PUGET SOUND ENERGY

2023 Annual Conservation Plan

for Electric and Natural Gas Programs

ENERGY EFFICIENCY

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I. Executive Summary

Consistent with WAC 480-109-120(2)[1] and applicable Sections of Exhibit F in Docket UG-011571,[2] Puget Sound Energy (PSE) presents this 2023 Annual Conservation Plan (the Plan or ACP). The Plan represents program revisions, improvements, and modifications that PSE is putting into place in order update its originally indicated 2023 savings and anticipated expenditures in the 2022-2023 Biennial Conservation Plan (BCP). Development of the 2023 ACP was conducted in conjunction with PSE's Conservation Resource Advisory Group (CRAG).

A key consideration that has influenced every element of Energy Efficiency's 2023 planning exercises are the persistent challenging and evolving economic conditions that began in 2020. Readers will note the extensive adaptive management that program staff have applied to address issues such as inflation, rising interest rates, supply chain disruptions, and staffing issues.

Table I-1: 2023 Energy Efficiency Savings Goals and Budgets presents the revised electric and natural gas savings goals and budgets, as compared to their original values.

Table I-1: 2023 Energy Efficiency Savings Goals and Budgets

2023 Energy Efficiency Portfolio Amounts	Originally-Indicated		Updated ACP Values		Revised TRC	Revised UCT
	Savings	Budgets	Savings	Budgets		
Electric	239,026 MWh	$116,689,016	251,673 MWh	$122,793,213	1.48	1.90
Percent Change			*5.3%*	*5.2%*		
Natural Gas	3,572,307 Therms	$23,618,987	4,393,239 Therms	$26,480,546	1.01	1.30
Percent Change			*23.0%*	*12.1%*		
Total Budget		$140,308,004		$149,273,760		
Percent Change				*6.4%*		

[1] WAC 480-109-120(2): *Annual conservation plan.* On or before November 15th *[sic]* of each even-numbered year, a utility must file with the commission, in the same docket as its current biennial conservation plan, an annual conservation plan containing any changes to program details and annual budget.

[2] Exhibit F, Settlement Terms for Conservation, is often referred to as the Stipulation Agreement. The corresponding electric portion of the Agreement, UE-011570, was vacated by the 2010 Electric Settlement Agreement in Docket UE-100177. Sections with which this Plan complies include, but are not limited to C.5, E.14, H.21-27, and K.34.

All references to electric and natural gas 2023 updates are to savings and budget figures enumerated in PSE's original 2022-2023 BCP filing on October 29, 2021, and approved by the Commission on January 18, 2022 in Order 01.

The Plan consists of this Overview document and a series of supporting Exhibits, in which PSE provides electric and natural gas program updates specific to 2023.

A. Influence of ACP Updates on 2022-2023 BCP Total Utility Conservation Goal

In each annual update of its biennial plan, PSE considers it a good business practice to share with its Regulatory Stakeholders the impact that the updated plan will have on the overall Total Utility Conservation Goal. Table I-2 provides the forecasted 2022-2023 electric and natural gas total savings[3].

Currently the 2022 savings forecast and 2023 ACP plan does not meet PSE's energy efficiency savings targets. PSE has worked with its CRAG to implement a number of adaptive management actions in 2022 and will continue to aggressively pursue all savings opportunities to try and exceed its savings targets.

Table I-2: 2022-2023 Total Utility Conservation Goal Forecast

2022-2023 Energy Efficiency Total Utility Conservation - Projection					
	2022-2023 BCP		2022 YE Forecast + 2023 ACP		Revised TRC
	Savings	Budgets	Savings	Budgets	
Electric	537,698 MWh	$240,105,807	535,758 MWh	$236,056,055	2-year TRC will be calculated in the 2022-2023 Biennial Conservation Report.
Percent Change			*-0.4%*	*-1.7%*	
Natural Gas	9,890,520 Therms	$48,523,531	9,491,518 Therms	$52,064,752	
Percent Change			*-4.0%*	*7.3%*	
Total Budget		$288,629,338		$288,120,808	
Percent Change				*-0.2%*	

It is noteworthy that it isn't possible for PSE to finalize the actual 2022 annual savings totals until the first quarter of 2023.

[3] 2022 Year-End forecast as of September 2022.

B. Updates to the 2022-2023 Biennial Conservation Plan

In the Chapters 3 through 9 program discussions, PSE includes the original 2022-2023—as provided in the October 29, 2021 filing—program overviews as a courtesy to readers.

PSE highlights these with unique section headers to clearly differentiate the discussions. These provide a point of comparison to 2023 updates, enhancements, and pandemic responses—also denoted by a unique section header—in compliance with WAC 480-109-120(2), and emphasizes PSE's adaptive management through its application of continuous improvement principles. PSE details updated 2023 savings, measure values, and budget figures in Exhibit 1: *Savings and Budgets*. Comparisons of original 2023 figures to those updated in the 2023 ACP refer to the 2023-specific page of the 2022-2023 Exhibit 1: *Savings and Budgets*.

1. 2023 Electric Savings Revisions

In its 2022-2023 BCP, PSE indicated that its 2023 electric savings goal was 239,026 megawatt-hours (MWh), with anticipated expenditures of $116.69 million (including Other Electric Programs). As indicated in Table I-1, the updated 2023 savings goal is now 251,673 MWh with anticipated expenditures of $122.79 million. These figures represent a 5.3 percent increase and an increase of 5.2 percent from the original values, respectively.

2. 2023 Natural Gas Figure Revisions

In its 2022-2023 BCP, PSE indicated that its original 2023 savings goal was 3.57 million therms, with an anticipated expenditure of $23.62 million. As indicated in Table I-1, the updated 2023 natural gas savings goal is now 4.39 million therms with anticipated expenditures of $26.48 million. These figures represent a 23.0 percent increase, and an increase of 12.1 percent from the original values, respectively.

C. CETA Focus

Passed in 2019, RCW 19.405 or the Clean Energy Transformation Act (CETA) requires PSE to ensure that all customers benefit equitably from the transition to clean energy. As part of this effort, Energy Efficiency worked with a larger group that includes the PSE Clean Energy Implementation Plan team, the Equity Advisory Group, and the Department of Commerce to identify geographic locations of highly impacted communities and vulnerable populations, referred to collectively as "named communities".

To monitor the impact on these customers, PSE is working with the Washington Utilities and Transportation Commission and its stakeholders to finalize its proposed customer benefit indicators (CBIs) from the 2021 CEIP. One of the CBIs include the monetary values of Non-Energy Impacts (NEIs) associated with Energy Efficiency measures and projects. Other CBIs include the level of participation by customers in Energy Efficiency programs. An internal dashboard is being refined to identify program participation in named communities in order to focus efforts on equitable design and delivery.

Energy Efficiency 2023 program efforts aimed at increasing equity can be found in their respective program discussions. During 2023, Energy Efficiency will continue to support the CBIs and enhance the dashboard tool while adaptively managing programs to identify strategies that serve named communities.

At the time of writing the 2023 ACP, Puget Sound Energy's 2021 Clean Energy Implementation Plan had not yet been approved. Some of the descriptions here are predicated upon approval.

D. Regulatory Stakeholder Engagement and Reporting

Throughout the Plan, PSE addresses and references discussions, requests, and agreements made with its Regulatory Stakeholders in 2022.

1. Conservation Resource Advisory Group (CRAG)

PSE proactively engaged the CRAG in the development of this ACP, and provided the CRAG with:

- Key 2023 ACP continuous improvement areas in its August 3, 2022 CRAG meeting, and
- Draft ACP review in its October 12, 2022 CRAG meeting.

In accordance with WAC 480-109-110(3), PSE provided the CRAG with an electronic draft 2023 ACP on October 14, 2022.

E. Compliance

This 2023 Annual Conservation Plan complies with WAC 408-109-110(2), and all other rules adopted in 2022.

The 2023 ACP also complies with applicable conditions in Attachment A of Order 01 in Docket UE-210822 relative to program design, cost-effectiveness tests, required involvement in preparation of 2023 activities, etc. The Plan is also consistent with condition (4), which indicates that PSE's annual budgets must be provided in a detailed format and show projected savings.

Lastly, the ACP is consistent with Section F.11[4] of the 2010 Settlement Agreement in Docket UE-100177, and the natural gas-specific sections of the 2002 Rate Case Stipulation Agreement, Exhibit F of Docket UG-011571.

1. Compliance with Conservation Types Included in the Portfolio

The revisions in the 2023 ACP reflect program staff's review of all elements listed in WAC 480-109-100(1)(b)—listing the types of conservation that must be included in a utility's Portfolio, where possible.[5] PSE presents the chapter locations of its program discussions in Table I-3.

Table I-3: 2023 Conservation Type References

Requirement		BCP Location
(i)	End-use efficiency	All Residential (REM) and Business (BEM) programs
(ii)	Behavioral programs	REM and BEM sections
(i)	High-efficiency cogeneration	No projects identified during 2022-2023 planning
(ii)	Production efficiency	Chapter 6: Regional Programs, Schedule 292
(i)	Distribution efficiency	Chapter 6: Regional Programs, Schedule 292
(ii)	Market transformation	Chapter 6: Regional Programs, NEEA—Schedule 254
(c)	Pilots	Chapter 5: Pilots with Uncertain Savings

[4] Pertaining to the development of an annual electric budget.

[5] As noted in WAC 480-109-100(1)(a)(ii), […] If no cost-effective, reliable and feasible conservation is available from one of the types of conservation, a utility is not obligated to acquire such a resource.

F. Following Chapters

This document discusses the management steps that PSE put into place in order to achieve the indicated savings goals while effectively managing expenses and providing exemplary stewardship of customer funds.

PSE discusses key drivers of budgets and savings goals in Chapter 2: *Program Discussions* and in the program detail discussions. Some standard Energy Efficiency Exhibits are biennially focused documents, and are thus excluded from the 2023 ACP.

These are:

- Exhibit 6: Evaluation Plan,
- Exhibit i: *Ten-Year Potential, Two-Year Target Development*.

Exhibits included in the 2023 ACP are:

- Exhibit 1: *Savings and Budgets,*
- Exhibit 2: *Cost-Effectiveness Estimates,*
- Exhibit 3: *Program Details,*
- Exhibit 5: *NEEA's 2022-2023 Updated Planned Activities Report.*

Also, as a backward-looking compliance review, Exhibit 7: *Requirement Compliance Checklist* is included in PSE's Annual Conservation Reports, and is therefore omitted from the Plan.

With this 2023 ACP, PSE continues its principle of providing a wide range of business information in a form that meets stakeholder needs with a high degree of transparency. The Plan demonstrates PSE's long-standing application of continuous improvement principles—in all Energy Efficiency business operations, including each support function—to adaptively manage its conservation Portfolio in a dynamic marketplace. As a courtesy to Stakeholders, PSE actively solicits, welcomes, and incorporates comments and suggestions on all of its filing documents.

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II. Program Discussions

Consistent with its application of the adaptive continuous improvement approach, the Residential Energy Management (REM) Sector focuses on maximizing customer participation and continuous improvement, with the equitable design and delivery front of mind for 2023. Additionally, the Business Energy Management (BEM) Sector has consistently achieved superior results through its proactive application of continuous improvement and adaptive principles for over ten years.

The following sections detail REM and BEM continued difficulties with increased expenditures and decline in savings in multiple areas, barriers to participation, and their respective adaptive management strategies in department operations, with the intention of maximizing customer participation and conservation savings in 2023.

PSE provides program and Sector savings and budget details in Exhibit 1: *Savings and Budgets*. PSE discusses program plans in the following sections, with comprehensive reviews of target markets, marketing and outreach initiatives, and customer incentives contained in Exhibit 3: *Program Details*.

A. 2023 Conservation Savings Goals and Anticipated Expenditures

Table II-1 presents the overall electric savings and anticipated spending by Energy Efficiency Sector, as compared to the 2023 figures presented in the 2022-2023 Electric Savings Target, which the Commission approved in Order 01, Docket UE-210822 on January 18, 2022 (found on next page).

Table II-1: Comparison of Updated 2021 Electric Savings and Spending

2023 Comparison: Electric BCP versus ACP Update						
	Savings, MWh			Expenses		
Sector	Original 2023 Plan As indicated in 2022-2023 BCP	Updated 2023 ACP	Percent Change	Original 2023 Plan As indicated in 2022-2023 BCP	Updated 2023 ACP	Percent Change
Residential Energy Management	50,175	90,278	79.9%	$38,900,269	$39,538,503	1.6%
Business Energy Management	165,071	140,407	-14.9%	$55,307,785	$53,969,097	-2.4%
Pilots	2,363	359	-84.8%	$773,076	$1,961,260	153.7%
Regional *(NEEA, Generation/Transmission/Distribution)*	21,418	20,628	-3.7%	$5,382,902	$5,580,281	3.7%
Portfolio Support				$10,670,510	$12,382,854	16.0%
Research & Compliance				$2,943,506	$3,103,816	5.4%
Other Electric Programs				$2,710,969	$6,257,402	130.8%
Totals	**239,026**	**251,673**	**5.3%**	**$116,689,016**	**$122,793,213**	**5%**

Table II-2 also presents the overall natural gas savings and anticipated spending by Energy Efficiency Sector. References to the natural gas 2023 original plan are presented in the approved BCP mentioned above.

Table II-2: Comparison of Updated 2021 Natural Gas Savings and Spending

2023 Comparison: Natural Gas BCP versus ACP Update						
	Savings, Therms			Expenses		
Sector	Original 2023 Plan As indicated in 2022-2023 BCP	Updated 2023 ACP	Percent Change	Original 2023 Plan As indicated in 2022-2023 BCP	Updated 2023 ACP	Percent Change
Residential Energy Management	1,668,156	2,817,937	68.9%	$12,583,437	$13,537,202	7.6%
Business Energy Management	1,871,526	1,575,302	-15.8%	$6,595,202	$7,178,510	8.8%
Pilots	32,625	0	-100.0%	$1,870	$871,984	46528.9%
Regional *(NEEA, Generation/Transmission/Distribution)*	0	0		$1,872,516	$1,892,868	1.1%
Portfolio Support				$1,935,039	$2,348,248	21.4%
Research & Compliance				$530,923	$551,735	3.9%
Other Gas Programs				$100,000	$100,000	0.0%
Totals	**3,572,307**	**4,393,239**	**23%**	$23,618,987	**$26,480,546**	**12%**

Note: Natural Gas Pilots' large expenses increase is due to a sizeable budget increase with the Hybrid Heat Pump pilot entering implementation.

B. Program Drivers of Change in Expenditures and Savings

PSE anticipates notable increased expenditures and savings reductions (from originally-planned 2023 values) in several programs, driven by pandemic related circumstances, decline in customer participation largely due to market saturation, as well as other broad economic impacts. Regardless, PSE is continually strategizing how to help customers save additional energy wherever possible and how to make it easier to do so. The program Sectors will continue to implement adaptive responses to systematic adjustments throughout the biennium.

Significant changes to program savings and spending in the 2023 ACP from the planned second year (2023) of the BCP include the following:

1. Electric Drivers – Expenditures

- The Residential Midstream HVAC and Water Heat program is anticipating a 45 percent reduction in expenditure due to decreased incentives attributed to Department of Energy HVAC code adoptions and increased baselines.
- Low Income Weatherization will increase spending by almost two million dollars because of the planned increase in measure costs.
- The Multifamily Retrofit program is planning a 25 percent increase in expenditure to raise incentives primarily for air sealing and windows measures. Additionally moderate-income projects will receive higher incentives and direct install will transition from water savers to more costly smart thermostats.
- Lighting to Go reduced budget by over 40 percent as retailers continue to experience product shortages and staffing issues.
- Hybrid Heat Pump pilot added almost $1.7 million in 2023 after significant research in 2022 to develop the design.

2. Electric Drivers – Savings

- The largest driver of increased savings on the electric side is in the Home Energy Reports program, which is transitioning from a two-year measure life to a one-year measure life. The result is an increase in savings of over 44,000 MWh.
- Residential space heat increased 2023 savings by over 1,000 MWh by adding an advanced duct sealing measure and planning a limited time offer on electric resistance to heat pumps conversions.

- The Residential Midstream HVAC and Water Heat program is reducing electric savings by approximately 22 percent to account for the Department of Energy HVAC code changes and increased baselines.

- The Lighting to Go program is reducing savings by over 9,000 MWh due to continued disruptions experienced since the beginning of the pandemic. The main influences are supply chain issues and distributor staffing shortages.

- Business Lighting is reducing savings by over 10,000 MWh also due to supply chain issues, inflation, and LED market saturation.

3. Natural Gas Drivers – Expenditures

- The Multifamily New Construction program decreased budget by approximately $200,000 due to reduced savings opportunities resulting from higher state code baselines.

