2023 BIENNIAL CLEAN ENERGY IMPLEMENTATION PLAN UPDATE

November 20, 2023 (corrected)

PUGET SOUND ENERGY

About PSE

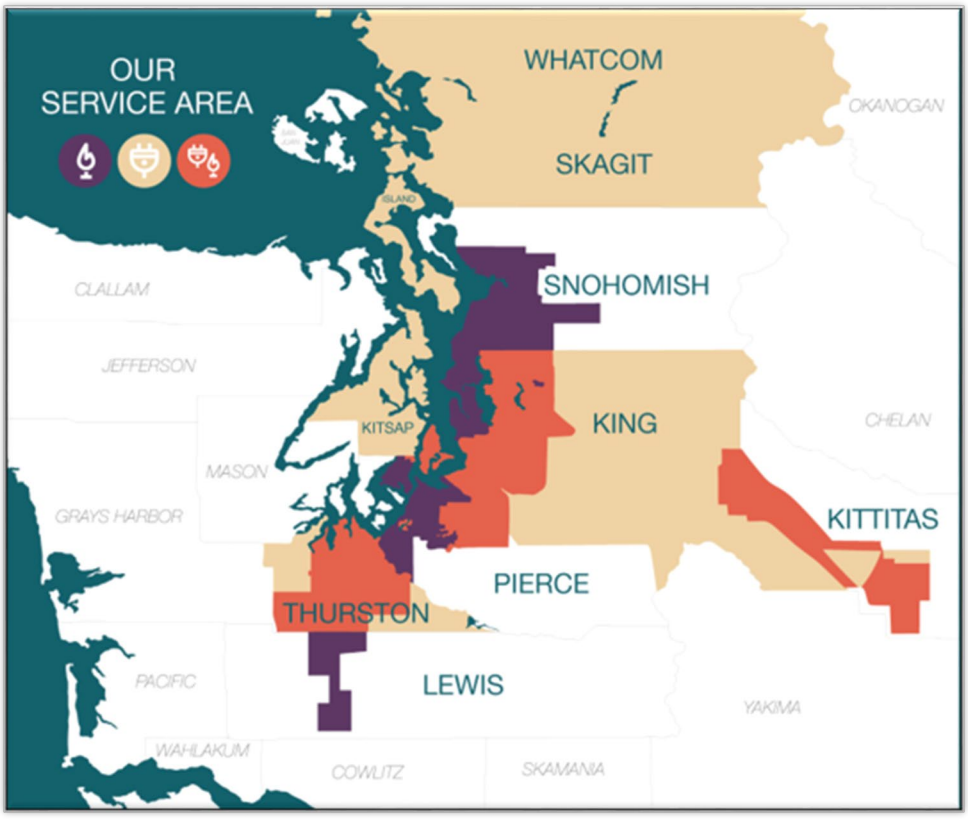
As Washington State's oldest local energy company, Puget Sound Energy serves more than 1.2 million electric customers and more than 900,000 natural gas customers in ten counties. Our service territory includes the vibrant Puget Sound area and covers more than 6,000 square miles, stretching from south Puget Sound to the Canadian border, and from central Washington's Kittitas Valley west to the Kitsap Peninsula.

A subsidiary of Puget Energy, PSE meets the energy needs of its customers, in part, through incremental, cost-effective energy efficiency, procurement of sustainable energy resources, and far-sighted investment in the energy-delivery infrastructure. PSE employees are dedicated to providing great customer service and delivering energy that is safe, dependable and efficient. For more information, visit pse.com.

As shown in Figure 1, our electric service territory includes all of Kitsap, Skagit, Thurston, and Whatcom counties, and parts of Island, King (not Seattle), Kittitas and Pierce (not Tacoma) counties.

Our natural gas service territory includes: Parts of King (not Enumclaw), Kittitas (not Ellensburg), Lewis, Pierce, Snohomish, and Thurston counties. Figure 1.1 below shows PSE's electric and gas service territories.

Figure 1: Puget Sound Energy natural gas and electric service territories



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DEFINITIONS AND ACRONYMS

Term/Acronym	Definition
AMI	Advanced metering infrastructure
AMI	Area median income
aMW	The average number of megawatt-hours (MWh) over a specified time period; for example, 175,200 MWh generated over the course of one year equals 20 aMW (175,200 / 8,760 hours).
ATB	Annual Technology Baseline, an annual, publically available report published by NREL, and presents a consistent set of electricity generating technology cost and performance data
Aurora	One of the models PSE uses for electric resource planning. AURORA uses the western power market to produce hourly electricity price forecasts of potential future market conditions. Aurora is also used to test electric portfolios to evaluate PSE's long-term revenue requirements.
ADR	Automated Demand Response
BCP	PSE's Biennial Conservation Plan
BDR	Behavioral Demand Response or Bill Discount Rate
BESS	Battery Energy Storage System
BIL	Bipartisan Infrastructure Law
BIPOC	Black, Indigenous, and other People of Color
BPA	Bonneville Power Administration
CBI	Customer benefit indicators
CBO	Community-based organization
CCA	Climate Commitment Act
CCEAP	PSE's CEIP Customer Education and Awareness Program
CEIP	Clean Energy Implementation Plan
CETA	Clean Energy Transformation Act
CHanGE	University of Washington Center for Health and Global Environment
CIA	Cumulative impact analysis
C&I	Commercial and industrial
C&I DR	Business Demand Response
CO2	Carbon dioxide
CO2e	Carbon dioxide equivalents
Commission	Washington Utilities and Transportation Commission
CPA	Conservation potential assessment
CRAG	PSE's Conservation Resource Advisory Group
C&S	Codes and standards
DEA	Distributional equity analysis
DE	Distribution efficiency
Deepest need	PSE customers living in areas identified as clusters of severe energy burden and multiple compounding factors hindering the ability to access adequate resources
Demand response	Flexible, price-responsive loads, which may be curtailed or interrupted during system emergencies or when wholesale market prices exceed the utility's supply cost.
DER	Distributed energy resources. Electricity generators like rooftop solar panels that are located below substation level.

Term/Acronym	Definition
DERMS	Distributed Energy Resource Management System
Deterministic analysis	Deterministic analysis identifies the least-cost mix of demand-side and supply-side resources that will meet need, given the set of static assumptions defined in the scenario or sensitivity.
DOE	U.S. Department of Energy
DOH	Washington State Department of Health
DR	Demand response
DSM	Demand-side measure
DSM	Demand-side management
DSP	Delivery System Planning
DSR	Demand-side resources. These resources reduce demand. They include energy efficiency, distribution efficiency, generation efficiency, and distributed generation and demand response.
Dth	Dekatherms
EAG	PSE's Equity Advisory Group
EE	Energy efficiency
EEP	Energy Equity Project (University of Michican)
EFPC	Equity Forum Planning Committee
EHD	Environmental health disparities
EHEB	Economic, Health and Environmental Benefits Assessment
EIA	U.S. Energy Information Agency
EIA	Washington State Energy Independence Act
ELCC	Effective load carrying capacity. The peak capacity contribution of a resource calculated as the change in capacity of a perfect capacity resource that results from adding a different resource with any given energy production characteristics to the system while keeping the 5 percent LOLP resource adequacy metric constant.
Energy need	The difference between forecasted load and existing resources.
Energy storage	A variety of technologies that allow energy to be stored for future use.
EPA	U.S. Environmental Protection Agency
EV	Electric vehicle
EVSE	Electric vehicle supply equipment
FERC	Federal Energy Regulatory Commission
FPL	Federal poverty level
GHG	Greenhouse gas
GRC	General Rate Case
GPSG	PSE's Green Power Solar Grant
GW	Gigawatt
GWh	Gigawatt hours
HIC	Highly impacted communities. Defined by CETA as a community designated by the Department of Health based on cumulative impact analyses in RCW 19.405.140 or a community located in census tracts that are fully or partially on "Indian country" as defined in 18 U.S.C. Sec. 1151.
HVAC	Heating, ventilating and air conditioning

Term/Acronym	Definition
IAP2	International Association of Public Participation
iDOT	Investment Optimization Tool. An analysis tool that helps to identify a set of projects that will create maximum value.
IIJA	Infrastructure Investment and Jobs Act
INA	Immigration and Nationality Act
IPP	Independent power producer
IRA	Inflation Reduction Act
IRP	Integrated resource plan
ITC	Investment tax credit
Justice40 Initiative	Executive Order 14008, which directs 40% of the overall benefits of certain Federal investments – including investments in clean energy and energy efficiency; clean transit; affordable and sustainable housing; training and workforce development; the remediation and reduction of legacy pollution; and the development of clean water infrastructure – to flow to disadvantaged communities (DACs).
kV	Kilovolt
kW	Kilowatt
kWh	Kilowatt hours
LBNL	Lawrence Berkeley National Laboratory
LIAC	PSE's Low Income Advisory Committee
LNG	Liquified natural gas
MDth	One thousand dekatherms or 10,000 therms
Mid-Columbia	The principle electric power market hub in the Northwest and one of the major trading hubs in the WECC.
MMBtu	Million British thermal units
MMtCO2e	Million metric tons of CO2 equivalent
MW	Megawatt
MWh	Megawatt hour
Nameplate capacity	The maximum sustained output capacity of an electric-generating resource.
NERC	North American Electric Reliability Council
Net metering	A program that enables customers who generate their own renewable energy to offset the electricity provided by PSE.
NIBDR	Non-incentivized behavioral demand response
NPCC	Northwest Power & Conservation Council
NREL	National Renewable Energy Laboratory
NWA	Non-wires alternative
Peak need	Electric or gas sales load at peak energy use times.
Peaker or peaking plants	Peaker is a term used to describe generators that can ramp up and down quickly in order to meet spikes in need. They are not intended to operate economically for long periods of time like baseload generators.
Peaking resources	Quick-starting electric generators that can ramp up and down quickly in order to meet short-term spikes in need, or gas sales resources used to meet load at times when demand is highest.
PEV	Plug-in electric vehicle

Term/Acronym	Definition
PHES	Pumped hydroelectric energy storage
Planning reserve margin or PRM	These are amounts over and above customer peak demand that ensure the system has enough flexibility to handle balancing needs and unexpected events.
Planning standards	The metrics selected as performance targets for a system's operation.
PLEXOS	An hourly and sub-hourly chronological production simulation model that utilizes mixed-integer programming (MIP) to simulate unit commitment of resources at a day-ahead level, and then simulate the re-dispatch of these resources in real time to match changes in supply and demand on a 5-minute basis.
PNNL	Pacific Northwest National Laboratory
PNUCC	Pacific Northwest Utilities Coordinating Committee
PNW	Pacific Northwest
PNWH2	Pacific Northwest Hydrogen Association
Portfolio	A specific mix of resources to meet gas sales or electric load.
PPA	Purchased power agreement. A bilateral wholesale or retail power short-term or long-term contract, wherein power is sold at either a fixed or variable price and delivered to an agreed-upon point.
PSE	Puget Sound Energy
PTC	Production Tax Credit
PTR	Peak time rebate
PUD	Public utility district
Pumped hydro or PHES	Pumped hydro facilities store energy in the form of water, which is pumped to an upper reservoir from a second reservoir at a lower elevation. During periods of high electricity demand, the stored water is released through turbines to generate power in the same manner as a conventional hydropower station.
RA	Resource adequacy
RCW	Revised Code of Washington
REC	Renewable energy credit. RECs are intangible assets, which represent the environmental attributes of a renewable generation project – such as a wind farm – and are issued for each MWh of energy generated from such resources.
RFP	Request for proposal
RFQ	Request for quote
RNG	Renewable natural gas
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SCADA	Supervisory control and data acquisition that provides real-time visibility and remote control of distribution equipment
SCT	Societal Cost Test
Scenario	A consistent set of data assumptions that defines a specific picture of the future; takes holistic approach to uncertainty analysis.
SCC	Social cost of carbon, also called SCGHG, social cost of greenhouse gases
SCGHG	Social cost of greenhouse gases
SENDOUT	The deterministic gas portfolio model used to help identify the long-term, least-cost combination of integrated supply- and demand-side resources that will meet stated loads.

Term/Acronym	Definition
Sensitivity	A set of data assumptions based on the Reference Scenario in which only one input is changed. Used to isolate the effect of a single variable.
SMR	Small modular reactor
Stochastic analysis	Stochastic risk analysis deliberately varies the static inputs to the deterministic analysis, to test how different portfolios perform with regard to cost and risk across a wide range of potential future power prices, natural gas prices, hydro generation, wind generation, loads, plant forced outages and CO2 prices.
Supply-side resources	Resources that generate or supply electric power, or supply natural gas to natural gas sales customers. These resources originate on the utility side of the meter, in contrast to demand-side resources.
T&D	Transmission and distribution
thermal resources	Electric resources that use carbon-based or alternative fuels to generate power.
TOP	Transmission operator
TOU	Time-of-use
Transmission capacity	Defines the quantity of generation development available in specific geographic regions.
Tranche	A capacity segment on ELCC saturation curve
VPP	Virtual power plant
Vulnerable populations	Communities that experience a disproportionate cumulative risk from environmental burdens due to: 1. Adverse socioeconomic factors, including unemployment, high housing and transportation costs relative to income, access to food and health care, and linguistic isolation 2. Sensitivity factors, such as low birth weight and higher rates of hospitalization
WAC	Washington Administrative Code
Wholesale market purchases	Generally short-term purchases of electric power made on the wholesale market.
WPP	Western Power Pool
WRAP	Western Resource Adequacy Program
WUTC	Washington Utilities and Transportation Commission

EXECUTIVE SUMMARY

CHAPTER ONE

PUGET SOUND ENERGY

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1. Introduction

Puget Sound Energy (PSE) is Washington State's largest and oldest utility, serving 1.5 million customers in ten counties over 6,000 square miles. We were an early leader in clean energy — from establishing one of the largest energy efficiency programs in the nation to building our first wind facility, Hopkins Ridge in 2005, to establishing a pathway to remove coal-fired generation by the end of 2025. Our commitment to clean energy and reducing greenhouse gas emissions has only strengthened in recent years, as evidenced by our support of the passage of the Clean Energy Transformation Act (CETA) and the Climate Commitment Act (CCA).

In 2021, PSE developed and filed its first Clean Energy Implementation Plan (the 2021 CEIP). The 2021 CEIP described PSE's initial plan to implement CETA for the first compliance period (2022–2025). It charted new directions in our electricity supply and included new and diverse voices in planning. It aimed to find affordable, clean energy solutions that benefit all customers, while reducing burdens on highly impacted communities and vulnerable populations.

The Washington Utilities and Transportation Commission (the Commission) approved the 2021 CEIP with conditions in Order 08 in Docket UE-210795 on June 6, 2023. This 2023 Biennial CEIP Update (the Biennial Update) is an opportunity to update goals and targets, address conditions in Order 08, and report progress on specific actions, equity, and public engagement.

2. Meeting our clean energy obligations

PSE is on track to meet the CETA obligation that all retail electric load[1] be greenhouse gas neutral by 2030,[2] and that by January 1, 2045 all retail electric load be supplied by clean energy, defined as either renewable[3] or nonemitting electric generation[4] resources.[5] In the 2022-2025 compliance period, we expect to deliver about 3.5 million more megawatt-hours (MWh) of clean energy to our electric customers than projected in the 2021 CEIP.

PSE proposed annual goals for the 2022-2025 compliance period as a measure of progress towards CETA compliance in the 2021 CEIP. Table 1.1 compares the annual goals presented in the 2021 CEIP with some adjustments in this Biennial Update.

1. See RCW 19.405.020(36) (defining "retail electric load")
2. RCW 19.405.040(1)
3. See RCW 19.405.020(34) (defining "renewable resource")
4. See RCW 19.405.020(28) (defining "nonemitting electric generation")
5. RCW 19.405.050(1)

Table 1.1: Clean energy goals and interim target

Document	2022	2023	2024	2025	Interim target (average)*
2021 CEIP	43%	53%	59%	63%	54.5%
2023 Biennial Update	45.4% (actual)	53% (actual + projected)	60% (projected)	60% (projected)	54.5% (projected)

* The average may differ slightly based on rounding.

As shown in Table 1.1, PSE proposes to adjust the 2025 annual goal from 63 percent to 60 percent. Furthermore, PSE proposes that the interim target for the four-year compliance period be the average of the annual targets. Although the 2021 CEIP did not express the interim target as an average over the four-year compliance period, the use of such an average is consistent with CETA, which relies upon multiyear compliance periods.[6] Accordingly, this Biennial Update expresses annual clean energy percentages as "annual goals," and the interim target for the four-year compliance period as the four-year average of annual goals.

The reduction in the annual goal for 2025 from 63 percent to 60 percent is the product of a significant increase in retail electric load — an increase of approximately 7 percent — since publication of the 2021 CEIP. An increase in retail electric load requires significantly more clean energy generation resources to achieve the annual goal than originally projected in the 2021 CEIP. Other factors have contributed to the adjustment to the 2025 annual goal. For example, many clean energy resources under development in the region have delayed their commercial operating dates for a variety of reasons, such as delays related to interconnection and transmission issues and supply chain constraints. Additionally, the demand for electricity from clean energy resources has increased faster than supply, thereby tightening the market for these resources.

PSE continues to work diligently to acquire more electricity from clean energy resources, but many such resources under active consideration by PSE now fall outside the 2022-2025 compliance period. Accordingly, PSE seeks to adjust the 2025 annual goal from 63 percent to 60 percent. However, this proposed adjustment in the 2025 annual goal does not affect PSE's interim target of serving 54.5 percent of retail electric load with clean energy resources over the four-year compliance period.

In this Biennial Update, PSE seeks to adjust the 2025 annual goal from 63 percent to 60 percent but maintain an interim target to serve at least 54.5 percent of retail electric load with clean energy resources over the 2022-2025 compliance period.

6. See, e.g., RCW 19.405.040(1)(a) (requiring electric utilities to achieve compliance with the greenhouse gas neutral standards over three four-year compliance periods and one three-year compliance period beginning January 1, 2030, and ending December 31, 2044).

➔ Additional details on PSE's clean energy goals and targets can be found in Chapter 2: Updating the Clean Energy Targets.

3. Refining specific targets for customer programs

In the 2021 CEIP, PSE identified specific targets for energy efficiency, demand response, and distributed energy resources — all of which provide customers the ability to participate in some way in the clean energy journey.

In this Biennial Update, PSE proposes to update three of these targets:

- **Energy Efficiency:** Total energy efficiency of 934,337 MWh over the four-year compliance period (536,717 MWh in the 2022-2023 period and 397,620 MWh in the 2024-2025 period)[7]
- **Demand Response:** An increase in the demand response target from 23.7 MW to 86 MW by 2025
- **Renewable Energy:** An increase in the renewable energy target as a percent of new utility-scale renewable energy, from 10.5 percent to 11 percent

Table 1.2: Specific targets for customer resources 2022-2025 biennium

Category	2021 CEIP	2023 Biennial Update	Notes
Energy efficiency	1,073,434 MWh	**934,337 MWh**	Updated based on 2024-2025 Biennial Conservation Plan
Demand response by 2025	23.7 MW	**86 MW**	Increased based on cost-effective RFP resources consistent with direction in Order 08, Condition 4.
Renewable energy (%)	10.5% as a percent of **new** utility-scale renewable energy (updated in 60-day compliance filing)	**11%** as a percent of **new** utility-scale renewable energy	Updated to reflect the percentage of new utility-scale renewable energy to contribute to the updated targets.
Distributed energy resources – solar by 2025	80 MW	80 MW	On track
Distributed energy resources – storage by 2025	25 MW	25 MW	On track

In this Biennial Update, PSE seeks to update the specific targets for energy efficiency, renewable energy, and demand response. PSE's specific targets of 80 MW for distributed solar and 25 MW of distributed storage remain unchanged.

