PUGET SOUND ENERGY

2023 ANNUAL REPORT

OF ENERGY CONSERVATION ACHIEVEMENTS

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Executive Summary

Puget Sound Energy's (PSE's or The Company's) Customer Energy Management (CEM) department presents this Report of 2023 Conservation Accomplishments (Annual Report or Report), satisfying WAC 480-109-120(3). This Report details 2023 initiatives, activities, and adaptive management steps, taken to meet the expectations of PSE customers and fulfill the savings goals of energy efficiency programs funded by the Electric and Natural Gas Conservation Riders.

Throughout 2023, residual economic repercussions from the COVID-19 pandemic continued to be a key consideration influencing numerous elements of program performance. Readers will note the extensive adaptive management that program staff applied to address a wide variety of pandemic-related issues, including skilled labor shortages, product shortfalls, supply chain issues, and additional significant impacts to customers.

There was, however, a positive trend throughout the year as program participation improved and finished with strong results that propelled savings in both electric and natural gas above targets set in the 2023 Annual Conservation Plan (ACP). Adaptive management efforts and improving economic conditions are both likely contributors to the increased performance toward the end of the year.

A. 2023 Results

Table 0-1 Energy Efficiency 2023 Savings and Cost-Effectiveness Results

Energy Efficiency 2023 Savings and Cost-Effectiveness Results				
2023	**Savings**	**Expenditures**	**Total Resource Cost**	**Utility Cost**
Electric Actuals (MWh)	258,198 *(29.5 aMW)*	$120,779,370	1.83	2.25
Percent of Goal	*102.6%*	*98.4%*		
ACP Goal/Budget	251,673 *(28.7 aMW)*	$122,793,213		
Natural Gas Actuals (Therm)	4,555,198	$27,824,534	1.78	1.42
Percent of Goal	*103.7%*	*105.1%*		
ACP Goal/Budget	4,393,239	$26,480,546		

Savings are stated in terms of first-year figures, at the customer meter, without line loss.
**For a detailed account of savings and incentives distributed in Named Communities, see the Equity Focus Section in the Executive Summary.*

1. Key 2023 Results Drivers

Program reviews in Chapter I extensively discuss the key drivers of programs' savings and expenditure results. Supporting teams, such as the Verification team, Energy Efficient Communities (EEC), and Energy Advisors are discussed in Chapter II and provide important contributions to the Portfolio's savings and adaptive management efforts. PSE provides high-level summaries below.

a. *Ongoing Barriers to Achieving Energy Efficiency Savings*

In the fourth year since the onset of the pandemic, programs in 2023 continued to see improvements in customer participation; however, many continue to be deeply constrained by the pandemic's lingering economic effects.

One of the most significant challenges continuing to face customers is inflation. Higher prices for raw materials, shipping, and other expenses have led to increased project costs, making overall efficient projects less affordable.

Rising interest rates continue to be a struggle for businesses as well. As economies continue to recover from the pandemic, central banks continued to raise interest rates to keep inflation in check. This can make it more expensive for businesses to borrow money, which can limit their ability to invest in new projects or expand their operations.

Skilled labor shortages continue to be a significant challenge for businesses. The pandemic has led to a shift in the labor market, with many workers leaving their jobs or transitioning to new industries. This has made it difficult for businesses to find qualified workers, particularly in industries that require the specialized skills required to install efficient equipment.

Code changes in the service territory at the city, state, and federal levels continue to raise baseline equipment standards, reducing efficient opportunities and measure savings. Code changes have also shifted customers away from natural gas equipment and toward electric. The increasing push toward electrification in general will continue to erode natural gas savings.

In 2023, PSE staff worked diligently to continuously adjust programs to mitigate the effects of the above issues through adaptations such as refining marketing efforts, limited-time offers (LTOs), targeted marketing, increased distributor outreach, larger incentives, and personalized commercial customer training.

Between improving economic conditions and CEM's evolving mitigation strategy, PSE was able to achieve its 2023 savings goal with strong end-of-year results. Ending the year on this positive note is a hopeful sign of increased activity in the coming biennium.

b. *Savings*

In this section, PSE highlights key contributors to 2023 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 Chapter I.

i. Contributors to Higher-Than-Expected Savings

- The Residential Midstream HVAC and Water Heat Program exceeded its electric goal by 80 percent, or over 11,000 MWh.
- The Smart Thermostats Program exceeded its electric goal by 63 percent, or almost 500 MWh.
- The Commercial/Industrial (C/I) Retrofit Program exceeded its natural gas savings goal by 23 percent, or over 114,000 therms.
- The Commercial Foodservice Program exceeded its natural gas savings goal by 200 percent, or over 400,000 therms.

The Residential Midstream HVAC and Water Heat Program exceeded electric savings, primarily due to rapid increase in the market for heat pump technology in the region as well as outreach efforts.

The Smart Thermostats Program was able to exceed its electric goal by promoting instant rebates to customers via the PSE and Efficiency Boost Marketplace, as well as LTOs and flash sale pricing negotiated with manufacturers.

The C/I Retrofit Program exceeded natural gas savings targets for 2023. This was largely due to five large projects that were completed in December.

The Commercial Midstream HVAC and Water Heat Program exceeded its natural gas savings goal. This is due, in large part, to an increase in marketing, distributor training, and additional engagements.

ii. Drivers of Lower-Than-Expected Savings

- The Home Energy Reports (HER) Electric and Natural Gas Programs finished under goal by over 30 percent, or almost 16,000 MWh and over 500,000 therms respectively.
- The Single Family Existing (SFE) Water Heat Program fell short of its electric savings goal by 46 percent, which accounted for almost 668 MWh.
- The Multifamily Retrofit Program fell short of its electric and natural gas savings goals by 25 percent and 74 percent, respectively, or over 2,200 MWh and over 27,000 therms.
- The Multifamily New Construction (MFNC) Program fell short of its natural gas goal by 76 percent, accounting for over 11,400 therms.
- The C/I New Construction Program fell short of its natural gas goal over 46 percent, or over 41,500 therms.

The HER Programs ended 2023 with lower-than-expected electric and natural gas savings due to the most recent evaluation that yielded lower-than-expected results.

The SFE Water Heat Program did not meet its expected electric and natural gas savings volumes largely due to lack of participation in heat pump water heaters (HPWHs) and natural gas storage tank heaters.

The Multifamily Retrofit Program struggled with both electric and natural gas savings. Customer reluctance to participate amidst the high-inflation environment and a lack of weatherization projects were primary factors.

The MFNC Program dealt with lower-than-anticipated participation due to higher code baselines.

The C/I New Construction Program saw fewer natural gas conservation projects than anticipated likely due to local natural gas bans, changes to the Washington State Energy Codes with the adoption of the 2021 Washington State Energy Code (WSEC), as well as customer climate goals.

C. *2023 Adaptation through Continuous Improvement*

In 2023, program staff adaptively managed offerings, customer engagements, and marketing tactics to continue to mitigate the long-term effects of the pandemic on program uptake. Improvements and adaptations undertaken to increase savings amidst the continuing effects of the pandemic can be seen above in the Ongoing Barriers to Achieving Energy Efficiency Savings section.

The following list highlights some of the key improvements and adaptations CEM implemented in 2023.

- Low Income Weatherization (LIW): PSE addressed customer confusion regarding State and Federal income thresholds by redesigning webpages; focusing on demographic-based marketing efforts; and applying inflation multipliers to measure costs to keep agency incentives at pace with inflation and rising costs.
- Space Heat: PSE collaborated with several internal teams to prioritize engagement and smooth customer and contractor processes that increased participation. The program's education and relationship focus also increased customer satisfaction.
- Water Heat: PSE encouraged and offered an LTO that combined funds from the Northwest Energy Efficiency Alliance (NEEA) and regional utilities to offer a $750 rebate that boosted 2023 fourth quarter sales.
- Smart Thermostats: By building on the channel created in 2022 for contractors to apply for rebates on a customer's behalf, PSE was able to recruit enough contractors to develop a customer referral program.
- Weatherization: A new weatherization-related measure, Advanced Duct Sealing, was launched in 2023. Additionally, the program was able to build on previously launched projects and pilots to increase customer savings and rebates.
- Home Energy Reports: PSE added 77,000 customers in 2023 to address program attrition and deployed an Easy Assessment, which allows customer to more easily complete an online survey and be aware of their home's energy use.

- Efficiency Boost: The Efficiency Boost Marketplace was launched in 2023 allowing many moderate-income customers to purchase thermostats for as low as $1 with free shipping. PSE also collaborated with vendor C+C to promote Efficiency Boost rebates in stores to aid in thermostat and appliance sales.
- Multifamily Retrofit: The program offered and extended the LTO period of Ductless Heat Pumps that resulted in a 132 percent installation increase from 2022.
- Clean Buildings Accelerator (CBA): The CBA team sought out ways to increase program awareness by applying and being selected for several awards and recognition; including a nomination for the Leadership in Energy Efficiency award through NEEA, winning the William Hammer Top Innovator Award, and winning the 2023 Achievement in Business Customer Experience award from Public Utilities Fortnightly
- Business Lighting: In 2023 the Business Lighting program increased the existing contractor performance incentive from $0.01/kWh to $0.05/kWh to incentivize contractors and customers to drive additional savings. The Business Lighting application was also updated to streamline the application process.
- Commercial/Industrial Commissioning and Controls programs: In 2023, BEM added a technical account manager to focus outreach to commercial trade allies, leading to more contractor awareness.
- Commercial/Industrial custom grants: Incentives were increased for natural gas projects from $7/therm to $8/therm to drive additional savings, and a pilot-like initiative for Commercial Secondary Windows was added to target and incentivize energy efficient window systems.
- Commercial New Construction: A method to calculate an accurate baseline for data centers was added to the Energy Use Intensity (EUI) Performance Method. This option allows customers with data centers in portions of their buildings to participate in this program offering.
- Industrial Systems Optimization (ISOP): A pilot-like initiative was launched in 2023 that provides bundled incentives to ISOP customers for implementing operations and maintenance (O&M) and capital projects at the same time.
- Large Power User/Self Directed: Incentive rates increased by 50 percent and work began on setting up a Strategic Energy Management (SEM) program to allow retail wheeling customers to participate in SEM.
- Increased incentives: PSE added incentives for many programs to drive additional participation.
- In 2023, PSE dedicated a teammate to work with state and federal funding with the goal of maximizing conservation impacts for its customers. This staff member was active in Commerce Inflation Reduction Act (IRA) rebate design conversations and public comment opportunities while preparing resources for rebate integration into conservation programs. Additionally, PSE developed pse.com/ira to provide

information on the IRA for its customers that includes available tax credits. PSE estimates that up to $15.8 million[1] came back to PSE customers in the form of 25C tax credits in addition to the rebates PSE was able to deliver to its customers.

d. *Pilots and Pilot-Analogous Initiatives*

The Single Family Advanced Metering Infrastructure (AMI) Pilot, also known as the Home Energy Display (HED) Pilot, launched in December 2021 to assess if an in-home energy display along with a supporting portal, which encourages and supports customer engagement, can modify customer behavior enough to produce energy savings. PSE discontinued the pilot at the end of 2023 and chose to log negative 2023 savings of 489,261 kWh to ensure the Biennial Conservation Report (BCR) reflects a savings of net 0 kWh for the program.

PSE's Hybrid Heat Pump Pilot is intended to research the benefits of and barriers to hybrid heat pump adoption in single-family homes located in PSE's dual fuel territory. After a preliminary review of existing customer systems in 2022 produced inconclusive results, in 2023 PSE collaborated with distributors, contractors, and customers to develop a set of pilot rebates for single-family retrofit customers. The Hybrid Heat Pump Pilot is currently undergoing a comprehensive evaluation, with results to be delivered in 2024.

PSE also engaged in numerous activities that were new and creative in nature, but they have established savings values and were counted toward the penalty target. These are referred to as pilot-like initiatives and are further detailed in the program discussions.

A notable example of a pilot-like initiative is the partnership between PSE and the City of Lacey. The City contacted PSE to explore using City funds aligned with its sustainability goal to enhance efficiency. PSE co-designed the City's Energy Efficiency Rebate Matching Program that matches rebates on PSE's incentives for Residential Space Heat, Water Heat, Weatherization, Appliance, and Smart Thermostat Programs. PSE launched the novel arrangement with a streamlined experience where customers apply for a rebate through PSE, PSE assesses eligibility for customers, and PSE pays the combined incentives. Dozens of customers participated in 2023, and PSE looks forward to continuing and learning from the partnership in 2024.

e. *Customer Outreach, Engagement, and Portfolio Support*

The work performed by CEM's Programs Support teams as well as Marketing, Energy Efficient Communities (EEC), Events, Energy Advisors, and Equity contributed to conservation savings achievements in 2023. These organizations managed to continuously adapt to changing markets and pivot between virtual and in-person tactics, especially as the economic pressures associated with the pandemic and its recovery continued to impact customers across all segments.

[1] PSE estimates are based on PSE rebate participation in water heat and electric space heat programs and assumptions on customers who would be able to receive nonrefundable tax credits.

The EEC team continued its promotion of CEM's energy efficiency and sustainability programs to residential and small commercial customers across PSE's territory in 2023. The team delivered hundreds of presentations and events to customers; collaborated with partner and community-based organizations (CBOs); highlighted completed programs featuring energy efficiency measures as use cases in PSE collateral; and organized community support that led to the direct engagement of hundreds of businesses. The team especially focused its efforts on the transcreation of promotional materials in order to reach a broader audience more equitably.

The Market Integration Team maintained its robust energy efficiency messaging across PSE's service area. In 2023, the team launched two featured campaigns: Earth Month in April and Energy Awareness Month in October. The April Earth Month campaign received over 5,000 webpage visits and 150,000 social media impressions as a result of PSE's featured partnership with the Seattle Kraken and Climate Pledge Arena's "Green Month." The month also featured a fan event at a Seattle Kraken game that earned 175,000 event impressions. October's campaign drove over 97,000 page views and delivered more than 204,000 email messages to customers.

Overall customer experience continued to be a key focus for PSE in 2023 as well. In an effort to improve customer experience when engaging with CEM, and to increase savings acquisition, PSE implemented numerous strategies including:

- Continuing to engage Named Communities (as defined in the Clean Energy Implementation Plan [CEIP][2]) with tailored marketing and outreach efforts to improve engagement and encourage savings in neighborhoods
- Expanding some program participation rules to allow for more customers to benefit from programs and have a better customer experience
- Increasing rebate amounts to incentivize qualifying customers to participate and take advantage of the benefits of these programs
- Continuing to enhance communications and marketing efforts by focusing on customer education and producing materials in multiple languages to better reach diverse customer segments
- Augmenting project approval flow in order to qualify more customers for projects
- Focusing on relationship- and partnership-building efforts to both expand program awareness and positive public engagement

Regarding equity, CEM advanced its efforts in 2023 to better design and deliver programs by focusing on bringing its programs and incentives to Named Communities in alignment with the goals from the Clean Energy Transformation Act (CETA). It is integrated into most

[2] PSE Clean Energy Implementation. "Chapter 3: Highly Impacted Communities and Vulnerable Populations, and Customer Benefit Indicators (CBI)." 1 Feb 2022, https://irp.cdnwebsite.com/dc0dca78/files/uploaded/2022_0201_Chapter3.pdf.

program descriptions and was a heightened focus throughout the year for CEM. Please view Section B of the Executive Summary for a full description of PSE's equity efforts.

f. *Expenditures*

The majority of 2023 electric and natural gas expenditures finished the year near budget, with a few key exceptions. Exhibit 1, Supplement 1: *2023 Actual Expenditures Compared to Anticipated Spends*, provides a program-level comparison of costs incurred by budget category. The electric portfolio finished slightly under budget, while the natural gas portfolio finished approximately 5 percent over budget. Electric savings were slightly above plan while expenditures finished slightly below. Natural gas savings and budget were fairly aligned, both being above planned amounts.

Nearly all savings programs that varied from their anticipated expenditures also realized a commensurate increase (or reduction) in their planned savings, with the notable exception of HER where planned expenses were still incurred even though evaluated savings were lower than expected. Throughout 2023, program staff continuously improved efficiencies and proactively managed expenses, resulting in lower-than-expected ancillary costs, such as the Marketing, Materials, and Miscellaneous categories. Expenditure on incentives and costs directly benefitting customers exceeded budget in both electric and natural gas.

Residential electric and natural gas programs finished the year above budget as program managers increased incentives to achieve savings targets. Business programs exceeded the electric savings goal while underspending the budget. On the natural gas side, the business sector exceeded budget by increasing incentives to encourage more customer participation.

2. Compliance

In addition to PSE's reporting and planning compliance filings, CEM's key compliance reporting vehicle is Exhibit 7: *Requirement Compliance Checklist*. Each requirement type (according to docket number) is highlighted in a different color in the Exhibit for easier reference. Exhibit 7 contains the comprehensive list of satisfied requirements.

The below list outlines the primary conservation-related requirement documents[3] that govern CEM's operations:

- RCW 19.285 and WAC 480-109
- RCW 80.28.380
- Exhibit F, the 2002 Stipulation Agreement, Docket UG-011571[4]
- The 2010 Electric Settlement Agreement, Docket UE-100177
- Order 01, Attachment A of Dockets UE-210822 and UG-210823

[3] 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.

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

B. Equity Focus

The Clean Energy Transformation Act (CETA) requires electric utilities to reach 80 percent clean electricity by 2030.[5] CETA requires — among other things — that utilities actively engage in specific equitable actions to ensure that all customers are benefiting from the transition to clean energy. During 2023, CEM made that mandate possible by working with internal and external implementers to deliver an equitable distribution of energy and non-energy benefits, which reduces burdens to Vulnerable Populations (VPs) and Highly Impacted Communities (HICs). Public environmental and health benefits, the reduction of costs and risks, and energy security and resiliency are positively affected in the long- and short-term by the equitable distribution of energy benefits.[6]

In alignment with addressing the equity priorities of CETA, during 2023 PSE reviewed national and regional research and guidance from the UTC in the Cascade Natural Gas UG-210755 Order 09.[7] Order 09 set out the following principles of equity:

1. Ensuring that individuals have access to energy that is affordable, safe, sustainable, and affords them the ability to sustain a decent lifestyle
2. Providing individuals an opportunity to participate in and have meaningful impact on decision-making processes

Order 09 also contains the following core tenets of energy justice shown in Figure 0-1 Energy Justice Framework: Inspired by the University of Michigan's Energy Equity Project, which PSE adopted in 2023 for enterprise-wide use:

[5] RCW 19.405.040(1)

[6] RCW 19.405.040(8)

[7] UTC Docket UG-210755, Final Order 09

Figure 0-1 Energy Justice Framework: Inspired by the University of Michigan's Energy Equity Project

PSE developed a set of specific actions and best practices that integrate each core element of the equity framework. As seen in CEM's distributional equity analysis — and in the equity focus highlights listed below in Figure 0-2 Energy Justice Framework: Inspired by the University of Michigan – Adapted by PSE and CEM in 2023— CEM deepened its understanding of, and integrated these equity principles in, its scope of work during 2023.

Figure 0-2 Energy Justice Framework: Inspired by the University of Michigan – Adapted by PSE and CEM in 2023

1. Distributional Equity Analysis — Energy Efficiency Tranche

In developing a blended practice of *recognizing* that procedural inequities have an impact on Distributional Equity, in 2023 CEM conducted a Disparities and Root Factors Report for the year 2022. The report was part of *Chapter 3: Equity*, a section of PSE's CEIP Biennial Update Filing.[8] PSE expanded the recognition exercise for the year 2023. The information listed in the following tables illustrates how CEM equitably distributed customer benefits in 2023. These new recognition efforts report the benefits of both electric and natural gas programs.

This analysis aims to illustrate customer participation in energy efficiency programs among defined Named Communities for calendar year 2023.[9] In the context of this analysis, PSE defined "disparity" as a percentage of energy benefits that is lower than the percentage of that community relative to all customers. The following equation illustrates the approach:

Figure 0-3 Disparity as a Percentage of Energy Benefits Equation

$$\frac{\text{Customers in Named Communities}}{\text{Total Customers}} > \frac{\text{Energy Benefits in Named Communities}}{\text{Energy Benefits}}$$

Electric and Natural Gas

Table 0-2 Distribution of Electric Incentives and Energy Benefits (2023) and Table 0-3 Distribution of Natural Gas Incentives and Energy Benefits (2023) provide a synthesis of the findings for customer benefits. Each row of the tables represents a distributional comparison of customers grouped within Named Communities as it relates to energy benefits and incentives. Incentives represent the dollars PSE paid for participating in some energy efficiency programs. MWh and therms represent the energy benefits that customers received by saving energy through their participation in energy efficiency programming. In the 2023 recognition analysis, as shown in Figure 0-2 Energy Justice Framework: Inspired by the University of Michigan – Adapted by PSE and CEM in 2023, PSE focused on Named Communities, which are comprised of Highly Impacted Communities (HIC); Highly Vulnerable Populations (VP-High); and the non-duplicated population percentage of both that actually represents the unique Named Communities count. Table 0-2 Distribution of Electric Incentives and Energy Benefits (2023) and Table 0-3 Distribution of Natural Gas Incentives and Energy Benefits (2023) provide a similar summary for the distribution of non-energy impacts (NEIs) in Named Communities.

8. PSE – Biennial CEIP Update. Docket UE-210795

9. The report uses categories of Named Communities as defined in the 2021 CEIP, prior to the Commission's Order 08, in which PSE received new equity guidelines and conditions that will apply in 2024 and forward.

Table 0-2 Distribution of Electric Incentives and Energy Benefits (2023)

Electric	% of Population	Total Incentives Distributed	% of Incentives	Difference in Incentives Distribution	MWhs Distributed (Energy Benefits)	% of Energy Benefits (EBs) Distributed	Difference in EBs Distributed
HIC	27%	$20,915,073	30%	3%	73,092	30%	3%
VP(High)	34%	$33,767,637	48%	14%	103,376	43%	9%
NC	45%	$39,139,389	56%	11%	125,963	52%	7%

During 2023, customers in Named Communities received an equitable amount of electric energy benefits and incentives.[10] As seen in Table 0-2 Distribution of Electric Incentives and Energy Benefits (2023), for electric customers during the 2023 reporting period:

- The unique count of Named Communities customers received 53 percent of energy benefits (8 percentage points above the percentage of the segment's population) and 56 percent of incentives (11 percentage points above the percentage of the segment's population).
- PSE delivered 53 percent of energy savings (23 percentage points above the 30 percent minimum designation of electric energy benefits in Condition 20 of the CEIP approval order 08 in Docket UE-210795), while 56 percent of incentives (26 percentage points above the 30 percent minimum designation) was delivered in Named Communities in 2023.

Table 0-3 Distribution of Natural Gas Incentives and Energy Benefits (2023)

Natural Gas	% of Population	Total Incentives Distributed	% of Incentives	Difference in Incentives Distribution	Therms Distributed (Energy Benefits)	% of Energy Benefits (EBs) Distributed	Difference in EBs Distributed
HIC	25%	$4,581,900	28%	3%	1,036,148	23%	-2%
VP(High)	26%	$5,051,731	31%	5%	1,092,431	24%	-2%
NC	37%	$6,586,793	40%	3%	1,532,641	34%	-3%

[10] The total amount of Named Communities eligible energy benefits and incentives were 237,703 MWh and $69,764,317 at the energy efficiency tranche. As described in PSE's 2024-2025 BCP, for 2023, the energy benefits amounts listed above represent the majority of the portfolio that was eligible to reach Named Communities.

As seen in the table above, during 2023, for natural gas customers[11] there were slight disparities registered in the distribution of energy benefits and incentives:

- The unique count of Named Communities customers received 34 percent of energy benefits (3 percentage points below the percentage of the segment's population).
- Forty percent of incentives (3 percentage points above the percentage of the segment's population) was distributed in Named Communities.
- PSE delivered 34 percent of energy savings while 40 percent of incentives was delivered in Named Communities during the same reporting period.

Considering the scope of vulnerabilities and diverse characteristics of customers in Named Communities, PSE acknowledges that there still exist systemic barriers or factors that hinder participation in energy efficiency programs. Because of that, PSE continues to strengthen its design and delivery of programs to help customers in Named Communities overcome these barriers.[12] Table 0-4 Barriers to Participation and Mitigation Efforts in Energy Efficiency Programming from the previously mentioned 2023 Biennial CEIP Update equity chapter examines examples of barriers to participation and specific efforts to mitigate those barriers.

Table 0-4 Barriers to Participation and Mitigation Efforts in Energy Efficiency Programming

Barriers to Participation and Mitigation Efforts in Energy Efficiency Programming	
Barriers to Participation	**Efforts to Mitigate Barriers**
Financial Limitations	Increased incentives for income-qualified customers across a variety of residential efficiency programs. Customer education about low-cost or no-cost ways to save energy even without direct participation in a program.
Renting vs. Owning	Programs, such as Multifamily Retrofit and Small Business Direct Install, that include free energy assessments, education, and low-to-no cost efficiency upgrades and support for owners to make additional upgrades to benefit tenants
Communication and Culture	Culturally relevant marketing, outreach, and events, including transcreation of collateral and in-language staffing, to learn from customers and support their goals with program awareness and options.
Educational Attainment (GED Count)	Accessible program materials including informal guides to help customers understand their options to participate and the benefits that participation can bring.

[11] The total amount of Named Communities eligible Therms distributed was 4,555,199, at the tranche level. The total amount of Named Communities eligible incentives (Direct Benefit to Customer) distributed at the tranche level was $16,519,056.

12. For details about 2024-2025 specific actions by energy efficiency programs that will address barriers to participation by members of Named Communities, please see the 2024-2025 Biennial Conservation Plan (BCP). The Overview document includes an Equity Focus section that describes the team's strategy and tactics. That document also includes a summary of each program, including "equity focus" sections within applicable programs that describe how they will support increased participation in named communities.

2. Non-Energy Impacts

Non-energy impacts (often called “non-energy benefits” or NEIs) are defined as the impacts (usually positive) from energy efficiency programs that are not directly attributed to energy savings. Examples of these benefits are: water and other resource savings, improved health and safety, fewer shutoff notices for the utility, and improved quality of life or product quality.

