



2021 Annual Conservation Plan

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2021 Annual Conservation Plan Supporting Documents

- Exhibit 1: Order number level budget and savings details
- Exhibit 2: Cost effectiveness calculations, including
 - Supplement 1: Non-Energy Impact Database
 - Supplement 2: Plan for Valuation of Non-Energy Impacts
- Exhibit 3: Program details, with measure tables, target market, marketing plans, customer incentives
- Exhibit 8: Updated EM&V Framework
- Exhibit 10: Northwest Energy Efficiency Alliance Plan



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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 2021 Annual Conservation Plan (the Plan or ACP). The Plan represents program revisions, improvements, and modifications that PSE is putting into place in order to update its originally indicated 2021 savings and anticipated expenditures in the 2020-2021 Biennial Conservation Plan (BCP). A key consideration that has influenced every element of Energy Efficiency’s 2021 planning exercises is the global COVID-19 pandemic. Readers will note the extensive adaptive management that program staff have applied to address issues such as building load revisions, construction delays, labor furloughs, product shortfalls, and customer segments that were significantly impacted by the pandemic.

Table I-1: 2021 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: 2021 Energy Efficiency Savings Goals and Budgets

2021 Energy Efficiency Portfolio Amounts					
	Originally-Indicated		Updated ACP Values		Revised TRC
	Savings	Budgets	Savings	Budgets	
Electric	230,118 MWh	\$96,266,985	208,965 MWh	\$102,700,629	1.72
<i>aMW</i>	26.3 aMW		23.9 aMW		
<i>Percent Change</i>			-9.2%	6.7%	
Natural Gas	3,374,734 Therms	\$19,426,121	3,389,902 Therms	\$19,432,109	1.68
<i>Percent Change</i>			0.4%	0.0%	
Total Budget		\$115,693,106		\$122,132,738	
<i>Percent Change</i>				5.6%	

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.

Tables in Chapter 3: *2021 Annual Conservation Plan Development*, page 35, present additional summaries at the Sector level. The Company requests that the Commission allow the Plan to become effective on January 1, 2021.

All references to electric 2021 updates are to savings and budget figures enumerated in PSE's Petition to Modify Electric Savings Targets, which the Commission approved in Order 02, Docket UE-190905 on May 21, 2020. All references to natural gas 2021 updates are to savings and budget figures enumerated in PSE's original 2020-2021 BCP filing on November 1, 2019, and approved by the Commission on December 18, 2019 in Order 01.

As is the case in many other aspects of worldwide issues in 2020, Energy Efficiency program results are being (as of the writing of this Plan), significantly impacted by the global COVID-19 pandemic. PSE provides extensive discussions throughout the Plan on its adaptive management steps to address these conditions.

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 2021.

A. Influence of ACP Updates on 2020-2021 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 2020-2021 electric and natural gas total savings³.

Table I-2: 2020-2021 Total Utility Conservation Goal Forecast

2020-2021 Energy Efficiency					
Total Utility Conservation - Projection					
	Originally Indicated		2020 YE Forecast + 2021 ACP		Revised TRC
	Savings	Budgets	Savings	Budgets	
Electric	526,044 MWh	\$193,876,789	437,573 MWh	\$169,289,661	2-year TRC will be calculated in the 2020-2021 Biennial Conservation Report.
<i>aMW</i>	<i>60.1 aMW</i>		<i>50.0 aMW</i>		
<i>Percent Change</i>			<i>-16.8%</i>	<i>-12.7%</i>	
Natural Gas	7,774,516 Therms	\$36,197,964	7,487,147 Therms	\$35,269,826	
<i>Percent Change</i>			<i>-3.7%</i>	<i>-2.6%</i>	
Total Budget		\$230,074,753		\$204,559,487	
<i>Percent Change</i>				<i>-11.1%</i>	

³ 2020 Year-End forecast as of September 2020.



It is noteworthy that it isn't possible for PSE to finalize the actual 2020 + 2021 biennial savings totals until the first quarter of 2022.

B. Updates to the 2020-2021 Biennial Conservation Plan

In the Chapters 4 through 9 program discussions, PSE includes the original 2020-2021—as provided in the November 1, 2019 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 2021 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 2021 savings, measure values, and budget figures in Exhibit 1: *Savings and Budgets*. Comparisons of original 2021 figures to those updated in the 2021 ACP refer to the 2021-specific page of the 2020-2021 Exhibit 1: *Savings and Budgets*.

5. 2021 Electric Savings Revisions

In its April 2020 Petition to Modify 2020-2021 Electric Target, which the Commission approved in Order 02, Docket UE-190905 on May 21, 2020, PSE indicated that its 2021 electric savings goal was 230,118 megawatt-hours (MWh), with anticipated expenditures of \$96.27 million (including Other Electric Programs).⁴ As indicated in Table I-1, the updated 2021 savings goal is now 208,965 MWh with anticipated expenditures of \$102.70 million. These figures represent a 9 percent decrease and an increase of 7 percent from the April 2020 values, respectively.

6. 2021 Natural Gas Figure Revisions

In its 2020-2021 BCP, PSE indicated that its original 2021 savings goal was 3.37 million therms, with an anticipated expenditure of \$19.43 million. As indicated in Table I-1, the updated 2021 natural gas savings goal is now 3.39 million therms with anticipated expenditures of \$19.43 million. These figures represent a 0.4 percent increase, and negligible difference from the original values, respectively.

⁴ For the 2020-2021 biennium, programs noted in Other Electric Programs is Net Metering and Targeted Demand Response pilot. Consistent with requirements outlined in condition (9)(a), Net Metering administrative costs may be used as approved by the Commission.

C. Achieving the 2021 Savings Goals

In 2021, Energy Efficiency will continue to follow all WA State guidelines with regard to safety practices as the pandemic continues to impact operations. The Company has also put safety requirements into place for employees, designed to protect its customers, employees, and business partners. Energy Efficiency continues to adapt all aspects of its service delivery methodology to ensure safe operations for all parties. Staff will apply these updated approaches throughout 2021.

Staff will also continue to focus on maximizing customer engagement and participation while driving electric and natural gas conservation savings through innovation and adaptive management techniques. Their initiatives will include, but won't be limited to: a doubling of the Marketing and Outreach expenditures to maximize awareness; increased incentives and rebates; partnering with area utilities; and expanding channel partnerships. These efforts are consistent with WAC 480-109-100(1)(a)(iv).

1. Electric

PSE expects overall Portfolio electric savings to achieve approximately 9 percent less savings than planned for 2021 in the April 2020 BCP petition.

The Residential Energy Management (REM) Sector faces continued downward pressure on prescriptive measure savings values (UES – Unit Energy Savings). This impacted most REM programs, with PSE suspending the Retail Showerhead program altogether, Retail Lighting, Single Family Weatherization, and Single Family Space Heat seeing significant drops in savings projections. As expected, an additional key driver of lower expected electric savings are the circumstances caused by the COVID-19 pandemic, which has affected product supply chains, availability of personnel, construction schedules, and consumer ability to participate. Another retirement resulting from the pandemic and RTF-driven measure UES value reductions was the Home Energy Assessment program in mid-2020.

In spite of staff's considerable adaptive management efforts to consider historical performance and apply learnings to 2021 projections, PSE expects 2021 REM electric savings to finish the upcoming year 22 percent, or 11,200 MWh lower than indicated in the petition. Only the Single Family Water Heat and Smart Thermostat programs are expecting increases in savings in 2021.



Program staff are engaging new fulfillment channels (such as midstream services), adding limited-time incentive offerings, expanding its instant rebates availability, implementing its online marketplace, increasing the scope of marketing and outreach initiatives, and considering new measures, among other approaches.

In the Business Energy Management (BEM) Sector, staff have made significant efforts to expand their fulfillment channels, utilizing the midstream, distributor, and contractor networks to broaden their service offerings. Staff have also created innovative pilot-like initiatives, such as the “Elevate Your Efficiency” RFP process in the Commercial/Industrial Retrofit program, and Business Lighting Express, which bridges the Lighting to Go and Custom Lighting Grant offerings.

Similar to their REM counterparts, BEM staff are utilizing limited-time offers, increased marketing and outreach initiatives, and providing new and innovative measures to minimize savings losses. The pandemic, as it has in the REM Sector, continues to influence a significant portion of the commercial sector. Construction delays, product restrictions, building occupancy loads, and labor furloughs will continue to impact BEM operations well into 2021, resulting in an expected 5 percent reduction in electric savings.

The behavioral pilot Home Energy Assessment for Vulnerable Communities was suspended as a result of the same circumstances affecting the Home Energy Assessment program. A considerable number of programs—both in REM and in BEM—have engaged with other regional utilities to ensure consistent rebate application processes, sharing of savings, and providing customers with simplified application processes.

Although excluded from PSE’s EIA Penalty Threshold, the Northwest Energy Efficiency Alliance (NEEA) savings influences PSE’s overall Portfolio savings figure. In September 2020, NEEA adjusted its 2020-2021 savings forecast, with a 2021-specific electric savings adjustment of 12,877 MWh from its original 2021 forecast of 10,862 MWh, an increase of 19 percent.

2. Natural Gas

Although UES revisions and COVID-19 impacts affected almost every Energy Efficiency natural gas program in a similar fashion as the electric programs, the overall impact was not as severe.

PSE expects to acquire approximately 0.4 percent more therms than originally forecast for 2021 in the 2020-2021 BCP: 3.389 million therms, versus an original figure of 3.375 million. There is negligible impact on the anticipated spending: \$19.432 million, versus an original estimate of \$19.426 million. Similar to the circumstances in the electric Portfolio, lower UES values (many driven by RTF UES value adaptations) affected most residential programs. For instance, PSE will suspend the natural gas Retail Showerhead program in 2021.

As is the case in the electric portfolio, Single Family Weatherization UES value reductions significantly curtailed natural gas savings. As the emphasis on electrification in many municipalities takes hold, the Single Family New Construction program expects to see a substantial decline in estimated therm savings. Home Appliances added a top-load clothes Washer, which staff expect to contribute to a natural gas savings increase, and the Multifamily Retrofit program increased its 2021 savings estimate based on historical program performance.

While the majority of BEM programs expect 2021 therm savings to remain on-track with their original estimates, Commercial Rebates programs, including Commercial Foodservice and Commercial Midstream, expect double-digit increases from their original estimates. This comes as a result of their focus on channel partnerships, the addition of new measures to the midstream offering, inter-program partnerships, and customer focus.

In addition, as is the case on the electric side, PSE suspended the behavioral HEA pilot.

Natural gas programs will follow the same COVID-19 safety protocols, and will focus on accomplishing as much customer interfacing via virtual means as possible. Programs have increased the marketing and outreach efforts as well as extended limited-time offerings.

D. Principal Considerations Influencing 2021 Revisions

PSE provides additional discussions of key savings and expenditure drivers in Chapter 3: *2021 Annual Conservation Plan Development*, section III.B, starting on page 35. PSE also provides an extensive program-by-program comparison chart in Exhibit 1: *Savings and Budgets*.

1. Extraordinary Circumstances: COVID-19 Repercussions

The COVID-19 pandemic, while primarily having a major negative influence on 2020 operations, is expected to have continuing negative impacts in 2021. In many building sectors, construction timelines have been profoundly altered, with many project delays caused by supply constrictions, increased safety requirements, and labor allocations. It is anticipated that many new construction projects originally scheduled for 2021 completion may be delayed until 2022 or beyond. Key measures, such as some LED lamps, continue to be in short supply.

All of Energy Efficiency on-site activities: from Small Business Blitzes; events; customer collaborations; and a variety of outreach strategies; have been completely re-designed to accommodate more virtual customer interactions.

PSE anticipates that the pandemic will continue to greatly influence the overall marketplace. Business impacts include employee furloughs, continued product shortages, and in the case of restaurants, theaters, fitness centers, closed facilities that may not re-open or open with dramatically reduced capacity. Energy use analyses have been made especially challenging for Energy Efficiency's engineers, as businesses that have implemented telecommuting guidelines have reduced energy use due to lower occupancy, which is somewhat offset by the requirement for increased ventilation.

2. Systematic Drivers: Re-Occurring Circumstances

One issue with which program staff are familiar is the evolving prescriptive savings of electric and natural gas measures. In many cases, staff are able to employ their considerable skill to adaptively manage their program offerings to offset the annual savings reductions. However, in some cases, the adjustments result in a critical savings reduction, as is the case in the Retail Lighting and Single Family Weatherization programs. In the Lighting to Go program, a very popular measure is no longer available, resulting in some contractors no longer participating at all. PSE was also required to suspend two programs: the Residential Showerhead and Home Energy Assessment⁵ programs. The majority of the residential programs anticipate electric savings reductions in 2021, while commercial programs are forecast to be less affected.

⁵ It is important to note that the COVID-19 pandemic, which necessitated the restriction of entering customers' homes, was a key driver in the HEA program suspension, along with the RTF's showerhead measure deactivation.

Residential natural gas programs were similarly impacted, with savings reductions anticipated for several programs. Most commercial programs foresee no change to their original therm savings estimates, with Commercial Rebates forecasting a natural gas savings increase that results from additional midstream management that includes new measures.

Energy code revisions scheduled to take effect in February 2021 are anticipated to affect the Single Family New Construction program later in 2021, with some ancillary impact in the Commercial Midstream program.

Pilot savings will be reduced, in large part due to the suspension of the HEA-Focus on Vulnerable Communities program, as well as startup delays in the residential and small business AMI Enhanced Engagement and Retail Choice initiatives.

3. Planned Budgets

While the Portfolio's natural gas budget is expected to remain flat, as compared to the original 2021 anticipated spend, the Portfolio's electric budget increase of approximately 7 percent is being driven largely by Energy Efficiency' adaptation to the pandemic-caused circumstances. Increased costs are being driven by incentive and rebate increases in many Residential and Business programs and limited-time offers, potential new savings opportunities such as the Commercial/Industrial Retrofit RFP process. There are also significant increases in Marketing and Outreach activities designed to reach the maximum number of customers in this new, virtual/limited-contact environment. There is less of a savings-to-expenditure link than in past years, largely due to circumstances caused by the pandemic.

E. Cost Effectiveness Considerations

In the 2021 cost-effectiveness calculations, PSE applied all available RTF-established Non-Energy Impacts (NEIs)^{6,7} to the applicable prescriptive rebate programs, including electric and natural gas. PSE provides cost-effectiveness calculations by program in Exhibit 2: *Cost-Effectiveness Estimates*.

⁶ Of particular note, the PM_{2.5} NEI, as reported by Abt Associates in its Final Wood Smoke Analysis is included in applicable space heat measures.

⁷ The RTF recently removed the NEIs from weatherization measures, due in large part to a lack of any study that directly quantifies a specific benefit resulting from insulating a house.



Final cost-effectiveness figures—that may differ from the above estimates, and will be based on actual expenses and savings—are reported in PSE’s Annual Reports of Energy Conservation Accomplishments, filed with the Commission each April.

In this Plan, PSE also includes two new Exhibit 2 Supplements:

- Supplement 1 is a database of Non-Energy Impacts. PSE created the database in collaboration with DNV-GL, and includes all NEIs currently used by PSE.
- Supplement 2 is PSE’s plan for the proper valuation of Non-Energy Impacts that have not been previously quantified.

1. Electric

PSE estimates that the aggregate of electric programs will achieve a Total Resource Cost (TRC) benefit-to-cost ratio of 1.72, and a Utility Cost (UC) benefit-to-cost ratio of 2.08 at the Portfolio level.

2. Natural Gas

The overall Portfolio estimated natural gas TRC benefit-to-cost ratio will be 1.68. Natural gas programs will, in aggregate, achieve an overall UC of 1.94.

F. Regulatory Stakeholder Engagement and Reporting

Throughout the Plan, PSE addresses and references discussions, requests, and agreements made with its Regulatory Stakeholders in 2020.

1. Conservation Resource Advisory Group (CRAG)

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

- Key 2021 ACP continuous improvement areas in its August 5, 2020 CRAG meeting, and
- Draft ACP review in its October 14, 2020 CRAG meeting.

In accordance with WAC 480-109-110(3), PSE provided the CRAG with an electronic draft 2021 ACP on October 15, 2020.

PSE will continue to provide the CRAG with program updates throughout 2021, including issuing its newsletter *CRAG Communications* at appropriate intervals to ensure that the CRAG is up-to-date with Energy Efficiency developments. 2021 is a planning year for the 2022-2023 biennium. PSE anticipates that there will be five 2021 CRAG meetings, four of which will focus on the BCP development. This schedule may be modified to accommodate new rules or requirements.

2. Regulatory Stakeholder Comment Follow-up

In the 2021 Plan, Energy Efficiency provides discussions on several long-standing initiatives, business practices, and guiding principles. In concert with its CRAG, PSE continued to refine and improve in all areas throughout 2020. Energy Efficiency staff base these principles and practices on almost two decades of successful service.

The Plan also reflects responses to Regulatory Stakeholder comments, requests and recommendations. In response, PSE has:

- Developed a standard Savings by Housing Type, which PSE provides in concert with CRAG meetings.
- Developed a comparison table in Exhibit 1, indicating the originally planned 2021 figures, compared to the 2021 ACP figures.

Energy Efficiency commits to engage the CRAG as it continues its initiatives throughout 2021.

G. 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 3: *Developing 2021 Updates to the Biennial Conservation Plan*, and in the program detail discussions. Some standard Energy Efficiency Exhibits are biennially focused documents, and are thus excluded from the 2021 ACP.

These are:

- Exhibit 6: Evaluation Plan
- Exhibit 7: *Marketing Plan*,



- Exhibit 11: *Tariff Revisions*,
- Exhibit 12: *Biennial Condition Revisions*,
- Exhibit i: *Ten-Year Potential, Two-Year Target Development*.

Exhibits included in the 2021 ACP are:

- Exhibit 1: *Savings and Budgets*,
- Exhibit 2: *Cost-Effectiveness Estimates*,
 - Supplement 1: *Non-Energy Impact Database*
 - Supplement 2: *Energy Efficiency Draft Plan to Value NEIs*
- Exhibit 3: *Program Details*,
- Exhibit 8: *EM&V Framework, updated for 2021*,⁸
- Exhibit 10: *NEEA's 2021 Forecast for PSE Territory*.

Also, as a backward-looking compliance review, Exhibit 9: *Requirement Compliance Checklist* is included in PSE's Annual Conservation Reports, and is therefore omitted from the Plan.

With this 2021 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.

⁸ Exhibit 8: EM&V Framework, is typically a biennial document. However, for 2021, PSE has augmented the Framework to include an extensive Verification discussion, made necessary by the COVID-19 pandemic and PSE's responses.

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II. Introduction

The 2021 Annual Conservation Plan (ACP, or the Plan) will discuss PSE conservation program objectives and initiatives that update, revise, or modify those discussed in the 2020-2021 Biennial Conservation Plan (BCP), filed in Dockets UE-190905 and UG-190913.⁹ The ACP fulfills the requirements of WAC 480-109-120(2), as it relates to electric programs, and applicable natural gas Sections of Exhibit F, the Settlement Terms for Conservation in Docket UG-011571. These electric-and natural gas-specific requirements indicate that PSE must provide detailed annual budgets, program updates, and any tariff revisions for Stakeholder review.

The 2021 ACP discusses updated strategies that PSE will employ in order to exceed customer expectations, prudently use the funds that they've entrusted to PSE, and be proactive in adjusting to ever-evolving market conditions while achieving its Commission-approved savings targets, consistent with the requirement of WAC 480-109-120(2):

(2) Annual conservation plan. On or before November 15th 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.

The Plan also outlines PSE's implementation of innovative and adaptive program design, providing a comprehensive focus on responses to conditions caused by the global COVID-19 pandemic. Energy Efficiency's updated plan focuses on customer satisfaction and participation, leading to achievement of its updated Portfolio savings goals of 208,965 Megawatt-Hours (MWh), (23.9 Average Megawatts [aMW]), with anticipated expenditures of \$102.70 million. Its updated 2021 natural gas conservation goal is 3.39 million therms, with an associated anticipated expenditure amount of \$19.43 million.

A. PSE Requests that the Commission Approve its 2021 Annual Conservation Plan

PSE requests that the Washington Utilities and Transportation Commission (WUTC, UTC, or Commission) approve the 2021 electric and natural gas conservation goals, along with its associated budgets as discussed in the Plan, with an effective date of January 1, 2021.

⁹ Rather than file separate electric and natural gas Plans (and achievement Reports), PSE combines the information into a single compliance package. This approach reflects Energy Efficiency's program operations, where program initiatives are much more efficient, effective, and innovative when the two fuel types are managed within the same expert staffing organizations.

B. 2021 Savings and Budgets: Original BCP vs Updated ACP

Table II-1 provides a comparison of the updated 2021 electric and natural gas savings and anticipated expenditures to the 2021 values originally stated in the 2020-2021 BCP. All references to electric 2021 updates are to savings and budget figures enumerated in PSE's Petition to Modify Electric Savings Targets, which the Commission approved in Order 02, Docket UE-190905 on May 21, 2020. All references to natural gas 2021 updates are to savings and budget figures enumerated in PSE's original 2020-2021 BCP filing on November 1, 2019, and approved by the Commission on December 18, 2019 in Order 01.

The following sections in this chapter and in Chapter 3: *Developing 2021 Updates to the 2020-2021 BCP*, will provide insights into the key revision drivers.

Table II-1: 2021 Savings by Sector Compared to Original BCP Figures

2021 Comparison: BCP* versus ACP Update					
Portfolio	Savings		Expenses		
	Electric (MWh)	Natural Gas (Therms)	Electric \$	Natural Gas \$	Total \$
Original 2021 Plan <i>As indicated in *2020-2021 BCP</i>	230,118	3,374,734	\$ 96,266,984	\$ 19,426,122	\$ 115,693,106
Updated 2021 ACP	208,965	3,389,902	\$ 102,700,629	\$ 19,432,109	\$ 122,132,738
Change	(21,153)	15,168	\$ 6,433,645	\$ 5,987	\$ 6,439,632
Percent Change	-9.2%	0.4%	6.7%	0.0%	5.6%

*Electric savings are based on the petition (UE-190905, Order 02) version of Exhibit 1 for "original".

PSE did not change its 2020-2021 natural gas savings target in the April 2020 petition to modify electric savings.

The electric and natural gas savings values noted within represent goals necessary to achieve all targets associated with the overall Portfolio, including PSE's decoupling commitment of 5 percent over the course of the biennium.

PSE conducted an extensive examination of considerations in updating its original 2021 conservation Portfolio, including potential adaptations needed to achieve savings during the pandemic. Program staff scrutinized the impacts of the ongoing COVID-19 pandemic, and issues such as RTF and PSE Deemed Unit Energy Savings (UES) value updates, marketplace dynamics, and externalities (for instance, utility actions and partnerships, energy code updates, regional initiatives, regulatory requirements, etc.). Staff also assessed the potential for new offerings, historical performance, original plan revisions, and customer participation and feedback.

By applying continuous improvement and adaptive management principles, as well as the experience gained by adapting to the pandemic throughout 2020, program staff honed the 2021 estimates—developed in 2019 and the first quarter of 2020—to a higher degree of precision and transparency. PSE presents detailed 2021 savings goals and budgets by program in Exhibit 1: *Savings and Budgets*.¹⁰

1. Compliance with Conservation Types Included in the Portfolio

The revisions in the 2021 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.¹¹ PSE presents the chapter locations of its program discussions in Table II-2.

Table II-2: 2021 Conservation Type References

Requirement	BCP Location
(i) End-use efficiency	All Residential (REM) and Business (BEM) programs
(ii) Behavioral programs	Home Energy Reports, REM and BEM sections
(i) High-efficiency cogeneration	No projects identified during 2020-2021 planning ¹²
(ii) Production efficiency	Chapter 10: Regional Programs, Schedule 292
(i) Distribution efficiency	Chapter 10: Regional Programs, Schedule 292
(ii) Market transformation	Regional Programs, NEEA—Schedule 254
(c) Pilots	Chapter 9: Pilots with Uncertain Savings

¹⁰ Most Exhibit 1 pages contain the combined 2020-2021 tables. However, only 2021 savings and budget values are updated.

¹¹ 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.

¹² Although no co-generation projects were presented to PSE as part of 2020-2021 planning, PSE completed a successful cogeneration project in 2020 whose completion was originally expected in the previous biennium. PSE is looking to develop a case study of that project to further generate interest in this measure for future planning cycles.

C. 2021 Cost-Effectiveness Calculations

In compliance with WAC 480-109-100(8) and (10), and condition (8), PSE evaluated its programs using methodologies consistent with those used by the Northwest Power & Conservation Council, and its Portfolio passes the required cost-effectiveness tests. PSE provides details on cost-effectiveness calculations in Exhibit 2: *Cost-Effectiveness Estimates*.

It is noteworthy that PSE incorporated the costs associated with RTF-defined Non-Energy Impact (NEI) figures for applicable prescriptive measures, including electric and natural gas.¹³ PSE identified discrete Non-Energy Impacts and the monetized value used in cost-effectiveness testing for each electric program, consistent with condition (10)(b). New for 2021, PSE also created two new Exhibit 2 Supplements:

- Supplement 1 is a database of Non-Energy Impacts. PSE created the database in collaboration with DNV-GL, and includes all NEIs currently used by PSE.
- Supplement 2 is PSE's plan for the proper valuation of Non-Energy Impacts that have not been previously quantified.

Table II-3 provides summary views of the Portfolio cost-effectiveness calculations.¹⁴

Table II-3: 2021 Portfolio Cost-Effectiveness Calculations

Benefit to Cost Ratios Portfolio		
	Total Resource Cost	Utility Cost
Electric	1.72	2.08
Natural Gas	1.68	1.94

Indicated TRC includes the application of a 10 percent Conservation credit value.

¹³ The RTF recently removed NEIs from weatherization measures, citing a lack of evidence to directly quantify specific benefits resulting from insulating a house.

¹⁴ Indicated electric and natural gas TRC values include a 10 percent adder, consistent with condition (8)(a).



Final cost-effectiveness figures—that may differ from the above estimates, and will be based on actual expenses and savings—will be reported in PSE’s Annual Reports of Energy Conservation Accomplishments, filed with the Commission in April 2021.

D. Energy Efficiency’s 2021 Areas of Focus

In addition to a comprehensive design of savings goals and well-vetted anticipated expenditures, the Energy Efficiency department maintained clear focus on its other important priorities throughout the 2021 planning process. PSE discusses highlights of its priorities in the following sections, including: PSE’s adaptive management response to the COVID-19 pandemic; maximizing customer participation and approval; encouraging participation in underserved and potentially hard-to-reach segments; maximizing pilot program initiatives; continued coordination with other utilities; consistently improving and refining business processes; and maximizing reporting transparency.

1. Adapt to the Dynamics Presented During the COVID-19 Pandemic

As of the filing of this 2021 Annual Conservation Plan, the COVID-19 pandemic continues to have a global impact. It isn’t possible to predict the status of Washington’s health crisis in 2021. However, Energy Efficiency has launched several initiatives to encourage conservation participation and sustain the utmost consideration for customer and staff safety. PSE will continue to update its service strategies as the pandemic evolves. Major initiatives include, but aren’t limited to:

- A doubling of Marketing and Outreach budgets,
- Virtual trainings for Preferred Energy Professionals and coordinating program implementation revisions with all program vendors,
- PSE staff are not permitted to enter customers’ homes. PSE contractors are permitted to enter customer homes only under very specific guidelines,
- Program verification strategies and approaches have been updated to reflect State-mandated requirements for the health and safety of customers, program staff, and contractors.
- The Verification team has transitioned to a 100 percent virtual verification approach,
- Market research has been increased to generate insights into providing increased effectiveness for program participation for PSE’s low-income customers,

- In lieu of in-person events, outreach, or Small Business Blitzes, staff employ phone and conference calls, and use email,
- Many programs increased measure incentives through limited time offers, and
- Small Business assessments are being explored.