7. See PSE's 2024-2025 Biennial Conservation Plan, filed on November 1, 2023, at UE-230892 and UG-230893.

➔ Additional details on these specific targets can be found in Chapter 2: Updating the Clean Energy Targets.

4. Complying with Commission Order 08

On June 6, 2023, the Commission approved the 2021 CEIP, subject to conditions, in Order 08.[8] The approval solidified our path to meeting the targets and sub targets developed in the first CEIP. Through these conditions, detailed in Appendix B: Commission Order 08 Conditions and Status, the Commission instructed PSE to make several adjustments and revisions to its plan in the Biennial Update and in the 2025 CEIP.

The following sections outline key conditions addressed in this Biennial Update. In addition, throughout this document, PSE discusses how it is fulfilling the conditions relevant to the Biennial Update and provides updates regarding progress on longer-term conditions.

➔ Please see Appendix B: Commission Order 08 Conditions and Status for additional details on specific conditions.

4.1. Named communities

The Commission included two conditions in Order 08 related to named communities:

- Condition 9, which requires PSE to include certain metrics within the list of vulnerable populations[9]
- Condition 10, which requires PSE to include certain modifications to the designation methodology for vulnerable populations[10]

PSE initially implemented the requirement of Condition 9 by including a specific list of additional factors in the definition of named communities. We found that such inclusion, however, resulted in a reclassification of nearly all of the block groups in PSE's service territory as high vulnerability, which did not seem to be the result intended by the Commission in Order 08.

Upon reflection on the intent of Condition 9, we refined the approach to incorporate factors that, in the words of the Commission, "truly renders communities vulnerable."[11] To meet the requirements of Condition 10, we modified the vulnerability classification. The modifications required by Conditions 9

8. See Order 08, infra note 3.
9. See Order 08, Appx A at ¶ 11.
10. See Order 08 at ¶ 12.
11. See Order 08, infra note 3, at ¶ 154.

and 10 resulted in adjustments to classifications at the census block group level. Of the 1,613 census block groups in PSE's electric service territory:

- 74 percent of the census block groups retained the same vulnerability classification
- 12 percent of the census block groups increased in vulnerability
- 14 percent census block groups decreased in vulnerability

In the new classification, approximately

- 342,000 residential customers (33 percent of all residential electric customers) are in high vulnerability block groups
- 386,000 residential customers (36 percent of all residential electric customers) are in medium vulnerability block groups
- 337,000 residential customers (31 percent of all residential electric customers) are in low vulnerability block groups

None of the changes in vulnerability designations were concentrated in any single part of PSE's electric service territory.

➔ Details on this definition and minimum designation can be found in Chapter 3: Equity.

4.2. Deepest need and minimum designation

Through collaboration with our advisory bodies and interested parties in the summer and fall of 2023, we developed a methodology to understand and identify our customers who are in the deepest need, and to focus our engagement and resources towards making sure they benefit from the clean energy transition.

PSE also identified a minimum designation of energy benefits (2.5 percent) that must be dedicated to customers who are in the deepest need. We consider this percentage an initial goal for the remainder of the 2022-2025 compliance period. Prior to this Biennial Update, PSE has never designated a minimum designation of energy benefits for customers in the deepest need. Additionally, there is no precedent for PSE to follow.

We will strive to meet this minimum designation of 2.5 percent by the end of the 2022-2025 compliance period but also realize we have a lot of new work to do in this space. PSE also recognizes that conversations and collaboration with interested parties and advisory bodies must continue as we refine and develop programs to reach our customers with the deepest need. PSE expects to update the

minimum designation — and, perhaps, the definition of customers in the deepest need — in the 2025 CEIP.

➔ Details on this definition and minimum designation can be found in Chapter 3: Equity; the collaborative process used is described in Chapter 4: Public Participation.

5. Embedding equity

Since filing the 2021 CEIP, PSE has continued to research and understand energy equity. This research and understanding have resulted in a better understanding of the subject, has informed a framework for energy justice, and has provided insights into how to operationalize equity within the clean energy transition.

A Commission order in a proceeding involving Cascade Natural Gas Company[12] has also provided important guidance. This order suggests that utilities in Washington start with four tenets of energy justice: recognition, procedural, distributional, and restorative justice. This Biennial Update includes references to these four tenets of energy justice and provides specific implementation examples of how PSE has advanced equity work, such as:

- In recognition justice, we have updated the definition of vulnerable populations to streamline the factors of vulnerability and identify challenges facing the most severely disadvantaged customers.
- In procedural justice, we have prioritized efforts towards education and awareness for programs focused on named communities and advanced efforts in partnering with community-based organizations and customers.
- In distributional justice, we have added measures to track the progress made through programs and actions and designated a percentage of energy benefits to named communities and customers in deepest need.*

This focused approach on equity accelerates the ability of customers in named communities to participate and realize the benefits of the energy transition. By executing on these three tenets as described above, PSE will advance the fourth tenet, restorative justice, by providing benefits for and reducing existing barriers to PSE's most vulnerable customers.

12. WUTC v. Cascade Natural Gas Corp., Docket UG-210755, Order 09 (Aug. 23, 2022).

6. Delivering equitable and meaningful engagement

In alignment with the concept of procedural justice, PSE developed a strategy for conversations and dialogue with community members, with an emphasis on further understanding existing barriers and building relationships through community organizations. Since 2021 we have thoughtfully engaged with our customers, particularly in named communities, in conversations supporting our ongoing engagement, program design, and specific topics like defining deepest need. These engagements resulted in recommendations and decisions supporting new and refined programs and critical definitions and approaches.

Since filing the 2021 CEIP, PSE has explored a range of new approaches and tactics, including but not limited to joint meetings with advisory bodies and empowering Equity Advisory Group (EAG) members to form a steering committee, participate in grant selection panels, and host two equity forums. We are proud of the results of this dialogue and conversations with interested parties, advisory bodies, and customers, including a greater understanding of how best to develop and design programs, products, and services, and deliver a more just clean energy transition.

We also recognize we are still in the early stages of a long journey. Using the lessons learned, we will continue to engage with customers, especially in named communities, as we work to achieve our goals and targets.

➔ Additional details on our engagement efforts can be found in Chapter 4: Public Participation.

7. Designing specific actions

PSE has collaborated with customers in named communities to develop and deliver programs and products to deliver energy from renewable and nonemitting electric generation resources and provide benefits to such customers.

Programs developed include:

- Four (4) new demand response programs
- Two (2) new DER – solar programs to accompany four (4) existing DER – solar programs
- Two (2) DER – storage programs
- The continuance of a variety of energy efficiency programs

We designed programs based on feedback from customers in named communities, and these programs reflect specific-design elements developed in response to such feedback. New programs —

such as the residential rent-to-own program — will provide customers an opportunity to power their residences directly from solar resources. Other programs — such as the Flex Reward demand response program — will provide customers with incentives to reduce energy usage. Together, these programs offer greater opportunities for customers, especially our customers in named communities, to participate in the clean energy transition.

➔ Specific actions are further detailed in Chapter 5: Specific Actions.

8. Delivering customer benefits

The customer benefit indicators (CBIs) developed in the 2021 CEIP are important to distributional justice. CBI metrics illustrate how PSE's customers benefit from the clean energy transition and document progress over time. Most of the initial CBI metrics remain in place for the Biennial Update. The Commission's Order 08, however, required PSE to add two CBIs, two new metrics to an existing CBI and remove one CBI.

The new CBIs and metrics required by Order 08 include:

- Arrearages and disconnections
- Energy burden
- Residential rebates

➔ Customer benefit indicators are further detailed in Chapter 6: Customer Benefit Indicators.

9. Next steps

This Biennial Update is the second milestone in a clean energy journey that will span almost a quarter century. We are pleased to share updates on specific actions accomplished so far and what is planned for the remainder of the compliance period. We are on track to meet our CETA obligations for 2030 and 2045, while recognizing there is much work still ahead. PSE must continue to acquire new customer-scale and commercial-scale resources, partner and collaborate with customers and interested parties, including those in named communities and deepest need. And, alongside all this important work, we need to maintain and provide affordable, safe, and reliable service now and in the years to come.

UPDATING THE CLEAN ENERGY TARGETS

CHAPTER TWO

PUGET SOUND ENERGY

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1. Introduction

This chapter describes Puget Sound Energy's (PSE) progress in meeting the goals set forth in the 2021 CEIP and provides relevant updates affecting the 2021 Clean Energy Implementation Plan (the 2021 CEIP), including impacts of PSE's 2023 Biennial Conservation Plan and changes necessitated by information updated in the Electric Progress Report (April 2023).

For this 2023 Biennial CEIP Update (the Biennial Update), PSE seeks the Washington Utilities and Transportation Commission's (the Commission) approval for the following:

- **Interim Target:** An interim target of an average of 54.5 percent of retail electric load served by renewable and nonemitting electric generation resources during the four-year compliance period of the 2021 CEIP
- **Energy Efficiency Target:** An energy efficiency target of 934,337 MWh for the four-year compliance period of the 2021 CEIP (536,717 MWh in the 2022-2023 biennium and 397,620 MWh in the 2024-2025 biennium, based on PSE's 2024-2025 draft Biennial Conservation Plan)
- **Demand Response Target:** A demand response target of 86 MW by calendar year 2025
- **Renewable Energy Target:** A renewable energy target of 11 percent as a percent of **new** utility-scale renewable energy

Additionally, PSE reaffirms our commitment in the 2021 CEIP to a distributed energy resources (DER) — solar capacity target of 80 MW and a DER — storage capacity target of 25 MW. Table 2.1 summarizes these specific targets.

Table 2.1: Updated specific targets for the 2022-2025 biennium

Description	2021 CEIP	2023 Biennial Update
Energy Efficiency (MWh)	1,073,434 MWh	934,337 MWh
Demand Response (MW)	23.7 MW	86 MW
Renewable Energy (%)	10.5% as a percent of **new** utility-scale renewable energy (updated in 60-day compliance filing)	11% as a percent of **new** utility-scale renewable energy
DER – Solar (MW)	80 MW	80 MW
DER – Storage (MW)	25 MW	25 MW

2. Interim target update

Based on recent information and trends in retail electric load growth and the availability of clean energy resources, PSE proposes adjustments to its interim target to an average of 54.5 percent of retail electric load served by clean energy generation during the four-year compliance period. Furthermore, PSE proposes to adjust its annual goals for 2024 and 2025 to 60 percent of retail electric load served

by clean energy resources. These annual goals are achievable and demonstrate reasonable progress towards meeting the Clean Energy Transformation Act (CETA) obligation that all retail electric load be greenhouse gas neutral by 2030, and that by January 1, 2045 all retail electric load be supplied by clean energy, defined as either renewable[3] or nonemitting electric generation[4] resources. PSE's annual goals for 2022-2025 are listed in Table 2.2.

Table 2.2: Proposed interim target and annual goals

Description	2022 Annual Goal	2023 Annual Goal	2024 Annual Goal	2025 Annual Goal	2022 – 2025 Interim Target (4-year average)*
Proposed interim target and annual goals	45.4%	53%	60%	60%	54.5%

* The average may differ slightly based on rounding.

PSE will strive to achieve its original annual goal of serving 63 percent of retail electric load with renewable and non-emitting electric generation sources in calendar year 2025 if there are reasonable and prudent opportunities to acquire additional renewable and non-emitting electric generating resources in calendar years 2024 and 2025.

In achieving an average of 54.5 percent of retail electric load served by clean energy over the four-year compliance period, PSE expects that it will serve significantly more retail electric load with clean energy resources over the four-year period than PSE forecasted in the 2021 CEIP, as noted in Table 2.3.

Table 2.3: Comparison of electricity from clean energy generation forecasted to meet target (MWh)

Description	2022 (Actual)	2023 (Actual + forecast)	2024	2025	Total
2021 CEIP forecasted energy	8,104,783	9,762,017	10,821,995	11,381,593	40,070,388
Current forecasted energy	9,423,931	10,550,270	11,729,946	11,935,549	43,639,696

As discussed further below, several factors, including significantly more retail electric load growth on PSE's system than projected in the 2021 CEIP, may make it challenging for PSE to acquire sufficient electricity from clean energy resources to meet its original annual goal of 63 percent established in the 2021 CEIP for calendar year 2025. As seen in Table 2.4, current retail electric sales is forecasted to be higher than originally forecasted in the 2021 CEIP. In 2022, retail electric sales was about 1.6 million MWh higher than originally forecasted in the 2021 CEIP.

Table 2.4: Comparison of electric retail sales forecast within the compliance period, 2022-2025

Forecasted retail sales	2022	2023	2024	2025
2021 CEIP retail sales based on 2021 IRP demand forecast (MWh)	20,236,296 (forecasted)	20,378,670 (forecasted)	20,604,482 (forecasted)	20,722,203 (forecasted)
2023 retail sales based on 2023 Electric Progress report (MWh)	21,863,548 (actuals)	20,562,303 (actual + forecast)	21,229,856 (forecast)	21,481,788 (forecast)

Forecasted retail sales	2022	2023	2024	2025
Most recent forecasted retail sales based on most recent demand forecast (10/1/23) (MWh)	21,863,548(actuals)	21,374,656 (actual + forecast)	21,866,622 (forecast)	22,161,979 (forecast)

With much higher retail electric sales now forecasted for the remainder of the compliance period, it is appropriate for PSE revisit its original annual goals and determine what seems reasonably achievable while still meeting a lowest reasonable cost standard. Accordingly, PSE proposes adjustments to its 2024 and 2025 annual goals, which are shown in Table 2.5.

Table 2.5: Comparison of annual goals based on forecasted load and generation

Description	2022 (actual)	2023 (actual + forecasts)	2024 (forecasts)	2025 (forecasts)	Average*
2021 CEIP Targets (Table 2-2) – based on 2021 IRP Demand Forecast	43%	53%	59%	63%	54.5%
Proposed annual goals – based on most recent demand forecast (10/1/23)	45.4%	53%	60%	60%	54.5%

* The average may differ slightly based on rounding.

As demonstrated in Tables 2.4 and 2.5 above, PSE (1) exceeded its annual goal for 2022 on both an energy delivered and percentage basis and (2) projects that it will meet or exceed its original annual goals for 2023 and 2024 on both an energy delivered and percentage basis.

Although PSE projects that it may not meet its original annual goal of serving 63 percent of retail electric load with electricity from clean energy resources for 2025, PSE projects that (1) it will meet its updated annual goal of serving 60 percent of retail electric load with clean energy resources in 2025 and (2) it will deliver significantly more total megawatt-hours of electricity from clean energy resources over the four-year compliance period than projected in the 2021 CEIP.

2.1. Measuring compliance over the four-year implementation period

CETA measures compliance over a four-year period. CETA target requires electric meet retail electric loads with electricity from clean energy resources over multiyear compliance periods.[1] Measuring compliance over a multiyear compliance period is critical for the ability of electrical companies to comply with CETA, given the variability in factors that affect actual retail electric loads and generation from clean energy resources in any given year.

1. *See*, *e.g.*, RCW 19.405.040(1)(a)(ii) ("use electricity from renewable resources and non-emitting electric generation in an amount equal to one hundred percent of the utility's retail electric loads *over each multiyear compliance period*") (emphasis added).

These factors include the impact of weather on retail electric load and generation from renewable resources, as well as the timing under which new renewable resources may come online. As a result of such variability, the percentage of retail electric load of an electrical company served by clean energy resources will not always be linear. Electrical companies may well exceed annual goals in some years of a four-year compliance period but fall short of in other years of the same four-year compliance period.

In the 2021 CEIP, PSE did not clearly identify the interim target for the four-year compliance period (calendar years 2022-2025). Instead, PSE expressed an interim target as a destination — achieving "63% by 2025." This Biennial Update provides PSE with an opportunity to express the interim target as the average of retail electric load served by electricity from clean energy resources over the four-year compliance period. Table 2.6 shows how PSE expressed its annual goals in the 2021 CEIP.

Table 2.6: Comparison of 2021 CEIP and Biennial Update annual goals

Description	2022 (actual)	2023	2024	2025	Average*
2021 CEIP annual goals – based on 2021 IRP demand forecast	43%	53%	59%	63%	54.5%
Proposed annual goals – based on draft 2025 IRP demand forecast	45.4%	53%	60%	60%	54.5%

* The average may differ slightly based on rounding.

The first row of Table 2.6 above demonstrates an average of PSE's retail electric load served by clean energy resources during the four-year compliance period. This average is calculated by summing the four annual percentage goals in 2022, 2023, 2024, and 2025, which equals 218, and then dividing by the number of percentages (4), which equals 54.5 percent.

In the second row, PSE projects that, through the end of 2025, it will still serve an average of at least 54.5 percent of retail electric load with energy from clean energy resources over the four-year compliance period, even when using the most recent demand forecast, which estimates higher retail electric loads and accounting for a lower annual goal of 60 percent in 2025. Table 2.7 provides a breakdown of how the forecasted retail electric sales, energy, and percentages compare between the 2021 CEIP and this Biennial Update.

Table 2.7: Comparison of retail sales, energy, and percentage, 2022 - 2025

Year	Document	Actual/forecasted retail sales (MWh)	Actual/forecast load reduction (MWh)	Actual/forecast CETA retail load (MWh)	CETA eligible energy (MWh)	CETA percentage*
2022	2021 CEIP	20,236,296 (forecasted)	1,512,019	18,724,277	8,104,783	43%
	2023 Biennial	21,863,548 (actuals)	1,109,953	20,753,595	9,423,931	45.4%
2023	2021 CEIP	20,378,670 (forecasted)	1,800,537	18,578,133	9,762,017	53%

Year	Document	Actual/forecasted retail sales (MWh)	Actual/forecast load reduction (MWh)	Actual/forecast CETA retail load (MWh)	CETA eligible energy (MWh)	CETA percentage*
	2023 Biennial	21,374,656 (actual + forecast)	1,703,568	19,671,088	10,550,270	53%**
2024	2021 CEIP	20,604,482 (forecasted)	2,143,425	18,461,057	10,821,995	59%
	2023 Biennial	21,866,622 (forecasted)	2,237,782	19,628,840	11,729,946	60%
2025	2021 CEIP	20,722,203 (forecasted)	2,724,716	17,997,487	11,381,593	63%
	2023 Biennial	22,161,979 (forecasted)	2,258,412	19,903,567	11,935,549	60%

* CETA % =CETA Eligible Energy / CETA Retail Load (Retail sales - load reduction).[see Chapter 2, pg. 16 of the 2021 CEIP for a full description of this calculation

** For 2023, PSE is rounding down to 53 percent in light of recent trends as discussed in section 4.2 below.

3. Annual goal update

As noted in previous sections, PSE continues to monitor and track our annual goals based on updated load and generation information. PSE also continues to pursue adding additional electricity from clean energy resources for the remainder of the four-year compliance period through the 2021 All-Source RFP and other short-term opportunities to secure clean resources. Table 2.8 below shows our current projections that inform the interim target for, and the annual goals for years within, the four-year compliance period.

