



2020-2021 Biennial Conservation Report

of Electric and Natural Gas Programs



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Exhibits

Exhibit 1: 2020-2021 Electric and Natural Gas Savings and Expenses

Supplement 1: BECAR Final Report

Supplement 2: 2020 HER Evaluation Summary

Supplement 3: 2021 HER Evaluation Summary

Supplement 4: Building the Biennial Targets Tables

Supplement 5: Commerce EIA Conservation Report

Exhibit 2: 2020-2021 Electric and Natural Gas Cost-Effectiveness Results

Exhibit 7: Requirements Compliance Checklist



Executive Summary

Puget Sound Energy (PSE or the Company) presents this 2020-2021 electric and natural gas Biennial Conservation Report (Report) to the Washington Utilities and Transportation Commission (UTC or commission), consistent with WAC 480-109-120(4). Although the WAC only refers to electric conservation, PSE follows the same format for natural gas conservation.

A. 2020-2021 Electric Conservation Achievements

PSE did not meet its Energy Independence Act (EIA) penalty target of 410,633 Megawatt-hours (MWhs), nor its additional Decoupling Penalty Target of 21,710 MWh, even utilizing previous biennium excess savings as demonstrated in Table I-1.

However, pursuant to RCW 19.285.040 (1)(e), PSE requests that the commission issue an order, determining that PSE is in compliance with its biennial acquisition target for cost-effective conservation as the COVID-19 pandemic was beyond the reasonable control of the utility and prevented it from meeting the conservation target. The COVID-19 pandemic was a natural disaster resulting in extended emergency declarations.

The original November 1, 2019 Biennial Conservation filing had an EIA Penalty Target of 336,297 MWhs and an additional Decoupling Penalty Target of 17,993 MWh. PSE would have met the original total penalty of 354,290 MWhs without utilizing excess savings. The November 1 filing was increased by 22 percent to the final penalty number in April of 2020 at the beginning of the pandemic. This was to account for the social cost of greenhouse gas emissions based on the draft 2019 IRP and the penalty targets were not adjusted for the nationwide declaration of the COVID-19 pandemic.

Table 0-1 2020-2021 Electric Portfolio Conservation Results

2020-2021 Electric Total Verified Penalty Savings			
Conservation Savings			
Description	MWh Target	MWh Actual (Verified)	Percent
Total Verified Conservation Savings	526,044	388,492	74%
Total Verified Penalty Savings	432,342	353,489	82%
Excess Savings Available		58,509	
Total Penalty Plus Excess Savings	432,342	411,998	95%
Conservation Expenditures			
	Budget	Actual	Percent
Total Conservation Expenditures	\$190,483,174	\$ 144,675,732	76%
Cost-Effectiveness			
	Total Resource Cost Test	Utility Cost Test	
Benefit-to-Cost Ratios	2.00	2.63	

As indicated in Table 0-1, the 2020-2021 electric portfolio conservation-specific expenditures were 76 percent of anticipated spending: \$144.68 million versus a budget of \$190.48 million. The portfolio-level



(not including Low Income Weatherization) biennial electric Total Resource Cost (TRC) test benefit-to-cost ratio was 2.00, and the Utility Cost (UC) test benefit-to-cost ratio was 2.63.

B. 2020-2021 Natural Gas Conservation Achievements

PSE met its 2002 Conservation Settlement (PSE General Rate Case UG-011571) penalty target of 6,160,000 therms, and its additional Decoupling Penalty Target of 308,000 therms as demonstrated in Table 0-2.