- The Commercial Foodservice program increased budget by almost $900,000 in order to accommodate the increased incentives planned.

- CI New Construction's budget was decreased by approximately $400,000 to account for the anticipated reduced incentives attributed to continued commercial COVID economic pressures.

- The Home Energy Reports budget is increasing by almost 30% to accommodate the additional cost of adding natural gas report recipients.

4. Natural Gas Drivers – Savings

- The largest driver of increased savings on the natural gas side is in the Home Energy Reports program, which is transitioning from a two-year measure life to a one-year measure life. The result is an increase in savings of over 1,300,000 therms.

- Smart Thermostats is anticipating a reduction of almost 77,000 therms due the adoption of a new RTF savings value that is lower than the PSE calculated value.

- The Foodservice program expects to see an additional over 88,000 therms due to increased rebate amounts that are expected to yield additional savings.

- Commercial Strategic Energy Management expects to see 170,000 fewer therms of savings due to increased loads associated with customer increased outside air usage.

C. Adaptive Management

1. Barriers to Participation

COVID-19 pandemic related limitations have continued to loosen in 2022; however, the economic effects from the disruption continue to evolve. PSE has noticed a number of economic related factors persist to cause downward pressure on customer participation in Energy Efficiency programs. The following list contains issues frequently cited by EE program staff and the national media as constraints to completing customer projects:

- **Inflation – higher project costs**

  Since early 2021, inflation has been on the rise. Various factors have contributed to the rise including pandemic-related fiscal and monetary stimulus, supply shortages, price gouging, and the Russian invasion of Ukraine. Many nations have experienced their highest inflation in decades.[6]

- **Rising interest rates**

  In an effort to reduce inflation and slow demand, the Federal Reserve has raised the Federal Funds Rate aggressively in 2022. Increasing borrowing costs will typically make borrowed money more expensive and thus reduce demand for products.

- **Supply chain disruptions – product availability**

  Due to the COVID-19 pandemic, global supply chains slowed, causing shortages of inputs and finished goods. Supply chain issues have persisted through 2022 and are expected to ease but continue into 2023 as demand for products remains high. According to recent PSE evaluations, supply chain disruptions have negatively affected the Single Family Retrofit program's space and water heating measures. A recent non-residential evaluation also found limited supply to be a significant barrier to participation.

[6] 2021–2022 inflation surge. (2022, September 29)In *Wikipedia*. https://en.wikipedia.org/w/index.php?title=2021%E2%80%932022_inflation_surge&oldid=1113112262

- **Skilled labor shortages**

  The pandemic led to a major disruption in the American work force. Often referred to as the Great Resignation, in 2021 more than 47 million workers quit their jobs. According to the most recent NABE Business Conditions Survey, 52% of respondents reported shortages of skilled labor and 16% reported shortages of unskilled labor.[7] Locally, according to the recent Low Income Weatherization Program evaluation, housing agencies have struggled to find qualified contractors who meet the state's prevailing wage requirements.

- **Customers dealing with COVID-related staffing issues**

  Similar to the skilled labor shortages, general staffing issues have affected many industries since the beginning of the pandemic. Industries that have felt the impacts more than others include, leisure and hospitality as well as wholesale and retail.[8] The manufacturing industry has felt the impacts of staffing issues as well. Quit rates in the sector were 58% higher in 2021 than pre-pandemic levels. The manufacturing work force continues to improve but the enduring shortage has led to stock shortages and longer lead times.[9]

- **Code changes**

  Requirements for electric equipment are more stringent under the 2018 Washington State Energy Code (WSEC) than they were under the 2015 WSEC. The 2018 code was implemented in 2021, so commercial new construction projects that were permitted under the 2018 WSEC are beginning to close out in 2022 and 2023, which will result in a decrease in potential savings.

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[7] NABE Business Conditions Survey. (July 2022) *National Association for Business Economics*. https://nabe.com/NABE/Surveys/Business_Conditions_Surveys/July-2022-Business-Conditions-Survey-Summary.aspx

[8] Understanding Americas Labor Shortage: The Most Impacted Industries. (2022, September 7) *U.S. Chamber of Commerce.* https://www.uschamber.com/workforce/understanding-americas-labor-shortage-the-most-impacted-industries

[9] 5 Manufacturing Sectors Affected by the Great Resignation. (2022, July 13) *Manufacturing Tomorrow.* https://www.manufacturingtomorrow.com/story/2022/07/5-manufacturing-sectors-affected-by-the-great-resignation/19028/

Required lighting power densities are more stringent in the 2018 code so there has been a loss of potential savings in new construction lighting projects. Required efficiencies for HVAC equipment have also increased, and could impact the baseline of whole building new construction projects permitted under the 2018 code.

- **Electrification**

  Cities, counties, and individual companies are beginning to create their own climate agendas, which further decreases the potential natural gas savings for new construction. These policies, while not required by law, heavily favor electrification and influence the design decisions for new construction projects. Many projects that could have installed gas equipment and been in compliance with the WSEC have opted for all-electric equipment to meet their individual climate goals.

2. Implementing Adaptive Management

Adaptively managing through continuous improvement is ongoing in all Energy Efficiency supporting functions, as staff implement exciting and inventive methods of connecting with customers, providing exceptional service, and striving towards conservation goals. In addition to the barriers described above, PSE is also assessing the impacts and opportunities from increased state and federal funding, the climate commitment act, and industry focus on targeted electrification.

PSE continues to implement several adaptive and continuous-improvement initiatives in 2023 that will positively influence Energy Efficiency's ability to implement CETA while helping to mitigate external impacts to savings achievement. Many of these initiatives carry over from 2022. Listed below are some highlights that PSE discusses in more detail in the coming chapters and in Exhibit 3: Program Details.

Current 2022 activities that will continue in 2023

- Limited time offers to drive savings.
- Outreach and relationship building via community-based organizations.
- Outreach and relationship building via new Account Executives.
- Aligning marketing efforts between energy efficiency and other PSE teams to reach customers as a cohesive approach.

- Advancing equitable design and implementation empowered by the draft CEIP, updated named community dashboard, training, ongoing program assessments, and creating a new position – a Product Manager of Equity.
- Awareness campaign in Q4 2022, carrying in to 2023.
- Changes to Current Programs:
    - Revision of Total Resource Cost threshold on custom projects to increase throughput.
    - Extend/Increase contract for the Virtual Commissioning Program to take advantage of additional savings opportunities.
    - Strategic Energy Management focused engagement with gas customers in their first year of the program to encourage program completion.

Energy Efficiency 2023 Planned Actions

- An updated PSE Marketplace option will enable instant discounts on thermostats at the higher Efficiency Boost rebate amount.
- The Multifamily New Construction program continues to offer an energy modeling-like service that allows projects to evaluate various scenarios of energy efficient design.
- SBDI will continue offering virtual assessments for small business customers, as well as adding back in-person community blitzes, giving customers a choice of either a virtual or in-person experience.
- The Business Lighting Express (BLx) initiative bridges the gap between Lighting to Go and Custom Lighting Grants by simplifying the application process.
- The Business Lighting team's "Project Perks" will incentivize customers and contractors to submit new applications and complete projects quickly that have been already submitted.
- Increased Incentives for C/I Retrofit and Commercial New Construction.
- Planning and assessing more limited time offers.

- Partnering with contractors via referrals, sales program incentive funds (spiffs), trainings, 1:1 engagement, and ideas to further engage customers in Named Communities.
- Outreach team focused on named communities and small medium businesses.
- Measure updates:
    - Increasing Low Income Weatherization measure costs approximately 30%.
    - Generally increasing both annual measure costs and incentives.
    - Updated and additional non-energy impacts (NEIs), especially for multifamily retrofit.
- Adding measures:
    - Commercial refrigerators and freezers.
    - Residential clothes dryers.
    - Air sealing pathway for Aeroseal technology in Single Family Weatherization, with additional exploration underway.
    - Continued exploration for commercial windows and weatherization.
    - Commercial Secondary Window Slides.

PSE's commitment to constant innovation and proactive management has resulted in consistently maximizing conservation resources for the past decade, while utilizing customer-funding contributions wisely and thoughtfully. PSE provides additional details in the program overviews found in the following sections.

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III. Residential Energy Management Detailed Program Discussions

A. Low Income Weatherization

Schedules E/G 201

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

The Low Income Weatherization (LIW) program improves the energy efficiency of single family residences, multifamily structures and manufactured/mobile homes, provides education on routine ways to reduce energy use and costs, and supports health and safety measures and energy-related repairs. Funding from this program supports many cost-effective home weatherization measures for low income customers receiving natural gas and/or electric heat from PSE.

As of January 1, 2022 the income threshold to participate in the LIW program will be increased to 80 percent of Area Median Income (AMI) or 200 percent of Federal Poverty Level (FPL), whichever is higher. The new income threshold will be in compliance with WAC 480-109-060(22).

During the 2022-23 biennium PSE will continue to make low income customers in the manufactured home sector a priority audience, leveraging findings from the Low Income Needs Assessment (LINA) Phase 1 and 2, as well as the Department of Health cumulative impact assessment to inform program design and customer engagement.

Additionally, PSE staff will coordinate with the Department of Commerce and Department of Health to meet Clean Energy Transformation Act (CETA) legislative requirements with a particular emphasis on Section 12[10] and Section 14[11]. Additionally, staff will engage with customer groups such as the Equity Advisory Group (EAG) and leverage energy burden data analysis and the results of the LINA Phase 1 and Phase 2 studies.

[10] Section 12 pertains to utility data collection

[11] Section 14 pertains to the application of cumulative impacts assessments to inform future program design where available

As highly impacted communities and vulnerable populations are identified, these communities will be folded into LIW customer engagement strategies. This will inform program strategies to reduce or remove systematic and participation barriers and to target future outreach and marketing campaigns in communities with high energy burden.

PSE will also continue collaborating with stakeholders in high needs communities to disburse special contract funds established as part of the Settlement Agreement in Docket UE-161123. Potential projects in 2022-2023 include a partnership between The Energy Project, the Lummi Nation, and SPARK NW to serve low-income customers in the Lummi Nation tribe with renewable energy. This potential project is expected to be confirmed and begin in 2022 with the installation of solar panels on up to five buildings, which in turn would lower operating expenses and energy bills for social service providers while creating a funding stream to directly service eligible low-income households.

2023 Updates, Revisions, Enhancements, Adaptive Management

The Low Income Weatherization (LIW) program improves the energy efficiency of single-family residences, multifamily structures and manufactured/mobile homes, provides education on routine ways to reduce energy use and costs, and supports health and safety measures and energy-related repairs. Funding from this program supports many cost-effective home weatherization measures for low-income customers receiving natural gas and/or electric heat from PSE. The LIW program will continue to spend additional shareholder dollars and will support distribution by sending all weatherization agencies monthly spending reports to help determine their share of funds remaining for the year.

For use in 2023, PSE will update measure costs significantly after consulting with agency stakeholders and with The Energy Project (TEP) to assess inflation-adjusted costs and fully fund cost-effective conservation measures with a Total Resource Cost test of at least 0.667. PSE will work with its Conservation Resource Advisory Group to survey actual installed measure cost and further adjust rebate amounts if warranted.

Equity Focus

In 2022, PSE continues to make progress in applying the results from the Low Income Needs Assessment (LINA) phases 1 and 2, completed in 2020 and 2021. The results have been used to target marketing, outreach, and program delivery to census blocks identified in the study as high needs areas.

By its very nature, the LIW program is designed with equity in mind by fully reducing the cost of home upgrades for income-eligible customers. The goal of 2022 is to continue exploration of ways to scale the program equitably to distribute energy efficiency benefits to a greater number of eligible PSE customers.

In 2023, the LIW program will leverage its new landing page launched in 2022, pse.com/home, making it easier for customers to navigate directly to the information related to the program, which includes transcreation in the top five languages requested by customers. Additionally, there have been several email campaigns with a focus on weatherization education.

B. Single Family Existing

Schedules E/G 214

This sector group is the largest contributor of savings in REM and consists of these programs:

- Residential Lighting,
- Home Appliances,
- Smart Thermostats,
- Home Energy Reports,
- Space and Water Heat,
- Residential Midstream HVAC and WH,
- Weatherization.

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

PSE retired the Showerheads program, effective January 1, 2022 due to low cost-effectiveness following the retirement of all showerhead measures from the Regional Technical Forum in 2020. The remaining measure in this program, Thermostatic Shower Valves, will continue to be offered through the Multifamily Retrofit and LIW programs; however, rebates will no longer be available through PSE Marketplace.

2023 Updates, Revisions, Enhancements, Adaptive Management

Updates described in the program discussions (Section II).

Equity Focus

The REM team will continue to enhance internal tools, training, and processes to improve the equitable design and delivery of programs. These efforts will be coordinated with the ongoing

review of the Clean Energy Implementation Plan, and supported by a new position focused on imbuing equity in these and future services.

1. Residential Lighting

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

The primary focus of the Residential Lighting program is providing instant discounts on qualifying LED products and fixtures to single family residential electric customers through participating retailers. Retailers in the program include brick and mortar establishments and the PSE Marketplace online shopping platform. Management of the Residential Lighting program excludes the Lighting to Go program, which can be found in the Business Energy Management section.

Washington State's House Bill 1444 adopted the EISA expanded definition of a general service lamp (GSL) at the beginning of 2020. PSE elected to discontinue incentives on the measures that are within that definition starting February 1, 2020. The program was significantly impacted by this change and program staff continue to monitor both LED market saturation as well as manufacturer participation for fluctuation due to the significantly smaller rebate volume spread across many individual products.

In 2022-2023, PSE continues to provide incentives on residential lighting not impacted by HB 1444, including indoor LED fixtures, outdoor LED fixtures, T8 LED fixtures, T8 LED retrofits, and patio style LED string lights.

2023 Updates, Revisions, Enhancements, Adaptive Management

The primary focus of the Residential Lighting program is providing instant discounts on qualifying LED products and fixtures to single family residential electric customers through participating retailers. Retailers in the program include brick and mortar establishments and the PSE Marketplace online shopping platform. Management of the Residential Lighting program excludes the Lighting to Go program, which can be found in the Business Energy Management section.

PSE will continue to provide incentives on residential lighting not impacted by Washington State's House Bill 1444 and the Department of Energy's revised definition of a General Service Lamp, including indoor LED fixtures, outdoor LED fixtures, T8 LED fixtures, T8 LED retrofits, and patio style LED string lights. Incentives for Residential Lighting measures will be revised in 2023 based on updated measure cost information gathered from shelf survey data conducted in the PSE service territory.

In 2020, the WUTC asked PSE and other Investor Owned Utilities in Washington to research and identify additional non-energy impacts (NEIs). In 2021, PSE contracted with DNV to identify a large number of NEIs used by other utility jurisdictions, and come up with a methodology to adopt them. PSE added NEIs for the Residential Lighting program in the 2023 measure case updates. The Residential Lighting program had not had NEIs prior to this update.

2. Space Heat

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

The Space Heat program accounts for more than 10 percent of anticipated electric and over 20 percent of natural gas savings across residential programs. This program manages incentives and installations of gas and electric home heating systems. The program previously included PSE's midstream space and water heat programs but starting in 2022-2023 includes only downstream space heat rebates. Downstream water heat rebates will be included under the Water Heat program and midstream rebates will be included under a new Residential Midstream HVAC and Water Heat program.

In 2022-2023, the program will deploy higher incentive levels to help target hard to reach customers, specifically those with manufactured homes as well as low-to-moderate income customers served by the Efficiency Boost program. Most notably, gas furnaces incentives will be doubled for the coming biennium and there will be a focus on helping customers to convert from electric resistance to heat pump systems.

The program is also working with its Trade Allies to create materials to better inform customers about HVAC replacements.

2023 Updates, Revisions, Enhancements, Adaptive Management

The Space Heat program incentivizes installations of gas and electric home heating systems. The Space Heat program will launch advanced duct sealing measures in 2023, claiming RTF UES Duct Sealing Measure B (visual inspection and tested) duct sealing savings values. Advanced duct sealing will run through the Space Heat program as HVAC contractors are the majority of the installers trained in this technology. PSE will monitor the market to see how this new technology changes the duct sealing landscape and will make program changes as needed.

In the spring of 2023, the program plans to offer a heat pump limited time offer to initiate a focus on helping customers to convert from electric resistance to heat pump systems. The program is also exploring a limited-time offer customer bonus for customers who install

advanced duct sealing with their new-ducted ASHP or gas furnace; encouraging the optimization of their new efficient space heat system.

The program is working with the Trade Ally Network and the Midstream HVAC program to provide Trade Allies with additional space heat sizing and installation training, both improving realization rates with proper HVAC installation, and boosting contractor engagement.

Equity Focus

In 2022, all gas furnace incentives were doubled and in 2023, the program will deploy an additional increased gas furnace incentive that nearly covers the measure cost for manufactured homes as well as low-to-moderate income customers via the Efficiency Boost program.