Table 2.8: Estimated 2025 annual goal calculation (as of 10/1/23)

Description	2024	2025
Current forecasted CETA retail load based on most recent demand forecast (10/1/23)	19,628 GWh	19,904 GWh
Current existing CETA resources (10/1/23)	11,237 GWh	9,814 GWh
Short-term hydroelectric	370 GWh	370 GWh
All-source RFP	-	215 GWh
Short-term RFP	122 GWh	337 GWh
Anticipated opportunities to pursue in 2025	-	1,200 GWh
Projected Total CETA-eligible energy	**11,729 GWh**	**11,936 GWh**
Projected annual goal	**60%**	**60%**

In July of 2023, PSE submitted our first Annual Progress Report[2] to show its progress towards the 2022 annual goal and calculated the percentage of CETA retail load served by clean energy resources. As

2. Puget Sound Energy, Puget Sound Energy 2023 Annual Clean Energy Progress Report, Docket UE-210795 (June 30, 2023).

shown in Table 2.9, PSE served 45.4 percent of its CETA retail load with renewable and non-emitting energy in 2022, which is 2.4 percentage points higher than our annual goal for 2022 of 43 percent.

Table 2.9: 2022 Annual Goal Calculation

2022 CEIP Performance (MWHs)	2021 CEIP Original MWh Target for 2022	2022 Actual
CETA Retail Electric Load	**18,724,277**	**20,753,595**
Existing Wind/Solar/Biomass	2,390,017	2,507,501
Existing Hydro	5,714,766	6,436,850
EIM renewable resources sold to California	-	(245,835)
BPA System Power	-	725,414
Total CETA-Eligible Energy	**8,104,783**	**9,423,930**
Eligible Energy as % of CETA retail load	**43%**	**45.4%**
Over / (under) annual goal	**-**	**2.4%**

Since 2022, PSE has acquired, and continues to acquire, long-term and short-term electricity from clean energy resources, to meet our annual goals and achieve our goals over, and the interim target for, the four-year compliance period. PSE projects that, by the end of calendar year 2025, it will have acquired 1.5 GWh of supply-side electricity from clean energy generation resources. As shown in Table 2.10, these acquisitions range in size and type but illustrate PSE's commitment to acquiring electricity from clean energy resources to meet annual goals and achieve compliance over the four-year compliance period.

Table 2.10: Supply-side resources 2022-2025

Description	2022	2023	2024	2025
Specific resources (existing or contracted)	**250 MW** Short-term transaction(s) for electricity from renewable and nonemitting generation resources	**350 MW** Long-term PPA for output of Clearwater I Wind Project in eastern Montana **500 MW** Short-term transaction(s) for electricity from renewable and nonemitting generation resources	**265 MW** Short-term transaction(s) for electricity from renewable and nonemitting generation resources	**90 MW** Long-term PPA for output of Vantage Wind Project in eastern Washington

3.1. Modeling for this Biennial Update

The 2021 CEIP modeling process optimized resource additions over the 2022-2025 compliance period. For this Biennial Update, however, PSE has focused its modeling efforts on the two remaining years of the four-year compliance period (2024 and 2025). As part of this analysis, PSE updated the preferred portfolio from the 2023 Electric Progress Report to incorporate recent acquisitions of renewable and non-emitting energy made by PSE after finishing the 2023 Electric Progress Report.

PSE built the modeling assumptions and framework for this Biennial Update upon analytical work completed for the 2023 Electric Progress Report. This Biennial Update provides updated analysis for the 2021 IRP as required by (1) commitments made in the 2021 CEIP and (2) conditions contained in the Commission's Order 08[3] approving PSE's 2021 CEIP.

Several significant updates from the 2021 IRP to the 2023 Electric Progress Report include the following:

- Updates to the load forecast to reflect the impacts of climate change. In previous modeling, PSE has used temperatures from the previous 30 years. In the 2023 Electric Progress Report, however, PSE used — for the first time — climate change projections modeled by climate change scientists for the region, as listed below:
- Revisions to effective load carrying capability (ELCC) estimates provided by consultant E3 – Energy and Environmental Economics, Inc.
- Inclusion of the impacts of the Climate Commitment Act, which created a Cap-and-Invest allowance market for Washington State
- Revisions to Conservation and Demand Response Potential Assessments conducted by consultant Cadmus Group
- Updates to cost impacts of the Inflation Reduction Act on supply-side and some demand-side resources

For the purposes of this modeling and to comply with Condition 32 of Order 08,[4] PSE considered two portfolios:

1. A reference portfolio based on the modeling methodology from the 2023 Electric Progress Report
2. A reference portfolio that uses the social cost of greenhouse gas (SCGHG) as a dispatch cost

Based on the results of this analysis, PSE projects that it has sufficient resources to meet the annual goal for 2024 but not sufficient resources to meet the annual goal for 2025. For the SCGHG methodology modeling, PSE saw no difference in the years 2024 and 2025 because the only resources available in those years are the contracts PSE has signed to meet current goals.

The first methodology aligns with the 2023 Electric Progress Report and applies the SCGHG as an externality cost throughout the process. This approach does not affect economic dispatch at any step of the process, instead adding the SCGHG pollution costs after dispatch decisions. The alternative

3. In the Matter of Puget Sound Energy Clean Energy Implementation Plan Pursuant to WAC 480-100-640, Docket UE-210795, Order 08 (June 6, 2023).
4. See Order 08, infra note 3, Appx. A at ¶ 34.

methodology applies the SCGHG as a dispatch cost when the Aurora model calculates the long-term capacity expansion plan to design the portfolio.

The alternative method then redispatches the portfolio without SCGHG, and SCGHG is again applied as an externality cost. PSE performed the projected incremental cost calculation for the limited purpose of complying with Condition 32 and showed the results calculated over a two-year period. This calculation did not inform the updates PSE is seeking for its annual goals or interim target in this Biennial Update. The drivers for PSE's updates to targets are explained fully earlier in this chapter.

It is important to note that the Commission requires the SCGHG be included in both the CETA and no-CETA portfolios but this incremental cost calculation does not reflect bill impacts to customers. Instead, it reflects the estimated cost of renewable resources after inclusion of the SCGHG. In other words, the incremental cost calculations presented here are for comparative modeling purposes and are not a measure of rate impacts. The modeling showed the builds and targets were the same for both portfolios. Therefore, there is no impact to the energy storage sub-target. Furthermore, the Commission specifically directed PSE in Condition 29 in Order 08 to "not use the projected incremental cost of compliance as a planning constraint."[5]

➔ Additional information on this analysis is provided in Appendix A-1: Aurora Modeling Analysis and Appendix E: Biennial Cost Update.

PSE also performed a risk analysis on the probability of meeting annual goals given varying retail electric loads, wind, solar, and hydro generation. The risk analysis showed PSE was likely to meet the annual goal for 2024; however, the risk analysis showed PSE was only able to meet the annual goal for 2025 in the 90th percentile or better conditions.

➔ Additional information on this analysis is provided in Appendix A-1: Aurora Modeling Analysis.

Interested parties asked PSE to take into full consideration the impacts of the Inflation Reduction Act (IRA) in the 2023 Electric Report. PSE included the IRA provision for distributed solar investment tax credits (ITC) in the 2023 Electric Report because these are clear provisions that PSE has used in the past. The IRA rulemaking process is largely incomplete, and PSE does not expect to understand the nuances of those results until mid-2024. PSE is working to stay informed about the IRA rulemaking process and will incorporate known impacts in the 2025 IRP cycle.

5. See Order 08, Appx. A at ¶ 31.

➔ Please see Chapter Four: Legislative and Policy Change in the 2023 Electric Progress Report for additional information about how PSE incorporated the impacts of the IRA into this report.

PSE partially incorporated the Infrastructure Investment and Jobs Act (IIJA) in the demand forecast used in the 2023 Electric Progress and this Biennial Update. PSE used economic data that incorporated the IIJA, including employment data that included forecasted effects of the IIJA. The demand forecast did not include the IIJA's effects on electric vehicle (EV) growth. The EV forecasting process was too far along, and the turnaround time too tight, to take this information into account at the time. PSE will incorporate any impacts of the IIJA into the EV forecasts for the 2025 IRP cycle and future IRP cycles.

3.2. Impact of conditions

In Order 08, the Commission included the following Conditions 1 and 2:

> **CONDITION 1:** In its 2023 Biennial CEIP Update and in future CEIPs, PSE must include descriptions of quantitative (i.e., cost based) and qualitative (e.g., equity considerations) analyses that support interim targets to comply with the CETA 2030 and 2045 clean energy standards.[6]
>
> **CONDITION 2:** In its 2023 Biennial CEIP Update and in future CEIPs, PSE must include quantitative and qualitative risk analysis, if risk is used to justify deviating from the lowest reasonable cost solution that complies with CETA.[7]

Per Conditions 1 and 2 in Order 08, PSE has included a quantitative analysis in the Aurora modeling discussed above and the methodology used in the All-Source, DER, and DSS RFPs. PSE incorporated a qualitative analysis in the portfolio benefit analysis discussed in the 2023 Electric Progress Report and in the evaluation of resources in RFPs, including the use of customer benefit plans.

➔ Details of the cost-based and equity analysis for the RFPs can be seen in Appendix D: RFP Quantitative and Qualitative Analysis.

The risk analysis is discussed above and shows how PSE analyzed the probability of meeting the CETA target at various levels of generation and load.

6. See Order 08, infra note 3, Appx. A at ¶ 3.
7. See Order 08, infra note 3, Appx. A at ¶ 4.

➔ Additional details of the Aurora modeling and risk analysis are in Appendix A-1: Aurora Modeling Analysis.

In Order 08, the Commission also included the following Condition 32:

> **CONDITION 32:** PSE will rerun its portfolio optimization models with an updated methodology for incorporating the Social Cost of Greenhouse Gas Emissions and updated capacity values for energy storage. PSE will recalculate its interim clean energy targets and energy storage sub-target, and its projected incremental cost of compliance with CETA, based on these new model runs. PSE will incorporate any changes in its 2023.[8]

Please see Section 3.1 in this chapter for a discussion of Condition 32.

4. Reason for updates to annual goals and the interim target

As discussed above, the primary factors contributing to PSE's decision to reduce its annual goal for calendar year 2025, include the following:

- Updated retail electric load forecast (retail electric sales forecasted to be seven percent higher than the retail electric sales forecasted in the 2021 CIEP)
- Generation assumptions in forecasts (actual hydropower generation is trending lower than "mean water conditions" indicate)
- Supply chain and generator interconnection issues delaying forecast commercial operation dates for new renewable and non-emitting resources

4.1. Updated load forecast

In the 2021 CEIP, PSE used the retail electric demand forecast from the 2021 IRP as a base assumption in developing the annual goals reflected in the 2021 CEIP. For this Biennial Update, PSE uses the retail electric demand forecast used in the 2023 Electric Progress Report as a starting point. PSE updates its retail electric demand forecast annually and completed a new retail electric demand forecast in 2023 to inform the 2025 IRP but was not able to include it in modeling for this Biennial Update.

Still, PSE went on to estimate the impact of the draft 2025 IRP demand forecast on PSE's annual goals and compliance with the interim target for the four-year compliance period. As demonstrated in Table 2.11, both the retail electric demand forecast used in the 2023 Electric Progress Report and

8. See Order 08; Appx. A at ¶ 34.

PSE's draft 2025 IRP retail electric demand forecast project higher retail sales over the four-year compliance period than the retail electric sales projected over the same four-year compliance period reflected in the 2021 IRP demand forecast used in the 2021 CEIP.

Table 2.11: Comparison of demand forecast within CEIP compliance period, 2022-2025

Forecasted Retail Sales	2022	2023	2024	2025
2021 CEIP retail sales based on 2021 IRP demand forecast	20,236,296 (forecasted)	20,378,670 (forecasted)	20,604,482 (forecasted)	20,722,203 (forecasted)
2023 retail sales based on 2023 Electric Progress report	21,863,548 (actuals)	20,562,303 (actual + forecast)	21,229,856 (forecast)	21,481,788 (forecast)
Current forecasted retail sales based on most recent demand forecast (10/1/23)	21,863,548 (actuals)	21,374,656 (actual + forecast)	21,866,622 (forecast)	22,161,979 (forecast)

The most recent retail electric demand forecast is seven percent higher than the retail electric demand forecast used in the 2021 CEIP (the 2021 IRP demand forecast). PSE developed the 2021 IRP retail electric demand forecast used in the 2021 CEIP during the initial stages of the COVID-19 pandemic, and that retail electric demand forecast included projected impacts of the Washington State stay at home order and non-essential businesses being shuttered for a then-unknown length of time.

Since 2020, retail electric load patterns have been higher than pre-pandemic levels. The retail electric demand forecast used in the 2021 CEIP also anticipated a slowdown of residential growth and loss of commercial customers due to the pandemic's effect on the economy, which has occurred, but to a more modest extent than predicted. For more recent load forecasts, PSE recalibrated load forecasts to the actual consumption patterns observed.

The projections for EV adoption (and therefore energy consumption) also increased significantly over the course of PSE's last several retail electric demand forecasts. The increase in EV adoption reflects several federal and state policies enacted to encourage a decrease in greenhouse gas emissions from the transportation sector.

Such policies include:

1. The Washington Zero Emission Vehicles Program enacted in 2020
2. The Washington Low Carbon Fuel Standard and Climate Commitment Act enacted in 2021
3. The federal Infrastructure Investment and Jobs Act enacted in 2021
4. The federal Inflation Reduction Act enacted in 2022
5. The U.S. Environmental Protection Agency's Advanced Clean Trucks Rule published in 2022
6. Washington's Internal Combustion Engine Ban announced in 2022

PSE's 2023 retail electric demand forecast was the first retail electric demand forecast to include a forecast of medium and heavy-duty vehicles — the retail electric demand forecast used in the 2021

CEIP included only light duty vehicles. These updates in forecasted adoption of EVs account for a 1.5 percent increase in forecasted retail electric load in 2025, when comparing the 2023 demand forecast to the 2020 retail electric demand forecast.

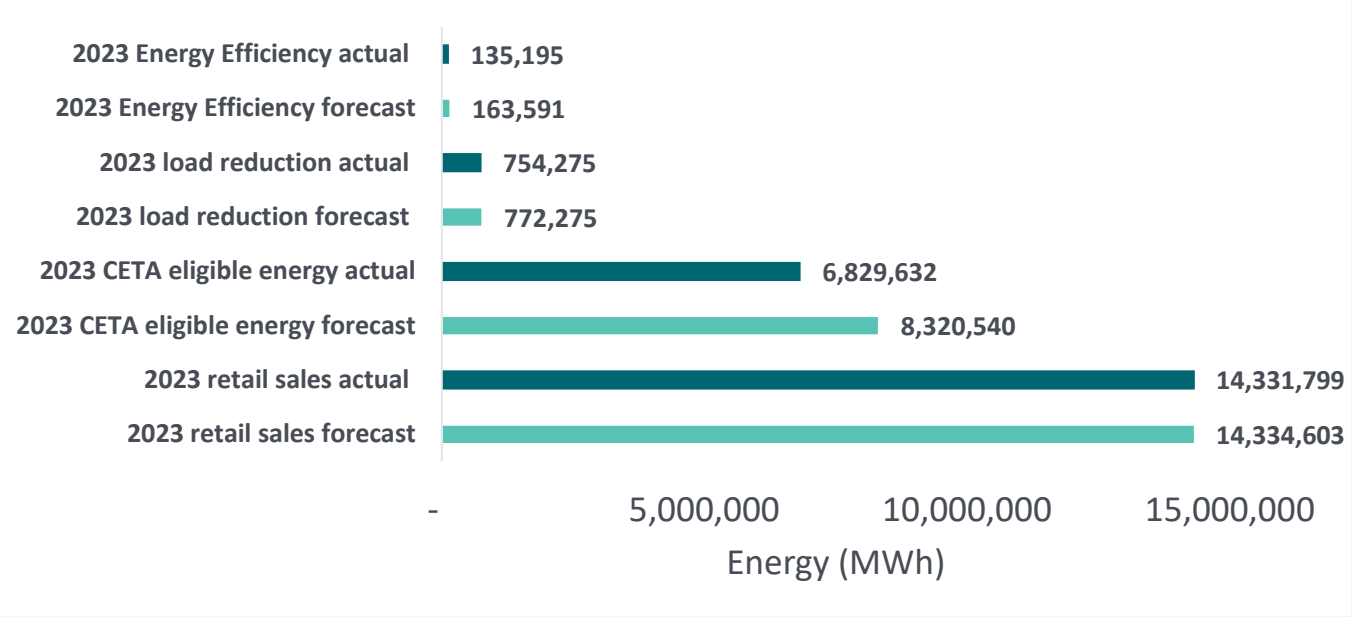
The retail electric demand forecast used in this Biennial Update reflects lower demand-side resources than previous retail electric demand forecasts, thereby resulting in increased forecasted retail electric demands. The lower demand-side resources are reflected in the decrease in energy efficiency targets discussed below. Other elements that decrease the retail electric demand forecast (e.g., climate change, lower forecast of customer growth, increased projection of net-metered solar) are outweighed by the continued post-pandemic consumption patterns and expected growth in load due to EV adoption.

4.2. Generation assumptions in forecasts: P50 vs. P10

Since 2022, PSE has modeled electricity from existing and contracted clean energy resources using a P50 risk assessment, which assumes that a resource will achieve mean expected generation for any given year. As PSE moves through each month in a given calendar year, however, the gap between actual electricity from clean energy resources and the P50 forecast of mean expected electricity from clean energy generating resources grows larger, as seen in Figure 2.1 below.

For calendar year 2023, for example, the gap between actual and the P50 forecast of electricity from clean energy resources is primarily due to existing hydropower projects generating lower than the expected mean suggested by the P50 forecast. In fact, actual generation from hydropower projects is trending closer to the P10 forecast (10 percent probability of generation) than the P50 forecast.

Figure 2.1: Actual vs. forecast generation (based on data through August 2023)



PSE used the P50 forecast to establish the annual goals reflected in the 2021 CEIP for each year of the four-year compliance period because the Commission's rules require that an electric company's historic performance under median water conditions inform an interim target.[9] The use of a P50 forecast for CETA compliance over the four-year compliance period allows for variability within any given year of the four-year compliance period. Due to the differences observed in actual and the P50 forecast of hydropower generation over the past two years, PSE has concerns about the use of a P50 forecast to establish annual goals. Indeed, the P50 forecast, which reflects mean expected generation, will, by definition, reflect only a 50 percent probability that such mean generation will occur in any given year. Although PSE will continue to comply with WAC 480-100-640(2)(d), its resource strategy should plan more conservatively than a P50 standard to ensure PSE can meet its compliance obligations.

PSE has also experienced changes in generation assumptions. Specifically, power purchase agreements for output from hydropower resources — a crucial element in PSE's strategy in meeting the annual goals in the 2021 CEIP — have reduced the forecasted amount of energy that PSE will receive in calendar years 2024 and 2025. This reduction in generation assumption represents a loss of about 682 GWh in 2024 and 492 GWh in 2025, or about 4 to 6 percent of the energy needed in each calendar year to meet the annual goal.