Table 0-2 2020-2021 Natural Gas Portfolio Conservation Results

2020-2021 Natural Gas Total Verified Penalty Savings			
Conservation Savings			
Description	Therms Target	Therms Actual (Verified)	Percent
Total Conservation Savings	7,774,516	6,783,778	87%
Total Penalty Savings	6,468,000	6,773,578	105%
Conservation Expenditures			
	Budget	Actual	Percent
Total Conservation Expenditures	\$37,013,753	\$ 30,925,825	84%
Cost-Effectiveness			
	Total Resource Cost Test	Utility Cost Test	
Benefit-to-Cost Ratios	1.58	2.13	

As indicated in Table 0-2, the 2020-2021 natural gas portfolio conservation-specific expenditures were 84 percent of anticipated spending: \$30.93 million versus a budget of \$37.01 million. The portfolio-level (not including Low Income Weatherization) biennial electric Total Resource Cost (TRC) test benefit-to-cost ratio was 1.58, and the Utility Cost (UC) test benefit-to-cost ratio was 2.13.

C. Regulatory Compliance

This report complies with WAC 480-109-120(4), which requires utilities to report by June 1 of each even-numbered year on its progress in meeting the electric conservation target. PSE utilizes this format to report its natural gas conservation savings as well.

PSE will post the Report contemporaneously on PSE.com, as required by WAC 480-109-120(6), following the Commission’s ruling on PSE’s 2020-2021 electric and natural gas conservation achievements.



WAC 480-109-120

(4) Biennial conservation report.

(a) On or before June 1st of each even-numbered year, a utility must file with the commission, in the same docket as its current biennial conservation plan, a biennial conservation report regarding its progress in meeting its conservation target during the preceding two years.

(b) The biennial conservation report must include:

- (i) The biennial conservation target;
- (ii) Planned and claimed electricity savings from conservation;
- (iii) Budgeted and actual expenditures made to acquire conservation;
- (iv) The portfolio-level cost-effectiveness of the actual electricity savings from conservation;
- (v) An independent third-party evaluation of portfolio-level biennial conservation savings achievement;
- (vi) A summary of the steps taken to adaptively manage conservation programs throughout the preceding two years; and
- (vii) Any other information needed to justify the conservation savings achievement.

(c) A utility must provide a summary of the biennial conservation report to its customers by bill insert or other suitable method within ninety days of the commission's final action on the report.

Additionally, PSE presents its 2020-2021 condition compliance status in Exhibit 7: *Requirements Compliance Checklist*.

D. Supporting Documentation

PSE presents all program result details for the 2020-2021 biennium in its Annual Reports of Energy Conservation Accomplishments, with copies provided to the Conservation Resource Advisory Group (CRAG), and subject to commission staff review and follow-up. The 2020-2021 Biennial Conservation Plan (BCP) and 2021 Annual Conservation Plan update (ACP), developed with comprehensive CRAG engagement and subject to a 30-day UTC review, are also filed in Docket UE-190905 and UG-190913.

In addition to already-filed detailed information, readers may also refer to the following included in this Report:

- Exhibit 1: 2020-2021 Electric and Natural Gas Savings and Expenses,
- Exhibit 2: 2020-2021 Electric and Natural Gas Cost-Effectiveness Results, and
- Exhibit 7: Requirements Compliance Checklist for additional 2020-2021 biennial details.

For this report, PSE includes four documents that do not align with its standard "Exhibit" nomenclature, primarily due to their specific nature and timing:



- Supplement 1: Evergreen Economics, Inc.'s "Puget Sound Energy 2020-21 Biennial Electric Conservation Achievement Review (BECAR) Final Report", and
- Supplement 2: DNV's 2020 Home Energy Reports (HER) Evaluation Summary, and
- Supplement 3: DNV's 2021 Home Energy Reports (HER) Evaluation Summary, and
- Supplement 4: 2020-2021 BCP Building the Biennial Target Tables, and
- Supplement 5: The Washington Department of Commerce's Microsoft® Excel™ workbook that addresses conservation. PSE provided this document with the WA Department of Commerce concurrent with this report.