NEIs have been a focus of PSE’s research since the UTC issued a set of conditions in accepting PSE’s 2020-2021 Biennial Conservation Plan (BCP) (Docket 190905; Attachment A). These conditions committed PSE to “demonstrate progress towards identifying, researching, and developing a plan to properly value nonenergy impacts that have not previously been quantified” and “[t]o the extent practicable … begin to identify the distribution of energy and nonenergy benefits in annual plans and reports.” Progress in 2023 toward these conditions is described in Section V: Non-Energy Impacts of Exhibit 2, Supplement 1: *Cost-Effectiveness Overview and Non-Energy Impacts*.

The tables below show the distribution of NEIs among Named Communities associated with electric and natural gas savings. The tables demonstrate that NEIs increased considerably in 2023, more than doubling the total value reported in 2022. Part of this can be attributed to the increase in electric and natural gas savings, as NEI values are linked to measure savings.

Table 0-5 Distribution of Electric Non-Energy Benefits (2023)

Electric	% of Population	Total NEIs Distributed	% of NEIs Distribution	Difference in NEIs Distributed
HIC	27%	$6,193,962	32%	5%
VP(High)	34%	$9,720,163	50%	16%
NC	45%	$10,946,352	56%	11%

During 2023, the total amount of electric NEIs distributed, at the energy efficiency tranche level, was valued at $19,398,464. As seen in Table 0-5 Distribution of Electric Non-Energy Benefits (2023), for electric customers, during the 2023 reporting period:

- The unique count of Named Communities customers received 56 percent of NEIs (11 percentage points above the population’s percentage).

Table 0-6 Distribution of Natural Gas Non-Energy Benefits (2023)

Natural Gas	% of Population	Total NEIs Distributed	% of NEIs Distribution	Difference in NEIs Distributed
HIC	25%	$5,712,672	32%	7%
VP(High)	26%	$8,181,601	45%	19%
NC	37%	$9,783,063	54%	17%

During 2023, the total amount of natural gas NEIs distributed at the tranche level was valued at $18,037,711. As seen in Table 0-6, for natural gas customers, during the 2023 reporting period:

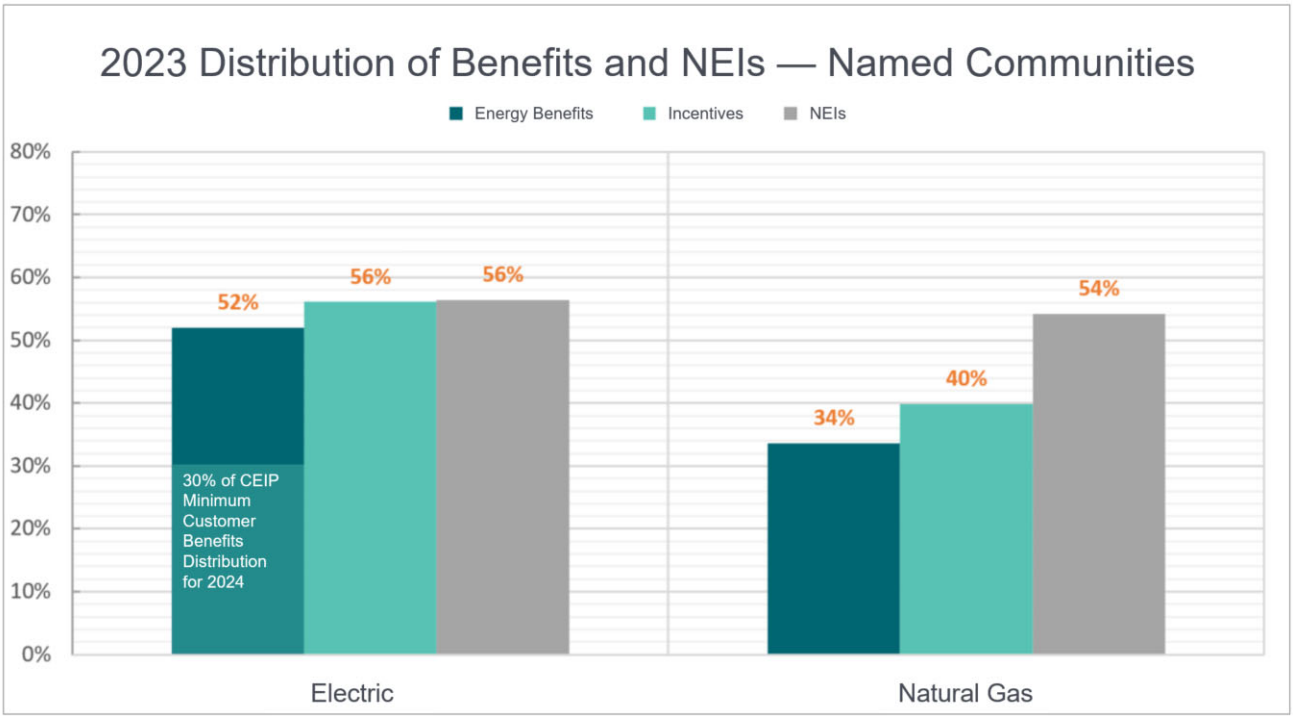
- The unique count of Named Communities customers received 54 percent of NEIs (17 percentage points above the population's percentage).

3. Conclusions

Overall, the equity distribution analysis for 2023 demonstrates equitable distribution of energy benefits for both electric and natural gas sections of the energy efficiency tranche.

PSE's CEM programs delivered customer benefits above the 30 percent minimum designation assigned to electric energy efficiency programs, including related NEIs. Customer benefit delivery was also above this 30 percent benchmark for natural gas programs. The chart below synthesizes the Recognition Equity findings, in regard to how Distributional Equity performed above the 30 percent minimum designation of customer benefits being delivered in Named Communities during 2023. The equity focus program highlights that follow, illustrate specific Procedural Equity actions that contributed to the development of Distributional Equity advancement within CEM.

Figure 0-4 Distribution of Benefits and NEIs — Named Communities



4. Equity Focus Program Highlights

Throughout Chapter I of this report, each program's Equity Focus section highlights specific actions that demonstrated innovative and human-centered equity approaches in 2023. The orchestrated efforts benefitted customers across PSE's service territory, and below are a subset of program equity focus areas as examples of what CEM implemented broadly.

a. *Space Heat*

In 2023, the Space Heat program pursued Recognition Justice in outreach efforts to Named Communities by simplifying offerings to reduce barriers to participation. With a focus on Procedural Justice, the Space Heat Program promoted Efficiency Boost with HVAC contractors who have direct relationships with customers in Named Communities. The program actively solicited and integrated feedback during this process. Space Heat also had significant success with Distributional Justice, as program efforts resulted in higher electric savings and natural gas savings for Efficiency Boost and manufactured home customers. In all of the Space Heat Program's efforts, Restorative Justice principles were deliberately applied to enhance equity and minimize inequities.

b. *Weatherization*

The Weatherization customer journey is built upon the pillar of Distributional Justice and seeks to make home efficiency upgrades more accessible to a wide range of customers, especially those with low-to-moderate incomes. PSE customers receive the rebate as an instant discount through a participating Trade Ally contractor. The Trade Allies assume responsibility for the paperwork and PSE reimbursement, freeing the customer from those potential burdens. This pathway is optional for customers seeking windows rebates, but it is the standard process for non-windows measures, such as insulation and duct sealing.

The PSE Weatherization Program also practices Restorative Justice through higher rebates for targeted groups. In 2023, the program deployed insulation incentives that nearly covered the pre-tax cost for manufactured homes and low-to-moderate income customers served by the Efficiency Boost program.

The program also participated in PSE's targeted education and awareness outreach for customers in Named Communities, a component of Procedural Justice. For example, the Weatherization Program was spotlighted at PSE's Ask an Expert webinar in September 2023 hosted by the PSE EEC and Events teams. The virtual event had about 75 live attendees and 78 views in the two weeks immediately following the event. PSE offered live interpretation in Spanish, Chinese, and Hindi, as well as closed captioning in 11 additional languages. The post-event views utilized all four live languages with about 12 percent Spanish, 20 percent Hindi, 22 percent Chinese, and the remaining views in English. In the fourth quarter, the Weatherization program participated in the Thunderbirds sponsorship/activation that is in geographical alignment with Named Communities. This event resulted in 5,825 impressions, including approximately 325 awareness-raising conversations with staff at the PSE booth.

c. *Small Business Direct Install*

The Small Business Direct Install (SBDI) Program is designed to ensure that Procedural Justice is supported as it serves all of its small business customers. This is achieved through

program qualifications based on meter, building size, and customers being locally owned and operated businesses, including nonprofit organizations. Many of these customers face barriers to participation such as renting their space and having limited staff resources to put toward energy considerations, and this program directly addresses those barriers by providing free energy assessments and energy upgrades.

PSE also increased program marketing using direct mail, email, and social media campaigns to increase program awareness targeting Named Communities. Notably, the marketing budget was also increased to allow the program and marketing team to develop a blitz-specific flier in Vietnamese after proactively identifying a customer need.

I. Customer Programs

This chapter is intended to provide an overview of all of PSE's customer conservation programs, presented in order of their Conservation Schedule with a brief description of the program and its specific results and achievements for the 2023 program year. As applicable, each program overview will also highlight adaptive management, pilot-like initiatives, attention to equity focuses, and key variance drivers.

A. Residential Energy Management

The following discussion addresses results and accomplishments in the Residential Energy Management (REM) sector.

1. Low Income Weatherization

Schedules E/G 201

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 2023, the goal of PSE'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 continued to focus on partnerships with assistance agencies and leveraged PSE programs such as bill-payment assistance.

Key interested parties include: low-income natural gas and electric customers; county and municipal low-income weatherization agencies in the PSE service area; Washington State Department of Commerce (Commerce); and participating weatherization contractors and suppliers.

a. *Low-Income Weatherization Funding*

For those projects receiving PSE funding combined with other state and federal funding, income eligibility is determined in accordance with Commerce policies and procedures.

Residential LIW provides funding for many cost-effective home weatherization measures for low-income customers receiving natural gas and/or electric heat from PSE. 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 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:

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

i. Sources of Funding

Sources of LIW funding include, but are not limited to, the Conservation Rider, Company funds (Shareholder), Bonneville Power Administration (BPA) credits, or other federal or state government programs.

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

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 continued 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.

Macquarie Transfer Settlement Commitment #46

On March 7, 2019, the Washington Utilities and Transportation Commission (UTC) issued a Final Order 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."

ii. 2023 Ad Hoc Funding Disposition

In 2023, the LIW Program met all funding requirements. See below for Ad Hoc funding 2023 accomplishments:

Special Contract Funding

PSE continued to accumulate dollars in 2023 to be applied to future CEM projects, given the 2022 expenditure of $300,000 to provide financial assistance to the Lummi Indian Business Council for solar panels and related renewable energy equipment through a contribution agreement with the Washington State Housing Finance Commission.

Macquarie Transfer Settlement Commitment #46

By the end of 2023, the program spent $1,108,487, which includes all spending between 2019 and 2023.

b. *2023 Program Accomplishments*

In 2023, the LIW Program underspent the electric budget by 7 percent and exceeded the natural gas budget by 58 percent. Similarly, electric savings were below target by 27 percent, and natural gas savings were above target by 55 percent. The natural gas program continued to show signs of recovery that contributed to the program's ability to exceed targets. The LIW Program served a total of 1,209 housing units in 2023. Separated into housing sector types, 142 were single-family electric homes; 129 were single-family natural gas homes; 657 were multifamily electric homes; 42 were multifamily natural gas homes; 231 were electric manufactured home residences; and eight were natural gas manufactured home residences.

c. *Adaptive Management*

Adaptive management of the LIW Program in 2023 fell into four categories: (1) targeted marketing; (2) tactics to prevent customer confusion regarding conflicting income thresholds and to better manage customer expectations; (3) updating program incentives and measure costs to keep pace with inflation; and (4) closer coordination with Commerce Weatherization staff.

i. Targeted Marketing

In 2023, marketing tactics for the Home Weatherization Assistance Program included paid social media advertising, email campaigns, print advertising including fliers, and postcards mailed to homes. PSE focused email campaigns and a postcard campaign to target high-risk or vulnerable customers based on income level, Named Communities status, and high energy burden. The program was also featured at in-person and virtual events, including two Ask and Expert events with content tailored to PSE Assistance programs.

ii. Tactics to Prevent Customer Confusion

In 2023, the LIW Program addressed potential customer confusion regarding conflicting state and federal income thresholds by redesigning the LIW income chart on pse.com/home. As part of the redesign, the chart was color-coded to align with state and federal income thresholds so that customers at various income levels could better understand the likelihood that assistance agencies would qualify them for program services.

iii. Update Program Incentives and Measure Costs

In 2023, absent updated Commerce measure costs, PSE applied inflation multipliers to measure costs to keep agency incentives at pace with inflation and rising measure and construction costs.

iv. Closer Coordination with Commerce Weatherization Staff

In 2023, Commerce hired additional Weatherization staff including one position dedicated exclusively to utility partnerships and another dedicated to workforce development. The additional resources dedicated at the state level have started to result in more frequent communication and information sharing to help address statewide program barriers.

d. *Equity Focus*

The program primarily furthers the objective of Distributional Equity because its primary mission is to ensure that all customers have access to the benefits of energy efficiency improvements when they may otherwise not have the funds to take advantage of standard rebate offerings. The program focuses on a specific segment of PSE customers: those who meet specific income criteria. In addition to income qualification, to further target program awareness and promotion, PSE focused email campaigns and a postcard campaign to target high-risk or vulnerable customers based on Named Communities and energy burdened customer status. PSE also participated in two Ask An Expert events, one in May and October, presenting on weatherization benefits and other income-qualified offerings, along with personalized answers to questions not addressed during the presentation by interested customers.

e. *Key Variance Drivers*

The most significant variance experienced in the program in 2023 was the strong showing of the natural gas program, reporting spending and savings accomplishments that exceeded goals by over 50 percent. This was a hopeful sign that the program was showing signs of recovery. Program activity included some multifamily activity that contributed to the program's ability to exceed its goal, along with additional opportunity that was found in the single-family sector.

Electric savings fell short of goal by 27 percent while electric spending fell short of budget by only 7 percent. Some of this discrepancy is because 2023 acquisition costs (program costs) were underestimated during program planning in relation to the dollars needed to achieve kWh savings. Some of the additional costs can be attributed to increased 2023 incentives to keep pace with inflation and increased health, safety, and repair spending.

f. *Measure Highlights*

Table I-1: Low Income Weatherization Measure Counts

Low Income Weatherization Measure Counts			
Measure Type	**Measure**	**Electric**	**Natural Gas**
Insulation			
	Attic Insulation	140	100
	Duct Insulation	10	50
	Floor Insulation	210	70
	Wall Insulation	30	70
Sealing			
	Air Sealing	120	
	Duct Sealing	40	70
	Structure Sealing	240	110
Space Heat			
	Furnace Replacement		80
	Ductless Heat Pump	380	
	Heat Pump	40	
Ventilation			
	Whole House Ventilation	300	
Water			
	Tankless Water heater		10
	Water Heater Pipe Insulation	110	50
	Windows	20	20
	Thermostats	120	
	Ductless Heat Pumps	10	

Table I-2 Low Income Weatherization Measure Count Savings

Low Income Weatherization Measure Count Savings			
Category	**Subcategory**	**kWh**	**Therms**
Controls			
	Thermostats - ESS	11,265	
HVAC			
	Ductless Heat Pump	732,668	
	Ductless Heat Pump (SIR)	11,021	
	Energy Recovery Ventilator (SIR)	3,517	
	ES Whole House Ventilation	36,608	
	Furnace > 95%		6,845
	Heat Pump	167,148	
	Integrated Space and Water Heat		4,680
Lighting			
	Lighting (SIR)	1,378	
Water Heat			
	Gas Water Heater	24	60
	Tankless Water Heater	(207)	546
	Water Heater Pipe Insulation	2,316	37
Weatherization			
	Air Sealing	82,180	
	Duct Sealing	29,376	5,011
	Insulation – Attic	115,440	5,147
	Insulation – Duct	5,436	1,397
	Insulation – Floor	156,126	1,628
	Insulation – SOGI (SIR)	18,683	

*Note all measures reported generate savings.

Low Income Weatherization Measure Count Savings Continued			
Category	**Subcategory**	**kWh**	**Therms**
Weatherization			
	Insulation – Wall	21,513	3,574
	Insulation (SIR)		
	Structure Sealing	44,516	1,008
	Windows	16,375	334
Total		**1,457,383**	**30,268**

*Note all measures reported generate savings.

2. Single-Family Existing

Schedules E/G 214

Single Family Existing (SFE) 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 that include: structures with four or fewer 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, distributors, retailers, developers, and Trade Allies. They also provide administrative efficiencies for PSE in meeting energy efficiency goals.

Note: Multifamily campuses that have a mixture of existing residential building types, including buildings with four attached residential units or fewer, are served under the Multifamily Retrofit Program; Schedules E217 & G217.

a. *Retail Engagements*

In 2023, PSE's field service vendor, C+C, focused on driving customer awareness through collaborative efforts with local retailers. Many Single-Family Existing measures are already available directly to customers through local retailers, making partnerships with retailers a crucial pathway to customer engagement. The following discussions highlight some of the key 2023 retail-based engagement initiatives.

i. Field Visits

C+C reported 1,686 retail store visits in 2023 to PSE throughout the year across the service territory. During these visits, field representatives placed point-of-purchase (POP) signage; confirmed product pricing and PSE rebate accuracy; touched base with store managers and employees; and answered customer questions.

ii. Trainings

In 2023, PSE's field services vendor conducted 668 retail trainings, reaching 778 store associates throughout PSE service territory. Field representatives educated retail staff on PSE's rebate programs for lighting, smart thermostats, appliances, and heat pump water heaters (HPWHs).

iii. Events

C+C held eight in-store retail events during 2023. Event staff set up a table at the front of the retailer. The purpose of the events was to educate customers and store associates on PSE's rebates for lighting, smart thermostats, appliances, and HPWHs available in retail stores. The events included prize raffles to encourage customer and store associate participation.

b. *Program Reviews*

The following discussions provide 2023 recaps for the individual programs that comprise the SFE suite of offerings.

i. Retail Lighting

PSE offered instant rebates on quality energy efficient lighting measures. The rebated lighting products could be found in brick-and-mortar retail stores, as well as the PSE Marketplace online store.

2023 Program Accomplishments

PSE partnered with manufacturers and retailers on cost-share promotional opportunities throughout 2023. Additionally, 2023 in-store events promoted Retail Lighting rebates in the program's final year.

Adaptive Management

After careful evaluation of market and legislative indicators such as the Department of Energy ruling, the ENERGY STAR® specification ending, and local market saturation, PSE made the decision to sunset the Retail Lighting program after December 31, 2023. Program management provided notification of this decision to internal and external partners in early 2023 and executed an extensive plan to sunset the Retail Lighting Program. This sunset is a reflection of a successful program that helped to transform the market. The Retail Lighting Program rebated millions of bulbs and fixtures, resulting in savings over biennia of more than 700,000,000 kWh.

Equity Focus

To increase Distributional Justice, the Retail Lighting Program made instant discounts on lighting available in a wide variety of stores that served all customer groups and geographies

within the PSE service area. In 2023, PSE held eight in-store events to educate both customers and sales associates about PSE retail rebates, including lighting rebates. Half of these in-store events were in retail stores located within Named Communities. Furthermore, the PSE Marketplace, an online shopping platform, offered instant lighting rebates to all residential customers who wanted to access the rebate through that channel.

Key Variance Drivers

The Retail Lighting Program completed 2023 over its savings target and over budget due to efficient lighting rebates exceeding expectations supported by continued customer education and marketing.

ii. Downstream Space Heat

The Downstream Space Heat Program delivers incentives and drives installations of home heating systems, including, but not limited to: integrated space and hydronic heating systems, natural gas furnaces, boilers, heat pumps, and advanced duct sealing. The program includes delivery for customers purchasing products through contractors.

2023 Program Accomplishments

The Downstream Space Heat Program provided 9,241 rebates to customers in 2023. With over 628,000 therms of natural gas savings, the program achieved 101 percent of the 2023 target. This is a 25 percent increase over 2022. The program achieved over 9,000,000 kWh of electric savings, which was 99 percent of the 2023 target. This is 21 percent over 2022.

The Space Heat Program also successfully incorporated two pilots: the Hybrid Heat Pump Pilot and the Targeted Demand Side Management (TDSM) Pilot. The pilots engaged contractors and offered new energy efficiency choices for customers. An advanced duct sealing measure was added to the Space Heat Program offerings. This pilot-like initiative encourages customers to get the most out of new HVAC installations by sealing leaky ducts.

The Downstream Space Heat Program offered a heat pump limited-time offer (LTO) in the summer of 2023, achieving a 5 percent increase in saving over the same timeframe in 2022. The Space Heat Program continued regional partnerships with Energy Smart Eastside, the Northwest Energy Efficiency Alliance (NEEA), and engaged with the Consortium for Energy Efficiency (CEE) to help provide additional benefits to customers.

Adaptive Management

Working with the Energy Advisors, Trade Ally Network (TAN), Marketing and Verification teams, the Space Heat Program was able to increase engagement and smooth out processes for customers and contractors. By focusing on simplification and increasing predictability for contractors, Space Heat staff increased confidence in the program, increasing participation. Throughout the year, Space Heat prioritized education and relationships, which helped maintain high customer satisfaction and helped prevent adverse incentives. In close collaboration with the verification team, payment time to contractors was reduced by over 10 percent. This is especially notable considering the continuously high volume of projects. In the third quarter, TAN restarted HVAC contractor evaluations and that

was beneficial to the program. Space Heat was in regular contact with HVAC contractors throughout this process to ensure that it was mutually beneficial for PSE's HVAC partners.

Equity Focus

In 2023, the Space Heat program pursued Recognition Justice in outreach efforts to Named Communities by simplifying offerings to reduce barriers to participation. With a focus on Procedural Justice, the Space Heat Program promoted Efficiency Boost with HVAC contractors who have direct relationships with customers in Named Communities. The program actively solicited and integrated feedback during this process. Space Heat also had significant success with Distributional Justice, as program efforts resulted in higher electric savings and natural gas savings for Efficiency Boost and manufactured home customers. In all of the Space Heat Program's efforts, Restorative Justice principles were deliberately applied to enhance equity and minimize inequities.

Key Variance Drivers

The successful coordination between the Energy Advisors, TAN, Marketing, program managers of the pilots, and Verification teams played a key role in achieving savings, offering new pilots, and completing a successful LTO.

iii. Water Heat

The Water Heat Program delivers incentives and drives installations of water heating systems, including:

- heat pump water heaters (HPWHs)
- ENERGY STAR natural gas tankless water heaters
- ENERGY STAR gas tank storage water heaters

The Retail Heat Pump Water Heater (HPWH) Program in 2023 was similarly a continuation of the 2022 program methodology. Consumers used coupons to get instant rebates at checkout at participating Lowe's and The Home Depot stores.

PSE continued to apply customer engagement and rebate delivery methods for natural gas tank water heaters from the 2022 program year to the 2023 program year. Customers would receive instant rebates from installers or they could apply online to PSE to receive the rebates.

2023 Program Accomplishments

The first full calendar year for the HPWH retail coupon offering in partnership with participating Lowe's and The Home Depot stores was 2023. PSE successfully offered an LTO at the end of the year and saw a significant surge in retail purchases. The coupons were made available for customers online (Lowe's only) or in-store by scanning a QR code. Instant rebates were applied at checkout. The number of customers who received a rebate on a HPWH went from 809 in 2022 to 561 in 2023.

PSE's natural gas hot water offerings consisted of high-efficiency natural gas storage units as well as natural gas tankless water heaters. The storage units, which qualified for a modest rebate of $50, did not do well in the downstream channel. Specifically, 56 were rebated in

2022; that dropped to 50 units in 2023. The natural gas tankless water heaters did well in 2023. A total of 1,216 units were rebated in 2023, up 22 percent from 2022.

Adaptive Management

To help boost the HPWH sales in 2023, PSE offered an LTO. Combining funds from NEEA ($50 per unit) and additional funds from the regional utilities ($200 per unit), PSE and regional partners were able to offer a rebate of $750 across participating stores. This LTO resulted in 2023 fourth quarter sales (300 units) that exceeded the 2022 fourth quarter sales (217 units).

PSE and its partner for retail services, C+C, worked through some important challenges inherent in the coupon offering. For example, a significant number of customers purchased coupons but waited to redeem them. C+C sent out a series of reminder emails to encourage customers to take advantage of their coupons with limited success. PSE is looking at how to make this communication more impactful in 2024.

Equity Focus

In 2023, C+C carried out a Deep Dive survey with sales associates and customers at participating Lowe's and The Home Depot stores. This survey was a nod to the importance of Recognition Justice. The survey included questions about the diversity of the customers, customer purchase motivations, comfort with self-install, the motivational power of rebates, and more.

The results showed that the stores' clientele are becoming more diverse: An associate celebrated seeing more diversity in their customers, saying that they are "glad to see people of my ethnicity shopping more."

Key Variance Drivers

PSE explored why there was a reduction in rebated HPWHs from 2022 to 2023. One theory is that the number of customers willing to self-install one of these units is limited; with over 1,300 units sold over 24 months to "DIYers," PSE may have saturated the market for this customer group. The majority of customers may prefer to have a contractor install the unit for them.

The Retail Water Heat offering may have also suffered from a lack of customer education around the benefits of HPWHs. In 2024, PSE is making a much greater effort to help consumers understand the value of investing in one of these units.

The low rebate volume for natural gas storage tank water heaters may have been a case where the rebate was so small due to cost-effectiveness limits that installers did not pursue submitting the paperwork to get reimbursed.

A mid-year LTO was credited for the strong demand for natural gas tankless water heaters in 2023.

iv. Home Appliances

In 2023, this program offered incentives on ENERGY STAR front-loading clothes washers and clothes dryers for customers.