3. Water Heat

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

This Water Heat program manages downstream incentives and installations of single family residential water heating for both electric and natural gas customers. This program was previously included alongside space heat and midstream rebates.

In 2022-2023, the program will deploy higher incentive levels to help target hard to reach customers, specifically those with manufactured homes as well as low-to-moderate income customers served by the Efficiency Boost program.

Additionally, program staff will continue collaborating with Tacoma Power, Snohomish Public Utility and NEEA to provide coordinated retail incentives for heat pump water heater at regional Lowe's and Home Depot stores. PSE is also investigating split Heat Pump Water Heater systems and ways to enhance the retail delivery experience for customers at the point of sale.

2023 Updates, Revisions, Enhancements, Adaptive Management

This Water Heat program manages downstream incentives and installations of single family residential water heating for both electric and natural gas customers. This program provides rebates for storage and tankless natural gas water heaters and electric heat pump water heaters (HPWH).

Program staff will continue collaborating with Tacoma Power, Snohomish Public Utility District, and Northwest Energy Efficiency Alliance (NEEA) to augment the retail heat pump water

heater program to include a coupon for customers to redeem at the register at regional Lowe's and Home Depot stores in order to address retailer risks.

Program staff will continue monitoring several factors that may impact this program, including inflation, increases in the price of steel, supply chain disruptions, and adoption of the 2018 Washington State Energy Code (WSEC) that went into effect on February 1, 2021.

Equity Focus

The program will continue to deploy higher incentive levels to manufactured home residents as well as moderate income customers served by the Efficiency Boost program. This includes increased incentives closer to the incremental cost of tankless natural gas water heaters. PSE will continue to work to identify more ways to reach out to named communities to increase Efficiency Boost program awareness for water heaters, especially HPWHs.

4. Residential Midstream HVAC and Water Heat

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

The goal of the Midstream Residential HVAC and Water Heat program is to help distributors to increase sales by reducing first costs, encourage upselling of high-efficiency products, and increase stock so that it is readily available to customers in emergency replacement situations. This program comprises nearly a quarter of anticipated electric savings across residential programs.

In 2022-2023, program staff are focused on increased distributor and contractor engagement to promote awareness of the Midstream HVAC and Water Heat program. Midstream HVAC and water heat incentives were previously combined with downstream space and water heat incentives. Since midstream rebates capture participation from a large portion of the market which created the risk of double-paying rebates, PSE streamlined midstream-eligible products to only be rebated through this program.

PSE will also continue coordinating with Seattle City Light and Snohomish PUD to align rebate offerings across the region and encourage higher distributor participation. Additionally, program staff will monitor for and work to mitigate possible supply chain disruptions, including product availability, product cost, and contractor availability.

2023 Updates, Revisions, Enhancements, Adaptive Management

The goal of the Midstream Residential HVAC and Water Heat program is to help distributors to increase high efficiency sales of heat pumps and heat pump water heaters by reducing first

costs, encourage upselling of high-efficiency products, and increase stock so that it is readily available to customers in emergency replacement situations. This program comprises nearly a quarter of anticipated electric savings across residential programs.

In 2022, program requirements were revised and adapted to accommodate for the 2018 WSEC. This included increased baseline for new construction ductless heat pumps, new construction traditional heat pumps, and retrofit traditional heat pumps, and the elimination of Tier 1 new construction for traditional heat pumps. For 2023, PSE does not anticipate a reduction in tonnage coming through the midstream residential HVAC program; however, due to code adoptions and increased baselines, program staff are forecasting an almost 20% reduction in kWh savings attributable to the residential HVAC measures. Due to decreased rebates for HVAC measures, spending will be reduced by approximately 45%.

To align with Department of Energy federal code and test method changes for HVAC minimum efficiency and testing requirements, program requirements will again be revised and updated for 2023. This includes recognizing equipment rated in HSPF2 and SEER2 and creating three new tiers to align with the federal code change. The upcoming changes to the federal minimum standard, which go into effect for the Northern region of the United States, including the Pacific Northwest, will be effective based on manufacturer date of January 1, 2023. As there will be existing stock for equipment manufactured under the previous federal minimum standards that will most likely take 6-9 months to install, the HVAC measures will be updated in a phased approach when stock of HSPF and SEER rated products are depleted.

Also in response to changes to Washington State Energy Code, program staff modified 2022 residential heat pump water heater program requirements to align with NEEA Tiers and Cold Climate Efficiency (CCE). These changes resulted in adjustments to savings and restructuring rebate levels based on project type (i.e., new construction or existing home), added a contractor spiff for installations in existing homes; and reduced size category to ≤120 gallons.

Split HPWH systems, which have the compressor and heat exchanger located outside of the home reducing the impact to the HVAC load, have always been accepted into the Program but using the same savings methodology as traditional HPWHs. The Program will be adding a new measure in 2023 to better account for the savings of these types of HPWHs using the existing rebate level structure. Additionally, the Program will remove NEEA Tier 1 offering in 2023, as this equipment is the lowest efficiency HPWH option on the market currently and only offering rebates for NEEA Tier 3 or 4 aligns with other PSE programs and pushes the market toward highest efficiency equipment.

Equity Focus

PSE will continue to identify ways to further engage the contractor and distributor community to increase commercial midstream participation. In addition to looking for potential measures to add to the program, PSE is also working with its implementation contractors and regional partners to identify ways to ensure Named Communities are incorporated in its expansion efforts. Program staff are assessing the most effective ways to engage contractors serving customers in Named Communities to provide the necessary tools and potentially increased rebates for greater equity in residential HVAC and water heating programs.

5. Weatherization

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

The Weatherization program helps residential customers, including manufactured home customers, to improve the "shell" of their home through installation of windows, insulation, air sealing, and duct sealing. This program will contribute a significant amount of gas savings across residential programs in 2022-2023.

Although this program remains as one of PSE's longstanding residential programs, there are two key changes for this biennium. First, the insulation and air sealing incentive delivery model will change from percentage of project cost to a per-square-foot incentive to align with other regional utilities. Second, the 'whole home' air sealing measures were retired during the previous biennium due to lack of participation and low cost-effectiveness.

During the previous biennium, program staff piloted higher incentives for projects that bundled measures, which resulted in higher savings, lower customer costs and less customer disruption. These 'Customer Bonus' incentives will continue in 2022-2023 for projects with three or more measures. Additionally, PSE will continue to engage contractors and explore opportunities for coordinated trainings with regional utilities and the Comfort Ready Home initiative supported by Bonneville Power Administration (BPA).

2023 Updates, Revisions, Enhancements, Adaptive Management

The Weatherization program helps residential customers, including manufactured home customers, to improve the "shell" of their home through installation of windows, insulation, air sealing, and duct sealing.

Although this program remains as one of PSE's longstanding residential programs, there are two key changes for this biennium. First, the insulation and air sealing incentive delivery model will change from percentage of project cost to a per-square-foot incentive to align with other

regional utilities. Second, the 'whole home' air sealing measures were retired during the previous biennium due to lack of participation and low cost-effectiveness.

During the previous biennium, program staff piloted higher incentives for projects that bundled three or more measures, which resulted in higher savings, lower customer costs and less customer disruption. In 2023, the Customer Bonus incentives will be increased, further promoting participation in multiple weatherization measures.

The Weatherization program is working with the Trade Ally Network to relaunch Weatherization contractor onboarding in early 2023. Additionally, PSE will continue to engage contractors and explore opportunities for coordinated trainings with regional utilities and the Comfort Ready Home initiative supported by Bonneville Power Administration (BPA).

Equity Focus

In 2023, this program will deploy insulation incentives that nearly cover the measure cost for manufactured homes as well as low-to-moderate income customers served by the Efficiency Boost program. This program will assess whether to increase remaining insulation, duct sealing, and air sealing incentives for the new biennium using participation data from a 2022 Q4 LTO that offered a 50% incentive increase.

6. Home Appliances

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

The Home Appliances program incentivizes residential customers to upgrade to ENERGY STAR® appliances.

Major program revisions for this biennium include the retirement of PSE's appliance decommissioning service and ending of ENERGY STAR® dryer and heat pump dryer rebates.

In 2022-2023, the Home Appliances program will provide downstream rebates for front loading clothes washers. The majority of savings derived from these measures will be electric savings, however incidental gas savings are captured through reduced water heating use in ENERGY STAR rated clothes washers.

2023 Updates, Revisions, Enhancements, Adaptive Management

The Home Appliances program incentivizes residential customers to upgrade to ENERGY STAR® appliances. Major program revisions for 2023 include the inclusion of ENERGY STAR® dryer rebates.

The Home Appliances program will continue to provide downstream rebates for front loading clothes washers. The majority of savings derived from these measures will be electric savings, however incidental gas savings are captured through reduced water heating use in ENERGY STAR rated clothes washers.

Equity Focus

The program will continue to deploy higher incentive levels to manufactured homes as well as low-to-moderate income customers served by the Efficiency Boost program. This includes providing increased incentives for front loading washers from 2022 Efficiency Boost program levels and the inclusion of increased ENERGY STAR dryer rebates.

7. Smart Thermostats

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

This program, previously named Web-Enabled Thermostats, incentivizes residential electric and natural gas customers to upgrade their regular or programmable thermostat to either an ENERGY STAR® rated smart thermostat or a PSE-approved Electric Line Voltage Connected Thermostat. The Smart Thermostats program will account for more than 10 percent of gas savings across residential programs.

In 2022-2023, PSE will continue offering post-purchase downstream incentives as well as instant rebates via PSE Marketplace. Program staff will also explore the option of adding an instant discount option for contractors.

2023 Updates, Revisions, Enhancements, Adaptive Management

The Smart Thermostat program incentivizes residential electric and natural gas customer to upgrade their regular or programmable thermostat to either an ENERGY STAR® rated smart thermostat or a PSE-approved Electric Line Voltage Connected Thermostat.

In 2023, the Smart Thermostat program will continue to offer rebates on post-purchase downstream incentives, as well as instantly through either the PSE Online Marketplace or trade ally network contractors. The program plans to focus efforts to increase contractor participation in offering instant rebates to customers. PSE believes this will help overcome the barrier for customers interested in the technology, but uncomfortable with self-installation.

Equity Focus

The program negotiates with manufacturers to be able to offer low to no cost limited time offer smart thermostat promotions to customers that might not otherwise be able to afford investing

in the technology. It is also part of the Efficiency Boost program, with higher incentives available for self-identified low-to-moderate income customers. The smart thermostat program added paper rebate forms in 2022 to assist customers with limited access to technology or difficulty with operating it with being able to apply for program rebates.

Additionally, in 2023 the program will begin creating collateral to improve the program's equity for customers whose primary language is not English.

8. Home Energy Reports

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

Home Energy Reports (HER) are customized reports sent to participating residential electric and 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. This program is the most significant driver of both electric and natural gas savings across residential programs.

In late 2021, PSE added approximately 85,000 additional reports to participating gas-only customers, which significantly expands gas savings in the 2022-2023 biennium. Program staff also expect an increase in both electric and gas savings from dual-fuel customers added in 2018 and 2019, due to the ramp up of savings after the first years of participation. Additionally, PSE will continue periodically adding customers to the program due to move-out attrition in the new biennium. For example, in the previous biennium approximately 50,000 customer were added to replace customers who left the program due to move-outs.

PSE will continue to enhance and adapt the energy saving messaging provided to customers based on their input and feedback. PSE will also evaluate this program on an annual basis, as it has since the program's inception.

2023 Updates, Revisions, Enhancements, Adaptive Management

Home Energy Reports (HER) are customized reports sent to participating residential electric and 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. This program is the most significant driver of both electric and natural gas savings across residential programs.

In early 2022, PSE added 70,000 multi-family electric customers, while in mid-2022, PSE added 60,000 gas only customers, and 40,000 low to moderate income electric customers. The two additional waves launched in mid-2022 came with a budget increase over the original 2-year forecast, which is reflected in exhibit 1. Given the expansion, we also forecast a potential savings increase program wide in 2023.

We will leverage existing data about the performance of and engagement with Home Energy Reports and self-service tools to continually refine and improve both. The updating of some current and addition of new self-service tools throughout 2022 and continuing in 2023 should help customers gain a deeper understanding of their usage and help identify opportunities to conserve energy.

In 2023, PSE will shift from a 2-year to a 1-year measure life for the Home Energy Report program. This will ensure PSE claims all energy savings from the independent evaluation performed annually for the program. Moving to a 1-year measure life also aligns with BPA guidance. Additionally, counting savings annually should remove unnecessary accounting complexity and more accurately calculate evaluated savings.

Equity Focus

The additions of the multi-family and LMI (Low to Moderate Income) waves help us improve program equity to customers with potentially higher energy burdens by providing low-to-no cost energy savings tips.

9. Efficiency Boost

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

Efficiency Boost provides increased rebate amounts for various measures within the Space Heat, Water Heat, and Weatherization programs in order to increase access to efficiency for moderate income customers who may not qualify for low-income programs.

In 2022-2023, Program staff will focus on expanding awareness of this program through targeted marketing and aims to grow the program to more than 700 customers served annually. Additionally, staff will engage with the PSE Equity Advisory Group, leveraging energy burden data and coordinating with CETA requirements. As part of these efforts, the income thresholds for the program will be adjusted to align with the new thresholds for the LIW program. As of January 1, 2022, LIW income thresholds will be adjusted to 80 percent of AMI or 200 percent of FPL, whichever is higher and Efficiency Boost thresholds will adjust to 90 percent of AMI.

2023 Updates, Revisions, Enhancements, Adaptive Management

Efficiency Boost will continue to target low-to-moderate income customers with higher rebates. In prior marketing, we have conducted targeted awareness to zip codes with a high percentage of moderate-income customers. This will continue into 2023.

In 2022, Efficiency Boost transcreated two documents in Spanish: the program 1-pager and the Income Qualification form. The effort to make Efficiency Boost accessible to speakers of other languages will continue into 2022 and 2023 with the transcreation of the Efficiency Boost website. In late 2022 and 2023, PSE will engage in a sponsorship with the Seattle Thunderbirds, a major junior ice hockey team based in Kent, WA. This sponsorship will provide a good opportunity for Efficiency Boost outreach to a prime audience.

While participation in Efficiency Boost has increased in 2022, we hope to continue driving participation by exploring increased rebates for 2023.

In 2022, smart thermostats, line voltage thermostats, and clothes washers were added to the list of measures that provide higher rebates through Efficiency Boost.

To drive more participation in thermostats, PSE is creating a Marketplace for income-qualified customers, slated for completion in Q4 of 2022.

C. Single Family New Construction

Schedules E/G 215

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

> *The* Single Family New Construction *(SFNC) program works with builders and raters to influence higher-than-code energy efficiency homes throughout the PSE service area. This program includes Manufactured Homes New Construction (MHNC), in which conservation measures are promoted through manufacturers and retailers selling qualified homes to residential PSE customers.*
>
> *With the change to 2018 Washington State Energy Code (WSEC), the baseline for efficiency for new construction homes has increased significantly. Due to this higher baseline, savings will be harder to come by for PSE's SFNC program. Additionally, most HVAC and water heat savings are no longer eligible for incentive through the SFNC program since they are incentivized through the midstream model. These two factors will be key challenges for the SFNC program in 2023 and 2023.*

In this biennium, incentives will include Built Green 4-Star and 5-Star as well as NEEM 1.1 and NEEM 2.0. PSE added the NEEM 1.1 and NEEM 2.0 natural gas measures to the MHNC program and in 2022 would begin accepting natural gas rebate requests in symmetry with the electric measures. PSE is also investigating a code credit-based incentive for 2022-2023, but is still determining a savings value to align with each credit.

Additionally, PSE will continue partnering with Snohomish County Public Utility District (SnoPUD) to align incentives and program rules to simplify the rebate experience for manufactured home retailers that exist in and around locations close to both PSE and SnoPUD service areas.

2023 Updates, Revisions, Enhancements, Adaptive Management

The SFNC program has changed its payment structure to pay-per-savings, versus the previous tiered (Built Green 4-Star and 5-Star equivalent) payment structure. The pay-per-savings structure offers a few programmatic benefits. One is that it allows SFNC to disallow savings that overlap with the PSE Midstream program.

Another is that it allows an easier entry point for builders. The previous tiered payment structure required homes to be at least 10% more efficient than Washington State Energy Code (WSEC). The pay-per-savings structure has no minimum percent-above-code requirement. This is important given the higher baselines with each new iteration of WSEC.

SFNC is also investigating alternative program pathways that are more prescriptive in nature.