PSE effectively implemented the majority of these processes nimbly, with a very short turnaround time, and proactive communication. PSE will continue to adaptively manage its service approaches as 2021 progresses, in compliance with State mandates. Several key elements of Energy Efficiency's operations have been dramatically affected, as discussed below.

a. Program Implementation

As discussed in various sections and program discussions of this Plan, COVID-19 has had a significant impact on the implementation of Energy Efficiency's many conservation programs. The most prominent consequence was the suspension of the Home Energy Assessment program in 2020. Other programs that rely on in-person customer interaction, including events, outreach seminars and meetings, Multifamily Retrofit direct install offerings, and Small Business Direct Install blitzes were all impacted. Construction delays, labor furloughs in distributor and contractor businesses, commercial building operations, and schools and restaurant closures greatly affected the majority of Energy Efficiency programs. Program staff discuss their adaptive management solutions in the program detail sections.

b. Verification Process Revision Summaries

A critical element in accurately reporting conservation savings is a robust, vetted, and thorough measure installation and verification process. The COVID-19 pandemic affected many elements of Energy Efficiency's prescriptive rebate and custom grant verification processes. Due to the uncertainty of the 2021 pandemic safety requirements, the below discussions represent Energy Efficiency's verification guidelines for the foreseeable future. The classifications are in reference to pre-Covid conditions.

i. No Change

Programs verified via telephone, surveys or external agents maintain these verification methods because they require no PSE site verification. These programs include Retail Lighting, Home Appliances, Smart Thermostats, and Mobile Home New Construction.

Low Income Weatherization leverages agency and commerce verification documentation, but the LIW team is considering leveraging the V-Team starting in 2021, when possible.

Programs that primarily leverage data analysis as a verification mechanism, including Home Energy Reports and Generation, Transmission and Distribution also remain unchanged in 2021. Moderate Income Residences deploys under the respective measure delivery program so verification processes and details fall within those particular programs.

ii. Programs Initially On Hold

Due to the on-site nature of service delivery, the Small Business Direct Install and Commercial HVAC programs were heavily impacted (not operating or are operating at a severely limited basis) early in the pandemic. Since then, both programs have resumed limited operations and fall under the combination verification method.

iii. Combination of In-Person and Virtual Verification

This category now applies to many of the Programs within the portfolio and fall into two large groupings, verification performed by Energy Management Engineers (EME) or the Verification team (V-Team). The EME's cover programs including Commercial/Industrial Retrofit and New Construction, Custom Lighting, the Large Power User programs, Pay for Performance, Industrial, and Commercial Strategic Energy Management. PSE created a matrix structure to determine, given certain project characteristics, the type of verification guidance recommended – with options of virtual, on site, or a combination of both. Examples of virtual verification include, but are not limited to photos, trend data, contractor documentation, video meetings with the customer or contractor, and engineering drawings. Key drivers of method selection include how much energy savings are estimated as well as the possible incentive amount. Safety is an over-arching principle regardless of every project.

The V-Team also plans to leverage a similar matrix structure to provide guidance in the verification of commercial projects. The programs supported by the V-Team include Lighting to Go, Foodservice and Laundry, HVAC, Midstream, Small Business Direct Install, and other commercial rebates. When the V-Team goes on site for verification for any of these projects, safety will always be a factor in how they perform the job. Social distancing and visiting outside of customer open hours are a couple of examples to ensure safety of both PSE staff as well as the customer. The matrix structure allows for the same specific verification methods as mentioned above.

PSE intends to continue site verification inspections for Single Family New Construction projects because they are performed before occupants move in.

iv. Completely Virtual Verifications

All space, water heat and weatherization residential programs are performing 100 percent virtual verifications to eliminate visits to customer homes. This applies to Single Family Existing, Multifamily Retrofit, and New Construction. Upgrade measures include heat pumps, furnaces, boilers, heat pump water heaters, integrated space and water heat, windows. The verification process leverages video meetings or phone calls. In both cases, the V-Team directs the conversation with the customer through a series of questions (as they would perform on site). Photos during the meeting (via online meeting or customer provided pictures) provide further detail of the installed measure, when applicable.

v. Program-Specific Verification Process Revisions

Table II-4 provides PSE's program-by-program revised measure installation/grant verification process revisions for 2021.



Table II-4: Program-Specific Verification Revisions for 2021

Implementation Program Name	Pre-Covid 19 Approach	2021 Revised Verification Process
Residential lighting	General population survey (EVAL)	No Change
Home Appliances	General population survey (EVAL)	No Change
Smart Thermostats	General population survey (EVAL)	No Change
Showerheads	General population survey (EVAL)	No Change
Home Energy Reports	Specific Grouping Surveys (EVAL)	No Change
Generation, Transmission and Distribution	Data analysis	No Change
Moderate Income Residences	Not applicable, incorporated into other programs	Not applicable, incorporated into other programs
Low Income Weatherization	Dept of Commerce monitoring reports to PSE	Pre-Covid plus virtual inspection by V-Team, when possible
Home Energy Assessment	Site inspection by Franklin Energy	Program halted
Demand Response Pilots	Not applicable	Program in development
Targeted DSM	Program in development	Program in development
Single Family New Construction	Site inspection by PSE V-Team	Site inspection by PSE V-Team
Multifamily Retrofit	Site inspection by CleaResult	Virtual inspection by CleaResult
Multifamily New Construction	Site inspection by CleaResult	Virtual inspection by CleaResult
Space heat	Site inspection by PSE V-Team	Virtual inspection by V-Team
Water heat	Site inspection by PSE V-Team	Virtual inspection by V-Team
Weatherization	Site inspection by PSE V-Team	Virtual inspection by V-Team
Commercial / Industrial Retrofit	Site inspection by PSE EME	Virtual, Site, or combination by PSE EME (matrix)
Custom Lighting Grants	Site inspection by PSE EME	Virtual, Site, or combination by PSE EME (matrix)
Commercial/Industrial New Construction	Site inspection by PSE EME	Virtual, Site, or combination by PSE EME (matrix)
Commercial Strategic Energy Management	Site inspection by PSE EME	Virtual, Site, or combination by PSE EME (matrix)
449 Customers	Site inspection by PSE EME	Virtual, Site, or combination by PSE EME (matrix)
Non-449 Customers	Site inspection by PSE EME	Virtual, Site, or combination by PSE EME (matrix)
Commercial Pay for Performance Pilot	Site inspection by PSE EME	Virtual, Site, or combination by PSE EME (matrix)
Industrial Programs	Site inspection by PSE EME or third party	Virtual, Site, or combination by PSE EME or 3rd party (matrix)
Lighting to Go	No site verification	Virtual, Site, or combination by V-Team (matrix)
Commercial kitchen and laundry	Site inspection by PSE V-Team	Virtual, Site, or combination by V-Team (matrix)
Commercial HVAC	Site inspection by PSE V-Team	Virtual, Site, or combination by V-Team (matrix)
Commercial Midstream	Site inspection by PSE V-Team	Virtual, Site, or combination by V-Team (matrix)
Small Business Direct Install	Site inspection by PSE V-Team	Virtual, Site, or combination by V-Team (matrix)
Commercial General Rebates	Site inspection by PSE V-Team	Virtual, Site, or combination by V-Team (matrix)

EVAL = not a program/project verification activity, but rather part of a Program Evaluation

c. Marketing, Outreach, and Events

In response to the pandemic, PSE has increased its marketing efforts in specific channels as customer use has changed. For instance, many customers are currently working at home and consuming digital channels more during the pandemic. Marketing is also taking this opportunity to explore and try new advertising channels within the digital space, such as native advertising, streaming audio, and Nextdoor¹⁵ to promote energy efficiency rebates and programs.

¹⁵ “Nextdoor” is an app that provides neighbors with up-to-date communications, such as lost pets, suspicious activity, community improvements, and energy-efficiency opportunities.

For programs that have specific in-person assessments or fieldwork, PSE has delivered messaging to customers by email and social media channels to announce COVID-19 safety precautions and service information.

In 2021, PSE will continue a robust advertising campaign that began in 2020, to raise PSE customers' awareness of solutions to help save on energy costs. The advertising campaign is expected to include TV, radio, print and digital tactics.

While the region responds and recovers from COVID-19, the Energy Efficient Communities (EEC) team will continue using virtual and digital tools, as appropriate. For customers believed to have high-energy efficiency potential, EEC staff will conduct high-touch email and phone campaigns while leveraging social media channels. Custom presentations will shift to virtual, as appropriate. The team will also conduct no-to-low contact research to locate neighborhoods, commercial centers, and specific business customers that show promise for energy efficiency savings.

The Events team traditionally focuses on targeted in-person engagement to educate customers while promoting specific programs. Events staff has adapted by pivoting to virtual events, shifting to digital platforms, and leveraging social media. This also improves PSE's reach by eliminating geographical boundaries. The Events team will explore additional opportunities as the region moves through the COVID-19 phases of re-opening. PSE plans to utilize both virtual and in-person events as appropriate in 2021.

2. Maximize PSE Customer Participation and Approval

A critical element of any successful conservation program depends on maximized customer engagement and support. A key focus for PSE in the upcoming year is the need to continue providing customers with a positive energy efficiency experience while emphasizing personal safety in addressing the ongoing pandemic.

PSE will continue its ongoing work to make it easy for customers to participate in Energy Efficiency programs and provide them with an array of energy efficiency services that meet their expectations.

Energy Efficiency will continue its 2020 initiatives to raise customers' awareness and encourage participation: all of PSE's Energy Efficiency marketing communications; its brochures, web pages, and media broadcasts focus customers' attention on the values of services offered by PSE. These will be adapted to address all COVID-19 caused circumstances.



Energy Efficiency will continue to provide consistent conservation messaging in its direct customer-facing activities (in-person field activities, such as retail events, community initiatives, telephone interactions with PSE Energy Advisors, email interactions, etc.).

PSE's targeted outreach strategies, including small business blitzes, community events, door-to-door outreach, along with its fun and engaging Energy Upgrade campaigns, are updated for 2021 to reflect COVID-19 guidelines.

In addition to these customer-facing activities and services, PSE will continue to adaptively manage the implementation of numerous back-office customer-focused process refinements in 2021. These include, but aren't limited to: streamlining rebate and custom grant application processing; Verification Team virtual verification process enhancements; and systems optimization to support Energy Efficiency's product and services offerings. Examples include, but aren't limited to: bringing appliance rebate process in-house; providing customers with the opportunity to apply their rebate as a bill credit; making customer interfacing refinements to DSMc, Energy Efficiency's project management system; and improving Business Lighting application process simplifications.

3. Encourage Participation in Underserved and Potentially Hard-to-Reach Segments

Consistent with condition (9)(a), PSE conducted a Low-Income Needs Assessment (LINA)¹⁶ in 2020. Based on the assessment's conclusions and recommendations, PSE will develop a plan to achieve sustained energy burden reductions in 2021. PSE will include the plan in the 2022-2023 BCP, with the engagement of the CRAG.

In the 2020-2021 BCP, PSE provided comprehensive discussions of its ongoing hard-to-reach strategy in Section III.A.2: Energy Efficiency Areas of Focus for the 2020-2021 Biennium, V.B: Residential Energy Management Overview, and VI.B: (Business Energy Management Overview). Additionally, each program discussion in the BCP highlighted planned 2020-2021 initiatives designed to address hard-to-reach and potentially underserved segments.

These strategies have proven to be successful, and program staff will continuously refine and improve them in 2021, being mindful of the ongoing effects of the pandemic.

¹⁶ Consistent with WAC 480-109-120(3)(b)(v), the assessment will be included in PSE's 2020 Annual Report of Energy Conservation Accomplishments (Annual Report).

Energy Efficiency will continue to employ data and program performance analyses, customer research, evaluations and surveys, and other tools to provide services to customers in the applicable market segments. Staff will continue to monitor and verify results going forward. Proven strategies and approaches¹⁷ that PSE will continue to execute and refine in 2021 include, but are not limited to:

- a) The Low Income Weatherization (LIW) program provides services to the broadest range of target customers. With no spending cap, LIW program staff work closely with low-income agencies to ensure that its offerings are clear and made available to as many eligible customers as possible, limited only by low-income agency processing capacity.

The LIW's program reach spans several housing types (manufactured homes, multifamily and single-family) and aligns with most of Energy Efficiency's marketing, promotional, outreach, and measure offering initiatives (for instance, appliances, duct sealing, lighting, etc.). In order to maximize efficiency opportunities for this segment, PSE is allowed to offer measures that result in a lower Total Resource Cost (TRC) than other programs.¹⁸

Similarly, low-income agencies can use PSE shareholder funds to enable the installation of measures, including repairs to low-income dwellings that are needed as a condition of an efficiency upgrade installation.¹⁹ In 2021, LIW will operate in compliance with the updated terms of section (10)(a) of WAC 480-109-100, and all relevant Settlement Agreements, and Commission Orders.

The Low Income Needs Assessment (LINA) completed in 2020 provided PSE with useful data, necessary to build tools that will assist program staff to implement strategies to address participation gaps. The study will help foster program optimization and innovation. Although the study did not provide a qualitative assessment of participation barriers, program staff will be in close communications, and share findings and recommendations with state low-income agencies.

¹⁷ Some of these strategies are, of course, affected and will be modified by COVID-19 circumstances.

¹⁸ As stipulated in Schedules 83 and 183 (electric and natural gas, respectively), section 9.a, Low Income agencies may receive funding equal to a value that will result in a TRC benefit-to-cost ratio of no less than 0.667.

¹⁹ For instance, it is unhealthy/hazardous to install new insulation in an attic structure than has mold or dry rot, etc. A detailed discussion of repairs and health & safety measures is included in LIW's Exhibit 3: *Program Details*.

Using demographic trends from the study, staff will be able to prioritize and target high-need areas with appropriate marketing tactics.

Additional potentials include, but are not limited to: identifying customers with the highest energy burden; those with the highest energy savings potential; and examine the potential for the equitable delivery to areas with a high proportion of underserved customers. In 2021, PSE will also consider the possibility of conducting a phase 2 study.

- b) The Small Business Direct Install program also targets those businesses that may have a lower awareness of Energy Efficiency programs, may be rural,²⁰ may be difficult to access, are locally owned/operated, skeptical of utility efficiency programs, be unavailable at particular seasons or times of day, not interested in making efficiency upgrades,²¹ etc. For 2021 and in coordination with State COVID-19 guidelines, program staff have reviewed and continue to modify strategies for providing services, which formerly involved in-person interactions where PSE representatives visit businesses door-to-door and offer direct installation or low-cost measures. Most of these functions will now be performed virtually, via email, or externally, using social-distancing protocols.
- c) The Energy Efficient Communities and Outreach teams continually scan for underserved and hard-to-reach segments of PSE's service territory. These efforts often result in PSE's participation in events (most conducted virtually in 2021, as discussed in Section II.D.1.c, that feature multi-ethnic and English-as-second-language participants. The organizations also coordinate radio and print advertisements in-language and presentations at ethnic community organizations.

As with many other services provided by Energy Efficiency, the Energy Efficient Communities team has put into place several innovative approaches to be able to provide similar services for customers while maintaining COVID-19 safeguards. PSE discusses these updates in the Energy Efficiency Communities section of Chapter 10.

²⁰ This is especially true with small-to-medium farms.

²¹ Again, particularly applicable to business proprietors that lease their space.

- d) In 2021, PSE’s moderate-income pilot “Efficiency Boost” will focus on moderate-income customers: those who do not meet the income thresholds to qualify as low-income, but are limited in the number of higher-cost measures available. This pilot will offer higher rebate amounts for key efficiency measures.
- e) The Multifamily Retrofit program’s Strategic Energy Management (SEM) offering engages residential multifamily and rental customers to influence energy-savings behaviors. For 2021, program staff have modified service aspects and verification processes that formerly involved in-person contacts.
- f) Energy Efficiency provides commercial tenants with numerous opportunities to participate in its programs, including the Lighting to Go program, which also provides an efficient avenue for businesses—regardless of their rate Schedule—to acquire a wide range of efficient lighting products. Tenants may also be unaware of the efficiency programs that are available to them; Energy Efficiency’s communication efforts address this need.
- g) The Commercial Foodservice team is keenly focused on this particularly hard-hit customer segment in 2021. The team will focus on customers’ preferred communications channels, expand its midstream channel services, and actively manage incentives to help these customers recover from the effects of the pandemic.
- h) The Small Business Direct Install program is focusing their efforts on previously-identified potentially underserved business customers in their telephone and email surveys.
- i) Energy Efficiency’s collateral is available in multiple languages, and there is even a “For Renters” site on PSE’s Energy Savings website.²² Residential Home Energy Reports are another important tool for reaching customers who may be reticent to participate in efficiency programs. Energy Efficiency’s promotions also target hard-to-reach segments. These include, but aren’t limited to the Energy Upgrade campaign, and pop-up events, where PSE focused on areas of its service territory with a smaller population. Initiatives in 2021 will include a similar focus.

²² Renters sometimes believe only the landlord or property owner is eligible to apply for efficiency incentives. This can especially be true of low-income customers and small business proprietors.

- j) The Marketing and Outreach teams also employed their transcreation system, which translates materials—not only into native speakers’ language, but conveys critical concepts not necessarily captured in a word-for-word “translation”.

PSE provides additional discussions of revisions and 2021 updates to these approaches in the applicable program sections in the following chapters.

4. Maximizing Pilot Program Initiative Potential

Another 2021 priority for Energy Efficiency is to assess the potential for new pilot programs. Energy Efficiency will also operate in compliance with condition (9)(b) relative to the design and implementation of pilot programs that serve highly impacted communities and vulnerable populations.

As it has for many years, PSE will continue to scrutinize the energy efficiency horizon for new and innovative technologies. In addition, program staff will implement 2021 pilot programs consistent with the UTC staff’s expectations that utilities engage in larger and more creative pilots consistent with CETA (Clean Energy Transformation Act). Energy Efficiency will inform the CRAG of potential new opportunities throughout 2021.

Energy Efficiency provides a summary of pilot initiatives, including Pay for Performance; Residential and Small Business AMI Enhanced Engagement; Retail Choice Engine; Efficiency Boost; and Targeted DSM. PSE discusses pilot-analogous measures, such as the Business Lighting Express, and the Commercial/Industrial RFP process in Chapter 3: *Developing 2021 Updates to the 2020-2021 BCP*, section III.B.6.a.i – ii. PSE provides a comprehensive discussion of pilot updates in Chapter 8: *Pilots*.

5. Coordination with Other Utilities

In 2021, Energy Efficiency will continue its long-standing approach to engaging, consulting, coordinating, and cooperating with other utilities. This is especially important during the COVID-19 era. During the peak of the COVID-19 pandemic, Energy Efficiency staff provided leadership in a limited-time offering in the Business Lighting market, which continued through the end of 2020, and will be considered for 2021. The Retail Lighting program will coordinate with other utilities to monitor any increase in incandescent or halogen lamp sales.

Although most utility partnerships are successful, PSE’s investigation into the potential to manage Pay for Performance (P4P) pilot projects with other utilities has considerable obstacles. In the initial phases of the pilot, PSE was open to considering projects where PSE is only the gas utility and not the electric.

This approach would enable PSE to particularly collaborate with Seattle City Light (SCL) on projects, in concert with their recently launched P4P program along the same timeline. Challenges including program alignment, fuel-switching between utilities, whole-building modeling with only PSE’s meter data, and achieving the 15 percent savings requirement with natural gas-only savings, make it unlikely that projects will be viable unless PSE is the sole utility provider. In 2021, PSE staff will continue their initiatives to:

- Collaborate with Tacoma PUD, Snohomish PUD, and NEEA to launch a heat pump water heater instant rebate offering,
- Partner with Snohomish PUD to align Single Family New Construction incentives,
- Work together with seven regional electric and natural gas utilities to provide commercial foodservice customers with a uniform assortment of equipment, applications, and incentives,
- Cross-promote Advance Rooftop Controller (ARC) incentives with other utilities, and
- Align with Seattle City Light to align distributor offerings, managed through the Commercial Midstream program.

Staff will continue to examine opportunities to partner with other utilities on pilot projects, additional limited-time incentives, and offerings that address customers’ evolving requirements.

6. 2021 Business System Refinements

In 2021, the Rebates Processing organization will bring the processing of retail appliances in-house. PSE expects to enhance the customer’s experience, and Energy Efficiency will have increased control of the overall process. Customers also have requested the ability to apply their rebate to their power bill, and bringing the rebate processing in-house will enable that.

Staff have already begun to implement enhancements to Business Lighting Grant applications, program relationships with distributors and other market partners, and engaged communities and municipalities to coordinate new construction design reviews. Another system upgrade, made necessary by the passage of House Bill 1257 and the expected significant increase in customer access demand, will be the replacement of MyData (or Automated Benchmarking System) in 2021.

7. 2021 Updates to Ensure Accurate and Transparent Reporting

Introduced in the second quarter of 2020, PSE will continue to provide the CRAG with DSMc's Savings by Housing Type report, which provides a summary view of savings by program, by housing type, including manufactured homes.

8. Maximizing Regulatory Stakeholder Engagement

As PSE has consistently demonstrated for several years, its focus on providing an excellent customer experience extends to its Regulatory Stakeholders. Energy Efficiency program staff continue to enthusiastically welcome CRAG members' input on a variety of conservation topics in 2021. PSE is committed to ensuring that its Stakeholders have all of the information, program background, measure details, and process guidelines necessary to fulfill their advisory roles. PSE treats the satisfaction of their expectations with a very high regard.

In 2021, PSE will continue providing CRAG members updates on program developments outside of the CRAG meeting environment. PSE will also provide the CRAG with regular updates of its Requirement Compliance Checklist, Exhibit 9. Although excluded from Conservation Plans, the Checklist is included in PSE's Annual Reports of Energy Conservation Accomplishments.

The planning for the 2022-2023 BCP occurs in 2021, and—as required by the UTC—PSE will depend on critical CRAG engagement throughout the process prior to filing the BCP in November 2021.

E. Implementing Adaptive Management through the Application of Continuous Improvement

Another PSE priority is to explore inventive methods of delivering outstanding customer service and cost-effective conservation. Energy Efficiency's staff has demonstrated particular inventiveness and acumen during the ongoing COVID-19 pandemic. They consistently apply continuous improvement adaptive business management principles to their iterative and robust program management decision-making throughout the year. As a result, PSE expects to realize continued improvement in department operations, with the intention of maximizing customer participation and conservation savings in 2021.

1. Highlights of 2021 Continuous Improvement, Adaptive Management Initiatives

Adaptively managing through continuous improvement is ongoing in all Energy Efficiency supporting functions, as staff implement exciting and inventive methods of connecting with customers, provide exceptional service, and achieve conservation goals every year.

PSE continues to implement several adaptive and continuous-improvement initiatives in 2021 that will positively influence Energy Efficiency's success while helping to mitigate external impacts to savings achievement. Many of these initiatives carry over from 2020. Listed below are some highlights that PSE discusses in more detail in the coming chapters and in Exhibit 3: *Program Details*.

In addition to the continuous improvement that Energy Efficiency staff implement, PSE has made several updates to their 2021 implementation plans consistent with UTC staff's expectation that utilities implement CETA (Clean Energy Transformation Act) requirements to the best of their abilities,²³ even in the absence of guidance. In 2021, highlights of Energy Efficiency plans include, but aren't limited to:

- Suspension of the Retail Showerhead program, as a result of the RTF deactivation of the showerhead UES values.
- Suspension of the Home Energy Assessment program, due in large part to the impact of the pandemic, but also a result of the deactivation of residential showerhead measures by the RTF.
- C/I Retrofit's new Elevate Your Efficiency RFP process, designed to encourage commercial customers to complete efficiency projects by the end of 2021.
- The new Business Lighting Express offering, designed to bridge the gap for lighting contractors who are not implementing complete lighting projects.
- The Small Business Direct Install program addition of distributor associations, many new exterior fixture incentives, and improved outreach in alignment with State COVID-19 requirements. The program will also collaborate with the Commercial Foodservice program, so that those customers may also participate in free assessments.

²³ Paraphrased from Commission Staff Comments Regarding Electric Utility Conservation Plans Under the Energy Independence Act, RCW 19.285 and WAC 480-109 (2020-2021 Biennial Conservation Plans) *Ensuring all customers are benefitting from the transition to clean energy*, page 5 ¶ 3.



- The Commercial HVAC program improvement of the ARC incentive structure to make it easier for customers to apply, and to align with other utilities' programs.
- Evaluations for new and innovative measures, including but not limited to: Variable Refrigerant Flow in the Commercial Midstream program; incorporating the EUI (Energy Use Intensity) Performance Method in the C/I New Construction program; and the Multifamily Retrofit program is considering the potential of adding a Direct Install Line Voltage thermostat.

This commitment to constant innovation and proactive management has resulted in PSE consistently meeting conservation goals for the past decade while utilizing PSE customer funding contributions wisely and prudently.

F. Compliance

This 2021 Annual Conservation Plan complies with WAC 408-109-110(2), and all other rules adopted in 2020.

The 2021 ACP also complies with applicable conditions in Appendix A of Order 01 in Docket UE-190905 relative to program design, cost-effectiveness tests, required involvement in preparation of 2021 activities, etc. The Plan is also consistent with condition (4)(a), 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.11²⁴ 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.

G. Conservation Tariff Schedule Revisions

PSE has no Conservation Schedule revisions to file in 2021.

H. Annual Conservation Plan Contents

Where there are notable differences, or where it is applicable, PSE will discuss electric initiatives separately from natural gas initiatives. Where there is not a distinction, the Energy Efficiency program staff will adaptively manage program strategies that address both fuel type programs.

²⁴ Pertaining to the development of an annual electric budget.

1. References to 2021 Updates

Important Clarification

All references to electric 2021 updates are to savings and budget figures enumerated in PSE's Petition to Modify 2020-2021 Savings Target, which the Commission approved in Order 02, Docket UE-190905 on May 21, 2020.

All references to natural gas 2021 updates are to savings and budget figures enumerated in PSE's original 2020-2021 BCP filing on November 1, 2019, and approved by the Commission on December 18, 2019 in Order 01.

Many discussions will reference and summarize supporting Exhibits, which provide a substantial amount of detailed, important information. PSE updated applicable Exhibits to reflect 2021-specific initiatives and information.

As it did in the 2019 ACP, PSE provides 2021 updates to its 2020-2021 program discussions in Chapters 4 through 9. It includes the original program plan outline with this heading:

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

This content is copied directly from the 2020-2021 BCP, and is *italicized* to clearly indicate that it is not updated for the 2021 ACP. PSE provides this content for reference purposes only. Following the BCP discussion, PSE provides applicable 2021 updates²⁵ via a separate heading within each program outline:

2021 Updates, Revisions, Enhancements, Adaptive Management

Where possible, PSE provides a reference to the previously filed 2021 information for a straightforward comparison to the updated values. Most notably, PSE provides this updated information in the detail pages of Exhibit 1: *Savings and Budgets*.

This allows Stakeholders straightforward comparisons of PSE's original 2021 program plans to its updated 2021 plans, and reflects PSE's commitment to adaptive management through the application of continuous improvement.

²⁵ Where there is an action or commitment related specifically to 2020 in the *original* BCP program discussion, PSE will provide follow-up in its 2020 Annual Report of Energy Conservation Accomplishments, which will be filed on April 1, 2021.



2. 2021 Programs

This document, the *2021 Annual Conservation Plan*, provides general discussions relative to the development of the ACP, outlines of PSE's plans for executing its conservation programs, and other topics that may not be germane to the attached Exhibits (for instance, a review of PSE's compliance or a discussion of Energy Efficiency's application of continuous improvement principles).

The Plan provides readers with the sense of focus that Energy Efficiency's program staff employed to develop this considerable amount of detailed and thorough program planning for this impressive portfolio.

PSE updated and revised Exhibits 1: *Savings and Budgets*, Exhibit 2: *Cost-Effectiveness Estimates*, and its accompanying Supplements, Exhibit 3: *Program Details*, Exhibit 6: *Evaluation Plans*, and Exhibit 10: *NEEA 2021 Plans* to reflect updated 2021 plan details.

3. 2021 Annual Conservation Plan Exhibits

In this Plan, PSE references five Exhibits and two Supplements, all updated to reflect 2021 revisions, listed in section II.J.1.b, that provide details about key elements of Energy Efficiency operations.²⁶

4. Regulatory Citations

Throughout this Plan, PSE may cite WAC 480-109 and UTC conditions where applicable within program or function discussions. Conditions include requirements outlined in Appendix A of Order 01 in Docket UE-171087; Sections A through J of the 2010 Electric Settlement Agreement, Docket UE-100177; and applicable Sections of Exhibit F in the 2001 General Rate Case Stipulation Agreement, Docket UG-011571.