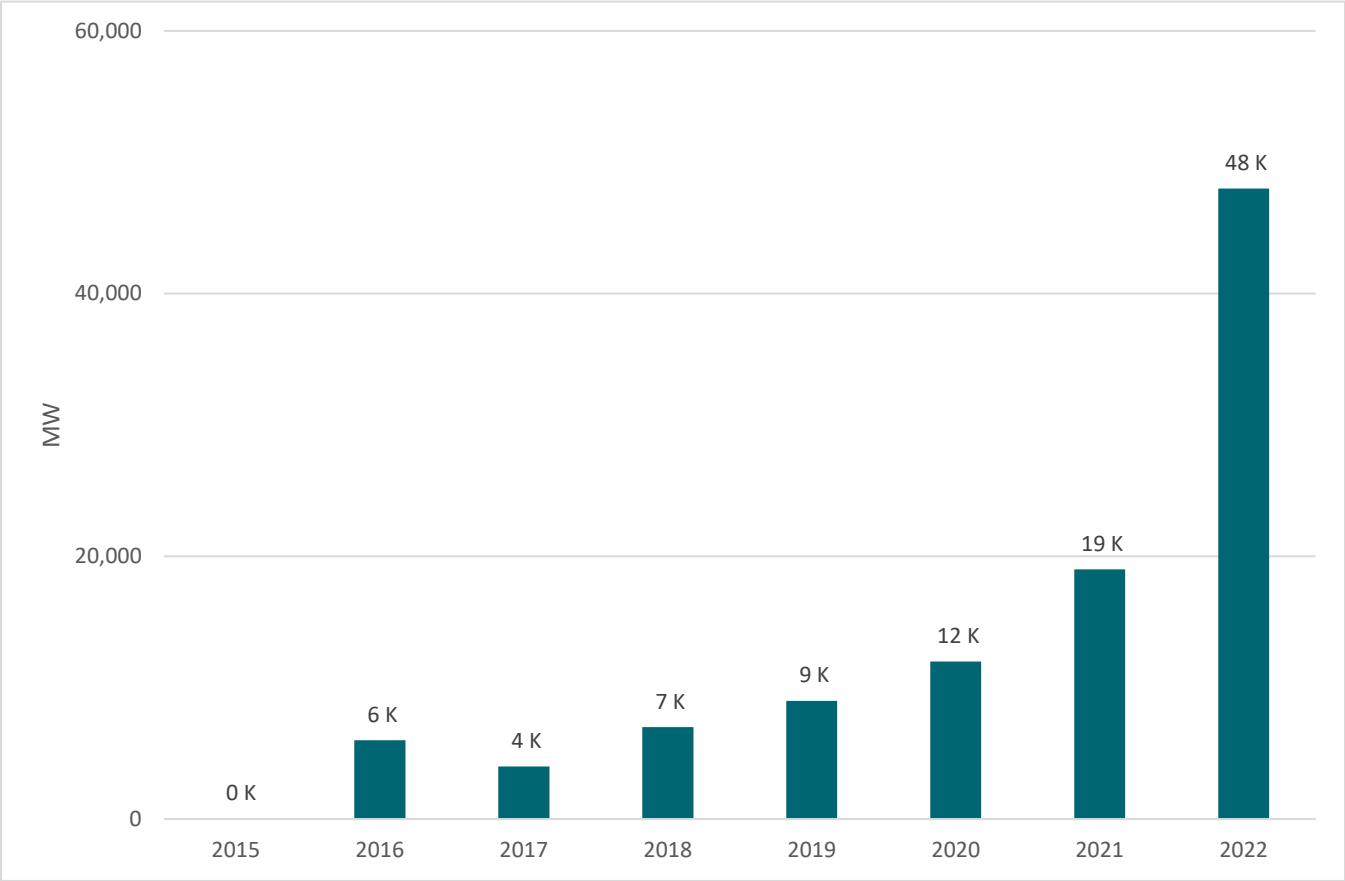
4.3. Supply chain and generator interconnection issues

PSE continues to evaluate and acquire renewable and non-emitting resources necessary to meet its goals. However, PSE faces several obstacles in acquiring a considerable volume of renewable and non-emitting resources in the very near term. For example, many projects bid into PSE's 2021 All-Source Request for Proposals have delayed their commercial operation date to 2026 or later (i.e., after the four-year compliance period of the 2021 CEIP).

Additionally, the unprecedented demand for clean energy resources has created permitting and transmission challenges. For example, Bonneville Power Administration (BPA) has experienced incredible growth in the amount of capacity requesting interconnection to its transmission system. As shown in Figure 2.2, BPA experienced an eightfold increase in generation capacity seeking interconnection between 2016 (6 GW) and 2022 (48 GW).[10]

9. See WAC 480-100-640(2)(d).
10. Bonneville Power Administration, 2022 Transmission Plan: Open Access Transmission Tariff Attachment K Planning Process, at section 1.3.1 (Dec. 2022), available at https://www.bpa.gov/-/media/Aep/transmission/attachment-k/2022-bpa-transmission-plan.pdf.

Figure 2.2: BPA Generation Interconnection Requests (in MW)



BPA has reported that, over calendar year 2022, BPA's large-generator interconnection queue consistently contained more than 130 GW of requests, whereas BPA interconnected about 8 GW of generation over the twenty-two-year period between 2000 and 2022.

PSE is also observing growing competition in the demand for renewable and non-emitting generation from other utilities as the Pacific Northwest region pushes for a cleaner energy portfolio. Increasing demand for these resources has diminished PSE's opportunities to acquire new resources as desirable projects have been acquired by other utilities.

5. Specific target update

5.1. Energy efficiency target

As PSE was drafting this Biennial Update, PSE was concurrently drafting its 2024-2025 Biennial Conservation Plan, which PSE will file on November 1, 2023. The 2024-2025 Biennial Conservation Plan includes a new energy efficiency target for 2024-2025.[11] CETA requires utilities to file a CEIP

11. Please see dockets UE-230892 and UG-230893.

every four years that includes a four-year energy efficiency target; however, WAC 480-109 requires a two-year biennial conservation plan process with penalties.

PSE estimated the four-year energy efficiency target in the 2021 CEIP by applying the Total Utility Conservation Goal from the 2022-2023 Biennial Conservation Plan for calendar years 2022 and 2023, and then replicating those values for the calendar years 2024 and 2025. In the 2021 CEIP, PSE acknowledged the 2022-2023 Total Utility Conservation Goal values used for 2024-2025 were a placeholder and that PSE would adjust the energy efficiency target in the Biennial Update to align with the Total Utility Conservation Goal for calendar years 2024 and 2025 in the 2024-2025 Biennial Conservation Plan. PSE now makes this adjustment in this Biennial Update.

PSE's original energy efficiency target for the 2022-2025 compliance period in the 2021 CEIP was 1,073,434 MWh, consistent with the 2022-2023 Biennial Conservation Plan filed on November 1, 2021. Table 2.12 shows the calculated target for each biennium of the four-year compliance period. The biennial targets are detailed in the 2022-2023 Biennial Conservation Plan and include all energy efficiency and conservation targets and goals required by the Commission.

Table 2.12: PSE's energy efficiency target from the 2021 CEIP

Category	2022-2023	2024-2025	Total
Energy Efficiency target	536,717 MWh	536,717 MWh	1,073,434 MWh

As of the date of this filing, the updated energy efficiency target for the 2024-2025 two year period is 397,620 MWh. Table 2.13 shows the updated 4-year energy efficiency target once the energy efficiency target for the 2024-2025 biennium is incorporated.

Table 2.13: Updated CEIP 4-year energy efficiency target

Description	2021 CEIP (2022 – 2025)	2023 Biennial Update (2022-2025)
Energy Efficiency target	1,073,434 MWh	934,337 MWh

This target is lower than the initial Energy Efficiency target proposed in the 2021 CEIP of 1,073,434 MWh. As a reminder, the target in the 2021 CEIP for calendar years 2024 and 2025 was based on the 2022-2023 Biennial Conservation Plan. The target is lower because the 2023 Electric Progress Report modeling selected a lower energy efficiency bundle. A summary of the modeling for determining this target is below.

PSE's two-year conservation targets are set based on RCW 19.285 and WAC 480-109 and in consultation with its Conservation Resource Advisory Group (CRAG). Actual program performance and savings mitigation efforts are reviewed at least quarterly with the CRAG. Table 2.14 shows performance for the 2022-2023 biennium using a combination of actuals and forecast for 2023.

Table 2.14: Energy efficiency first two-year performance

Description	2022-2023 total target	22-23 actuals + forecast	Shortfall
Energy Efficiency	536,717 MWh	476,706 MWh	60,011 MWh

Per RCW 19.285, PSE updated its 2024-2025 energy efficiency target based on the current conservation potential assessment plus a required five percent decoupling adder and an additional 70,000 MWh based on projected program activity.

As described in the 2021 CEIP, the "holding place" savings for the third and fourth years of the energy efficiency target have been updated with the savings forecast from the 2024-2025 Biennial Conservation Plan. The new four-year energy efficiency target is 934,337 MWh.

5.1.1. Energy efficiency methodology

PSE's 2024-2025 Biennial Conservation Plan informed the energy efficiency targets of this Biennial Update. PSE conducted a Conservation Potential Assessment, a study that determines the conservation potential (i.e., the amount of energy efficiency available in PSE's service territory), for the 2024-2025 Biennial Conservation Plan. For such Conservation Potential Assessment, PSE builds the conservation potential with a bottom-up approach, using unique energy-efficient technologies applied to appropriate end uses and building types to determine the achievable technical potential.

PSE uses the Conservation Potential Assessment as an input to the PSE IRP economic portfolio modeling. The model selects the amount of cost-effective annual energy efficiency. Variables that influence this selection process include load growth, generation costs, and other factors. In conjunction with the Conservation Resource Advisory Group, PSE uses the achievable, technical, and economic potential to build biennial targets.

PSE calculates the targets for each biennium, consistent with the Energy Independence Act requirements found in WAC 490-109-100(3). The calculation uses a pro rata share of the ten-year conservation potential identified in the IRP and then adds a five percent decoupling target. On top of this, PSE adds additional firm savings not included in the Conservation Potential Assessment (Schedule 449 Program) and additional program savings based on projected program activity to obtain the final two-year conservation goal.

Working with the CRAG, PSE uses the information in the Conservation Potential Assessment and other relevant data to build PSE's portfolio of programs designed to achieve the targets. These programs fall in residential energy management, business energy management, pilots, and regional programs, like participating in the NEEA, and system distribution efficiency activities. The work to implement the biennial targets constitutes specific actions under CETA.

For detailed information about energy efficiency targets, budgets, and program specifics please see the 2024-2025 Biennial Conservation Plan as filed on November 1, 2023 in Docket UE-230892.

➔ See Chapter 5: Specific Actions for more information.

5.2. Demand response target

In Order 08, the Commission also included the following Condition 4:

> **CONDITION 4:** PSE will increase its demand response target to include all cost-effective DR bids it received in response to its recent RFP. PSE will include expanded Direct Load Control offerings in this increased target.[12]

Accordingly, PSE is updating its demand response target in this Biennial Update to 86 MW (see Table 2.15) and includes Direct Load Control offerings in the Flex Smart program discussed further in Chapter 5: Specific Actions.

Table 2.15: Updated demand response target

Description	2021 CEIP	2023 Biennial Update
Demand Response Target	23.7 MW	86 MW

As discussed in the 2021 CEIP, PSE developed demand response programs through a solicitation process. PSE provides an overview of the qualitative and quantitative analysis performed for the 2022 DER RFP to develop programs to meet this revised target considering all cost-effective bids.

➔ The summary and analysis are provided in greater detail in Appendix D: RFP Quantitative and Qualitative Analysis and the 2022 DER RFP: Proposal Summary in Docket UE-210878[13]

5.2.1. Demand response methodology: 2022 DER RFP

PSE based its evaluation of resources submitted in response to the 2022 DER RFP on a combined quantitative and qualitative assessment of all proposals that met the minimum requirements of the solicitation. Taken together, the quantitative and qualitative evaluation criteria assessed the feasibility of proposals and measured each proposal's ability to satisfy compatibility with resource need, cost minimization, contribution to CETA customer benefit and equity provisions, risk management, and strategic and financial considerations.

PSE divided its evaluation process into three phases:

12. See Order 08, infra note 3, Appx. A at ¶ 6.
13. Puget Sound Energy, 2022 DER RFP: Proposal Summary, Docket UE-210878 (Apr. 19, 2022)

1. A screening phase (Phase 1)
2. The Value Fit program building and portfolio design phase (Phase 2)
3. A concurrent evaluation with the 2021 All-Source RFP shortlist in Docket UE-210220 (Phase 3)

In Phase 1, PSE evaluated proposals based on qualitative and quantitative metrics and placed proposals into two categories; Category A or Category B:

- **Category A** represented turnkey resources, which were complete resources ready for deployment.
- **Category B** represented vendor services that would be a component of a turnkey resource, such as providing customer enrollment, equipment installation, and other programs activities.

PSE used the DER Benefit Cost Analysis tool developed for the 2021 CEIP to model the costs and benefits of each proposal. PSE then ranked proposals based on their combined score, which was a combination of qualitative and quantitative attributes. PSE decided to move all projects forward from Phase 1 to Phase 2.

For Phase 2, PSE incorporated Category B, or Value Fit Programs, into the evaluation, similar to Category A proposals during Phase 1. Two Value Fit programs were developed and compared with the turnkey Category A proposals. Both Value Fit programs were rejected. One ranked second to last based on the combined score and was found to not be cost-effective based on the Societal Cost Test, and the other completely overlapped with another winning bid that provided more capacity. The Societal Cost Test, as used in the DER RFP, mirrors that used in PSE's 2021 Clean Energy Implementation Plan[14] with minor updates to fully align the Societal Cost Test with the most recent iteration of the Jurisdictional Cost Test outlined in Docket UE-210804.

5.2.2. Demand response results: 2022 DER RFP

PSE received 186 MW in proposals in response to the 2022 DER RFP. During its evaluation, PSE noted that some proposals did not meet the threshold for cybersecurity and eliminated those projects from consideration after Phase 2. To avoid cybersecurity concerns and overlap in customer segments, PSE did not select all proposals and instead selected 86 MW, which included three projects in the concurrent analysis.

The three Category A demand response proposals (provided by AutoGrid, EnelX and Oracle) were highly ranked and cost-effective. These three programs also did not extensively overlap with the customer segments they were separately targeting. PSE short-listed these three proposals for the Concurrent Analysis with the 2021 All-Source RFP short-listed projects. The remaining programs not shortlisted in the 2022 DER RFP did extensively overlap in targeted customer segments (e.g., two

14. See Puget Sound Energy, 2021 Clean Energy Implementation Plan, Appendix D: DER Suite Selection and Evaluation, Docket UE-210795 (Dec. 17, 2021)

bidders targeting the same commercial customer base). Table 2.16 provides a summary of the short-listed results.

➔ Please see Chapter 5: Specific Actions for details on the programs.

Table 2.16: Demand response shortlist programs from phase 2 modeling

Program bidder	Cumulative 2025 winter MW	Customer segment	Program type	Societal cost test	Combined score	Selected for contracting
Enel X	30	Commercial	Demand Response – Bundled	10.76	66.42	Yes
Bidder A	Less than 10 MW	Residential	Demand Response – Bundled	4.85	58.94	No
Oracle*	4	Residential	Behavioral	4.82	55.23	Yes
Autogrid	33.6	Majority Residential + Commercial	Demand Response – excluding Battery program	4.41	42.48	Yes
Autogrid (included with the DR proposal, but analyzed separately)	12	Residential	Battery	0.82	42.48	Yes
Bidder B	Greater than 10 MW	Majority Commercial + Residential	Demand Response – Bundled	2.85	40.35	No
Bidder C	Greater than 10 MW	Majority Commercial + Residential	Demand Response – Bundled	3.00	34.26	No

** In contract negotiations Oracle's bid changed from what was initially modeled.*

Table 2.16 illustrates the rankings of the 2022 DER RFP proposals based on their Combined Score. PSE selected EnelX, Oracle, and AutoGrid based on their high cost-effectiveness and Combined Score ranking.

Not included in Table 2.16 are bidders who did not meet the minimum qualifications of the 2022 DER RFP, the core of which were SOC II Type 2 certification and having a platform able to integrate with PSE's virtual power plant. Bates & White, the independent evaluator, will submit a report summarizing the 2022 DER RFP process and selected bidders by the end of the year.

5.3. DER solar and storage targets

PSE is not seeking to adjust the DER solar or storage targets in this 2023 CEIP Biennial Update. PSE plans to spend the remainder of the four-year compliance period working to meet the 80 MW solar and

25 MW storage targets identified in the 2021 CEIP (see Table 2.17), which includes the 50 MW stipulated in the CEIP order for Community Solar. PSE's 2023 Electric Progress Report modeling demonstrated higher potential for DERs over this compliance period. However, the issue of timing is important because PSE is at the midpoint of the four-year compliance period, making it extremely challenging to execute programs and products to go beyond its already ambitious targets in the next two years.

Table 2.17: DER – solar and DER – storage targets

Description	2021 CEIP	2023 Biennial Update
DER – Solar	80 MW	80 MW
DER – Storage	25 MW	25 MW

As discussed in the 2021 CEIP, PSE solicited DER solar and storage resources through an RFP process. The initial 2022 DER RFP produced no results for DER solar and storage but did provide results for Demand Response programs. Following this, PSE issued a DER Solar and Storage RFP (the 2023 DSS RFP). This 2023 DSS RFP was more successful in attracting proposals for distributed solar and storage resources, which was achieved by having a targeted resource request, simplifying the submission process, increasing outreach, as well as benefiting from external factors like the passage of the Inflation Reduction Act.

Below, PSE provides an overview of the qualitative and quantitative analysis performed for the 2022 DSS RFP.

➔ The summary and analysis are provided in greater detail in Appendix D: RFP Quantitative and Qualitative Analysis and the 2023 Voluntary Distributed Solar and Storage Request for Proposal – Summary Report in Docket UE-220971[15]

5.3.1. DER solar and storage methodology: 2023 DSS RFP

The evaluation results of PSE's DERs was based on a quantitative, qualitative, and technical assessment of all proposals to meet the minimum requirements of the 2023 DSS RFP. The technical assessment involved a preliminary site assessment, similar to a feasibility study done under the Schedule 152 interconnection process to assess interconnection feasibility and scope. Proposals were scored and ranked based on qualitative and quantitative metrics, which included the results of the preliminary site assessment. Only those proposals that satisfied the minimum requirements of the 2023 DSS RFP received a qualitative and quantitative score. Some projects were rejected during the initial intake for not being in the service territory or not having a project site for their proposal.

15. Puget Sound Energy, 2023 Voluntary Targeted DSS RFP – Summary Report, Docket UE-210878 (Apr. 21, 2023).

The quantitative metrics assessed are expected costs associated with the capacity and energy prices offered for each response. PSE used the DER Benefit Cost Analysis tool developed for the 2021 CEIP and used in the 2023 DER RFP to model the costs and benefits of each proposal. The qualitative and quantitative scoring of each project was individually verified by Bates & White, the independent evaluator.

