 2020: Filed an updated Exhibit 3: Program Details, UE-190905. This revision updated all various measure tables and customer service offerings as a result of PSE adaptive management.
- October 19, 2020: Filed an updated Exhibit 3: Program Details, UE-190905. This revision updated all various measure tables and customer service offerings as a result of PSE adaptive management.
- November 13, 2020: Filed 2021 Annual Conservation Plan, UE-190905 and UG-190913.

B. 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 2020. Many members of the CRAG demonstrated considerable engagement and a thorough understanding of PSE programs and implementation strategies through the year.

CRAG members brought to bear a considerable understanding of technical elements associated with some of Energy Efficiency's more complicated conservation measures and offerings, and a thorough understanding of the impact and implications of how those would affect potential savings and costs. CRAG members provided valuable consideration and insights of State policy goals and initiatives, along with their constituents' expectations.

The CRAG's perspective on the region's dynamic marketplace was also invaluable. As a result, PSE adaptively managed its Portfolio throughout the year with these considerations in mind.

Through PSE's collaborative process, it achieved significant milestones during the past year, as discussed throughout the Report and in the following sections.

▪ Background

PSE formed the CRAG in response to Section D of Exhibit F in the 2001 General Rate Case Stipulation Agreement, Dockets UE-011570 and UG-011571. The CRAG consists of approximately 12 Stakeholders and represents a wide variety of interests, including consumers, industry, and regional concerns. It also includes a member of the

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.

▪ **CRAG Vision**

Throughout 2020, CRAG members consistently demonstrated qualities of the CRAG vision, established in May 2010:

Members actively participate in CRAG processes and advise on PSE decisions so that ratepayer funds are being used to achieve all cost-effective energy conservation in the most prudent, beneficial manner.

In order to ensure its applicability and value, PSE and the CRAG reviewed the Vision Statement at the first CRAG meeting of the year, March 18, 2020. PSE also provides laminated copies of the Statement at each CRAG meeting. PSE and CRAG members conducted all CRAG interactions with the utmost respect for potentially alternative views, and participants were engaged, with the clear vision of customer benefit and continuous improvement uppermost in mind.

▪ **2020 Adaptation through Continuous Improvement**

Consistently building on efficiencies that PSE initiated in 2010, Energy Efficiency continued to execute a number of steps to maximize transparency and improve efficiencies for CRAG members including:

- Emails that are formatted to immediately call attention to the desired level of action.
- PSE added a program-by-program comparison chart in Exhibit 1 of the 2021 Annual Conservation Plan, providing CRAG members with a direct and streamlined way of comparing the 2020-2021 Biennial Conservation Plan’s 2021 figures to the updated 2021 ACP numbers.
- Other than the January 27 CRAG meeting, all meetings were shifted to a virtual platform to accommodate social distancing requirements.
- All report and plan responses to queries from CRAG members are consistently formatted, and turned around within one week of receipt.

▪ CRAG Activities

In addition to conducting CRAG meetings and various sub-committee meetings, PSE provided filings background and workpapers, data, opinions, references, comments, and data request responses to CRAG members throughout the year. PSE also provided CRAG members a brownbag meeting on its Conservation Voltage Reduction program.

▪ Publication Updates

PSE provides the CRAG with several document drafts prior to filings. For instance, the first and third quarter updates to its *Program Details* (Exhibit 3) and the draft 2021 Annual Conservation Plan, as required by WAC 480-109-110(3).

It has been a long-standing practice to provide 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. As required by WAC 480-109-130(6), PSE updates these documents on the PSE.com website following Commission acknowledgement or issuance of an approval order.

▪ CRAG Meetings

In 2020, PSE met the requirements of WAC 480-109-110(2) and condition (3)(e) by convening five CRAG meetings during the year. PSE places emphasis on ensuring that it maintains an accurate meeting record, where meeting attendees can reference agreements, action items, and issue resolutions. PSE also provides a very long lead time for meeting schedules to avoid potential scheduling conflicts. Every CRAG meeting includes several standing agenda items, including:

- Activities that have occurred since the previous meeting;
- CRAG meeting action item status;
- Marketing and program updates; and
- PSE emails meeting materials to attendees participating via conference call prior to the meeting call to order.

The following discussions are very high-level “snapshots” of the six 2020 CRAG meetings (including one brownbag webinar). They are intended only to provide a general sense of the meeting topics. CRAG members received a meeting summary document, along with all handout material and the slide deck shortly after each CRAG meeting.

- **January 27 Meeting:**

This meeting was convened to provide CRAG members with an overview of PSE's conservation target considerations and steps to meet the requirement to incorporate the social cost of carbon into the two-year targets by April 15th.

- **March 18 Virtual Meeting**

The March meeting's intent was to provide an overview of the draft petition to revise the 2020-2021 electric target and to agree on the revised target. Other topics included; Schedule 120 recovery filing, Schedule 120 audit, and program updates.

- **May 20 Virtual Meeting:**

This primary focus of this meeting was to discuss the results of the 2018-2019 biennium in PSE's June 1 filing as well as to provide the CRAG with updates related to COVID-19 in business plans and programs.

- **August 5 Virtual Meeting:**

The August meetings intent was to provide CRAG members a status update of conservation programs and to share plans for 2021. PSE also shared actions taken to mitigate the impact of COVID-19 on programs.

- **October 14 Virtual Meeting:**

October's CRAG meeting was intended to share program updates and to discuss the contents of the 2021 Annual Conservation Plan.

- **December 2 Virtual CVR Brownbag:**

PSE hosted a brownbag for CRAG members to share out on the current Conservation Voltage Reduction program and to discuss future plans for the program.