I. COVID-19 Adaptive Management

The COVID-19 pandemic had a major negative impact on 2020-2021 energy efficiency operations. At the onset of the pandemic, and in response to state restrictions and guidelines, all onsite activities were halted in March, 2020. This effectively shut down program operations and staff immediately pivoted to adapting program plans around new safety guidelines and rapidly evolving circumstances. Program staff also refocused efforts on supporting customers through this extraordinary time as usage patterns across all sectors drastically shifted. As vaccines became more widely available in the first half of 2021, state restrictions started to become more relaxed. However, new COVID-19 variants continued to develop and both the Delta variant in April 2021 and the Omicron variant in November 2021 caused significant setbacks to recovery for customers, business owners, suppliers, and manufacturers.

Throughout the biennium, program staff continued to focus efforts on supporting customers through this extraordinary time as usage patterns remained higher than usual for residential customers and many businesses faced continued financial challenges and lower occupancy.

Despite continuous adaptive measures to program operations throughout both 2020 and 2021, there were continuing impacts across all sectors and the pandemic greatly influenced the overall market. In many building sectors, construction timelines continued to be put on hold or were significantly altered throughout the year, compounded by ever-changing safety requirements, labor allocations and supply constrictions on key measures like LED lamps and deep fat fryers. And in the case of restaurants, theaters, and fitness centers, additional businesses closed permanently or went through re-openings and then experienced various levels of capacity restrictions.

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

A. 2020-2021 Energy Efficiency Implementations to Address the Impacts of COVID-19

- **Low Income Weatherization** - Partnering agencies developed COVID-19 safety protocols (per Washington State Department of Commerce guidance), obtained personal



- protective equipment (PPE), and required training before staff and contractors were allowed to re-enter customer homes. PSE developed a COVID-19 service invoicing process that allowed agencies to charge shareholder dollars for staff training and other non-project expenses during the initial shutdown and subsequent ramp up.
- **Retail Lighting** - Field services for the Retail Lighting program were adapted to COVID-19 state guidelines. In-store events were suspended and sales associate training was adapted for virtual participation.
 - **Residential Space Heat** - Program staff developed recorded training modules for contractors to remain informed of programmatic changes. Program staff were available for follow-up questions and received positive feedback from contractors whose schedules were stretched thin with increased HVAC demand and staffing shortages. The field team queried distributors to assess stocking levels at given points in time and together the team chased stock; supporting partners with stock and coordinating contractor promotion events.
 - **Home Energy Assessments** - PSE explored virtual options for delivering residential home assessments with the HEA vendor as well as modified in-home assessments with adopted COVID-19 safety practices. Unfortunately, neither option proved cost-effective.
 - **Home Appliances** - PSE temporarily paused the Appliance Recycling program from March to June 2020. PSE switched to a contact-free curbside model in July 2020 in order to maintain safety during the pandemic while continuing to offer the Appliance Decommissioning program.
 - **Residential Showerheads** - Field services in stores were suspended temporarily in 2020 and PSE relied on search engine marketing, targeted emails and social media to advertise the Residential Showerhead program and influence customer participation. PSE partnered with manufacturer Evolve to promote showerhead products to customers.
 - **Residential Weatherization** - Due to state COVID-19 restrictions and safety guidelines, PSE was no longer able to conduct in-home project verification services. In the interim, the Weatherization program created a virtual verification process in coordination with PSE's Verification team and Trade Allies. Amid the pandemic, PSE also partially suspended testing requirements for the whole house air sealing measure in alignment with Washington State Department of Commerce recommendations.
 - **Home Energy Reports** - The Home Energy Report program did not pause during the COVID-19 pandemic, instead adding messaging to address resources and energy tips as many began working from home.
 - **Multifamily Retrofit** – In 2020, the Multifamily Retrofit program offered a double incentive for window projects and the program also replicated the LTO offered through the Business Lighting program. To help drive savings in 2021, the Multifamily Retrofit program extended a LTO for window installations started in 2020.
 - **C/I Retrofit** - PSE adjusted its site visit and verification requirements to allow for increased remote site evaluation and post-installation project verification. Additionally, PSE began the Elevate Your Efficiency (EYE) LTO in the beginning of 2021 and was



intended to provide an enhanced incentive for electric and gas energy efficiency projects completed in calendar year 2021. As a result of that LTO, PSE received over 120 project applications and completed grant agreements for 46 of those proposed projects.