D. Multifamily Retrofit

Schedules E/G 217

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

The Multifamily Retrofit program provides comprehensive whole building that aggregates both in-unit and common area opportunities. The program serves existing multifamily buildings with five or more attached residential dwelling units as well as multifamily campuses, which have a mixture of building types including buildings with less than five units. This program comprises over 10 percent of electric savings across residential programs.

In the coming biennium, program staff will target approximately 40,000 units and will focus on driving participation among the moderate-income customer segment. The program aims to pilot in-language outreach and education about the benefits of energy

efficiency and changing customer behavior. Additionally, program staff will partner with PSE's LIW program to provide resources and raise program awareness of PSE's products and services through "Energy Fair" events.

2023 Updates, Revisions, Enhancements, Adaptive Management

The Direct install component of the Multifamily Retrofit program has existed for over ten years, however the program has recently adapted to changing needs. Fewer property owners (and residents) have been interested in Advanced Power Strips and Thermostatic Tub-start and Showerhead Adapters than in past years. As a result, the program has shifted towards installing line voltage thermostats and TLED light fixtures. In 2023, the program will continue offering these installs at no cost to moderate-income sites. We will also elevate the traditional rebate for these measures accessible to market rate properties.

The program plans to increase weatherization measures such as Air Sealing and Insulation incentives for attics, crawl spaces, and walls. Likewise, we plan to increase window incentives for market rate properties as well as boosted incentives for moderate income.

For 2023, the program is exploring a rebate for package terminal heat pumps. These units are very similar to ductless heat pumps; however, there is minimal impact to the exterior of the building. We believe these units are positioned to gain momentum in the marketplace for their efficient heating and cooling benefits and for their ease of installation. Coupled with a smart thermostat these installations should provide excellent savings for apartment residents or condominium owners who previously heated with baseboard heat.

Equity Focus

The Multifamily Retrofit program will continue to offer increased incentives for moderate-income properties in 2023. Weatherization incentives are slated to increase for sites deemed Moderate Income. The Multifamily Retrofit program defines Moderate Income sites that are within Tribal communities; or classified as Affordable by the State; or sites that offer rental assistance; or sites built before 1986. By not relying on income tables per household, property owners will inherently know the status for their sites. Furthermore, contractors and their sales staff can easily obtain ownership and vintage data through County Assessor webpages, which will enable them to include Moderate Income incentives in their bids. Given the streamlined process and increased incentives the program aims to achieve 50% of 2023 program savings through Moderate Income projects.

E. Multifamily New Construction

Schedules E/G 218

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

The Multifamily New Construction program provides comprehensive whole building savings with tiered incentives based on per kWh or per therm rate. Staff closely coordinate with developers, architects, and engineers early in design process to influence efficient solutions for market rate and affordable multifamily new construction 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 WA State Housing Finance Commission's Low Income Housing Tax Credit.

In the 2022-2023 biennium, program staff will aim to seek deeper savings through an emphasis on Early Design Assistance projects. As in other new construction programs, there are a number of factors that pose a risk to savings, including more stringent WSEC, stricter standards from HB 1444, and the shift in HVAC and water heat incentives to the midstream program.

Early Design Assistance provides an opportunity to drive participation through the value add of technical assistance and cost/benefit analysis to assist customers in seeking deeper savings. PSE will increase market penetration through a third-party vendor that will work closely with architects, engineers, and developers to host design charrettes and provide technical assistance.

2023 Updates, Revisions, Enhancements, Adaptive Management

PSE changed vendors for Multifamily New Construction (MFNC) for the 2022-2023 biennium. While most of the projects that the new vendor is processing in 2022 are carryover projects with analysis from the previous vendor, some projects are being converted over to the new vendor's energy modeling tool—Net Energy Optimizer (NEO). The NEO tool has more comprehensive offerings than the previous tool, allowing for deeper savings within projects. However, these deeper savings are competing against higher baselines with each new iteration of Washington State Energy Code (WSEC) Overall, the net energy savings per project is proving to be lower for 2018 WSEC projects, even with the deeper savings due to NEO. This has led to PSE reducing its forecasted MFNC savings for the biennium by approximately 15 percent, or 1,000 MWh.

In 2023, MFNC will continue doing outreach in order to build out the pipeline of MFNC project slated to close in 2023, 2024, and 2025. PSE will work with the new vendor to continue to investigate the incorporation of new technologies into Net Energy Optimizer – namely central heat pump water systems for 2023.

Equity Focus

PSE continues to offer a 50 percent higher incentive for affordable housing projects, as compared to the market-rate housing incentive. Affordable housing projects are defined as an overall average occupant income of 60% Area Median Income or less, and aligns with Washington State Housing Finance Commission's Low Income Housing Tax Credit (LIHTC) programs.

In 2022, PSE's vendor for MFNC was added to Approved Roster of Energy Modeling Consultants for projects that are seeking the LIHTC. Projects can achieve points towards 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.

IV. Business Energy Management Detailed Program Discussions

A. Commercial/Industrial (C/I) Retrofit

Schedules E/G 250

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

This suite of programs provides customized incentives to small, medium, and large commercial and industrial customers for energy efficiency upgrades to lighting, equipment, building shell, industrial process, and select O&M improvements. Standard incentive approaches include existing building commissioning, major controls projects, and variable refrigerant flow projects. Program staff also work with financial decision makers at the customer's facility to ensure the customer is aware of cost-savings opportunities, including review of energy saving projections that can help obtain favorable financing rates.

In 2022-2023, programs will be added to the C/I Retrofit suite of offerings: the Clean Buildings Accelerator program and the Telecommunications Energy Management program. Additionally, program staff will improve recruitment with an emphasis on individual account management and a streamlined handoff process. This will help new customers navigate through program offerings and find the most suitable fit for their needs.

Custom Grants – Lighting and Non-Lighting

Custom grants provide commercial and industrial customers calculated incentives. PSE considers any cost-effective measure that provides quantifiable energy savings. Custom grants are available through two programs: Custom Grants (non-lighting measures) and Custom Lighting Grants (lighting and lighting controls measures). These programs will account for roughly a quarter of both electric and natural gas savings across business programs in 2022-2023.

In the coming biennium, both electric and natural gas incentives will be increased for non-lighting measures. Additionally, program staff are exploring direct partnerships with property managers and school districts to promote the installation of advanced controls during lighting upgrades. The Custom Lighting Grants program will also explore partnerships with property management firms that engage in service and repair work.

Business Lighting Express

The Business Lighting Express program is a hybrid between Business Lighting custom grants and Lighting To Go point-of-sale incentives. It provides prescriptive incentives for exterior and limited interior lighting upgrades for contractors and customers doing maintenance work.

In 2022-2023, program staff will explore the addition of lighting-only tenant improvement and new construction projects into the Business Lighting Application. Additionally, staff will evaluate a bonus incentive when occupancy sensors are added to a project as a way to encourage a higher rate of adoption for lighting controls in projects.

Industrial Programs

The Industrial Energy Management program provides a comprehensive set of offerings, focused on tuning-up industrial systems and reducing energy usage. Offerings include traditional custom capital projects, Industrial Systems Optimization (ISO), Strategic Energy Management (SEM), and the Comprehensive Small Industrial offering, which provides custom grants targeted at small industrial sector customers.

For the following biennium, an offering will be added to the program targeted at customers participating in ISO to encourage customers to pursue capital measures identified in the ISO process by bundling them with the O&M measures and offering additional incentives. This will allow ISO participants to capture more capital project savings identified in the scoping phase.

Additionally, PSE will expand the SEM offering by recruiting two wastewater and/or water treatment cohorts and three manufacturing cohorts. In the Small Industrial offering there will be an increased focus on hard-to-reach small industrial and manufacturing customers.

Overall, program staff will increase targeted marketing and outreach to increase the number of applications submitted and improve connections with industry partners such as industrial equipment vendors and maintenance service companies.

Clean Buildings Accelerator

Launched in late 2021, the Clean Buildings Accelerator (CBA) program is designed to assist building owners to comply with the requirements of Washington State House Bill 1257, the Clean Buildings Law. This new program provides strategic energy management services through a four-month program.

It is best suited for lower resourced and smaller organizations, including public organizations and non-profits, and/or customers that have less experience with energy efficiency programs.

Telecommunications Efficiency Program

A new addition for 2022-2023, the Telecommunications Efficiency Program will provide comprehensive and flexible capital and performance-based incentives to telecommunication customers receiving commodity electric and natural gas service from PSE. Telecommunication customers include internet service providers, radio, telecom, cellphone, broadband, and cable television providers.

This program will include any cost-effective measure that provides quantifiable energy savings, including capital measures and/or operational and maintenance measures. The program anticipates achieving primarily electric savings with cost effective natural gas projects to be developed where opportunities exist.

Small and Medium Business AMI Virtual Commissioning

Previously named Small and Medium Business (SMB) AMI Enhanced Engagement, this pilot is now known as SMB Virtual Commissioning. This pilot provides a limited number of qualifying customers with very detailed analyses, and potentially disaggregated energy use reporting, providing participating customers with conservation calls to action. PSE provides site specific low-cost/no-cost recommendations and assists the customer to virtually implement the recommendations. In 2022-2023, PSE will continue to evaluate the impacts of COVID-19 on the baseline model and expects to have served 120 customers by 2023.

2023 Updates, Revisions, Enhancements, Adaptive Management

1. AMI SMB Virtual Commissioning (TM) Program

In May 2022, PSE moved the Virtual Commissioning offering from pilot status to program status due to early success and a promising savings forecast.

This program provides a limited number of qualifying customers with very detailed analyses and energy use reporting, which results in conservation calls to action. PSE provides site-specific low-cost/no-cost recommendations and assists the customer virtually to implement the recommendations. The reduction to site consumption is observed over several months to verify savings.

2. Variable Refrigerant Flow

PSE is currently evaluating our VRF offerings to determine appropriate incentive and savings values.

3. Industrial Programs

The industrial focused efforts of the C/I program have been significantly affected by the COVID-19 Pandemic. The program has seen a considerable reduction in custom project applications as well as customer availability to discuss potential projects.

To adapt to the combined effects of this delay, as well as the reduced number of project applications this year to date, the Industrial program is taking a number of steps to meet 2023 savings goals including:

- Bundling capital projects with ISOP O&M measures to encourage customers to pursue capital projects by providing higher combined incentives, increasing ISOP participation goals paired with expanded ISOP outreach efforts by the new Account Executive.

- Assisting ISEM cohort participants in finding, applying and implementing the capital projects, and leveraging PSE's Engineering Services contractors to assist in these efforts. These actions will result in more focus on near-term custom grants and ISOP projects while continuing to work with ISEM cohorts for long-term program savings.

4. Clean Buildings Accelerator (CBA)

After running this program for a year, PSE has learned that the CBA is more of a 'gateway program' than a typical energy efficiency program. Meaning, participating in the CBA yields relatively small savings numbers, but leads to projects in other programs while delivering high customer satisfaction. PSE has been discussing internally about rethinking the values this program brings, including customer engagement & ongoing partnership beyond savings, and will be reducing the savings targets for 2023 accordingly.

5. Custom Lighting Grants (Business Lighting)

The COVID-19 pandemic has affected the Business Lighting Incentive program (BLi) in reduced participation due to businesses slowly reopening and with supply chain and inflationary pressures. BLi adapted by increasing incentives mid 2020 by 50%; by adding

an incentive for contractors to close projects early in 2021; and by maintaining the 50% higher incentives.

In 2022, BLi maintained the higher 2021 incentives and introduce a Tenant Improvement and New Construction lighting only path within the BLi Application to expand program participation and added a new exterior control bonus.

In 2023, BLi will maintain the higher 2022 incentives and will add control "bonuses" for adding automatic daylighting, occupancy sensing and task tuning controls. The added Project Perk: Contractor Performance Incentive (CPI) implemented in mid-2022 will continue through 2023. The Business Lighting Express (BLx) sub-program will also add prescriptive daylighting, occupancy and exterior photocell measures. The Business Lighting New Construction (BLnc) sub-program will be simplified to use the Washington State Energy Code (WSEC) Building Area method. The Business Lighting Street Lighting (BLsli) added advanced lighting controls incentives in 2022 and these will continue in 2023.

6. E/G 250 Non-lighting

The COVID-19 pandemic has resulted in significant delays, cancellations and a marked decrease in new project applications in the non-lighting portion of Schedule 250 portfolio. PSE has taken several steps to re-engage customers by ramping up outreach efforts to generate program interest and drive customer participation.

7. Verification Methods

Post-installation project verification methods will remain similar to those used prior to COVID-19. All verification tools (site visit, trend review, interval data and bill history analysis, customer virtual walk-throughs) that were available to staff before the pandemic are still available with less emphasis placed on in-person site visits.

B. Commercial/Industrial New Construction

Schedules E/G 251

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

The C/I New Construction program works with customers, developers, tenants, owners, designers and builders of new commercial and industrial facilities to influence efficient design, building components and equipment. The program provides incentives for installation of cost-effective energy efficient projects that exceed Washington State Energy Code or standard industry practice. Incentive pathways

include whole building incentives, EUI performance method, and both lighting and non-lighting component approach.

In 2022-2023, this program will contribute over 10 percent of electric savings across business programs. While the program will continue to be a significant contributor to electric savings, more stringent code requirements and local natural gas legislation for new construction decrease opportunities for gas savings. Additionally, the program expects a decrease in indoor agriculture projects due to lower customer participation.

Beginning in 2022, a new base payment will be implemented that will assume a 5 percent savings guarantee for projects using the EUI performance method pathway. In the coming biennium, program staff will focus on more partnerships and integrated outreach with the Residential Multifamily New Construction program in order to increase participation of large and small commercial and multifamily customers. Both program teams will collaborate on outreach to developers, architects, and engineers to help drive new construction projects.

Staff will also conduct more commercial Early Design Assist (EDA) meetings for customers who do not have access to energy modeling. The EDA meetings will provide estimated savings for a variety of high efficiency design options to help the customer determine the best design for their project. EDA meetings will also provide information on PSE's incentive paths and will create a pipeline of projects for the program.

2023 Updates, Revisions, Enhancements, Adaptive Management

Starting in 2023, Commercial New Construction (CNC) EUI Performance Method will no longer use the building target EUIs developed by the Department of Commerce for HB 1257 as the baseline for energy savings.

Instead, the baseline EUIs will be determined by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 100 standard EUIs for buildings in the Puget Sound climate zone. This industry standard has more conservative baseline EUIs that better reflect the 2018 Washington State Energy Code (WSEC) requirements. Customers will also be allowed to apply this baseline to CNCs whole building energy model approach if they do not wish to provide a baseline energy model that meets PSE requirements. This provides a conservative and consistent baseline for all customers regardless of which building incentive offering they choose. Customers will still be allowed to submit a code compliant baseline energy model for their project; however, it must meet all of PSE's modeling requirements and accurately represent the WSEC.

In 2023, the Commercial New Construction staff will continue working on increasing and better coordinating outreach efforts. In coordination with other BEM programs, a process has been set up with the Outreach staff to connect with medium-sized customers, with appropriate

consideration to COVID-19 safety requirements. Additionally, staff from the commercial, multi-family and residential new construction teams will continue to build relationships with municipalities and coordinate design review and building permitting processes.

Commercial New Construction staff will also closely coordinate with Business Lighting staff to increase participation in both the new construction and retrofit lighting programs. This may involve streamlining the new construction section of the Business Lighting Application to make the application process easier for all customers.

Staff will also create collateral to provide developers at the beginning of the design phase, and work to get program information embedded in the permitting process. Additional resources have been provided on the PSE website to provide a self-service option for customers familiar with the program. Resources include guidelines for specific incentive options and required customer submittals.

Many projects have experienced delays, resulting in delayed claimed savings for the program. There was also a decrease in project submissions in 2020 which will impact the savings for the 22-23 biennium. Due to long project timelines that include the design and construction phase, projects that were submitted in 2020 would typically close two to three years after submission. This results in less projects closing in the 22-23 biennium. While program staff have increased outreach efforts and collaboration with other departments (Business Lighting and MFNC), these efforts will most likely impact future biennia due to long construction timelines.

C. Energy Performance Incentive Programs

Schedules E/G 253

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

> *Energy Performance Incentive Programs, previously named Commercial Strategic Energy Management, includes whole-building, performance-based programs that achieve cost-effective electric and natural gas savings through energy management practices.*
>
> **Commercial Strategic Energy Management**
>
> *Specifically for commercial customers, the Commercial Strategic Energy Management (CSEM) program is intended for customers with a facility or portfolio of facilities that use more than 1,000,000 kWh or 135,000 therms annually. Participating customers are incentivized to establish an integrated strategic energy management program and manage energy through behavioral and operations and maintenance measures. This*

program contributes a significant proportion of electric and natural gas savings, including over a quarter of gas savings, within the business energy management sector.