Following the evaluation, PSE used Societal Cost Test ratio to determine each project's overall cost-effectiveness. A Societal Cost Test ratio greater than one (1) is deemed cost effective. The Societal Cost Test indicates if the benefits of a DER resource will exceed its costs from the perspective of society. This test provides the most comprehensive picture of the total impacts of a DER resource. PSE selected all the cost-effective projects, based on the Societal Cost Test, available from the RFP.

We also included consideration of equity and customer benefits in its evaluation process. Each bidder provided an equity and customer benefit plan demonstrating their proposal's alignment with goals set forth in CETA.

5.3.2. DER solar and storage results: 2023 DSS RFP and 2022 DER RFP

To meet the 80 MW solar target, including the added capacity to meet the Community Solar requirement, PSE selected the most cost-effective solar projects amounting to 56 MWs, which includes both hybrid and solar only projects. However, some proposals have been withdrawn due to third-party issues. Table 2.18 provides a summary of the shortlisted results, with details in Chapter 5, Specific Actions.

PSE intends to use over thirty (30) MWs of proposed solar from the 2023 DSS RFP for community solar programs to help fulfill Condition 18 of the Commission's Order approving the 2021 CEIP. PSE currently has roughly 16 MWs, from 6 projects, in place, with another 6 projects, representing nearly 1 MW, under development in Western Washington. The existing projects are a mixture of PPAs and PSE-owned projects as discussed in Chapter 5, Specific Actions. Finally, PSE continues to solicit interest for new project sites from potential site hosts through a new site host application and web portal as discussed in Chapter 5: Specific Actions.

Table 2.18: Summary of DER Solar resources acquired from the 2023 DSS RFP

Program	Capacity (MW)
New Community Solar	32 MW
Standalone distributed generation (Solar) [not a customer product, operated by PSE]	9 MW
Hybrid distributed generation (Solar) coupled with storage	9 MW
TOTAL	50 MW

Looking ahead, PSE plans to achieve the remainder of the 80 MW solar target through PSE products, which are described further in Chapter 5: Specific Actions.

For the 25 MW storage target, PSE expects to exceed this target because it selected 38.5 MWs of cost-effective projects. We will meet this target with projects from both the 2022 DER RFP and the 2023 DSS RFP. Although PSE has selected enough storage projects to meet the 25 MW storage target, various risks in negotiations, development, and additional stages remain in which projects fail to meet commercial operation. PSE will strive to meet this target but acknowledges that known and unknown risks may make achievement of this storage target by the end of 2025 challenging. A summary of the shortlisted results is provided in Table 2.19 with details in Chapter 5: Specific Actions.

Table 2.19: Summary of DER storage resources acquired from the 2022 DER and 2023 DSS RFPs

Program	Capacity (MW)
Hybrid distributed generation (storage) coupled with solar [2023 DSS RFP]	3.5 MW
Standalone BESS [2023 DSS RFP]	30 MW
Residential BESS Services [2022 DER RFP]	5 MW
TOTAL	38.5 MW

5.4. Renewable energy

In Order 08, the Commission also included the following Condition 6:

> **CONDITION 6:** Within 60 days of the entry of this Order, PSE must file with the Commission a narrative describing the methodology used to develop the renewable energy Specific Target and describing how its renewable energy Specific Target contributes to PSE achieving its Interim Target of serving 63 percent of retail load with renewable, non-emitting resources by 2025. PSE must express its renewable energy Specific Target as a percentage of retail load. PSE must provide sufficient supporting detail to be understood by a generalist, and the Company may not rely on mere "global" references to the underlying Aurora model.[16]

Accordingly, PSE clarified its renewable energy target in its 60-day compliance filing.[17] As discussed in the filing, PSE's renewable energy target was translated from 800 MW to 63 percent. Furthermore, in that 60-day compliance filing, PSE updated its renewable energy target to a percentage of new utility-scale renewable energy as a target of 10.5 percent of retail load (see Table 2.20).

16. See Order 08, infra note 3, Appx. A at ¶ 8.
17. https://apiproxy.utc.wa.gov/cases/GetDocument?docID=1112&year=2021&docketNumber=210795

Table 2.20: Updated Renewable Energy Target

Description	2021 CEIP	2023 Biennial Update
Renewable energy target	10.5% as a percent of **new** utility-scale renewable energy (updated in 60-day compliance filing)	11% as a percent of **new** utility-scale renewable energy
Annual goal	63% in 2025	60% in 2025*

* Please see section above for details on adjustment of Interim Target.

Table 2.21 shows a breakdown of the table used previously to calculate this renewable energy target.

Table 2.21: Calculation of Renewable Energy Specific Target, 60-Day Compliance Filing

Line	CETA summary	2025	Percent of retail load
1	CETA Retail Electric load	17,997,487 MWh	-
2	New wind	1,256,988 MWh	6.98%
3	New utility-scale solar	629,343 MWh	3.50%
4	New DER/Non-wires Solar	8,148 MWh	0.05%
5	DER Solar – CETA Eligible resources	22,589 MWh	0.13%
6	Existing Wind/Solar/Biomass (includes signed contracts)	4,054,720 MWh	22.53%
7	Existing Hydro	5,409,805 MWh	30.06%
8	CETA-eligible energy	11,381,593 MWh	-
9	Interim Target	63%	-
10	Renewable energy Specific Target		63.24%
11	NEW utility scale renewable energy as a percent of retail load		10.48%

In alignment with the discussion earlier in this chapter on updating the interim target to 54.5 percent, the 2025 annual goal to 60 percent and the 60-day compliance filing, PSE also updates its renewable energy target for new utility scale renewable energy to 11 percent PSE provides the calculation for this updated renewable energy target in Table 2.22.

Table 2.22: Calculation of Renewable Energy Specific Target

Line	CETA Summary	2025	Percent of retail load
1	CETA Retail Electric load	19,903,567 GWh	-
2	New utility-scale CETA eligible resources	2,185,000 GWh	11%
3	Existing CETA eligible resources*	9,749,832 GWh	49%
4	Annual goal	60%	-
5	Renewable Energy specific target		60%
6	NEW utility scale renewable energy as a percent of retail load		11%

* Assumes 95% of energy is derived from a BPA source

Based on the calculation above, PSE is also updating its renewable energy target from 10.5 percent to 11 percent.

5.4.1. Renewable energy methodology: 2021 All-Source RFP

PSE initiated the 2021 All-Source RFP to bring utility-scale resources to meet the goal from the 2021 CEIP. PSE provides an overview of the qualitative and quantitative analysis performed for this RFP below.

➔ The summary and analysis is provided in greater detail in Appendix D: RFP Quantitative and Qualitative Analysis and Docket UE-210220.[18]

PSE received 95 proposals for 21 gigawatts (GW) of new resources in response to its 2021 All-Source RFP. Bids reflected a range of resource types, as shown in Table 2.23. Interested parties can find more information about these proposals on PSE's RFP web site in a proposal summary[19] posted pursuant to WAC 480-107-035(5).

Table 2.23: 2021 All-Source RFP proposals received

Resource category	Resource type	Phase 1	
		# of proposals[1]	Total capacity (MW)[2]
Solar	Solar only	20	4,094
	Hybrid: Solar + Storage	9	1,181
	Hybrid: Solar + System PPA	1	200
Wind	Wind only	20	6,986
	Hybrid: Wind + Storage	2	800
	Hybrid: Wind + Solar + Storage	2	451
Storage	Storage: Battery	29	4,360
	Storage: Pumped Hydro	3	800
Flexible capacity	Natural Gas-fired Generation	3	1,247
	Biofuel-fired Generation	4	857
Other resources	Run-of-river Hydro	1	22
	Hydrogen Fuel Cell	1	10
Total		95	21,008

PSE included consideration of equity and customer benefits in each phase of its 2021 All-Source RFP evaluation process. The 2021 All-Source RFP required each bidder to provide an equity and customer benefit plan demonstrating their proposal's alignment with goals set forth in CETA. Required 2021 All-Source RFP proposal forms also included a series of questions designed to capture information about

18. Puget Sound Energy, 2021 Request for Proposals for All Generation Sources – Summary Report, Docket UE-210220 (Oct. 1, 2021)
19. Puget Sound Energy, 2021 Request for Proposals for All Generation Sources – Summary Report, Docket UE-210220 (Oct. 1, 2021)

the project relevant to supporting goals set forth in RCW 19.405.040(8) related to customer benefits; diversity, equity, and inclusion; and labor.

PSE's evaluation of resources for the 2021 All-Source RFP was based on a combined quantitative and qualitative assessment of all proposals that met the minimum requirements of the solicitation. In Phase 1, PSE performed a preliminary cost and risk analysis to screen for the most promising resources for further consideration. This phase used a combination of quantitative and qualitative scores. At the end of Phase 1, sixty-seven (67) proposals with the highest combined scores from each resource category were identified for further evaluation in Phase 2.

In Phase 2, PSE performed a portfolio optimization and qualitative due diligence to verify and identify key commercial issues and project risks. PSE also performed a sensitivity analysis to produce a portfolio that meets capacity and renewable need, while maximizing CBIs.

➔ See Appendix D: RFP Quantitative and Qualitative Analysis for details of the rubrics and evaluation used.

In the concurrent analysis, PSE brought in all three of the Demand Response programs as part of the modeling analysis. In this analysis all three demand response projects were selected as part of the short-list.

5.4.2. Renewable energy results

At the time of writing this Biennial Update, PSE has signed and executed one (1) contract and expects more contracts to be signed by the end of the first quarter of 2024.

Table 2.24: Signed contracts from 2021 All-Source RFP

Project name	Capacity (MW)	Contract Start Date
Vantage Wind Power Purchase Agreement	90 MW	2025

Additionally, PSE is evaluating and/or negotiating with other counterparties for additional resources to help meet PSE's renewable and non-emitting energy and capacity needs consistent with the requirements of CETA. Among these resources, PSE has identified several offers that are currently in contract negotiations. Combined, these offers represent over 1,000 MW of additional wind and solar energy that would help meet PSE's 2030 CETA target and over 500 MW of additional CETA-compliant capacity resources. These resources, if secured, are expected to be online after 2025 but would help PSE to ramp into meeting its 2030 CETA clean energy standard.

Bidders and interested parties can find more information about the 2021 All-Source RFP on PSE's RFP web site. New RFP resource acquisition announcements will be shared in the Updates and Notifications section of the site as they become available.

EQUITY
CHAPTER THREE

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1. Introduction

In this Chapter, Puget Sound Energy (PSE) illustrates its research on energy justice, describes alignment on a definition of energy justice, and lays out a framework by which we understand and model equity for the clean energy transition. This includes updates to existing equity elements like vulnerable populations and CBIs, as well as establishing new elements like deepest need and minimum designations.

2. Definitions of energy equity

To gain a better understanding of PSE's approach to an equitable energy future, PSE highlights some of the definitions of energy equity based on existing literature:

- **The Energy Equity Project (EEP, University of Michigan):** "Energy equity recognizes the historical and cumulative burdens of the energy system borne by frontline and low-income communities and Black, Brown, and Native people. To eliminate these disparities, energy equity centers the voices of frontline communities in energy planning and decision-making and ensures the fair distribution of clean energy benefits and ownership."[1]
- **Pacific Northwest National Laboratories (PNNL):** "Energy equity recognizes that disadvantaged communities have been historically marginalized and overburdened by pollution, underinvestment in clean energy infrastructure, and lack of access to energy-efficient housing and transportation. An equitable energy system is one where the economic, health, and social benefits of participation extend to all levels of society, regardless of ability, race, or socioeconomic status. "Achieving energy equity requires intentionally designing systems, technology, procedures, and policies that lead to the fair and just distribution of benefits in the energy system."[2]
- **The American Council for an Energy-Efficient Economy (ACEEE):** "At ACEEE, we define energy equity using a sustainability framework developed by Angela Park and colleagues at the Urban Sustainability Directors Network. [T]his framework includes four dimensions of equity: procedural equity, structural equity, distributional equity, and transgenerational equity. We use this framework to assess the extent to which policies and programs embed inclusive engagement processes, result in a fair distribution of benefits and burdens, and ensure desired outcomes benefit future generations."[3]
- **Lawrence Berkeley National Laboratory (LBNL):** "Energy equity is the fair distribution of the benefits and burdens of energy production and consumption. States are increasingly

1. University of Michigan School for Environment and Sustainability, Energy Equity Project Framework Report, v1.0 (2022), available at https://energyequityproject.com/wp-content/uploads/2022/08/220174_EEP_Report_8302022.pdf
2. Pacific Northwest National Laboratory, Energy Equity: What is Energy Equity?, available at https://www.pnnl.gov/projects/energy-equity
3. American Council for an Energy-Efficient Economy, Energy Equity, available at https://www.aceee.org/topic/energy-equity

> recognizing equity as a goal of utility regulation, going beyond the traditionally stated objectives to ensure that electricity systems are reliable, safe, and fairly priced."[4]

As evidenced from these definitions, energy equity is a dynamic and multi-faceted issue that considers the full spectrum of equity. For instance, the definitions proposed by ACEEE and Berkeley Lab highlight the distributional aspect of equity, by advocating that all communities, especially those that are disadvantaged/marginalized, have access to clean energy that is affordable, safe, and sustainable. However, the definitions proposed by EEP and PNNL incorporate all equity dimensions. They emphasize the need to recognize and respond to the historic and ongoing inequities that have plagued marginalized communities and seek to ensure that they are at the frontline of the energy planning and decision-making process.

In general, all four definitions overlap in their meaning and capture the definition and dimensions or tenets of energy justice described by the Washington Utilities and Transportation Commission (the Commission) in its order in Docket UG-210755,[5] the 2021 general rate case proceeding for Cascade Natural Gas Company:

Energy justice is focused on: (1) ensuring that individuals have access to energy that is affordable, safe, sustainable, and affords them the ability to sustain a decent lifestyle; and (2) providing an opportunity to participate in and have meaningful impact on decision-making processes.

The core tenets of energy justice are:

- Distributional justice, which refers to the distribution of benefits and burdens across populations. This objective aims to ensure that marginalized and vulnerable populations do not receive an inordinate share of the burdens or are denied access to benefits.
- Procedural justice, which focuses on inclusive decision-making processes and seeks to ensure that proceedings are fair, equitable, and inclusive for participants, recognizing that marginalized and vulnerable populations have been excluded from decision-making processes historically.
- Recognition justice, which requires an understanding of historic and ongoing inequalities and prescribes efforts that seek to reconcile these inequalities.
- Restorative justice, which is using regulatory government organizations or other interventions to disrupt and address distributional, recognitional, or procedural injustices, and to correct them through laws, rules, policies, orders, and practices.[6]

4. Ernest Orlando Lawrence Berkeley National Laboratory, Advancing Equity in Utility Regulation, at 8 (Dec. 16, 2021), available at https://eta-publications.lbl.gov/sites/default/files/advancing_equity_webinar_slides_20211216.pdf
5 WUTC v. Cascade Natural Gas Corp., Docket UG-210755, Order 09 (Aug. 23, 2022)
6. WUTC v. Cascade Natural Gas Corp., Docket UG-210755, Order 09 (Aug. 23, 2022) at ¶ 56

3. PSE's energy equity approach

PSE identifies and acknowledges energy equity in its clean energy operations and adopts the definition of energy equity proposed by the University of Michigan, School for Environment and Sustainability's Energy Equity Project.[7]

PSE has adopted the definition of energy equity proposed by the Energy Equity Project because it builds upon the four core tenets or dimensions of justice as delineated in the Commission order in Docket UG-210755 — recognition, procedural, distributional, and restorative justice. In addition, the Energy Equity Project's concept of energy equity promotes a "bottom-up" approach to advancing equity by recognizing the unique circumstances and needs of communities that have been historically marginalized and underserved, while also including them in the decision-making process. This "bottom-up" approach draws heavily on the environmental justice framework, which upholds the fair treatment and meaningful involvement of all people regardless of race, color, national origin, income, or other demographic characteristics.

PSE presented its approach to conceptualizing energy equity to its Equity Advisory Group (EAG) for guidance and feedback. The EAG members appreciated the four-tenet construct and discussed alignment with the guiding principles of the EAG, centered on accessibility, affordability, and accountability. The EAG also suggested that PSE leverage communities' perspectives, knowledge, and understanding of energy equity in everyday, plain language rather than academic terms and definitions.

In collaboration with the EAG, PSE also hosted two equity forums with its EAG, community-based organizations, and community members. As of the date of filing this 2023 Biennial CEIP Update (the Biennial Update), PSE and the EAG are compiling a summary of those events. PSE recognizes that those events represent a model for ongoing engagement and will further support our understanding of what energy equity means to customers in named communities. We believe this is the kind of engagement the Commission envisioned in expecting "meaningful engagement" with the EAG, named communities and interested persons.[8]

➔ The equity forums are further detailed in Chapter 4: Public Participation.

4. PSE's Equity Guidance Tool

PSE aims to ensure systemic change, both internally and externally, in our processes to the benefit of the customers we serve, especially those that have been historically marginalized or underserved. In support of this vision, PSE's Energy Equity team developed a guidance tool to be used by internal departments when considering equity across the company. The Equity Guidance Tool describes the

7. See note 1, infra.
8. See Order 08, at ¶ 313.

four core tenets of energy justice and establishes a mechanism for use by internal teams to ensure PSE's progress towards addressing each tenet of energy justice. Equipped with this tool, illustrated below in Figure 3.1, PSE will seek to mitigate existing disparities and confer benefits for all, especially those that are overburdened by inequities in the energy system.

Figure 3.1: Equity Guidance Tool

In each of the four tenets, consider:
- What have you done for highly impacted communities and vulnerable populations?
- What measures are you able to provide in these areas?
  - Process measures (what's been done to incorporate energy equity, what changes have been made)
  - Engagement measures
  - Impact measures
- What's your progress and what are your future plans?
- Additional guidance and questions are provided below.

	Overview	Additional Guidance
Recognition Justice	**Understanding of historic and ongoing inequalities** and prescribes efforts that seek to reconcile these inequalities	• What are the disparities & root factors that have led to historic and current inequities? What are the deepest inequities that have been identified? • Have you identified the communities you're targeting? What are their characteristics (e.g., housing, energy burden, pollution, health, economic)? • What collaborative efforts are happening to identifying communities you're targeting?
Procedural Justice	Focuses on **inclusive decision-making processes** and seeks to ensure that proceedings are fair, equitable, and inclusive for participants, recognizing that marginalized and vulnerable populations have been excluded from decision-making process	• How are you being inclusive and accessible in your engagement in named communities? • Have you engaged with the right Community-Based Organizations? • How are you engaging named communities in legal / regulatory proceedings? • How are you using the feedback from named communities? How are you informing your decisions based on their feedback? • Are you co-creating programs, procedures with communities? • Is early engagement occurring with communities? Have you identified their burdens?

Distributional Justice	**Distribution of benefits and burdens** across populations. Aims to ensure marginalized and vulnerable populations do not receive inordinate share of the burdens or are denied access to benefits	• What have you done in your process(es) to incorporate energy equity? What changes have been made?
		• How are you measuring your impact on benefits & reduction of burdens?
		  ○ Have you established baseline measures and able to track progress of impact?
		  ○ What are you doing to measure community engagement?
		  ○ Are benefits distributed equitably and fairly? What % of programs/projects are received by named communities?
		• Are at least 30% of benefits distributed to named communities?