This discussion and the Glossary of Commonly Used Terms section contain the only citation of the complete, formal name of those orders and conditions. In the following discussions, the report will only reference Section, condition, or order to avoid unwieldy repetition and unnecessary verbiage.

²⁶ In its Annual Conservation Plans, PSE excludes four Exhibits that are a part of its Biennial Plans: Exhibit i: *Ten-Year Potential, Two-Year Target*; Exhibit 6: *Evaluation Plan*; Exhibit 7: *Marketing Plan*; and Exhibit 8: *The EM&V Framework*.

I. Key Plan Enhancements

Continuous improvement initiatives are not limited to Energy Efficiency conservation programs. PSE included a variety of noteworthy upgrades to its Plan standards in this 2021 ACP. Readers will recognize that several enhancements resulted from Stakeholder comments and requests.

PSE appreciates Stakeholder comments relative to its documentation ease-of-use, presentation formatting, relevant information and reports, and ability to effectively access the required information. PSE re-prioritized the information presented in the Plan that Stakeholders indicated isn't as valuable, expanded that which is useful, and organized the entire ACP package in a logical and consistent flow.

Even with these improvements, PSE maintained the traditional chapter/section focus and presentation style to maintain continuity with PSE's other reporting and planning documents. The Energy Efficiency staff continue to value and incorporate Stakeholder suggestions whenever possible.

Highlights of ACP upgrades include:

1. PSE added two Supplements to Exhibit 2: Cost-Effectiveness Calculations. The Supplements meet the requirements of conditions (10)(a) and (10)(b). Supplement 1 provides a database extract of Non-Energy Impacts (NEIs) available for program use in 2021. Supplement 2 is PSE's plan to properly value Non-Energy Impacts that have not previously been quantified.
2. The Plan documents program discussions included in the original 2020-2021 content, followed by a 2021 Updates, Revisions, Enhancements, Adaptive Management section. This enhancement will make it quite clear what program modifications and adaptive management steps PSE plans for the upcoming year.
3. In Exhibit 1: *Savings and Budgets*, Stakeholders will notice several 20-21-specific modifications to the program detail pages, including: 2020 totals are greyed out; the horizontal table that feeds the Sector tables is organized chronologically top-to-bottom, including the original 2020 and original 2021 figures, along with *updated* 2021 figures; applicable measure tables will clearly indicate—via cell highlighting—those attributes that are updated for 2021.

PSE also included a new table in the workbook: "Compr Apr Petitrn 21 to ACP 21" that indicates the program-by-program savings and budget comparisons from the April 2020 petition to the updated 2021 planned values.



III. Developing 2021 Updates to the 2020-2021 BCP

Chapter 3 focuses on the key factors and considerations PSE examined, and strategies developed to build and execute on its updated 2021 electric and natural gas savings targets, cost-effectiveness estimates, and corresponding budgets.

A. 2021 Conservation Savings Goals and Anticipated Expenditures

Table III-1 presents the overall electric savings and anticipated spending by Energy Efficiency Sector, as compared to the 2021 figures presented in the April 15, 2020 Petition to Modify 2020-2021 Electric Savings Target, which the Commission approved in Order 02, Docket UE-190905 on May 21, 2020.

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

2021 Comparison: Electric BCP* versus ACP Update						
Sector	Savings, MWh			Expenses		
	Original 2021 Plan As indicated in 2020-2021 BCP*	Updated 2021 ACP	Percent Change	Original 2021 Plan As indicated in 2020-2021 BCP*	Updated 2021 ACP	Percent Change
Residential Energy Management	50,245	39,012	-22.4%	\$30,547,536	\$30,702,897	0.5%
Business Energy Management	160,721	153,300	-4.6%	\$46,462,631	\$52,110,659	12.2%
Pilots	7,540	3,275	-56.6%	\$1,983,915	\$1,297,175	-34.6%
Regional (NEEA, Generation/Transmission/Distribution)	11,612	13,377	15.2%	\$4,938,097	\$4,472,516	-9.4%
Portfolio Support				\$7,515,762	\$9,326,154	24.1%
Research & Compliance				\$3,136,786	\$2,818,849	-10.1%
Other Electric Programs				\$1,682,257	\$1,972,380	17.2%
Totals	230,118	208,965	-9.2%	\$96,266,984	\$102,700,629	7%

*Based on the petition (UE-190905, Order 02) version of Exhibit 1 for "original".

Table III-2 also presents the overall natural gas savings and anticipated spending by Energy Efficiency Sector.

All references to natural gas 2021 updates are to savings and budget figures enumerated in PSE's original 2020-2021 BCP filing on November 1, 2019, and approved by the Commission on December 18, 2019 in Order 01.

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

2021 Comparison: Natural Gas BCP* versus ACP Update						
Sector	Savings, Therms			Expenses		
	Original 2021 Plan As indicated in 2020-2021 BCP*	Updated 2021 ACP	Percent Change	Original 2021 Plan As indicated in 2020-2021 BCP*	Updated 2021 ACP	Percent Change
Residential Energy Management	1,563,096	1,378,464	-11.8%	\$9,388,247	\$9,041,179	-3.7%
Business Energy Management	1,651,638	1,900,938	15.1%	\$5,106,440	\$7,058,461	38.2%
Pilots	160,000	110,500	-30.9%	\$100,913	\$12,563	-87.6%
Regional (NEEA, Generation/Transmission/Distribution)	0	0		\$2,689,541	\$817,308	-69.6%
Portfolio Support				\$1,558,455	\$1,973,730	26.6%
Research & Compliance				\$495,526	\$441,869	-10.8%
Other Gas Programs				\$87,000	\$87,000	0.0%
Totals	3,374,734	3,389,902	0%	\$19,426,122	\$19,432,109	0%

*PSE did not change its 2020-2021 natural gas savings target in the April 2020 petition to modify electric savings.

1. Principal Considerations Influencing Energy Efficiency 2021 Updates

Energy Efficiency staff continually examined several considerations while adaptively managing their programs in 2020 with an eye toward developing the 2021 ACP. The following discussions highlight some of the key assumptions and factors that program staff used to guide their planning processes as they adaptively managed electric and natural gas savings goals and 2021 anticipated spending.

B. Key 2021 Savings Revision Drivers

Throughout the 2021 planning process, staff carefully considered the dynamics of PSE's and the region's marketplace, trade ally support, customer requirements, internal and external resources, actions taken by other utilities, and the potential for new and untested customer offerings. The impacts of the ongoing COVID-19 pandemic influenced many planning activity attributes with continuing uncertainty, and called upon staff's inventive adaptive management skills.



The pandemic has also had a pronounced effect on the dynamically evolving market demand of key measures. In light of this uncertainty, Energy Efficiency program staff conducted rigorous savings reviews for both natural gas and electric Portfolios.

Many savings drivers pertain equally to electric and natural gas updated savings values. Central among these include, but are not limited to: annual revisions to RTF Unit Energy Savings (UES)²⁷ and PSE Deemed savings values, energy code implementation, the cyclical nature of certain programs, the impact of pilots with uncertain savings, NEEA savings projections, and the incorporation of applicable recommendations made in the 2018-2019 Biennial Electric Conversation Achievement Review (BECAR).

It is important to note that, although excluded from PSE's biennial EIA Penalty Threshold, Northwest Energy Efficiency Alliance (NEEA) savings and pilot programs with uncertain savings are included in the overall Energy Efficiency Portfolio²⁸ as PSE customers fund these. As Portfolio contributors, PSE includes them in the following discussions. Where applicable, PSE distinguishes the circumstances applicable to electric versus natural gas programs.

1. Direct Impacts of the COVID-19 Pandemic

The COVID-19 pandemic resulted in the suspension of PSE's Home Energy Assessment program. A key attribute of the program was the in-home evaluation of a customer's energy system. When in-home customer contacts were suspended,—coupled with the RTF's showerhead UES value revision, discussed below—the program became unsustainable.

The pandemic also affected several other Energy Efficiency offerings and services. It was necessary to considerably curtail programs or the implementation approach of programs that formerly involved a high degree of personal or on-site interaction with customers: Multifamily Retrofit and Small Business Direct Install, for instance. Also impacted was the Commercial Strategic Energy Management (CSEM) program, where savings attribution has been made challenging.²⁹

²⁷ Those PSE-Deemed measures, whose savings values are derived from RTF baselines (primarily natural gas prescriptive measures) are also impacted by RTF UES value revisions.

²⁸ The 2020 and 2021 Portfolio savings comprise the *Total Utility Conservation Goal*.

²⁹ With many business types and schools closed or operating with minimal staffing, it isn't possible to directly attribute energy usage reductions to conservation efforts versus reductions directly related to the pandemic.

The pandemic also significantly altered PSE’s verification processes, its marketing tactics, and customer outreach approaches. Other effects of the pandemic caused many conservation measures to be in short supply: LED products from China, for instance.

PSE provides additional, detailed discussions in its program-specific outlines in Chapters 4 through 9.

2. Dramatically Evolving Market Dynamics

The evolution of market demand in most marketplace segments is linked to the COVID-19 pandemic. Program staff has observed that as the pandemic continues, customers have modified their Energy Efficiency focus, and many have been forced to curtail their outlay on energy efficiency products. As consumers respond to the pandemic, certain market segments are more adversely impacted. This makes calculating conservation savings quite complicated and difficult to pinpoint, especially in the business sector.

As noted in the “Key Drivers of Electric Savings Revisions” in Chapter 3, most schools have been closed since April 2020, making savings difficult to calculate. Differentiating between lower energy usage due to no staff on-site versus conservation measures became challenging. Many businesses have experienced similar circumstances: with many employees telecommuting, quite a few buildings are experiencing lower power demands.

Conservation measure availability is also significantly influencing PSE’s ability to affect savings. For instance, LED products have experienced supply shortages for a number of months due to the pandemic, as are several other products. An additional effect of the pandemic is consumer re-focus and its effect on businesses. For instance, most bicycle stores have seen a run on bicycles since the beginning of the pandemic. They are now unable to replenish their stock; making conservation investment decisions difficult to commit to now. Shops selling campers, boats, fitness equipment, etc. face the same situation as consumers seek diversions that provide social distancing and as alternative to in-person settings, such as gyms, theaters, halls, etc.



3. Annual Prescriptive Measure Updates: RTF UES and PSE Deemed

RTF and RTF-derived measures comprise a sizable proportion of PSE’s overall electric and natural gas conservation goals. In applicable cases, PSE will follow accepted methodology and protocols to develop PSE Deemed savings values³⁰ that are consistent with WAC 480-109-100(5)(a), and adhere to Energy Efficiency’s *Measure Revision Guidelines*.

The 2021 ACP reflects applicable programs’ revisions of the RTF and PSE Deemed prescriptive measures in their portfolios to the updated values published by the RTF as of September 1, 2020, or vetted through the PSE Deemed³¹ measure review process by December 31, 2020.³² In the first quarter of 2021, PSE will report those savings values for all prescriptive measures in Exhibit 5: *Prescriptive Measure Values*.

Program staff have updated the savings values for their programs’ suite of measures in each program detail page of Exhibit 1. PSE highlights applicable revised savings figures³³ in the Measure Information Tables. A measure with an outdated savings value is retired, and the updated savings value denoted at the end of the table as a new measure.³⁴

a. Highlights of Significant Prescriptive Measure Revisions

One of the most noticeable RTF UES revisions enacted in 2020 was the deactivation of residential showerheads in June. PSE’s Retail Showerhead program employed savings values derived from RTF UES calculations. Based on the UES value for each showerhead type, PSE applied adjustments that align with its customer demographics, to arrive at savings values that were specific to its service territory.

³⁰ In cases where PSE pursues the conversion of a measure from RTF UES to PSE Deemed, the measure cannot be used until the evaluation, engineering analysis, or actual usage studies are completed and approved. This impacts PSE’s ability to meet its savings targets and goals.

³¹ The majority of natural gas prescriptive measures are PSE Deemed.

³² Program staff review all prescriptive measures, including PSE Deemed measures annually.

³³ If an RTF measure’s value was not updated by September 1, 2020, or if there was no revised business case for a PSE Deemed measure by December 31, the value will be the same as was noted in the original 2020-2021 BCP’s Exhibit 1 detail page measure table.

³⁴ This is in keeping with the DSMc measure revision/version process. Even if the measure maintains the same name from year to year, if the savings value is revised, a new version is assigned and the old designation is retired (but archived for historical reference).

This measure's deactivation resulted in PSE suspending its Retail Showerhead program, resulting in a loss of almost 1,200 MWh and 35,000 therms in 2021. Other Energy Efficiency programs also depended on savings from showerheads to offset some higher-cost measures in their portfolio, including Home Energy Assessments, Multifamily Retrofit, Low Income Weatherization, and Small Business Direct Install.

Another key RTF savings value revision³⁵ applied to LED lamps in the last quarter of 2019. Since the RTF made this update after PSE filed the 2020-2021 BCP,³⁶ those revisions will affect the updated 2021 savings figure: a reduction of more than 60 percent, or -2,600 MWh from the originally filed 2021 amount.

Other RTF UES value changes, such as insulation, windows, and sealing shell measures, had a significant impact on the Single Family Weatherization program, and ductless heat pump revisions resulted in reduced Single Family Space Heat savings forecasts.

Very few programs in REM and BEM were unaffected by the annual savings value revisions. Some adjustments resulted in measures becoming cost-ineffective, which necessitated those measures' retirement for 2021, or the suspension of ancillary measures. PSE discusses specific instances in upcoming program discussions.

Although some per-measure value adjustments may seem insignificant, when multiplied by thousands (or in the case of some LED lamps, millions), the adjustments could have a considerable impact. Program staff are adept at employing a variety of adaptive management solutions to overcome these challenges.

³⁵ The RTF doesn't establish per-lamp UES values for LEDs. Rather, it calculates "lumen bins". An RTF analysts assists PSE to establish per-lamp PSE Deemed savings values, based on historical sales data in PSE's territory.

³⁶ If the RTF updates a UES value after September 1 of a planning year, PSE reflects that change in the year after the subsequent year. For instance, the RTF revised LED savings figures near the end of 2019. By that time, PSE had locked its planners in readiness for the November 1 2020-2021 BCP filing. Therefore, those RTF changes were not reflected in 2020 and 2021 savings estimates. The updated 2021 figures, however, will reflect the updated RTF-derived PSE Deemed values.



4. Code Revisions

The 2018 Washington State Energy Code (WSEC) goes into effect in 2021. Although building codes primarily impact new construction projects (both residential and commercial) and have lead times anywhere from six months to two years, the effect on the overall Portfolio can be far-reaching and affect service delivery, supply chain and partner channels, and overall savings. The Energy Code is trending toward a more performance-based/holistic system-level requirements, rather than prescriptive equipment efficiencies. Energy Efficiency anticipates that key programs that will be impacted are: Single Family New Construction, Single Family Space and Water Heat (both electric and natural gas), and Commercial Midstream.³⁷

EISA (Energy Independence and Security Act) codes³⁸ will continue to affect primarily Retail Lighting measures in 2021.³⁹ The majority of general-purpose lighting within the bill's definitions were removed. These LED lamps include, but are not limited to A-lamps, Candelabra, Globe, and Reflector. Program participation by retailers and manufacturers has eroded due to the limited number of rebated lighting products.

5. Cyclical Program Savings

A clear example of savings that occur in a regular, predictable cycle is the Large Power User/Self-Directed program (Schedule 258). This program occurs in a four-year cycle and 2021 is the third year of the current cycle. Over the four-year cycle, years one and two have historically have seen only a slight increase in savings from the previous year. The third year typically sees savings increase while the fourth year has the most dramatic savings increase. As with other programs, it is difficult to predict how customers with large power demand will be impacted by COVID-19 in 2021. Early feedback suggests that customers will need to delay some projects in 2021.

³⁷ PSE does not anticipate that the 2018 building codes will significantly impact the Commercial/Industrial New Construction program in 2021, as that program's lead times typically extend beyond the planning year.

³⁸ EISA requirements were rolled back nationally in 2019, but were "backstopped" by HB 1444.

³⁹ PSE discusses its process for incorporation of RTF savings revisions in footnote 40.

6. Pilot and Pilot-Analogous Savings

PSE provides a comprehensive overview of its approach to pilot and pilot-analogous measures in Section E of its 2020-2021 BCP. In 2021, PSE will continue to actively examine new technologies, and adaptively manage its program offerings to ensure that customers have access to the latest cost-effective conservation services.

Although the potential electric savings from Pilots with Uncertain Savings are excluded from the EIA Penalty Threshold, PSE includes the following discussion on pilot program and activity in the 2021 Key Savings Revision Drivers section because it is an element of customer-funded overall Portfolio initiatives and savings goals. PSE will ensure that it reviews the status of its pilot program activities and any potential pilots with the CRAG throughout 2021.

a. Energy Efficiency Considerations for Pilot Initiatives

As part of PSE's continuous improvement, program staff persistently scan for innovations in technology and program delivery. Pilot initiatives focus on methods for achieving energy savings as well as better serving customers, including hard-to-reach and vulnerable populations. In addition to operating in compliance with condition (9)(b), in 2021 Energy Efficiency will continue to explore new opportunities following the findings of Low Income Needs Assessment completed in 2020 and design pilots accordingly.

A key aspect of PSE's evaluation of potential pilot programs is the potential for cost-effective energy savings in the current or subsequent biennium.⁴⁰ WAC 480-109-100(1)(c) indicates that a utility must implement pilot projects:

...when appropriate and expected to produce cost-effective savings **within the current or immediately subsequent biennium**,⁴¹ as long as the overall portfolio remains cost-effective.

Throughout the 2021 planning process, Energy Efficiency staff examined the energy efficiency landscape, consulted with its Trade Ally Network, and partnered with regional utilities for new technologies and new savings opportunities.

⁴⁰ Energy Efficiency's current pilots with uncertain savings are excluded from the EIA Penalty Threshold, and thus, not a key EIA savings driver, pilots and pilot-analogous initiatives contribute to the overall Portfolio savings.

⁴¹ Emphasis is added for purposes of this discussion.



This work continues in order to develop potential new and innovative customer offerings that reflect a prudent use of their Rider funding.

If program staff, based upon their extensive experience and professional opinion, cannot justify the ratepayer expenditure on an offering not expected to produce verified savings within several years, it is prudent to pass that product by and potentially consider it in a future biennium. Where they believe that there is feasibility and customer demand with a potential for program execution and a degree of savings uncertainty, PSE classifies these initiatives as pilots in Exhibit 1: *Savings and Budgets*.

Certain offerings or services that might be classified as Pilots may be incorporated into the Portfolio as a part of BEM's Energy Efficiency Technical Evaluation program (Schedule 261), or they may be directly incorporated into an existing program.

i. Pilots with Uncertain Savings

PSE's 2021 conservation plans include broader deployment of its "Retail Choice Engine", which is scheduled to launch in 2020 as the "Efficient Product Guide." This provides customers with side-by-side comparisons of energy efficient products, rather than researching products individually. The site will provide an "energy score" alongside pricing, customer ratings, product details, etc.

Planned for deployment in 2021, the Single Family AMI Enhanced Engagement pilot uses AMI data to provide customers with near real-time energy usage information, with the intent of influencing conservation behaviors, resulting in reduced energy usage.

For its Small and Medium Business AMI Enhanced Engagement pilot, program staff will delay the launch into 2021 due to data integrity issues, and customers' ability to install measures in areas still affected by the pandemic. This pilot uses PSE's new Meter Analytics Record (MAR) data platform to provide near real-time energy usage information to influence conservation behaviors and will begin claiming savings in early 2021.

Building on the momentum established in 2020, BEM's Pay for Performance pilot expects to increase program potential through expanded outreach and additional training for Energy Management Engineers. Staff will continue 2020 program improvements that focused on long-term contractor-customer engagement, the incentive calculator, and criteria for project documentation. Additional program improvements in 2021 will focus on adjustments to the program engagement period and the incentive model.

Moderate Income Residences is now the “Efficiency Boost” pilot and is consistent with condition (9)(b). In 2021, Efficiency Boost will increase rebates for moderate-income customers across a wide offering of residential rebates.

The BEM team expects to launch a Climate Corps Fellowship pilot that will run from the fall of 2020 through June 2021. PSE will subsidize a fellowship at five customer host organizations to support the planning, implementation, and documentation of energy efficiency projects.

Expected to launch in late 2020, BEM staff plans to deploy a Request for Proposals (RFP) process, with a proposed budget of \$5 million (combined electric and natural gas) for Commercial/Industrial Retrofit non-lighting and non-commissioning projects.

ii. Pilot-Analogous Initiatives

In 2021, program staff will implement innovative measures and services, consistent with its continuous improvement through adaptive management principles.

PSE successfully launched the Moderate Income Residences pilot in 2020 to address a potentially hard-to-reach customer segment. Renamed as “Efficiency Boost”, broader deployment in 2021 expects to increase rebates for moderate-income customers across a wide swath of residential rebate offerings.

The Business Lighting program launched the Business Lighting Express pilot in late 2020. It will continue to be developed in 2021 and expects to increase lighting maintenance upgrades that wouldn’t otherwise fit the Lighting to Go and Business Lighting grants.

Also introduced in late 2020, the Commercial/Industrial Retrofit RFP initiative expects to leverage BEM’s experience with the Large Power User/Self-Directed RFP process to encourage increased commercial conservation, with the expectation that added incentives will complete projects by the end of 2021.

iii. Business Energy Management Technology and Pilot Assessments

BEM’s Energy Efficiency Technical Evaluation program operates under the terms of electric/natural gas Schedule 261, and screens potential commercial pilots each year. Energy Management Engineers (EMEs) receive occasional solicitations for potential energy efficiency projects.



As discussed in the program's Exhibit 3: *Program Details*:

[...] Ideally, PSE would identify cost effective technologies and measures with significant savings potential, which are commercially available. However, there are many emerging technologies that range from commercially available, but not used in the Northwest, to conceptual or prototypical technologies still in the development phase. [...]

Energy Efficiency EMEs subject potential projects that are submitted to rigorous assessments, most of which have not been performed by the applicant. As a result, many of these proposals' savings claims are unsupported, inaccurate, not cost-effective, or not market-ready.

When the program generates an opportunity, though, Energy Efficiency includes it in its Exhibit 1 documentation in the Energy Efficiency Technology Evaluation line of the BEM Sector, and presents it to the CRAG.

In 2021, PSE does not foresee new or innovative electric or natural gas technologies that would be applicable to this service, based on engineer feedback provided in 2020. PSE will continue to scan for new and innovative conservation technologies in 2021.

7. NEEA Savings

With the agreement the CRAG and Commission staff, NEEA savings are also excluded from the 2020-2021 EIA Penalty Threshold calculations. To ensure reporting consistency, PSE includes NEEA savings in its Exhibit 1 and the Department of Commerce's annual update of biennial conservation achievement.

Since PSE customers fund NEEA activities and savings that are included in the overall Energy Efficiency Portfolio, Energy Efficiency includes this key element in its discussion on 2021 key savings revision drivers.

Energy Efficiency's Portfolio includes both the established NEEA electric program, and NEEA's natural gas market transformation pilot.

a. NEEA Electric Savings

In September 2020, NEEA revised its 2020-2021 savings forecast for the PSE service territory. NEEA's original projection for 2021 electric savings was 1.24 aMW. Its revised projection for PSE savings is 1.47 aMW, or 12,877 MWh: an 19 percent increase.

NEEA indicates that a key driver of this variance is primarily three market transformation initiatives: ductless heat pump UES value revisions,⁴² an above-estimated market share for ENERGY STAR 7 Desktop Computers, and more commissioning than the original forecast based on NEEA's 2019 Commissioning data.

b. NEEA Natural Gas Market Transformation Savings

Similarly, NEEA's original 2021 forecast for natural gas savings, achieved through its Natural Gas Market Transformation Collaborative pilots, was zero therms in PSE's service territory. Over the course of 2020 analyses, PSE estimates that natural gas savings achieved through NEEA initiatives in its territory will remain 0 therms for 2021.⁴³ Although there is a potential for the installation of commercially available gas heat pump water heaters (one of the core initiative measures), it is not possible to project where units may be installed, and what their savings values may be.

8. Incorporating 2018-2019 BECAR Recommendations

Evergreen Economics made several electric savings calculation-specific recommendations in the 2018-2019 Biennial Electric Conservation Achievement Review (BECAR)—many of which staff incorporated into their 2021 planning— including:

- Continue tracking BECAR recommendations and responses.⁴⁴
- Continue with evaluation response tracking and identify longer-term recommendations that should be addressed specifically in future evaluations.
- Review the status of longer-term recommendations that were identified in this BECAR that should be addressed in future evaluations, which are summarized in Table 7 (with specific report page numbers included in parenthesis) and copied verbatim in *Appendix A*.⁴⁵

⁴² NEEA now adjusts its RTF-based UES values using an approach that is consistent with PSE's guidelines, which updates deemed savings values annually.

⁴³ NEEA's original therm savings estimate for 2021 was based on the early adoption of commercially-available natural gas technology, including non-plug Energy Star® water heaters. Although NEEA plans to claim savings for Next Step Homes throughout the region, analysis continues on the derivation of those claims, specifically as they pertain to the PSE territory.

⁴⁴ Evergreen Economics, *Biennial Electric Conservation Achievement Review (BECAR) of the Puget Sound Energy 2018-2019 Electric Conservation Program Portfolio*, Section 3.3, page 26.

⁴⁵ Evergreen Economics, *Biennial Electric Conservation Achievement Review (BECAR) of the Puget Sound Energy 2018-2019 Electric Conservation Program Portfolio*, Section 3.4, page 27.



PSE provides a summary of recommendations from the aforementioned Table 7⁴⁶ in the following sections. These recommendations may influence program delivery strategies, savings calculations, cost-effectiveness, measure cost, etc.

a. Resource Conservation Management Program⁴⁷

Evergreen Economics recommended that PSE test for savings differences between schools and other government buildings.

b. Multifamily Program

Evergreen Economics recommended:

- Develop and track HTR indicators for hard-to-reach MF sub-segments,
- Update natural gas UES values in 2020 for thermostatic showers and adapters,
- Update window measures savings for natural gas heated homes,
- Enhance participant data tracking to follow-up with customers and increase conversion to retrofit projects, and
- Update savings for specific measures included in table.

c. Web-Enabled Thermostats

Evergreen Economics recommended:

- Update deemed savings value for natural gas customers to 21 therms,
- Conduct additional impact research for electric heating customers using an expanded participant pool and consumption data,
- Conduct additional impact research for natural gas heating customers using an expanded participant pool and consumption data,
- Evaluate the influence of PSE's efforts to promote 'set it and forget it' message,
- Deliver 'set it and forget it' message on PSE's website via short videos or links to other resources, and
- Conduct more research to determine best customer targeting strategies.

⁴⁶ Ibid, page 28.

⁴⁷ In Table 7 of the BECAR, Evergreen Economics terms RCM incorrectly in the BECAR: "Resource Conservation Manager", rather than the correct "Resource Conservation Management". In 2020, the program was re-titled "Commercial Strategic Energy Management".

d. Home Energy Assessment⁴⁸

Evergreen Economics recommended:

- Adopt a multi-pronged approach for messaging savings recommendations to customers,
- Improve marketing efforts that encourage word-of-mouth advertising, and
- Provide customers more information prior to the assessment.

e. Home Energy Reports

Evergreen Economics recommended:

- Explore claiming savings from move-out homes, and
- Examine trend of decreased savings for expansion groups through a comprehensive review of outcomes/strategies and models.

Evergreen Economics' recommendations aligned with PSE's standard adaptive management approach. Thus, where possible, PSE incorporated each of these recommendations in its 2021 suite of programs.

C. Electric Programs' Saving Revisions

In reviewing Energy Efficiency's update of its 2021 savings forecast contained in its April 2020 Petition to Modify the 2020-2021 Electric Savings Target, PSE provides a program-by-program comparison table of original-versus-revision savings and budget figures in Exhibit 1's "Compr Orig 21 to ACP 21" tab.

PSE expects that its 2021 electric savings achievement will be approximately 9 percent lower than originally indicated in its April 2020 petition: 208,965 MWh versus an original value of 230,118 MWh. While it is expected that most Residential and Business Rebates programs will achieve results that are in line with the original 2021 expectations, many will struggle with previously discussed issues, such as uncertainty, slipped construction schedules, and delays caused by the COVID-19 pandemic, as well as reduced UES values, lower customer demand, and lower contractor participation.