During the 2022-2023 biennium, program staff will focus heavily on customer recruitment with a specific consideration for reaching small commercial customers. PSE also incorporated new software implementation into the budget for the coming biennium. This new software will replace the current benchmarking and entire building analysis systems, which are becoming outdated.

Pay for Performance

Newly added to the Schedule 253 tariff as a standard program, the Pay for Performance (P4P) program was previously included under Schedule 249 as a pilot. The P4P program helps customers achieve energy savings through deep retrofits in commercial buildings with over 50,000 square feet. The program also supports compliance with Washington State House Bill 1257 for customers enrolled in the Clean Buildings Law early adoption program.

In the 2022-2023 biennium, program staff are focused on streamlining the application process and approval process as well as program navigation. With the addition of new programs and customers seeking compliance with the Clean Buildings Law, there will also be an emphasis on improving the customer intake experience through clear program navigation and handoff between staff supporting managed accounts or outreach and program staff.

2023 Updates, Revisions, Enhancements, Adaptive Management

1. Commercial Strategic Energy Management

In 2023, the CSEM program staff reduced the gas savings forecast to 400,000 therms in response to increased loads associated with customers running facilities with 100% outside air. Program staff will work with building operators to optimize building operations while continuing to ensure safe ventilation rates are being supplied to building occupants.

The CSEM program will continue to recruit organizations, specifically gas customers in order to try and fill the gap in gas savings.

2. Pay for Performance

Building on the momentum established in 2022, BEM's Pay for Performance (P4P) program expects to increase program potential in 2023 by collaborating with Business Services and Outreach and expanding training for Energy Management Engineers to

develop more P4P projects. In 2022, staff explored projects that would partner with other utilities regardless of whether they had a P4P program.

In instances where PSE is only the natural gas utility and not the electric utility, the threshold to participation was lowered down to 10% gas savings.

In 2023, PSE will pilot a couple of P4P projects for buildings between 20,000 – 50,000 square feet, to align with the Clean Buildings Expansion Law (SB5722) that passed in the 2022 legislative session. PSE will be considering alternative eligibility criteria, such as amount of energy savings available, rather than building square footage.

Staff will continue 2022 program improvements that focused on long-term contractor-customer engagement, the incentive calculator, and criteria for project documentation. Additional program improvements in 2023 will include reviewing the minimum building size requirements in order to increase eligibility. PSE also needs to develop a path forward for decarbonization efforts, meaning fuel switching.

D. Large Power User Self-Directed

Schedule E258

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

This program provides incentives that support self-directed energy efficiency projects proposed by large power users on PSE rate schedules 46, 49, 448, 449, 458, and 459. Participating customers receive funding based on their electric usage and are responsible for proposing cost-effective project(s) to utilize their allocation. The program has a four-year cycle with both non-competitive and competitive phases.

In 2022, the program will be in in fourth year of its 2019-2022 program cycle, and 2023 will be the first year of the following program cycle. Due to the nature of participants' conservation project plans, and RFP participation during the competitive versus noncompetitive phases of the four-year cycle, the final year of a cycle typically captures the highest energy savings. Thus, the combined 2022-2023 electric savings will be approximately 25 percent higher than the previous biennium.

Over $5 million was not utilized during the competitive phase in 2021 and remains unspent or allocated. In 2022, PSE will make the remaining funds available to Schedule 258 customers to use on cost-effective projects, customer-driven engineering studies, or turn-key engineering studies provided by PSE approved engineering services providers.

It's worth noting that Schedule 40 customers, who were eligible for the program previously, were converted to the next applicable rate Schedule in 2020 and were ineligible to participate in the competitive phase in 2021. These customers were eligible to transition to PSE's C/I Retrofit or C/I New Construction programs.

2023 Updates, Revisions, Enhancements, Adaptive Management

The Large Power User/Self-Directed program occurs in a four-year cycle, and 2023 will be the first year of a new cycle. Over the four-year cycle, years one and two typically have the lowest recorded savings as customers begin to submit projects but have not yet had enough time to complete them. Year 3 typically sees savings start to increase, and year four has the highest savings.

Continuing with modifications made in the 2019-2022 program cycle, including funding for energy studies and a longer competitive phase for a project submission period, PSE is anticipating offering additional ways for Larger Power User customers to take advantage of this program. This includes higher incentive levels and the ability to join a strategic energy management (SEM) cohort to identify additional low-cost modifications that can be made at their facilities.

E. Technology Evaluation

Schedules E/G 261

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

During the 2022-2023 planning process, there were no new energy-efficient technologies on the horizon that weren't already being evaluated in other forums, such as the 2021 RFP/RFI process.

Therefore, no savings or expenses were budgeted for 2022-2023. PSE program staff will continuously scan for new technologies throughout the year and will consider, in consultation with the CRAG, amending the Technology Evaluation status for the 2023 Annual Conservation Plan.

2023 Updates, Revisions, Enhancements, Adaptive Management

PSE will continue to review and evaluate any technological innovations in 2023, consistent with its application of adaptive management.

F. Commercial Rebates

Schedules E/G 262

The Commercial Rebates suite of offerings is comprised of several rebate programs that focus primarily on small-to-medium sized commercial customers, many of which are considered hard-to-reach:

- Commercial Retail Lighting - Lighting to Go,
- Commercial Foodservice & Commercial Laundry,
- Lodging Rebates
- Commercial HVAC,
- Commercial Midstream HVAC and Water Heat, and
- Small Business Direct Install.

1. Lighting to Go

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

The Lighting to Go program provides customers with point of sale discounts for prescriptive lighting at commercial lighting wholesalers, distributors, and suppliers. This program is a significant contributor to electric savings within the Business Energy Management sector.

In 2022-2023, the program adds exterior fixtures to the measure mix, including troffers, High Bays, strip fixtures, and downlight retrofit kits. While the anticipated sales volume is somewhat uncertain, program staff expect strong sales and distributor participation with an increase in participation due to the expanded fixture rebate offering.

2023 Updates, Revisions, Enhancements, Adaptive Management

To adapt to barriers of participation, PSE has increased marketing, outreach, and materials using internal and external tactics. Several distributors have had to decide to close their now lower-producing storefronts. Lighting to Go launched a new set of exterior fixture incentives that are expected to be more productive in 2023.

In partnership with the third party implementer and field services provider, PSE continues to add new distributors that previously were not participating. Outreach to distributors, both at sales floor and at the management level, will continue to increase to improve awareness of the program for the staff that delivers the incentives to the customer.

Through these improved relationships, PSE strives for a clearer understanding of customer businesses and the motivation behind purchasing habits/practices. Program staff will investigate whether developing non-English materials to assist those customers with purchases will increase program awareness.

In 2023, the Lighting to Go program team will continue to build customer relationships, add distributors, and look for new opportunities to encourage participation in the program. This will include incentivizing sales staff at the distributor level, introducing new products to incentivize, and marketing tactics for customer awareness of the program.

PSE aligning with two bordering utilities is a key component to providing distributors a consistent platform to engage customers. PSE, Seattle City Light (SCL) and Snohomish Public Utility District No. 1 (SnoPUD) largely align program offerings and are working with a third party implementer to ensure a cohesive approach.

Equity Focus

Program staff will investigate whether developing non-English materials to assist customers with purchases will increase program awareness.

PSE will continue to identify ways to further engage the contractor and distributor community to increase commercial participation.

In addition to looking for potential measures to add to the program, PSE is also working with its implementation contractors and regional partners to identify ways to ensure Named Communities are incorporated in its expansion efforts. Program staff are assessing the most effective was to engage contractors serving customer in Named Communities to provide the necessary tools and potentially increased rebates for greater equity in commercial lighting programs.

2. Commercial Foodservice & Laundry

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

> *The Commercial Foodservice program serves customers who utilize commercial foodservice equipment. Foodservice measures are offered through both midstream (instant rebates) and downstream models. The Commercial Laundry program was previously grouped under the umbrella of Commercial Foodservice & Commercial Laundry. As of January 1, 2022, PSE sunset the Commercial Laundry program due to low customer adoption and lack of uptake in the current market.*

Commercial Foodservice contributes over 10 percent of natural gas savings across business programs.

Commercial Foodservice

Offering a full suite of equipment categories, PSE's midstream model was first in the country for the commercial foodservice sector. Partnering with local, regional, and national sales channels has proven crucial to broadening program reach.

In 2022-2023, the program will work to onboard the largest online retailer in the country into the program. Additionally, the updated standard enumerated in Washington State House Bill 1444 affects some commercial cooking equipment within the portfolio and there continues to be some uncertainty in the market due to retailers continuing to stock lower efficiency items. In response to this, PSE will continue rebates on fryers, steamers, and dishwashers and program staff will conduct a mid-year assessment in 2022 to determine efficiency baselines for 2023.

2023 Updates, Revisions, Enhancements, Adaptive Management

The Laundry measures in this program have been retired at the beginning of 2022 due to low customer adoption. This section will speak specifically to the Foodservice Program and foodservice industry. Staff will be incorporating new and innovative marketing and outreach efforts to help with customer barriers to participation. Seeing much success in 2022 through email campaigns and social media marketing, the program will continue to use these tools to drive customers to the foodservice equipment distributors participating in the midstream program.

In 2023, PSE will continue to implement a third-party administered midstream incentive model. Program staff expect that this program design will increase customer participation and drive additional savings through the best available sales channels as this hard-hit industry continues to recover from the pandemic. In 2023, there will be a strong focus on a broader incorporation of nationally recognized market actors not historically part of the program, as well as enhancements made available through the online submission portal for all participating midstream foodservice equipment distributors. After market research and with support from the CRAG, PSE will continue to use marked-based efficiency assumptions in 2023 for fryer, steamer, and dishwasher measures, rather than the baselines from 2019 House Bill 1444. In addition, PSE will introduce refrigerator and freezer rebates, while increasing incentives on other appliances.

Equity Focus

The basic principles of the Foodservice program focus around this unique and challenged customer segment, comprised of large electric and natural gas users where the very foundation of their business relies on energy-intensive equipment. They also have difficulty understanding, trusting, and subsequently participating in Energy Efficiency programs, so the program delivery model must reach them in their preferred manner.

In 2023, PSE will continue to focus program efforts toward these preferred channels, enhanced by the expanded Midstream program engagement of local, regional and national market partners. The program will deliver a streamlined point of purchase (POP) experience both in-store and online, and will increase creative marketing efforts and campaigns to raise general industry awareness. With transcreation of program materials, PSE will better serve business owners who speak languages other than English. The program will also coordinate closely with the Small Business Direct Install program, allowing customers to take full advantage of free energy assessments and assist in connecting them with the full portfolio of PSE's offering to the commercial customer base. Examples include appliances, HVAC, and custom grant processing.

3. Lodging Rebates

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

> *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 program is offered through a downstream model and rebates are set at an "up to" amount based on the individual cost of the equipment. PSE reintroduced this program in 2021 with enhanced incentive amounts.*
>
> *After initial interest and customer participation in spring 2021, facility closures, supply chain delays, and shortages caused a slowdown in activity. In 2022-2023, program staff will continue to monitor the market and explore options to bolster participation.*

2023 Updates, Revisions, Enhancements, Adaptive Management

Re-introduced back into the portfolio in late 2021, the Lodging Rebate Program is designed to assist hotel and motel customers in affording the significant cost associated with making changes to their greatest energy burden – heating and cooling. The program is available to all hotel and motel customers utilizing PSE fuel for heating and cooling and is not limited by size, though PSE's small and medium sized hotel and motel customers are the greatest focus. Rebates are offered through a downstream model with a limit amount based on the individual cost of the equipment. The incentives were increased in 2022 and will remain at that level in 2023 to address pandemic, supply chain, and inflation issues. This will allow customers to

have the ability to address multiple retrofits in their facility with the enhanced rebate, and not be limited to installing one or two at a time as budget permits.

The program continues to employ new marketing tactics for the sector, including search engine marketing, email and social media campaigns, as well as direct mailers to announce incentive increases. This broadened awareness is expected to spread through the industry in numerous ways. PSE also intends to partner with the Washington Hospitality Association, as well as other smaller local hotel associations, to market the program and increase awareness.

4. Commercial HVAC

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

This program provides HVAC rebates to small and medium sized commercial customers to help reduce energy usage without having to upgrade costly rooftop equipment. This program works well as a next step for small commercial customers that have participated in the SBDI or Business Lighting program.

While customer participation has seen a slight decline, program staff are focused on marketing strategies to drive participation in 2022-2023. These strategies include targeted messaging delivered directly to selected business and collaboration with manufacturers, distributors and contractors to co-promote HVAC incentives.

2023 Updates, Revisions, Enhancements, Adaptive Management

The Commercial HVAC Program helps commercial customers of all sizes upgrade the energy efficiency of their existing heating and cooling equipment through either retrofit replacement or existing system upgrades. Customer participation is not restricted by size or energy usage, but rather by existing equipment and receiving electric or dual service from PSE. For example, commercial web-connected thermostats must replace non- web connected thermostats and ductless heat pumps must replace zonal electric resistance heating, while all advanced rooftop units <20 years old and without variable speed capabilities are eligible. Small-and-medium business customers are the primary focus for Commercial HVAC as this segment has a greater concentration of web-connected and ductless heat pump opportunities, while big box stores, grocery and larger office buildings are great candidates for Advanced Rooftop Controls

Rebates are offered through a downstream model and have a limit based on the individual cost of the equipment. Several changes were made to the Commercial HVAC measure metrics for 2023. Non-energy impacts were added for all measures where applicable. In addition to the creation of new Commercial Ductless Heat Pump measures to incorporate the

code shift to HSPF2, incentives were increased from $500/ton to $1000/ton in alignment with the RTF source of savings. The program will also employ new marketing tactics for the sector, including search engine marketing, email and social media campaigns, as well as direct mailers to announce incentive increases. This broadened awareness is expected to spread through the industry in numerous ways. Additionally, Commercial HVAC will coordinate closely with the Small Business Direct Install program. This will allow the small and medium business customer base to take full advantage of free energy assessments and assist in connecting them with PSE's full portfolio of prescriptive rebates.

Despite a greater focus on active Commercial HVAC promotion, the program still relies on customers to be aware of PSE incentives and submit their own rebate applications. This leads to a variable project stream and difficulty directly pursing greater savings largely due to the complexity of the equipment. In 2023, PSE will seek to increase ARC measure savings through the exploration of a third-party partner for project sourcing, install, and application. ARC projects were chosen to investigate the third party approach, due to the greater amount of per project savings and equipment complexity barriers as compared to other Commercial HVAC measures.

5. Commercial Midstream HVAC and Water Heat

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

This program works with HVAC and water heater distributors to make high-efficiency HVAC equipment more readily available to commercial customers. This midstream model ensures customers who need emergency or last-minute replacements install qualified products from locally stocked distributors. This program accounts for nearly a quarter of electric savings across business programs.

Revised Federal Minimum Efficiency Standards will take effect in 2023, impacting approximately 40 percent of the current HVAC units listed in the AHRI. For 2022-2023, PSE will add an interim tier of rebates to capture large commercial customers in need of HVAC systems that more closely align with the new standards.

Additionally, the Seattle Energy Code will be updated as of January 2022 to no longer allow Multifamily or Lodging facilities to install natural gas water heating equipment. These installations typically represent about 45 percent of program participation from the City of Seattle and are typically larger projects than the rest of the service area. PSE anticipates natural gas savings in this program to be lower than the previous biennium due to this change.

2023 Updates, Revisions, Enhancements, Adaptive Management

Savings attributed to the 2023 Commercial Midstream HVAC and Water Heat program are anticipated to fall short of originally forecast numbers by 41 percent for electric savings and 31 percent for gas savings.

While there are no changes to the commercial natural gas water heating program offerings, updated gallons per day metrics and typical square footage for select building types led to reductions in claimable energy savings. PSE anticipates the same volume of projects coming through the program but with reduced savings. For this reason, spending is forecasted to be down by only 18 percent.

Federal minimum changes will affect the 2023 HVAC measures with the removal of Tier 1 units in January and the removal of Tier 2 units in July. Program staff are taking a phased approach but will watch the HVAC market and adjust offerings when products manufactured under the old federal minimum are no longer available in the market.

The 2023 commercial heat pump water heater measures contribute to the largest reduction in savings and spending due to market volatility, equipment availability and new larger equipment entering the market. Larger equipment will continue to be processed through PSE's custom grants program. Additionally, the Regional Technical Forum has divided commercial HPWHs into consumer and unitary categories, essentially distinguishing between low usage equipment designed for the residential market and medium to high usage equipment specifically designed for the commercial market. The 2023 program adopts that distinction and splits the commercial measures into two categories 50-80 gallons and 81-120 gallons, which have different savings values based on the gallon per day water usage expected for each equipment size grouping.