Restorative Justice	Utilizes regulatory government organizations or other interventions to disrupt and address distributional, recognitional or procedural injustices and to correct them through **laws, rules, policies, orders and practices**.	• What do you see success looking like? • Are processes eliminating future inequities? • Do customers feel they are receiving the benefits? • Have we built a just energy system where it is accessible for all?

5. PSE's Equity Assessment Framework

In its 2021 CEIP, PSE developed the Equity Assessment Framework, its first strategic approach to incorporate equity in its clean energy programs and resources. PSE designed the Equity Assessment Framework to guide PSE in ensuring that (i) all customer groups—particularly those who have been historically marginalized—benefit from the clean energy transition and (ii) PSE's clean energy operations does not disproportionately burden any customer group. PSE developed this Equity Assessment Framework with feedback and engagement from the EAG, subject matter experts, and other interested parties.

To further refine its approach to energy equity, PSE retained ILLUME Advising (ILLUME) to evaluate the Equity Assessment Framework and highlight opportunities for additional alignment with the CETA, Commission direction, and PSE's equity objectives. ILLUME reviewed documentation related to the 2021 CEIP (e.g., testimony and public comments), attended public meetings of the EAG, interviewed PSE staff, and assessed similar efforts from other utilities and agencies.

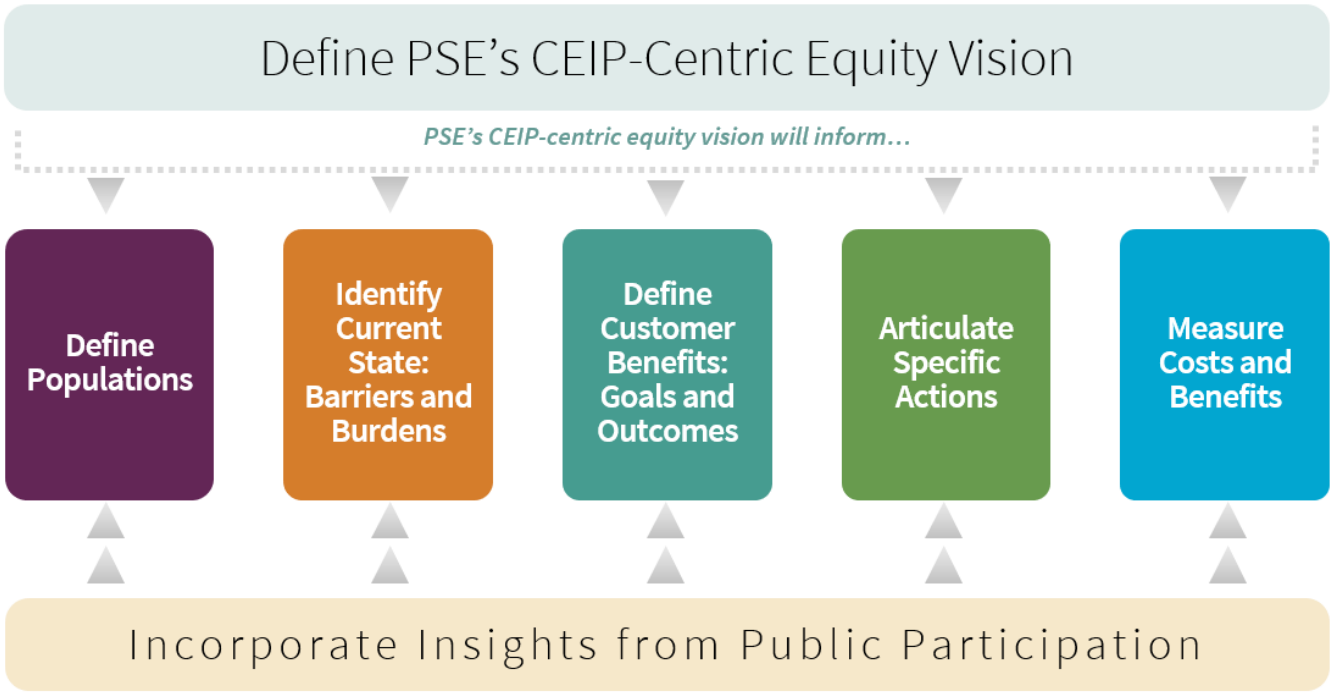
➔ See Appendix J: ILLUME Memorandum: PSE Equity Assessment Framework for additional details.

ILLUME suggested modifying the initial Equity Assessment Framework to reflect three important updates:

1. Defining PSE's CEIP-centric equity vision
2. Defining priority populations (including, but not necessarily limited to, named communities)
3. Defining measurable and achievable customer benefits

ILLUME's suggested modifications are illustrated in Figure 3.2.

Figure 3.2: ILLUME Advising Equity Assessment Framework



This revised Equity Assessment Framework represents an integrative approach to advance energy equity. Each element, or step, of the Equity Assessment Framework provides an input into another element. Combined, this Equity Assessment Framework reflects a holistic strategy to ensure that customers and communities that have been historically marginalized are identified and prioritized to benefit from PSE's clean energy transition.

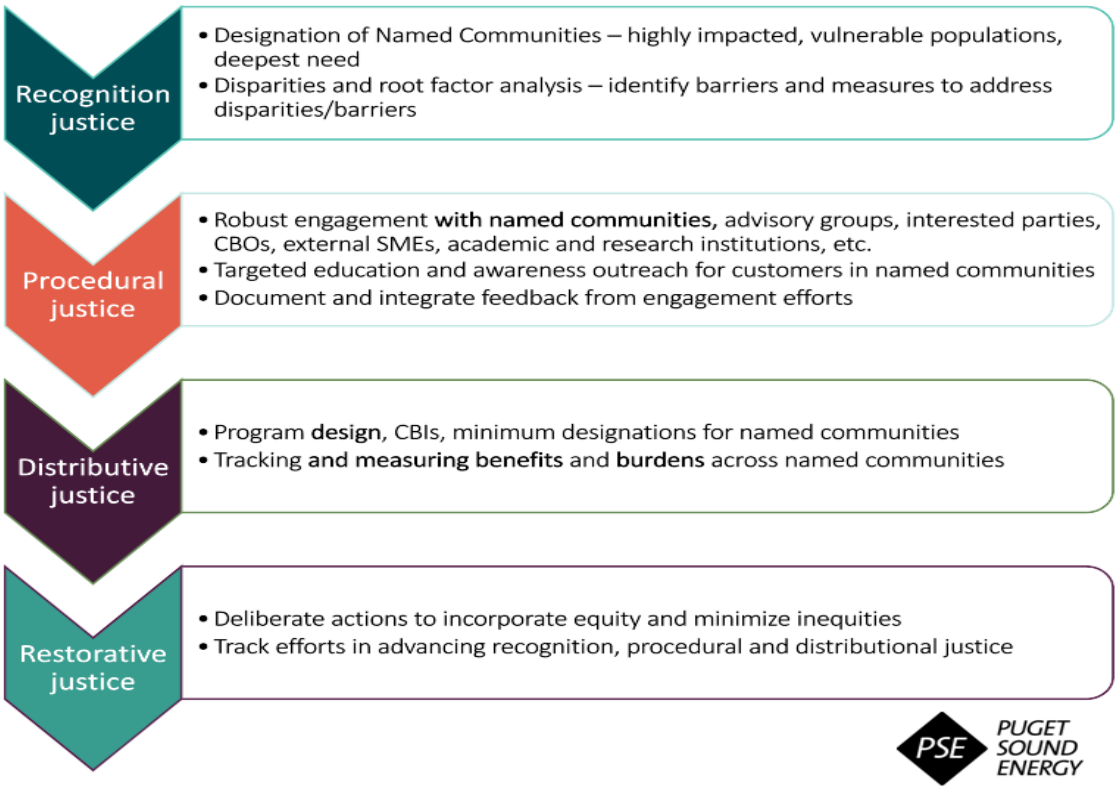
Following ILLUME's recommendations PSE integrated the four tenets of energy justice, as illustrated in Figure 3.3. For example, "defining populations" is a key consideration in recognition justice because it aims to designate and identify groups that have been historically marginalized or currently experience disparities. Similarly, "defining customer benefits" directly ties into distributional justice. By establishing targets to ensure benefits are realized by named communities, PSE focuses its outreach and programs

to meet these goals. By intentionally directing energy benefits into named communities, PSE promotes the equitable distribution of benefits and increases opportunities for customers in named communities to receive benefits, accounting for the reality that they may have been under-served in the past.

6. Integrating the tenets of energy justice in the CEIP

The definition of energy equity proposed by the Energy Equity Project and the core tenets of energy justice delineated in the Commission order in Docket UG-210755 set the parameters for incorporating equity across PSE's operations. Figure 3.3 describes PSE's efforts to advance the core tenets of energy justice in the CEIP.

Figure 3.3: Energy justice core tenets and the CEIP



6.1. Recognition justice

As described by the Commission order in Docket UG-210755, recognition justice requires an understanding of historic and ongoing inequalities and prescribes efforts that seek to reconcile these inequalities.

Recognition justice underlies many aspects of the CEIP, and the key elements of recognition justice include (1) identifying, defining, and mapping named communities and (2) identifying and tracking disparities in the clean energy system.

6.1.1. Defining, designating, and mapping named communities: highly impacted communities, vulnerable populations, and deepest need

CETA specifically identifies highly impacted communities[9] and vulnerable populations,[10] as groups that should benefit from the equitable distribution of energy and non-energy benefits and the reduction of burdens.[11] Through collaboration with the EAG, interested parties, internal and external subject matter experts, and a demographic analysis of the electric service territory, PSE has sought to understand, define, and identify customers in "named communities," a term that refers, collectively, to highly impacted communities and vulnerable populations.

Customer groups within named communities bear a disproportionate burden of environmental risk and have historically faced barriers to clean energy benefits. This includes customer groups marginalized by race, income, language, disability, housing status, immigration background, age, and other vulnerability factors. To gain context and visibility into these customer groups, their vulnerabilities, and their energy-related needs, PSE utilizes data on named communities. With this data, PSE can prioritize customers with the highest energy needs and vulnerabilities and work directly with them to address their needs across the energy system.

We will also utilize data on named communities to inform and implement its clean energy initiatives and programs to ensure that all customers, especially those that have been historically underserved or disproportionately burdened, are able to meaningfully participate in the decision-making processes and benefit from clean energy resources, regardless of their sociodemographic characteristics or geographic locations. These efforts are not only key to recognition justice, but they also set the background or context to address procedural and distributional justice.

Since issuance of the 2021 CEIP and following the Commission's order in Docket UG-210755, PSE has revised its definition of named communities. Specifically, PSE revised its definition of vulnerable populations and has defined the term "deepest need," both of which are discussed below.

6.1.2. Highly impacted communities

CETA defines the term "highly impacted communities" as "a community designated by the department of health based on cumulative impact analyses in RCW 19.405.140 or a community located in census tracts that are fully or partially on "Indian country" as defined in 18 U.S.C. Sec. 1151."[12] The Washington State Department of Health identifies highly impacted communities via the Environmental Health Disparities Map.[13]

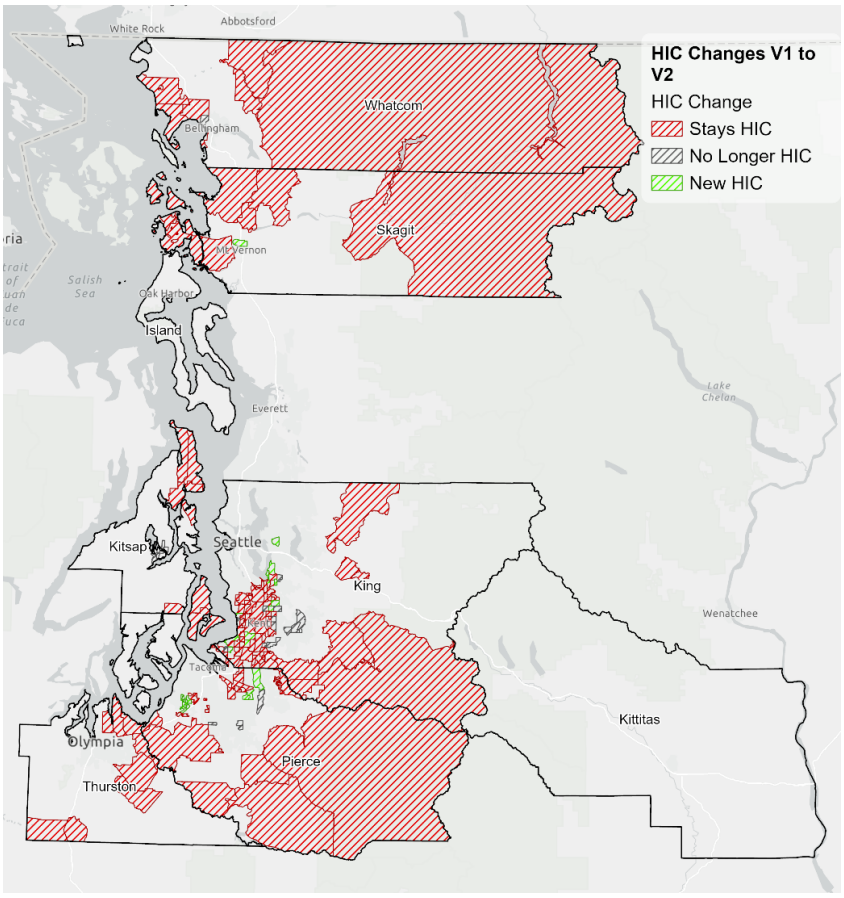
The Washington State Department of Health identifies highly impacted communities by groups of factors measuring environmental exposures and effects, indicators of sensitive populations, and some

9. See RCW 19.405.020(23) (defining "highly impacted community").
10. See RCW 19.405.020(23) (defining "vulnerable populations").
11. See, e.g., RCW 19.405.040(1).
12. RCW 19.405.020(23).
13. See Washington State Department of Health, Washington Environmental Health Disparities Map.

socioeconomic indicators. These factors are ranked 1–10 scale, and census tracts assigned a score of 9 or 10 are classified as highly impacted communities. A tract may also be classified as a highly impacted community if it does not have a score of 9 or 10 but does intersect “Indian country,” as defined in 18 U.S.C. Sec. 1151.

Since issuance of the 2021 CEIP, PSE has not changed the definition of highly impacted communities. The Washington State Department of Health, however, released a second version of the Environmental Health Disparities Map in 2022, updating data resources and adjusting to three environmental exposure indicators. After this update, 286 tracts in PSE’s electric service area remained highly impacted communities, 10 tracts in PSE’s electric service area became highly impacted communities, and 20 tracts in PSE’s electric service area no longer remained highly impacted communities. Figure 3.4 below displays the updated highly impacted communities across PSE’s electric service area. In total, approximately 27 percent of PSE’s electric residential customers (approximately 283,000 residential customers) reside in highly impacted communities.

Figure 3.4: Updates to highly impacted communities



6.1.3. Vulnerable populations

CETA defines the term “vulnerable populations” as communities that experience a disproportionate cumulative risk from environmental burdens due to:

1. Adverse socioeconomic factors, including unemployment, high housing and transportation costs relative to income, access to food and health care, and linguistic isolation
2. Sensitivity factors, such as low birth weight and higher rates of hospitalization[14]

To further understand the scope of vulnerabilities and unique circumstances and capabilities of vulnerable populations, PSE sought input from its EAG in 2020, through public outreach, engagement, and collaborative efforts. The EAG expanded the primary list and added factors derived from their collective experience and interactive sessions with PSE. Vulnerable populations are defined at the geographic level using census blocks groups across the service territory. PSE uses the data for each factor of vulnerability and applies it to each census block group to determine the degree of vulnerability.

In the Commission's Order 08[15] accepting the 2021 CEIP, subject to conditions, two (2) of the conditions — Condition 9 and 10 — related to vulnerable populations:

- Condition 9, which requires PSE to include certain metrics within the list of vulnerable populations[16]
- Condition 10, which requires PSE to include certain modifications to the designation methodology for vulnerable populations[17]

Initially, PSE implemented the requirement of Condition 9 by including a specific list of additional factors in the definition of named communities. However, PSE found that such inclusion resulted in a reclassification of nearly all of the block groups in PSE's service territory as high vulnerability, which did not seem to be the result intended by the Commission in Order 08. Upon reflection on the intent of Condition 9 and after conferring with NW Energy Coalition and Commission staff, PSE refined the approach to incorporate factors that, in the words of the Commission, "truly renders communities vulnerable."[18] To meet the requirements of Condition 10, PSE modified the vulnerability classification by:

- Selecting percent versus count score for a factor instead of including both to remove multiple measures of the same factor
- Selecting one measure of a vulnerability factor where multiple measures were present
- Replacing data sets with more current research; PSE replaced its heat island data with newly released data from the University of Washington Center for Health and Global Environment (CHanGE)

14. RCW 19.405.020(40)
15. In the Matter of Puget Sound Energy Clean Energy Implementation Plan Pursuant to WAC 480-100-640, Docket UE-210795, Order 08 (June 6, 2023).
16. See Docket UE-210795, Order 08 (June 6, 2023), Appx A at ¶ 11.
17. See Docket UE-210795, Order 08 (June 6, 2023) at ¶ 12.
18. See Order 08, infra note 15, at ¶ 154.