2023 Program Accomplishments

In 2023, the Home Appliances Program achieved 99 percent and 97 percent of its forecasted electric and natural gas savings, with over 816,000 kWh and over 5,900 therms achieved.

Adaptive Management

In 2023 adaptive management focused on:

1. Targeted Marketing: this included social media campaigns, email campaigns, and in-store POP information and signage set up by PSE's contract partners. Targeted marketing was focused on helping to drive customer engagement with PSE customer populations most likely to upgrade to ENERGY STAR appliances.
2. An LTO: in 2023, PSE offered an LTO increasing rebate amounts for customers purchasing both front-load washers and dryers to drive higher savings and help boost ENERGY STAR appliance sales.

Equity Focus

In 2023, Home Appliances for the first time offered rebate forms in print and online in Spanish. This demographic not only allowed PSE to better serve the general Spanish-speaking population, but it also increased access for customers within Named Communities who have a high rate of Spanish speakers. This effort helped align with PSE's goal of increasing Procedural Justice. Home Appliances also participated with the Efficiency Boost Program, offering higher rebates for income-qualified customers helping to increase access to energy efficient appliances for Named Communities and further Distributional Justice.

Key Variance Drivers

The Appliances Program had spending higher than forecast. This was mainly due to the increased rebate spend driven by higher uptake of the LTO.

v. Smart Thermostats

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

2023 Program Accomplishments

In 2023, the Smart Thermostats Program accomplishments included, but were not limited to, exceeding both its electric and natural gas saving targets; negotiating four flash sale collaborations with manufacturers on the PSE marketplace; and being included as a product offering for the Efficiency Boost Marketplace that PSE launched in February of 2023. Additionally, PSE recruited enough contractors to be able to offer thermostat installation as a product offering through the TAN.

Adaptive Management

PSE continues to work on strengthening its relationships with contractors to provide customers uncomfortable with installing their own thermostat an avenue through which they can find a quality resource to install and ideally provide an instant discount on a new

thermostat purchase. To ease the application process, PSE created a channel for contractors to apply for rebates on customer's behalf in 2022. In 2023, PSE recruited enough contractors throughout PSE service territory to be able to offer a referral to customers. To encourage contractor participation, PSE surveyed all TAN contractors on the ideal LTO scenario and then, using the compiled feedback back from contractors, designed an LTO available only to them. The offer ran from June through October and the increased PSE rebate was available on any model thermostat installed by a PSE TAN contractor.

Pilot-Like Initiatives

PSE negotiated special pricing with ecobee, Emerson, Nest, and Mysa to conduct flash sales offers in 2023. While PSE did not increase the rebate offering, manufacturers agreed to lower their pricing on PSE's Marketplace. Free shipping was also included as part of the promotion. PSE also partnered with Mysa, Emerson, and Google to do direct mailer cards to customers.

Equity Focus

During 2023, PSE's Smart Thermostats program focused on addressing Procedural Justice in order to expand reach into Named Communities. Based on data from PSE's DEI dashboard and customer feedback, the program sought to address identified language, financial, and technology barriers in the program's structure.

For language barriers, in-store rebate pads were redesigned to be dual-sided, one side written in English and the other side transcreated in Spanish, making Spanish translation for program materials consistently available. The store POP signage suite also had a new aisle violator added — an advertisement on a sign positioned perpendicular to the aisle to draw customer attention while shopping. The aisle violator promoted PSE's increased Efficiency Boost rebates to customers in both English and Spanish. PSE's Energy Efficient Communities (EEC) team also participated in events at local Spanish CBOs and had staffers available who were bilingual in Spanish and English.

For financial barriers, PSE recognized the need to remove the upfront cost for customers and created the Efficiency Boost Marketplace in 2023. The marketplace allowed income-qualified customers instant access to higher rebates without having to apply for the additional amount after already receiving the standard rebate on PSE's current marketplace. Customers eligible to shop on the Efficiency Boost could access thermostats for as low as $1 with free shipping. The EEC team increased outreach and education efforts at local food banks and CBOs to make customers aware of the new marketplace.

Finally, the PSE EEC team was also leveraged to address technology barriers for customers. The EEC team and Event staffers began carrying tablets with them at outreach events so they could walk customers through the purchase process if they were interested in buying a thermostat. Access to tablets allowed customers with limited technology access or understanding to be able to view the instant rebates available to them on the PSE or Efficiency Boost marketplaces. PSE also provided the EEC team with thermostat samples so customers could get a first-hand look and feel of the smart thermostat technology.

Key Variance Drivers

The Smart Thermostats Program exceeded both electric and natural gas savings targets for 2023. This success was largely due to promoting instant rebates to customers via the PSE and Efficiency Boost Marketplaces, as well as LTOs and flash sale pricing negotiated with manufacturers.

vi. Weatherization

The Weatherization Program helps single-family residential customers improve the shell of their home through the installation of windows, insulation, air sealing, duct sealing, ventilation, and similar measures. This program targets customers with houses that do not meet modern energy efficiency standards, thus incentives are focused on older homes and manufactured homes with high savings potential. Weatherization technologies with significant reduction to energy consumption and high customer demand are prioritized.

2023 Program Accomplishments

In 2023, the PSE Weatherization Program provided rebates to more than 3,700 PSE customers. About 1,650 customers received rebates for window upgrades and nearly 2,170 customers participated in the non-window weatherization rebates. Electric savings of about 1,300,000 kWh exceeded the year's target by about 2 percent. Natural gas savings of about 227,000 therms reached about 90 percent of the year's target.

Adaptive Management

The Weatherization Program continued building upon previous process and customer journey updates to increase participation, streamline the customer journey, and maximize energy savings. A new weatherization-related measure, Advanced Duct Sealing, was launched in 2023 under the Single Family Space Heat Program.

Two windows initiatives began in 2022; improvements to the application; and a new higher-efficiency windows rebate option. These initiatives continued to gain traction in 2023. The very-efficient window option accounted for 13 percent of window kWh savings and 19 percent of window therm savings in 2023. Overall, electric savings for windows were 13 percent above target for 2023.

Program staff continued to refine the program's offerings. Higher incentives for projects that bundled measures resulted in higher savings, lower customer costs, and less customer disruption. Because of this, these customer bonus incentives were increased in 2023, further promoting participation in multiple weatherization measures. In the fourth quarter of 2022, the Weatherization Program presented an LTO, increasing all weatherization rebate amounts for single-family, manufactured home, and Efficiency Boost customers by 50 percent. Building upon this pilot, weatherization rebates for manufactured homes and Efficiency Boost customers were increased in 2023.

Equity Focus

The Weatherization customer journey is built upon the pillar of Distributional Justice and seeks to make home efficiency upgrades more accessible to a wide range of customers, especially those with low-to-moderate incomes. PSE customers receive the rebate as an

instant discount through a participating Trade Ally contractor. The Trade Allies assume responsibility for the paperwork and PSE reimbursement, freeing the customer from those potential burdens. This pathway is optional for customers seeking windows rebates, but it is the standard process for non-windows measures, such as insulation and duct sealing.

The PSE Weatherization Program also practices Restorative Justice through higher rebates for targeted groups. In 2023, the program deployed insulation incentives that nearly covered the pre-tax cost for manufactured homes and low-to-moderate income customers served by the Efficiency Boost program.

The program also participated in PSE's targeted education and awareness outreach for customers in Named Communities, a component of Procedural Justice. For example, the Weatherization Program was spotlighted at PSE's Ask an Expert webinar in September 2023 hosted by the PSE EEC and Events teams. The virtual event had about 75 live attendees and 78 views in the two weeks immediately following the event. PSE offered live interpretation in Spanish, Chinese, and Hindi, as well as closed captioning in 11 additional languages. The post-event views utilized all four live languages with about 12 percent Spanish, 20 percent Hindi, 22 percent Chinese, and the remaining views in English. In the fourth quarter, the Weatherization program participated in the Thunderbirds sponsorship/activation that is in geographical alignment with Named Communities. This event resulted in 5,825 impressions, including approximately 325 awareness-raising conversations with staff at the PSE booth.

Key Variance Drivers

In early fall 2023, the Trade Ally that had been contributing the second-highest volume of PSE-rebated, non-window weatherization projects per year went out of business without notice. This dampened savings throughout the fall, when savings typically ramp up as the outside temperatures cool. By December, the market seemed to stabilize as peer companies, including several active PSE Trade Allies, absorbed the projects and employees of the former company. The Weatherization Program worked with the TAN to reinvigorate Weatherization contractor onboarding in the second half of 2023 to build out a more robust weatherization TAN going forward.

vii. Home Energy Reports

Home Energy Reports (HER) are customized reports sent to participating residential electric and natural gas customers to help them better understand their home energy consumption, motivate them to conserve, and provide targeted calls to action tailored to help each customer save money and improve energy efficiency. In addition, these communications actively promote the usage of online self-service tools to help further educate customers about their energy usage.

2023 Program Accomplishments

The Home Energy Reports Program successfully delivered 1,659,002 print reports and 4,295,146 email reports in 2023. Even with the total number of communications sent for the program increasing 14 percent compared to 2022, the number of customer calls identified as related to the program decreased. In 2023, PSE deployed an experience specific to program

participants who have Level 2 Electric Vehicle (EV) charging at their homes to increase the personalization of these reports for this customer segment.

Adaptive Management

PSE added about 77,000 customers in 2023 to address program attrition due to customer move-outs. PSE added the most customers in its low-to-moderate income group, originally deployed in 2022. To help customers refine the suggested savings actions in the reports and make the similar homes comparison group more personalized, PSE deployed an Easy Assessment. This new process allows customers to complete the online survey without having to login or create an online account. The Assessment helps them better understand their home's energy use and understand which behavioral actions may be beneficial for increasing energy efficiency.

Equity Focus

PSE centered Recognition Justice, Procedural Justice, and Restorative Justice when it identified customers in Named Communities in the program for specific, targeted messaging (e.g., Efficiency Boost, Bill Discount, and other assistance programs).

Procedural Justice and Restorative Justice were supported when PSE focused the annual program survey on customers in treatment groups with the highest representation in Named Communities to ensure feedback from customers in those segments was received. With the survey response, PSE gleaned knowledge that customers with lower incomes tend to review the reports more thoroughly and find the reports more helpful. In 2023, the program segmented customers with high vulnerability to target program promotion.

The HER Program continued educational efforts to empower customers with no- and low-cost actionable savings insights on their consumption patterns and profiles. Providing these types of insights reduces the barrier of implementation by reducing their energy costs while also promoting programs that can further aid in energy burden reductions. PSE also supported Procedural Justice when it began exploring what is required to offer a Spanish-language version of HER.

Key Variance Drivers

Costs were only 81 percent of target due to electric costs that will not be incurred until 2024. Natural gas and electric forecasts decreased significantly (-500,000 therms), (-16,000,000 kWh) due to the 2022 evaluation that showed lower-than-expected savings and an adjustment for potential shortfalls in 2023. Final savings totals for 2023 are pending independent evaluation.

viii. Efficiency Boost

Efficiency Boost provides increased rebate amounts for various programs within REM. Higher rebates increase access to efficiency for customers who do not qualify for low-income programs but who may still have limited means to make costly home upgrades. Customers qualify for the increased rebates with a household income within 90 percent of Area Median Income (AMI).

2023 Program Accomplishments

In 2023, over 2,200 customers received an Efficiency Boost rebate, a five-fold increase from the 2022 customer count. This was largely due to thermostats sold on the Efficiency Boost Marketplace, where approximately 1,400 eligible customers purchased a thermostat. However, even without thermostats, Efficiency Boost saw significant increases in participation across other programs that have Efficiency Boost measures, particularly Space Heat, Windows, and Appliances.

Adaptive Management

The Efficiency Boost Marketplace was launched in January 2023 and proved to be a boon for customers seeking to purchase thermostats, as many models were available for as low as $1, with free shipping. In addition to the low cost, customers could also income-qualify via questions directly on the Efficiency Boost Marketplace platform, as opposed to having to submit a separate income qualification form.

During the summer of 2023, the EEC team did office visits with several Trade Allies offering Efficiency Boost rebates. One ongoing hurdle for Efficiency Boost is that turnover among the sales and field staff of Trade Allies leads to new staff who may not know about Efficiency Boost. The office visits by the EEC team were an opportunity to re-train sales staff.

In order to increase awareness of Efficiency Boost for customers shopping for thermostats and appliances at retail locations, PSE worked with C+C to add signage that promoted Efficiency Boost rebates in stores.

Equity Focus

Procedural Justice efforts for the Efficiency Boost Program included continuing to send quarterly emails to a cohort of about 80,000 customers that are likely income-eligible for Efficiency Boost. Overall for 2023, Efficiency Boost emails had a click through rate of 3.3 percent, reflecting good customer engagement.

Regarding Distributional Justice, the Efficiency Boost Program has worked with PSE's Customer Insights team to establish an internal, program-specific dashboard that calculates the proportion of income-eligible customers who received an Efficiency Boost rebate (versus a standard rebate). This number increased from about 5 percent in 2022, to close to 20 percent in 2023, and it allows Efficiency Boost to monitor how well the program is reaching moderate-income customers.

Lastly, in the Restorative Justice domain, the Efficiency Boost Marketplace made income qualification seamless for customers. Customers simply entered in their household size, county, and monthly household income, and the Marketplace platform determined income eligibility based on the Efficiency Boost income table that was built into the platform.

Key Variance Drivers

Overall, participation in Efficiency Boost rebates was vastly higher in 2023 compared to 2022 due to: the creation of the Efficiency Boost Marketplace; continued engagement with the Efficiency Boost cohort of approximately 80,000 customers; and better engagement with Trade Allies who offer Efficiency Boost rebates.

ix. Residential Midstream HVAC and Water Heat

The Residential Midstream HVAC and Water Heat Program provides pass-through rebates for high-efficiency heat pumps, ductless heat pumps, and HPWHs. These rebates are to increase sales of high-efficiency equipment by reducing first costs, encouraging upselling of high-efficiency products, and increasing stocking of high-efficiency equipment so that it is readily available to customers in emergency replacement situations.

2023 Program Accomplishments

Program staff hosted a second year of HPWH workshops in 2023, in collaboration with NEEA, the Plumbing-Heating-Cooling Contractors Association (PHCC), UA Local 26, Comfort Ready Home, A.O. Smith, Bradford White, and Rheem. Over 120 attendees representing industry interested parties and over 70 contractors — including sales specialists, managers, owners, plumbers, and technicians — were able to earn continuing education units (CEU) while they learned more about HPWHs, regional program rebates, and received valuable face time with manufacturer representatives, distributors, and Midstream Program staff.

Additionally, the workshop provided insights on how to sell HPWHs and dispelled myths on venting and space requirements. Manufacturers indicated the attendance was record-setting and attendees requested that utilities make it an annual event. The workshop was hosted in Seattle, based on distributor feedback about program education needs further south. Given the challenges surrounding HPWH adoption in the northwest, the turnout of dozens of contractors is a great sign of the need for additional contractor support.

The program partnered with National Comfort Institute (NCI) for a High-Performance HVAC and Water Heating Contractor three-day reduced cost training course for 25 contractors. Participants became NCI-Certified system performance technicians and gained 20 student contract hours, applied learnings that improved installed system performance with a hands-on workshop, and then applied NCI's proven diagnostic methods to heat pump retrofit projects.

Adaptive Management

Early in 2023, a handful of partners noted difficulty sourcing Tier 4 HPWHs and/or a shortage of staff. By the end of the year, the market rebounded. Manufacturer's suggested retail prices (MSRP) are much higher than pre-pandemic prices, but they are not rising at the rate experienced during the height of COVID-19.

The program continued to focus on three primary engagement areas: strategic distributor visits to identify who had stock and when; developing relationships with key partners to proactively address barriers and reduce administrative bottlenecks; and facilitating engagement with the contractors via joint distributor/manufacturer training on sales best practices, common barriers, and technology misperceptions.

Contractor engagement was a target of 2023, with technology training and support, attending contractor counter day events, distributor trade shows, and dealer events throughout the year. Targeted tactics for specific branches were identified to increase participation and program growth.

The program worked with Johnstone NW corporate to develop a contractor portal complete with internal accounting processes, to create internal Johnstone-branded promotional POP, and to retrain all branches. Much progress was made in encouraging submissions from this distributor in 2023.

The program rolled out this pilot from a 2022 tool for distributors to identify underperforming contractors and promote participation in the program. This initiative provided select distributors with a list of all contractors who submitted rebate claims in prior years by total number of submissions. Outreach then worked with the distributors to create a process for following up with underperforming contractors to better understand the barriers to submitting claims and to provide education and support whenever possible. This helped distributors better understand the program participation hurdles that their low-performing contractors faced and provided them with a targeted group of contractors for their outreach efforts. This tool was rolled out to additional distributors in 2023; aligning distributors' sales goals with program goals is an effective way to overcome program barriers.

Equity Focus

Recognition and Procedural Justice are always a top priority for PSE when developing a program. PSE commissioned an assessment to enhance PSE's understanding of the program's historical and current effectiveness in reaching customers in Named Communities. The report aimed to identify opportunities for improvements so that the program can support the advancement of an equitable energy system in Washington. These findings and recommendations will influence program design.

Key Variance Drivers

The HVAC and Water Heat Program strived to exceed its goals in 2023 to try and help hit portfolio targets. The program exceeded the combined Residential HVAC and Water Heat savings goal by 85 percent due to the rapid marketing of heat pump technology in the region, as well as PSE's 2023 outreach efforts including contractor trainings for HPWHs and heat pumps.

Pilot-Like Initiatives

The field services team made a concentrated effort to increase contractor outreach to build a positive view of the program. Over 100 contractors were educated on the program at distributor-hosted events. Distributors and contractors were satisfied with the raffle prizes, food, and demos provided at these contractor-facing events and customer appreciation days.

The program piloted an innovative way to streamline program participation by ingesting participants' sales data to screen for all eligible sales, sort and filter sales by contractor, and provide contractors with a tool to easily provide any missing information. A distributor increased savings by 266 percent from 2022 to 2023 using this tool.

c. *Single Family Existing Measure Highlights*

PSE presents measures, grouped by types reported in 2023, in Table I-3.

Table I-3: Single Family Program Measure Counts

Single Family Existing Program Measure Counts				
Program Measure Type	**Measure**	**Electric**	**Either Fuel**	**Natural Gas**
Retail Lighting				
	Fixtures and Lamps	118,340		
Space Heat				
Heat Pump				
	Ductless Heat Pump	2,020		
	Air Source Heat pump	1,170		
Sealing				
	Duct - Advanced	60		120
Boiler				
	ENERGY STAR – 95pc AFUE			70
Furnace				
	Furnace – 95pc			5,400
	Hybrid			10
Integrated Heating System				
	Space and Water			80
Water Heat				
Water				
	Heat Pump Water Heater	620		
	Natural Gas Water Heater			1,270

Single Family Existing Program Measure Counts Continued				
Program Measure Type	**Measure**	**Electric**	**Either Fuel**	**Natural Gas**
Home Appliances				
Appliances				
	Dryers	3,840	10	
	Clothes Washer	2,550	2,470	
Web-Enabled Thermostats				
	Web-Enabled Thermostats	8,800		10,140
Weatherization				
Sealing				
	Insulation and Duct Sealing	160		810
	Air Sealing*	621,090		1,785,460
	Duct Sealing	70		150
Insulation				
	Attic Insulation*	237,380		713,140
	Floor Insulation*	408,950		789,950
	Wall Insulation*	38,880		170,480
Windows				
	Single Pane to U30*	60,980		124,720
	Double Pane/Metal Frame to U30	11,150		1,150
	Single/Double to U22 Triple Pane	16,520		33,960
Home Energy Reports				
		237,391	190,712	136,901
Midstream HVAC and Water Heat				
Heat Pump				
	Ductless Heat Pump	5,770		
	Air Source Heat Pump	4,960		
Water Heat				
	Heat Pump Water Heater	600		

* Units in square feet.

3. Single Family New Construction

Schedules E/G 215

The following discussion applies to new construction, both “stick-built” single-family homes and manufactured homes. 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, CEM receives measure installation data directly from builders, developers, showrooms, and distributors. It is therefore possible to precisely track measure details.

a. *2023 Program Accomplishments*

The Single Family New Construction (SFNC) Program continued to utilize NEEA’s Next Step Homes Performance Path Program in 2023. Performance Path follows the Regional Technical Forum’s (RTF) approved standard modelling protocol, which provides a simplified method for estimating reliable whole-home savings through energy modeling. PSE incentivized 46 Performance Path projects in 2023, compared to 65 in 2022.

b. *Adaptive Management*

The lower number of participants in the SFNC Program inspired the search for a third-party vendor to take the lead on outreach and quality control for this program through the planning process for the 2024-2025 biennium.

c. *Equity Focus*

The Manufactured Home Rebates Program falls under the SFNC umbrella. This program, by design, serves a homeowner group who may face unique vulnerabilities such as not owning the land on which a home is located or being of lower income. This helps PSE support its goal of Recognition Justice.

d. *Key Variance Drivers*

Program participation in 2023 decreased compared to 2022, largely due to lack of sufficient outreach and education of the program, which PSE is addressing going forward with the help of a third-party vendor who specializes in the complexities of the residential new construction space.

e. *Measure Highlights*

The SFNC Program was able to add a large number of savings toward the end of the year with the completion of a sizable housing development project.

PSE provides a general overview of prescriptive measure categories reported in the 2023 Single Family and Manufactured Home New Construction programs in Table I-4 and Table I-5.

Table I-4: Single Family New Construction 2023 Measure Summary

Single Family New Construction Measure Counts				
Measure Type	**Measure**	**Electric**	**Natural Gas**	**Dual**
SFNC				
	Performance Path – EH or EWH – SF - NC	6		
	Built Green – 3 Star or Equivalent – 10% above WSEC			40

Table I-5: Manufactured Home New Construction 2023 Measure Counts

Manufactured Home New Construction Measure Counts		
Measure Type	**Measure**	**Count**
MHNC		
	Incentive – Sales – NEEM 1.1 & 2.0	50
	MHNC: NEEM 1.1 Rated – ENERGY STAR	80
	MHNC: NEEM 2.0 Rated – ENERGY STAR	10

4. Multifamily Retrofit

Schedules E/G 217

The objective of the Multifamily Retrofit Program is to increase the installation of cost-effective, energy-efficient measures into 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 Homeowner Associations (HOAs) to encourage program participation. The program also serves multifamily campuses that have a mixture of building types, including buildings with fewer 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; operations and maintenance (O&M) improvements; behavioral modification; and calculated commercial upgrades such as central boilers, HVAC controls, and solar pool heaters. This program targets the installation of energy-efficient measures occurring during planned retrofit and replacement upon failure. PSE updates its 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 smartphone. 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.

a. *2023 Program Accomplishments*

The Multifamily Retrofit Program served over 20,000 dwelling units in 2023, just over a 10 percent increase from 2022. Nineteen percent participated in PSE's Direct Install offer. While this represents a large share of the overall participation, windows contributed 26 percent of the overall savings, while lighting contributed 22 percent, and weatherization contributed 23 percent of the total electric savings for the year.

Some multifamily property owners continued to delay projects due to inflation that led to achieving 75 percent of the electric target and 26 percent of the natural gas target; however, the program worked closely with contractors to focus efforts to serve moderate-income customers (see Equity Focus) with weatherization and direct install opportunities. In particular, the program rebated nearly 400 ductless heat pumps in 2023, up from 30 units in

2022. PSE also saw a measurable increase of air sealing projects serving over 1,400 dwellings in 2023.

b. *Adaptive Management*

The program took a couple adaptive measures to help achieve targets and also to provide the best possible customer experience. On a case-by-case basis, the program allowed four-unit buildings within the same community to participate in the Multifamily Retrofit Program. A pillar of the program's goals is to provide higher rebates for rental properties to offset the "split incentive" phenomenon. For this reason, the program matches or exceeds the rebate available to single-family homeowners who have a vested interest in home improvements.

Another strategy undertaken by the program was offering an extended LTO period beyond that available to single-family customers for ductless heat pumps. This proved very helpful in getting nearly 400 units installed, a 132 percent increase from 2022.

c. *Equity Focus*

The Multifamily Retrofit Program has historically focused on customers with lower propensity to participate. PSE has defined geographic areas called Named Communities to meet equity goals described in the Clean Energy Implementation Plan (CEIP). Having defined Census block groups is powerful for marketing and outreach purposes; however, asking Multifamily interested parties to review a map of Census blocks poses a burden for participating in elevated incentives. Therefore, in an effort to simplify this Recognition Justice strategy, the Multifamily Retrofit Program conducted an analysis of real estate data that revealed that the majority of affordable rent housing tends to be owned by single-proprietor owners rather than large-portfolio owners.

The data also indicates that the sites owned by single proprietors tend to be older and built before 1986. The program used this analysis and market data to define Moderate-Income as sites that meet any one of the following criteria: are built before 1986, are Tribal-owned, military-owned, offer rent assistance, or are listed as rent-subsidized. This Restorative Justice strategy intends to make it easier for residents in Named Communities to participate in the incentives for multifamily properties. These data points are easily known or found online, which enables contractors and property owners to quickly know whether a site qualifies for increased incentives. Integrating these findings into PSE's program design yielded strategies that resulted in the program having served nearly 12,500 Moderate-Income customers in 2023.

d. *Key Variance Drivers*

As indicated earlier, the Multifamily Retrofit Program fell short of the savings targets for both electric and natural gas. The program saw fewer and smaller-sized weatherization projects than in years past. Rising inflation costs have led some investors to pause upgrades, but it has also caused planned projects to cost more. The adaptive measures the program implemented did increase the expected cost per savings, but, as previously mentioned, the majority of these increased rebates helped moderate-income properties.

e. *Pilot-Like Initiatives*

Strategic Energy Management (SEM) is not a pilot program for the Multifamily Retrofit Program, but it is a fairly new offering. The program team recruited 18 properties and kicked off a 12-month engagement covering both residential and common area energy saving strategies. The typical engagement for each site involved an assessment of equipment; control set points and schedules; identification of savings opportunities; and reoccurring monthly check-ins to review progress toward goals. The program received a lot of positive feedback, and PSE was able to claim electric savings for 2023. The 12-month engagement will continue into 2024, and PSE will also be recruiting another cohort of sites to participate.

f. *Measure Highlights*

The table below provides a general overview of measure categories reported in the Multifamily Retrofit Program in 2023.