- **Business Lighting** - Offerings that typically required site visits, such as industrial systems optimization, were converted to remote implementation to adjust to COVID-19 restrictions and safety protocols. In January 2021, the Business Lighting team launched Project Perk to incentivize contractors to close projects, generally in the form of a bonus incentive. Project Perk ran from January through the end of August 2021.
- **Commercial Strategic Energy Management** - Customer education and technical support was adjusted to accommodate COVID-19 health and safety consideration. Educational training that traditionally took place in person was shifted to virtual webinar format. Additionally, the program team recognized that first year and traditionally hard to retain customers would face additional participation barriers during the pandemic.
- **Commercial Midstream Lighting to Go** - The team encouraged upgrading fixtures to LED as a safer project under COVID-19 restrictions due to safety protocols in interior occupied spaces.
- **Commercial Food Service** - The program team adapted by implementing a phased approaching launching the new Midstream partner model. Phase 1 began in April 2020 and included: a Time & Materials (T&M) payment structure, new program processes, and outreach to and onboard national market actors. Phase 2 began in 2021 and included the launch of the new online platform and implementation of a performance-based payment (PBP) structure.
- **Small Business Direct Install** - PSE renegotiated the third party contract to time and materials, allowing the implementer to retain the necessary staff to perform virtual assessments and conduct necessary business tasks such as program management and customer service. This allowed program staff to return to work without delay once COVID-19 restrictions were eased and a comprehensive safety plan was in place.
- Additional detailed adaptive management techniques are available in the 2020 and 2021 annual reports.

II. 2020-2021 Verified Conservations Results

A. 2020-2021 Verified Electric Conservation Results

The 2020 – 2021 total conservation savings of 390,811 MWh is a combination of the 2020 and 2021 total Annual Report savings. To arrive at a total penalty savings number, the following items were removed: Schedule 449's, pilots with uncertain savings, and NEEA savings. The removal of savings not in the penalty yields a total Annual Report penalty savings number of 355,809 MWh. At the end of the biennium, savings are adjusted to account for the Biennial Electric Conservation Achievement Review (BECAR) and the Home Energy Reports (HER) evaluation. There were no adjustments due to the BECAR however HER savings were reduced by 2,320 MWh, to arrive at a Verified Penalty Savings of 353,489 MWh. To arrive at a total penalty including excess, excess savings from the previous two biennia of 58,509 MWh are added to the Verified Penalty Savings total to arrive at a Total Penalty plus



Excess of 411,998 MWh. This amount is short of the EIA Penalty Threshold plus Decoupling Threshold amount of 432,342 MWh by 20,344 MWh or 95 percent of target. The electric achievement for the biennium is reflected in Table II-1 below.

Table II-1 2020-2021 Electric Conservation Savings

2020-2021 Electric Penalty Savings Calculations	
Conservation Savings	
Description	MWh
2020 Annual Report (AR) Savings	221,001
2021 Annual Report (AR) Savings	169,810
Total AR Conservation Savings	390,811
Sch. 449	11,240
Pilots	811
NEEA	22,951
Total Savings Not Included Penalty	35,002
Total AR Penalty Savings	355,809
BECAR	0
HER Eval Adjustment	(2,320)
Total Savings Adjustment	(2,320)
VERIFIED PENALTY SAVINGS	353,489
Excess Savings	58,509
Total Penalty + Excess	411,998
Penalty Threshold plus Decoupling Threshold	432,342
Percent	95%

B. 2020-2021 Verified Natural Gas Conservation Results

The 2020-2021 total conservation savings of 6,467,281 therms is a combination of the 2020 and 2021 total Annual Report savings. To arrive at a total penalty savings number, pilots were removed from the Annual Report savings total to arrive at 6,457,081 therms. It is then necessary to add other adjustments completed since the Annual Report filings. The natural gas HER evaluation yielded an additional 316,497 therms. When added to the Annual Report penalty savings, the verified penalty savings total becomes 6,773,578 therms. This amount exceeds the penalty threshold plus decoupling threshold amount of 6,468,000 therms by 305,578 therms or 105 percent of target. The natural gas achievement for the biennium is reflected in Table II-2 (see next page).