- Adding new measures of vulnerability including data from the University of Washington Center for Health and Global Environment classifying health factors associated with high heat risk, wildfire risk derived from the U.S. Forest Service, and housing quality from the U.S. Department of Housing and Urban Development[19]

The modifications required by Conditions 9 and 10 resulted in adjustments to classifications at the census block group level. Of the 1,613 census block groups in PSE's electric service territory:

- 74 percent of the census block groups retained the same vulnerability classification
- 12 percent of the census block groups increased in vulnerability
- 14 percent census block groups decreased in vulnerability

In the new classification, approximately:

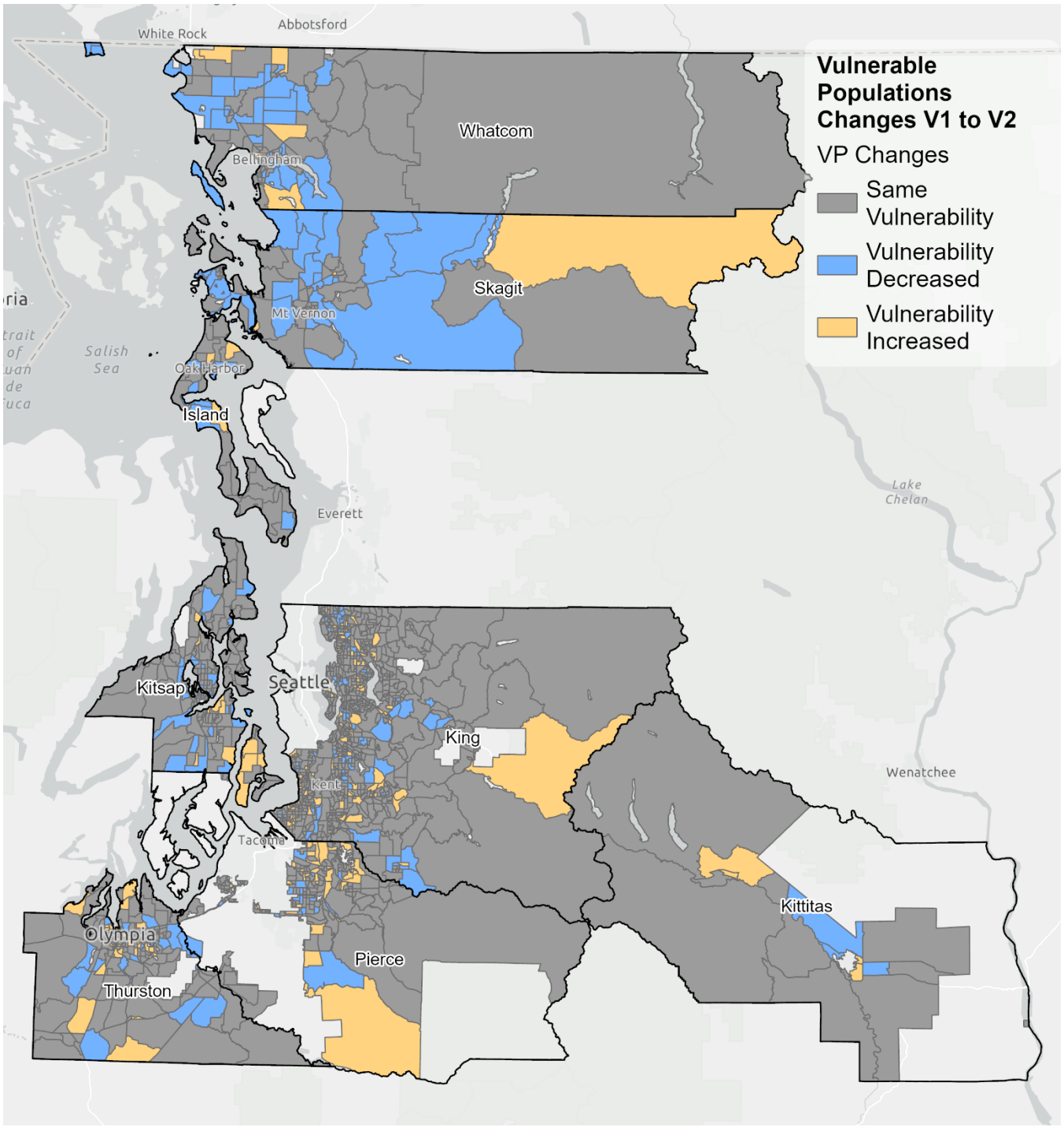
- 342,000 residential customers (33 percent of all residential electric customers) are in high vulnerability block groups
- 386,000 residential customers (36 percent of all residential electric customers) are in medium vulnerability block groups
- 337,000 residential customers (31 percent of all residential electric customers) are in low vulnerability block groups

None of the changes in vulnerability designations were concentrated in any single part of PSE's electric service territory.

➔ See Appendix I: Vulnerable Populations and Deepest Need Methodology.

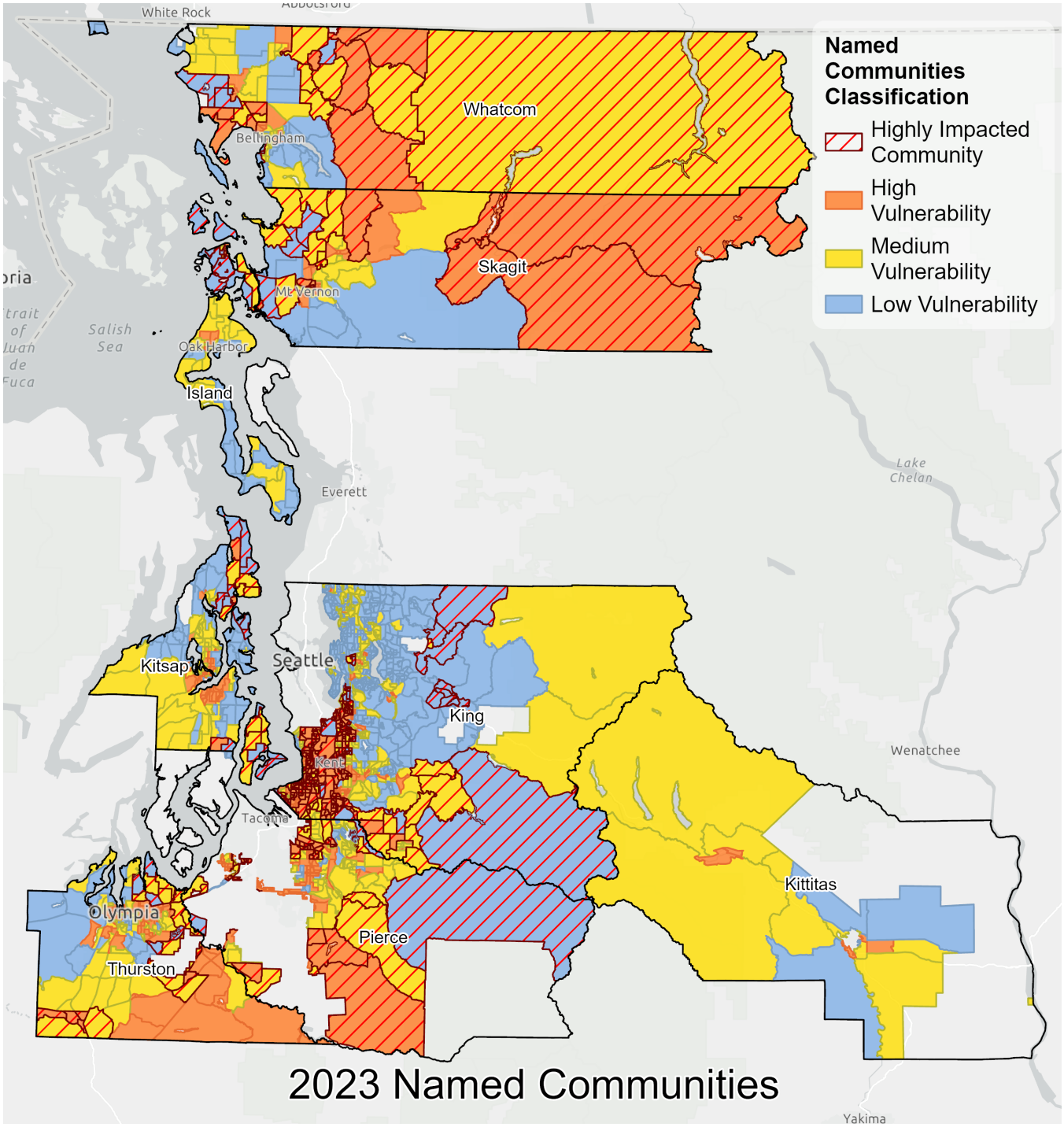
19. PSE also acquired data mapping racially restricted covenants in PSE's electric service area from the University of Washington Civil Rights and Labor History Consortium; however, PSE did not use this data in the cumulative index due to timing and the need for additional evaluation and understanding of the data set.

Figure 3.5: Updates to vulnerable populations in PSE's electric service area[20]



20. This map displays 2010 census block groups, whole or portions, intersecting with PSE's electric service territory. Areas of census block groups extending beyond PSE's electric service territory are not shown.

Figure 3.6: Updated mapping of named communities in PSE's electric service area[21]



21. This map displays 2010 census block groups, whole or portions, intersecting with PSE's electric service territory. Areas of census block groups extending beyond PSE's electric service territory are not shown.

6.1.4. Deepest need

Condition 20 in Order 08 required PSE to develop "a targeting approach to identify the customers and communities with deepest need within the broader category of named communities in consultation with interested persons and advisory groups."[22] To comply with this condition, PSE started with the elements specified in Conditions 9 and 10 and the requirements in Condition 20, while recognizing that the term "deepest need" was not defined in Order 08. Using that information, PSE sought direction from the EAG, met with staff from Front and Centered, the NW Energy Coalition, and their outside consultant, to hear perspectives on how to best define the phrase "deepest need" and integrate the concept into PSE's approach. As discussed in Chapter 4: Public Participation, one of the concerns voiced was to capture neighborhoods of vulnerability. PSE's electric service area tends to be characterized by suburban and some rural areas where there may be small pockets of vulnerability obscured by the larger community.

After review of the literature, PSE discovered no formal definition of the concept "deepest need," although PSE considered research on deep poverty and deep disadvantage as informative, with "deep poverty" defined by the U.S. Census Bureau as living in a household with total cash income that is below fifty percent of the federal poverty threshold. PSE discussed these research findings with the Equity Advisory Group, the Low-Income Advisory Committee, and the Conservation Resource Advisory Group in a joint meeting on August 7, 2023,[23] and asked if there existed other research that PSE should consider in defining the concept of "deepest need." In subsequent conversations, the NW Energy Coalition suggested a threshold of severe energy burden could approximate the deep poverty threshold because the severe energy burden standard aligns with the goal of CETA to reduce energy burden. With that suggestion in mind, PSE agreed it was a reasonable starting point to identify customers and communities with deepest need and then include an analysis of compounding factors affecting those customers and communities.

As detailed in Appendix I: Vulnerable Populations and Deepest Need methodology, PSE used a revised method (i) to identify customers with severe energy burden[24] or 10 percent or more of income allocated to household energy expenses in groups or clusters throughout its service area and (ii) added a second screen of areas with high counts of customers with severe energy burden. This was the first step to identify customers and communities with deepest need.

The second step was to consider non-economic factors in the definition, as suggested during the joint advisory group discussions. Once the group of customers were selected at the severe energy burden

22. See Order 08, infra note 15, Appx. at ¶ 22.
23. See Appendix C: Public Participation for Meeting Summary and Feedback Report for this meeting.
24. Severe Energy Burden is not referenced in CETA as a required threshold, but used by the American Council for an Energy-Efficient Economy. See American Council for an Energy-Efficient Economy, How High Are Household Energy Burdens? An Assessment of National and Metropolitan Energy Burden across the United States (Sept. 2020).

threshold, PSE layered these non-economic, compounding factors identified in the Commission's Order 08, the advisory groups, and interested parties, including areas with:

- Customers with high arrearages
- Higher rates of disconnections
- Higher concentrations of customers renting homes
- Higher populations of customers belonging to Black, Indigenous, People of Color (BIPOC) communities
- Longer commutes
- Limited English
- Poor housing quality
- Rural U.S. Census designation
- Extreme heat risk factors (Climate)
- Extreme heat risk factors (Landscape)
- Human Physical Health vulnerability factors
- Preexisting Medical conditions
- Higher social isolation for older adults
- Higher risk for wildfire
- Intersection with Tribal Land Parcels

Through this process, PSE defined customers and communities with deepest need as those living in areas identified as clusters of severe energy burden and multiple compounding factors hindering the ability to access adequate resources.

Additionally, PSE will integrate a third layer of qualitative information from its engagement teams, consisting of PSE's Community Affairs, Community Outreach, and Local and Governmental Affairs groups, to "ground truth" these factors. The nature of the quantified data is necessarily static for a given period, but the conditions for communities and customers are dynamic. Collectively, PSE's engagement teams maintain and update information as it changes in real time. This element of PSE's deepest need information will provide perspective to incorporate with quantitative data and help prioritize engagement. For example, when there are known conditions at a given site such as a community-based organization's capacity to engage with a given initiative at a given moment that may direct PSE to work at another location or muster additional supportive resources to engage effectively at a given site.

These three layers all inform how PSE identifies and prioritizes engagement with customers and communities in the deepest need. This, in turn, fosters productive engagement in the procedural justice

quadrant to co-create solutions delivering the benefits by tranche of resources as directed by Condition 20.

Table 3.1: Breakdown of PSE residential customers by named communities

All Electric PSE customers	HIC	VP High	Deepest Need*
1,065,508	283,000	342,000	68,000
100%	27%	33%*	6%

** The average may differ slightly based on rounding.*

6.1.5. Disparities analysis in clean energy programs

An essential step in energy equity is the identification of where disparities exist in the clean energy system and examining the underlying causes or factors that may be exacerbating existing disparities. There are numerous definitions of disparity, but many have a common theme. Disparity generally refers to the differences in outcomes and conditions for some groups of people compared to other groups because of unequal treatment or disproportionate access to programs or services.[25] Clean energy system disparities manifest in the lack of access to clean energy resources, technology, or programs and the unequal distribution of benefits and burdens from deploying clean energy resources. The underlying factors creating or exacerbating disparities in the clean energy system are diverse, complex, evolving, and interdependent in nature. They are evident in unequal social, economic, and environmental conditions.[26]

Analyzing disparities in PSE's clean energy programs is integral to the success of PSE's equity initiatives. This analysis could also inform efforts that address procedural and distributional justice, by ensuring that those customer groups experiencing the greatest disparities have input in the design, planning and implementation of programs, and are prioritized in receiving the benefits of the clean energy system. The section below summarizes the findings of a disparity analysis conducted by PSE in energy efficiency.

25. R. Fong, et al. (eds.), Addressing Racial Disproportionality and Disparities in Human Services: Multisystemic Approaches, Columbia University Press (2014).
26. B. Smedley & S. Syme, "Understanding and Reducing Socioeconomic and Racial/Ethnic Disparities in Health," in Promoting Health: Intervention Strategies from Social and Behavioral Research, National Academies Press (US) (2000).

Summary of findings of the disparity analysis — energy efficiency programs, 2022

This disparity analysis aims to articulate and illustrate customer participation in energy efficiency programs among defined named communities for calendar year 2022.[27] In the context of this analysis, PSE defined 'disparity' as a percentage of energy benefits that is lower than the percentage of that community relative to all customers. The following equation illustrates the approach:

$$\frac{\text{Customers in Named Communities}}{\text{Total Customers (Electric Only and Dual Fuel*)}} < \frac{\text{Energy Benefits in Named Communities}}{\text{Energy Benefits}}$$

Tables 3.2 and 3.3 provide a synthesis of the findings. These tables represent a comparison of customers grouped within named communities as it relates to energy benefits, defined as incentives, and MWh savings. Incentives reflect the dollars customers receive for participating in some energy efficiency programs. MWh reflects the energy customers saved through their participation in energy efficiency programming. Energy benefits mirror the percentage of MWh saved, in named communities, through participation in energy efficiency programs. PSE's electric customers studied for this report include the 27 percent of PSE electric customers in highly impacted communities and the 38 percent of PSE electric customers grouped in the high vulnerable population segment.

Table 3.2: Distribution of incentives and energy benefits to highly impacted communities (2022)

HIC	% of Population	Total Incentives Distributed	% of Incentives	Difference in Incentives Distribution	MWhs Distributed (Energy Benefits)	% of Energy Benefits (EBs) Distributed	Difference in EBs Distributed
Yes	27%	15,800,601	32%	5%	71,402	34%	7%
Total	-	48,938,485	-	-	212,713	-	-

Table 3.3: Distribution of incentives and energy benefits to vulnerable populations (2022)

VP	% of Population	Total Incentives Distributed	% of Incentives	Difference in Incentives Distribution	MWhs Distributed (Energy Benefits)	% of Energy Benefits (EBs) Distributed	Difference in EBs Distributed
High	38%	22,528,467	46%	8%	87,034	41%	3%
Total	-	48,938,485	-	-	212,713	-	-

27. The report uses categories of named communities as defined in the 2021 CEIP, prior to the Commission's Order 08, in which PSE received new equity guidelines and conditions.

As seen in Tables 3.2 and 3.3, during the 2022 reporting period:

- Customers in highly impacted communities received 34 percent of energy benefits (7 percentage points above the percentage of the target customer population)
- Customers in highly impacted communities received 32 percent of incentives (5 percentage points above the percentage as the target population)
- Customers in high vulnerable populations received 41 percent of energy benefits (3 percentage points above the population's percentage) were distributed during the same period
- Customers in high vulnerable populations received 46 percent of incentives (8 percentage points above of the percentage of the customer population)

Within named communities, PSE's analysis did not reveal disparities in the distribution of energy benefits (incentives and MWh savings) for the calendar year 2022. The analysis did reveal, however, that a higher percentage of energy benefits (incentives and MWh savings), compared to the overall customer base, were directed to customers in named communities (high vulnerable populations and highly impacted communities).

Considering the scope of vulnerabilities and diverse characteristics of customers in named communities, PSE acknowledges that there still may be systemic barriers or factors that hinder participation in energy efficiency programs. PSE continues to strengthen its design and delivery of programs to help customers in named communities overcome these barriers.[28] Examples of barriers to participation and efforts to mitigate those barriers are illustrated in Table 3.4.[29]

28. For detail about future specific actions by energy efficiency programs that will address barriers to participation by members of named communities, please see the 2024-2025 Biennial Conservation Plan (BCP). The Overview document includes an Equity Focus chapter that describes the team's strategy and tactics. That document also includes a summary of each program, including '" equity focus"' sections within applicable programs that describe how they will support increased participation in named communities.
29. Details of program descriptions and achievements can be found in the 2022 Annual Conservation Plan (ACP).

Table 3.4: Barriers to participation and efforts to mitigate in energy efficiency programming

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

Building on the findings of the disparity analysis, PSE recognizes that addressing these barriers to participation should be a priority, along with directing benefits to customers in named communities. Going forward, PSE will continue to:

1. Refine (or develop) and implement measures to identify and track disparities in the distribution of benefits resulting from participation in clean energy programs
2. Review clean energy programs and participation rates to identify potential barriers to participation within named communities
3. Seek customer and community input in the design and refinement of programs to mitigate disparities or participation barriers
4. Focus efforts to improve access to clean energy programs and direct benefits to target customer groups

6.2. Procedural justice

As stated by order of the Commission in Docket UG-210755,[30] procedural justice involves creating an inclusive and accessible process for the authentic engagement and representation of communities that have been historically excluded or marginalized in the development and implementation of clean energy programs.[31]

PSE recognizes that robust public engagement is needed to ensure community voices are heard and infused throughout the design, implementation, and evaluations of our clean energy programs. To

30. WUTC v. Cascade Natural Gas Corp., Docket UG-210755, Order 09 (Aug. 23, 2022).
31. WUTC v. Cascade Natural Gas Corp., Docket UG-210755, Order 09 (Aug. 23, 2022) at ¶ 56.

further this objective, PSE filed a public participation plan in May 2023.[32] The public participation plan describes a variety of mechanisms (tactics and strategies) for proactively and meaningfully engaging with PSE customers across different geographic and demographic segments.

A priority of the public participation plan is to establish an environment that allows community members/customers within named communities to make meaningful contributions and to share their input or feedback with respect to the development and implementation of clean energy programs. The public participation plan also devises methods and mechanisms for documenting and incorporating communities' feedback and insights into the design, planning and implementation of clean energy programs.

➔ For more details see Chapter 4: Public Participation.

Collectively, PSE acknowledges the importance of understanding the cultural perspectives of diverse customer populations to meet their unique needs. PSE is also aware of power dynamics and recognizes the value and expertise provided through engagement with community-based organizations, advisory bodies, community leaders, interested parties, and our broader customer base. Drawing on the strategic community engagement efforts deployed by PSE's clean energy programs — demand response, distributed energy resources, and energy efficiency — key insights gathered include:

- Customers in named communities are highly diverse, requiring culturally relevant approaches and outreach strategies that resonate with them.
- Building attentive and intentional partnerships with community members, advisory groups, community-based organizations, and community leaders can help establish trust and foster a collaborative environment.
- Consistent and targeted customer education and awareness is crucial to eliminate barriers and illuminate pathways for authentic community engagement and participation.
- Adopting community/customer-centered approaches fosters authentic engagement and is mutually beneficial.
- Customer feedback drives continuous improvements and allows for the design and implementation of programs, products, or services that align with customer expectations.
- Accessible meeting locations, access to technology, translation/interpretation services, flexible timing, and childcare provisions should be taken into consideration to enhance an equitable community participation.