⁴⁸ As noted in discussions throughout the 2021 ACP, PSE suspended the Home Energy Assessment program early in the third quarter of 2020, due to circumstances caused by the pandemic and cost-ineffectiveness.



Highlights of notable reductions include:

- Home Energy Assessments: Savings reduced 2,590 MWh, 100 percent resulting from the pandemic restrictions and the deactivation of the retail showerhead measures.
- Retail Showerheads: Savings reduced 1,200 MWh, 79 percent as a result of RTF deactivation
- Retail Lighting: Savings reduced 2,650 MWh, 63 percent resulting from prescriptive measure savings revisions.
- Single Family Weatherization: Savings reduced 768 MWh, 37 percent due to RTF UES revision of all insulation, window, and sealing measures.
- Residential Pilots, HEA Service for Vulnerable Communities: Savings reduced 3,400 MWh, 61 percent due to HEA suspension.
- Commercial Strategic Energy Management: Savings reduced 3,000 MWh, 19 percent, resulting from building occupancy disruptions caused by COVID-19.
- Lighting to Go: Savings reduced by 7,000 MWh resulting from code revisions making a very popular measure unavailable for rebates.

One program, Single Family Water Heat projects an increase of 58 percent, or 1,290 MWh, due in large part to the new instant rebate fulfillment channel.

D. Natural Gas Programs' Saving Revisions

In reviewing Energy Efficiency's update of its 2021 savings forecast contained in its November 1, 2019 BCP filing, PSE provides a program-by-program comparison table of original-versus-revision savings and budget figures in Exhibit 1's "Compr Orig 21 to ACP 21" tab. PSE expects that its 2021 natural gas savings achievement will be relatively unchanged from the originally-indicated amount.

On the natural gas side, several programs project increases of 5 percent to more than 30 percent above their originally planned 2021 figures, as indicated in the November 1 filing of the 2020-2021 BCP. Program staff adaptive management actions that are leading to increased therm savings include, but aren't limited to:

- Single Family Space Heat: An increase in therm savings of 29,000, or 5 percent, resulting from the addition of the instant rebate fulfillment access.
- Multifamily Retrofit: An increase of 2,500 therms, or 10 percent, resulting from updated historical analyses affecting future projections.

- Home Appliances: An increase of 2,100 therms, or 29 percent, resulting from adding top-load clothes washers to the measures.
- Commercial Foodservice: An increase of almost 150,000 therms, resulting from calculations updated in the April Petition to Modify 2020-2021 Savings Target and an update of the midstream fulfillment channel opportunities.

PSE anticipates notable savings reductions (from originally-planned 2021 values) in several programs, where pandemic related circumstances, significant reductions in UES values, elimination of measures, along with an update to the original 2021 program projections, reduced savings by 12 to 78 percent. Notable variances include, but are not limited to:

- Low Income Weatherization: A reduction of 5,700 therms, or 23 percent, attributable in large part to the effects that the pandemic continues to have on project timelines, labor availability, and the delay of a number of large multifamily projects.
- Single Family Weatherization: A reduction of 120,000 therms, or 35 percent. As is the case in the electric program, revised UES values are the key drivers.
- Retail Showerheads: A reduction of 35,000 therms, or 81 percent, due to the deactivation of the showerhead measures.
- Single Family New Construction: A reduction of 20,000 therms, or 78 percent, caused by fewer new homes being built with natural gas as the heating source.
- Home Energy Assessment Service for Vulnerable Communities Pilot: A reduction of approximately 49,000 therms, resulting from the suspension of the primary HEA program in 2020.

E. Key 2021 Expenditure Revision Drivers

When discussing drivers of anticipated spending and any associated variances to the original 2021 values listed in the 2020-2021 BCP, there are sometimes considerations that affect electric and natural gas programs equally. For instance, one key driver of updated 2021 planned expenses that applies to all Energy Efficiency programs is the COVID-19 pandemic. Many programs, such as Single Family Water Heat, Small Business Direct Install, Business Lighting Grants, Commercial Industrial, and Commercial Foodservice, have increased their marketing, outreach, or field services budgets to adaptively manage revised constituency requirements. Additional costs will be incurred in order to respond to new contact methods, upgraded communications systems, and the additional effort required to adhere to PPE (Personal Protective Equipment) needs. Another attribute adjusted annually is the updated corporate overhead rates.



In recent annual Plan revisions, drivers of planned spending revisions could be linked to savings forecasts—which primarily result in a commensurate change in measure uptake and customer incentives—in electric or natural gas programs in a relatively clear-cut fashion. This year, that correlation is not as prevalent, due in large part to circumstances created by the responses to the pandemic, and the additional costs required to make up for many programs’ savings revisions. PSE provides high-level summaries of anticipated spending revision drivers in the following section, with additional details provided in the specific program discussions.

1. Updated 2021 Corporate Overhead Rates

The updated 2021 PSE corporate labor overhead rate was revised from 65.1 percent to 66.0 percent. PSE’s micro-overhead classification⁴⁹ is slightly higher than originally calculated: from 22.2 percent to 24 percent. Both of these overhead elements impact electric and natural gas anticipated spends, and are applied globally to applicable programs in the Exhibit 1: *Savings and Budget MS™ Excel®* workbook.

2. Electric Budgets

The electric budget of \$102.70 million is approximately 7 percent higher than the originally stated 2021 budget in the 2020 April Petition. The overall budget considers, but is not limited to revised UES values for prescriptive measures, revised program expectations, updated savings calculations, labor allocation revisions, and historical data accumulated in 2020.

PSE’s program-by-program comparison table of original-versus-revision electric savings and budget figures in Exhibit 1’s “Compr Orig 21 to ACP 21” tab. The baseline used is PSE’s April 2020 Petition to Modify 2020-2021 Savings Target.

a. Spending Associated with Projected Electric Program Savings

Highlights of key electric budget drivers include, but are not limited to:

- Single Family Water Heat intends to spend an additional 105 percent to move the market. Program staff increased the midstream incentive on heat pump water heaters to match the downstream rebate.

⁴⁹ The micro-overhead account tenet removes assessments that were formerly added to the Labor budget category. The addition of micro-overhead did not result in an incremental increase in the overall budget.

- The Smart Thermostats program intends to add a new line-voltage measure and utilize additional field services to market the measure. The resultant budget has increased by 51 percent.
- Showerheads will see a reduction in spend of 83 percent due to the RTF deactivation of showerhead savings. Remaining spending is due to carry over of rebate applications from 2020.
- The Single Family Weatherization program is planning an increase in cost of 60 percent. A driving factor of this was a correction in the planning calculation that resulted in an increase in the number of window units by a factor of 10. Additionally, the Weatherization program intends to continue the Efficiency Boost initiative of increased incentives for qualifying customers.
- Single Family New Construction is planning a 31 percent reduction in spending due to a contraction in anticipated units that aligns with volumes seen in 2020.
- Commercial/ Industrial Retrofit will increase its budget by 27 percent to account for new incentive rates of \$0.50 per kWh capped at 100 percent of measure cost. This translates to approximately \$4 million in additional spending.
- PSE increased the budget for Automated Benchmarking by 116 percent to reflect the increase in costs due to technical hurdles implementing the software upgrade.
- The Trade Ally Network is anticipating \$60,000 less in revenue than originally expected, attributed to reduced contractor activity surrounding the pandemic. Because the TAN program is designed to be revenue-neutral, this reduction results in a dramatic percentage decrease in its budget.
- A significant advertising campaign to increase customer conservation activity during the pandemic led to an overall increase of the Market Integration budget of \$941,000.
- The Evaluation group anticipates a reduction of approximately \$333,000 from its original 2021 plan. This can be attributed to a shift of some residential evaluation work forward into 2020, and using updated budgets provided by PSE's evaluation contractor.

3. Natural Gas Budgets

The natural gas budget of \$19.43 million is largely a result of adjusted labor overhead rates, revised UES values for prescriptive measures, revised program expectations, updated savings calculations, labor allocation revisions, and PSE's concerted adaptive efforts to maintain a robust suite of natural gas offerings in light of the ongoing pandemic.



PSE’s program-by-program comparison table of original-versus-revision savings and budget figures in Exhibit 1’s “Compr Orig 21 to ACP 21” tab compares the November 1, 2019 2020-2021 BCP filing to this 2021 ACP update.

a. Spending Associated with Projected Natural Gas Program Savings

Highlights of key natural gas budget drivers include, but are not limited to:

- The Low Income Weatherization program is anticipating a 31 percent decrease in spending due to lower construction industry activity and Housing Agency forecasts.
- The Showerheads program is budgeted to be 83 percent lower due to RTF measure deactivation. Similar to electric, the remaining budget will be for 2020 incentive payment carryover.
- Single Family New Construction anticipates spending 40 percent less due to a recalibration of anticipated activity.
- Commercial/ Industrial Retrofit intends to increase the incentive per therm to \$7 and cap at 100 percent of measure cost. This results in an increased budget of 63 percent.
- A significant advertising campaign to increase customer conservation activity during the pandemic led to an overall increase of the Market Integration budget by \$142,100.
- PSE reduced the NEEA Gas Market Transformation 2021 budget by 75 percent, which accounts for NEEA’s under-spend of approximately \$1.5 million for the 2015-2019 program cycle.⁵⁰
- The Trade Ally Network reduced revenue by \$60,000—similar to its electric operations—to account for an expected reduction in revenue due to decreased contractor activity.

⁵⁰ Of the original \$18.3 million NEEA budgeted for the first 5-year natural gas collaborative cycle, initiative start-up and subsequent suspensions, staffing ramp-up, and less-than-anticipated contractor expenses resulted in a NEEA 5-year under-spend of PSE ratepayer funds. NEEA and PSE agreed that any true-ups occur once per 5-year cycle. While the repayment was originally budgeted in the 2020-2021 BCP’s first year, NEEA and PSE agreed that the repayment would be spread over eight quarters, beginning in Q3 of 2020. Thus, the actual expenses reported in PSE’s 2020 Annual Report for the NEEA Natural Gas Collaborative will show a variance from the budgeted amount.

F. Portfolio Cost Effectiveness

Table III-3 on page 56 presents the projected 2021 electric and natural gas program cost-effectiveness ratios, as measured using the Total Resource Cost (TRC) test and the Utility Cost (UC) Test. It is important to note that cost effectiveness calculations performed for planning purposes rely on measure cost, customer incentive, and savings projections.

PSE will finalize definitive cost-effectiveness rates only after PSE accumulates and reports actual costs. PSE provides program-level cost-effectiveness calculations in Exhibit 2: *Cost-Effectiveness Calculations*. PSE will provide the 2021 actual cost-effectiveness results, based on the reported 2021 costs and savings in the Annual Report of Conservation Accomplishments in March 2022.

1. Application of Non-Energy Impacts

For 2021 cost-effectiveness analyses, PSE continued the standard of incorporating RTF-calculated Non-Energy Impacts (NEIs) and NEIs validated in evaluation studies into the TRC calculation for the majority of electric prescriptive measures using RTF UES values.⁵¹ PSE applied this policy to its suite of gas measures as well.

The RTF indicates the first-year value of the applicable NEI. That value is based on either a square-footage or per-unit (for instance, attic insulation versus showerheads) application. In its Exhibit 2 cost-effectiveness calculator, enters that value, and then multiplies the first-year NEI value by the measure life to determine the total NEI value for each measure.

For its suite of prescriptive natural gas measures, PSE incorporated NEIs through (1) using the kWh-to-therm savings conversion tool for natural gas measures that are based on RTF electric UES values (for those natural gas measures that aren't calculated by the RTF), then (2) applying the RTF-calculated electric first-year NEI figure.

⁵¹ The RTF recently removed NEIs from weatherization measures, citing a lack of evidence to directly quantify specific benefits resulting from insulating a house. This impacted the Single Family Weatherization program's overall cost-effectiveness.



Consistent with conditions (10)(a) and (10)(b), PSE created two Supplements to Exhibit 2 included in this ACP:

- Supplement 1 is a database of Non-Energy Impacts. PSE created the database in collaboration with DNV-GL and includes all NEIs currently used by PSE.
- Supplement 2 is PSE's plan for the proper valuation of Non-Energy Impacts that have not been previously quantified.

2. Electric Cost Effectiveness

Energy Efficiency's overall electric Portfolio cost-effectiveness remains healthy. Consistent with WAC 480-109-100(10)(b), PSE omitted Low Income Weatherization (LIW) factors from the REM and Portfolio TRC and UC calculations.⁵²

The cost-effectiveness considerations for Energy Efficiency's electric portfolio remain intact, with very little change from the 2020-2021 BCP estimates. Reductions in prescriptive UES values, deactivation and suspension of some measures, higher costs resulting from adaptive management steps employed to respond to the pandemic and lower customer demand have increased pressure on program staff to balance their programs' measure mixes. Energy Efficiency calculates that its overall Portfolio electric TRC will be 1.72.

In the REM, only Residential Lighting and Home Energy Reports programs are estimating TRCs B/C ratios lower than 1.0, with the overall Sector achieving a TRC of 1.84. PSE excludes the LIW cost-effectiveness attributes from the overall REM and Portfolio cost-effectiveness calculations. In BEM, all programs are anticipated to finish 2021 with TRCs above a B/C ratio of 1.0. Overall, BEM is expected to achieve a TRC of 2.06.

3. Natural Gas Cost Effectiveness

As was the case in recent past biennia, program staff must apply skillful and proactive management in every Energy Efficiency program in order to sustain the Portfolio's suite of natural gas programs. The Portfolio's overall TRC for 2021 is calculated to be 1.68.

⁵² Although omitted from aggregate UC and TRC calculations, PSE provides LIW cost-effectiveness calculations (for both electric and natural gas sectors) separately in Exhibit 2: *Cost-Effectiveness Calculations*.

In REM, PSE calculates that LIW will finish 2021 with a natural gas TRC of 0.77. LIW will continue to provide partnering agencies electric and natural gas incentives that are the higher of either the PSE deemed measure cost or statewide average measure cost. The policy on the treatment of natural gas boilers to establish payments on the incremental and measure cost up to an SIR of 1.0 or greater has also affected the program's TRC. PSE excludes the LIW cost-effectiveness attributes from the overall REM and Portfolio cost-effectiveness calculations.

Other residential programs that PSE calculates will achieve a TRC of less than 1.0 in 2021 are Single Family Weatherization, Home Energy Reports, and Single Family New Construction. REM's Sector natural gas TRC is expected to be 1.47.

In BEM, PSE calculates that only the Commercial/Industrial Retrofit program will achieve a TRC of less than 1.0 in 2021. When actual project reporting is completed at the end of 2021, the ratio will be trued up and is expected to exceed a TRC of 1.0. PSE calculates that BEM's overall natural gas TRC will be 2.65 for 2021.

As it has for the past several years, PSE assigns a 10 percent adder to the natural gas TRC figures for illustrative purposes.

4. 2021 Cost-Effectiveness Estimates

As indicated in Table III-3, the overall Portfolio exceeds an estimated TRC of 1.0 for its electric programs, consistent with the requirement of WAC 480-109-100(8). PSE's natural gas conservation programs also exceed an overall TRC of 1.0.

Table III-3: 2021 Energy Efficiency Cost Effectiveness Estimates, Sector View

Benefit to Cost Ratios by Sector				
Sector	Electric		Natural Gas	
	Total Resource Cost	Utility Cost	Total Resource Cost	Utility Cost
Portfolio	1.72	2.08	1.68	1.94
REM	1.86	2.25	1.47	2.36
BEM	2.06	2.68	2.65	2.32

Indicated TRC includes the application of a 10 percent Conservation credit value.



It is noteworthy that PSE will report final cost-effectiveness figures—that may differ from the above estimates and are based on actual expenses and savings—in its Annual Report of Energy Conservation Accomplishments, filed with the Commission each April.

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IV. Residential Energy Management Overview

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 safety of customers, staff, and partners uppermost in mind for 2021. The Sector expects to continue to proactively adapt to the ongoing effects of the COVID-19 pandemic, and will make enhancements and revisions to several program strategies and measure offerings, consistent with State and Company guidelines and savings goals. Several conditions will have considerable impacts on the Sector's electric and natural gas programs in 2021, with planned electric savings falling 22 percent below the originally planned 2021 goal. REM calculates that its natural gas savings will be 12 percent lower than the original 2021 goal.

Although the ongoing effects of the pandemic will continue to affect the majority of REM programs, systematic revisions—predictable, routine annual updates—are also significant contributors to the Sector's challenges. These include, but are not limited to prescriptive measure UES value updates and code changes.

In the following program plans, PSE includes the original 2020-2021 Biennial Conservation Plan program overviews (denoted with a unique heading and italicized font) to differentiate and provide a point of comparison with the updated 2021 program plans (also separated by a unique heading).

A. COVID-19 Pandemic Adaptations

As was the case in every facet of Energy Efficiency's operations, REM was required to swiftly make several changes to its business model: some were temporary, but many will continue into 2021. Key among its updated processes will be the Sector's verification processes, and customers, contractors, and third-party implementer interfacing. While some of the retail programs will not need to alter their verification processes (for instance, Retail Lighting, Home Appliances, Smart Thermostats, Home Energy Reports), programs that partner with contractors and agencies have resumed operations under strict guidelines that comply with the State Safe Start requirements. All residential space, water heat, and weatherization programs will utilize 100 percent virtual verifications. PSE provides a complete discussion of Energy Efficiency's verification process modifications in Chapter 2: *Introduction*.

New Construction—both Multifamily and Single Family—experienced significant slowdowns in 2020, and anticipate that the effects from the pandemic will continue to delay construction starts, and persist in limiting product supply chains well into 2021. It is foreseeable that some projects slated for a 2021 completion may slip to 2022 or be cancelled altogether.

Customer participation in some Energy Efficiency programs, for instance, Smart Thermostats and Home Appliances, declined in 2020. A notable suspension due in large part to the pandemic was the Home Energy Assessment program in mid-2020. To counteract these conditions, PSE has modified or curtailed in-person events, meetings, and retail trainings to provide more virtual interactions wherever possible through either teleconferences or email. REM programs have increased their Marketing, Outreach and field services efforts to compensate for the reduction of in-person communications. Staff have also implemented limited-time offers, new measures, and innovative services to meet on-site limitations.

B. Systematic Influences

Prescriptive measure savings are typically reviewed annually, both by the RTF and Energy Efficiency program staff. Savings value reductions are fairly routine and can be somewhat compensated for. In 2021, however, the amount of revisions had an enormous cumulative effect on many programs, both electric and natural gas. For instance, because of the RTF deactivation of residential showerheads, PSE was obligated to suspend its electric and natural gas Retail Showerhead program, along with showerheads delivered via direct-install programs. The adjustment of key LED lamp savings in late 2019⁵³ will also reduce Retail Lighting savings by over 60 percent.⁵⁴ UES value reductions in key weatherization measures reduced the Single Family Weatherization electric savings by almost 80 percent, and its natural gas savings by 35 percent.

The implementation of the 2019 Washington State Energy Code in February 2021 will also result in a small amount of reduced electric savings in the Multifamily and Single Family New Construction programs (although many projects started in 2020 and early 2021 will be grandfathered under the 2015 Code).

⁵³ The LED calculations—made by applying RTF-supplied data to PSE sales data—were made subsequent to the November 1, 2019 filing of PSE’s BCP, and therefore, the 2020 Retail Lighting savings values were based on the originally-indicated figures. The 2021 savings values represent the updated UES calculations, as well as the elimination of several general-use LED lamp types.

⁵⁴ The reduction in Retail Lighting savings is particularly noteworthy. In years past, this program constituted almost 50 percent of the total REM electric savings.



C. REM 2021 Highlights

The Sector will continue to implement adaptive responses to the pandemic and systematic updates that it started in 2020. Several 2021 initiatives include, but are not limited to:

- The Home Appliances program is adding top-load clothes washers to their suite of offerings.
- The Single Family Water Heat program collaborated with Tacoma Power, Snohomish PUD, and NEEA to introduce instant rebates on heat pump water heaters.
- The Smart Thermostat program plans to add an instant rebate function via a new online marketplace website.
- The Single Family New Construction program is examining the potential of adding a 3-Star, 10 percent above-code tier to its electric offerings. Snohomish PUD will also align with PSE's incentives and program guidelines. Due to a variety of factors, including builder incentives to install more electric equipment, the program's natural gas savings is anticipated to be more than 70 percent lower than originally planned.
- The Multifamily New Construction program will simplify its incentive structure from a three-tier to two-tier offering.
- The Multifamily Retrofit program will examine the potential for a direct-install line voltage thermostat measure.
- PSE suspended the Behavioral Home Energy Assessment for Vulnerable Communities residential pilot for 2021. In addition, the Retail Choice Engine pilot is expected to see lower-than-planned savings, due to systems startup timing and pilot design. The Efficiency Boost pilot, targeting hard-to-reach moderate-income customers, is expected to continue ramping up in 2021.

PSE provides additional details in the program discussions in the following chapter.

1. Overall Sector Savings and Expenditure Updates

Table IV-1 provides a summary of the Residential Energy Management Sector's 2021-savings goals, specific budgets, and cost-effectiveness estimates, and compares them to the originally stated 2021 goals and budgets. PSE discusses several constituents of these figures in the following program sections. PSE provides details of specific budget and savings changes in the specific budget detail sheets for each program in Exhibit 1: *Savings and Budgets*.

Table IV-1: 2021 REM Conservation Target and Budget Estimates

2021 Comparison: Original BCP versus ACP Update						
Residential Energy Management	Savings			Expenses		
	Original 2021 Plan As indicated in 2020-2021 BCP	Updated 2021 ACP	Percent Change	Original 2021 Plan As indicated in 2020-2021 BCP	Updated 2021 ACP	Percent Change
Electric (MWh)	50,245	39,012	-22.4%	\$30,547,536	\$30,702,897	0.5%
Natural Gas (Therms)	1,563,096	1,378,464	-11.8%	\$9,388,247	\$9,041,179	-3.7%
Budget Totals				\$39,935,783	\$39,744,076	0%

2. Sector Cost-Effectiveness Calculations

The Sector's overall electric TRC is expected to be 1.86 for 2021, with a UC of 2.25.⁵⁵ REM's natural gas TRC is calculated to be 1.47, with a UC of 2.36 in 2021. Retail Lighting is expected to achieve a TRC slightly less than 1.0, and the Home Energy Reports program, in conjunction with its two-year measure life,⁵⁶ is expected to finish 2021 with a TRC less than 1.0.

⁵⁵ These figures exclude LIW, consistent with WAC 480-109-100(10).

⁵⁶ In the HER program, which has a two-year measure life, PSE reports only first-year savings. In the second year, PSE reports only incremental savings. The program incurs costs for both years, however, causing the benefit-to-cost ratio appear disproportionate in the second year.



Table IV-2 provides the REM summary cost-effectiveness ratios.

Table IV-2: 2021 REM Cost-Effectiveness Calculations

Benefit to Cost Ratios Residential Energy Management		
	Total Resource Cost	Utility Cost
Electric	1.86	2.25
Natural Gas	1.47	2.36

Indicated TRC includes the application of a 10 percent Conservation credit value.

REM's natural gas Single Family Weatherization, Low Income Weatherization, Home Energy Reports, and Single Family New Construction have TRC calculations below a 1.0 for 2021.

All other programs in both the electric and natural gas portfolios, are expected to achieve a greater than 1.0 TRC in 2021. It is noteworthy that actual cost-effectiveness figures—which may differ from the above estimates, and are based on actual expenses and savings—are reported in PSE's Annual Reports of Energy Conservation Accomplishments, filed with the Commission each April.

PSE provide details of specific cost-effectiveness calculations for each program in Exhibit 2: *Cost-Effectiveness Calculations*.

3. Tariff Schedule Adjustments

Residential Energy Management has no revisions to its Conservation Schedules (Schedules 200 – 249) planned in 2021.

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V. Residential Energy Management Detailed Program Discussions

Chapter 5 provides detailed discussions on REM programs.

A. Low Income Weatherization

Schedules E/G 201

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

LIW will provide electric and natural gas incentives to partnering agencies that are the higher of either the PSE deemed measure cost or statewide average measure cost.

The program expects that there will be relatively little change in electric savings from the previous biennium. LIW will continue to make available a comprehensive electric measure mix, incorporating the full range of insulation measures, including duct sealing and structural sealing.

It will continue to offer refrigerator replacements, heat pumps, heat pump water heaters, and aerators. As with other residential programs impacted by the updated EISA codes and HB 1444 standards, LIW will now only offer LED lamps as a healthy and safety or repair measures. Thus, the savings derived will not be reported by the program, but as a part of a comprehensive offering, the customer will benefit.

Program staff expect that almost 25 percent of electric savings will be derived from ductless heat pumps, and that SIR measures⁵⁷ installed as a result of agencies using TREAT modeling, will add more than 1.2 million kWh of savings, with the majority of those savings resulting from ductless heat pumps.

By employing broader cost-effectiveness parameters, LIW will continue to offer a range of natural gas measures, including a variety of insulation, and duct and structure sealing. The program will also continue to offer showerheads, water heaters, and natural gas furnaces, which will add a significant portion of the savings. Program staff expect that natural gas savings for the program will increase by over 50 percent from 2020-2019, due to the City of Seattle exceeding boiler installation expectations since 2020. Additionally, since PSE's health/safety/repair reimbursements increased, other agencies have been able to expand their service to natural gas customers.

⁵⁷ The discussion on incorporation of SIR calculations, as applicable to Low Income Weatherization savings, begins on page 65 in the 2020-2021 BCP reference content.

PSE will collaborate with internal and external stakeholders during the 2020-2021 biennium to disburse the Special Contract settlement funds in a way that engages agency partners to provide maximum benefit to low income customers throughout the PSE service territory. Additionally, program staff will continue to target low income customers in the manufactured home sector, using the findings of the Cadmus study, the Macquarie Transfer Needs Assessment, and the Department of Health cumulative impact assessment to inform program design and customer engagement. Overall, the goal of the low income program will be to be more data-driven, not just with regard to the manufactured home segment, but customer segments considered by the State as at risk or vulnerable.

In response to the results of the Cadmus study, some priority customer groups for the 2020-2021 biennium include:

- *Spanish Speaking Customers*
- *Out of Park Customers*

PSE will leverage a variety of tactics including social media, community-based social marketing, email, and transcreated collateral to engage this hard to reach customer segment to participate in Weatherization and Bill Payment Assistance programs and other relevant PSE offerings. The program will put particular emphasis on ductless and air source heat pump offerings.

Finally, PSE will be concluding its manufactured home replacement pilot at the end of 2019, and will continue to explore scalable program designs in the 2020-2021 biennium. Once the proof of concept analysis is completed, PSE will explore more potential partnerships and funding sources to support a permanent program.

The LIW program will provide measures for approximately 1,500 customers per year, and contribute approximately 2 percent of the overall REM electric savings. The program's natural gas savings contribution will be slightly more than 1 percent of the overall Sector total.

2021 Updates, Revisions, Enhancements, Adaptive Management

In 2021, the Low Income Weatherization (LIW) program will continue to apply Safe Start Protection protocols developed by partner agencies and the Department of Commerce to ensure the safety of PSE customers and agency staff in response to the COVID-19 pandemic.

The program will strive to meet electric targets that are close to the original targets set for the 2020-21. However, natural gas targets and spending are projected to be lower, due to weatherization project delays, staffing furloughs, and property access restrictions. These are particularly impactful in the multifamily sector, where slipping timelines on individual projects can have a large impact on natural gas savings. The newly set targets are closer to what is achievable for 2021, given the impacts of COVID-19.



The LIW program will continue to spend additional shareholder dollars allocated to the program in the Macquarie Agreement in 2021.

1. Underserved and Hard-to-Reach Segments

In 2021, PSE will make progress in applying the results from the Low Income Needs Assessment (LINA), completed in 2020 in response to the PSE's commitment in the Macquarie Agreement. The results will be 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 audience contains multiple hard-to-reach segments, so the goal of 2021 is to continue to explore ways to equitably scale the program to distribute energy efficiency benefits to a greater number of eligible underserved PSE customers.