Table II-2 2020-2021 Natural Gas Conservation Savings

2020-2021 Natural Gas Penalty Savings Calculations	
Conservation Savings	
Description	Therms
2020 conservation savings	4,102,810
2021 conservation savings	2,364,471
Total conservation savings	6,467,281
NEEA Gas	-
Pilots	10,200
Total Savings Not in penalty	10,200
Total AR Penalty Savings	6,457,081
BECAR	0
HER Eval Adjustment	316,497
Total Savings Adjustment	316,497
VERIFIED PENALTY SAVINGS	6,773,578
Penalty Threshold plus Decoupling Threshold	6,468,000
Percent	105%

C. 2020 – 2021 BECAR Report

The BECAR process involves a third-party independent consultant managed by PSE and WUTC staff with input from the CRAG. The objective is to review four primary areas and report the findings. The final conclusion was that no savings adjustments were necessary for the biennium. The following are the four tasks and specific findings:

1. **Unit energy savings review** - Unit Energy Savings (UES) values in use by PSE were applied correctly and were based on reasonable assumptions.
2. **Portfolio savings review** - The total 2020 and 2021 kWh values reported by PSE matched the numbers in the tracking data summary.
3. **Previous BECAR recommendation response review** - The consultant reviewed recommendations that were made in the 2018 – 2019 BECAR report and then contacted PSE staff to determine whether the recommendations have been adequately addressed. Predominantly, PSE has addressed these longer-term recommendations, either by accepting them or otherwise providing a valid reason for not constituting the change.
4. **Evaluation report response review** - The consultant reviewed each evaluation report response and compiled the recommendations and PSE responses contained in each. They then contacted each relevant PSE staff person to discover what actions had been taken in response to the review. The consultant found that the recommendations made in the evaluation reports of the Commercial and Industrial Retrofit, Multifamily New Construction, Home Energy Reports, and Large Power User programs have largely been addressed by PSE, or will be addressed in the future.



D. 2020 – 2021 HER Electric Savings Adjustment

PSE facilitates an annual evaluation of the Home Energy Reports (HER) program savings, per a 2008 agreement with the CRAG. The evaluation for a given year is often not completed in time for the corresponding Annual Report given the complexity of the analysis. In other words, the 2021 evaluation is not available for the 2021 Annual Report. Therefore, PSE estimates HER savings in Plans and Annual Reports based on the program’s historical performance and anticipated trends. Then PSE trues-up the estimates in the Biennial Report based on the final evaluations. Based on a two-year measure life, PSE claims savings for the biennia from the higher of the two evaluations per agreement with the CRAG.

In the 2020 Annual Report, PSE reported HER savings of 46,876,400 kWh. To account for the 2020 evaluated savings and estimated incremental savings in 2021, PSE reported an additional 2,026,000 kWh of HER saving in the 2021 Annual Report. The 2021 evaluation did not include the incrementally higher savings that PSE anticipated. This results in reporting a reduction of 2,319,502 kWh (48,902,400 – 46,582,898 = -2,319,502) in this Report, reflected in **Error! Reference source not found.** below.