Table I-6: Multifamily Retrofit 2023 Measure Counts

Multifamily Retrofit 2023 Measure Counts			
Measure Type	**Measure**	**Electric**	**Natural Gas**
Air Sealing	Dwellings	1,400	27
Insulation	Attic Insulation	1,048	53
	Floor Insulation	212	12
	Wall Insulation	65	0
Window	Double Pane dwellings	1,269	71
	Triple Pane dwellings	6	25
Space Heat	Gas Furnace		24
	Boiler		2
	Ductless Heat Pump	397	
Space & Water	Combined Space & Water Heat		61
Water	Storage Water Heater		3
	Tankless Water Heater		10
Lighting	LED Common Area	4,490	
	TLED Lamp	423	
Thermostat	Elect. Line Voltage Thermostat	3,971	
	Smart Line Voltage Thermostat	3,744	
	Smart Thermostats	153	3
Ventilation	Mechanical Ventilation	607	
Appliance	Clothes Washer	15	
	Clothes Dryer	15	
Power Strips	Advanced Power Strips	363	
Behavior	Strategic Energy Management	5,586	141

*All units are dwellings served.

5. Multifamily New Construction

Schedules E/G 218

The Multifamily New Construction (MFNC) Program provides comprehensive whole-building savings with incentives based on per-kWh or per-therm rate. Staff closely coordinate with developers, architects, and engineers early in the design process to influence efficient solutions for market rate and affordable MFNC projects. The MFNC Program provides increased incentives for affordable housing construction projects that have an overall average occupant income of 60 percent AMI or less. This aligns with the Washington State Housing Finance Commission's Low-Income Housing Tax Credit Program (LIHTC).

MFNC packages financial incentives under one grant that is structured to work in accordance with current Business Energy Management (BEM) programs.

a. *2023 Program Accomplishments*

In 2023, the MFNC Program provided grants to 25 projects, including three affordable housing projects. The program achieved over 4,000,000 kWh of savings, which was 101 percent of the annual savings goal. The program also achieved over 3,500 therms of savings, which was 24 percent of the annual savings goal. Of the total savings, over 350,000 kWh came from affordable housing projects, with total incentives paid to affordable housing projects of $210,050. No therm savings came from affordable housing projects.

b. *Adaptive Management*

In 2023, the MFNC Program continued to use housing consortiums and developer conferences for outreach of the program. In addition to being a member of Housing Development Consortium (HDC) of King County, in 2023, representatives from MFNC also joined the task force of an important subcommittee of HDC — the Exemplary Buildings Program Task Force. This task force aims to enable highly efficient design in affordable housing and is composed of many big players in affordable housing in King County.

Additionally, the MFNC Program sponsored three developer conferences focused on multifamily construction in the Pacific Northwest (PNW). These sponsorships allowed MFNC to reach the larger developer community in the PNW.

c. *Equity Focus*

Continued Procedural Justice strategies included PSE's membership of the HDC of King County. HDC is a leading advocate for affordable housing in the King County region. Being a member of HDC allows MFNC to connect with major affordable housing developers. In 2023, MFNC was a presenter in a Lunch and Learn session with HDC's membership. This increased awareness amongst developers of MFNC's elevated affordable housing incentives.

Regarding Distributional Justice, the MFNC Program continues to provide a 50 percent higher incentive to affordable housing projects that are aligned with the Washington State Housing Finance Commission's LIHTC requirements. Also, the implementer for MFNC, Willdan, is on

the Approved Roster of Energy Modeling Consultants for projects seeking the LIHTC. Projects can achieve points toward their LIHTC application by using a modeler from this list to inform building design. This potentially lowers costs for projects that are applying for LIHTC since they can use PSE's vendor for both PSE's MFNC incentives and for LIHTC application points.

d. ***Key Variance Drivers***

The advancing Washington State Energy Code (WSEC) continues to push the MFNC Program to find deeper savings. Additionally, WSEC increasingly makes it difficult for projects to utilize natural gas fuel and achieve above-code savings. Therefore, therm savings will continue to diminish for MFNC.

e. ***Pilot-Like Initiatives***

In 2023, PSE paid for its first MFNC project that had a central HPWH system. There are a number of other projects in the MFNC pipeline that have these types of systems.

f. ***Measure Highlights***

MFNC incentives are packaged under one grant that is structured to work in accordance with current BEM programs. As such, a summary of each component measure is not provided for the MFNC Program.

B. Business Energy Management

The following program discussions address specific results and accomplishments in the Business Energy Management (BEM) 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 CEM's Exhibit 1: *Savings and Budgets*.

1. Commercial/Industrial (C/I) Retrofit

Schedules E/G 250

PSE works with commercial and industrial (C/I) customers to provide incentives for cost-effective energy efficiency upgrades to lighting, equipment, building shell, industrial process, and select operations and maintenance (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 to make 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 customers' facilities to ensure customers are aware of cost-savings opportunities, including review of energy-saving projections that can help obtain favorable financing rates.

C/I 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 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.

a. *C/I Retrofit: Custom Grants (Non-Lighting)*

PSE provides discussions of notable Commercial/Industrial (C/I) Retrofit Program accomplishments in the following sections.

i. 2023 Program Accomplishments

The Custom Grants Program exceeded the 2023 natural gas and electric targets with budgets commensurate with achieved savings. PSE C/I Retrofit incentivized a total of 108 individual measures — 65 percent electric measures and 35 percent natural gas measures.

PSE paid the first monitoring-based commissioning (MBCx) performance incentive. The incentive paid was over 90 percent of the maximum achievable payment.

PSE launched a Commercial Secondary Window measure offering increased incentives for installation.

PSE incorporated enhanced ad search tactics and updated organic search criteria to increase program visibility. Additionally, marketing messaging was expanded to include overarching company decarbonizing and energy efficiency strategies.

ii. Adaptive Management

PSE offered a project closeout incentive to selected customers to get projects completed in 2023. Ultimately, no projects received a closeout incentive due to immovable customer timelines.

In 2023, PSE created a contractor outreach position designed to provide training and support to contractors familiar with PSE programs as well as to inform non-participating contractors about PSE programs. Several information sessions were scheduled and completed in 2023.

iii. Equity Focus

Due to the nature of this program, in 2023, there were no additional equity-based initiatives.

iv. Key Variance Drivers

Five large natural gas energy efficiency projects delivering about 40 percent of the achieved savings in 2023 were completed in December. This contributed to C/I Retrofit exceeding the natural gas target by 40 percent.

b. *Business Lighting Incentive Program*

The Business Lighting Incentive (BLi) Program — which includes Tenant Improvements (BLti), New Construction (lighting only) BLnc, Street Lighting (BLsli), and Business Lighting Express (BLx) — serves customers as a part of the C/I Retrofit Conservation Schedule 250. To simplify the customer experience, PSE offers a "Simple" application that allows for projects with five measures or fewer and a "Standard" application for projects with five or more measures when applying for a Business Lighting Incentive grant. This program addresses customers' needs by providing custom calculated incentives for lighting and lighting controls measures.

i. 2023 Program Accomplishments

The Business Lighting Incentive Program and its sub-programs completed over 493 projects in 2023, with an average project size of 52,000 kWh in savings. To increase participation in the program, a new "Project Perk" incentive was offered. An updated application was presented to customers in December in preparation for 2024.

ii. Adaptive Management

The Business Lighting team consistently monitored lighting market trends throughout the year. A significant trend in 2023 that continued from 2022 was the slowdown in the lighting retrofit market. The team met with analysts to look at suspected LED technology saturation in PSE territory. In June 2023, the Business Lighting team launched a new Project Perk: Contractor Performance Incentive (CPI) that gave the customer an additional $0.025 per kWh saved and the submitting contractor an additional $0.025 per kWh saved (total $0.05 per kWh) for projects that were completed and invoiced by November 15, 2023. In 2024, the CPI will evolve to create stronger partnerships with customers.

iii. Equity Focus

The BLi Program supported Distributional Justice when it developed a higher incentive to reach customers who are part of Highly Impacted Communities (HIC) and Vulnerable Populations (VP). This will lower their costs for projects that are applying for a Business Lighting Incentive.

iv. Key Variance Drivers

The BLi Program fell short of original savings and incentive goals set in 2023. Targets were readjusted mid-year and final targets were met by the year's end.

c. *Industrial Programs*

In addition to C/I 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.

The Industrial Energy Management (IEM) Program serves customers as a part of the C/I 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.

The IEM Program provides a comprehensive set of offerings, focused on tuning up industrial systems and reducing energy usage. Offerings include traditional Custom/Capital Project Development (Capital), Industrial Systems Optimization Program (ISOP), Industrial Strategic Energy Management (ISEM), and the Comprehensive Small Industrial (CSI) offering, which provides custom grants targeted at small industrial sector customers.

i. 2023 Program Accomplishments

In 2023, PSE's IEM programs made steady growth in their total number of projects, as well as in size. In addition to the existing ISEM cohorts, one wastewater treatment cohort, two manufacturing cohorts, and one one-on-one customer, PSE launched two new ISEM manufacturing cohorts in 2023. PSE was also able to achieve either completion or significant progress in several ISOP and large capital projects. PSE launched a new program, ISOP+, in 2023 and worked on a CSI project.

ii. Adaptive Management

In 2023, PSE program staff and an energy efficiency account executive dedicated significant effort to targeted marketing and outreach to increase the number of applications submitted and to improve connections with industrial customers and industry partners.

Program staff also continued to update the industrial program webpage and application process throughout 2023 to create a user-friendly experience. Customers can find all the required documentation online, along with program guides, Q&As, case studies, and an email address for IEM Program staff for questions and project applications.

iii. Equity Focus

In the Recognition Justice domain, program staff worked with PSE's Energy Equity group to identify the customers served by the program within Named Communities with the aim of:

1. Identifying barriers and exploring solutions to mitigate disparities
2. Exploring how to boost the awareness and the engagement of customers within Named Communities in support of Procedural Justice
3. Establishing the financial assistance guideline in the program's design in support of Restorative Justice

As a result of this exercise, the following specific actions were deployed during 2023:

1. Evaluating and identifying the industrial customers in Named Communities
2. Planning 2024 program offerings for small industrial customers in Named Communities

iv. Key Variance Drivers

The IEM program exceeded the 2023 electric savings goal largely due to the completion of several large capital projects and achievements of a few ISEM cohorts. However, IEM fell short of natural gas savings. This shortfall was largely due to the lumpiness of natural gas savings in this program with large projects not occurring in 2023. The IEM team is focusing on program recruitment of large natural gas customers in the 2024-2025 biennium.

v. Pilot-Like Initiatives

Program staff launched ISOP+ in early 2023. The program provides bundled incentives to ISOP customers for implementing O&M and capital projects at the same time.

d. *Clean Buildings Accelerator*

The Clean Buildings Accelerator (CBA) Program is designed to help building owners comply with Washington State House Bill 1257, the Clean Buildings Law. The Accelerator provides strategic energy management (SEM) services through a four-month program. It is targeted toward lower-resourced and smaller organizations, including public organizations, nonprofits, and/or customers who have less experience with energy efficiency programs.

i. 2023 Program Accomplishments

The CBA supported over 40 customers in six different cohorts in 2023 on their path to compliance, targeting energy savings between 2 and 7 percent or more per building. Cohorts from previous years have completed their cycle through the program and have graduated onto other PSE incentive and energy management programs.

Customer feedback has included that the program is a solid, accurate resource that saved a lot of time and stress in creating the necessary plans and programs for compliance. PSE keeps the interaction with each customer personalized and builds strong relationships over the 16-month engagement. The Accelerator is serving as a touch point and springboard to provide excellent customer service, while also bringing more projects into PSE’s other efficiency programs.

PSE has shared the CBA Program design with other utilities in Washington State, many of whom have since adopted the program as their own.

In 2023, the CBA program was recognized for awards by Edison Electric Institute (EEI), Public Utilities Fortnightly, and NEEA for a Leadership in Energy Efficiency Innovative Collaboration Award, and it was a top-five finalist for the EEI’s 2023 Edison Award.

ii. Adaptive Management

The program engaged in the following adaptive management strategies in 2023:

- Despite the significant impact it will have on PSE's customers, the Clean Buildings Law remains largely unknown to many customers, and there is a lack of understanding of the urgency of the situation. Recruiting customers for the CBA Program has proven to be a challenge. To raise interest, there was a big focus on awareness using multiple mediums in addition to customer-facing website optimization, direct email campaigns, presenting at

conferences, using chambers of commerce, simplifying language, co-branding with other CBA programs, and working to engage other utilities and third parties. Additionally, the three awards that the CBA has won and the finalist spot it earned provided marketing visibility across multiple audiences. These efforts significantly increased awareness among PSE's customers, leading to a continued growing number enrolling in the program.

- PSE continues to work on developing strategies to transition CBA customers smoothly and efficiently to other efficiency programs like CSEM, Controls, P4P, and Custom. For example, PSE highlights one of its efficiency programs at each Elevation Seminar. PSE's CBA team also meets regularly with the CSEM team to review customer readiness to graduate from CBA to CSEM.

iii. Equity Focus

In 2023, targeted and customized letters were sent to Skagit, Whatcom, and Island Counties informing building owners of Washington State's Clean Buildings Law and the PSE CBA Program. Around the same period that the letters were distributed, it was identified that those three counties contained customers within HICs and that this communication effort supported Restorative Justice. Additionally, PSE worked with other departments such as the Energy Efficient Communities (EEC) team to connect the CBA Program to Named Communities in the Whatcom, Skagit, and Island Counties via email blasts and other outreach methods. The CBA team also supported Recognition Justice as it worked with other PSE teams to help refine the program's approach to equitably serve commercial customers.

iv. Key Variance Drivers

In 2023 the CBA Program achieved its savings target goals. Customer awareness on Washington State's Clean Building's Law continues to be a variance driver for the program. The CBA team is utilizing methods outlined in the adaptive management section above to increase awareness of the program: website optimization, direct email campaigns, presenting at conferences, using chambers of commerce, simplifying language, co-branding with other CBA programs, working to engage other utilities, and third parties.

The primary purpose of the CBA is to educate customers on how to comply with the law. For that reason, PSE is shifting its promotion of the CBA Program from being an incentives program to a more informative and educational program. The largest value of the CBA is that it will bring projects to PSE's other incentive and energy management programs, as customers learn how their buildings are performing and where they need to implement measures to achieve compliance.

e. *Virtual Commissioning*

Since 2020, PSE has been contracted with Power TakeOff to deliver the Virtual Commissioning Program (VCx). This program was previously a pilot until May 2022. PSE sends 15-minute interval data from PSE rate Schedule 24EC, 25EC, 26EC, 31EC, and 31GC accounts to Power TakeOff on a daily basis for it to analyze. Using the data, Power TakeOff identifies opportunities to modify schedules, set points, and more to save energy. Power TakeOff then reaches out to the customer over phone calls and emails to implement the no-

cost savings measures. After implementation, Power TakeOff verifies savings over a three-to-eight-month performance period, and it invoices PSE on a monthly basis.

In December 2023, the program went through its first true-up analysis, meaning that every site that was invoiced since the program's inception was reanalyzed with updated savings. This included projects from when this program was a pilot in early 2022. The true up found some sites that had reduced or no savings, as well as sites that had increased savings for various reasons. This was taken into account using Demand Side Management central (DSMc) subprojects for the pilot and program. Since PSE did not have any new projects under the pilot in 2023, only the net negative savings values from the true-up were available, so the net savings from 2023 for the pilot were negative. Future true ups will be done at the end of each PSE program year and will only include projects that were invoiced in that particular year.

The program will continue into the next biennium.

i. 2023 Program Accomplishments

In 2023, the program reported over 3 million kWh in energy savings — surpassing the goal of 3 million kWh. Additionally, the program brought in 23 referrals to other PSE programs or offerings.

ii. Adaptive Management

In 2023, to get an idea of what other vendors may be offering, PSE sent out an RFP for Virtual Engagement and Commissioning that had two respondents. Of the two, Power TakeOff was the only one that fit PSE's requirements from a turnkey program design standpoint, so it was selected.

PSE negotiated the contract for the 2024-2025 biennium, ultimately resulting in a lower payment rate for energy savings than 2023 ($0.25/kWh instead of $0.30/kWh). Additionally, the VCx Program manager worked with PSE IT to add Schedule 31EC accounts to the data feed that will increase opportunities for energy savings.

The VCx Program manager trained major account executives on the VCx Program, and these account executives now get CC'd on Power TakeOff emails to customers. This has proven to increase customer confidence in the legitimacy of Power TakeOff's emails and keep the PSE account executives informed of the outreach. It has even created new opportunities for savings that Power TakeOff had not originally accounted for through relationship building alongside the PSE account executives.

The PSE program manager strongly emphasized the need for natural gas savings in 2023, but Power TakeOff staff were not able to get the International Performance Measurement and Verification Protocol (IPMVP)-guided natural gas models to show savings for a single project, despite a concerted effort.

iii. Equity Focus

This program continues to prioritize customers with the greatest opportunity for energy savings based on a consultant's analysis. In 2023, there were no new equity-based initiatives.

iv. Key Variance Drivers

- Program Cross-Participation: This program had a substantial amount of cross-participation with other PSE programs, which reduced VCx savings on several projects.
- PSE Data Issues: There were multiple VCx engagements that were negatively affected by the large amount of estimated and/or missing reads in PSE interval data. A meeting was facilitated between PSE IT and Power TakeOff. PSE's intention is to continue incrementally reducing estimated and missing reads over time to gradually lessen the issue.
- True Up and Persistence of Savings: If a customer closes or vacates a building after implementing VCx, the savings do not persist and must be made up by new projects to maintain the savings forecast. For the pilot, there were no new projects in 2023, so the savings claimed were the net negative from the true up, mostly due to the closing of a large retail store that was a major participant in the pilot.

f. *Telecommunications Efficiency*

The Telecommunications Energy Management Program is designed to identify, evaluate, and implement projects in PSE's telecommunication customer facilities. It improves energy efficiency by providing them with a comprehensive and flexible program that combines capital and performance-based incentives. The program covers all telecommunications customers and includes all measures that cost effectively save energy. Those measures can be capital investments, operational and maintenance (O&M), and other comprehensive measures. The program will continue into the next biennium.

i. 2023 Program Accomplishments

In 2023, the program reported over 7 million kWh in energy savings — surpassing the original goal of 6 million kWh.

ii. Adaptive Management

In 2023, PSE leveraged Willdan's connections and contacts with many telecommunications companies and garnered many projects from those connections.

PSE negotiated a contract extension for the 2024-2025 biennium, resulting in a continued partnership with Willdan and increased the total savings that Willdan will bring in.

iii. Equity Focus

Due to the nature of this program, in 2023 there were no new equity-based initiatives.

iv. Key Variance Drivers

Regarding program participation, with many telecommunications companies already contacted and leveraged for projects, there may be a drop in new customers joining the program in 2024.

g. *Project Figures*

PSE provides the following C/I Retrofit table 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.

Table I-7 provides an overview of the number and types of projects completed in C/I Retrofit in 2023.

Table I-7: Commercial/Industrial Retrofit Custom Grants

Commercial/Industrial Retrofit Custom Grants			
Program	**Electric**	**Natural Gas**	**Both Electric and Natural Gas**
C/I Custom Grants	50	32	12
C/I Lighting Grants	421	0	0
Industrial Energy Management	29	1	0
Clean Buildings Accelerator	21	22	35
Total Project Count	521	55	47

* Custom grant projects often consist of more than a single measure.

2. 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.

a. *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 use 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 incentive amount. The building must use at least 10 percent less than the baseline EUI metric to qualify for an incentive.

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.

b. *2023 Program Accomplishments*

In 2023, the C/I New Construction Program prioritized outreach to local engineering and architecture firms to promote the program and increase participation. In the first quarter of 2023, program staff held a virtual Coffee and Conversations event that provided an overview of C/I New Construction incentive options. This event had over 20 attendees and generated multiple project leads as well as one-on-one conversations with local firms. C/I New Construction staff also presented incentive options at the University of Washington's Integrated Design Lab virtual event that had over 50 attendees from the design community.

C/I New Construction also continued to work with the Multifamily New Construction (MFNC) team on increasing program outreach and Early Design Assist (EDA) meetings. The EDA meetings provide customers with real-time energy modeling to help them make informed decisions regarding their energy usage. While the vendor's focus has been the Multifamily Program, it has also provided an EDA for a commercial customer and provided outreach for the commercial program.

Program staff also developed a process to work collaboratively with Snohomish County PUD to capture new construction natural gas savings in shared territory. For a very cost-effective fee, Snohomish County PUD provided verification documentation on completed projects that had natural gas savings and its claimed electric savings. This is an ongoing relationship that will most likely be beneficial in the future.

c. *Adaptive Management*

In 2023, a method to calculate an accurate baseline for data centers was added to the EUI Performance Method. This option allows customers with data centers in portions of their building to participate in this program offering. The ENERGY STAR Methodology was used to determine a baseline energy usage for a data center with an ENERGY STAR score of 100 (very efficient). The IT equipment usage kW and data center square footage are provided by the customer to determine an efficient baseline. The difference between this efficient baseline and the actual measured data center usage is included in the savings analysis for possible incentives.

A limited-time close-out bonus was also developed for this program in 2023 to encourage customers to complete verification paperwork before the end of the year. This was intended to speed up the close-out process and encourage customers to complete projects in 2023 rather than early in 2024. Changes were made to DSMc to accommodate this new option, and it will be available in the future if it is needed.

d. *Equity Focus*

The EUI performance method was developed to reduce barriers to participation for Commercial New Construction customers. This incentive option does not require the added cost of developing an energy model. Only basic building information is required, which provides a streamlined and more cost-effective option to capture whole-building savings. Buildings of all sizes are eligible for this incentive, which further reduces barriers for smaller projects that may not have the budget for a full energy analysis. This method also provides the best potential incentive because the customer can capture design savings as well as commissioning and behavioral savings. This effort aligns with PSE's Distributional Justice category in that the program design is meant to reduce participation barriers for Named Communities customers.

e. *Key Variance Drivers*

The C/I New Construction Program exceeded the electric program target for 2023. The increase in electric savings was mainly due to a few performance projects that exceeded PSE's conservative savings estimates.

The C/I New Construction Program completed 2023 with lower-than-expected natural gas savings. This decrease is mainly due to an overall decrease in new construction natural gas projects. The current climate around natural gas projects, including local natural gas bans and corporate climate goals that limit natural gas usage, have been pushing customers to use electric equipment for large new construction projects. This trend will most likely continue with a more stringent WSEC set for 2024.

f. *Project Figures*

The C/I New Construction representative number of projects completed in 2023 are shown in Table I-8.

Table I-8: Commercial/Industrial New Construction Custom Grant Projects

Commercial/Industrial New Construction Custom Grant Projects			
Program	**Electric**	**Natural Gas**	**Both Electric and Natural Gas**
C/I New Construction	34	3	5

3. Energy Performance Incentive Programs

Schedules E/G 253

Energy Performance Incentive Programs, previously named Commercial Strategic Energy Management (CSEM), include whole-building, performance-based programs that achieve cost-effective electric and natural gas savings through energy management practices. This section was renamed during 2022 to accommodate the addition of the Pay for Performance (P4P) Program to the Schedule 253 offerings.

The following discussions provide 2023 recaps for two programs that comprise the Energy Performance Incentive offerings: CSEM and P4P.

a. *Commercial Strategic Energy Management*

PSE offers Commercial Strategic Energy Management Services (CSEM) to any commercial 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 customers, PSE offers Strategic Energy Management (SEM) options for multifamily 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 2,000,000 therms for natural gas-only service from PSE. Funding levels are prorated based on the number of staff a customer would need to allocate to achieve cost-effective savings from CSEM efforts. At a minimum, the customer needs to use 1,000,000 kWh, 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 interested parties.

Monetary grants include a "start-up" grant for completion of deliverables associated with building the program foundation. The start-up deliverables include completion of an energy management plan and operations and maintenance (O&M) plan. 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. There are also milestone incentives that are paid to the customer upon completion of program requirements.

The CSEM agreement is valid for three years. Over this time, PSE anticipates a 9-12 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.

PSE’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:

Program Start-Up

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

Technical Assistance

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

Education and Training

- Training in fundamental concepts for designated energy managers and support personnel such as custodial, maintenance, and facilities staff
- Educational materials for classroom or building occupant use including checklists, fact sheets, and calculators
- A training stipend to support professional development in building operation or energy management

Energy Data Services

- Review of existing databases for inclusion of all facilities, accounts, meters, and overall data integrity
- Energy interval services for internet view of facility natural gas interval meter data

Cash Incentives

- A “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
- Milestone Incentives for customers upon completion of program requirements each year

The CSEM Program has also assisted customers in establishing ENERGY STAR Benchmarks for their facilities using the U.S. Environmental Protection Agency's (EPA) 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 the 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.

i. 2023 Program Achievements

The CSEM program team has had a lot of success in recruitment into the program over the past 18 months. The team exceeded the goals it created for recruitment in the last year, mostly due to the addition of an account executive to the team who has been able to focus on engaging with customers and bringing them into the program. The CSEM program also exceeded natural gas targets for 2023. Outside of recruitment, the team has also done considerable work on program improvements that focus on driving deeper savings with existing customers in the program. Since the CSEM program is performance-based customers still need to learn SEM and implement it at their organization. During 2023, there was significant work done to develop a better program engagement that should foster more savings with existing customers in the program.

ii. Adaptive Management

A recruitment issue that arose since PSE exceeded its project goals is how to deal with the large influx of customers looking to join the program while ensuring the team has enough capacity to take on additional customers. The team wants to ensure that the program delivery quality is maintained and is not diluted due to engineers managing many different customer relationships.