Residual impacts from staffing shortages relating to COVID-19 persist. Distributors and branch staff are challenged by the administrative burdens of submitting claims and it continues to be an area of focus for PSE's field services contractors. Increased distributor and contractor engagement will continue to be the focus for 2023, with increased efforts to streamline bulk upload templates and increased support for distributors. The Inflation Recovery Act may also alleviate project slow-downs and increase participation if first cost barriers are minimized for customers. Program Staff will continue to monitor the IRA and identify ways to maximize impacts to program participation levels.

PSE has learned from Distributors via its annual midstream survey that incentives the Program offers provide a means to recoup administrative costs and offer a broader set of products to meet customer requests. Stocking high efficiency products is more commonplace among participating distributors, and allows them to achieve a competitive advantage over distributors that do not participate in the program.

Equity Focus

PSE will continue to identify ways to further engage the contractor and distributor community to increase commercial midstream participation. In addition to looking for potential measures to add to the program, PSE is also working with its implementation contractors and regional partners to identify ways to ensure Named Communities are addressed in its expansion efforts. Program staff are assessing the most effective ways to engage contractors serving customers in Named Communities to provide the necessary tools and potentially increased rebates for greater equity in commercial HVAC and water heating programs.

6. Small Business Direct Install

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

The Small Business Direct Install (SBDI) program contributes over 10 percent of electric savings across business programs. SBDI is designed to help hard-to-reach small business customers in completing lighting, refrigeration and HVAC retrofit upgrades. Participants receive a free energy assessment and are guided through PSE's rebate and custom grant programs. Specifically targeted toward hard-to-reach customers, this program is intended for lower use rate schedules and buildings with less than 10,000 square feet. Customer segments typically include hospitality, restaurant, grocery, retail office spaces, and agriculture.

For 2022-2023, the program is continuing its partnership with Snohomish County PUD to deliver SBDI in their service area. In addition, program staff will continue exploring additional opportunities for natural gas savings and options to better serve small business natural gas customers.

Program staff will also coordinate with other commercial offerings to provide a streamlined customer navigation process between similar program offerings. Additionally, PSE anticipates re-launching the popular community blitz series to engage local cities, municipalities, and tribal customers. This approach was successful in the past but was put on hold due to limitations on in-person activities in the last biennium.

2023 Updates, Revisions, Enhancements, Adaptive Management

As COVID-19 guidance continues to evolve, the SBDI program aims to be flexible to ensure safety for the customer. The program will continue to offer virtual and in-person assessment. PSE will continue the Virtual Blitz model started in 2022, and start to bring back the in-person blitzes as the pandemic recovery conditions allow.

After COVID-19, these new virtual tactics can provide an efficient way to reach customers and complement the in-person outreach and events. These new tactics will help reach aggressive targets in 2023, with the program's electric goal increasing approximately 600,000 kWh from the originally indicated 2023 value, and the natural gas savings goal will remain consistent with the originally indicated savings amount.

The program continues to deliver SBDI to Snohomish PUD territory. The delivery model includes engaging PSE's third-party implementer to perform the same direct installation work in the Snohomish PUD territory, as in PSE electric territory with their established and effective Direct Install model. This allows PSE to deliver a more comprehensive energy saving experience to its natural gas customers and Snohomish PUD will be able to report the electric savings achieved. The implementer's charges are passed through to Snohomish PUD making this approach revenue-neutral, with PSE charging only a small administrative fee. This program has experienced great success and is forecasted to continue doings so.

Equity Focus

One of the largest trends to emerge during the COVID-19 pandemic is small businesses going online and using social media to maintain their operations. Program staff has adapted their marketing approach to include social media campaigns as a way to reach small businesses.

Program staff will continue to research and target PSE's Named Communities, including those that are small-to-medium sized business customers. Continuing our approach using interpreters and folio pieces in multiple languages. PSE's popular SBDI's Blitzes remain the optimum avenue for reaching these Named Communities. Person to person contact is the most effective way to communicate and establish relationships with the Named Communities.

V. Pilots

Schedules E/G 249

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

A. Pilot-Analogous Initiatives

In 2022-2023, Energy Efficiency will implement pilot initiatives that leverage existing programs, leverage existing value-chain relationships, or consist of individual measures.

1. Commercial Midstream

As noted in several program discussions in Chapters 6 and 8, program staff are considering incorporating a third-party administered midstream model into their program offerings. These include Commercial Kitchens, Commercial HVAC, and Single Family Space and Water Heat. Doing so provides a new channel for the distribution of cost-effective measures with proven savings potential. Program staff are being cautious, however, to ensure that there are accounting safeguards in place that will prevent double-counting of savings or paying incentives to both customers and channel partners.

2. Moderate Income Residences

This pilot program, new for 2022-2023, is a collaborative effort within the REM Sector to focus on the moderate income customer segment. It will rely on established, proven measures to encourage participation in a segment that doesn't quite meet low-income qualifications, but often lacks the resources or program awareness of other segments. PSE will report savings achieved through the pilot efforts in the respective programs.

3. Individual Measures

The Multifamily Retrofit program plans to explore the market potential of Package Terminal Heat Pumps in multifamily buildings. These are similar to ductless heat pumps, however there is minimal impact to the exterior of the building. The program has also proposed to expand Air Sealing incentives to sites heated by PSE natural gas. The program has worked closely with PSE Trade Ally contractors who've undergone additional training.

REM staff have also designed a ductless heat pump upgrade incentive, which is expected to drive adoption of units that are even higher-efficiency than standard ductless heat pumps.

In the BEM Direct Install programs, customers will have a custom option to receive incentives for specific equipment unrelated to other business types, such as chick warmers for agriculture, and kitchen ventilation equipment for hospitality establishments. PSE also considers the Commercial Kitchens' initiative to standardize Demand Control Kitchen Ventilation (DCKV) incentive processing to be analogous to a pilot.

4. Targeted DSM

This pilot program, which will entail energy-efficiency measure offerings and demand response projects (see E/G 219), will employ avoided costs in specific localities, identified by PSE's Delivery Systems Planning group to have a potential for Non-Wires and Non-Pipe Alternatives (NWA, NPA, respectively). The specific avoided costs will allow the pilot to offer increased incentives to customers residing in those localities, with the intent of delaying the need for infrastructure improvements, sometimes for up to 10 years.

Since TDSM will utilize existing measure in established programs, all savings will accrue to those programs, and the PSE will not classify the pilot as a "Pilot with Uncertain Savings".

Schedule 249A represents the Demand Response component of Targeted DSM and scheduled to launch in two municipalities in Q4 of 2022, with an immediate emphasis on supporting Single Family customers. Multifamily-specific customer outreach and marketing development will commence during the end of Q4 2022 with the goal of launching in the first half of 2023. Targeted DSM will also begin supporting large use commercial customers via behavioral demand response solutions in 2023 as PSE's Virtual Power Plant (VPP), the software being used to provide demand response capabilities to PSE's service territory, enables behavioral demand response notification systems. The decision to stage the release of direct load control and behavioral demand response capabilities was made as a result of the development cycle of the VPP, which required direct load and behavioral demand response platforms to be separated into multiple development phases to support the programs long-term goals and available resources.

B. Pilots with Uncertain Savings

This section presents a summary of pilot offerings and initiatives related to either Residential or Business Energy Management. These pilots with uncertain savings are excluded from PSE's EIA Penalty Threshold, and are listed in the Pilots section of Exhibit 1's Portfolio View.

The following are pilots that PSE estimates have uncertain savings.

Retail Choice Engine

Also known as the Efficient Product Guide, this pilot is designed to provide customers with an online marketplace, where they can compare energy-efficient products side-by-side rather than researching products individually. The site provides an "energy score", alongside pricing, customer ratings, product details, and more. This pilot will continue to be implemented and evaluated using treatment and control groups in order to evaluate impacts. There are approximately 110,000 residential customers in the various treatment and control groups.

Single Family AMI Enhanced Engagement

This pilot uses AMI meter data to provide customers with near real-time energy usage information via an in-home display. This immediate feedback, paired with customer education, is intended to help customers understand how their home uses energy and how to reduce energy usage. This pilot is expected to launch for customer participation by early 2022 and ramp up to approximately 1,500 customers. Additionally, this pilot will be evaluated during the coming biennium.

Hybrid Heat Pump Pilot

This pilot is designed to quantify the carbon emissions benefit of using heat pumps in conjunction with gas heating furnaces. In parallel, this pilot aims to quantify the electric peak-load benefit, or reduction, when continuing to use gas heating only on the coldest days and an electric heat pump for the remainder of the season. In 2022-2023, PSE will collaborate with distributors, contractors, builders and customers to identify cost-effectiveness, barriers, value proposition, technological constraints, and other key factors that will assess the potential to create a dual fuel heating program.

Small and Medium Business Virtual Commissioning Pilot

Previously named Small and Medium Business (SMB) AMI Enhanced Engagement, this pilot is now known as SMB Virtual Commissioning. This pilot provides a limited number of qualifying customers with very detailed analyses, and potentially disaggregated energy use reporting, providing participating customers with conservation calls to action. PSE provides site specific low-cost/no-cost recommendations and assists the customer to virtually implement the recommendations. In 2022-2023, PSE will continue to evaluate the impacts of COVID-19 on the baseline model and expects to have served 120 customers by 2023.

2023 Updates, Revisions, Enhancements, Adaptive Management

Significant changes to savings and expenditures were made in the Pilots area with the graduation of the Small and Medium Business Virtual Commissioning Pilot to a full program which removed its saving from the area. The increase in expenditure is attributed to the additional planned activity in the Hybrid Heat Pump Pilot. After consultation with the CRAG in 2022 and research completed with the evaluation consultant, the Hybrid Heat Pump pilot program added budget to provide customer incentives.

1. Moderate Income Residences

PSE's initiative to target moderate-income residences is now named "Efficiency Boost". In 2023, this pilot will increase rebates for moderate-income customers—those customers that are not income qualified for low-income assistance, but have difficulty in the capital outlay for higher-cost measures—across a wide offering of Energy Efficiency residential rebates.

2. Retail Choice Engine

PSE is currently working with an independent third-party evaluator to determine customer benefits and savings potential for this tool. Once the evaluation is complete, PSE will determine appropriate next steps and potential continuation of the pilot program into 2023.

3. Single Family AMI Enhanced Engagement

In 2023, PSE staff will work with its third-party evaluator to implement the evaluation plan that is a combination of quasi-experimental design and randomized control trial. In 2022, PSE recruited slightly more than 2,000 customers via email to purchase a Rainforest EMU-2 device which leverages AMI meter data to display their home's energy usage. A subset of customers were invited to a portal with challenges and activities to encourage customers to utilize their device and reduce energy usage. In the spring of 2023, an impact analysis will be performed to determine is the device impacted customer usage and savings achieved.

4. Hybrid Heat Pump Pilot

Leveraging the learnings from the research performed in 2022, PSE added budget to the ACP in order to help customers install at least 275 hybrid heating systems (adding heat pumps to existing gas furnace homes) and 275 cold-climate heat pump systems.

In researching these system types, PSE aims to validate energy (and carbon) impacts as well as electric peak impacts with these alternatives to business-as-usual home heating (and cooling) systems. If the PSE multi-year rate case settlement ultimately includes funds for targeted electrification, including hybrid-heating systems, this work/scope/budget would be superseded by the final settlement agreement.

VI. Regional Programs

In the following program plans, PSE includes the original 2022-2023 Biennial Conservation Plan program overviews, with an updated discussion below with a unique section heading to indicate 2023-specific updates.

A. Northwest Energy Efficiency Alliance

Schedule E254

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

NEEA's updated operational plan for 2022-2023 is included in this BCP as a standalone document, Exhibit 5.

1. PSE Participation in NEEA Operations

Several PSE staff members participate on NEEA committees. Some committees are advisory in nature and others are technically-oriented. NEEA also maintains selected sub-committees and working groups that report up to the senior committees. The majority of the operational committees advise four groups that provide advice and recommendations to the NEEA executive board and board of directors. PSE sits on the board of directors.

Energy Efficiency staff often participate on more than one committee or working group, as well as ad-hoc and limited-time work groups. PSE staff participation includes the following:

- *Regional Portfolio Advisory Committee,*
- *Cost-Effectiveness Advisory Committee,*
- *Commercial New Construction Initiative*
- *Natural Gas Advisory Committee,*
- *Integrated Systems Coordinating Committee,*
- *Controls Working Group,*
- *Northwest Strategic Energy Management Collaborative,*

- *Collaborative Funders Group,*
- *Industrial Collaborative Funders Group,*
- *NEEA Heat Pump Water Heater Pilot, and*
- *Regional Emerging Technology Advisory Committee*

PSE representatives that are a part of the Regional Portfolio Advisory Committee vote on broad initiatives. Other participants collaborate with committee or work group members outside of the committee forums, and bring issues and new initiatives to their groups.

In 2022-2023, PSE plans to participate in NEEA's savings-generating programs, as well as the currently planned "optional" programs:

- *SEM—Strategic Energy Management*
- *Multifamily Stock Assessment*
- *End Use Load Research*
- *As well as other that may be developed during the biennium*.

PSE includes the source of NEEA's biennial savings forecast in the BCP's Exhibit 5, Supplement 1, which enumerates NEEA's conservation programs as allocated to PSE. It is important to note that, regardless of the delivery mechanism, if a savings classification is included in PSE's CPA, PSE will pursue it, whether delivered through NEEA or through an Energy Efficiency program.

2. Natural Gas Market Transformation

The Natural Gas Advisory Committee (NGAC) currently serves both technical and advisory functions. There are no sub-committees established as of the filing of this BCP. As a major funder, PSE staff also participate on this committee.

In 2022-2023 NEEA will focus its efforts on emerging technology and early program development. Key priorities for the natural gas portfolio include:

- *Efficient Rooftop Units (RTUs),*
- *Natural gas heat pumps,*
- *Natural gas heat pump water heaters,*

- *Dual-fuel residential new construction,*
- *Emerging technology and early program development,*
- *Dual-fuel strategies and activities,*
- *Support for the Residential Building Stock Assessment,*
- *Extra-regional engagement to drive Pacific Northwest strategic priorities, and*
- *Triple pane window initiative.*

NEEA does not attribute savings to the specific territory from which they originated. Rather, NEEA apportions savings according to the funder's share. In PSE's case, NEEA would assign 42.01 percent of the regional savings to PSE.

PSE's share of the natural gas market transformation funding is 42.01 percent, with a 2022-2023 total of $3.18 million.

2023 Updates, Revisions, Enhancements, Adaptive Management

NEEA Electric Operations Program Measures are forecasted to be under target in 2023. Heat Pump Water Heaters are a significant driver of the lower than targeted savings due in large part to local utility development of HPWH programs which claim the savings in that sector. Efforts in the residential Refrigerator and Freezer market that drive products using less energy than Energy Star specification are expected to come in above target.

For 2023, three key initiatives in the natural gas portfolio are anticipated to deliver savings: Residential Codes, Commercial Codes, and Equipment Standards. Residential and commercial code savings are from NEEA work on the 2018 Washington State Energy Code that went into effect in February 2021. Standards savings are from work NEEA participated in related to new Federal Department of Energy standards for commercial packaged boilers that will go into effect in 2023.

Additionally, the Efficient Rooftop Top Unit Initiative (ERTU) is planned to move from the program development stage to the market development stage of Market Transformation in late 2022. This initiative is anticipated to generate natural gas savings that would be reported in 2023.

In addition, the High Performance Window Initiative was added to the natural gas portfolio in 2022 after being in NEEA's electric portfolio for several years.

This initiative will be moving to the market development stage in 2023 and has the potential to generate both electric and natural gas savings in 2023.

B. Targeted Demand Side Management

Schedule 219

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

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

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

In 2022-2023, the TDSM initiative will offer the same measures that are available through standard programs. TDSM will offer, however, an increased amount on either measure incentives in the specific localities, through a bonus amount attached to the incentive, or additional, separate incentives. PSE provides a complete listing of available measures in Exhibit 3: Program Details.

2023 Updates, Revisions, Enhancements, Adaptive Management

The Targeted DSM pilot remains on track to launch in 2022, consistent with its original plans. Due to the development period of the Virtual Power Plant (VPP), the software supporting PSE's effort to provide a Demand Response platform to customers, the launch date of Targeted DSM was moved to Q4 of 2022 (originally Q3 of 2022). To ensure launch could occur in our target release year, the Targeted DSM team has created a staged launch of the program. First, the Program will focus initial marketing and outreach efforts to Single and Multifamily customers. As the VPP continues to develop, the Program will begin to offer behavioral Demand Response opportunities to large commercial use customers in the targeted municipalities, as the functionality comes online.

C. Distribution Efficiencies

Schedule E292

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

The Production and Distribution Efficiency program involves implementing energy conservation measures within PSE's own production and distribution facilities that prove cost-effective, reliable and feasible. Within production facilities (power generation), conservation measures reduce ancillary loads at the site and exclude efficiency improvements made to the generating equipment itself. These measures may include, but are not limited to, lighting upgrades, variable speed drives and compressor upgrades. For transmission and distribution (T&D) efficiency, improvements are implemented at PSE's electric substations.