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,
- Showerheads,
- Smart Thermostats,
- Home Energy Reports,
- Space and Water Heat,
- Weatherization,
- Home Energy Assessment, and
- Business Rebates.

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

In 2020-2021, the programs will focus on the quality of measures and initiatives while maximizing customer participation. The group will maximize customer value through market research intelligence, measuring success, assessing, refining, and testing. PSE implements this adaptive management approach to:

- *Increase energy-efficiency equity within stores (attribution issue).*
- *Leverage rebate and product pricing structures.*
- *Enhance knowledge of the real barriers to customer participation.*

- *Provide programs designed to meet PSE customers' needs.*

2021 Updates, Revisions, Enhancements, Adaptive Management

In 2021, the Single Family Existing composition will adjust to updated Unit Energy Savings values and safety considerations implemented in response to the COVID-19 pandemic.

1. Underserved and Hard-to-Reach Segments

The Single Family Existing programs will continue the moderate-income rebates – branded as Efficiency Boost – that launched in 2020.

In 2021, PSE will make progress in applying the results from the Low Income Needs Assessment (LINA) that was completed in 2020, in response to the PSE's commitment in the Macquarie Settlement Agreement, Docket U-180680. The results will be used to target marketing, outreach, and program delivery to census blocks identified in the study as high needs areas. Additionally, program staff will work with the Strategic Planning group to evaluate the possibility of a Phase 2 assessment.

2. Retail Lighting

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

The program is significantly impacted by the updated EISA (Energy Independence and Security Act) codes,⁵⁸ which were adopted in House Bill 1444. The program's electric savings will be reduced by approximately 71 percent from the 2018-2019 Plan, with the majority of general-purpose lighting within the bill's definitions removed. These LED lamps include, but are not limited to A-lamps, Candelabra, Globe, and Reflector. PSE will continue to coordinate with other local utilities to monitor for any rise in the sales volumes of incandescent and halogen bulbs in the absence of LED rebates.

The program will still contribute almost 20 percent of the REM electric savings in the coming biennium by continuing to offer rebates on patio style LED string lights, T8 LED fixtures, and T8 LED retrofit bulbs. Additionally, PSE's CRAG agreed that it was appropriate to report savings achieved through the end of January 2020, when existing Memorandums of Understanding (MOUs) expired.

⁵⁸ Earlier in 2019, those codes were rolled back, but were "backstopped" by HB 1444.



PSE will implement a highly-focused marketing and promotional plan⁵⁹ that focuses on providing customers options to help choose the best energy-efficient products for them. Some strategies includes the creation of materials to encourage the adoption of specialty LEDs, limited-time offers, in-store events and signage, paid advertising (ferry and bus transit ads, for example), web banners, etc. The program will continue its implementation of the sales associate education guide and in-store training performed during store visits, as well as high-impact events hosted in stores.

Due to the nature of this business model, where retailers provide a vast array of product in various configurations, it isn't possible to track and report the number of actual customers served through Retail Lighting.

2021 Updates, Revisions, Enhancements, Adaptive Management

At the end of 2019, PSE determined that indoor and outdoor LED fixtures are eligible for the residential retail lighting program in 2020-2021. PSE will continue to offer incentives in 2021 on indoor LED fixtures, outdoor LED fixtures, T8 LED fixtures, T8 LED retrofits, and patio-style LED string lights. Program participation by retailers and manufacturers has reduced due to the limited number of rebated lighting products. PSE will continue to coordinate with other local utilities to monitor for any rise in the sales volumes of incandescent and halogen bulbs in the absence of LED rebates. PSE is also conducting shelf surveys to monitor the local market share of LED bulbs.

PSE updated the deemed savings for continuing retail lighting measures in late 2019 using a combination of RTF methodology and PSE data. The updated UES values have been applied to 2020 savings and will continue to be applied in 2021. The 2021 estimated savings has been reduced from the originally stated BCP 2021 figure, as it incorporates the updated UES values and PSE completed the BCP prior to the UES update in late September, 2019. Incentives for four of the five retail lighting measures will be increased in 2021 in an effort to spur increased customer participation.

3. Space Heat

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

The Space Heat program will comprise a significant portion of the REM 2020-2021 electric and natural gas savings: over 14 percent almost 26 percent, respectively.

⁵⁹ Detailed marketing plans are included in the Exhibit 3: *Program Details* discussions and Exhibit 7: *Marketing & Outreach Executive Summary*.

The primary measures in its program suite include ductless heat pumps, air source heat pumps, and forced air furnace-to-heat pump conversions.

New for 2020-2021, the program will augment the availability of products by piloting an effort to employ a midstream distribution model, which staff expect to generate approximately 33 percent of the electric savings. This will be in addition to the incentives provided to customers purchasing products through contractors.

As a program that relies of contractor referrals, the midstream model is efficient, incentives distributors to carry more energy-efficient products, and will help PSE connect more effectively with its trade allies.

Natural gas savings will be derived from 95-percent efficient furnaces, 95-percent AFUE boilers, and integrated space and water heat systems. The majority of natural gas savings will be generated by furnaces. It is important to note that PSE is applying a Non-Energy Impact (NEI) value for ductless heat pumps that replace wood-burning appliances as the primary heat source. Using this NEI allowed the overall program to maintain its cost-effectiveness, and provided program staff with a more robust suite of measure offerings.

PSE will utilize direct customer marketing and collaborate with its Trade Ally Network (TAN) to maximize customer awareness and provide instant rebates. Staff expect the Space Heat program to provide services to almost 18,000 customers per year.

2021 Updates, Revisions, Enhancements, Adaptive Management

Updates from the Regional Technical Forum in 2020 will result in different UES values for ductless and ducted heat pump systems for 2021, and heat pump from forced air furnace measures were also adjusted, reducing planned electric savings by over 20 percent from the original 2021 Plan.

Absent historical trending data to compare against, and based on vendor RFP proposals, PSE's original savings projections for 2021 were overly ambitious for the addition of heat pumps and ductless heat pumps into the midstream model. Market monitoring and successful distributor relationships have provided PSE with more accurate market insights for its 2021 projections.

The 2021 natural gas savings calculation has also been adjusted to more accurately account for the impact of the moderate-income pilot "Efficiency Boost". PSE launched this pilot program in 2020, but over-estimated participation levels on par with the single family program. PSE has adjusted those participation rates to 10 percent of the single family program, which is a more conservative estimate in line with similar programs across the region.



Staff adjusted the number of integrated heating systems projection for 2021, helping to increase natural gas savings by more than 29,000 therms over the original Plan.

Program staff will monitor the adoption of the new 2018 Washington State Energy Code in 2021 and adjust programs as necessary. Anticipated code program impacts include, but are not limited to; adjusting weighted average baselines for new construction measures, creating new tiers to assure measures remain above code, and eliminating new construction from participation in measures that fall below necessary cost-effectiveness requirements. Typical lag times from when a new code goes into effect and when new equipment is purchased, range anywhere from six to nine months for homes permitted under the new code.

Despite the delayed launch, and COVID-19 impacts, the addition of heat pumps in the residential midstream space heating program have been very successful, and well received within the distributor and contractor network. Over 50 residential distributor branches have participated in program training and are submitting projects.

4. Water Heat

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

Similar to engage the midstream channel in the Space Heat program, in 2020-2021, PSE will pilot a midstream product offering to encourage distributors and contractors to stock and install higher-efficiency heat pump water heaters. In addition to contractor referrals, the program will also focus on increasing the product availability of natural gas tank and tankless water heaters to consumers through retail outlets. PSE continues to collaborate with other "I-5" utilities on coordinating these efforts.

The program will utilize data analytics to drive customer referrals to PSE's Trade Ally Network (TAN), and ensure that customers understand their energy-efficiency options through clear and concise messaging. Program staff will also collaborate with manufacturers, distributors, and contractors to provide special discounts and limited-time customer offers.

PSE anticipates that it will provide Water Heat services to approximately 3,000 customers annually. Program staff expect it to generate 1 percent of REM's total electric savings, and almost 3 percent of REM's overall natural gas savings.

2021 Updates, Revisions, Enhancements, Adaptive Management

Despite similar challenges faced by the midstream Space Heat program, PSE successfully launched the heat pump water heater measure into its midstream delivery channel in April 2020. PSE will continue to increase anticipated savings levels for 2021 by building upon a collaboration launched in late 2020 with Tacoma Power, Snohomish Public Utility District No. 1, and NEEA to provide an instant retail rebate.

Program spending projections for 2021 will be significantly impacted by increasing the rebate amount to match the downstream rebate, and other regional utility rebates. Initial estimates for spending and savings were based on smaller rebates in the midstream model and PSE adjusted the rebate amount in its efforts to move the market and remove the first cost barrier to customers.

Additional efforts being explored by PSE for implementation in 2021 and which contribute to the increased budget and savings targets include Targeted Demand Side Management (localized avoided costs for the PSE system); bulk buy purchases; set price installation; demand response communication capabilities; and direct to consumer online marketplace.

5. Home Energy Assessment

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

EISA code updates and HB 1444 standards had a significant impact on the Home Energy Assessment (HEA) program, primarily due to the high number of general-purpose LED lamps used as a key element of the value-add service.

As a result of these measures being eliminated, Energy Efficiency could not run the program as originally designed. Program staff continued to examine potential alternatives, including potential pilot activities, direct-install measures, bundling opportunities, etc., that would allow the Company to continue offering this valuable in-home service.

Their efforts led to a revised HEA program. The new offering will focus on providing onsite energy-efficiency information and measure installation assistance to customers in the moderate-income segment. HEA may find synergies with the Home Energy Reports program, which staff may employ to test the reliability of the savings. Program staff will focus on creating marketing and collateral communications that includes options for groups that may overlap with the target segment: in particular, low-income and manufactured home customers. Staff will ensure coordination with their Energy Efficiency colleagues to provide the broadest spectrum of services.



PSE expects that the revised HEA program will generate approximately 3 percent of the overall REM electric savings.

2021 Updates, Revisions, Enhancements, Adaptive Management

As of July 2020, PSE suspended the Home Energy Assessment (HEA) program. PSE is no longer scheduling customers for an HEA or placing customers on the HEA waitlist. The HEA program could not maintain operations in light of the pandemic related restrictions, especially the risks to customers and PSE's vendor associated with entering customers' homes. Additionally, the program became too cost-ineffective to continue when the RTF deactivated the residential showerhead measures.

PSE explored different combinations of measures, value propositions, and vendor pricing in an effort to continue the HEA Program through 2021. However, PSE could not reasonably adjust the program given current constraints and maintain cost effectiveness. Therefore, PSE ended the program in July 2020.

6. Home Appliances

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

Until updated avoided costs are confirmed in the final 2019 IRP, Energy Efficiency plans to continue the appliance decommissioning measure. Depending on cost-effectiveness revisions and Regional Technical Forum (RTF) analyses, this may only be for the start of the upcoming biennium. PSE may need to retire these measures during the biennium.

As a result of updated EISA codes incorporated into HB 1444 standards, Energy Efficiency retired the Thank You kits provided to customers who participated in a Home Appliance offering. Additionally, due to cost-effectiveness issues, the program will no longer offer rebates on refrigerators. Home Appliances' electric savings are expected to finish the upcoming biennium approximately 70 percent lower than in 2018-2019, with a 50 percent drop in natural gas savings over the same period.

The program will base its planned electric savings on Energy Star® electric clothes dryers—both vented and ventless—faucet aerators, and clothes washers. PSE will also report natural gas savings for clothes washers, aerators and a small number of showerheads installed in PSE gas-only territories where natural gas is the primary water heat fuel source (for instance, a qualifying clothes washer installed in the Seattle City Light service territory).

The Home Appliance program is exploring the potential of developing an instant rebate validation concept, using a coupon—either in-store, through an app, etc. —applied at the point-of-sale. The program’s marketing will focus on limited-time offers, in-store events, and signage, social and earned media, direct mail and email, website and paid advertising.

In the coming biennium, Home Appliances will provide incentives for approximately 25,000 customers per year. The program will comprise almost 2 percent of the total REM electric and less than 1 percent total REM natural gas savings.

2021 Updates, Revisions, Enhancements, Adaptive Management

The Appliance Decommissioning program was determined to be cost effective in 2020 based on the final updated avoided costs in the 2019 IRP analysis. New savings calculations provided through analysis by the Regional Technical Forum (RTF) in 2020 also show the program to be cost effective. PSE will offer the program to customers through 2021.

The Home Appliance program will continue to base its planned electric savings on ENERGY STAR® electric clothes dryer, both vented and ventless, as well as clothes washers. The elimination of the Thank You kits, along with updated UES values will result in an electric savings decrease of approximately 20 percent from the originally indicated 2021 Plan. PSE will increase rebates on ENERGY STAR® dryers and front-loading clothes washers, as well as adding an ENERGY STAR® top loading clothes washer measure to the program. This new measure will be a primary contributor to the program’s increased natural gas savings goal of more than 2,000 therms.

PSE saw a significant drop in 2020 program participation, which it attributes to the COVID-19 pandemic, and forecasts less volume in 2021 as the economy recovers. It projects to serve 13,000 customers with the program.

7. Smart Thermostat

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

PSE revised the program name from the 2018-2019 “Web-Enabled Thermostats” to “Smart Thermostats” in 2020-2021, to denote that PSE will issue rebates for Energy Star® smart thermostats that control electric heating in addition to gas heating in residential structures.

PSE projects that the number of smart thermostats installed controlling natural gas heat will be substantially higher than those controlling electric heat—a greater than five-fold difference.



The program may add an instant rebate option for purchases made through online channels, maximizing the ease of program participation for customers. In 2020-2021, program staff will focus on improving the customer training associated with the installation of smart thermostats in order to maximize the effective savings. Staff also recognize that smart thermostats provide a mechanism for potential demand response pilots.

PSE forecasts that the program will serve approximately 11,000 customers annually. Savings for this measure will constitute almost 1 percent of the overall REM electric savings. The program's natural gas savings will make up a large percentage of total REM savings—almost 15 percent—as gas is the primary heating fuel for the majority of eligible PSE customers.

2021 Updates, Revisions, Enhancements, Adaptive Management

PSE projects that the number of smart thermostats installed controlling natural gas heat will continue to be substantially higher than those controlling electric heat in 2021, although natural gas savings is expected to be approximately 12 percent lower than originally planned, due to the ongoing effects of the pandemic. The program will be adding instant rebates as a purchase option through the new PSE online marketplace, in 2021. In an effort to create more options for electric customers and increase program savings opportunities, PSE created a new line voltage connected thermostat measure offering that will be available to retail customers in 2021. Customers will be able to access the rebate either through applying after purchase or with an instant incentive available on PSE's online marketplace.

Despite more purchasing avenues available to customers, and modest gain in electric savings, PSE forecasts that the program will have lower volumes as the economy recovers from COVID-19 and estimates the program will serve approximately 10,000 customers in 2021.

8. Showerheads

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

In the upcoming biennium, PSE will communicate a variety of showerhead purchasing options to electric and natural gas customers, and streamline the purchasing process with clear point-of-sale materials and improved online functionality. Examples include instant rebates in retail stores, pop-up retail events, and an improved online experience at ShopPSE.

Updated standards enumerated in HB 1444, and the requirement to meet the requirements in the California Cod of Regulations, Title 20, Section 1605.3 makes 2.0 Gallons per Minute (GPM) the base efficiency at the start of 2021. Therefore, some measures' rebates will end, and the above-code energy savings will be lower for remaining measures.

Customer communications will emphasize customer choices and that high-efficiency showerheads do not necessarily equate to a low-quality shower. Staff are also investigating the potential of shifting its current pop-up retail events to an enhanced online ShopPSE platform in the coming biennium. In addition to a variety of showerheads and showerstart adaptors, the program will continue to offer WaterSense faucets (including efficient aerators), offered through retail delivery, online, and mail-in request.

Program staff project an electric anticipated showerhead savings increase of approximately 39 percent from the previous biennium, and approximately 65 percent savings reduction in natural gas. Program staff plan to enhance customers' access to efficient showerheads through a more robust alternative to its existing online store, ShopPSE. It is anticipated that the offering will increase the electric savings. The natural gas program savings will see a greater impact from the updated efficiency standards in HB 1444.

PSE expects to serve approximately 42,000 customers per year in the coming biennium. The showerhead program will contribute approximately 2 percent to the REM electric savings, and almost 3 percent of natural gas savings in 2020-2021.

2021 Updates, Revisions, Enhancements, Adaptive Management

In June 2020, the Regional Technical Forum deactivated the showerheads savings workbook. Without the workbook to support savings claims, PSE ended rebate offerings for showerhead measures after December of 2020. Aerator measures' low performance in 2020 also led PSE to end incentivizing the measure after 2020. PSE will continue to offer thermostatic valves on the PSE online marketplace that is slated to launch in 2021. PSE forecasts that approximately 5,000 customers will be served by the program. Although there will be a moderate amount of savings reported in early 2021 due to carryover (resulting from processing pending rebate applications from 2020), PSE plans that the Showerhead program will realize reduced savings of approximately 1,200 MWh and over 35,000 therms in 2021.



9. Weatherization

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

PSE's Single Family Weatherization is one of REM's long-standing programs, and its suite of offerings remains largely unchanged from the last biennium. Similar to other programs affected by marketplace conditions and RTF UES value adjustments, savings values are lower than the previous biennium. The Weatherization program has adapted its complement of measure offerings for the coming biennium to minimize potential shortfalls. The Weatherization program is also integral in Energy Efficiency's focus on all of the shell measures installed in manufactured homes—including duct sealing—as well as its standard suite of insulation, sealing, and window measures.

There is a fairly even distribution of electric and natural gas savings across the wide variety of offerings, with Prescriptive Duct Sealing and Insulation, and Single-Pane Windows garnering the higher savings quantities. The majority of weatherization measures are calculated on a square-foot basis (insulation, windows, for instance).

Program staff are exploring the potential to bundle shell measures and offer higher incentives to customers that pursue a more “whole house” approach. The program will also offer a new measure: combined air sealing and insulation. The Weatherization program will rely on its TAN partners to install the qualifying measures and provide instant rebates, and expects to install one or more measures in approximately 6,000 customers' homes annually.

PSE expects that the Weatherization program will contribute approximately 2 percent to the overall REM electric 2020-2021 savings. On the natural gas side of the program, contributions to the overall REM Sector savings will be approximately 16 percent.

2021 Updates, Revisions, Enhancements, Adaptive Management

RTF UES measure value savings reductions significantly impacted the Single Family Weatherization program, reducing both electric and natural gas 2021 savings. In 2021, the program will see lower savings per unit across multiple measures, particularly Windows, Insulation, and Whole House Air Sealing. Additionally, PSE has adjusted the windows calculations in the Weatherization planner, to account for the number of windows versus the square footage of windows accurately. Higher costs – resulting in part from the program's support of the Efficiency Boost pilot (which provides for increased rebates on weatherization measures for income-qualified customers) and the elimination of Non-Energy Impacts (NEIs) by the RTF – affected program cost-effectiveness as well. PSE anticipates that the program's electric and natural gas savings will decrease from the original 2021 Plan by approximately 750 MWh, or 37 percent, and 120,000 therms, or 35 percent, respectively.

PSE has also adjusted 2021 forecasts to account for ongoing impacts of the COVID-19 pandemic. These impacts include a significant drop in rebate applications and temporary suspension of certain rebates that needed modifications to the testing requirements due to restrictions on in-home activities. As a result, PSE created a virtual verification process that now requires Trade Allies to submit detailed documentation and photographic records of each project so PSE can review the documentation in lieu of in-home verification activities for a randomly selected portion of projects. The suspension of the Home Energy Assessment, which was directly linked to the Single Family Weatherization program, also caused a reduction in anticipated savings from the originally stated 2021 Plan.

The program team will continue to apply adaptive management strategies to address COVID-19 impacts in 2021, including monitoring verification findings for any changes in compliance rates and reevaluating the virtual verification process accordingly.

10. Home Energy Reports

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

In the upcoming biennium, PSE plans to expand its Home Energy Reports (HER) program, providing approximately 150,000 additional reports to participating customers, with a more evenly-distributed electric to natural gas ratio than in prior biennia. Program staff expect that this expansion can result in an approximate four-fold increase in electric savings from the previous biennium, and a ten-fold increase in natural gas savings from the 2018-2019 Plan.⁶⁰ PSE will provide the reports via paper and electronic media. Additionally, as a part of its focus on manufactured home customers, PSE provides Home Energy Reports to approximately 30,000 manufactured home customers.

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. For planning purposes, a deemed value, based on the previous year's actual is used, while the verified savings trues up the reported savings in the following year.

Home Energy Reports will make up more than 26 percent of REM electric savings and almost 35 percent of REM natural gas savings in 2020-2021.

⁶⁰ It should be noted that PSE inadvertently and unintentional omitted a portion of planned natural gas savings in the 2018-2019 plan, thus inflating the biennial variance.



2021 Updates, Revisions, Enhancements, Adaptive Management

The Home Energy Reports (HER) program includes approximately 280,000 customers after a refill of 100,000 customers in January 2020 to account for normal attrition from customer account move-outs.

In 2021, PSE anticipates deploying a 'target rank' test experience to additional customers beyond the original 8,000 customers included in 2020. The HER program does not expect to see a significant change in savings due to the COVID-19 pandemic as both treatment and control groups are likely to be impacted equally. PSE will continue to adapt messaging to be customer-friendly and relevant given current affairs.

C. Moderate-Income Residences

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

Although termed a pilot program, the Moderate Income pilot does not rely on uncertain savings. It is therefore excluded from the Pilots with Uncertain Savings line of Exhibit 1. In fact, the program will not attribute any savings at all; savings generated from this initiative will be reported through the Single Family Water Heat, Space Heat, Weatherization, or Multifamily programs. Indicated 2020-2021 budgets represent only program staff administration or marketing expenses.

The intent of the program is to address a potentially hard-to-reach customer segment. Moderate income customers do not quite meet the qualifications of low-income customers, and quite often do not have the same resources as other customer segments. The optimal program operation will be in conjunction with property portfolio managers or owners.

Program staff expect that PSE may serve as many as 1,000 moderate-income customers through this effort, resulting in an approximate 10 percent increase in the servicing programs: Single Family Space & Water Heat, and Weatherization.

2021 Updates, Revisions, Enhancements, Adaptive Management

PSE renamed the residential Moderate Income Initiative to "Efficiency Boost" in the third quarter of 2020. In 2021, Efficiency Boost will increase rebates for moderate-income customers across a wide offering of residential rebates. PSE also references the Efficiency Boost program in the Pilots chapter.

D. Single Family New Construction

Schedules E/G 215

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

In recent years, program staff worked with the Northwest Energy Efficiency Alliance to refine the REM/Rate™ modeling database in order to provide accurate whole-house savings models. Doing so allowed PSE to offer prescriptive whole house—versus component—incentives for new construction. This approach will also align well with Built Green® certification standards, and provide for potential new measures in the future, based on their models. In response to the current construction boom, program staff designed the retailer incentive to encourage builders to bring the entire structure to a 20 percent-better-than-code efficiency prior to construction completion.⁶¹ Certified energy rates develop energy models for participating homes. If efficiencies can't be designed into the structure, it represents a lost opportunity.

PSE will offer four whole-home electric prescriptive measures: two all-electric homes, and two dual-fuel homes. Each is split between four-and five-star Built Green standards. Its natural gas offerings will be for natural gas-heated homes.

Certain prescriptive measures will also be offered to supplement the whole-home suite of measures. PSE expects that work establish to design these offerings in the previous biennium will yield dividends in the coming biennium. Electric savings are expected to increase two-fold, while natural gas savings will similarly increase.

PSE will also offer two manufactured home incentives: one for Energy Star®, and one for NEEM (National Energy Efficient Manufactured homes) 2.0 standards. PSE is coordinating its efforts to influence customer's purchase of efficient manufactured homes with NEEA. PSE expects to provide over 100 Single Family New Construction incentives per year in the coming biennium.

PSE expects that the Single Family New Construction program will add almost 1 percent of the overall electric savings, and slightly over 1 percent of REM's natural gas savings.

⁶¹ PSE expects that, with the passage of more stringent building codes in 2020, program cost-effectiveness will limit cost-effective opportunities to exceed code for the Single Family New Construction whole-building approach. However, the ability to capture energy efficiency savings from projects that exceed minimum code efficiencies will still be present.



2021 Updates, Revisions, Enhancements, Adaptive Management

In 2021, PSE will continue to offer whole-home measures for Single Family New Construction. The update to 2018 Washington State Energy Code (effective for homes permitted after February 1, 2021) will substantially reduce savings for these measures. However, because of the lag time between when a home is permitted and when construction is completed, many homes that complete construction in 2021 will still be permitted under 2015 state code. PSE will continue to offer its current whole-home measures (baselined on 2015 code) to any homes permitted under 2015 code. In mid-2021, NEEA will update its REM/Rate modeling database (AXIS database) to baseline homes on 2018 state code, at which point PSE will update its whole-home measure savings accordingly. Program staff believe that these factors will contribute to an approximate 260 MWh reduction from the original 2021 Plan.

PSE's current entry point for its Single Family New Construction measures is 20 percent above code. Based on the low volume PSE has seen for these measures, it is likely that this is too high of an entry point (given Washington's already relatively strict residential energy code), and will be even more of a barrier with the adoption of 2018 state code. Given this, PSE is evaluating a 10 percent above-code measure (aligning with "Built Green 3 Star"). If this measure proves to be cost-effective, PSE will begin offering this measure under its current whole-home iteration (based on 2015 state code), ideally continuing when the measure transitions to a 2018 code baseline.

Program staff anticipate an approximate 78 percent reduction in natural gas savings from the originally filed 2021 Plan. Key factors include a new construction point system that rewards the installation of electric measures, fewer new natural-gas heated homes built, and adoption of the program's offerings is weaker than planned.

For its Manufactured Home New Construction program, PSE will continue to offer rebates for both ENERGY STAR® and ENERGY STAR® with NEEM+ manufactured homes. PSE increased its rebate for ENERGY STAR® with NEEM+ from \$1500 to \$2000 in 2020 to accelerate market transformation. Still, the vast majority of rebates that PSE is seeing in this program are for ENERGY STAR® manufactured homes (rather than ENERGY STAR® with NEEM+).

PSE will continue to collaborate with a third-party field services implementer to offer rebate support and training for ten manufactured home retailers in or around PSE territory. In 2021, Snohomish County PUD will reportedly align with PSE's incentives and program rules, easing the experience for both manufactured home retailers and interested buyers.

E. Multifamily Retrofit

Schedules E/G 217

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

In 2020-2021, the Multifamily Retrofit program will provide comprehensive whole-building and property design services that aggregate both residential and commercial (common area) conservation opportunities. Multifamily campuses may consist of a combination of building types, and may include two to four buildings. Program staff developed this approach to reduce customer confusion and create residential program consistencies.

Similar to several REM programs impacted by EISA code and HB 1444 standard updates, more limited savings opportunities required program staff to adaptively managing its overall suite of offerings. The extensive array of electric measures would be comprised of both calculated, custom, and prescriptive measure types. Live voltage and web-enabled thermostats become standard offerings, as will common-area HVAC, variable-frequency drives, heat-recovery ventilators, and tub spout diverters. Only savings from general-purpose LED lamps that are directly installed in place of incandescent lamps will be reported for 2020. These will then be phased out in 2021. On the natural gas side, the program will add a conservation building tune-up measure, and HVAC controls to its existing suite of tankless 0.90 EF (Efficiency Factor) and storage tank 0.67 EF natural gas water heater, insulation, boilers, and window measures.

The Multifamily Retrofit program partners with several multifamily associations who manage industry events to generate energy-efficiency leads. The program will also work with the Energy Efficient Communities team to develop and implement target outreach strategies for both business partners and customers.

Program staff will communicate with property managers, owner, and tenants through quarterly e-newsletters, and they are investigating the potential of providing energy-use monitoring devices.

The program typically uses a bundled approach to provide print advertisements in trade publications, direct mail and E-blasts, social media, television advertisements, and contractor advertising, among others.



1. Strategic Energy Management

The program will continue its Strategic Energy Management offering, which it implemented in the 2016-2017 biennium. Leveraging the concepts established in the Commercial Strategic Energy Management program, the innovative service would engage property owners, managers, maintenance staff, and residents to achieve electric energy cost reductions of 5 percent over the property portfolio baseline. Program staff will manage the activities of a third-party implementer in a controlled rollout to a limited number of qualifying properties.