The solution the team is implementing is to move toward a cohort-style program where customers are provided a run-through of a curriculum in the first incentive cycle in the CSEM Program. The curriculum focuses on the fundamentals of SEM to educate customers on how to establish an SEM program at their organization. The intended outcome of this is to deliver a quality program while reducing workload for engineers by grouping similar activities to complete with multiple customers. The team is continuing to work on how this cohort-style model will be implemented with existing customers who have already established an SEM program at their organization.

iii. Equity Focus

The team focused on Recognition Justice in 2023 by conducting an analysis to better understand the program's current participation in Named Communities, which is based on customer account numbers. The analysis helped PSE determine that 30.6 percent of CSEM customers are located in HICs, and 66.5 percent of customers in the CSEM Program are deemed as high or medium vulnerability.

In response to the findings of the above-mentioned recognition exercise, the team has been working hard to ensure that all the incentives are paid out in a much timelier fashion. With changes made to documentation requirements, PSE engineers can close out projects faster.

iv. Key Variance Drivers

The CSEM Program exceeded natural gas targets for 2023 and fell short of electric savings targets by just over 650,000 kWh. There has been considerable turnover at customer organizations that has led to decreased CSEM savings. In response, the team is improving program design that delivers content tailored to the experience level of energy champions. This means that customers who are newer to SEM will receive content that focuses on the fundamentals of SEM, and customers with more SEM experience will have more advanced content that focuses on how to save energy in individual energy systems.

v. Pilot-Like Initiatives

The team has identified the need for a more specialized approach to hospital customers due to the complexity of the systems in their facilities. The Hospital SEM (HSEM) will have the same incentive structure as the CSEM Program, except the content that is delivered will be more focused on hospital systems. The team is planning to pilot this with five customers, with each of those customers bringing two-to-three buildings into the program. Savings targets will be 3 percent. This program is being stood up in 2024, so savings will not be claimed until 2025.

vi. Project Figures

Table I-9 below shows the number of CSEM Program projects.

Table I-9: Number of CSEM Projects

Number of CSEM Projects				
Program	**Electric**	**Natural Gas**	**Electric and Natural Gas**	**Total Projects**
CSEM	13	7	21	41

b. *Pay for Performance (P4P)*

The Pay for Performance (P4P) Program helps customers achieve energy savings through the aggregate of multiple energy efficiency capital projects, O&M, and behavioral activities in individual commercial buildings. P4P uses a measurement and verification (M&V) process that evaluates the bundled savings using whole-building approach methodology (IPMVP

Option C). To qualify, buildings are required to be a minimum of 50,000 sq. ft. and projected to achieve at least 15 percent energy savings from a minimum of two discrete capital projects.

P4P has a five-year payment cycle. The cycles start with a payment of up to 50 percent of the projected savings upon implementation of the capital improvement projects. The remaining projected savings are amortized annually over the next four years. The annual payments can be derated based on that year's achieved savings as compared to projected savings. If the customer achieves savings exceeding projected savings, they are provided a performance bonus on top of the full portion of that year's amortized payment.

By focusing on facility-level savings from multi-measure projects, the program supports and is complementary to Washington State House Bill 1257, enacted in 2019, for customers working toward compliance with the Clean Buildings Law, particularly with the early adoption incentive program.

i. 2023 Program Accomplishments

In addition to servicing previous years' existing five-year contracts, four new P4P projects were contracted in 2023 and four new sites were under review at the end of 2023. This is consistent with previous years.

The five-year cycle has shown itself to be attractive to many contractors as it provides an opportunity to maintain continuing service contracts with the customer after the capital projects have been completed.

ii. Adaptive Management

In 2022 and 2023, BEM added several energy efficiency account managers to focus outreach into various market segments. Though this effort is not specific to P4P promotion, it has led to both more customer and contractor awareness of the P4P Program option.

In 2022, the Clean Buildings Law expanded to include a new tier of buildings between 20,000-50,000 sq. ft. To study the feasibility of reducing building size as a qualifying threshold, the P4P Program actively recruited two buildings in the new tier. Analysis has shown that some smaller buildings with deeper retrofits can provide the same overall quantity of savings, if not more, than larger buildings that are reaching their minimum savings thresholds with shallower retrofits.

Incentive levels were also changed in 2023 to keep in sync with the other C/I Retrofit programs.

iii. Equity Focus

Since P4P focuses on larger buildings, Distributional Justice is served through program participant institutions such as municipal governments, schools, and libraries who often service an equity focus within their overall mission. For instance, while one of the buildings under contract is a Tribal government building, P4P also has four schools in a school district that serves two other tribes and disadvantaged communities.

iv. Key Variance Drivers

Because this is a young program with few sites, any one site can skew the savings budgets. For 2023, P4P was below the electric savings target by 24 percent as a result of a single project being cancelled due to increased finance costs. However, P4P was way over the 2023 natural gas savings goal of 1,500 therms, because it closed two new natural gas sites — one that claimed over 16,500 therms and another at just under 3,000 therms.

At up to 50 percent, the first-year base savings claim is a large down payment on a five-year contract. With the remaining savings being amortized, the remaining annual payments are much smaller in the latter years of the contract. As such, the full program annual savings is heavily weighted toward new project recruitment.

v. Project Figures

Table I-10 below shows the number of P4P Program projects.

Table I-10: Pay for Performance Project Count

Pay for Performance (P4P) Project Count	
Stage of Project as of EOY 2023	**Count**
Under Review for Grant	4
Signed Grant – Capital Projects In Progress	2
Signed Grant – Capital Projects Completed, First Performance Year	6
Signed Grant – Second Performance Year	3
Signed Grant – Third Performance Year	4

4. Large Power User/Self Directed

Schedule E 258

This program solicits electric energy efficiency upgrades through a Request for Proposal (RFP) process. C/I customers receiving electric service under Schedules 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.

The Large Power User/Self-Directed (LPU) Program operates in a four-year cycle, with two phases in each cycle. The current program cycle spans from January 1, 2023, to December 31, 2026. The above-noted RFP process is the first phase, and it 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 CEM program budget at the end of the program cycle.

a. *2023 Program Accomplishments*

The first year of the new program cycle was 2023. The RFP was released in April and 16 projects were submitted by year end, with two projects completed in 2023.

b. *Adaptive Management*

Work has begun on setting up a Strategic Energy Management (SEM) Program that will begin in the competitive phase of the program cycle (mid-2025). This will allow the retail wheeling customers (Schedule 449) to participate in SEM, which they are not eligible for through PSE's other SEM offerings. Incentive rates have also increased from 2022 by 50 percent, to $0.75/kWh, to encourage more participation.

c. *Equity Focus*

Due to the customer base of the LPU Program, which consists of approximately 30 large industrial and institutional entities, there are limited opportunities to affect changes to HICs and VPs through the LPU Program.

d. *Project Figures*

Table I-11 shows the distribution of projects by customer rate schedule.

Table I-11: Large Power User/Self-Directed Number of Projects

Large Power User/Self-Directed Number of Projects	
Program	**Project Count Per Program – Electric Only**
High Voltage 449	2
High Voltage Non-449	3

5. Commercial Rebates

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PSE offers prescriptive incentives for select commonly applied measures to C/I 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 natural gas Commercial Grant programs. Staff review program refinements and cost-effectiveness with engineering staff, the Evaluation team, and the manager of BEM 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
- Lodging Rebates
- Downstream Commercial HVAC
- Commercial Midstream HVAC and Water Heat Rebates*
- Commercial Foodservice Equipment*

- Small Business Direct Install (SBDI) Program*
  (It includes lighting, refrigeration, and basic HVAC and water saving for small businesses, small lodging, and small agriculture customers).

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

Table I-12 Number of 2023 Commercial Rebates

Business Rebates	Number of Projects		
Program	**Electric**	**Natural Gas**	**Both Electric & Natural Gas**
Lighting to Go	Lighting to Go is not based on projects but is a point-of-sale program for contractors and commercial customers.		
Commercial HVAC	34	0	3
Commercial Lodging	16	0	0
Commercial Midstream HVAC and Water Heat	273	468	0
Commercial Foodservice	266	697	15
Small Business Direct Install	1,853	0	0
Total Project Count	2,442	1,165	18

a. *Commercial Midstream Customer Engagements*

Midstream programs spent 2023 adapting to ever-changing market conditions while accomplishing a variety of goals and taking on new initiatives, such as planning how to more equitably distribute program benefits. In addition to navigating code changes; providing consistent distributor training and program awareness; and dispersing program signage, analyses were used to improve engagement and create innovative ways to deliver energy savings.

The PSE Midstream Commercial Foodservice Program, Lighting Program, and HVAC and Water Heat Program continued to provide a tangible connection between distributors, contractors, customers, and the entire suite of rebate programs offered by PSE. Products incentivized in wholesale locations included commercial foodservice, commercial lighting, commercial-sized HVAC and water heating, as well as residential-sized HVAC and water heating for commercial and residential end-use installations. Overall, outreach (or engagement) resulted in over 3,900 personal touch points with industry partners over the course of the year.

In 2023, PSE successfully implemented field services for midstream programs in over 160 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, contractors, and the PSE customer.

Table I-13: Commercial* Midstream Customer Engagements

Commercial Midstream Customer Engagements				
Location Type	**Number of Locations**	**Total Number of 2023 Touch Points**	**Touch Points per Location**	**Avg. Touch Points Per Month**
Brick and Mortar	83	1,041	41	87
Corporate and Branch Efforts	86	860	21	73
Calls, Emails, and Virtual Meetings Only	17	2,121	10	177

*The Midstream HVAC & Water Heat program spans both Commercial and Residential markets.

The program considers each staff interaction as a chance to train and reinforce messaging. After formal trainings have taken place, it is often in these more casual interactions that industry partners ask questions, troubleshoot issues, and build meaningful partnerships that are sustained throughout the year.

b. *Program Reviews*

The following discussions provide 2023 recaps for the individual programs that comprise the Commercial Rebates suite of offerings.

i. 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 LED lighting from participating distributors for use in commercial customers' businesses. The Lighting to Go Program covers replacement lamp measures including: Tubular LED (TLED) measures; CFL replacements; HID replacements; and fixture replacements, including high-bay and low-bay fixtures, linear replacement strip and wrap fixtures, downlight fixtures, troffers, and exterior fixtures.

2023 Program Accomplishments

Regional program alignment coupled with uniform program quantity limits and definitions were solidified in 2023. This increased program stability to the participating distributors, enabling the rapid program growth and high program savings experienced in 2023.

In the second quarter, PSE proposed an LTO for troffer and linear fixtures that launched with substantial market engagement and demonstrated the effectiveness of increased incentives on fixtures with high savings per unit. This produced the needed data for a productive 2023 measure development cycle and provided additional savings to the program.

A contractor webpage was launched just prior to the start of the LTO and provided a direct avenue to advertise it, as well as serving as a regional program information resource. It

received 146 page views from 70 unique users. An average of just under 30 seconds spent on the page indicates that webpage users were able to find the information they needed quickly.

The 2023 new measure development was a success, enabling early regional agreement on general program direction, creation of new measures, timely marketing materials creation, and strategically timed market communications announcing the changes, all leading to a successful set up for the 2024 program year. This round of measure development saw the creation of the following new measures: parking garage fixtures with integral controls, stairwell fixtures with integral controls, high-bay and low-bay fixtures with integral controls, troffers with integral controls, and an 8-foot T8 TLED lamp.

The additional fixtures with integral controls will help offset reduced savings caused by increasing lamp baselines, and they will help smaller commercial customers begin to use simple integrated controls with daylight dimming and occupancy-sensing capabilities for increased savings beyond a fixture-only retrofit.

This was part of the complete redesign of the incentive structure for 2024 to encourage fixtures over lamps, as increased baselines for lamps continue to put significant downward pressure on claimed savings.

Table I-14: Commercial Midstream Lighting to Go Customer Engagements

Commercial Midstream Lighting to Go Customer Engagements				
Location Type	**Number of Locations**	**Total Number of 2023 Touch Points**	**Average Touch Points per Location**	**Average Touch Points per Month**
Brick and Mortar	66	457	7	38
Corporate	8	69	9	6
Online Only	17	178	10	15

Adaptive Management

In 2023, there was an emphasis on increasing visits and communication with participating distributors. Individual distributor trainings were well-received and helped increase project submissions, especially those that had no or minimal participation previously.

Equity Focus

In 2023, this program successfully had multiple participating lighting distributors in every county in PSE electric service territory as part of PSE's focus on Distributional Justice. This helped ensure that customers from all economic backgrounds could participate in the program incentives offered. PSE regularly engaged with distributors — on a quarterly basis in-person and via email and calls on an as-needed basis — to discuss their goals and marketing plans as they related to more equitably distributing lighting rebates to customers who, due to lack of awareness, may not as readily participate.

Key Variance Drivers

Using market feedback, the program worked with program implementers, regional utilities, and internal marketing to launch an LTO on troffers and linear fixtures.

Increased marketing, distributor training, and engagement propelled the program to 186 percent of the 2023 program kWh savings goal.

ii. Commercial Foodservice

PSE continued to offer cost-effective prescriptive Downstream and Midstream Foodservice rebate incentives to over 8,000 foodservice customers in 2023, focusing on equitable participation opportunity across the region.

The Commercial Foodservice (CFS) Program's structure centered on providing access to all PSE foodservice customers by partnering with as many equipment sales locations as possible within, and outside of, PSE's service territory in order to influence their purchasing decisions and offer instant pass-through rebates. In 2023, the CFS Program focused on onboarding additional national partnerships as well as some technology-specific partners focused on heavy energy savers. As the Midstream portion of the Foodservice Rebate Program continued to grow, Downstream rebate participation naturally lessened over the course of the year as more customers found their access to rebates via PSE's concerted Midstream efforts. For that reason, the below content focuses on Midstream efforts, with the understanding that PSE's Downstream option for customers remains to ensure that customers who shopped outside of the Midstream distributor network still have access to rebates. It is not a separate program delivery or effort.

2023 Program Accomplishments

Table I-15 Program Successes for the Commercial Foodservice Program

Program Successes for the Commercial Foodservice Program				
Location Type	**Number of Locations**	**Total Number of 2023 Touch Points**	**Touch Points per Location**	**Average Touch Points per Month**
Brick and Mortar	17	584	34	49

PSE continued to offer cost-effective prescriptive Downstream and Midstream Foodservice rebates to its over 8,000 foodservice customers in 2023, focusing on equitable participation across the region. The third full implementation year of PSE's Midstream delivery model was 2023, and it continued to be an increasingly more successful and effective option for this customer segment. The CFS Program's deepened engagements created richer product and market understanding, greater insights, and more timely support with the account management approach introduced in 2022 that was cultivated and matured in 2023.

This approach focused on using one dedicated field representative for all of PSE's local foodservice dealers, instead of utilizing multiple staff assigned by region, and the program

also introduced engagement of a national Trade Ally Management team. This constant and consistent bridge to the program for dealers, distributors, and manufacturers showed an increase of 400 percent in natural gas savings and 150 percent in electric savings when compared to 2022 achievements. Additionally, the number of units processed through the Midstream and Downstream portions of the Foodservice program increased by 288 percent to a record-breaking 1,647 pieces of equipment rebated in 2023.

PSE's continued engagement with national accounts through the team of national Trade Ally Managers (who focus exclusively on national partnerships) also contributed to huge successes with participation across the country in 2023. These deeper engagements are reflected in record savings for 2023, a record number of field reports logged, and a substantial increase in participation from national accounts.

In addition to continued local and national engagement, The CFS Program launched competitive sales reports in 2023. These reports show dealer-level participation details to provide insights and feedback on how well the dealers are performing compared to their competitors. The CFS Program received overwhelming positive feedback from the market on these reports and saw an increase in participation of the more popular equipment types in subsequent months. These influenced the dealer's stocking habits and drove sales in areas they may not have been focusing on after seeing how other dealers utilized the CFS Program.

Adaptive Management

The CFS Program adapted to market challenges in many ways. This included continuing to foster the benefits of the account management approach mentioned by maintaining and enhancing digital tools and by employing new tools and resources, such as the ZIP code lookup tool (see Pilot-Like Initiatives) for participating Midstream partners. Other key successes were achieved through increased coordination efforts that enabled the CFS Program to assist equipment partners in finding eligible products through alternate vendors when they would otherwise have been unable to find efficient stock to sell.

Program staff continued to monitor the market through direct interaction and feedback from equipment dealers. This included informing dealers of the Washington State appliance efficiency standards that impacted fryers, steamers, and dishwashers. With approval from the Conservation Resource Advisory Group (CRAG), PSE continued incentives for these appliances based on market realities that inefficient products remained readily available.

Equity Focus

A majority of restaurant customers face barriers to improving energy efficiency, such as lack of upfront capital, often being renters, uncertainty as to the longevity of their business, and limited awareness of energy efficiency. Additionally, a high proportion of these customers are multilingual and are distrustful of utilities. This is mostly due to negative lived experience in different cultural landscapes. The program focuses on Recognition and Distributional Justice in order to better serve these customers with culturally appropriate approaches.

With the mobility recovery since COVID-19, The CFS Program was able to resume attendance at industry expo and conference tabling in 2023. In addition, regional and segmental presentations as well as Midstream rebate delivery through local, regional, and

national equipment distributors and manufacturers continued. The CFS Program also worked closely with a local dealer possessing great connections in PSE's Hispanic/Latino foodservice customer segment. This collaboration helped spread word to customers who have never participated in the program before, and it aided them in outfitting at their various locations with efficient equipment by using the Midstream instant rebate path.

Key Variance Drivers

The CFS Program worked closely with dealers in 2023 to drive natural gas measure awareness and participation in order to achieve high natural gas savings goals. Natural gas filing goals were exceeded by 200 percent. While the CFS Program set a high electric saving goal, due to the addition of refrigeration and freezers and the resurrection of griddles and hot food holding cabinets, only 84 percent of this goal was achieved by the end of 2023. As with most new equipment added to a program, there was a slow adoption period with higher sales in these new measures toward the end of the year. The additional efforts to engage chains and national dealers began to ramp up in the last three months of the year when the CFS Program saw most of the griddle and hot food holding cabinet participation. These engagement efforts saw some early success in late 2023, and they will continue to carry over and build, contributing to the early success of the 2024 program year with national chains.

Pilot-Like Initiatives

The CFS Program has had unique opportunities to enhance and expand at the national level from the work its implementation partner conducted. In 2023, the CFS program launched a Universal Dealer Participation Agreement, which is streamlined and nationally standardized. It allows dealers participating in other utility programs who sell product into the PSE territory to easily provide rebates for this program as well. In offering the same standardizing program and process nationally, regardless of utility, the dealers, distributors, and manufacturers recognize an opportunity for them to implement these rebates into their business and financial plans across a broader footprint. This is in contrast to the typical reticence that dealers, distributors, and manufacturers experience when navigating volumes of differing utility programs. This naturally increases participation from partners who would not have otherwise considered PSE's program due to this complexity.

After receiving consistent feedback from the market, the CFS Program added refrigeration and freezer rebates in 2023. They proved to be a huge success, with 27 percent of electric participation coming from those sales.

iii. Lodging Rebates

PSE's Lodging Rebates are designed to help hotel and motel customers afford the significant cost associated with making changes to their greatest energy burden — heating and cooling. This encompasses specific technologies found within guest rooms including Packaged Terminal Heat Pumps and Occupancy-Based Thermostat Controls.

This program is offered through a downstream model and rebates are set at an "up to" amount based on the individual cost of the equipment.

2023 Program Accomplishments

The Lodging Program saw an increase in customer awareness and interest in 2023 following a heavy marketing focus in the first half of the biennium that put program information in-hand for every single (electricity-using) hotel in PSE's territory. The 2023 rebate caps were also increased slightly for both equipment categories, and that adjustment was accompanied by strategic marketing and outreach efforts highlighting the change. PSE worked with 50 facilities throughout 2023, spanning 24 cities and eight counties, to complete 20 projects. Due to these types of projects spanning weeks to months for pre-approval and installation, the remaining as-yet-incomplete customer projects continued their work with PSE into 2024 to fulfill project requirements and complete installation and verification.

PSE was also able to help five customers complete full-facility upgrades for both of the measures in the program, which is the ideal customer experience. Additionally, not only did customers take notice of the program and the more accessible rebates in 2023, but the sales market did as well. PSE experienced more market partner inquiries in the program than in the previous year.

Adaptive Management

In terms of individual customers directly engaging with PSE, 2023 was the program's largest year. This allowed the program staff to learn even more about the needs of this important customer base by testing out different approaches with them. PSE was also able to make changes to internal staffing support midway through the year, and, with that boost in assistance, investigate optimizations to the external and internal processes for the program.

In order to continue to fulfill PSE's needs while also meeting customers at a more achievable ability level, program staff worked on incorporating improvements that augmented the project approval flow. This made it possible to utilize internal resources in the Verification Team to help qualify customers for packaged terminal heat pump rebates before they moved forward with potentially non-qualifying conditions. This improved the customer experience significantly, shortened pre-approval timelines for projects, and gave PSE's lodging customers much-needed technical attention to move their projects forward.

Equity Focus

The Lodging Program focuses on being accessible to some of PSE's busiest business customers. Within PSE's 1,000 lodging customers who may qualify for the program — customers must use PSE electricity — there is a large subset comprised of small- to medium-sized lodging facilities. Many of these facilities lack upfront capital, are managing facility-wide needs with extremely limited staff, and have both reduced awareness of energy efficiency and limited technical understanding of some of PSE's more complex requirements. Similar to commercial foodservice customers, a high proportion of these customers are multilingual and are distrustful of utilities. This is mostly due to negative lived experience in different cultural landscapes. To address these issues, the Lodging Program focuses on Recognition and Distributional Justice strategies in order to serve these customers with customized and culturally sensitive approaches.

In 2023, the program's team focused on making communications and requirements clearer to customers. The team's analysis yielded that language barriers needed to be addressed to help customers when working with them throughout their projects. Additionally, the first Spanish transcreated collateral pieces became available for the program to accompany an event held by the Washington Hospitality Association, where the association announced its new Latino chapter to members and partners.

Key Variance Drivers

Due to the lengthy timelines of the projects in this program and the inexperience of customers working through PSE's requirements, projects were slower-moving than initially expected for the year. This was despite the fact that the volume of customers was higher than typical and the rebate amounts were more in line with market costs. Active adaptations were employed, however, to improve the aspects of this that PSE had some control over. This did show results in the last quarter of the year, and many projects continued to move through approvals, installation, and verification into 2024. Ultimately, the program savings were 40 percent of the 2023 goal.

Pilot-Like Initiatives

Midway through the year, PSE was able to designate additional staff to help give customers one-on-one, individualized attention for their projects. This was recognized as a need and, once focused on, proved to be very helpful for customers. It was also key in helping PSE better understand the gaps the program would need to fill to help customers more successfully complete the necessary program requirements. Those learnings will continue to be compiled and used to fill in those gaps and incorporate long-term improvements to the program.

iv. Commercial HVAC

The Downstream Commercial HVAC program provides rebates on Advance Rooftop Controllers (ARC), Commercial Connected 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 who have participated in the SBDI or Business Lighting Grants programs.

2023 Program Accomplishments

New to PSE's commercial rebate offerings are the addition of prescriptive windows and insulation measures. They were launched September 1, 2023, for commercial electric customers, and PSE started seeing rebate applications within a month of launch. PSE also saw an increase in web traffic and application downloads as an outcome of targeted email and digital marketing campaigns leading to greater awareness of the program.

Equity Focus

As part of PSE's Procedural Justice goals, customer insight analysis was taken to evaluate the transcreation of Commercial Connected thermostat collateral. Further investigation

about which language(s) program promotional materials will be transcreated into will finalize in 2024.

Key Variance Drivers

Low participation due to staff turnover affected the amount of savings claimed. There are unplanned charges to the program for the work done by a vendor to model windows and insulation savings as part of the implementation of those new measures.

v. Commercial Midstream HVAC & 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 heating equipment, encouraging those distributors to stock high-efficiency equipment that is readily available upon unplanned equipment failures. In 2023, the Commercial Midstream HVAC and Water Heat Program had two delivery mechanisms: a flexible delivery for large commercial HVAC and natural gas water heating equipment in which the distributor is not required to pass the incentive onto the contractor and there is generally one commercial branch office per distributor; and a mandatory contractor pass-through delivery for residential-sized heat pumps, ductless heat pumps, and electric HPWHs for small commercial and residential end-use customers. There are 78 participating branches that serve the small commercial and residential market.

Contractors installing below 5.4-ton air source heat pumps or below 120-gallon HPWHs in commercial customer facilities often purchase from the same branch staff as residential installations, and, therefore, the data provided in the Residential Midstream HVAC and Water Heat Program earlier within this report applies to small commercial customers. Aside from discussion on commercial electric HPWHs, the below section pertains mostly to the large commercial equipment including air-cooled air conditioners; water-cooled and evaporative-cooled air conditions; air-cooled heat pumps (greater than 5.4 tons); water-cooled heat pumps; condensing natural gas storage and tankless domestic water heaters; and condensing natural gas domestic hot water boilers.

2023 Program Accomplishments

In 2023, PSE helped guide regional coordination to align rebate offerings with utilities across the region and encourage increased distributor participation. This alignment helped to mitigate supply chain disruptions, including product availability, product cost, and contractor availability. The program expanded in-person visits to branches, distributor training events, and outreach efforts that encouraged growth strategies with a focus on boosting participation. The program provided tools to overcome implementation barriers such as readily identifying eligible projects with customized Qualified Products Lists and an updated regional ZIP code lookup tool.

Building on the success of the 2022 distributor awards, the Midstream HVAC and Water Heat Program continued Distributor Awards for 2023. This initiative recognized 13 of the top-performing distributors for their contributions to drive growth and support satisfaction in the Midstream Program. The program encouraged submissions by implementing several distributor and contractor competitions and raffles for gift cards and tickets to a Seattle Kraken

hockey game. End-of-year distributor appreciation activities during branch visits supported increased engagement with donuts and processor gift cards.

Table I-16: Program Success for HVAC and Water Heat

Program Success for HVAC and Water Heat				
Location Type	**Number of Locations**	**Total Number of 2023 Touch Points**	**Touch Points per Location**	**Average Touch Points per Month**
Corporate and Branch Efforts	78	801	12	67
Calls, Emails, and Virtual Meetings Only	N/A	1,943	N/A	162

** Includes commercial and residential outreach*

Adaptive Management

The program worked with Johnstone NW corporate to develop a contractor portal complete with internal accounting processes, creating internal Johnstone-branded promotional POP, and retraining all branches. Much progress was made in encouraging submissions from this distributor in 2023.