Table II-3 2020-2021 HER Electric Evaluation Report Savings

2020-2021 Home Energy Reports Electric Savings			
Index	Factoring in Year 2 incremental savings (ignoring Year 2 decremental savings)	Savings, kWh	Computation
		Home Energy Report	
a	Reported savings in 2020 Annual Report	46,876,400	
b	True-up savings in 2021 Annual Report	2,026,000	
c	Total reported saving for the biennium	48,902,400	=a+b
e	Savings from 2020 (year 1) evaluation per DNV	46,582,898	
f	Savings from 2021 (year 2) evaluation per DNV	46,245,877	
g	Savings from the higher of the evaluations	46,582,898	Higher of e or f
h	Incremental or (decremental) savings between reported savings and the higher evaluation	-2,319,502	=g-c
i	Adjustment to 2020-2021 Biennial Electric Conservation Report.	-2,319,502	

E. 2020 – 2021 HER Natural Gas Savings Adjustment

PSE facilitates an annual evaluation of the Home Energy Reports (HER) program savings, per a 2008 agreement with the CRAG. The evaluation for a given year is often not completed in time for the corresponding Annual Report given the complexity of the analysis. In other words, the 2021 evaluation is not available for the 2021 Annual Report. Therefore, PSE estimates HER savings in Plans and Annual Reports based on the program’s historical performance and anticipated trends. Then PSE trues-up the estimates in the Biennial Report based on the final evaluations. Based on a two-year measure life, PSE claims savings for the biennia from the higher of the two evaluations per agreement with the CRAG.



In the 2020 Annual Report, PSE reported HER savings of 1,341,855 therms. To account for the 2020 evaluated savings and estimated incremental savings in 2021, PSE reported a reduction of 437,401 therms of HER savings in the 2021 Annual Report. The 2021 evaluation included incrementally higher savings than PSE anticipated. This results in reporting an increase of 316,497 therms (1,220,951 – 904,454 = 316,497) in this Report, reflected in Table II-4 below.

Table II-4 2020-2021 HER Natural Gas Evaluation Report Savings

2020-2021 Home Energy Reports Natural Gas Savings			
Index	Factoring in Year 2 incremental savings (ignoring Year 2 decremental savings)	Savings, Therms	Computation
		Home Energy Report	
a	Reported savings in 2020 Annual Report	1,341,855	
b	True-up savings in 2021 Annual Report	-437,401	
c	Total reported saving for the biennium	904,454	=a+b
e	Savings from 2020 (year 1) evaluation per DNV	994,445	
f	Savings from 2021 (year 2) evaluation per DNV	1,220,951	
g	Savings from the higher of the evaluations	1,220,951	Higher of e or f
h	Incremental or (decremental) savings between reported savings and the higher evaluation	316,497	=g-c
i	Adjustment to 2020-2021 Biennial Electric Conservation Report.	316,497	

F. Excess Electric Savings

Per WAC 480-109-100(3)(c)(i), PSE is able to use excess electric savings achieved over the two previous biennia towards a savings shortfall. While PSE is applying for relief from penalty for the 2020 – 2021 biennium, it recognizes it is likely fair to exhaust the two previous biennium’s excess savings and begin the 2022 – 2023 biennium with zero excess savings banked. Excess savings calculation can be seen in Table II-5 (see next page).



Table II-5 Excess Electric Savings and Penalty Target

Excess Savings for Penalty Target Accounting									
	a	b		c	= c - (a + b)				
	EIA Penalty Target	Decoupling Penalty Target	20% of EIA Penalty Target (WAC 480-109- 100(3)(c))	Actual PSE- Specific Savings	Excess Value	Available for potential 2016-2017 Shortfall	Available for 2018- 2019 Shortfall	Available for 2020- 2021 Shortfall	Available for 2022- 2023 Shortfall
2016-2017	537,078	27,993	107,416	587,061	21,990		21,990	21,990	-
2018-2019	448,109	23,658	89,622	508,285	36,518			36,518	
2020-2021	469,182	24,878	93,836	355,809	0				0
Total Available Excess for Penalty Targets			<i>(This is the amount of excess savings needed to meet the maximum allowed by the RCW.)</i>	<i>Verified savings: after adjustments , true-ups, and vetting.</i>		-	21,990	58,509	0