PSE will offer customers who meet the minimum consumption standards—at no cost to them—the development of a portfolio baseline, a portfolio energy management plan, energy management workshops, performance monitoring, and tenant gamification (contests, challenges, etc.). This interaction would also raise awareness of PSE energy efficiency initiatives in general, and create sustainable energy management practices.

Multifamily Retrofit will continue their “battle of the buildings” energy competition to motivate behavior change even further. Program staff will develop an array of prizes, and hopes to leverage Energy Star® resources. They are also exploring the continuation of portfolio benchmarking, which has proven to be a valuable gates to retrofit projects outside of SEM efforts.

The Multifamily Retrofit program expects to serve approximately 35,000 units annually. Staff expect that there will be a reduction in savings due to savings value and cost-effectiveness updates from its 2018-2019 Plan: approximately 25 percent in electric, and slightly more than 60 percent in natural gas. Program staff expect the program to provide 14 percent of the overall REM 2020-2021 electric savings, while its natural gas efforts will comprise slightly more than 1 percent of the Sector savings.

2021 Updates, Revisions, Enhancements, Adaptive Management

Multifamily weatherization: In 2021, the Multifamily Retrofit program will continue to follow all protocols for physical distancing and PPE use, consistent with State and PSE requirements. As such, program field staff will continue to utilize remote verification via video calls and photographs with contractors, site staff, or residents. The estimated electric savings for 2021 remains largely unchanged; however, targeted marketing campaigns and Limited Time Offer (LTO) incentive increases are expected to increase the program budget in order to drive participation. Increases to Common Area Lighting and Window incentives are among the LTO's. Based on 2020 production, the program has increased the 2021 gas savings target by 10 percent and respective budget by 6 percent.

In-Unit Direct Install: Program staff planned for the retirement of this service due to House Bill 1444, which essentially makes screw-in LED's the new baseline. Without the ability to report savings for these “general service” lamps, the ability to continue the ‘free to residents’ program becomes difficult due to a lower cost-effectiveness. To adaptively manage, program staff is considering alternatives for 2021, such as directly installed line voltage thermostats, light fixtures, and bath fans.

Multifamily Air Sealing: Air Sealing continues to be an important component of the Multifamily Retrofit program as roughly 100 buildings are air sealed across the region each year. PSE will also continue to increase awareness of air sealing with marketing and contractor trainings in collaboration with the Air Barrier Association of America (ABAA). In order to focus these efforts and drive persistent energy savings the program will cap existing buildings at 1983 and older due to cost effectiveness considerations.

Line Voltage Connected Thermostats: The Multifamily Program will continue to encourage Smart Connected Line Voltage thermostats by increasing the incentive to \$75/unit. The Single Family retail channel will add this measure, which will allow for coordinated marketing campaigns to all residential electric customers. PSE continues to assess the user acceptance and behavioral change this measure entails through ongoing education efforts.

Strategic Energy Management: The Multifamily Retrofit program will build upon the groundwork forged by its Strategic Energy Management (SEM) pilot. By utilizing portfolio benchmarking and leveraging the existing SEM educational tools, the program will aim to catalyze deep energy retrofits and influence customer behaviors. Housing Authorities with workforce housing portfolios have expressed keen interest for SEM, particularly from a resident engagement standpoint

F. Multifamily New Construction

Schedules E/G 218

For 2020-2021, program staff are considering vendor-implemented efforts to maximize market penetration, including facilitating charrettes with members of the design community. These will provide technical energy efficiency assistance and assure that efficiency is designed into structures.

PSE increased its incentives for affordable multifamily new construction that will help builders meet “total development cost per unit” loan requirements. Affordable housing is another potential hard-to-reach, proportionally underserved market segment.



The program will also create greater awareness through in-person and online presence with developers, renters, condominium buyers, and communities, concentrating on engaging decision-makers early in the design process. It will also develop post-construction marketing collateral that identify energy efficiency upgrades, and create letters to new residents, in-unit upgrades information, project completion plaques, and on-site project celebration events.

As is the case with commercial new construction projects, savings are often based on construction that may be underway for a period of more than one or two years, and can often be thought of as “lumpy”; a project with potentially considerable savings may be delayed or scaled back with little warning. The program’s electric measures will primarily consist of common-area and calculated measures, along with prescriptive showerhead, and stairwell and garage lighting. Lighting Power Density measures will comprise the bulk of the program’s electric savings.

PSE anticipates that natural gas measures, including condensing water heaters and boilers, showerheads, and calculated whole-building measures will see limited installation in this market, primarily due to the efficient equipment’s first-cost considerations for developers and builders. Additionally, gas acquisition costs are higher than for equivalent electric equipment.

The Multifamily New Construction program expects to serve almost 40 buildings, representing almost 7,500 units over the course of the biennium. The program’s contribution to overall REM 2020-2021 electric savings will be approximately 3 percent and approximately 3 percent in natural gas savings.

2021 Updates, Revisions, Enhancements, Adaptive Management

In 2021, PSE will continue offering a whole-building incentive to Multifamily New Construction projects with the phase out of savings for showerheads. Program staff simplified the incentive structure from a 3-tiered incentive based on points, to a two-tiered incentive based on number of measures installed. PSE will continue offering an enhanced incentive for affordable projects that is 50 percent higher than the market-rate incentive.

PSE continues to engage projects early in the design process, to more optimally plan for the incorporation of energy efficiency. In 2021, Energy Efficiency will build upon the five Early Design Assistance workshops held in 2020.

The COVID-19 pandemic necessitated increased safety procedures, which has slowed down construction processes and delayed many timelines. Due to this, some projects in the PSE pipeline that were scheduled to complete construction in 2020 will now finish in 2021, and some scheduled to finish in 2021 will now complete in 2022.

This has led to PSE reducing its forecasted MWh savings for the Multifamily New Construction program by approximately 15 percent, or 1,000 MWh. The program still anticipates achieving its Therm targets for the biennium.



VI. Business Energy Management Overview

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 onset of the COVID-19 pandemic in 2020 presented the Sector with challenges that affected every program, and the organization's implementation of impressive adaptive responses is reflected in their 2021 plans. As is the case in the Residential Energy Management (REM) sector, prescriptive measure savings revisions and code updates also impacted program planning.

In the program plan discussions in the following chapter, PSE includes the original 2020-2021 Biennial Conservation Plan program overviews (denoted with a unique heading and italicized font) to differentiate and provide a point of comparison with the updated 2021 program plans (also separated by a unique heading).

A. COVID-19 Pandemic Adaptations

As is the case in every facet of Energy Efficiency's operations, BEM was required to swiftly make several changes to its business implementation models in response to the COVID-19 pandemic: some were temporary, while many have become permanent, and will continue into 2021. Key among the revisions are any process necessitating customer, contractor, or vendor interactions. Wherever possible, energy management engineers (EMEs) will conduct verification and evaluation steps virtually; either through teleconference, contractor documentation, trend data, video, photograph, or email. In exceptional cases, an EME may need to conduct work at a customer's site. In these cases, they will follow strict protocols to ensure the safety of the customer, themselves, and contractors. These principles apply to Commercial/Industrial (C/I) Retrofit, New Construction, Large Power Users, Commercial Strategic Energy Management (CSEM), Pay-for-Performance, and Custom Lighting.

The pandemic influenced a broad range of the commercial building sector. Commercial Foodservice customers were particularly hard-hit, with many not expected to fully recover in 2021. From labor furloughs, supply chain interruptions and cancellations, construction delays, on-site restrictions, and customer funding availability, 2021 is expected to reflect the ongoing issues presented in 2020. In 2021, several programs have increased their Marketing and Outreach budgets in order to compensate for missed communications opportunities. EMEs are diligently working to reconcile building usage data to account for the majority of workers telecommuting, schools being unoccupied, restaurants being closed, and retailers' constricted supply chains.

Staff have also created limited-time incentives, and innovative offerings (for instance, the C/I Retrofit Elevate Your Efficiency, Business Lighting Express, and the Small Business Energy Makeover contest). Staff have collaborated with utility partners to standardize incentives in the Advanced Rooftop Controller (ARC), Commercial Foodservice programs, and Commercial Midstream programs. Additionally, the Small Business Direct Install (SBDI) program is creating new ways to contact potentially hard-to-reach customers, via virtual assessments and adding new, exterior measures.

B. Systematic Influences

Although the majority of BEM programs utilize only a limited number of prescriptive measures, the annual revision of many UES values—even when anticipated—had a greater-than-normal effect on Business Rebate programs. Particularly impacted was the Lighting to Go program, where a very popular recessed can measure savings revision resulted in the retirement of the measure. This resulted in a significant reduction in the program savings, and some contractors withdrawal from the program. The new construction energy code is also expected to have an effect on the Commercial Midstream Program (where product is supplied to developers), and—although to a lesser extent—the C/I New Construction program, where projects are often planned years in advance.

C. BEM Highlights

The Sector will continue to implement adaptive responses to the pandemic and systematic updates that it started in 2020. Several 2021 initiatives include, but are not limited to:

- The Commercial Foodservice program is closely aligned with seven electric and gas utilities to provide customers with a consistent assortment of equipment, application processes, and incentives.
- The Commercial HVAC ARC incentives have been re-calculated (from a per-ton to per-unit basis) to simplify the application process, and are cross-promoted with other Puget Sound utilities. The program is also building a suite of HVAC maintenance measures.
- SBDI is considering the use of virtual assessments for small business customers. The program is also adding new exterior measures, has added distributor partners, and is improving outreach. Program staff are also in talks with Snohomish PUD (SnoPUD) to implement a savings-sharing agreement, where PSE's vendor installs both electric and natural gas measures, with the electric savings being reported by SnoPUD. The customer benefits by dealing with a single point of contact and receiving a more comprehensive efficiency update.



- The C/I New Construction team is examining the implementation of the EUI Performance Method approach, based on HB 1257 baselines. The team, along with the Multifamily and Single Family organizations, are meeting with municipalities to coordinate design review, and building permitting processes.
- The Commercial Midstream program is considering the addition of new measures, including Variable Refrigerant Flow to its suite of products.
- The new Business Lighting Express initiative bridges the gap between Lighting to Go and Custom Lighting Grants by simplifying the application process, and providing a way for contractors performing lighting maintenance work to provide upgrades.

1. Overall Sector Savings and Expenditure Updates

Overall, BEM’s electric savings is only 5 percent lower than originally planned for 2021. Two key drivers of the reduction from the original 2021 plan are the CSEM program, where building energy usage calculations have been made quite difficult, due to the proportion of employees telecommuting and schools being unoccupied for a number of months. Another is the Lighting to Go and SBDI program, as discussed in the previous section. The anticipated electric spending is higher than originally-planned as a result of increased incentives, limited-time offers, new offerings (an additional \$4 million is allocated to the C/I Retrofit Elevate Your Efficiency initiative, for instance), and increased Marketing efforts. BEM’s natural gas savings is expected to be 15 percent higher than first planned, due in large part to the Commercial Foodservice midstream product focus. The natural gas budget is increased due to added incentives and Marketing/Outreach.

Table VI-1 provides a summary of the BEM’s 2021 budgets, savings goals and cost-effectiveness estimates, and compares them to the originally indicated 2021 values.

Table VI-1: 2021 BEM Savings Target and Budget Estimates

2021 Comparison: Original BCP versus ACP Update						
Business Energy Management	Savings			Expenses		
	Original 2021 Plan As indicated in 2020-2021 BCP	Updated 2021 ACP	Percent Change	Original 2021 Plan As indicated in 2020-2021 BCP	Updated 2021 ACP	Percent Change
Electric (MWh)	160,721	153,300	-4.6%	\$46,462,631	\$52,110,659	12.2%
Natural Gas (Therms)	1,651,638	1,900,938	15.1%	\$5,106,440	\$7,058,461	38.2%
Budget Totals				\$51,569,071	\$59,169,120	15%

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*.

2. Sector Cost-Effectiveness Calculations

The Sector's overall electric TRC is calculated to achieve a ratio of 2.06, with all programs exceeding a TRC of 1.0. The electric UC is calculated to be 2.68 for 2021. BEM's natural gas TRC is calculated to be 2.65, with only the C/I Retrofit program forecast to be lower than 1.0. PSE is confident that when actual costs are compared against program savings, the actual TRC will be quite a bit higher. The overall UC calculation is 2.32. Table VI-2 provides the summary BEM cost-effectiveness ratios.

Table VI-2: 2021 BEM Cost-Effectiveness Calculations

Benefit to Cost Ratios Business Energy Management		
	Total Resource Cost	Utility Cost
Electric	2.06	2.68
Natural Gas	2.65	2.32

Indicated TRC includes the application of a 10 percent Conservation credit value.

It is noteworthy that final cost-effectiveness figures—which may differ from the above estimates, and are based on actual expenses and savings—are reported in PSE's Annual Reports of Energy Conservation Accomplishments, filed with the Commission each April.

D. Tariff Schedule Adjustments

BEM has no plans to update tariff schedules in 2021.



VII. Business Energy Management Detailed Program Discussions

Chapter 7 provides detailed discussions for BEM programs.

A. Commercial/Industrial (C/I) Retrofit

Schedules E/G 250

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

The team of EMEs, supervisors and contract administration staff will engage with customers, developers, contractors and engineers to develop, evaluate, manage, and verify custom grants for both lighting-specific and other retrofit projects during this upcoming biennium. In addition, the staff will provide outside evaluation support, participate on RTF subcommittees and inter-utility initiatives, and contribute to a variety of NEEA advisory committees. In 2020-2021, this BEM group will expand its marketing and trade ally relations in order to increase electric savings from its 2018-2019 Plan.

In the upcoming biennium, PSE will consider funding any cost-effective measure that provides quantifiable, cost-effective energy savings. Electric, non-lighting incentives will be 35 per kWh, up to 70 percent of a project or incremental cost, while incentives for natural gas custom grants will be \$5.00 per therm, up to 70 percent of the project or incremental cost. These adjustments are consistent with current industry standards. Typical measures include variable frequency drives (VFDs), chiller upgrades, boiler replacements, compressed air system upgrades, refrigeration system improvements, etc. PSE will continue its Advance Rooftop Controls (ARC) offering, which partners with other “I-5” utilities to standardize applications and incentives, creating a seamless customer experience. Also in coordination with the I-5 utilities, PSE is pursuing ways in which custom grants can be seamlessly managed across different jurisdictions. PSE is also exploring the potential of expanding the scope of industrial measures.

The C/I Retrofit team will rely on internal PSE channels, including Business Services, Energy Efficiency Communities contacts to assist in awareness and project lead generation. The Energy Efficient Communities team will conduct presentations to a range of constituents including local governments. Additionally, BEM will be increasing its engagement efforts with external partners such as trade allies, engineering design firms and professional organizations in order to both increase awareness and generate more projects.

The group's marketing materials and communication pieces will be more awareness-driving than project-generation focused and its internet focus will be on providing more effective program offerings communication. Program staff are also engaged in developing and providing new incentive payment mechanisms, such as on-bill incentive payments/credits.

The C/I Retrofit team expects to manage electric and natural gas projects affecting approximately 1,800 sites annually.

1. Custom Lighting Grants

In 2020-2021 C/I Retrofit Custom Lighting Grants will comprise more than 70 percent of the C/I Retrofit group's electric savings. The program manages custom lighting grants for upgrades to commercial, industrial, agricultural, and street lighting projects, up to 70 percent of the project cost.

The program is planning to increase their custom lighting incentives, and will offer increased incentives for customers that bundle lighting controls with fixtures to maximize electric savings. The program is also pursuing improvements to streamline the application for small-quantity fixture replacements, and a standardized approach for tenant improvement projects. The program will also offer tiered incentive levels:

- *Retrofit lamp, CFL to LED or HID to LED: \$0.125/kWh.*
- *Full retrofit kit or a new fixture: \$0.175/kWh.*
- *Adding a new automatic control: the incentive goes up \$0.05/kWh.*

Program staff are also exploring the potential of working directly with property managers and school districts to enhance their understanding of the value proposition for installing advanced controls during any lighting upgrades. Finally, the program is considering a pilot with a contractor who does a substantial amount of service work for property management firms, and partner with them to not just replace with what was there but upgrade to LED when individual fixtures fail.

2. C/I Retrofit Standard Approaches

In addition to C/I Retrofit's custom grant process, which, as the name implies, requires the work of an energy management engineer (EME) to evaluate, make recommendations, and verify conservation projects on an individual basis, there are also projects that implement a standardized, straightforward approach.



a. Existing Building Commissioning

PSE customers with a building larger than 50,000 square feet are eligible to participate in the Existing Building Commissioning (formerly CBTU) program. A qualified commissioning provider must conduct assessments. PSE maintains a database of qualified building commissioning providers for eligible customers' reference. PSE will provide (1) incentives based on square footage, and (2) performance incentives. BEM collaborated with Seattle City Light in enhancing the Existing Building Commissioning program, which is tied to the Building Tune-up Accelerator. As a result, the shared customers are able to leverage the two programs for both their natural gas and electric conservation efforts.

b. Major Controls

The C/I Retrofit group of programs will also place a greater focus on major controls projects, which is receiving increased prominence in the department. These projects will focus on upgrading the central building control systems, and follow ASHRAE Guideline 36 that defines energy efficient HVAC control sequences.

Grants will be comprised of a base incentive plus a performance incentive—based on achieved savings—up to 50 percent of the project cost.

c. Variable Refrigerant Flow Projects

These projects deal with heat pump and HVAC technology for multi-zone commercial facilities, and are applicable to offices or schools with more than 10,000 square feet.⁶² The standard incentives for VRF projects is \$1.00 per square foot.

3. Focus on Industrial Businesses

For the coming biennium, BEM has created a separate Industrial Grants program to spotlight this potentially hard-to-reach customer segment. PSE expects that this increased attention will result in a higher number of custom grant activity. A key element of this initiative is moving from a contractor-managed Industrial Systems Optimization Program (ISOP) to an expanded program managed by BEM EMEs.

⁶² Buildings that are less than 10,000 ft² are managed through the custom grant process.

The program's offerings will be concentrated on four components:

- 1. Industrial Tune-Ups: Focus on tuning-up industrial systems to increase efficiency and reduce energy usage – compressed air, refrigeration systems, process heating, wastewater systems.*
- 2. Industrial Strategic Energy Management (I-SEM): Holistic approach to energy management that includes assessment of energy management practices, goal setting, action planning, and employee engagement.*
- 3. Custom Project Development: Levering industrial Tune-Ups and I-SEM to develop additional and deeper levels of projects with customers.*
- 4. Small Industrial Customers – Focus on improved trade ally relationships and simplified tools to develop custom projects in smaller industrial sites. – for instance, compressed air, and variable frequency drives. This customer class usually is comprised of entities that supply airplane components, food processing, breweries, or a small machine shop. These often supply goods to the larger industrial customers.*

2021 Updates, Revisions, Enhancements, Adaptive Management

Commercial and Industrial Programs

In an effort to encourage additional projects, BEM has increased the incentive on C/I Retrofit projects to \$0.50 per kWh and \$7 per therm capped at 100 percent of the measure cost. Also, an additional \$4 million has been budgeted to electric and \$1 million to natural gas.

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. Additionally, two key program offerings, Industrial Systems Optimization (ISOP), and Industrial Strategic Energy Management (ISEM) originally involved site visits and in-person meetings that were suspended due to COVID-19 safety protocols. As a result, the participation timeline for these programs has pushed the performance periods into 2021, and in some cases beyond. Thus, program savings associated with participation in these two offerings are not expected to be as high as originally planned.



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 2021 savings goals including:

- Participating in an expanded incentive RFP combined with accelerated marketing efforts to bring in more custom retrofit projects,
- Increasing ISOP participation goals paired with expanded ISOP outreach efforts, 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.

Custom Lighting Grants (Business Lighting)

In 2021, the team will implement a comprehensive update of its internal processing approach, which will simplify the application process for customers. Program staff are enthusiastic about the potential of the Business Lighting Express pilot, which is expected to bridge the gap between the Custom Lighting Grants and Lighting to Go programs. The pilot is expected fill a need in assisting contractors engaged in building maintenance operations, rather than full-scale lighting retrofits. Business Lighting Express is also discussed in the Pilots chapter.

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.

Elevate Your Efficiency

In September 2020, PSE launched the Elevate Your Efficiency RFP. This is a limited time offer providing increased incentives and increased incentive caps for energy efficiency projects that can be completed by December 2021.

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 2020-2021 Biennial Conservation Plan Content (For Reference Only)

The C/I New Construction program will continue its application of three incentive pathways in 2020-2021:

- *Component Measures: That include custom analysis funding of individual, non-lighting measures, and may be up to 100 percent of incremental cost to exceed code, and may include measures such as boilers, chillers, or industrial processes.*
- *Whole Building Analysis: (For natural gas customers, PSE must also provide electric service.) The program bases these incentives on the percent savings over code baseline as determined by building energy simulation analysis. PSE will provide design team and energy model development support. PSE works with other utilities on a project-by-project basis. Utility cooperation will be discussed at an upcoming utility energy conservation engineering roundtable meeting.*
- *Lighting: PSE will use the Washington State Energy Code Lighting Power Allowance (LPA). It will calculate savings from lighting compliance forms.*

In the coming biennium, the program will also develop a standardized energy modelling guideline for whole-building approach projects, and will explore piloting early design assistance incentives. The program will also enhance the marketing of prescriptive measures applicable to new construction projects, and increase outreach to developers, architects, and engineers. The program is piloting an Early Design Assistance Incentive of up to \$2,500, as the cost of hosting a design meeting for developers is considered a barrier to incorporating energy efficiency into the initial building design. The program's collateral will reflect customers' need for a more comprehensive representation of program offerings, while electronic content will be updated and optimized. PSE will employ standard energy models, including EQuest and code models, to standardize evaluations and streamline the custom grant processing.



To adapt to market conditions and customer adoption, New Construction lighting projects must meet a standard of 20 percent better than the energy code for 2020-2021. New Construction lighting incentives will better align with Business Lighting incentives.

The engineering staff expect that the indoor agriculture market will generate slightly lower savings than in previous biennia, potentially the result of market saturation of new construction projects. PSE created a standardized lighting incentive of \$25.00 per square foot of illuminated canopy area for new or expansion projects. Non-lighting incentives—HVAC, dehumidification, heat recovery, etc.—are available on a custom basis.

PSE expects that many indoor agriculture initiatives will turn to more retrofit projects, as some businesses expand, or move to upgrade their HVAC and controls measures. Program staff expect that this will lead to a slight reduction of electric savings of the overall program.

On the natural gas side, program staff based savings forecasts on custom projects that are due to be completed in 2020-2021. In past biennia, some of these projects tend to be very large, with an apparent few projects usually contribute the largest amount of natural gas savings. If these projects are delayed, it can cause a substantial variance of projected-versus-actual savings. Due to the long planning and development timeline for new construction projects program staff may spend a portion of their time in 2020-2021 working on projects that have the potential to deliver savings in 2022 or beyond.

2021 Updates, Revisions, Enhancements, Adaptive Management

The Commercial New Construction team has developed an additional offering, the EUI (Energy Use Intensity) Performance Method approach, which will be offered starting in late 2020. The purpose of this new approach is to offer customers a way to participate in a whole-building savings program that does not require an energy model. Staff expects this approach to increase participation by making it less resource intensive for customers to participate in the program. This approach uses an EUI baseline, as determined by HB 1257 New Construction targets, and one year of metered data to determine savings. Staff will build on these efforts in 2021 with the addition of incentivizing energy efficient designs, which incentivize good building operation.

In 2021, 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.

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.

C. Commercial Strategic Energy Management

Schedules E/G 253

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

BEM expects that the award-winning Commercial Strategic Energy Management (CSEM) program will generate highly cost-effective electric and natural gas savings. Participation qualifications for customers managing a portfolio of qualifying buildings will remain at 1,000,000 kWhs, and 135,000 therms or equivalent per site. In order to serve a potential hard-to-reach segment, PSE will refer industrial customers interested in the CSEM program to ISOP, where they will receive no-cost engineering support, and operational and management improvement recommendations.

A key requirement for the program in the coming biennium is the need to upgrade its MyData Manager software, used for building benchmarking. Originally intended to meet the City of Seattle requirements, the software now needs to encompass the entire PSE service territory. The replacement solution must provide service to PSE's internal constituency (used for data analysis) and its external constituents, providing easy and safe customer access.

In the 2020-2021 biennium, the Commercial SEM program will continue to offer the following services to portfolio customers:

- *Program start-up support,*
- *Resource accounting software,*
- *Technical assistance,*
- *Education and training,*
- *Energy audits, and*
- *Financial incentives.*

The CSEM program utilizes a broad array of marketing materials and training activities to reach its customer base. The nature of the CSEM program and its need for ongoing communications efforts with customers merits an integrated approach to support this program. The program's communication strategy will focus on existing customers, with recognition and awards to outstanding customers, enhancing the ease of tool usage and ownership, and improving the Commercial SEM web pages.



To attract potential new customers, program staff will continue to develop case studies, and feature them in monthly newsletters. The CSEM team will also leverage internal PSE groups, including the Energy Efficient Communities and Business Services to communicate program information and updates.

PSE staff will also implement SEM work throughout PSE's facilities to drive energy savings, and to test and analyze energy management methods and techniques to be shared with CSEM program participants. PSE will fund the SEM position through the Conservation Rider. PSE will utilize the standard Commercial grant process, subject to all other program eligibility requirements for projects that result from SEM efforts. PSE will pay all other expenses outside of the CSEM program (such as equipment upgrades) from non-Rider funding.

2021 Updates, Revisions, Enhancements, Adaptive Management

In response to the COVID-19 pandemic, the majority of customers in the CSEM program began altering the operation of their buildings. Building operations were adapted to match a reduction in occupancy profile and new indoor environmental safety and public health guidelines. While decreased occupancy decreased building energy loads, the new health and safety guidelines focused on increased ventilation, which increased building energy loads. Building operators continue to adapt, as the response to the pandemic remains in fluctuation. The CSEM program faces the unprecedented challenge of determining and isolating decreases in energy consumption that is attributable to actions taken to achieve CSEM savings.

Program staff reduced the CSEM savings forecast for 2021 due to uncertainty presented by a dynamic response to COVID-19 in commercial building operation, including schedule changes, operational changes, maintenance changes, and load response.

The CSEM program remains committed to applying objective, defensible methodologies to determine energy savings attached to building operation, maintenance, and behavioral changes in 2021. The CSEM program will continue to engage customers on taking actions that simultaneously ensure the health of building occupants while saving energy.

D. Large Power User Self-Directed

Schedule E258

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

In 2020-2021, the Large Power User/Self-Directed program will be in the second-and third-year of its 2019-2022 cycle. Thus, the combined 2020-2021 electric savings will be approximately 50 percent lower than the previous biennium's Plan.⁶³ Due to the nature of large power user participants' conservation project plans, and RFP participation during the competitive-versus-noncompetitive phases of the 4-year cycle, 2021-specific savings are expected to be slightly more than double the savings expected for 2020: 11 million kWh in 2021 versus 5 million kWh for 2020.

At the start of the current cycle in 2019, PSE created an Energy Engineering Study measure. Program staff created the measure as a way to provide customers a means to participate in the RFP process. The measure provides customers who were not able to participate in the RFP due to the lack of technical expertise availability reimbursement for an energy-efficiency evaluation. It is hoped that this then, would lead to project proposals.

Current Schedule 40 customers, who will be converted to the next applicable rate Schedule in 2020, will still be able to participate in the non-competitive phase of the program. When the competitive phase starts in 2021, those customers will be ineligible to participate. They will, however, be able to participate in PSE's C/I Retrofit or C/I New Construction programs.

2021 Updates, Revisions, Enhancements, Adaptive Management

The Large Power User/Self-Directed program occurs in a four-year cycle, and 2021 is the third year of the current cycle. Over the four-year cycle, years one and two have historically have seen only a slight increase in savings from the previous year. Year three typically sees savings start to increase, and year four has the most dramatic savings increase. Early feedback from customers suggests that some projects will be delayed in 2021 due to COVID-19. As with other programs, it is difficult to predict how customers with large power demand will be impacted by COVID-19.