The program rolled out this pilot-like initiative (see the Residential Midstream HVAC and Water Heat Pilot-Like Initiatives Section) from a 2022 tool for distributors to identify underperforming contractors and promote participation in the program. This initiative provided select distributors with a list of all contractors who submitted rebate claims in prior years by total number of submissions. Midstream outreach then worked with the distributors to create a process for following up with underperforming contractors to better understand barriers to submitting claims and to provide education and support whenever possible. This helped distributors better understand the program participation hurdles their low-performing contractors faced and provided them with a targeted group of contractors for their outreach efforts. This tool was rolled out to additional distributors in 2023. Aligning distributors' sales goals with program goals is an effective way to overcome program barriers.

Equity Focus

Recognition and Procedural Justice are always a top priority for PSE when developing a program. PSE commissioned an assessment to enhance PSE's understanding of the program's historical and current effectiveness in reaching customers in Named Communities. The report aimed to identify opportunities for improvements so that the program can support the advancement of an equitable energy system in Washington. These findings and recommendations will influence program design.

Key Variance Drivers

The program exceeded combined Residential and Commercial HVAC and Water Heat savings goal by 85 percent due to the rapid marketing of heat pump technology in the region as well as PSE's 2023 outreach efforts including contractor trainings for HPWHs and heat pumps.

Pilot-Like Initiatives

The field services team made a concentrated effort to increase contractor outreach to build a positive view of the program. Over 100 contractors were educated on the program at distributor-hosted events. Distributors and contractors were satisfied with the raffle prizes, food, and demos provided at these contractor-facing events and customer appreciation days.

The program piloted an innovative way to streamline program participation by ingesting participants' sales data to screen for all eligible sales, sort, and filter sales by contractor, and provide contractors with a tool to easily provide any missing information. A distributor increased savings by 266 percent from 2022 to 2023 using this tool.

vi. Small Business Direct Install

The Small Business Direct Install (SBDI) Program is designed to encourage 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 engage with residential customers as well, residential rebate programs are often discussed during the business's energy assessment to maximize this in-person point of contact.

Program Accomplishments

In 2023, the program's focus continued to be to search for customers in areas who have not participated in the program as well as new ways to serve PSE's small agricultural customers. Throughout the year, PSE completed 2,264 assessments, 2,039 installations, and saved over 17,000,000 kWh and 650 therms. The program served over 100 different ZIP codes in its service territory. The program also provided over $8,000,000 in electric incentives to participating businesses. PSE continued a coordinated co-deployment with Snohomish County PUD to support PSE's natural gas-only customers, although natural gas savings through direct-install measures remained limited, as expected.

Throughout 2023, the program also used targeted community blitzes to encourage further program participation by engaging with small business customers in a door-to-door outreach approach. During these blitzes, PSE had 159 customer touch points, 116 energy assessments resulting in over 500,000 kWh and 156 therms of energy savings for those customers.

Adaptive Management

Over the course of the program's existence, some market saturation has occurred in PSE's territory. To continuously reach its customer base, the program adapted its door-to-door blitz strategy to include a data-driven approach to find those customers who had not participated in the program previously — enlarging the existing focused area of customers who are targeted by PSE to participate in this program. Notably, Tumwater had previously been blitzed, and returning to the area yielded an additional 21 installations and over 180,800 kWh in what was thought to be a saturated area.

Equity Focus

The SBDI Program is designed to ensure that Procedural Justice is supported as it serves all of its small business customers. This is achieved through program qualifications based on meter, building size, and customers being locally owned and operated businesses, including nonprofit organizations. Many of these customers face barriers to participation such as renting their space and having limited staff resources to put toward energy considerations, and this program directly addresses those barriers by providing free energy assessments and energy upgrades.

PSE also increased program marketing using direct mail, email, and social media campaigns to increase program awareness targeting Named Communities. Notably, the marketing budget was also increased to allow the program and marketing team to develop a blitz-specific flier in Vietnamese after proactively identifying a customer need.

Key Variance Drivers

The program surpassed the 2023 kWh savings targets primarily due to an increase in targeted marketing and outreach. The program implementer added two installation contractors to ensure the customer expectation and experience was met. This allowed for a faster timeline for installations.

SBDI has started to grow in delivery and momentum. The addition of no-cost exterior fixtures helps drive this trend. PSE believes that small businesses restarting and reoccupying spaces will allow them to start to reinvest and make decisions on their leased spaces.

Pilot-Like Initiatives

SBDI program staff identified the need to add additional non-lighting measures to the program and developed plans to increase the web-enabled thermostat incentive and HPWH incentive for roll-out in 2024.

In 2023 PSE also continued its work and investigation of the possibility of leveraging PSE engineering support to target and look for SBDI opportunity in small grocery stores to try and find new paths for the program in the future.

Measure Highlights

The program team removed co-pays on lighting fixtures for the program, which made the lighting installations free for the customer.

Recessed Can light fixtures were added to the program in the third quarter.

PSE presents a high-level view of the Commercial Rebates projects managed in 2023 in Table I-17.

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

Table I-17: 2023 Business Rebate Measure Counts

2023 Business Rebate Measure Counts			
Program	**Measure**	**Electric**	**Natural Gas**
Business Lighting Markdown (Lighting to Go)			
Lighting	LED Fixture from HID	7,030	
	LED Lamp	4,350	
	TLED Lamp	140,500	
	Downlight LED from CFL	5,350	
	High Bay LED	7,840	
	Strip Fixture	2,470	
	Troffer - LED	9,940	
Lodging			
Heat Pump	Packaged Thermal	870	
Thermostat	Control – Occupancy-Based	1,600	
Commercial Kitchen			
Commercial Kitchen	Fryer		1,160
	Ice Maker	50	
	Oven	50	120
	Freezer	60	
	Refrigerator	120	
Dishwasher	Commercial Dishwasher	30	40
Commercial HVAC			
Heat Pump	Ductless Heat Pump	90	
Thermostat	Thermostat Web-Enabled	80	10
Insulation	Attic		6,100
	Wall	4,640	

2023 Business Rebate Measure Counts Continued			
Program	**Measure**	**Electric**	**Natural Gas**
Commercial Midstream			
HVAC	Heat Pump	200	
	Ductless HP	160	
	Air Conditioner	110	
Water Heat	Boiler	10	40
	Water Heater - Storage	130	340
	Water Heater - Tankless	40	90
	Sales Incentive	210	
Small Business Direct Install			
Controls	Occupancy Sensor, Lighting	20	
Lighting	Refrigeration Lighting	1,240	
	LED Fixture	6,450	
	TLED Lamp	65,570	
	LED Exit Sign	120	
Audit	Energy Audit	2,110	80

* Units in square feet.

C. Pilots

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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.

PSE discusses pilots that have uncertain savings potentials in this section. PSE discusses programs or measure offerings that could be considered analogous to pilots, but have a reasonable expectation of savings achievement, in the applicable REM and BEM program sections above.

1. Single Family Advanced Metering Infrastructure/Home Energy Display

The Single Family Advanced Metering Infrastructure (AMI) pilot, marketed as the Home Energy Display (HED) Pilot, launched in December 2021. The goal of the pilot was to assess if an in-home energy display along with a supporting portal, which encourages and supports customer engagement, can modify customer behavior enough to produce energy savings.

Customers met the following characteristic in order to participate in the HED Pilot:

- Residential electric or dual fuel customers
- Single-family homes (excluding renters)
- Their homes had a PSE AMI electric meter for at least 12 months

Pilot participants purchased a rebated Rainforest EMU-2 in-home display unit that syncs with their AMI meter for a real-time energy usage display.

As part of the pilot, an online portal was available to a subset of participants. The portal had tips and challenges for customers to complete to encourage them to utilize their device and take actions to reduce their energy usage.

The intention was that all participants have displays as a baseline; the comparison would be between those with just the displays and those who have the display and access to the portal. To get a clear sense of the potential of the pilot, getting participants to engage in the pilot was critical. In 2022, PSE designed a targeted recruitment rollout strategy and successfully recruited enough pilot participants by April — one month ahead of schedule — for the pilot to have a sufficient sampling size for evaluation. Approximately 2,297 customers enrolled in the pilot. In 2023, PSE organized two virtual events, one in January and another in March, to assist customers with best practices for utilizing their device. A monthly cadence of challenge emails was also sent to participants with portal access to continue their engagement in the pilot.

Unfortunately, PSE's third-party evaluator found no statistically significant savings when analyzing pilot participants' energy usage in comparison to a group of customers with similar demographics who were not enrolled in the pilot. There were also no statistically significant savings between the device-only and portal user groups. PSE claimed estimated savings in 2022 in advance of the evaluation. In light of the evaluation findings, PSE reported negative savings of 489,261 kWh in 2023 to ensure the two-year biennial report reflects a savings of net 0 kWh for the program. PSE discontinued the pilot at the end of 2023. Pilot participants kept their devices that remained connected to their meter. PSE will continue limited customer support.

2. Hybrid Heat Pump Pilot

PSE is conducting a pilot study to research the benefits of and barriers to hybrid heat pump adoption in single-family homes located in PSE's dual fuel territory. A hybrid or dual fuel heat pump consists of a ducted air source heat pump combined with a natural gas furnace. By operating an auxiliary natural gas furnace during cold winter peaks, dual fuel systems could allow

PSE to maximize emissions reductions without stressing the electric grid with additional peak heating load.

The objectives of the Hybrid Heat Pump Pilot include:

- Evaluating the impacts of dual fuel hybrid systems on annual energy consumption, electric peak loads, and greenhouse gas emissions when compared to alternative technologies such as cold climate heat pumps or natural gas furnaces paired with an air conditioner
- Identifying the level of financial and technical assistance needed to encourage existing single-family customers and new home builders to install hybrid heating systems
- Identifying measure costs and evaluate the impact of incentives on customer choice
- Identifying the appropriate installation practices and equipment control systems that would facilitate energy efficiency and customer comfort
- Learning about customer perception of dual fuel hybrid heat pump systems and how it impacts marketing and outreach on the technology
- Learning about Trade Ally/contractor perceptions of dual fuel hybrid heat pump systems, including technical concerns, barriers, applicability, marketability, risks, and costs

After a preliminary review of existing customer systems in 2022 produced inconclusive results, in 2023 PSE collaborated with distributors, contractors, and customers to develop a set of pilot rebates for single-family retrofit customers. These included incentives for hybrid heat pump systems (for PSE dual fuel customers with existing natural gas furnaces) and cold climate heat pumps (for PSE electric customers with existing electric forced air furnaces). PSE also provided rebates for natural gas furnace to electric cold climate heat pump conversions through the Targeted Electrification Pilot (see Targeted Electrification below). The Hybrid Heat Pump Pilot is currently undergoing a comprehensive evaluation, with results to be delivered in 2024.

3. Targeted Electrification

In January of 2023, PSE began working with the 2022 General Rate Case Settlement Parties on the design aspects of the Targeted Electrification Pilot Program. By June, after many Settlement Party collaboration engagements, PSE launched the pilot designed to deploy carbon reduction measures (heat pumps), identify opportunities to offset electric system reliability risk, and identify barriers and recommendations to improve heat pump market penetration, particularly in Named Communities. This pilot is targeted toward residential and small business customers. The pilot funding is not through the Conservation Rider but through its own deferred recovery mechanism through general rates.

Running through December 2024, this pilot is a learning opportunity for PSE and its customers, and it will be instrumental in helping to design and influence effective policies and programs to support the clean energy transition while maintaining reliability and affordability for customers.

Per the settlement language, PSE must use at least two of the following customer engagement measures to engage 10,000 customers:

- Rebates for fuel switching to high-efficiency, electric-only appliances that include consideration of carbon emission reduction potential

- Remote and in-home electrification assessments
- Education related to available electrification incentives and programs

By year end, the pilot had delivered ~2,500 home electrification assessments and ~250 heat pump rebates.

D. Regional Programs

This section provides an overview summary of programs that do not fit into the REM or BEM Sectors, are of a more regional nature (consisting of sites, installations, or facilities outside of PSE's service area), or are not directly managed by CEM Management program staff.

1. Northwest Energy Efficiency Alliance

Schedule E254

The Northwest Energy Efficiency Alliance (NEEA) is a nonprofit 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 (BPA), PSE, and more than 140 Northwest utilities on behalf of 13 million electric customers.

PSE and its customers benefit 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, and its 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 customers and energy efficiency programs on several NEEA committees, including the following:

- Products Coordinating Committee
- Integrated Systems Coordinating Committee
- Regional Emerging Technology Advisory Committee
- Cost Effectiveness Advisory Committee
- Natural Gas Advisory Committee
- End Use Load Research Project
- Regional Building Stock Assessments (Residential and Commercial)
- Regional Portfolio Advisory Committee

Exhibit 5 of this Report summarizes NEEA's 2023 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.

a. ***NEEA's Natural Gas Market Transformation Collaborative***

NEEA provides a more comprehensive discussion of its 2023 natural gas market transformation activities in Exhibit 5. PSE ratepayers are major funders of NEEA's collaborative, funding over 40 percent of the overall five-year budget of $18.3 million. NEEA reported natural gas code savings from activities in 2023.

Code savings are forecasted separately from energy efficiency potential and are also recorded outside of the PSE CEM savings. No other natural gas savings from the Collaborative were able to be tied to PSE service territory in 2023.

b. ***Exhibit 5: NEEA 2023 Report of Activities and Initiatives***

Exhibit 5 summarizes 2023 activities, regional initiatives, and outcomes in the areas of emerging technologies, residential, industrial, commercial, codes and standards, partner services, and evaluation by the NEEA in PSE's service area.

2. Targeted Demand Side Management (TDSM)

Schedule 219

Targeted DSM (TDSM) is an initiative designed to identify localized conservation and demand response (DR) potential, develop plans to achieve a defined percentage of that potential, then implement those plans to deliver identified energy efficiency and capacity savings. PSE plans to reduce winter peak electrical usage on Bainbridge Island by 3.3 MW and Duvall's winter peak natural gas usage by 3,000 MBH by 2029.

The TDSM 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 non-wired alternative (NWA) Project, as determined by PSE.

a. ***2023 Program Accomplishments***

Partnered with Trade Allies, PSE installed over 100 energy efficiency measures on Bainbridge Island including heat pumps, HPWHs, thermostats, and shell measures.

PSE developed relationships with the city of Bainbridge Island and community organizations such as the Bainbridge Island Heat Pump Project along with environmental and conservation groups to help proliferate awareness of targeted energy efficiency measures. Establishing partnerships with government community organizations generated considerable program awareness and support through public engagement and positive customer experiences, leading to customer enthusiasm being shared via testimonials posted in the Bainbridge Island Newsletter.

During 2023 PSE also recruited 25 new Trade Allies servicing Duvall and Bainbridge Island, further expanding the number of Trade Allies supporting the program and customers' energy efficiency goals.

b. ***Adaptive Management***

Based on feedback PSE received from installers on the complexity of installation measures available to customers, PSE responded by streamlining insulation measure types to increase the value of each measure while decreasing the number of measures per home heating type. This change was made to increase installer participation and decrease barriers associated with supporting TDSM. These changes will go into effect as of January 1, 2024.

In 2023, PSE also implemented a series of checks and balances to decrease the end-to-end project completion time. This process improvement involved collaboration between PSE's installer base, implementers, program teams, and rebate processing team. In addition to reduced process times, the changes resulted in an increase in completed monthly projects, improved customer satisfaction, and an increase in installer participation.

c. ***Key Variance Drivers***

The populations of Bainbridge Island and Duvall have considerable differences in community organization engagement and Trade Ally support. Historically, the City of Bainbridge Island has been much more engaged with PSE and its efforts to increase energy efficiency across the island through installer and community organization support. As such, the pre-existing relationships and awareness of prior PSE efforts is more abundant in Bainbridge Island than Duvall. The result of this is limited engagement from Trade Allies and customers to fulfill energy efficiency projects in Duvall. Due to variances in localized avoided cost for each area, differences in the measures and type of equipment that were available to customers may have led to confusion and/or hesitancy to engage in the program by installers. The learnings of 2023 have provided PSE with ample information about successful customer engagement strategies, which has informed the program's strategic approach to customer bases in both target cities.

3. Production and Distribution Efficiency

Schedule E292

The Production and Distribution Efficiency Program involves implementing energy conservation measures within PSE's own production and distribution facilities that provide cost-effective, reliable, and feasible energy savings.

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, efficiency measures are implemented at PSE's electric substations. These improvements may involve reducing the energy use within the substation or the distribution of energy beyond it. Efficiency measures may include lighting and heat pumps at the substation or system improvement measures including phase balancing and conservation voltage reduction (CVR), also referred to as voltage optimization (VO).

a. *2023 Program Accomplishments*

In 2023, PSE achieved over 4,500,000 kWh of electric savings in the Production and Distribution Efficiency Program from 11 fully implemented new CVR projects. However, the program also recorded a loss of over -2,500,000 kWh to true up previously recorded projects that were taken offline and re-enabled at a more conservative voltage setting. Of the 16 substations with CVR disabled in prior years, 12 were re-enabled in 2023. The remaining four stations were not able to be re-enabled due to hardware issues requiring LTC controller replacement or construction in the area. No substation upgrades were implemented in 2023. Overall, the program netted over 1,900,000 kWh saved.

b. *Key Variance Drivers*

Savings predictions made in prior eras underestimated operational challenges with CVR implementation. Projects implemented without consulting relay staff and communicating with field engineers were reversed. This resulted in a loss of over –2,500,000 kWh after some were able to be re-implemented at more conservative voltage settings. Substations with appropriate controllers selected for CVR require a phase balancing study, phase balancing construction, and development of tailored CVR settings before implementation. Once settings are deployed, customer complaints may lead to dialing back or reverting these settings.

c. *Adaptive Management*

In light of these challenges, the program stood up a team consisting of members from infrastructure program management, relay operations, system operations, standards, project management, system planning, field engineering innovation, and customer energy management in order to address coordination and troubleshoot operational issues. This team has met weekly to mitigate issues, develop better processes and procedures, and through this coordination was able to implement 11 CVR projects and re-enable 12 projects in 2023. The team hopes to continue process improvement and change management efforts in 2024.

In 2023, the distribution efficiency program continued work on the planned Volt-Var Optimization (VVO) pilots. The VVO pilots will be an improved CVR implementation method that allows for deeper levels of savings over PSE's current CVR implementation method of line drop compensation (LDC). Two VVO pilots are currently planned for implementation in 2024 and/or 2025.

E. Other Customer Programs

PSE separates the Other Customer Programs category from other Electric and Natural Gas Rider programs because they are not used in calculating cost-effectiveness of the overall Portfolio.

In 2023, the only program (partially) funded by the Conservation Rider, for which conservation savings are not claimed, was Net Metering. Net Metering is for onsite customer-side generation, including solar, wind, anaerobic digesters (e.g., renewable natural gas, etc.), and small-scale hydro. Net Metered systems are smaller than 100 kilowatts (kW).[13] Only other electric programs are excluded from CEM's cost-effectiveness calculations.

1. 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).

PSE provides interconnection services to qualifying customer-generators who operate fuel cells, hydroelectric, solar, wind, or animal waste natural 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 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. As of the end of 2023, PSE has over 21,000 net-metered customers with a combined generating capacity of 175 MW AC.

On December 20, 2023, PSE filed a tariff revision to Schedule 150 to make Net Metering Services available through December 31, 2025. The aim of this filing is to provide customers and the solar industry with transparency and assurance on their solar investments, while also allowing PSE time to participate in good faith with interested parties statewide to find the best approach to the next net metering services tariff schedule.

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 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.

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

While Schedule 150 Net Metering applies to customers who generate electricity using water, wind, solar energy, or biogas from animal waste as fuel, 100 percent of new net-metered systems were solar PV (photovoltaic) in 2023 with a median size of 9 kW DC and 7 kW AC for residential systems alone.

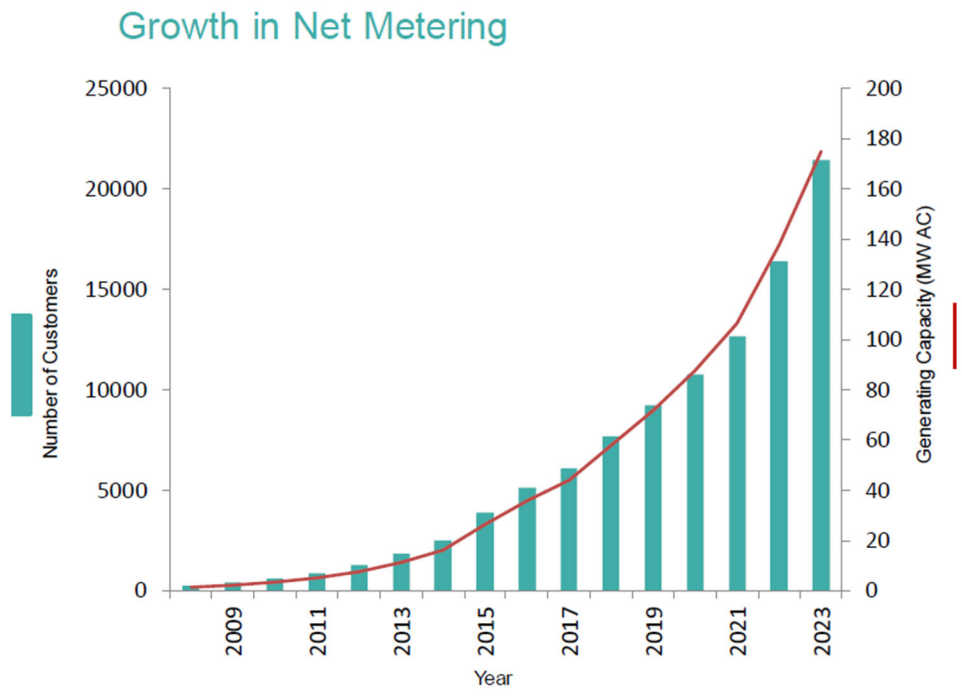
No direct customer incentives are provided by PSE as a part of this program. As described in the following section, the Schedule 120 Conservation Rider only funds administrative and applicable distribution expenses, as provided by the indicated requirements.

a. *2023 Program Accomplishments*

In 2023 PSE interconnected more than 5,000 customers, doubling the total number of net metered customers from 10,000 to 20,000 in just three years.

The Growth in Net Metering table in Figure I-1 Net Metering Customer-Generator System Count, 2008-2023 provides a program view of cumulative year-end numbers and the capacity of net-metered systems:

Figure I-1 Net Metering Customer-Generator System Count, 2008-2023



b. *Adaptive Management*

With AMI meters “solar ready” throughout PSE’s territory, and production meters no longer needed to capture incentives, physical meter exchanges are no longer required to enable net metering for most customers. PSE continues to develop process improvements and research best practices for scaling up residential-scale interconnection.

Additionally, PSE worked in 2023 to address uncertainty among its customers and Trade Allies around the question of when and how it would transition beyond offering Net Metering at “full retail rate” credit. PSE is rapidly approaching a cumulative capacity of net-metered systems equal to 4 percent of its 1996 peak load (179 MW), which is the threshold for requiring Schedule 150 defined in RCW 80.60. PSE made updates to the program’s website and talking points for prospective solar customers, participated in several statewide interested party discussions on the future of net metering and collaborated with Trade Allies to offer a transparent message as PSE navigates this threshold and continue (for now) to make Schedule 150 available.

c. ***Key Variance Drivers***

Continued acceleration of solar adoption beyond PSE projections increases program administrative costs. PSE requires more program staff to manage the customer interconnection process, more project records in PowerClerk, and more customer service staff to support a growing number of solar customers with questions and concerns, particularly with longer-than-expected lead times in gaining permission to operate or until seeing net metering credit on their bills.

d. ***Equity Focus***

Due to the nature of this program, in 2023, there were no new equity-based initiatives.

2. Targeted Demand Response

Schedules 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.

Targeted DR efforts are also included as a component of PSE’s TDSM Pilot for Bainbridge Island and Duvall.

a. ***2023 Program Accomplishments***

In 2023, PSE tripled the size of its targeted DR Program by enrolling an additional 187 customers in its pilot program, Flex Smart Plus, over the 54 customers enrolled in the latter half of the 2022’s fourth quarter.

One of the core drivers in expanded enrollments of Bainbridge Island customers was the increased number of thermostat manufacturers and DR program types available to customers on the island. Eligible products and services were expanded in 2023, increasing

device eligibility from originally only Nest, Ecobee, and Mysa by adding Amazon, Sinope, Sensi, and Honeywell devices.

For the 2022-2023 winter season, evaluation results received from PSE's DR evaluator, DNV, estimated that the winter season events were responsible for an event average total curtailment of 95 kW per event for electric events and 7.3 ccf/hr per event for natural gas events. The results are based on the per-customer average curtailment from each event and the number of customers enrolled.

During the last DR Event of 2023 called on December 22, 2023, electric customers in Bainbridge Island reached 340.52 kW load shed with 215 customers enrolled in Automated and Behavioral DR programs. PSE's evaluator estimates that the winter season natural gas event performance peaked at 7.6 ccf/hr during the February 23, 2023, event. This load shed is consistent with prior curtailment assumptions and keeps the project on track for achieving its long-term capacity goals.

b. *Adaptive Management*

To ensure that DR enrollment and participation rates maintain a consistent pace with installed energy efficiency measures, a requirement of the TDSM Program is for customers to enroll in a DR program to qualify for enhanced energy efficiency measures. As the program gained more popularity on Bainbridge Island, installers were quick to point out that the most advanced high-efficiency HVAC systems popular with customers on Bainbridge Island do not have direct connectivity with DR platforms. To address this technology gap and ensure customers could participate regardless of their preferred home HVAC solution, the program team expanded the list of qualifying DR programs to include PSE's behavioral DR program, Flex Rewards. With this approach, PSE can provide customers with a technology-agnostic solution to DR participation while also ensuring customers have access to the most efficient HVAC systems available to them.