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 document¹¹ 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.

A. Definitions

<p>A-line or A-Lamp</p>	<p>A bulb with a rounded cover that has the same basic appearance as a standard incandescent bulb. A-line/A-Lamp 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.</p> <p>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:</p> <ul style="list-style-type: none"> • Room area lighting • Reading lamps • Hallways <p>The "A" itself stands for arbitrary.</p>
<p>Calculated Savings</p>	<p>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 <u>Savings Type</u> field in Appendix B, List of Measures.</p>
<p>Conditions</p>	<p>Also "2010 Electric conservation Settlement Agreement Terms conditions", "Energy Independence Act conditions" or "Order 01, Docket UE-171087 conditions".</p> <p>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 Attachment A of Order 01 in Docket UE-171087.</p>

¹¹ 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".

Glossary of Commonly-Used Terms

Definitions, continued

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)	A PSE-specific term, indicating 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

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. ¹² 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 <u>Savings Type</u> field in Appendix B, List of Measures.
RTF Deemed	Former reference to the RTF’s UES (Unit Energy Savings).
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 natural 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.

¹² Schedule 83, section 4, Definitions, #m. Schedule 183, section 4, #l.

B. 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.

AESP	Association of Energy Service Professionals
aMW	Average MegaWatt. An expression of energy (versus “power”). It is used to express very large amounts of energy. The term represents an average of power (Megawatts [MW]) used over time (the standard term being one year or 8,760 hours). Thus, 1 aMW = 8,760 MWh.
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
BPA	Bonneville Power Administration
CEE	Consortium for Energy Efficiency
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
HVAC	Heating, Ventilation and Air Conditioning
IR	InfraRed. A technology typically used in remote-control devices.
KPI	Key Performance Indicator
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)
MWh	Megawatt-hour. 1,000 kWh = 1 MWh
NEEA	Northwest Energy Efficiency Alliance
NEEC	Northwest Energy Efficiency Council



Acronyms, continued

NWPCC	NorthWest Power Conservation Council
O&M	Operations & Maintenance
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.
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). ¹³
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. ¹⁴
VO	Voltage Optimization
WAC	Washington Administrative Code
WAMOA	Washington Association of Maintenance and Operations Administrators
WSEC	Washington State Energy Code
WSHFC	Washington State Housing Finance Commission
WUTC	Washington Utilities and Transportation Commission. Also referred to as UTC.

¹³ Schedule 83, section 4, Definitions, #z. Schedule 183, section 4, #x.

¹⁴ Schedule 83, section 4, Definitions, #bb. Schedule 183, section 4, #z.

C. Savings Terminology

The below table provides a comparison of savings terminology that the IOUs created and agreed would clarify the numerous elements that comprise their savings goals and penalty thresholds. This table is provided for reference only.

PSE's formerly used terms (pre-2020)	Updated Terms (2020)	Definition
Total Biennial Potential	CPA Pro-Rata Share	Pro-rata share of the utilities IRP's Conservation Potential Assessment's 10-year potential or 2 year total (whichever is greater). Includes NEEA.
Total Base Savings	EIA Target	[(CPA Pro-Rata Share) + (other programs/measures with confident savings that were omitted from CPA)]
Decoupling Penalty Target	Decoupling Threshold	[EIA Target * 0.05]
Total Portfolio Target	Total Utility Conservation Goal/Achievement	All savings programs funded by Conservation Riders [EIA Target + Decoupling Threshold]
Excluded	Adjusted Programs	Programs approved by the Commission to be excluded from a Penalty Threshold. For last three biennia, these included NEEA and Pilots with Uncertain Savings.
Utility-Specific Savings	Utility-Specific Conservation Goal/Achievement	[Total Utility Conservation Goal/Achievement – (Excluded programs (for instance, NEEA, Pilots with uncertain savings, retail wheeling accounts, etc.) + adjustments)]



Revised Savings Terminology, continued

PSE's formerly used terms (pre-2020)	Updated Terms (2020)	Definition
EIA Penalty Target	EIA Penalty Threshold	[Utility-Specific Conservation - Decoupling Threshold]
Excess Savings (1)	Excess Savings for Carbon (Dept of Commerce driven)	<p>(Referencing results, rather than targets)</p> The difference of [Total Utility-Conservation Achievement – Total Utility Conservation Goal]
Excess Savings (2)	PSE Excess Savings for Penalty Thresholds (UTC Driven)	<p>(Referencing results, rather than targets)</p> The difference of [(Total Utility-Specific Conservation Achievement) - (EIA Penalty Threshold + Decoupling Penalty Threshold)]

CONCLUSION

This concludes the Energy Efficiency 2020 Annual Report.

Please refer to the Report's Exhibits and Supplements for additional Energy Efficiency details:

A. Exhibits Included in the 2020 Report of Conservation Accomplishments

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

Exhibit 2: Program Cost Effectiveness

Exhibit 5: Prescriptive Measures

Exhibit 9: Requirement Compliance Checklist

Exhibit 10: NEEA 2020 Report of Activities and Initiatives

B. Supplements

Exhibit 1 (*Table of savings and expenditures*)

Supplement 1: Expenditures by Cost Element Group

Supplement 2: Portfolio Measure Category Counts

Exhibit 2

Supplement 1: Non-Energy Impact Identification, Valuation and Distribution

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

Supplement 1: Evaluation studies with their associated Evaluation Report Responses (ERRs) performed in 2020

Energy Efficiency looks forward to a productive and successful 2021.

Respectfully submitted,

The People of Energy Efficiency