⁶³ It is important to note that the 2018 Large Power User/Self-Directing program's savings—the last year of the cycle—was planned to be approximately 15 million kWh. This four-year trend in savings is quite typical for this program.



E. Technology Evaluation

Schedules E/G 261

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

During the 2020-2021 planning process, there were no new energy-efficient technologies on the horizon that weren't already being evaluated in other forums, such as the 2019 RFP/RFI process. Therefore, no savings or expenses were budgeted for 2020-2021. 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 2021 Annual Conservation Plan.

2021 Updates, Revisions, Enhancements, Adaptive Management

PSE will continue to review and evaluate any technological innovations in 2021, consistent with its application of adaptive management.

F. Commercial Rebates

Schedules E/G 262

The Commercial Rebates organization is comprised of several rebate programs that focus on commercial customers, many of which are considered hard-to-reach or proportionately underserved:

- Lighting to Go,
- Small Business Direct Install, which includes:
 - Lodging Direct Install,
 - Agricultural Direct Install,
- Commercial Foodservice & Laundry,⁶⁴ and
- Commercial HVAC

⁶⁴ The name of the Commercial Kitchen & Laundry programs is transitioning to Commercial Foodservice & Laundry in 2021.

1. Lighting to Go

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

Lighting to Go is a direct-purchase program in which PSE will utilize existing retail resources, including field services, store signage, marketing, outreach, and limited-time offers to support the commercial-focused efforts. EISA code and HB 1444 standards revisions did not impact the program to the extent as the impact to residential lighting programs, primarily due to the applications and types of commercial lighting.

Although the majority of general-purpose lighting will no longer be viable, commercial applications, such as wall packs, area lighting, linear lamps, and fixture conversions, will be incentivized through the program.

Program staff expect to expand Lighting to Go's product offerings, with measures including three different T5 fixture retrofit options: a ballast bypass, a "plug-and-play", and an entire fixture replacement. The program will also offer point-of-sale rebates on LED replacements for High-Intensity Discharge (HID) lamps, and pin-based LEDs for CFL replacement. Broader offerings will also include linear LEDs, and program staff are examining the potential for exterior lighting LED products.

The Lighting to Go program will focus its marketing and communications efforts on ensuring that instant rebate vendors place Point of Purchase (POP) signage appropriately, and that collateral provided increases awareness of PSE's Retail Lighting program incentives.

Program staff are also working to develop non-English materials to assist those customers with purchases and to increase program awareness. These efforts will be coordinated with the Retail Lighting⁶⁵ program initiatives.

2021 Updates, Revisions, Enhancements, Adaptive Management

Lighting to Go experienced a significant drop off in participation beginning in March 2020 when the COVID-19 pandemic caused a shutdown in construction activities. Some activity continued as essential services continued, though many distributors furloughed non-essential staff including some who process incentive submissions. The onset of the COVID-19 pandemic also coincided with the launch of a new rebate processing system implemented by PSE's implementation partner.

⁶⁵ Included in Chapter 6: Residential Energy Management Program Discussions.



The new system had a learning curve for distributors, and this combination of factors caused delays to acquiring program savings and data and program staff have yet to understand the full impact of COVID-19 on this program.

A key driver of the substantial reduction in 2021 electric savings from the original Plan is the elimination of the recessed cans measure (included in the HB 1444 updates), which was one of the more popular measures for contractors, and was important to the construction industry. As a result, many contractors are not participating in the Lighting to Go program, and projected savings are anticipated to go from approximately 15 million kWh to approximately 8 million kWh.

In line with Business Lighting's increased incentives, staff doubled the incentive on TLEDs in June 2020 to \$4 as a Limited Time Offer to promote customer participation through the end of 2020. In September, Lighting to Go launched a new set of exterior fixture incentives that will continue indefinitely.

In partnership with the third party implementer and field services provider, PSE added new distributors that previously were not participating. Outreach to distributors, both at sales floor and at the management level, was also increased to improve awareness of the program for the staff that delivers the incentives to the customer. Through these improved relationships, PSE strives to better understand of customer businesses and the motivation behind purchasing habits/practices.

In 2021, 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 could include but not limited to, incentivizing sales staff at the distributor level, introducing new products to incentivize, and marketing tactics for customer awareness of the program.

2. Commercial Foodservice & Laundry

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

This program focuses on a customer segment that is comprised of relatively large electric and natural gas users; the foundation of their businesses relies on energy-intensive equipment. They often require assistance in participating in Energy Efficiency programs, and service delivery must reach them in their preferred manner; commercial kitchens and commercial laundries have very specific time windows of availability.

Collaborating with seven electric, and natural gas utilities, PSE administers an incentive program that provides customers with a uniform assortment of energy-efficient equipment, a single application form, and consistent incentives.

This cohesive customer experience also benefits vendors and equipment distributors. Program staff are considering implementing a third-party administered midstream incentive model in addition to its standard implementation model. Program staff expect that this initiative will augment customer participation and driver increased savings.

Although the updated standard enumerated in HB 1444 affects some commercial cooking equipment, PSE expects that the program's measure offerings will align with the new requirements and accommodate customer needs. The program will coordinate market and outreach efforts with the Small Business Direct Install program, allowing program staff to assess, treat, educate, and connect customers with the rest of the PSE program portfolio. Examples include appliances, HVAC, and custom grant processing.

The program will engage local market partners to deliver a streamlined point of purchase (POP) experience in both the kitchen and laundry sectors. It will also translate its collateral materials for hard-to-reach customers, and will develop creative marketing campaigns to engage decision-makers more effectively.

Program staff will also work to identify opportunities to cross-promote commercial kitchen and laundry programs to customers who have participated in other commercial efficiency programs, and continue its involvement in multi-channel initiatives and campaigns, including the Small Business Direct Install program.

With planned electric and natural gas savings approximately 69 percent and 76 percent higher than last biennium's Plan, the program expects to serve approximately 300 customers annually in the coming biennium.

2021 Updates, Revisions, Enhancements, Adaptive Management

This industry has been uniquely affected by the COVID-19 pandemic and program staff will be incorporating new and innovating marketing and outreach efforts to help with some of those customer impacts.

In 2021 PSE will continue to collaborate closely with seven regional electric, natural gas, and water/waste-water utilities, providing customers with a uniform assortment of energy-efficient equipment, application form, and consistent incentives. In late 2020, program staff implemented a third-party administered midstream incentive model to replace and greatly enhance its historically pioneered and internally delivered version of the same (it is important to note the downstream portion of the program will remain intact). Program staff expect that this initiative will increase customer participation and drive additional savings for numerous reasons, including the incorporation of nationally recognized sales channels not historically part of the program, and an online submission portal for participating midstream foodservice equipment distributors.



Staff expect to see an approximate 50 percent decrease (1 million kWh to approximately 500,000 kWh) in planned electric savings in 2021, with an approximate 62 percent increase in planned natural gas savings. This is due in part to a combination of COVID-19 industry impacts as well as the onboarding of a third party driven Midstream model and acknowledgement of accompanying ancillary therm savings from the Petition to Modify 2020-2021 Savings Target for this program. The program is expecting to serve approximately 600 customers in 2021, largely due to the augmented Midstream program delivery and resulting increase in overall customer awareness.

a. Underserved and Hard-to-reach Segments

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 2021, PSE will continue to focus program efforts toward these preferred channels, enhanced by the expanded Midstream program engagement of local 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 where English is not their first language. 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. Commercial HVAC

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

The Commercial HVAC program expects to provide rebates on Advance Rooftop Controllers (ARC), web-enabled thermostats, and ductless heat pumps. The program is an ideal next step for small commercial customers that have participated in the SBDI or Business Lighting Grants programs. Commercial HVAC has also incorporated the offering of incentives through a third-party administered midstream model, which expands the program reach and savings potential. Those details are listed in the Commercial Midstream HVAC & WH section below.

Program staff will collaborate with manufacturers, distributors and contractors to co-promote HVAC incentives. PSE will participate in all relevant industry trade show and will examine opportunities to connect face-to-face with target customers and contractors.

PSE anticipates that the program will serve approximately 1,500 customers in conjunction with this initiative.

2021 Updates, Revisions, Enhancements, Adaptive Management

PSE is adapting rebates and processes to create a suite of commercial HVAC maintenance measures that can be easily accessed by its commercial customer base. This includes aligning the advanced rooftop control rebates and the program's new commercial web-enabled thermostat measure with the Regional Technical Forum's (RTF's) UES list.

Additionally, PSE is changing its incentive structure for advanced rooftop controls to adopt a more customer-friendly approach in alignment with other regional utility offerings. These changes include removing the 70 percent incentive cap for project costs and restructuring incentive payments so that they are calculated on a per rooftop unit basis as opposed to a per ton basis. The increased rebate amount should generate more customer interest, and switching to a per-unit payment structure will make the incentive calculations easier for customers to understand.

These changes will be cross promoted on joint utility rebate application forms, which will increase customer awareness of PSE's program offerings, and enhance customer experiences in overlapping service territories. Standardizing advanced rooftop control incentives regionally also streamlines the application process for contractors, making it more likely for them to understand and promote the incentives. Overall, the goal is to reduce administrative processing and reporting requirements to increase the adoption of commercial maintenance controls.

These improvements, along with new Variable Frequency Drive (VFD) and controller measures, result in an increase of anticipated electric and natural gas savings in 2021. PSE anticipates that the program will serve approximately 1,500 customers in conjunction with this initiative.

4. Commercial Midstream HVAC/WH

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

2020-2021 will represent the first full biennium that the program has been operational. It is administered through a third party with PSE management oversight.



By encouraging distributors and direct sales manufactures to focus more of their inventory on energy-efficient units, increased savings is possible. The program's electric savings projection is approximately 18 percent higher than the 2018-2019 period, and natural gas savings are expected to be 143 percent higher than the previous biennium.

Program implementation is currently centered on HVAC measures. Staff are considering adding water heat measures as well in the future. Program staff are proceeding with measured steps to ensure that there is no overlap with other Energy Efficiency programs utilizing a midstream fulfillment approach.

2021 Updates, Revisions, Enhancements, Adaptive Management

Savings and spending attributed to the Commercial Midstream electric HVAC and electric water heating program were inadvertently more than doubled in the original 2020-2021 biennium. Based on analysis using the correct savings and spending, staff anticipate that 2021 will reflect a decline in program electric savings of approximately 16 percent from the original 2021 Plan. Staff anticipates that natural gas savings will increase by approximately 100,000 therms from the originally indicated 2021 value, also because of savings calculation revisions.

The COVID-19 pandemic has contributed to several commercial HVAC industry impacts including, but not limited to, furloughs and staffing turn over at distributor branches resulting in gaps in knowledge for project submission, construction moratoriums, and interruptions in manufacturing in key hot spot areas in the United States.

Due to the more simplistic nature of water heating installations (when compared to large scale HVAC projects), PSE's commercial midstream gas water heating program has not experienced similar impediments to participation as on the electric side. On the contrary, 2021 estimates for savings and spending went up by 26 percent and 11 percent respectively. As the program matures, additional distributors have joined the program reaching more contractors and influencing more projects.

PSE will continue to identify ways to further engage the contractor and distributor community to increase commercial midstream participation. Program staff are proceeding with measured steps to ensure that there is no overlap with other Energy Efficiency programs utilizing a midstream fulfillment approach. PSE is also looking into potential measures to add to the program based on feedback from distributors and manufacturers.

Regional alignment in program offerings is a key component to success with any midstream program. It provides distributors a consistent platform to engage contractors. PSE and Seattle City Light are already closely aligned in program offerings, and are working to facilitate the addition of other regional utilities. Energy Efficiency staff are sharing program data with Snohomish Public Utility District No. 1 (SnoPUD) in 2020 and anticipate SnoPUD's participation in the Midstream program in 2021.

5. Small Business Direct Install

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

The Small Business Direct Install program provides services to a wide range of customer segments, including agricultural, lodging, and other small entities who receive service through PSE's rate schedule 24, rate schedule 25 when the building is less than 10,000 square feet, and natural gas rate schedule 31G. This group organization provides economies of scale, and drive consistencies where appropriate in these niche markets.

In order to provide a more comprehensive suite of electric and natural gas measures to small businesses, PSE will provide a wide range of services to customer classifications that can be considered hard-to-reach or proportionately underserved. These particular businesses may be located in rural areas, lack upfront capital due to low profit margins, rent their space, or may be uncertain about their longevity. PSE will continue to target outreach to tribal customers in the upcoming biennium, by building on its success⁶⁶ in piloting approaches to reach multi-cultural business customers.

Program staff plan to expand the measure offerings to include direct-install HVAC, and will facilitate custom measure installations. Staff also anticipate that the number of participating customers will increase from the previous biennium. A proposed agreement to coordinate the joint delivery of SBDI with Snohomish County PUD should also result in increased savings.⁶⁷

SBDI's savings are only minimally impacted by code and standards revisions affecting general-purpose screw-in LEDs, as many of its lighting measures are HID conversions, TLED conversions, and integral LEDs.

⁶⁶ PSE's primary method of marketing, the community blitz model, doesn't effectively reach tribes, rural and multi-cultural business owners. In 2019, PSE approached the Lummi Tribe with a multi-program outreach campaign encompassing single family, multi-family, small business and larger commercial facilities. This was a successful endeavor, and program staff will model 2020-2021 strategies based on its success.

⁶⁷ As of the filing of this BCP, PSE and Snohomish County PUD will meet in the fourth quarter 2019 to discuss the particulars of the proposal.



PSE's very successful small business "blitzes" will continue in the coming biennium, with at least five per year planned. Program staff will migrate further away from metropolitan areas, with an effort made to combine blitzes in smaller towns that are geographically closer. The team will also develop segment-specific blitzes, such as agriculture outreach.

As a part of the blitz visits, PSE teams will ascertain the interest level of the custom to consider additional measures that have a co-pay, and are in addition to those directly installed. The program will also engage local contractors to assist with the measures that require more installation expertise.

In order to provide a higher degree of efficiency and reduce turnaround, PSE will also locate field crews and inventory in the northern, central, and southern areas of its territory. This will provide an opportunity to communicate with several disparate businesses, rather than only those in a central location.

Staff will also coordinate marketing and promotional efforts with blitzes, and ensure that city officials and Chambers of Commerce are also engaged. The Residential and Commercial Sector Channels will promote product and rebate offerings between them. Program staff are developing materials specific to the needs of those hard-to-reach customers, including fliers illustrating partnerships with sector-specific organizations, multi-language collateral, and blitzes that occur in rural areas.

The Direct Install program allow PSE to offer electric and natural gas savings to a variety—rather than only one type, of small businesses. This will result in higher customer awareness of energy-efficiency opportunities, and lead to maximized electric and natural gas savings in this market sector.

2021 Updates, Revisions, Enhancements, Adaptive Management

In 2020, the Small Business Direct Install program shut down all field work in response to the COVID-19 pandemic and relevant healthy and safety protocols. The SBDI program pivoted to virtual assessments via phone to continue assisting customers and successfully built a pipeline of customers ready for installations once the pandemic eased.

In lieu of in-person outreach, such a blitzes and Outreach lead visits, staff have developed an outreach plan for phone and email contact by Outreach leads to identify eligible businesses in need in each territory. Staff is also exploring a Virtual Assessment option to stay connected in the community via internet conferencing. The Outreach team is also focusing on previously identified underserved communities in the email and phone contact plan.

As COVID-19 guidance continues to evolve, the SBDI program will continue to focus on exterior and unoccupied spaces during Phase II and III of the Governor's Safe Start plan. Accordingly, PSE has increased the incentives on exterior fixtures through the end of the year and will examine the results to inform potential 2021 incentive approaches. This response is in line with Business Lighting's increased incentives and focuses on continuing to help customers reduce energy use while work may be limited. SBDI assessments will also be offered to small business that apply for PSE's Small Business Energy Makeover contest.

After COVID-19, these new virtual tactics can provide an efficient way to reach customers and compliment the in-person outreach and events. These new tactics will help reach aggressive targets in 2021, with the program's electric goal increasing approximately 600,000 kWh from the originally indicated 2021 value, and the natural gas savings goal will be consistent with the originally indicated savings amount.

The program is also anticipating finalization of plans to deliver SBDI to Snohomish PUD territory late third quarter of 2020. The plan includes engaging PSE's third-party implementer to perform the same direct installation work in the Snohomish PUD territory, as in PSE electric territories. The implementer has established an effective delivery model. This allows PSE to deliver a more comprehensive energy saving experience to its natural gas customers. Snohomish PUD will be able to report the electric savings achieved as a pass-through of the implementer's charges to Snohomish PUD. This approach will be revenue-neutral, with PSE charging only a small administrative fee.

a. Underserved and Hard-to-reach segments

PSE's Small Business Energy Makeover contest focused on needy, deserving and underserved customers. SBDI supports the contest through energy assessments and installations for all nominees from late 2020 and into early 2021. PSE anticipates a focus on underserved communities and demographics as the public nominates local small businesses.

VIII. Pilots

Schedules E/G 249

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

A. Pilot-Analogous Initiatives

In 2020-2021, 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 2020-2021, is a collaborative effort within the REM Sector to focus on this hard-to-reach customer segment. It will rely on established, proven measures—primarily HVAC, weatherization, space and water heat—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

There are several potential measures and updated measure delivery methods that are new or revised for 2020-2021. Examples include the Multifamily Automatic Tubspout Diverter, which, after achieving a setpoint of 95 degrees Fahrenheit, will shut the tub spout off until the customer manually diverts the water flow to the showerhead.

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.

As a result of a PSE-directed evaluation, UES values for leave-behind advanced power strips dropped by more than 100 kWh per unit. To sustain interest in this measure, program staff is examining the potential of implementing a direct-install approach in 2020. The Multifamily program may also offer a line-voltage web-enabled thermostat.

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, 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 need 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".

B. Pilots with Uncertain Savings

As opposed to pilots that utilize measures or initiatives that have verified, proven savings, the following pilots have some degree of uncertainty relative to their savings potential. A case in point is the Pay for Performance pilot, which encountered several implementation challenges in the previous biennium. Two of the following pilot programs incorporate the enhanced Advanced Metering Infrastructure (AMI) metering capabilities.

PSE forecasts that the combined savings potential for initiatives in this category will be 15,080 MWh and 320,000 therms for the coming biennium.

The following are pilots that PSE estimates have uncertain savings.

1. Pay for Performance

Consistent with the requirement enumerated in the Multiparty Settlement Stipulation and Agreement in Docket U-180680, Business Energy Management will continue this pilot, which targets the engagement of at least five large commercial buildings to produce both electric and natural gas savings. The pilot's objective will be the selection of customers with sites of at least 50,000 square feet with large savings potential. Program staff plan that incentives will be source-blind, and consist of a combination of capital, O&M, and behavior savings. Incentives would be based on conservation savings realized.

PSE is collaborating with Stakeholders such as the Northwest Energy Efficiency Council (NEEC) and its CRAG to optimally align the offerings to customer needs.

2. Retail Choice Engine

Presented to PSE during its 2019 RFP release, 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 will provide an “energy score”, alongside pricing, customer ratings, product details, etc. Once implemented, program staff believe that this pilot could have a sizeable savings potential.

3. Single Family AMI Enhanced Engagement

This pilot uses AMI data to provide customers with near real-time energy usage information, with the intent of influencing conservation behaviors, resulting in reduced energy usage.

4. Small and Medium Business AMI Enhanced Engagement

Similar to its residential counterpart, the Small and Medium Business (SMB) AMI Enhanced Engagement pilot will provide a limited number of qualifying customers with very detailed analyses, and potentially disaggregated energy use reporting, providing participating customers with conservation calls to action.

5. Home Energy Assessments – Focus on Vulnerable Communities

A key element of the revised Home Energy Assessment program is a focus more on behavioral-related conservation, and may potentially coordinate with Home Energy Reports to assess the impact of the onsite consultation provided.

PSE has designed the pilot program to test the behavioral savings and energy-efficiency measure installation assistance, with a focus on moderate-income and vulnerable communities. Program staff will coordinate between the Energy Efficiency organizations, as well as area agencies providing services to eligible customers.

2021 Updates, Revisions, Enhancements, Adaptive Management

Moderate Income Residences

PSE's initiative to target moderate-income residences is now named "Efficiency Boost". In 2021, 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.

Pay for Performance

Building on the momentum established in 2020, BEM's Pay for Performance (P4P) pilot expects to increase program potential in 2021 by collaborating with Business Services and Outreach and expanding training for Energy Management Engineers to develop more P4 projects. In 2020, staff explored projects that would partner with other utilities with comparable P4P programs. This approach envisioned that PSE could collaborate with other utilities, such as Seattle City Light (SCL), on projects where PSE is only the natural gas utility and not the electric utility.

However, logistical challenges around aligning PSE's & SCL's programs has inhibited staff's efforts at utility partnership. Challenges included difficulty with claiming savings when fuel switching between utilities, whole-building modeling with only PSE's meter data, and achieving PSE gas savings close enough to the 15 percent savings requirement on its own. Coordination with other utilities is unlikely to occur in 2021 and staff have reduced the natural gas savings target reflect this change.

Staff will continue 2020 program improvements that focused on long-term contractor-customer engagement, the incentive calculator, and criteria for project documentation. Additional program improvements in 2021 will focus on adjustments to the program engagement period, which will potentially be modified from five years to three years. This would reduce a roadblock to participation while not affecting capital measures, which largely occur in the first year. The incentive model will also potentially be enhanced by implementing a rotating funds approach, which would more closely align with customer cash flow and budgeting. This would replace the current model, which calls for payment at the end of the first year and a performance model in following years.

Retail Choice Engine

PSE is branding the website for this pilot as the PSE “Efficient Product Guide.” Pilot design is limited to the same group of customers but in 2021, Energy Efficiency will expand marketing efforts based on learnings and customer engagement from 2020. Energy savings estimates for this pilot are significantly lower given a novel evaluation plan that includes fewer customers but will result in a more robust evaluation.

Single Family AMI Enhanced Engagement

In 2021, PSE staff will continue to work with its third-party evaluator to develop an evaluation plan in order to create an effective program design.

Small and Medium Business AMI Enhanced Engagement

The SMB Enhanced Engagement Pilot faced headwinds in 2020 that slowed planned implementation. Adaptive management focused on ensuring that customer data needed for the program (AMI data) flows to the selected vendor in such a way that available data is appropriate, secure, and in a compatible format. As the data availability issues are resolved, staff will continue to work with the vendor to clarify that energy-saving operational changes proposed to participants are compatible with operation during COVID-19 restrictions. PSE expects to run this two-year pilot in 2021 and 2022 instead of 2020 and 2021.

There is a reduction in expected savings for 2021 partly due to the slower than expected start of the pilot. Key variance drivers include:

1. Ability of the vendor to accurately evaluate customer data given data security issues and participant operational changes due to COVID-19, and
2. Participants’ ability to implement measures that will achieve savings.

Home Energy Assessments – Focus on Vulnerable Communities

As noted in Chapter 5: Residential Energy Management Program Details, PSE suspended the Home Energy Assessment (HEA) program, largely due to the effects of the COVID-19 pandemic and the RTF deactivation of residential showerhead measures. Due to its reliance on the HEA program, the Home Energy Assessment – Focus on Vulnerable Communities pilot has also been suspended. Accordingly, the planned 2021 savings of 5,000 MWh have been removed.

Newly Developed Pilots

Consistent with its continuous improvement through adaptive management principles, Energy Efficiency program staff have created several initiatives as pilot programs.

Staff created the Business Lighting Express pilot in late 2020 and will continue to develop and implement this pilot into 2021. This pilot provides incentives for exterior lighting upgrades for contractors conducting maintenance upgrades. The new Business Lighting Express pilot is designed to increase maintenance upgrades that don't fit into the Business Lighting or Lighting to Go programs.

The BEM team expects to launch a Strategic Energy Innovations (SEI) Climate Corps Fellowship pilot in September 2020 that will run through June 2021. PSE will sponsor five Climate Corps fellows, each a recent college graduate or college senior. Fellows will each be placed at a different customer host organization to support the planning, implementation, and documentation of energy efficiency projects within that organization. PSE will subsidize 75 percent of the cost of a Climate Corps Fellow and the host organization will provide the remaining 25 percent of the cost.

Expected to launch in late 2020, BEM staff will also deploy a Request for Proposals (RFP) process with a proposed budget of \$5 million for Commercial/Industrial Retrofit projects. Incentives will cover up to 100 percent of non-lighting and non-commissioning projects that are cost-effective, can be completed by December 2021, and have an emphasis on projects that have multiple measures that may be considered deep retrofits.

IX. Regional Programs

In the following program plans, PSE includes the original 2020-2021 Biennial Conservation Plan program overviews, with an updated discussion below with a unique section heading to indicate 2021-specific updates.

A. Northwest Energy Efficiency Alliance

Schedule E254

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

NEEA's updated operational plan for 2020-2021 is included in this BCP as a standalone document, Exhibit 10. It should be noted that at the time of the publication of PSE's 2020-2021 BCP, NEEA's board has not approved their 2020 operating plan. PSE extends its appreciation to the NEEA Staff for their gracious cooperation and the additional effort and resources expended to develop this content.

1. PSE Participation in NEEA Operations

Several Energy Efficiency staff members participate on NEEA committees, in partnership with other NEEA funders. Some committees are advisory in nature, and some 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's director of Energy Efficiency sits on the board of directors, and has been its chairman in the past.

Energy Efficiency staff often participate on more than one committee or working group, as well as ad-hoc and limited-time work groups. PSE participation includes, but is not limited to contributions in the:

- *Regional Portfolio Advisory Committee,*
 - *Strategic Market Strategy Working Group*
 - *Strategic Market Strategy Connectivity Working Group*
 - *Commercial Lighting Market Strategy Working Group*
- *Residential Advisory Committee,*
 - *Market Transformation Work Groups*

- *Commercial Advisory Committee,*
 - *Commercial Code Enhancement Program*
 - *Lighting Managers Committee*
- *Industrial Advisory Committee,*
 - *Training Committee*
- *Cost-Effectiveness Advisory Committee, and*
- *Emerging Technology Advisory Committee*
 - *Retac 2.0 Sub-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.

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

2. Natural Gas Market Transformation

In 2020-2021 NEEA will continue development of five key natural gas initiatives, as discussed in Exhibit 10:

- *Gas heat pump water heaters,*
- *Combination water and space heat systems,*
- *Gas clothes dryers,*
- *Rooftop HVAC, and*
- *Hearth products,*

consistent with its 2015-2019 Business Plan and its pending 2020 Operations Plan. NEEA estimates that the first of these products to yield therm savings may potentially be natural gas clothes dryers. A 0.67 natural gas water heater⁶⁸ may also produce savings, although there is a potential that neither will result in therm savings in the coming biennium.

⁶⁸ Although excluded from the initial five pilot measures, NEEA’s natural gas market transformation budget also includes a scanning function. This activity provides for NEEA staff to examine the energy-efficiency marketplace for new technologies that may be incorporated into the suite of offerings.



PSE's share of the natural gas market transformation funding is 41.25 percent, with a 2021 total of \$2.43 million.

2021 Updates, Revisions, Enhancements, Adaptive Management

NEEA's updated 2021 electric savings projection, provided to PSE in September 2020 is 12,877 MWh (1.47 aMW). This adjusted amount (2,000 MWh more than the originally indicated 2021 savings) accounts for revisions to ductless heat pump UES values, an above-estimated market share for ENERGY STAR® 7 Desktop Computers, and more commissioning than the original forecast based on NEEA's 2019 Commissioning data.

NEEA's natural gas savings forecast for 2021 is approximately 18,000 therms attributable to the PSE territory. However, PSE is working with NEEA to better quantify those estimates, and so will enter a planned savings of zero therms for 2021. The composition of the NEEA natural gas program is:

- Efficient Water Heat,
- Next Step Homes, and
- Condensing Rooftop Units.

B. Targeted DSM

Schedule 219

Original 2020-2021 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, 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.

The TDSM pilot will offer the same measures that are available through standard Energy Efficiency programs. TDSM will offer, however, an increased amount on measure incentives in the specific localities, either 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.

For 2020-2021, PSE has identified two municipalities for the pilot: Bainbridge Island (primarily electric measures) and Duvall (primarily natural gas measures).

Schedule 219, Targeted DSM is a new Schedule, providing the terms and conditions for PSE's specialized services applicable to specific localities.