In 2023, PSE developed a dispatch strategy with System Operations to ensure that the virtual power plant (VPP) could be used in targeted DR dispatching by ZIP code. This strategy ensures that PSE can maintain flexible, targeted DR controls over high-capacity areas in its service territory for dispatching.

In the summer of 2023, PSE rebranded its targeted DR program from Peak Rewards to Flex Smart Plus. This decision was made to align with the portfolio-level branding of the DR programs and to minimize confusion between the portfolio of programs that PSE administers.

c. *Key Variance Drivers*

DR is not a one-size-fits-all measure for both electric and natural gas fuel. Electric and natural gas demand and delivery processes differ, and, as such, dispatch strategies to address capacity constraints must be considered separately. These considerations drove the need to establish granular ZIP code-based dispatching methodologies as detailed in the adaptive management section above.

The primary dispatch variance between the two cities is found in the typical peak capacity times associated with the separate cities. On Bainbridge Island, peaks can occur equally in the morning and night, whereas Duvall's historical peaking windows are always in the early morning. The dispatch approach developed and detailed with System Operations allows PSE to dispatch DR events as needed, based on individual delivery needs of specific high-use areas in the service territory.

d. ***Equity Focus***

Due to the nature of this program, in 2023, there were no new equity-based initiatives.

3. System-Wide Demand Response

Demand Response Overview

Demand response (DR) is a strategy designed to decrease load on the grid during times of peak use. It involves modifying the way customers use energy — particularly when they use it — to prevent spikes in energy usage and ensure reliability. In response to the region's growing energy needs, PSE now operates DR programs across its service territory. Encouraging simple, energy-saving behavior changes and utilizing technologies like smart thermostats, these programs help ensure reliable electricity for all.

DR Program Portfolio Expansion

In 2023, PSE expanded DR offerings to five total programs available to residential and business electric PSE customers across the service territory:

Table I-18 PSE Demand Response Portfolio Offerings

PSE Demand Response Portfolio Offerings				
Resource	**Program Type**	**Description**	**Vendors**	**Launch Date**
Flex Events	Non-Incentivized Behavioral Demand Response	Customers receive email/IVR notification of upcoming DR events. Energy efficiency tips will be provided to help maximize their savings. Customers receive a post-event email containing their energy savings results compared to similar homes	OPower	Aug. 2023
Flex Rewards	Incentivized Demand Response	Customers without eligible smart devices will be rewarded for enrolling and earn additional rewards for reducing energy usage during an event. Customers will receive email and/or SMS notifications of an upcoming event window and are encouraged to reduce their energy usage during that time period.	Uplight	Nov. 2023

PSE Demand Response Portfolio Offerings Continued				
Resource	**Program Type**	**Description**	**Vendors**	**Launch Date**
Flex Smart & Flex EV	Automated Demand Response	Customers are rewarded for enrolling eligible thermostats, EV Chargers, or EVs and receive notifications ahead of DR events. PSE will adjust the customer's temperature set point by a few degrees or prevent charging of an EV during the event.	Uplight	Aug. 2023
Flex Smart+	Targeted Demand Side Management	Residential customers in Bainbridge Island or Duvall are rewarded for enrolling eligible thermostats or water heaters and receive notifications ahead of DR events. PSE will adjust the customer's temperature set point by a few degrees during the event.	Uplight	Nov. 2022
Business Demand Response	Incentivized Demand Response	PSE business customers earn incentives for enacting their custom energy reduction plan when a DR event is called.	Uplight Enel X	Nov. 2023

As part of ongoing DR program expansions in 2023, PSE expanded support for DR-compatible thermostats in the Flex Smart program by adding Amazon, Sensi, Sinope, and Honeywell models to the previously compatible list of Nest, Ecobee, and Mysa devices.

DR is funded by Power Purchase Agreements (PPAs) with service to customers and PSE DR Administration is funded by Schedule 120 based on an approved accounting petition.

Demand Response Events

In 2023, PSE dispatched its first summer and winter season DR events. PSE called upon over 431,000 customers enrolled in its Flex Events Program to voluntarily reduce their energy usage on August 15, 2023, which was forecasted to be the hottest day of the year between the hours of 4-6 p.m. when electrical demand would peak. PSE's customers responded by curtailing 6.1 MW per hour over the two-hour event, representing the first curtailment results for a system-wide DR event.

In the 2023 winter season, PSE called upon over 280,000 customers who curtailed over 24 MW across the two-hour event on December 22, 2023, exceeding PSE's Biennial Conservation Plan (BCP) stated target of 5 MW for 2023. This event represented the largest load shed of a 2023 DR event and ran Flex Events, Flex Rewards, and Flex Smart programs concurrently.

Updated System Wide DR Target

In the 2021 CEIP, PSE committed to an overall 23.7 MW target for its DR programs. After completing an RFP in 2022, PSE adjusted the target to 86 MW in its 2023 Biennial Update filed

on November 1, 2023, to reflect all cost-effective DR bids in compliance with Docket UE-210795, Order 08, Condition 4.

II. Support & Planning

A. Portfolio Support

The organizations that comprise the Portfolio Support group play a critical role in CEM's success of consistently achieving conservation targets within expected cost parameters. Much of what REM and BEM Management (who make up key elements of the CEM 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.

1. Data and Systems Services

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

- Compiles and tracks CEM programs, projects, and measures
- Processes residential and 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 residential rebates online (HVAC, Weatherization, Appliances, and Smart Thermostats)
- Creates reporting, forecasting, and business performance metrics

This group also oversees the department's Energy Efficiency Services (EES) Tracking and Forecasting system that is used to track and forecast program savings and expenses. This system allows the department to better monitor its progress toward 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.

a. *2023 Program Accomplishments*

The Data and System Services team had a number of notable accomplishments in 2023. The team made several enhancements to its project processing system, Demand Side Management central (DSMc), by:

- Developing and launching new rebate programs and customer submission processes for the Hybrid Heat Pump Pilot and the Targeted Electrification Pilot
- Creating a process to enable payment of bonus incentives to City of Lacey customers under the city's Energy Efficiency Rebate Matching Program
- Building a new process to handle insulation and window rebates for commercial customers
- Streamlining and enhancing the project verification process

Additionally, the team launched a new dashboard for tracking and analyzing verification activities, enhanced program planning tools for the 2024-2025 BCP filing, and launched a new version of the department's tracking and forecasting system.

2. Rebates Processing

Functions within the Rebates Processing team 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.

Roles on the Rebates Processing team include:

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

The Rebates Processing team performs a critical verification step in CEM. 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, but are not limited to, these questions:

- 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?

3. Verification Team

The Verification team serves as another key element of its evaluation, measurement and verification (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 ensure 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.

a. *Composition*

The Verification team consists of quality assurance specialists and business analysts. The quality assurance (QA) verification inspectors are responsible for conducting on-site inspections and related activities to verify the 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 the 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.

b. *Objective*

The team strives to positively contribute to program quality implementation and validate energy savings by combining detailed and documented statistical methods of analysis and sampling 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 they 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 Contractor Alliance Network (CAN) contractor, alert the customer that they may be eligible for a weatherization

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

Table II-1 Summary of Verifications by Measure Type highlights the overall verification totals per program.

Table II-1 Summary of Verifications by Measure Type

Summary of Verifications by Measure Type	
Measure Category	**Count**
Electric Home Heating	560
Electric Water Heating	10
Low Income Weatherization	20
Natural Gas Home Heating	370
Natural Gas Water Heating	230
Residential Smart Thermostats	70
Residential Windows	100
Retail Appliances	130
Single-Family Weatherization	650
Small Business Direct Install	70
Web-Enabled Thermostats	70
Targeted Residential Electrification	40
Total Verifications	**2,320**

4. Programs Support

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

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

- Collaboration with CEM interested parties on internal employee and customer communications
- Biennial and strategic program planning support

- Customer experience — CEM 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, energy efficient communities, digital experience, and other PSE internal departments
- Trade Ally support
- Best practices and continuous improvement

5. Trade Ally Support

Trade Ally Support manages PSE membership costs in CEM trade associations. These organizations stand apart from other trade memberships managed in individual CEM programs in that they provide comparatively broad-based energy efficiency 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 Trade Ally Network (TAN), which manages direct relationships and referral processes for the TAN.

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

- The adoption or expansion of energy-efficiency products, services, and practices
- 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 CEM services subscriptions PSE pays to broad-based industry trade and research organizations who perform and support ongoing development and implementation of REM and BEM 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 CEM staff, with the pertinent efficiency program(s) receiving the benefit.

a. *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 CEM conservation offerings when considering memberships.

Memberships paid from the Trade Ally Support account in 2023 focused mainly on local or regional conservation efforts. Memberships in 2023 included:

- Association of Energy Services Professionals (AESP)
- Consortium for Energy Efficiency (CEE)
- Association of Energy Engineers (AEE)
- E Source
- Energy Solutions Center (ESC)
- Northwest Energy Efficiency Council (NEEC)

The extensive E Source industry database provides an additional insight for program staff to ensure that they maintain awareness in utility and efficiency developments. PSE's 2023 subscription included additional tools for technology assessment and continued assistance with the BEM website for customers.

6. 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 TAN, 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.

a. *2023 Program Accomplishments*

The TAN generated over 17,000 customer referrals in 2023, which resulted in an over 40 percent increase in revenue compared to 2022. This revenue supports the TAN and continues to serve both customers and the contractors.

TAN continued to support programs and pilots in 2023 such as Flex Smart+ (previously Peak Energy Rewards), Efficiency Boost, the Hybrid Heat Pump Pilot, and the Targeted Electrification Pilot. Working with program staff, PSE held multiple webinars and trainings in 2023 to educate and recruit contractor support to participate in these programs.

In 2023, TAN also saw the addition of new products and services, for which customers can request referrals that included: Advanced Duct Sealing, EQ Shutoff Valves, and Duct Cleaning. These new referral products continue to support customer requests while also serving PSE's participating contractors with project leads.

b. ***Adaptive Management***

In 2023, the TAN focused on process improvements. A key area of this focus was around Energy Advisor scripting, engaging, and generating customer referrals. The change in EA scripting when generating referrals for customers was focused on better connecting customers and contractors by sharing customer contact information with the Trade Allies (contractors). While initial improvements were seen, ongoing improvements continue.

c. ***Key Variance Drivers***

The largest change in 2023 for the TAN was the growth of the team in anticipation of expanding the TAN to accommodate Distributed Energy Resource (DER) products in the future. As a result, the TAN offered more contractor support, which contributed to the increase in referral revenue and continues to drive additional completed customer projects.

d. ***Equity Focus***

Due to the nature of this program, in 2023, there were no new equity-based initiatives.

7. Automated Benchmarking System: EnergyCAP

EnergyCAP is an online platform for commercial PSE customers to view their energy usage data. Users can also submit data to ENERGY STAR Portfolio Manager for compliance with Clean Buildings and Seattle Energy Benchmarking ordinances. This tool replaces the MyData and MyDataManager legacy software.

a. ***2023 Program Accomplishments***

In 2023, EnergyCAP grew by over 100 percent for a total of 1,275 customers by year-end compared to ~500 customers year-end 2022. This growth is primarily due to the onboarding of customers to meet City of Seattle compliance, and PSE met City of Seattle compliance for reporting 2022 Cost and Usage data.

The EnergyCAP program launched in August of 2022 and Interval Meter Data launched in January 2023. Interval Meter Data shows customers interval meter usage data at 15 minutes, 60 minutes, or daily (based on meter), and this allows customers to monitor and manage their daily usage.

b. ***Adaptive Management***

The Data Team focused on improvements to ensure accuracy of data transmitting from PSE to EnergyCAP.

c. ***Key Variance Drivers***

The EnergyCAP program went over budget to correct an Aggregate Meter issue that was identified in late July 2023. The issue was due to an existing rule in the Application

Programming Interface (API) that did not display contract accounts in pse.com if they closed 120 days or more with a zero balance. Therefore, this data was not sent over to EnergyCAP, PSE's third-party vendor, causing 2022 data to be incomplete. Because of this, PSE was not able to push this information to ENERGY STAR Portfolio Management for City of Seattle Customers and any other customers who wanted to do energy benchmarking. The corrected program code will be implemented by the first quarter of 2024.

d. *Equity Focus*

Due to the nature of this program, in 2023, there were no new equity-based initiatives.

8. Energy Advisors

The Energy Advisor Department is a unique customer solution operation. This expert group brings efficiency into PSE customers' homes, and it guides customers in changing behaviors, understanding their energy use, and assisting them in using PSE's best-suited programs for their needs. Energy Advisors (EAs) also promote and explain PSE's renewable energy programs, energy efficiency rebates, available promotions, products and services and tax incentives. Energy Advisors assist customers with these services over the phone, email, and in person.

Unlike transaction-based customer care departments, the EAs provide expertise and deliver solutions tailor-made for customers' homes. The EAs 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 they make suggestions on how customers can reduce and manage their energy use. EAs represent PSE to promote cross-market energy-efficiency products and services by presenting and providing educational materials to employees, organizations, and community groups.

EAs receive training and instruction in departmental procedures, tools and systems, 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 EAs.

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

a. *2023 Program Accomplishments*

Table II-2 Key Energy Advisor Metrics provides a summary of key EA customer-focused metrics.

Table II-2 Key Energy Advisor Metrics

2023 Energy Advisors	
Calls Answered	44,261
Emails	7,489
Events Staffed	35
Contractor Referrals Generated	8,460

- Calls Answered are from the Residential Sector and a portion of Business Sector incoming activity.
- Events staffed are those home shows, municipal gatherings, and other events where EAs are on-hand to share a wide range of CEM information directly with PSE customers. Event metrics are presented in the following section.
- Emails include a wide variety of actions taken by EAs in response to emails sent to the general EA email link.

b. *Equity Focus*

Due to the nature of this program, in 2023, there were no new equity-based initiatives.

9. Energy Efficient Communities

Energy Efficient Communities (EEC) is a program-support channel to deliver CEM program information directly to residential and small commercial customers and through partnerships with community organizations, municipalities, and other entities at the local level. The program works to leverage community resources to connect with, educate, and move customers to CEM program participation. 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 CEM 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 to small businesses. As an outreach team for both residential and small commercial programs, the EEC team also works on cross-program promotion, where appropriate.

The EEC team focuses on priority audiences including vulnerable populations and small-to-medium businesses where direct, in-person engagement builds trust. Specific attention is given toward income-eligible programs: Low Income Weatherization, Efficiency Boost, and low barrier to entry programs like Smart Thermostats and the PSE Marketplace.

The following discussions provide reviews of key 2023 EEC’s areas of focus.

a. *2023 Program Accomplishments*

- Delivered more than 450 presentations, workshops, or tabling events on a variety of programs (virtual and in-person, as appropriate) to service organizations, homeowner's associations, downtown associations, nonprofit organizations, etc.
- Partnered with 10 nonprofit organizations, through PSE's Powerful Partnerships program, that had an interest in pursuing sustainability throughout their own organization or with their audiences. The team worked with the partners to promote select energy efficiency programs through their digital/print/web/social outlets, directly with their client base through resource tabling, workshops, and webinars, and consulted on energy efficient upgrades for their facilities as available.
- Created county profiles to showcase the number of residential and commercial rebates processed and the total residential and commercial incentives paid each year. These profiles are available on pse.com and are used during presentations to a variety of audiences, such as city councils, homeowner's association meetings, and tabling events. These profiles show that customers are participating in energy efficiency programs at a local level to generate local interest.
- Identified completed projects that highlight energy efficiency measures for use in case studies on social media, video, web and print collateral.
- Secured opportunities with community-based organizations (CBOs) to share promotional emails with program information through social media posts and newsletter blurbs, resulting in 59,158 impressions.
- Identified 146 small businesses, focused on woman- and BIPOC-owned businesses, or businesses located within Named Community areas, throughout the year for assessment and project completion for the SBDI Program.
- Organized community support, obtained interested sign-ups, and led direct engagement with 173 local businesses for three SBDI blitzes in Tumwater, Bremerton, and Anacortes areas. Blitzes are more coordinated efforts to target a small downtown area in partnership with the local community to raise more awareness of the program to obtain more sign-ups through small businesses sharing the opportunity with each other.
- Followed up with 647 recent SBDI participants to educate and propose further small-to-medium business program/efficiency opportunities, focused on Commercial HVAC, Commercial Kitchen, and Commercial lodging programs. This process also gathered customer feedback to deliver back to the program and ensured a complete customer journey.

Table II-3 Energy Efficient Communities Outreach Activities and Impressions

The data represents unique customer activities (presentations, workshops, tablings, and meetings) and engagements directly regarding Energy Efficiency program education and awareness. Note that this metric is different from last year, wherein PSE reported the number of times programs were promoted versus number of unique customer engagements.

Energy Efficient Communities Outreach Activities and Impressions			
Customer Type	**Outreach activities**	**Engagements and Impressions**	**In Language Engagements and Impressions**
Commercial Focused (Small and Medium Businesses)	98	4,764	2,723
Residential Focused	354	13,752	7,016
Totals	452	18,516	9,739

b. ***Adaptive Management***

As the EEC team was engaging with customers in Named Communities around bundled energy efficiency and assistance programs, it was evident that materials in more languages were needed so that feedback was provided and the materials were transcreated to deliver to these communities.

c. ***Pilot-Like Initiatives***

- The EEC team piloted providing gift cards for attendees to increase participation at four energy efficiency-related workshops and presentations, reaching 81 customers in Named Communities to reduce barriers of time, travel expense, and impact to income by attending PSE's events. The program focus included Low Income Weatherization, Appliances, Smart Thermostats, and Efficiency Boost. The primary focus was Spanish-speaking and senior audiences.
- Another pilot tested in 2023 was partnering with CBOs to procure volunteer or employee interpreters for PSE's in-language workshops. This pilot included payment to the volunteer/organization for their time, travel, room rental, and a meal for attendees. Focus languages included: Mixtec, Spanish, and Vietnamese. The EEC team coordinated five workshops and events in the community under this pilot. PSE engaged 179 customers in language through this effort.
- The team piloted having a tablet at income-eligible tablings, walking customers through the purchase process on the marketplace webpage during Smart Thermostats LTOs, as well as showing them how the devices work with tabletop demos. Barriers of technology were identified both with tablet use and misunderstanding of smart thermostat technology in the home. Feedback was provided to the program to consider for future program delivery design.

d. ***Equity Focus***

The EEC Program addressed procedural and distributional justice through engaging with customers in Named Communities directly and through partnerships with CBOs who serve them. The team also spent time educating customers about the benefits of energy efficiency and the programs that can help them save energy and money on their bills. And since the team is working on reaching customers that are harder to connect with through traditional

methods of marketing, it is addressing distributional justice to generate more opportunities and providing benefits to customers in Named Communities. Below are some examples of this work:

- An inclusive outreach strategy for engagement with PSE's customers is critical to advance equity. Since 2022, the EEC team has shifted to engaging primarily with customers in Named Communities to promote PSE's products and services that can benefit them the most.
- The ECC team increased its in-field time focused on customers in Named Communities to 60 percent, resulting in more engagements with this audience in 2023. Prior to engaging with outreach work, the team conducted research about the area assigned to each team member. Points of interest in this research included: community needs, barriers, and trusted, local partner organizations. The team also dedicated time to more diversity, equity, and inclusion (DEI) training to engage in more culturally appropriate approaches.
- The team provided contract management and outreach support for a Spanish-language campaign that partnered with two Spanish-language-focused CBOs to provide nine workshops in three communities — Skagit, South King, and Pierce — as well as providing in-language support from their employees, volunteers, and community organizers. Programs included Energy Assistance, Low Income Weatherization, and Smart Thermostats. There were 41 additional workshops provided during same period with Spanish speaking staff.
- The team delivered presentations, workshops, and train-the-trainer style classes, as well as collateral distribution — in collaboration with 189 unique local CBOs — targeted toward energy efficiency programs including Low Income Weatherization, Efficiency Boost, Weatherization, Smart Thermostats, and energy-saving tips for residential customers. The CBOs with whom PSE collaborated for this host of activities were located throughout PSE's service area.
- The team worked with the Nisqually tribe to understand its clean energy goals to generate energy assessments and associated upgrades for more efficient lighting in eight tribal buildings. The connection with the Nisqually tribe is unique, and innovative, in that they want to be the national leader in the transition to clean, renewable energy.
- Through the on-the-ground engagement the EEC team has with customers, it has learned about ways to decrease barriers for those who experience them the most. Through this learning, the team supported the Leading with Equity Committee by developing training tools and by delivering CEM-wide training to program teams on ways to maximize and coordinate resources for equitable program design and delivery.

10. Customer Digital Experience

The focus of the Customer Digital Experience initiatives is to significantly improve CEM'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. Customer Digital Experience supports interactive content development, e-newsletters, and other miscellaneous software applications, including online form, database, and web hosting services.

a. *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:

i. Unusual Usage Alerts (UUA)

- They are available for residential customers with an AMR or AMI meter and 12 or more months of data at the current address.
- More than 147,000 UUA reports were delivered to customers in 2023.
- UUA are generated when a customer is projected to use significantly more energy than they used for the same billing cycle the year prior.

ii. 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 and perform an online assessment to learn about their home's energy usage.
- In 2023, PSE saw increased customer engagement with the online tools beyond simply viewing usage graphs. PSE saw a 46 percent increase in total page views compared to the average for 2021-2022. PSE also saw a 74 percent increase in home survey questions answered compared to the average for 2021-2022. These increases were driven by new promotion of online tools and a new feature allowing customers to complete the online survey without having to login to their online account.

iii. Seasonal Readiness Emails (SRE)

- PSE's contractor sent just over 400,000 reports to customers twice in 2023. These proactive communications go out prior to the heating and cooling seasons to help customers prepare for expected increased usage due to the seasonal weather changes.

iv. Customer Engagement Tracking (CET)

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

- Explore customer interaction with and reception of the HER.

- 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 toward potential program improvements.
- In 2023, PSE focused on sending the survey to treatment groups with the highest rate of customers in Named Communities.

b. *PSE Marketplace*

The PSE Marketplace offers instant discounts to eligible customers on smart thermostats and LED products such as indoor and outdoor fixtures. 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.

i. 2023 Program Accomplishments

Smart thermostats proved to be the most popular product on the marketplace. PSE partnered with several manufacturers to create flash sales to lower the price of smart thermostats in addition to PSE's instant discount. PSE also leveraged manufacturer partnerships for several co-branded direct mail campaigns. The PSE Marketplace added new products throughout 2023 such as the Emerson Sensi Touch 2, Emerson Sensi Lite, and Mysa LITE.

ii. Adaptive Management

The PSE Efficiency Boost Marketplace soft-launched in January 2023 and had its full launch in February 2023. This second online marketplace provides income-qualified customers with higher instant rebates on smart thermostats, bringing many models to only $1. The PSE Efficiency Boost Marketplace was a success with customers and exceeded program targets within a few months of operation.

iii. Key Variance Drivers

The PSE Marketplace Program came in under budget for 2023 due to forecasted expenses also being shared with the lighting, electric smart thermostats, and natural gas smart thermostats program budgets. In 2023, natural gas costs were 78 percent of original forecast due to lower-than-expected labor costs.

iv. Equity Focus

Launching the Efficiency Boost marketplace increased access to higher rebate amounts for income-eligible customers.

11. Market Integration

Market Integration consists of salary costs of employees and contractors working on CEM 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.

a. *2023 Program Accomplishments*

In 2023, PSE continued a robust energy efficiency messaging campaign across its service area, designed to drive broad awareness of the solutions PSE provides to help residential customers use less energy and save on their energy costs. The campaign highlighted PSE's energy efficiency rebates, incentives, and low-cost/no-cost tips.

Tactics including always-on digital display banners and video, social media, email, print, radio, and streaming audio were in market throughout the year, with two featured campaigns: Earth Month in April and Energy Awareness Month in October.

April Earth Month Campaign

The Earth Month campaign in 2023 highlighted energy efficiency programs, tips, and rebates through digital content, including social media and targeted email. PSE was also a featured partner of Seattle Kraken National Hockey League (NHL) and Climate Pledge Arena's "Green Month," with energy efficiency programs, tips, and solutions shared via Kraken's and Climate Pledge's social media channels and website, featuring more than 5,000 webpage visits and 150,000 social media impressions, leveraging PSE's existing partnership with the organizations.

The month featured a fan event at a Seattle Kraken game asking customers and fans what they are doing to be energy efficient and offering additional tips and program participation information, culminating in more than 175,000 event impressions. The event and online content was also promoted to all customers online during April through PSE's social media and email channels.

October Energy Awareness Month

The 2023 Energy Awareness Month launched in October with a bill insert to all customers, two email newsletters, social media campaigns, and digital advertising celebrating Energy Efficiency Day and National Energy Awareness Month. These efforts highlighted the ways customers could prepare for winter energy costs with simple actions, participating in PSE's demand response (DR) programs, energy efficient heating systems, Inflation Reduction Act (IRA) incentives, and other low-cost/no-cost tips for mitigating colder winter temps and higher energy bills. October also featured an awareness-driving event highlighting PSE's energy efficiency programs and tips, at the Seattle Kraken 2023 season home opener.

The campaign drove more than 97,000 page views and delivered more than 204,000 email messages to customers.

b. *Adaptive Management*

In April 2022, PSE launched a quarterly energy efficiency awareness customer survey to measure message receptivity over time, with the target of raising awareness among residential customers by 4 percentage points from a baseline of 49 percent. Results for 2023 by month are:

- January: 53%
- April: 54%
- July: 54%
- October: 59%

PSE will continue to measure awareness of the solutions provided to help customers use less energy, save on their energy costs, and optimize its efforts as needed.

c. *Equity Focus*

Due to the nature of this program, in 2023, there were no new equity-based initiatives.

12. Events

The CEM Team participates in community, local, and regional events, including home shows, trade shows, seminars, sustainability fairs, corporate events, community events, and virtual events. The event audience consists of customer demographics like the general public, businesses, builders/contractors, multifamily property owners, city leaders, homeowners, renters, low-income, multilingual, 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 program offerings. Events provide a unique opportunity for staff to interact directly with customers and discuss a variety of products and programs, which provides a space for PSE to answer questions. Events staff match customer interests and needs with energy efficiency programs, and they gather customer feedback to inform and influence future programs.