Analyses performed during 2022-2023 planning revealed that there are no cost-effective retrofit measures available for PSE generation facilities. Program staff will maintain examination of these facilities in 2022 for incremental efficiency improvements that can be implemented during other capital upgrade work and will adjust its 2023 Annual Conservation Plan, should cost effective conservation opportunities in generating facilities be identified.

For the 2022-2023 biennium, PSE plans to implement CVR at substations most likely to provide cost-effective energy savings. CVR involves lowering the feeder voltage settings in order to receive energy savings when operating the distribution system more efficiently and within the ANSI Standard of 114 – 126 V. The plan for CVR implementation includes required system upgrades, implementation of RTF prescribed measurement & verification protocols, as well as the required phase-balancing work, which is a precursor to successful CVR implementation.

As of the third quarter of 2021, there are approximately 158 out of a total of 297 substations that have a potential for CVR. Of these, 16 have had CVR implemented, with additional projects planned for 2022-2023.

The planned number of CVR projects in 2022-2023 is an expansion of CVR project implementation. PSE is still implementing the Advanced Metering Infrastructure (AMI) project and ADMS projects. These two projects will enable Voltage Var optimization, an improved CVR method that allows for deeper levels of savings over PSE's current CVR implementation method of line drop compensation (LDC). For the 2022-2023 Biennial Conservation Plan, staff is anticipating to budget for a study that provides an updated methodology for energy savings determination for Voltage Var CVR projects.

This study is dependent on the implementation of PSE's first Volt Var pilot project that is dependent on the completion of the AMI and ADMS projects.

2023 Updates, Revisions, Enhancements, Adaptive Management

For 2023, PSE plans to implement line drop compensation (LDC) CVR at 12 substations. This is consistent with the original 2022-2023 plan of 24 over the biennium. PSE's Major Projects, Electric System Planning, and Program Infrastructure teams have been working through challenges related to supply chain shortages of regulators. Regulator installation and replacement are often needed as part of the CVR implementation process. The teams have been working to mitigate this by batch ordering multiple regulators for the planned projects. Additionally, the teams are working through technical challenges with implementing CVR on circuits that have previously implemented distribution automation schemes.

Planning for Volt-Var Optimization implementation has started, however implementation of the two pilot projects is now anticipated for 2025. Additionally, PSE staff decided to internally develop a measurement and verification process to quantify savings from Volt-Var implementation versus hiring a consultant to develop a study. PSE plans to provide the CRAG with an update in early 2023 to discuss program progress and measurement and verification of Volt-Var Optimization.

VII. Portfolio Support

In the following program plans, PSE includes the original 2022-2023 Biennial Conservation Plan program overviews, with an updated discussion below to indicate 2023-specific updates.

Portfolio Support functions and activities provide needed services to Residential and Business Sector program staff. Services include delivering a wide range of options for customers to ask questions and obtain information about PSE's energy efficiency programs, and ensure that PSE's awareness messaging is consistent across all platforms. Portfolio Support staff process enormous amounts of rebate application and measure installation data, efficiently process and follow-up on rebate applications, integrate PSE cost-effectiveness and UES savings methodologies in the region, and provide resources for developing new and updated program offerings.

Over the previous biennia, PSE has endeavored to provide maximized transparency, while maintaining reporting consistency and efficiency. In the 2022-2023 biennium, PSE continues to improve its budget representations in the Portfolio Support group, as will be discussed in the following sections.

The majority of functions and activities in the Portfolio Support group will continue to operate consistently with the originally outlined 2022-2023 Plan. As readers will note, several functions are associated with the support of Energy Efficiency's project management software DSMc, or will provide direct support of the implementation of PSE's Demand Response program.

A. Programs Support

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

> *The Programs Support group provides critical services to program staff, which is particularly crucial during planning periods, as they facilitate several planning initiatives for program staff, manage the RFP/RFI process, and produce and maintain many process manuals. Their roles also include IT support, product positioning and Integrated Go-To Market planning, internal communications, and change management. Other teams included under the Programs Support group include the Data and Systems Services, Verification, Rebates Processing, and Trade Ally Support.*

2023 Updates, Revisions, Enhancements, Adaptive Management

No updates since the filing of the BCP.

B. Data and Systems Services

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

This team is responsible for reviewing and ensuring data integrity from a wide variety of sources, including vendors, program staff, and contractors. They interface with several data systems, including SAP, DSMc (a project tracking system), and EES Tracking (a portfolio tracking and forecasting system). The team provides systems for program staff to enter measure data on a monthly basis to feed reporting systems, and uses measure data and projections to build monthly forecasting models.

In 2022-2023, the team will continue employing adaptive management and Six-Sigma techniques to ensure updated and reliable data, reporting, and forecasting tools. The team will also continue collaborating on data-driven dashboards to help Energy Efficiency staff better monitor and improve performance.

2023 Updates, Revisions, Enhancements, Adaptive Management

In 2023, the Data and Systems Support team will focus on implementing new programs and measures to process TDSM measures and DR incentives. The team is also building a new process within its DSMc system for low-income agencies to enter and track their project data.

C. Rebates Processing

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

This team plays a critical role in PSE's ability to achieve its customer participation and conservation goals, as they are a key energy-efficiency contact point for PSE customers. The staff must be well versed in all Energy Efficiency programs, the terms and conditions of PSE incentives, and be sensitive to how they represent the Energy Efficiency department to customers. The team also uses feedback provided by PSE constituents to collaborate with program staff to make process improvements within the programs throughout the year.

Team efforts in 2022-2023 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. Additionally, the team will be transitioning Appliance and Thermostat rebates to in-house processing.

2023 Updates, Revisions, Enhancements, Adaptive Management

No updates since the filing of the BCP.

D. Verification Team

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

The Verification team will perform both on-site and virtual inspections and confirmations of randomly-selected participant homes and business to assure energy-efficiency measures are properly installed. The team will update verification policies, protocols, guidelines, and processes as necessary.

The team has increased capacity for more virtual verification options for customers and will continue to expand virtual verifications in 2022-2023, except where on-site inspections are required to retain the integrity of the verification.

2023 Updates, Revisions, Enhancements, Adaptive Management

In 2023, the Verification team (V-Team) will continue implementing updated verification approaches, including 100 percent virtual verifications, using photographs, video, and real-time video conferencing. The majority of programs are still being verified virtually, however, our commercial rebate programs will return to in-person inspections in 2023. We also received approval to conduct in-person inspections for customer escalations and/or situations where a virtual option is not possible.

E. Trade Ally Network

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

The Trade Ally Network (TAN) is PSE's formal conduit for trade ally engagement with and participation in PSE's Energy Efficiency Programs. The TAN team engages approximately 200 independent contractors through the network who deliver energy efficiency (and ancillary) products and services to PSE's customer base.

In addition, the TAN team develops tools and resources to engage broader groups of trade allies including distributors, manufacturers, professional organizations, etc., to support more inclusive opportunities for trade ally partnerships.

2023 Updates, Revisions, Enhancements, Adaptive Management

The Trade Ally Network anticipates higher referral revenue as markets continue to stabilize and customers are completing projects. As the Trade Ally Network continues to support PSE programs, we will be looking to bring new products & services to the customer referral service. In order to expand these offerings, we will be looking to increase staffing of the program as well as continued improvements to the Trade Ally Portal.

F. Programs Support

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

This functional group is responsible for ensuring that program staff have the most updated cost-effectiveness calculation data and receive information on regional measure savings trends. The team will provide NEEA-PSE savings attribution coordination, tracking and reporting, and will provide RTF subcommittee participation support.

2023 Updates, Revisions, Enhancements, Adaptive Management

The description included under Program Support in the original 2022-2023 BCP was incorrect; a corrected description of this group's function follows: The Programs Support organization, as its name implies, provides critical services to Energy Efficiency program staff. These services allow program staff to focus on achieving cost-effective conservation savings while prudently using ratepayer funds. The Programs Support team's role is particularly critical during Energy Efficiency planning periods, as they facilitate several planning initiatives for program staff, manage the RFP/RFI process, and produce and maintain many Energy Efficiency process manuals. Their role also includes support of other groups within Energy Efficiency, including the Data and Systems Services team, Verification, Rebates Processing, Product Positioning, Internal Communications, Employee Engagement and IT support. The organization will continue to provide internal program support, process improvement initiatives, and operational effectiveness throughout 2023.

G. Trade Ally Support

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

In 2022-2023, the Trade Ally Support team will manage PSE's memberships in trade associations that benefit customers, including:

- *Building Owners & Managers Association (BOMA) of Seattle & King County,*
- *Consortium for Energy Efficiency (CEE),*

- *E Source,*
- *Electric League of the Pacific Northwest,*
- *Energy Solutions Center (ESC), and*
- *Northwest Energy Efficiency Council (NEEC).*

PSE provides extensive discussions of the objectives satisfied for each Energy Efficiency Trade Ally organization, including organization description, the nature of the expense, the need for PSE participation, and if there are associated sponsorships or events in Exhibit 3: Program Details.

2023 Updates, Revisions, Enhancements, Adaptive Management

No updates since the filing of the BCP.

H. Automated Benchmarking System

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

This free website, called MyData and launched in the autumn of 2013, provides building owners an easy to use, self-service portal that allows users to set up automated monthly reporting of their building's energy usage. The tool was designed and offered by PSE, and provides building owners, managers and operators a convenient way to track and assess energy consumption of their buildings. Customers register their property to receive quick and accurate data on a monthly basis for their building. Customers can track energy usage for a portfolio of buildings, track the results of energy efficiency projects, develop Energy Star® ratings, and comply with state and city regulations.

In 2022-2023, an extensive upgrade is planned for the software, which now must serve the data needs of building owners and operators throughout the PSE service area, consistent with requirements of HB 1257. This system replacement accounts for approximately $4 million in budget increase for the coming biennium and includes development, PSE IT support, and subscription costs.

2023 Updates, Revisions, Enhancements, Adaptive Management

PSE successfully migrated existing MyData users to the new EnergyCAP tool in the fall of 2022. This tool continues to be free to PSE customers, and provides building owners the same capabilities for automated monthly reporting of their building's energy usage to Energy Star Portfolio Manager. Additionally, users will gain access to daily and interval data, have more self-service options, and have access to reports for monitoring consumption data over time. In 2023, PSE will begin outreach to building owners who must comply with the Clean Buildings Law to inform them of this tool and encourage them to begin benchmarking.

I. Energy Advisors

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

This expert group brings efficiency into PSE's customer homes by guiding them in changing behaviors, understanding their energy use, and assisting them in using PSE's programs that are best for the customer's individual circumstances. Energy Advisors also promote and explain PSE's renewable energy programs, community challenges, available promotions and tax incentives. The Energy Advisors assist customers with these services over the phone, email, via virtual and in-person events and through social media.

2023 Updates, Revisions, Enhancements, Adaptive Management

No updates since the filing of the BCP.

J. Energy Efficient Communities

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

The Energy Efficient Communities team emphasizes proactive, direct residential and business customer outreach, with a focus on in-person engagement.

This strategy will augment the other forms of energy-efficiency exposure that customers receive, including phone contact, digital (including social media, radio, television), and print. The team works to discover locally-appropriate ways of engaging with customers by leveraging PSE's resources, community knowledge and partner support.

As Energy Efficiency considers its hard-to-reach and potentially underserved customers, the Energy Efficient Communities team will focus their attention on the design of new- and expansion of its existing- outreach tactics to reach these customers.

Energy Efficient Communities team members are embedded within specific regions of PSE's service area to provide an improved connection to the multiple community stakeholders that Energy Efficiency serves throughout the service area.

The team works to find areas with lower program participation to directly target engagement with customers. They provide leads for the small business programs through partnerships with cities, local business associations and community groups, through designing direct engagements as well as through presentations to the small business community.

Specific activities and customer engagements can be found under the header of "Marketing and Outreach Plan" in each program description within Exhibit 3: Program Details.

2023 Updates, Revisions, Enhancements, Adaptive Management

The Energy Efficient Communities team emphasizes proactive, direct residential and business customer outreach, with a focus on in-person engagement.

This strategy will augment the other forms of energy efficiency exposure that customers receive, including phone contact, digital (including social media, radio, television), and print. The team works to discover locally appropriate ways of engaging with customers by leveraging PSE's resources, community knowledge and partner support.

As Energy Efficiency considers its customers in the Named Communities, the Energy Efficient Communities team will focus their attention on expanding and creating new outreach tactics to reach these customers. Energy Efficient Communities team members are embedded within specific regions of PSE's service area to provide an improved connection to the multiple community stakeholders that Energy Efficiency serves throughout the service area.

The team works target engagement with customers through a variety of tactics. They provide leads for the small business programs through partnerships with cities, local business associations and community groups, through designing direct engagements as well as through presentations to the small business community.

Specific activities and customer engagements can be found under the header of “Marketing and Outreach Plan” in each program description within Exhibit 3*: Program Details*.

Adaptive Management

With the in person, on the ground nature of the EE Communities team, and the increased focus on Named Communities, the team is shifting more of its proactive efforts to Named Communities and small to medium businesses. The team will continue to support general residential and large commercial programs through their work in the community, but the majority of the proactive efforts will be focused on the audiences that benefit more from in person engagement or partnerships with trusted community organizations and leaders.

K. Customer Engagement

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

Beginning in the 2022-2023 BCP, this section replaces Exhibit 7: Marketing and Outreach Summary.

The Customer Engagement team’s (CET) responsibilities include the promotion of energy efficiency program offerings to achieve targets. This is accomplished by exercising promotional marketing and outreach to various market segments: residential direct-to-consumer, commercial and industrial, retailer, dealer, multi-family retrofit, home and commercial builder and trade ally groups—with the goal of influencing and motivating those in PSE’s service area to take specific, energy-efficient actions. The team anticipates customer needs, fosters community within specific channels and ensures delivery of PSE services and products through a variety of marketing programs, promotions, communications, outreach, and events.

Communications efforts in 2022-2023 will continue to focus on the customer experience. Messaging and campaign deliverables will encourage customer engagement with PSE programs, events and promotions. Overall marketing and outreach initiatives will drive customers to engage in programs, offerings, savings, and promotions online and in person at various events per COVID-19 safety guidelines and protocols.

The Customer Engagement team will continue to partner closely with the EE Communities team and relationship management teams to ensure that energy efficiency messaging and programs are consistent, streamlined and targeted geographically. The Customer Engagement team will continue to align deliberate planning and outreach with regional teams and locations that can serve as efficient

delivery channels for program opportunities within localized communities with localized needs.

CET will continue to assess how to leverage PSE employees and contractors as delivery channels within their personal communities, and as they come into contact with customers in their daily work effort.

PSE will continue to utilize its' customer-friendly brand platform that will incorporate energy efficiency messaging in 2022-2023 and is expected to positively influence adoption of energy efficient behaviors and use of energy efficient products.

Overall, the CET theme for 2022-2023 is to continue the focus on customer engagement, anticipate their needs, promotion and awareness, and deliver targeted and integrated programs and offerings to our customer base.

Specific activities and customer engagements can be found under the header of "Marketing and Outreach Plan" in each program description within Exhibit 3: Program Details.

2023 Updates, Revisions, Enhancements, Adaptive Management

The Customer Engagement team's (CET) responsibilities include promoting energy efficiency program offerings to achieve targets, accomplished by exercising promotional marketing and engagement to various market segments: residential direct-to-consumer, commercial and industrial, retailer, dealer, multi-family retrofit, home and commercial builder and trade ally groups—with the goal of influencing and motivating those in PSE's service area to take specific, energy-efficient actions. The team anticipates customer needs, fosters community within specific channels and ensures delivery of PSE services and products through a variety of marketing programs, promotions, communications, outreach, and events.

Communications efforts in 2023 will continue to focus on the customer experience. Messaging and campaign deliverables will encourage customer engagement with PSE programs, tools, events and promotions. Overall marketing initiatives will drive customers to engage in programs, offerings, savings, and promotions online and in person at it is safe to do so.

The Customer Engagement team will continue to partner closely with the EE Communities team and relationship management teams to ensure that energy efficiency messaging and programs are consistent, streamlined and targeted geographically. The Customer Engagement team will continue to align deliberate planning with regional teams and locations that can serve as efficient delivery channels for program opportunities within localized communities with localized needs.

CET will continue to assess how to leverage PSE employees and contractors as delivery channels within their communities, and as they come into contact with customers in their daily work effort.

PSE will continue to utilize its customer-friendly brand platform that incorporates energy efficiency messaging, and is expected to influence adoption of energy efficient behaviors and use of energy efficient products. Overall, the CET theme for 2023 is to continue the focus on customer engagement, anticipate their needs, promotion and awareness, and deliver targeted and integrated programs and offerings to our customer base.