2021 Updates, Revisions, Enhancements, Adaptive Management

The Targeted DSM pilot remains on track for 2021, consistent with its original 2020-2021 plans.

C. Distribution Efficiencies

Schedule E292

Original 2020-2021 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. These improvements focus on measures like phase balancing and conservation voltage reduction (CVR) (also referred to as voltage optimization [VO]). The methodology used to determine CVR savings is the Simplified Voltage Optimization Measurement and Verification Protocol provided by the Regional Technical Forum.

Analyses performed during 2020-2021 planning revealed that there are no cost-effective measures available for PSE generation facilities. Program staff will maintain examination of these facilities in 2020 and will adjust its 2021 Annual Conservation Plan, should conservation opportunities in generating facilities become cost effective.

For the 2020-2021 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.



Energy Efficiency staff closely coordinate with PSE engineering staff, system planning teams, and major project teams to plan, track, report, and coordinate potential CVR projects. PSE's engineering, system planning, and third-party design teams engineer the projects, while PSE's major projects and third-party contractors build the projects.

These programs will operate under Schedule 292 and require coordination between various PSE departments. The review, classification, project design, and implementation is a dynamic process. As the profile of customer demand on a particular circuit evolves, so too does the circuit's feasibility for CVR: only select distribution substations prove to be eligible for CVR. Circumstances that impact a circuit's CVR viability include, but are not limited to:

- *The number of three-phase customers,*
- *The number of solar/net metered customers on the circuit,*
- *The potential for phase balancing,*
- *Potential load growth,*
- *Reliability issues with the suggested voltage settings,*
- *Difficulty of implementing CVR on Distribution Automation (DA) enabled circuits due to lack of integration with Advanced Distribution Management System (ADMS),*
- *Ratio of residential and small commercial in the substation,*
- *There are also instances in which, after applying the CVR feasibility study on a circuit, a voltage increase is required, rather than a reduction.*

As of the third quarter of 2019, there are approximately 158 substations that have a potential for CVR. 10 have had CVR implemented, with an additional 4 in progress in 2019.

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.

There are eight projects slated for 2020-2021: three in 2020 at substations most likely to provide cost-effective energy savings to customers from this added level of monitoring and control. Program staff expect that 2020-2021 CVR projects will yield 1,500 MWh of savings in 2020-2021.

A significant expansion in CVR project implementation is planned in future years, this expansion is tied to the implementation of the Advanced Metering Infrastructure (AMI) project and substation automation project. 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 2020-2021 Biennial Conservation Plan, staff is investigating the need for a study that provides an updated energy savings methodology for Voltage Var CVR projects. The study scope and methodology investigation will be refined as more detail on the Voltage Var pilots are developed.

The pace of CVR implementation is planned to be increased in future Biennial plans, after the transition to volt-Var optimization and with continued AMI and substation automation project rollouts.

2021 Updates, Revisions, Enhancements, Adaptive Management

PSE engaged the 2020-21 CVR program with eight substations as the starting block. As each substation progresses through the CVR program phases, the forecasts adjusted to new technical findings. As of the third quarter of 2020, PSE estimates that all eight of the substations will reach project completion.



X. Portfolio Support

In the following program plans, PSE includes the original 2020-2021 Biennial Conservation Plan program overviews, with an updated discussion below to indicate 2021-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 2020-2021 biennium, PSE continues to improve its budget representations in the Portfolio Support group, as will be discussed in the following sections.

2021 Updates, Revisions, Enhancements, Adaptive Management

The majority of functions and activities in the Portfolio Support group will continue to operate consistently with the originally outlined 2020-2021 Plan. As readers will note, several functions are associated with or support the implementation of Energy Efficiency's new customer management software DSMc, or will provide direct support of the implementation of PSE's Demand Response program.

A. Tariff Schedule Adjustments

There are no tariff Schedule revisions required for 2021 in the Portfolio Support group.

B. Data and Systems Services

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

This team is responsible for reviewing and ensure data integrity from a wide variety of sources, including vendors, program staff, and contractors. They interface with several disparate data systems, including SAP, program databases, and the Measure Metrics archival 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 2020-2021, the team will continue employing adaptive management and Six-Sigma techniques to ensure updated and reliable data, reporting, and forecasting tools. Data and Systems Service staff are focusing on full-scale maintenance support of the DSMc (Demand Side Management central) system, which staff fully integrated in 2017. Staff coordinated the launch of the Public User Interface (PUI), which provides PSE customers with real-time access to their rebate application status. The team will focus on system enhancements, process improvements, and developing a trade ally portal.

The team is also developing data-driven dashboards to help program staff better monitor and improve program performance. Data and Systems Services staff are also working with the Rebates Processing team on a similar dashboard to monitor rebate processing metrics.

2021 Updates, Revisions, Enhancements, Adaptive Management

In 2021, the Data and Systems Support team will focus on adapting DSMc to process retail appliance rebates in-house, making system changes to and retail heat pump water heater rebates. The team will also implement enhancements to the DSMc Public User Experience (PUX).

C. Rebates Processing

Original 2020-2021 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.

The Rebates Processing team will focus on continued process improvement gains, maximized customer satisfaction, and benefit for Residential and Business programs in 2020-2021.



A key initiative for the coming biennium is the continued rollout of DSMc's Public User Interface (PUI), which provides a portal for customers to track their incentive application status. The team will collaborate with PSE's Information Technology and Marketing departments to create customer awareness of this service, with the ongoing emphasis on creating a purely digital portal. This has the potential of removing the need for customers to mail in hard-copy rebate application forms, and improves rebate analyst effectiveness, further improving incentive payment turnaround time.

2021 Updates, Revisions, Enhancements, Adaptive Management

In 2021, the Rebates Processing team will begin processing all residential single-family appliance rebates under an in-house model; appliance rebates were previously processed by a third-party vendor partner. The transition will enhance efficiencies, increase customer satisfaction, and provide the ability to apply rebates as credits to customer energy bills. The Rebates Processing team has been restructured to be able to absorb this transition with little to no additional cost.

D. Verification Team

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

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

The following Verification continuous improvement activities will support mainstream field work in 2020-2021:

1) Data Systems

The Verification tracking and scheduling database will be closely aligned with the DSMc system to continue simplifying and automating the project sampling and job-pulling process. This streamlines workflow between the program and verification teams.

The team will also explore a potential "virtual" inspection. This would use approved visual applications to interact with customers, improving incentive payment turnaround time. The concept would also reduce travel time, and increase productivity.

2) Sampling Rates

The team will base verification sampling rates on installation forecasts from the program teams and anticipated compliance/discrepancy rates. PSE expects that these forecasts will be finalized subsequent to the filing of the 2020-2021 BCP.

In the last biennium, though, the team forecast over 2,000 random verifications, and the team anticipates that the upcoming biennium will require a commensurate number, based on savings goals. Individual measures/programs will each have a target number of verifications. Reviewing compliance rate results will inform program staff in the continued management of process improvements, data integrity, savings validity, and program delivery efficiency.

3) Additional Verification Measures

The Verification team will continue to assist in other areas of Residential or Business efficiency programs, including non-random visits. Non-random visits, typically performed at the request of program managers for case-specific interests, are considered quality assurance reviews. These may also result in documented discrepancies for program management follow-up. Additionally, new measures/programs are planned for the Verification portfolio, including phone Verification for Appliance Decommissioning, and site verification for Business Rebates-Commercial Kitchens.

2021 Updates, Revisions, Enhancements, Adaptive Management

In 2021, the Verification team (V-Team) will continue implementing updated verification approaches, including 100 percent virtual verifications, using photographs, video, and real-time video conferencing. While virtual verification was available for some programs previously, the V-Team began moving to a 100 percent virtual model in response to the COVID-19 pandemic and relevant safety precautions regarding home visits. Many of the virtual verification plans continue to be developed and staff anticipate that they will launch in early 2021.

i. No change from pre-COVID-19 processes

The Low Income Weatherization, Home Appliances, Smart Thermostat, and Mobile Home New Construction programs will retain their existing verification processes, as these are adequately verified via telephone or external inputs.

ii. Verification plans under development

As of the filing of this plan, several virtual verification plans remain under development. Either combination or completely virtual models will be adapted for Commercial HVAC, Commercial Foodservice, and the Small Business Direct Install programs, depending on evolving COVID-19 safety standards. Modified verification plans are anticipated to be completed in late 2020 and implemented by early 2021 for these programs.

iii. Combination of in-person and virtual verification

Energy Efficiency will verify all custom grants using a combination of in-person and virtual verifications, depending on the size, scale, and complexity of projects.

iv. Completely virtual verifications

Ductless heat pumps, forced-air-furnace to heat pump conversions, gas boilers, furnaces, heat pump water heaters, integrated space and water heat, Single Family windows, and weatherization will be verified via virtual means in 2021. Verification will consist of, but will not be limited to, customer videos, customer photographs, and/or online virtual meeting applications.

E. Trade Ally Network

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

From an organizational standpoint, the Trade Ally Support (TAS) team is integrated within Energy Efficiency Strategic Initiatives with budget accounting falling within the Portfolio Support grouping in Exhibit 1: Savings and Budgets. The TAS team supports the development and enhancements of PSE's Trade Ally Network (TAN), previously the Contractor Alliance Network (CAN).

1. Integration Strategy

The Trade Ally Network is PSE's formal conduit for trade ally engagement with and participation in PSE's Energy Efficiency Programs. The TAS team engages approximately 250 independent contractors through the network who deliver energy efficiency (and ancillary) products and services to PSE's customer base.

In addition, the TAS 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.

Trade allies are identified as playing a critical role in achieving cost-effective energy savings. Trade allies are sometimes considered Energy Efficiency's "boots on the street", they are often the first to learn of marketplace trends. These insights may include customer preferences, expectations, product innovations, process improvements, and market readiness of technologies and services. The TAS team works closely with program staff to engage and interact with trade allies to learn from and refine program delivery strategies.

As discussed in Chapter 3: Key Areas of Focus, the TAS team will continue to develop a trade ally portal and Partner database to maximize trade ally integration within the EE conservation programs. The portal will help facilitate the TAS team strategies by enabling broader communications across all trade allies, TAN members and non-members. Furthermore, the portal will serve a pivotal role in refining account management strategies to help the EE team:

- 1. achieve cost-effective energy savings;*
- 2. adaptively manage targeted marketing and outreach activities;*
- 3. explore the possibility of non-incentive value-add services for customers receiving conservation measures.*

2021 Updates, Revisions, Enhancements, Adaptive Management

PSE anticipates that revenue in both electric and natural gas will be lower than originally anticipated due to a slowdown in the construction industry. Therefore, revenue was decreased in the ACP by \$60,000 in both electric and natural gas operations.

F. Programs Support

Original 2020-2021 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.

2021 Updates, Revisions, Enhancements, Adaptive Management

The description included under Program Support in the original 2020-2021 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, and Rebates Processing.



Two new positions, Senior Technical Communicator and Senior Market Analyst, were developed and filled in 2020. The Sr. Technical Communicator provides support for internal communications, customer communications, and employee engagement. The Sr. Market Analyst provides support for product positioning and an Integrated Go-To Market strategy. Additionally, a new role of Sr. Business Technology Analyst was developed and with plans to fill this position in late 2020. The Business Analyst will provide integrated analysis and IT support for Energy Efficiency. The organization will continue to provide internal program support, process improvement initiatives, and operational effectiveness throughout 2021.

G. Trade Ally Memberships

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

The Trade Ally Memberships function manages PSE's memberships in trade associations that benefit PSE's Energy Efficiency customers. Memberships in these organizations often lead to ideas for innovative service offerings, a broader understanding of market and industry trends, and insight into customer behavior. In combination with Energy Efficiency's TAN organization, Energy Efficiency can significantly broaden its customer reach and exposure.

In 2020-2021, the Trade Ally Memberships team will support services for energy-efficiency programs, including those provided by:

- *BOMA—Building Owners & Managers' Association,*
- *CEE—Consortium for Energy Efficiency,*
- *ESource,*
- *Electric League,*
- *ESC—Energy Solutions Center, and*
- *NEEC—Northwest Energy Efficiency Council.*

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.

2021 Updates, Revisions, Enhancements, Adaptive Management

An additional Trade Ally Membership was inadvertently and unintentionally omitted from the original 2020-2021 BCP program listing. PSE provides a correction by adding AESP – Association of Energy Professionals to the list of memberships. This omission had effect on the budget.

H. Automated Benchmarking System

Original 2020-2021 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 2020-2021, an extensive upgrade is planned for the software, which now must serve the data needs of building owners and operators throughout the PSE service territory, consistent with requirements of HB 1257. The Automated Benchmarking System budget reflects the anticipated increased funding required to build the new system.

2021 Updates, Revisions, Enhancements, Adaptive Management

In 2021, Energy Efficiency will focus on replacing the current MyData system. This is necessary in order to support a significant increase in customer access demands, as HB 1257 becomes effective. PSE revised the budget to match an increase in costs due to unforeseen technical challenges in the ongoing implementation of the required software upgrade.

I. Energy Advisors

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

The Energy Advisor department will continue to locate energy advisor staff in local PSE offices, in addition to the Bellevue-based core team—including Olympia, Bellingham, and South Whidbey Island. Energy advisors are also “embedded” with program staff; each Energy Efficiency program team has an energy advisor as a member of the team. This provides a heightened level of expertise in addressing customer questions, and allows program staff to receive “real world” customer feedback from the energy advisor. The team expects to handle over 120,000 phone calls, 16,000 email responses, and staff over 200 outreach events in 2020-2021.



2021 Updates, Revisions, Enhancements, Adaptive Management

In 2021, the Energy Advisor team will continue to provide customer support and Energy Efficiency guidance by phone, email, and outreach events while serving as a conduit to customer feedback for program staff.

J. Energy Efficient Communities

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

The Energy Efficient Communities team collaborates with, and adds value to many organizations within Energy Efficiency. The team will emphasize 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 telephone 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. Customer engagements may include, but will not be limited to:

- *Small Business Direct Install blitzes,*
- *Door-to-door initiatives,*
- *Cross-program (Residential and Commercial) promotions.*

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 located in regional offices 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 door to door engagements as well as through presentations to the small business community.

For example, the team has found efficiencies in targeting two smaller communities for the small business direct install blitzes instead of just one. This tactic utilizes local contractors, who are most familiar with the community's businesses. Focusing on local businesses is also the most efficient application of the contractor's time. This approach also allows PSE to increase awareness of its programs in communities where its presence is impactful and appreciated.

The team will assist in designing Energy Efficiency’s outreach materials to foster creative local partnerships, ensuring that PSE is easy to partner with (for instance, bill inserts with a city,⁶⁹ a piece of collateral that can be inserted into a food bank bag, delivering presentations to new audiences like home owners associations, tabling at existing local events hosted by business/nonprofit organizations, etc.).

In order to stand out in an already-cluttered space, the Energy Efficient Communities team will concentrate on new ways to engage with PSE customers, and plan to implement these and apply them to the next initiative going forward.

2021 Updates, Revisions, Enhancements, Adaptive Management

i. COVID-19 Pandemic Adaptations

The Energy Efficient Communities team focuses on in person outreach through direct engagement and group presentations. During the COVID-19 pandemic, the team has adapted by using virtual and digital tools, as appropriate. The team will continue to conduct high-touch email and phone calling campaigns, while leveraging social media channels, for customers believed to have a high energy efficiency potential. Custom presentations, a mainstay tactic, will shift to be virtual, as appropriate. The team will also conduct no-to-low contact research to locate neighborhoods, commercial centers, and specific business customers that show promise for energy efficiency savings. All efforts will follow COVID-19 related rules and safety guidelines.

ii. Outreach Strategy

The Energy Efficient Communities team will continue to add value to many organizations within Energy Efficiency in 2021, despite anticipated health regulations and safety precautions due to COVID-19. The team will emphasize proactive, direct residential and business customer outreach, with a focus on one on one engagement, in person, over the phone and in virtual meetings, as appropriate.

The team continues to advocate for locally relevant ways to engage with customers that leverage PSE’s resources, community knowledge and local partner support.

⁶⁹ There have been instances where Energy Efficiency has partnered with cities where Energy Efficiency provides a bill insert (conforming to the city’s size specifications) showcasing one of its programs and the city mails it out inside their water utility bills.



Customer engagements in 2021 may include, but won't be limited to:

- Identify and organize opportunities for interior and exterior lighting upgrades for small businesses, as appropriate
- Targeted outbound calling to reach customers safely at home,
- High touch prospecting to match large use customers with ideal programs using phone, email, virtual presentations and premium versions of social media platforms.

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. For example, PSE will potentially use targeted outbound calling to promote special energy efficiency programs designed for customers with limited budgets.

The Energy Efficient Communities team will also pursue opportunities to engage with business customers with limited English proficiency and ensure awareness of Energy Efficiency opportunities and reduce business costs and carbon footprints. These efforts will potentially utilize interpreters and transcreated materials.

In addition, the team will target small businesses located in office parks in need of upgrades. Collaborating with property managers to bring efficiency offerings to individual business owners will both consolidate installation and open doors at other properties owned or managed by the same company.

K. Digital Customer Services

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

Customer interactions with PSE are no longer limited to the internet. Customers expect PSE to communicate its energy-efficiency offerings in a wide variety of electronic media, and expect the information in the form and at the time they want it, rather than driving them to a PSE-designated site. This group will continue to improve the ways in which it communicates with energy-efficiency customers, and support energy analysis tools. The Customer Digital Experience team will also support interactive content development, e-newsletters, database, and web hosting services.

2021 Updates, Revisions, Enhancements, Adaptive Management

The Digital Customer Services organizations will continue to monitor customer usage and feedback of digital tools to serve all customers. This may include increased efficiency options on the mobile app and adjusting the location and messaging on pse.com to best serve customers

L. Customer Awareness Tools

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

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

1. Unusual Usage Alerts (UUA)

- *Unusual Usage Alerts, or UUA's are sent to customers when their energy usage is abnormal compared to the previous year.*
- *Unusual usage alerts are triggered when a customer is trending to use more than 30 percent of they used for the same billing cycle the year prior.*
- *Over the last year, an average of over 44,000 communications have been dispatched.*

2. My Energy Usage

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

3. Seasonal Readiness Emails (SRE)

- *Up to 250,000 PSE customers receive reports are sent to by Oracle to over 1 million customers twice a year during the changing seasons, once in the Summer and once in the Winter.*
- *In the last cycle, PSE's vendor sent approximately 180,000 emails.*
- *In 2017-2020, the open rate was over 33 percent for both the summer and winter notifications.*

4. Customer Engagement Tracking (CET)

The [Customer Engagement Tracker \(CET\) survey](#) is an instrument designed to explore utility customer reactions to the Home Energy Reports (HER) program and other related outreaches. The instrument incorporates a variety of standardized questions that enable applicable comparisons to other utility deployments surveyed by PSE's vendor, representing over 69,000 customer interviews across 44 distinct utility partners.

At PSE, the instrument aims to accomplish the following key objectives:

- Explore customer interaction with and reception of the Home Energy Reports; for both those in PSE's legacy deployments as well as the 2014 expansion groups,
- Gauge overall impact of the program on the PSE customer relationship, both via self-reported influence and by measuring differences in engagement between program participants and non-participants (controls).
- Compare results between PSE deployments and to those of other vendor utility partners, with an eye towards potential program improvements.

2021 Updates, Revisions, Enhancements, Adaptive Management

The COVID-19 pandemic continues to alter customers' energy usage patterns. In 2021, PSE will continue monitoring customer usage, delivery rates, and customer feedback to adjust messaging that is helpful and sensitive to changing customer energy usage. This may include adjusting thresholds for unusual usage alerts, directly addressing pandemic-related usage with supportive messaging and specific tips, and adjusting the timing and/or frequency of messaging (especially unusual usage alerts) to best serve customers

M. Online Marketplace

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

ShopPSE is Energy Efficiency's online retail website:

<https://shop.pse.com/>

will continue to provide PSE customers with a wide variety of energy-savings devices, including LED lamps and showerheads.

2021 Updates, Revisions, Enhancements, Adaptive Management

ShopPSE was sunset in early 2020 as part of a planned transition to a different online marketplace business model.

In 2021, PSE anticipates partnering with a third-party vendor to launch a new online marketplace 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 develop robust marketing efforts and will closely monitor customer adoption and use of the site. Prior to, and after, the launch of the site, PSE and the vendor will carefully consider the customer journey to streamline participation and maximize value. After launch, PSE will also consider adding more products to the marketplace.

N. Market Integration

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

For 2020-2021, the Market Integration group will continue supporting the enhancement of online energy-efficiency tools, and coordinating with traditional communications strategies and tactics.

2021 Updates, Revisions, Enhancements, Adaptive Management

In 2021, 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 robust advertising campaign that began in 2020, to raise customers' awareness of solutions PSE provides to help them save on their energy costs, and to demonstrate that PSE has done all it can to achieve its energy efficiency savings targets during the pandemic. The advertising campaign is planned to include TV, radio, print, and digital tactics.



O. Events

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

The Energy Efficiency Events team will continue to manage requests from communities—including those considered to be hard-to-reach or proportionately underserved—the team will coordinate Energy Efficiency participation in trade shows, and other interested organizations in approximately 150 events per year.

The Energy Efficient Communities 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.

The team will provide materials and moving services for custom interactive displays, using a tracking database to ensure consistent and accurate logistical flow. Major conferences planned for the 2020-2021 biennium will include targeted business-focused conferences.

2021 Updates, Revisions, Enhancements, Adaptive Management

Despite health regulations and safety precautions due to the COVID-19 pandemic, the Energy Efficiency Events team will continue to work together with Energy Efficiency program managers as well as the Marketing and Outreach teams to create robust, integrated virtual and/or hybrid events. The Events team will leverage event opportunities to connect with community stakeholders, increasing energy efficiency awareness, education, and action. PSE will continue to explore opportunities as it moves through the COVID-19 phases of re-opening and will redesign events to align with social distancing and safety precautions.

In 2021, the Events team plans to participate in virtual business focused conferences similar to AEE West and host virtual presentations, videos, Q&A and breakout sessions on commercial programs. The Events team will also continue to design and execute virtual based residential events to bring the in-person family friendly experience to digital platforms. PSE will continue to proactively seek new audiences, using available demographic data to identify harder to reach customer segments such as seniors, rural communities, small business owners, etc.

P. Brochures

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

This Energy Efficiency department category includes brochures that are not program-specific. Since PSE is discontinuing paper generalized energy-efficiency brochures and converting to electronic media, PSE re-allocated the duties and anticipated spend for developing and distributing electronic brochures into the Events function.

2021 Updates, Revisions, Enhancements, Adaptive Management

There are no updates to the 2020-2021 original plan discussion.



XI. Research & Compliance

The primary deliverable of this group is to provide critical research, customer information, such as survey results, demographic information, etc., evaluations, and assistance in the development of PSE's Conservation Potential Assessment every two years.

In the following program plan discussions, PSE includes the original 2020-2021 Biennial Conservation Plan program overviews, with an updated discussion below to indicate 2021-specific updates.

A. Tariff Schedule Adjustments

There are no tariff Schedule revisions required in the Research & Compliance group.

B. Conservation Supply Curves

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

The 2020-2021 focus of this group will be to select a consultant for the 2021 potential assessment, and provide staff support for the development of the 2021 Integrated Resource Plan (IRP).

2021 Updates, Revisions, Enhancements, Adaptive Management

With the economic modeling largely complete, the focus of this group in 2021 will be on translation of energy savings potential outputs into targets for the 2022-2023 biennium portfolio planning process.

C. Strategic Planning

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

The Strategic Planning group's 2020-2021 primary activities will include an oversample of regional Commercial Building Stock Assessment and continued implementation of more efficient research methods.

For the upcoming biennium, the group's electric budget reflects PSE's \$200,000 contribution to the Commercial Building Stock Assessment (CBSA) oversample, and the Regional End-Use Load Research study, with PSE's share estimated to be \$700,000.

2021 Updates, Revisions, Enhancements, Adaptive Management

In 2021, the Strategic Planning group will launch the Residential and Multi-Family, Building Stock Assessments, both of which are under NEEA management. Additionally, the Regional End-Use Load Research Study anticipates re-launching commercial end-use metering in 2021 after an initial pause due to the COVID-19 pandemic. Finally, the Strategic Planning group will also support efforts to refine program designs to alleviate the participation gap identified in the Low Income Needs Assessment while evaluating the possibility of a Phase 2 assessment in 2021.

D. Market Research

Original 2020-2021 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.

2021 Updates, Revisions, Enhancements, Adaptive Management

In 2021, Market Research will focus on understanding the impacts of the COVID-19 pandemic as it affects PSE's low-income customers to generate insights into providing increased effectiveness for program participation in this customer segment.

E. Program Evaluation

Original 2020-2021 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).

Exhibit 6 provides a detailed table of evaluations planned for the upcoming biennium.



2021 Updates, Revisions, Enhancements, Adaptive Management

The Program Evaluation Plan included in Exhibit 6 remains on target, with the exception that the Commercial Strategic Energy Management program may require an upgraded Tier for the Impact Evaluation. This is due to possible modifications in the energy savings approach, driven by significant operational changes in participant building portfolios.

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XII. 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 2020-2021 Biennial Conservation Plan program overviews in *italics* to differentiate and provide a point of comparison with the updated 2021 program plans.

A. Tariff Schedule Adjustments

There are no tariff revisions applicable to Net Metering planned for 2021.

B. Net Metering

Schedule E150

Original 2020-2021 Biennial Conservation Plan Content (For Reference Only)

Program staff anticipate that the regional interest in customer renewables, and net metering in particular will continue into the next biennium, although at a slower pace. Falling equipment prices are expected to continue, and the Net Metering team expects that the effects of Senate Bill 5939 will reduce historical customer signup trends by approximately 50 percent in the upcoming biennium (from a new enrollment estimated total of 1,350 in 2017 to 800 in 2020, and 700 in 2021). The bill provides for updated production incentives and a statewide payment cap. The UTC accounting Order⁷⁰ for the treatment of distribution costs resulted in an apparent increase in the program's 2020-2021 budget versus the 2016-2017 biennium.

2021 Updates, Revisions, Enhancements, Adaptive Management

The Net metering team will continue to look for more efficient ways to process new customer applications; and to manage the net metered billing process for the over 10,000 customers enrolled in the program.

⁷⁰ Commission Order in Docket UE-990016, in response to PSE's petition to authorize deferral of Net Metering expenditures and recover those expenditures in the Schedule 120 Conservation Rider.

The utilization of the PowerClerk Software tool continues to play a critical role in data management; and PSE is looking at ways to link this database with its SAP billing platform in order to provide further customer enhancements to the application process; as well as ensuring more visibility to these distributed resources for other departments within PSE.

C. Targeted Demand Response

Schedule E/G 249A, E/G 271

Original 2020-2021 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. This pilot program attributes to 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.

For 2021, PSE will pursue Targeted Demand Response projects in the cities of Bainbridge Island and Duvall. Demand Response projects will be both electric and natural gas. PSE provides a complete discussion of the pilot in Exhibit 3: Program Details.

2021 Updates, Revisions, Enhancements, Adaptive Management

PSE has no updates regarding Targeted Demand Response and remains on track for 2021 projects.



XIII. 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. ⁷¹ Measures should also meet cost-effectiveness standards.

⁷¹ Schedule 83, section 4, Definitions, #m. Schedule 183, section 4, #l.



Glossary, continued

<p>Orders (see also Conditions)</p>	<p>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.</p>
<p>Program</p>	<p>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.</p>
<p>PSE Deemed</p>	<p>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).</p>
<p>RTF Deemed (see also UES)</p>	<p>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).</p>
<p>Savings</p>	<p>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.</p> <p>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.</p>
<p>System</p>	<p>In this document, System may have the following meanings:</p> <ol style="list-style-type: none"> 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.

A. 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). ⁷²
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. ⁷³
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

⁷² Schedule 83, section 4, Definitions, #z. Schedule 183, section 4, #x.

⁷³ Schedule 83, section 4, Definitions, #bb. Schedule 183, section 4, #z.

Conclusion

This concludes Energy Efficiency's 2021 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 2020. PSE looks forward to further success in 2021.

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 2020-2021 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 prudently 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 2021!

Respectfully submitted,



Puget Sound Energy
Energy Efficiency