PSE employs a third-party vendor to augment its dedicated events staff and to ensure maximum energy efficiency exposure. The purpose of this is to increase awareness and uptake of PSE's energy efficiency programs, drive energy savings, and reach a broad and diverse audience base through community events, conferences, home shows, and virtual events. Some of the staff are multilingual and provide valuable resources for PSE's community events to customers.

a. 2023 Program Accomplishments

The Events team continued to manage and host virtual events for residential customers. Virtual events continue to be a successful tactic to drive awareness and engagement for PSE's programs and products. PSE leveraged digital channels to design events with a strong call to action and drive awareness, customer engagement, and participation in energy efficiency programs for both residential and commercial programs. The team made improvements to virtual events and inclusivity by adding closed captioning (11 languages) during virtual events and translation of content and simultaneous interpretation. Interpreted events are recorded and made available for customers to watch on their own time as well. PSE has seen a high rate of engagement for these translated recordings (i.e., Hindi, Spanish, Vietnamese, and Mandarin). This proved to be effective, and PSE will continue to implement this as a standard offering.

In 2023, the team participated in 124 community residential events, 46,495 short conversations, 16,535 engage conversations, and over 2.3 million impressions. PSE attended events in Named Communities and incorporated a strategy behind in-person events to bring meaningful and impactful events to its customers with tangible resources for customers to walk away with.

b. Highlights of Residential Events

The Events Team created robust, integrated virtual events that leveraged event opportunities to connect with community interested parties, increasing energy efficiency awareness, education, and participation. Customer data and a segment-based approach was used to target audiences and tailor messaging in order to make events high-impact. In 2023, approximately 6,500 customers registered for PSE's events and approximately 1,700 attended live. These virtual events included:

- **Ask an Expert: PSE Can Help!** — This live event series was hosted in May and October with energy efficiency experts. Focusing on Low Income Weatherization and Energy Boost, the PSE webinar included live Q&A and chat with residential customers along with simultaneous interpretation and translated materials.
- **Ask an Expert: Winter Preparedness** — This event cross-promoted multiple energy efficiency programs and included live Q&A and chat with residential customers along with simultaneous interpretation.
- **Home Energy Display Virtual Events** — This live event series was hosted in January and March promoting the pilot program to both portal and non-portal customers. Customers heard from PSE's energy efficiency experts with live Q&A and chat with residential customers.

In-person events included:

- Earth Week — various events throughout the service region
- Partnering with Seattle Kraken ice hockey team during earth month (April) and energy efficiency month (October)
- Farmer's Markets — in multiple counties
- T-Birds Hockey Events
- Various PRIDE events to include Seattle Pride
- Home Shows — in multiple counties
- Back to school fairs — in multiple counties
- Employee resource events

d. *Highlights of Commercial and Business Events*

In 2023, the Events team continued the ongoing practice of engaging PSE employees, vendor partners, and businesses to educate them on PSE's CEM programs and services aimed to drive participation and investment in energy efficiency both in-person and virtually. These efforts included:

- Hosting Coffee & Conversations (PSE virtual event series) and PSE webinars with PSE's energy efficiency experts with live Q&A and chat with business customers.
    - Program Focus: Commissioning, Food Service, and New Construction programs

- Hosting Business Lighting Road Show Events preparing customers for the upcoming Application Trainings
- Attending and presenting at the Smart Building Exchange event
- Attending and presenting at BOMA events
- Korean Grocers Event: Named community with signage and collateral in language, supporting PSE's Small Business and Foodservice programs
- WA State Hospitality Conference, in-language materials for the Latino chapter (WHA)

e. ***Adaptive Management***

In 2023, in order to support the events needs of programs across PSE's portfolio, the Events team completed a variety of efforts. Notably, it connected with program subject matter experts (SMEs) to tailor events to a program's demographic needs; obtained programmatic leads through one-on-one SME engagement; hosted in-person events and virtual events with Q&As as a means of furthering customer engagement and education; and more. The following commercial programs were supported in these ways:

- Small Business Direct Install
- Commercial Foodservice
- Commercial Lodging
- Commercial Downstream HVAC
- Business Lighting/Custom Lighting Grants
- Lighting To Go
- C/I Retrofit
- Clean Buildings Accelerator
- Industrial Programs
- C/I New Construction

In order to continue broadening program participation from residential and business customers in target demographics in 2023, PSE participated in the Korean Grocers Event that was held in a Named Community where it included in-language signage and collateral promoting PSE's Small Business and Foodservice programs. PSE also participated in the WA State Hospitality – Latino Chapter Conference where it included in-language materials.

f. ***Equity Focus***

The information above reflects many of the activities PSE took to enhance equitable events.

B. Research and Planning

Market Research conducts various research studies and analyses to support program design, marketing strategies and the development of effective program promotion and customer communications for CEM.

Functions of this group include:

- Conservation supply curves

- Strategic planning
- Market research
- Program evaluations
- Biennial Conservation Achievement Review (BCAR)

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

1. 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 CEM organization and tend to have overlapping goals and focus.

Conservation Supply Curves Description

The purpose of the Conservation Supply Curve function is to complete a Conservation Potential Assessment (CPA), which informs 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-plus-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 10-year conservation potential and the two-year electric conservation target required to comply with the Washington Energy Independence Act (EIA). Development of the natural gas conservation target follows a similar process.

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 the Regional Technical Forum (RTF)
- Supporting CEM third-party program bidding activities
- 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 2023 in Exhibit 2.

a. ***2023 Accomplishments: Conservation Supply Curves and Strategic Planning***

PSE supported Cadmus in developing the CPA for the 2025 IRP. This covers all three primary market segments: residential, commercial, and industrial. Key considerations in this CPA cycle were ramp rates and their alignment with the RTF, as well as the impacts to measure costs due to inflation and the forecasted impacts due to the IRA rebates/incentives.

The Targeted Electrification Pilot was launched in mid-2023, along with a proposal and approval for the Climate Commitment Act (CCA) funded decarbonization programs for low-income customers and small business. While both of these efforts are funded outside of the Rider, the Strategic Planning team supported the concept and program development process.

b. ***Key Variance Drivers: Conservation Supply Curves and Strategic Planning***

The 2025 CPA would normally be completed in 2024, the year prior to the IRP delivery (which is 2025), but to align with a more aggressive IRP timeline, the CPA was pulled into 2023 and the draft CPA was completed. Thus, the costs for this work show in the 2023 actuals, instead of the original expectation for 2024 spending.

c. ***Equity Focus: Conservation Supply Curves and Strategic Planning***

Due to the nature of these programs, in 2023, there were no new equity-based initiatives.

2. Market Research

Market Research conducts a variety of research studies and analyses to support program design, marketing strategies, and the development of effective program promotion and customer communications for CEM.

a. ***2023 Program Accomplishments***

Program accomplishments in 2023 for the Market Research team in support of the CEM group include:

- Multiple dashboards detailing program performance across digital channels, HICs and VPs, low-to-moderate market segment elements such as housing type and vintage and program participation survey results
- Continued support of the Commercial Building Accelerator dashboard
- Measuring Efficiency Boost participants' survey feedback regarding CEM program participation

- Income segmentation to identify customers who are either low- or moderate-income for the respective programs
- Tracking customer awareness of PSE's Energy Efficiency programs and rebates
- Ad hoc queries supporting program implementation such as email list generation

b. ***Equity Focus***

In the summer of 2023, in collaboration with its Equity Advisory Group, interested parties, and Commission staff, PSE revised its definitions of VPs and created the Customers with Deepest Need segment. Because of this work, PSE will update its dashboard with these new classifications. These tools empower CEM to operate within PSE's adopted Equity Framework. Additionally, Market Research will develop and deliver training for CEM staff to gain experience using the new dashboard for analysis of possible barriers to equitable program participation and coordination with the EEC team.

The work of Market Research is most directly aligned with the Recognition and Distributional Justice quadrants of the University of Michigan's Energy Equity Model. Market Research supported the design and development of PSE's identified VPs by identifying data resources for the criteria PSE's Equity Advisory Group identified as vulnerable classifications. Market Research is also directly involved in the Distributional Justice quadrant through the tools it develops such as the above-mentioned Energy Efficiency Dashboard with input from CEM staff to track program performance across Named Communities. The tool's aim is to help program staff and external implementers identify areas meeting equity goals, and/or struggling with participation goals. This, in turn, helps CEM and EEC staff identify areas for improvement in the Procedural Justice quadrant.

3. Program Evaluation

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

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 (2022-2023 Biennial Conservation Plan [BCP], Exhibit 6) in accordance with the guiding Evaluation Framework, ensuring that all programs receive review on a maximum four-year cycle.

Evaluations are conducted by third-party evaluation consultants selected by a competitive Request for Proposals (RFP) process. Since 2020, PSE has contracted with one third-party evaluator, DNV, 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 2023, evaluation resources focused on both 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 were consistent with the principles, objective, and metrics prescribed in the guiding Evaluation Framework. 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 has never been evaluated before.

Consistent with regulatory requirements and Conservation Research Advisory Group (CRAG) guidance, several programs underwent comprehensive evaluations in 2023, with four residential programs and six non-residential programs receiving their final evaluation report. In addition, PSE completed the evaluation of the first DR program season. 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 participated 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.

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 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.

a. *2023 Program Accomplishments*

Residential Programs: In 2023, PSE's EM&V consultant completed scheduled compliance evaluations of four residential programs. Final evaluation reports and their respective Evaluation Report Responses (ERRs) are provided in Exhibit 6, Supplement 1 and include:

- Home Appliance 2022-2023 Impact and Process Evaluation Final Report
- Home Energy Reports 2022 Impact and 2022-2023 Process Evaluation Report
- Multifamily Retrofit 2022-2023 Impact and Process Evaluation Final Report
- Smart Thermostat 2022-2023 Impact and Process Evaluation Final Report

PSE's EM&V consultant also evaluated two residential pilot programs in 2023: the Hybrid Heat Pump Pilot and the Single Family AMI/Home Energy Display Pilot. The Single Family AMI/Home Energy Display Pilot evaluation demonstrated no statistically significant energy savings and has been discontinued. The Hybrid Heat Pump Pilot evaluation is currently underway and, as a result, findings are not yet available.

Commercial Programs: In 2023, PSE's EM&V consultant completed evaluations of six commercial programs: C/I Retrofit, Commercial HVAC, Commercial Midstream HVAC and Water Heat, Large Power User, Custom Lighting Grants, and Industrial Energy Management. The final evaluation reports and their ERRs are also provided in Exhibit 6 and include all six in one report: *Final Report, 2022-2023 Non-Residential Program Evaluation*. The first evaluation of PSE's Small and Medium Business Virtual Commissioning program is still underway and the results will be provided in the 2024 Annual Conservation Report.

The consultant also evaluated PSE's new DR Program, estimating the savings from the first program season over the winter of 2022-2023. The result was positive: the consultant found that MW reduction across participating customers slightly exceeded the program's expectations. Because the DR Program is new to PSE, the program staff will be conducting independent evaluations of each program season for the next couple of years until they are satisfied that the program can deliver the expected capacity savings and may revert to the standard four-year evaluation cycle.

b. ***Key Variance Drivers***

Residential Programs: After a preliminary review of existing Hybrid Heat Pump customer systems demonstrated inconclusive results, PSE engaged with its third-party EM&V consultant to design, execute, and evaluate a follow-up evaluation of Hybrid Heat Pump rebate offerings launched in June 2023. The evaluation consists of customer and contractor surveys, billing analysis, and on-site data logging to support the pilot objectives and research questions. While all customer systems have been installed, the evaluation is ongoing, with results expected in 2024.

Commercial Programs: Many Commercial projects achieved a realization rate below PSE's programs' expectations. The reasons varied across projects, but several resulted from calculation errors that PSE's quality assurance/quality control processes should have caught. The consultant made several suggestions for improvement, and PSE is implementing them to prevent similar errors in the future.

c. ***Equity Focus***

Due to the nature of this program, in 2023, there were no new equity-based initiatives.

4. Biennial Conservation Achievement Review (BCAR)

In compliance with conditions associated with approval of PSE's 2022-2023 BCP, PSE must conduct an independent portfolio-level review of the electric savings reported by PSE for the 2022-2023 biennium. The review is managed jointly by Commission staff and PSE staff and ongoing oversight by the CRAG. The independent reviewer is selected via an RFP process and must complete the following tasks:

- Verify the calculation of total portfolio MWh savings
- Provide a review of EM&V activities and application for best practices and reasonable findings, which includes the following:
  - Validate the adequacy of PSE's savings verification process, controls and procedures
  - Validate savings tracking and reporting processes and practices
  - Review program process and impact evaluations completed during the biennium for appropriateness of evaluation approach/methodologies (program specific) and program cost-effectiveness calculations

In the 2022-2023 biennium, PSE was also required to conduct an independent portfolio-level review of the natural gas savings reported by PSE, although additional tasks were not specified.

The final report for PSE's 2022-2023 Biennial Conservation Achievement Review (BCAR) will be attached to PSE's 2022-2023 Biennial Conservation Report.

a. *2023 Program Accomplishments*

In 2023, PSE continued contractual work with the independent evaluator leading the BCAR. The evaluator delivered several task memos in 2023 to fulfill the conditions of approval of PSE's 2022-2023 BCP, which have been shared with PSE and UTC staff. The Mid-Cycle BCAR Report, delivered to PSE and UTC staff in May 2023, summarized the findings associated with the BCAR work conducted for the 2022 program year. PSE expects to include the final 2022-2023 BCAR report in the 2022-2023 Biennial Conservation Report.

b. *Key Variance Drivers*

Prior to the 2022-2023 program cycle, the conservation achievement review was referred to as the "Biennial Electric Conservation Achievement Review (BECAR)." Because the approval conditions for 2022-2023 included natural gas portfolio savings review, PSE has renamed it the "Biennial Conservation Achievement Review (BCAR)."

c. *Equity Focus*

Due to the nature of this program, in 2023, there were no new equity-based initiatives.

III. Interested Party Relations

PSE, along with its primary constituents, the Commission Staff, and the 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 2023.

A. Washington Utilities and Transportation Commission

CEM values its working relationship with Commission staff and appreciates their level of thoroughness, thoughtfulness, and adaptability. PSE was able to complete its 2023 initiatives as a result of the cooperation between its CEM staff and Commission Staff. The following discussion outlines the key conservation-related UTC filings that PSE made in 2023. 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.[14]

1. CEM — Specific Filings

- **March 1, 2022: Filed electric Schedule 120, UE-220137**. Effective May 1, 2022, the updated Schedule 120 represents an average increase of the electric Conservation Rider portion of affected customer bills by 0.97 percent.
- **March 1, 2022: Filed natural gas Schedule 120, UG-220138**. Effective May 1, 2022, the updated Schedule 120 represents an average increase of the natural gas Conservation Rider portion of affected customer bills by 0.2 percent.
- **April 17, 2022: Filed 2021 Annual Report of Conservation Accomplishments, UE-210822 & UG-210823.** Consistent with requirements in WAC 480-109-120(3), this report represented the evolution and continuous improvement in providing CEM program accomplishments, activities, and value-add information for PSE's interested parties.
- **November 1, 2022: Filed 2024-2025 BCP, UE-230892 and UG-230893.**

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

B. Conservation Resource Advisory Group (CRAG)

PSE acknowledges and is very appreciative for the work and committed engagement demonstrated by the CRAG throughout 2023. 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 CEM's more complicated conservation measures and offerings, as well as 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.

1. 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 interested parties and represents a wide variety of perspectives, including those on behalf of consumers, industry, and regional concerns. It also includes a member of the Commission Staff. The CRAG works closely with CEM on a variety of conservation initiatives, most notably conservation tariff filings, savings goal setting, and long-term conservation strategies.

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 15, 2023.

2. CRAG Meetings

In 2023, PSE met the requirements of WAC 480-109-110(2) and condition (3) (e) by convening six 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
- 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 2023 CRAG meetings. 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.

- **March 15 Meeting**
  This meeting was convened to share Schedule 120 filing information, foreshadow the BCP planning process, and introduce the concept of adding DER CRAG members.
- **June 7 Meeting**
  The June CRAG meeting’s intent was to review the Conservation Potential Assessment results, share target setting methodology, and to provide a DER update.
- **July 26 Meeting**
  The July meeting’s intent was provide draft BCP targets, further engage the CRAG on DER advisory, and to provide general program updates on the current biennium.
- **August 30 Meeting**
  The August CRAG meeting provided draft program details and budgets for the 2024-2025 biennium. It also continued to discuss Natural Gas target setting and it introduced the CEIP Joint Meetings concept for discussing Deepest Need.
- **September 27 Meeting**
  The September CRAG meeting was used to continue the 2024-2025 BCP target setting discussion and to introduce tariff updates for the coming year. PSE also provided information about state and federal funding for energy efficiency.
- **October 18 Meeting**
  The October CRAG meeting was used to finalize the 2024-2025 BCP targets and to discuss the methodology for the next CPA.

Glossary

This section provides descriptions of commonly used CEM terms and acronyms.

A. Commonly Used Terms

Term	Definition
Calculated Savings	This savings type is different from deemed values (described below). This term indicates that there is a pre-approved, stipulated input savings value (or cost) per measure. This value (or cost) is then multiplied by site-specific input values to arrive at the overall savings value (or cost).
Conditions	Specific deliverables and stipulations with which the Company must adhere through the course of operating and managing energy efficiency programs. In addition to compliance requirements outlined in the Settlement Terms Sections A through J and L in Docket No. 100177, 2018-2019 conditions are listed in Appendix A of Order 01 in Docket UE-171087. Conditions are typically included in Commission Orders approving PSE's biennial conservation targets.
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.
Direct-Install Measure	As in a measure's deemed savings 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 may have a deemed value of 24 kilowatt-hours per year.) This classification applies to both RTF and PSE Deemed (noted on the following page). This term has been supplanted by "UES", defined below.
Deepest Need	PSE has defined this new Named Communities segment as customers at or above 10 percent energy burden who are concentrated in neighborhoods or in the top half of Census blocks with the highest population of 10 percent or more energy burden.
Distribution	A conservation measure that is installed by a PSE representative — rather than a PSE customer — into a qualifying structure.
EIA	For the purposes of Schedule 292, means electrical facilities within the State of Washington that the Company owns or operates to convey electricity from the point of generation or purchase to the point of use by a Customer. Distribution includes transmission and distribution lines related substations and transformers.
Energy Burden	The Clean Energy Transformation Act (CETA) defines Energy Burden in RCW 19.405.020(17) as, "The share of annual household income used to pay annual home energy bills," and it requires the Department of Commerce to set the specific threshold. Commerce has set the threshold at 6 percent energy burden, which includes energy efficiency. This definition comes from a widely accepted principle that total shelter costs (e.g., rent, mortgage payments, utility bills, etc.) should not exceed 30 percent of income and that utility costs should not exceed 20 percent of those shelter costs, leading to the conclusion that an affordable energy burden should be at or below 6 percent of household income (20% x 30% = 6%).

	Energy burden is limited to expenses for residential purposes. It includes any fuel source for energy and excludes non-energy utilities and transportation-related energy expenses.[15]
Highly Impacted Community	A community designated by the Department of Health based on the cumulative analysis required by RCW 19.405.140 or a community located in Census tracts that fully or partially on "Indian country" as defined in 18 USC Sec,1151. Highly Impacted Communities (HICs) measure: 1. pollution burden and environmental effects 2. impacts to the human body and communities of people
Measure	Energy Independence Act. A reference to the 2006 voter initiative, The Washington Clean Energy Initiative. The vote resulted in the creation of RCW 19.285 and WAC 480-109, which is now referred to as the Energy Independence Act. The EIA was also sometimes colloquially referred to as "I-937."
Named Community	Deriving its definitions from the CETA statute and subsequent rule making, Named Communities (NCs) are the overlaying combination of Highly Impacted Communities (HICs) and Vulnerable Populations (VPs).
Orders (see also Conditions)	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 CEM 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.[16] Measures should also meet cost-effectiveness standards.
Program	Overarching instructions to an entity under the purview of the Washington Utilities and Transportation Commission (UTC or Commission). Orders may be made at the conclusion of a Docket proceeding or throughout the course of a Docket's existence. At the time of the publication of this BCP, PSE is operating under Order 01 of Docket UE-171087, along with other Orders in various Settlement Stipulations or Agreements.
PSE Deemed	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.
RTF Deemed (see also UES)	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 WAC 480-109-100(5).
Savings	A legacy term, only used in the Source of Savings database. Relative to PSE savings types (Custom, Calculated, PSE Deemed or RTF Deemed), supported by RTF analyses, in compliance with WAC 480-109-100(5).
System	Savings (both natural gas and electric) are defined and reported as those recognized in the first year of a measure's total expected life. PSE reports the total savings for the year that the measure was implemented, regardless of when it is installed. Electric savings are counted at the customer meter, not the busbar. Natural gas savings are counted at the customer natural gas meter.

[15] According to the U.S. DOE, one way to address high energy burdens is by implementing cost-effective energy efficiency measures to help reduce consumption of electricity and other fuels.

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

	It is important to note that all measures have an associated life, during which the noted annual savings accumulate. Each measure has a different life, as determined by rigorous evaluation. The average measure life per program can be found in the CEM Cost-Effectiveness tables in Exhibit 2 of this report. As noted above, measures have associated savings beyond the first year; those savings continue to accrue to the benefit of PSE.
	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. 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.
Transcreation	Transcreation takes the original message and conveys it in another language, making sure that the text in the target language keeps the original style, vocal tone, intent, and emotional salience.
Vulnerable Population	Defined by CETA as communities that experience a disproportionate cumulative risk from environmental burdens due to adverse socioeconomic and sensitivity factors. PSE co-created its definition of VPs with its Equity Advisory Group (EAG) and uses a Census block group scale to classify them.

B. Savings Terminology

Terms	Definition
CPA Pro-Rata Share	Pro-rata share of the utilities IRP's Conservation Potential Assessment's 10-year potential. Includes NEEA.
EIA Target	Equals the CPA Pro-Rata Share, applicable to electric savings
Decoupling Threshold	[EIA Target (electric) CPA Pro-Rata Share (gas) * 0.05]
Total Utility Conservation Goal/Achievement	All savings programs funded by Conservation Riders [EIA Target + Pilots + NEEA + 449/Special Contracts + Decoupling Threshold]
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 Conservation Goal/Achievement	[Total Utility Conservation Goal/Achievement – (Excluded programs (for instance, NEEA, Pilots with uncertain savings, retail wheeling accounts, etc.) + adjustments)]
EIA Penalty Threshold	[Utility-Specific Conservation - Decoupling Threshold]

Excess Savings for Carbon (Dept. of Commerce driven)	(Referencing results, rather than targets) The difference of [Total Utility-Conservation Achievement – Total Utility Conservation Goal]
PSE Excess Savings for Penalty Thresholds (UTC Driven)	(Referencing results, rather than targets) The difference of [(Total Utility-Specific Conservation Achievement) - (EIA Penalty Threshold + Decoupling Penalty Threshold)]

C. Acronyms

Acronym	Definition
ACP	Annual Conservation Plan
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.
BCP	Biennial Conservation Plan
BEM	Business Energy Management
BOMA	Building Owner and Managers Association
CEM	Customer Energy Management
CFL	Compact Fluorescent Lamp
C/I	Commercial/Industrial. References programs in the Business Energy Management sector.
CRAG	Conservation Resource Advisory Group
DSMc	Demand Side Management central. A comprehensive project management system, developed and maintained by Nexant.
EES	Energy Efficiency Services; a PSE legacy acronym that is still associated with some tracking and reporting systems and databases, referencing CEM's former name. (Eliminating this reference would cause severe disruption of queries and reports in some systems and filing structures.)
EE	Energy Efficiency
EME	Energy Management Engineer
EM&V	Evaluation, Measurement and Verification
HVAC	Heating, Ventilation and Air Conditioning
IRP	Integrated Resource Plan
IRPAG	Integrated Resource Planning Advisory Group
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 (typically, a lamp type)
MWh	Megawatt-hour. 1,000 kWh = 1 MWh

NEIs	Non-Energy Impact, Quantifiable. Formerly known as Non-Energy Benefit, or NEB. Attributes having a direct cost-effectiveness correlation applicable to the Total Resource Cost test. It is important to note that any reference to NEIs in any PSE document refers to those that are quantifiable. Any non-quantifiable benefits will be specifically noted.
NEEA	Northwest Energy Efficiency Alliance
RCW	Revised Code of Washington.
REM	Residential Energy Management
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.
SBDI	Small Business Direct Install (program within the BEM Sector, Commercial Rebates).
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).[17]
UC	Utility Cost: The Company's costs of administering programs included, but not limited to, costs associated with incentives, audits, analysis, technical review and funding specific to the Measure or program and evaluation.[18]
UES	Unit Energy Savings. Formerly "Deemed", the RTF updated the term in 2011.
WAC	Washington Administrative Code
WUTC, or UTC	Washington Utilities and Transportation Commission

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

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

Conclusion

This concludes the CEM 2023 Annual Report.

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

A. Exhibits Included in the 2023 Report of Conservation Accomplishments

- Exhibit 1: Savings & Expenditures
- Exhibit 2: Cost-Effectiveness Results
- Exhibit 4: Prescriptive Measures Offered in 2023
- Exhibit 5: NEEA 2023 Report of Activities and Initiatives
- Exhibit 7: Requirements Compliance Matrix

B. Supplements

- Exhibit 1
    - Supplement 1: 2023 Actual Expenditures Compared to Actual Spends
- Exhibit 2
    - Supplement 1: Cost-Effectiveness Overview and Non-Energy Impacts
- Exhibit 6 (The Evaluation Plan is excluded from this report)
    - Supplement 1: Evaluation Studies and Evaluation Report Responses Performed in 2023

Customer Energy Management looks forward to a productive and successful 2024.

Respectfully submitted,

PSE PUGET SOUND ENERGY

Puget Sound Energy
Customer Energy Management