Specific activities and customer engagements can be found under the header of "Marketing and Outreach Plan" in each program description within *Exhibit 3: Program Details.*

L. Events

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

> *The Events team will continue to manage requests from communities—including those considered to be hard-to-reach or proportionately underserved.*
>
> *The team seeks out events and presentation opportunities while engaging with organizations and municipalities as part of the overall outreach strategy for each of our Energy Efficiency programs. PSE pivoted to virtual events to stay connected with customers during COVID-19, and will continue planning events and follow safety guidelines during the different phases of re-opening.*
>
> *Specific activities and customer engagements can be found under the header of "Marketing and Outreach Plan" in each program description within Exhibit 3: Program Details.*

2023 Updates, Revisions, Enhancements, Adaptive Management

The Events team will continue to manage requests from communities—including those in Named Communities. In 2022, in-person events have increased and are returning to the pre-pandemic levels. Budget has been added in 2023 to cover the staffing cost of the in-person events.

The team seeks out events and presentation opportunities while engaging with organizations and municipalities as part of the overall outreach strategy for each of our Energy Efficiency programs.

Specific activities and customer engagements can be found under the header of "Marketing and Outreach Plan" in each program description within *Exhibit 3: Program Details*.

In 2022, the Events team hired additional staff that will be focusing on developing and executing the Commercial (BEM/SMB) event strategy. Budget was added to cover the cost the labor and cost of additional events in 2023. The plan is to leverage both in-person and virtual events.

M. Customer Digital Experience

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

Customer Digital Experience is designed to support the development and maintenance of tools that simplify the energy-efficiency educational process, providing interactive, engaging experiences that drive PSE's customers to manage and lower their energy usage. The team also supports interactive content development, e-newsletters and other miscellaneous software applications, including online form, database and web hosting services.

These tools help customers understand the specifics behind their energy usage, show neighbor comparisons (residential customers)[12], and provide new ways to encourage efficient behaviors, by suggesting personalized tips, tools, ideas and checklists, based on a customer's automated energy usage profile and self-assessment information.

2023 Updates, Revisions, Enhancements, Adaptive Management

No updates since the filing of the BCP.

N. Customer Awareness Tools

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

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 Unusual Usage Alerts and Seasonal Readiness Emails.

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

2023 Updates, Revisions, Enhancements, Adaptive Management

No updates since the filing of the BCP.

O. PSE Marketplace

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

Launched in January 2021, PSE Marketplace is a successor to ShopPSE and is an online shopping platform featuring a selection of energy-savings devices for gas and/or electric customers. The products sold and instant rebates provided through this service are aligned with and represented in program measure tables.

PSE and the vendor will continue to focus on the customer journey to streamline participation and maximize value. For 2022-2023, PSE will also consider adding more products to the marketplace.

2023 Updates, Revisions, Enhancements, Adaptive Management

In 2023, the PSE Marketplace will continue to offer an online platform with high utility attribution where shoppers can easily validate that they are a PSE customer and receive instant discounts on rebated products such as lighting and smart thermostats. PSE will carry forward robust marketing efforts and will closely monitor customer adoption and use of the site for the purposes of continual improvement. PSE carefully considers the customer journey to streamline participation and maximize value. PSE has been adding new products and promotions since the platform launched in January 2021 and will continue to pursue additional product opportunities in 2023.

P. Market Integration

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

For 2022-2023, the Market Integration group will continue supporting energy efficiency customer awareness efforts, including advertising, social media, email and other content production. The team will also launch an Energy Efficiency promotional partnership with local professional hockey team, The Kraken, and Climate Pledge Arena.

2023 Updates, Revisions, Enhancements, Adaptive Management

In 2023, the Market Integration team will continue supporting broad, general awareness of energy efficiency rebates, incentives, tools and services to help customers reduce their energy usage and costs. Efforts will also support the enhancement of online energy-efficiency tools, the creation and distribution of digital content and virtual engagement opportunities for customers through email and social media channels, and coordinating with traditional communications strategies and tactics.

Market Integration will continue a vigorous advertising and customer engagement campaign that began in 2020, to raise customers' awareness of solutions PSE has to help them save on their energy costs, and provide educational and actionable steps customers can take to use less energy. The 2023 campaign will include video, radio, print, direct mail and digital tactics, as well as continuation of a promotional advertising partnership with the Seattle Kraken National Hockey League Team and Climate Pledge Arena. The partnership leverages region-wide excitement about the area's newest sports franchise, and the thematic tie between the Seattle Kraken and Climate Pledge Arena's demonstrated sustainability, net-zero carbon and energy efficiency efforts, and PSE customer interest in sustainability at their homes and businesses.

The Seattle Kraken and Climate Pledge Arena partnership includes broadcast-visible signage, in-arena and in-game events, education and promotions on energy efficiency rebates and solutions, far-reaching email and social media promotion, and opportunities for PSE to leverage the Kraken and Climate Pledge Arena brands. This customer engagement extends year-round and beyond the arena, for those who may not be able to visit in-person or attend a game.

VIII. Research & Planning

A. Conservation Supply Curves

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

The purpose of the Conservation Supply Curve is to complete a Conservation Potential Assessment (CPA) for the company's Integrated Resource Plan (IRP).

PSE's 2023 Electric and Natural Gas CPA process will begin in early 2022 to inform the subsequent biennium planning cycle. The 2022-2023 budget includes costs to complete the CPA, which includes input analysis for the modeling, the modeling analysis itself, stakeholder engagement, reporting, and development of inputs for biennial program planning.

2023 Updates, Revisions, Enhancements, Adaptive Management

The outputs and results from the 2022 Conservation Potential Assessment (CPA) project will be fed into the company's Integrated Resource Plan (IRP) models, both electric and gas. The models take the achievable technical conservation potential, organized into cost effective bundles or groups (of similar cost-effective value), to select how much conservation is cost effective, which in turn informs the 2024-2025 biennium targets. We also expect to begin ramping up the 2024 CPA process early in 2023 (beginning with the RFP process) with work beginning in the fall, at the latest.

B. Strategic Planning

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

The Strategic Planning group's 2022-2023 primary activities will include support for the implementation of the regional Residential Building Stock Assessment, research focused on leveraging AMI interval data to understand peak load impacts from conservation measures and programs, and continued support for the Regional End-Use Load Research study.

2023 Updates, Revisions, Enhancements, Adaptive Management

The team will provide ongoing support for building stock assessments, the regional end-use load research study, the regional technical forum, and investigating the impacts on system peak from conservation measures. We continue to scan how to incorporate Non-Energy Impacts to our measures; a specific focus in 2023 will be addressing refrigerants.

C. Market Research

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

The Market Research activities include energy-efficiency customer satisfaction surveys and tactical program target-marketing support. This team of analysts will provide much-needed customer data, including an understanding of customer perceptions, barriers to the adoption of energy-efficient behavior, and tracking customer awareness of energy-efficiency programs. They will also support program-specific requests for analyses of localized customer characteristics, attitudes, energy-usage trends, and behaviors.

2023 Updates, Revisions, Enhancements, Adaptive Management

In 2023, Market Research will focus on developing tools to track and evaluate program performance across Named Communities as identified in PSE's CETA, as well understanding the decreased participation rates among low-income customers to generate increased effectiveness in program engagement.

Regional market research includes engagement with numerous NEEA advisory committees, including emerging technology. At the program level, we continue to research how to leverage data to inform program management, including merging customer data with external datasets.

D. Program Evaluation

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

Exhibit 6: Evaluation Plan, describes an ongoing process for prioritizing measures and programs, as well as the four-year timetable to evaluate all Energy Efficiency programs, consistent with condition (6)(c). A detailed table of evaluations planned for the upcoming biennium are included in the exhibit.

2023 Updates, Revisions, Enhancements, Adaptive Management

Evaluations are continuing as planned although minor updates to specific programs evaluations have been identified. Program evaluations follow a typical 4-year cycle rather than a full evaluation of every program this biennium, as erroneously reported in the 2022-2023 BCP Exhibit 3. Additionally, because it is a newly launched program, the PSE Marketplace Program evaluation has been replaced with the Appliance Program Evaluation. PSE Marketplace will be evaluated in a future biennium once enough data has been collected to facilitate a full process and impact evaluation.

In 2022, PSE received the final evaluation results for its Commercial New Construction, Lighting to Go, Small Business Direct Install, and Commercial Foodservice programs. These evaluations were submitted to PSE stakeholders and the WUTC in our 2021 Annual Conservation Report, Exhibit 6, Supplement 1. The Commercial SEM program, evaluated in the same period, is still being completed, and PSE expects to submit the evaluation with its 2022 Annual Conservation Report.

Also in 2022, PSE began a new round of non-residential program evaluations, which will include Business Lighting, Commercial HVAC, Commercial/Industrial Retrofit, and Large Power User 449 and non-449 programs. These evaluations are expected to be completed at the end of 2023.

Outside of evaluations required under a four-year cycle by regulation, PSE is also bringing evaluation resources in support of pilots and program research. Our evaluation contractor began a study of LED commercial market penetration in the region, using data from NEEA's Commercial Building Stock Assessments and Bonneville Power Administration. The evaluation team is monitoring the early stages of the Power Takeoff pilot, an innovative approach to capturing savings in small and medium-sized businesses using performance-based contracting methods, and our contractor will assist in the Evaluation, Measurement, and Verification of PSE's Demand Response pilot program.

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IX. Other Customer Programs

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

In the following program plans, PSE notes original 2022-2023 Biennial Conservation Plan program overviews in *italics* to differentiate and provide a point of comparison with the updated 2023 program plans.

A. Net Metering

Schedule E150

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

As of August 31, 2022 PSE has a total of 124.5 MW of net metered generation operating in its service territory – an increase of over 25 MW from the previous year. Program staff anticipate that strong adoption will continue with the expansion of theutility net metering threshold requirements in Washington as of July 2019; strong customer interest; and the restoration of the 30% federal investment tax credit. Over 83% of net metered projects are on single-family residential properties, but PSE has seen an increase in solar installations on commercial buildings over the past year and anticipates that will continue into 2023.m, Washington's Clean Energy Transformation Act will also bring new opportunities for customer generation to sectors that have previously been under-served by the State's renewable energy incentive programs.

2023 Updates, Revisions, Enhancements, Adaptive Management

The increase in net metering interconnection requests over the past year has resulted in higher program administration costs in to maintain targets. PSE has continued to add staffing resources to keep up with the increase in new net metering requests. This includes new resources to facilitate the timely interconnection of new solar projects, and customer billing resources dedicated to setting up net metered billing for each new customer. The Customer Connected Solar team continues to work with customers and installers to facilitate timely interconnections and to set appropriate expectations, even as system interconnections become more complex with the addition of behind-the-meter storage.

B. Targeted Demand Response

Schedule E/G 249A, E/G 271

Original 2022-2023 Biennial Conservation Plan Content (For Reference Only)

The purpose of the Localized Demand Response Pilot (DR) is to evaluate DR options applicable to identified Non-Wired Alternatives (NWA) projects in specific, targeted localities. Attributes this pilot program will evaluate include 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.

Demand Response projects will be both electric and natural gas. PSE provides a complete discussion of the pilot in Exhibit 3: Program Details.

2023 Updates, Revisions, Enhancements, Adaptive Management

No updates since the filing of the BCP.

C. Demand Response Program Management

Schedule E XXX

PSE plans to begin designing and implementing Demand Response (DR) programs in 2023 to help meet the needed capacity shortfall forecasted in our Integrated Resource Plan (IRP) and detailed in our Clean Energy Implementation Plan (CEIP). The Energy Efficiency team will be designing and managing the implementation and marketing of these DR programs. While the DR programs operational expenses will be accounted for through Power Purchase Agreements (PPAs) and recovered through rates, the program management will be included, and recovered, in the conservation rider.

X. Glossary of Terms

Calculated Savings	This savings type is different than deemed values (described below). This term indicates that there is a pre-approved, stipulated input savings value (or cost) per measure. This value (or cost) is then multiplied by site-specific input values to arrive at the overall savings value (or cost).
Channel	Within an Energy Efficiency Residential or Business sector, an organization that is established to focus on the value chain—consisting of manufacturer, distributor, dealer, contractor to the end-use customer—with the most similar market, delivery methods and ultimate purchasers or product users.
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 100177, 2014-2015 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.
Deemed 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 LED 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.

Glossary, continued

Direct Benefit to Customer (DBtC)	Rebates, grants, credits or services that are of value to customers. Services can include, but aren't limited to, credits on a monthly bill, upstream incentive provided to channel partners or trade allies—either within the PSE service territory or regionally—and free energy efficient devices available by mail.
Direct-Install Measure	A conservation measure that is installed by a PSE representative—rather than a PSE customer—into a qualifying structure.
Distribution	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.
EIA	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.
I-937	An informal reference to the 2006 voter initiative, The Washington Clean Energy Initiative. The vote resulted in the creation of RCW 19.285 and WAC 480-109, which, by law, is now referred to as the Energy Independence Act (EIA).
Measure	A product, device, piece of equipment, system or building design or operational practice used to achieve greater energy efficiency or to promote Fuel Conversion and Fuel Switching. Unless specifically enumerated in a specific Energy Efficiency Program, all Measures, proposed by Customers or otherwise, shall meet or exceed the efficiency standards set forth in the applicable energy codes, or, where none exists, standard industry practice as determined by the Company. Measures will meet common construction practices, and meet industry standards for quality and energy efficiency.[13] Measures should also meet cost-effectiveness standards.
Orders **(see also Conditions)**	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 ACP, PSE is operating under Order 01 of Docket UE-171087.

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

Glossary, continued

Program	Programs may consist of a single measure, an assortment of related measures or a suite of measures that are related strictly by delivery type or customer segment.
PSE Deemed	Relative to measure savings types (Custom, Calculated, PSE Deemed or RTF Deemed), these measures are supported by PSE engineering calculations or evaluation studies, in compliance with WAC 480-109-100(5).
RTF Deemed (see also UES)	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).
Savings	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. Gas savings are counted at the customer natural gas meter. 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 Energy Efficiency 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.
System	In this document, System may have the following meanings: 1) Any software program—supported by PSE's IT department or otherwise—or physical apparatus used to record, track, compile, report, archive, audit energy savings claims or financial data. 2) Electrical, and/or natural gas equipment that is either attached together or works in concert to provide space conditioning, plumbing functions or other end-uses associated with structures, such as HVAC systems, pumping systems, etc.
Transcreation	A term coined from the words "translation" and "creation", and a concept used in the field of translation studies to describe the process of adapting a message from one language to another, while maintaining its intent, style, tone, and context.

Acronyms

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
BCR	Biennial Conservation Report
BEM	Business Energy Management
BOMA	Building Owner and Managers Association
CBTU	Comprehensive Building Tune-Up (program in the BEM Sector).
C/I	Commercial/Industrial. References programs in the Business Energy Management sector.
CRAG	Conservation Resource Advisory Group
EES	Energy Efficiency Services; an acronym that is still associated with some tracking and reporting systems and databases, referencing Energy Efficiency'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
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

Acronyms, Continued

NEBs, NEIs	Non-Energy Benefit or Impacts, Quantifiable. Attributes having a direct cost-effectiveness correlation applicable to the Total Resource Cost test and Participant Cost Test. It is important to note that any reference to NEBs in any PSE document refers to those that are quantifiable. Any non-quantifiable benefits will be specifically noted.
NEEA	Northwest Energy Efficiency Alliance
O&M	Operations & Maintenance
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).[14]
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.[15]
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

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

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

Conclusion

This concludes Energy Efficiency's 2023 Annual Conservation Plan. PSE acknowledges, and is very appreciative of the partnership with the CRAG and the collaboration that was cultivated with CRAG members throughout 2022. PSE looks forward to further success in 2023.

PSE additionally appreciates the input and cooperation of its regional partners, other PSE divisions, and its constituents. As PSE progresses through the upcoming biennium, PSE will continue to keep its Stakeholders apprised of progress, program refinements, measure updates, and other adjustments as PSE utilizes its business management acumen to anticipate and stay ahead of regional conditions in moving toward achievement of its 2022-2023 biennial savings targets.

Most importantly, PSE extends its thanks to PSE customers. PSE sincerely appreciates their acknowledgement of its efforts and trust that they put in the dedicated men and women of Energy Efficiency. PSE is a steward of their efficiency efforts to thoughtfully use the funds that they provide and improve the environment for them and their children. PSE consistently strives to provide the highest level of customer service in the Northwest.

The Energy Efficiency staff look forward to a productive and collaborative 2023.

Respectfully submitted,

PSE PUGET SOUND ENERGY

Puget Sound Energy
Energy Efficiency