32. Puget Sound Energy, Public Participation Plan Update: Clean Energy Implementation Plan, May 2023 – April 2025, Docket UE-210297 (May 1, 2023)

We continue to prioritize community engagement and will incorporate insights gathered as we design and implement our clean energy programs. Additionally, PSE will continue to evaluate its engagement strategies and tactics for reaching diverse customer groups, especially those in highly impacted communities, vulnerable populations, and communities and customers in deepest need.

6.3. Distributional justice

As stated by order of the Commission in Docket UG-210755,[33] distributional justice is the fair distribution of benefits and burdens across populations. This objective aims to ensure that marginalized and Vulnerable Populations do not receive an inordinate share of the burdens or are denied access to benefits.[34]

Directing the benefits of a clean energy system to communities that have been historically and currently marginalized is at the core of distributional justice. As it relates to the CEIP, the key elements of distributional justice include customer benefit indicators (CBIs) and associated metrics, identifying barriers and burdens across named communities, and the minimum designation of benefits across tranche of resources.

6.3.1. Customer benefit indicators and metrics

To ensure that the benefits of the transition to clean energy are directed to all customers, especially those in named communities, PSE developed eleven CBIs that correlate with the CETA categories in the 2021 CEIP. As discussed in Chapter 6: Customer Benefit Indicators, PSE added two (2) more CBIs as a result of the Commission's conditions in Order 08. PSE developed the initial CBIs through an iterative process in collaboration with its EAG. The CBIs incorporate information on the benefits PSE's customers desire (or expect) in the transition to a clean energy system. These benefits include improved participation in clean energy programs, increased culturally- and linguistically-accessible program communications, reduced greenhouse gas emissions, improved community health, and others.

➔ For more details, please see Chapter 6: Customer Benefit Indicators.

For example, PSE utilized these CBIs and metrics in RFP processes for utility-scale and distributed energy resources. We include equity and customer benefits considerations in each phase of its RFP evaluation process. Bidders or developers may provide an equity and customer benefit plan demonstrating their proposal's alignment with CETA goals, namely energy security and resiliency, energy and non-energy benefits, environment, and public health benefits. In the utility-scale RFP evaluation, PSE graded proposals based on the degree to which the equity and customer benefit plan

33. WUTC v. Cascade Natural Gas Corp., Docket UG-210755, Order 09 (Aug. 23, 2022).
34. Id. at ¶ 56.

addressed one or more of the customer benefit indicator categories. This category carried the highest weight of the six categories in the qualitative portion of the evaluation.

6.3.2. Tracking progress in achieving customer benefits

To track progress most effectively in achieving customer benefits, PSE also established metrics for each CBI. These metrics offer a baseline or reference point against which implemented programs can be evaluated, revised and/or improved. Together, the CBIs and metrics serve as tools to guide PSE in the shaping of programs, actions, and investment decisions. The CBIs and metrics are guiding benchmarks for PSE in tracking and monitoring progress towards advancing distributional justice.

For instance, to evaluate PSE's progress in improving participation of named communities in clean energy programs, PSE will use metrics to track and measure participation rates in energy efficiency, demand response, and distributed energy resource programs for all customers, especially those in highly impacted communities and vulnerable populations. The insights gathered using CBIs and metrics will enable PSE to:

- Identify where disparities or gaps exist in program participation
- Identify significant burdens and barriers (or root factors) that restrict customers from participating in clean energy resources/programs
- Identify and prioritize those communities and customers with the deepest need and/or with significant barriers/burdens to participation

These insights equip PSE to reach those communities and customers in deepest need or with significant barriers/burdens and ensure that they can participate and benefit from the clean energy economy through design programs, resources, and strategies.

6.3.3. Identify barriers and burdens across named communities

In keeping with the principles of distributional justice, PSE is taking steps to identify systemic barriers that may exclude customers in named communities from directly benefiting from the clean energy system. PSE is implementing strategies to mitigate barriers to participation through product design and partnering with community-based organizations and community stakeholders. For instance, through community engagement efforts designed to identify barriers and burdens to participation in DER – Solar programs, the issue of cost was consistently highlighted by customers as the largest barrier throughout the community engagement process. As a result, PSE's product design for Schedule 667 includes additional financial benefits for named communities and service providers to offset the cost of installing customer-owned solar on properties in named communities. An upfront incentive and interconnection allowance, offered to named communities and service providers, is in addition to the credit for energy purchased by PSE that is available to all customers through this tariff schedule.

By implementing strategies that mitigate barriers to participation, PSE is making efforts to direct benefits to customers in named communities, while also reducing disparities in participation/access to

clean energy resources. A reduction in disparities means that PSE is moving towards greater distributional justice.

6.3.4. Minimum designation of energy benefit across tranche of resources

To ensure benefits are directed or flow to customers in named communities, the Commission included Condition 20 in Order 08:[35]

> **CONDITION 20**: Designate for Named Communities a minimum of 30% of the energy benefits of its DER solar, DER storage, DR, and EE programs, with benefits measured across each tranche of resources. PSE will commit to developing a targeting approach to identify the customers and communities with Deepest Need within the broader category of Named Communities in consultation with interested persons and advisory groups. By the 2023 Biennial CEIP Update, PSE will designate a minimum percentage of energy benefits that will flow to Named Communities with Deepest Need.[36]

First, PSE developed a working definition of energy benefits and held joint advisory group meetings and workshops to understand how PSE should interpret energy benefits. PSE initially suggested using MW and MWh, as suggested by NW Energy Coaltion. Members of advisory groups voiced concerns with this approach, in that it does not demonstrate the tangible benefits customers would realize. PSE recognizes the gap between technical terms of MWs and MWhs and the difficulty in translating these technical terms to tangible benefits, like utility bill reduction, emission reductions, etc. Although PSE shows a MW and MWh for energy benefits in the table below, PSE will continue to explore how to illustrate and tie tangible benefits from these programs to the MWs and MWhs.

After defining deepest need and evaluating the existing barriers and challenges of developing programs for communities and customers in the deepest need, PSE developed a minimum designation of energy benefits focused on communities and customers in the deepest need. We designate 2.5 percent as a minimum percentage for the remainder of the CEIP period, achieving the energy benefits in Table 3.5 for communities and customers in deepest need by 2025.

Table 3.5 Distribution of energy benefits by tranche of resources

Tranche of resources	Target by 2025	Named communities (30% by 2025)	Deepest need (2.5% by 2025)
Energy Efficiency	397,620 MWh	104,987 MWh*	3,727 MWh**
Demand Response	86.0 MW	25.8 MW	1.15 MW***
Distributed Solar	80.0 MW	24.0 MW	2.0 MW
Distributed Storage	25.0 MW	7.5 MW	0.6 MW

* Does not include savings from NEEA and Schedule 258

** Reflective of the portion of MWh savings attributable to residential EE programs for existing buildings. See Chapter 5

*** Reflects only programs targeted towards residential customers

35. In the Matter of Puget Sound Energy Clean Energy Implementation Plan Pursuant to WAC 480-100-640, Docket UE-210795, Order 08 (June 6, 2023).
36. See Order 08, infra note 3, Appx. A at ¶ 22.

After developing a strategy for engagement, program design, and implementation as well as gaining a better understanding of the programmatic needs of communities and customers in deepest need, PSE will reexamine this minimum designation for the 2025 CEIP. We acknowledge that we heard from some advisory group members in the joint advisory group meetings that the minimum designation should mirror the percentage of the population in deepest need. If PSE were to take such an approach in this 2022-2025 compliance period, the minimum percentage would be 6 percent.

While PSE aspires to have the energy benefits match the percentage of communities and customers in deepest need at the outset, PSE needs additional time to improve its effectiveness in reaching these communities and customers and designing programs to meet their needs. It is important to acknowledge that PSE has never designated a minimum designation for targeting those communities and customers in deepest need, nor is there any precedent to follow. We will strive to meet this 2.5 percent designation by the end of the 2022-2025 compliance period but also realize that we have a lot of new work to do in this space.

Additionally, PSE heard the joint advisory group discuss the challenges in reaching communities and customers in deepest need, like trust, education, and language barriers. To work through these challenges, we must engage in outreach, target engagement, remove specific barriers in program design, and use lessons learned to develop programs/products specifically for communities and customers in deepest need. This breadth of insight and engagement will require longer than the two years remaining in this 2022-2025 compliance period. Accordingly, PSE will continue to work towards its goal of increasing the minimum percentage in the upcoming 2026-2029 compliance period as PSE builds upon the work being done now to meet the 2.5 percent designation by the end of the 2022-2025 compliance period.

Finally, PSE will continue to make strategic efforts to develop, refine, and implement key elements of distributional justice. This includes, but is not limited to:

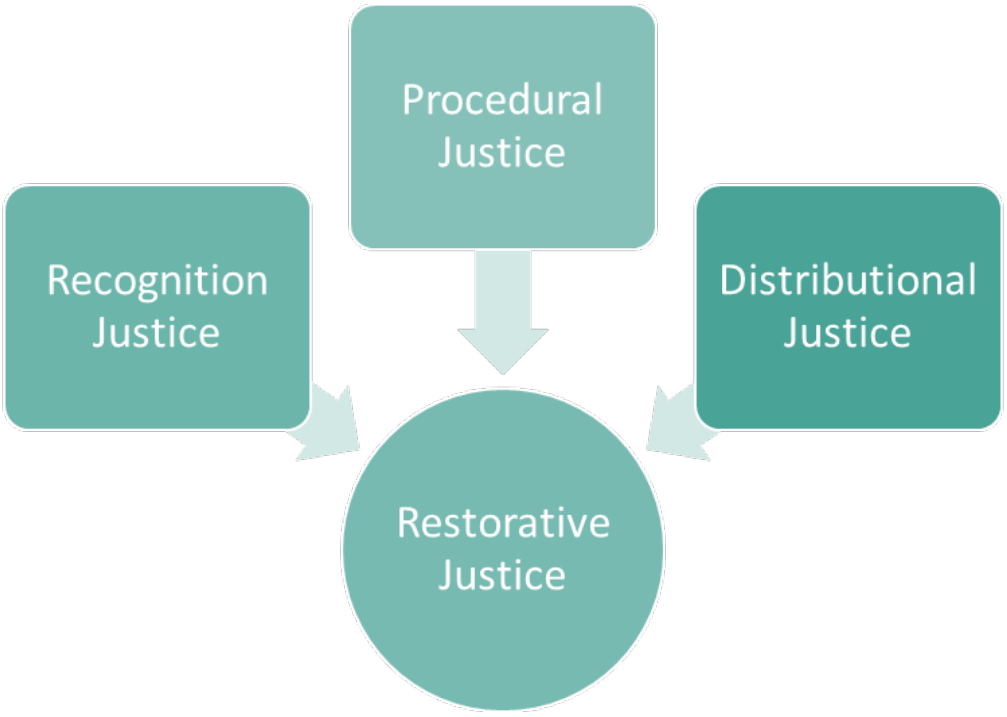
- Refining CBIs and metrics for future CEIPs focusing on CBIs within PSE's control
- Identifying barriers and burdens experienced by customers in named communities, including communities and customers in deepest need
- Identifying PSE's actions through its CEIP that could potentially eliminate barriers and promote the equitable distribution of benefits
- Developing robust outreach strategies and inclusive practices for soliciting feedback from customers on how best to equitably direct or distribute benefits to address their needs
- Monitoring and tracking progress in meeting customers' expectations and needs
- Exploring methods to translate MW and MWh metrics into tangible benefits for communities and customers in the deepest need

6.4. Restorative justice

As described by the Commission order in Docket UG-210755,[37] restorative justice uses regulatory government organizations or other interventions to disrupt and address distributional, recognition, or procedural injustices, and to correct them through laws, rules, policies, orders, and practices.[38]

To advance restorative justice, PSE envisions a synthesized or integrated approach, as demonstrated in Figure 3.7 below. This approach is built on the three core tenets of energy justice — recognition, procedural, and distributional justice. Efforts to address recognition justice (identifying customer groups that have been excluded from the clean energy system) set up the context to advance procedural justice (by ensuring that these customer groups can meaningfully participate in the design, planning and implementation of clean energy programs) and distributional justice (by ensuring that they are prioritized to receive the benefits of the clean energy system).

Figure 3.7: An integrated approach to restorative justice



Altogether these efforts seek to advance restorative justice — mitigating past inequities and directing energy and non-energy benefits to all customers, especially those in named communities.

37. WUTC v. Cascade Natural Gas Corp., Docket UG-210755, Order 09 (Aug. 23, 2022).
38. Id. at ¶ 56.

7. Conclusion

In summary, PSE has made, and continues to make, meaningful efforts to ensure that energy equity is at the center of the planning, designing, and implementation of clean energy programs and resources. These efforts are ongoing and iterative and are discussed throughout this Biennial Update. The strategies and best practices for incorporating equity in the CEIP processes include the Equity Guidance Tool and the Equity Assessment Framework. They are consistent with PSE's overall vision, strategy, and framework for energy equity.

PUBLIC PARTICIPATION
CHAPTER FOUR

PSE PUGET SOUND ENERGY

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1. Introduction

Puget Sound Energy (PSE) continues its work through a procedural justice lens to ensure new and diverse voices are part of the clean energy transition. Table 4.1 highlights engagement efforts across our organization as we work to identify and proactively engage customers in clean energy planning and decision-making, particularly in named communities, partner with community-based organizations, create channels for communications through program design and implementation, and measure and report progress. We detailed our approach to public participation in our original public participation plan filed with the 2021 Clean Energy Implementation Plan (CEIP)[1] and updated on May 1, 2023.[2]

Table 4.1: Summary of key engagement activities (January 2021 – October 2023)

Track	Advisory groups	Organizations that serve named communities	Surveys	Events in named communities
• 2023 Biennial CEIP Update	• 7 Equity Advisory Group • 4 Conservation Resource Advisory Group • 4 Low Income Advisory Committee	• 21 interviews	• ~70k recipients, 2,941 responses	• 2 Equity Forums • 4 co-staff festivals / farmers markets • 2 equity focused conferences
• Customer engagement	• 2 Equity Advisory Group	• 3 site visits	• 3,181 recipients, 1,311 responses	• 172 events attended • 4,283 in-person interactions
• Program design and delivery	• 4 Equity Advisory Group	• 61 participants in one or more calls, interviews, focus groups, or workshops	• 825 recipients, 202 responses	• N/A

2. Public participation objectives and tactics

Puget Sound Energy recognizes that working with customers with an emphasis on engaging those in named communities[3] is integral to the success of PSE's CEIP and an equitable clean energy transition. Following completion of the 2021 CEIP and recognizing this need for sustained participation, we implemented engagement in three distinct tracks with a focus on meeting customers where they are and engaging deeply: CEIP development and updates; customer engagement; and program design

1. 2021 CEIP, Chapter 6
2. 2023 Public Participation Plan Update
3. 2021 CEIP, Chapter 3

and delivery. We describe these tracks and their related objectives in sections 2.1 through 2.3 and included additional details in the 2023 Public Participation Plan Update.

2.1. 2023 Biennial Update

Following issuance of Commission Order 08 in June 2023, PSE focused engagement on critical elements needed to inform this update. Our objectives focused in the following areas:

- Creating spaces for and gathering feedback needed to define deepest need and a related minimum designation, per Commission Order 08, Condition 20[4]
- Further exploring barriers and burdens faced by highly impacted communities and vulnerable populations
- Advancing discussions related to three conceptual customer benefit indicators (CBIs) identified in the 2021 CEIP (see Chapter 6: Customer Benefit Indicators)[5]
- Strengthening relationships with organizations that serve customers within highly impacted communities and vulnerable populations

2.2. Customer engagement

As a provider of an essential service — light, heat and power — it is critical that we engage with our customers and communities in a variety of ways — from how we promote our products to meet the needs of all customers, to communicating with them regarding our infrastructure projects, to supporting nonprofits and organizations that keep our communities strong and help those most in need. This Section 2.2 describes the various ways we engage with customers related to clean energy and lists examples of how we are evolving approaches through a lens of procedural justice to engage directly with customers in named communities.

2.2.1. Outreach

An inclusive outreach strategy for engagement with customers is critical to the advancement of our clean energy efforts. Since 2022, we enhanced engagement with our customers in named communities to promote products and services that benefit these customers. Usually this starts with understanding customer bills and the products/programs that can help them save money.

Highlights include:

- Implementing a focused effort to deliver over 150 outreach activities in support of the Bill Discount Rate program[6] launch to share information with customers and local service providers. The effort includes workshops at libraries, food banks, health clinics, senior centers, immigrant assistance centers, veteran resource centers and other community organizations in multiple

4. Docket UE-210795 Final Order 8, Condition 20, (2023) pg. 75
5. 2021 CEIP, Chapter 6, pg. 218
6. PSE | Bill Discount Rate

languages to provide one-on-one assistance to customers in named communities. As community organization staff have been trained by PSE teams, they have also been able to assist customers with the application process for the Bill Discount Rate program, some indicating that it will be their top priority during the heating season.

- Working with women transitioning out of homelessness to understand their bill and how to manage energy usage
- Engaging with Spanish-speaking and Mixteco-speaking farmworkers in Skagit county to sign up for bill assistance and energy efficiency programs
- Working with the Nisqually Tribe to:
    - Understand their clean energy goals
    - Provide energy assessments and upgrades for more efficient lighting in eight tribal community buildings
    - Create connection to an electric vehicle concierge service to assess their EV opportunities
    - Discuss additional opportunities for clean energy partnerships, including the Tribe's solar for all initiative to help tribal members transition to lower-impact energy solutions.
- Delivering workshops to veterans, train the trainer sessions for caseworkers serving refugees, and partnering with meal delivery organizations to share information relevant to their clients
- Partnering with International Korean American Grocers Association to share small to medium business energy efficiency rebate programs, commercial renewables and EV opportunities, reaching 800+ businesses in language

2.2.2. Education

The CEIP Customer Education and Awareness Program (CCEAP) is a direct outcome of feedback from the Equity Advisory Group (EAG) and one of PSE's procedural justice initiatives. PSE designed the CCEAP to address historical and current barriers to accessing clean energy information, build trust, and drive authentic community engagement. This program focuses on communities historically and/or currently underrepresented in the clean energy system. This program aims to reduce existing disparities and paves the way to advance procedural and distributional energy justice – by providing education specifically for named communities and communities facing language access barriers about the clean energy transition.

Since early 2023, when the program began, we have completed the following actions:

- Sought and incorporated feedback and insights from the EAG to shape our audience segmentation approaches and priorities
- Finalized our named communities audience focus through analyzing the intersectionality and layered disparities among named communities to increase education and awareness of a clean energy future
- Conducted baseline research to understand the level of clean energy awareness, clean energy literacy, perceived benefits and values of clean energy, and sense of pride and trust among these audiences as well as their trusted sources for information

- Engaged with various entities whose work focuses on engaging customers in named communities to learn from their expertise and guidance

2.2.3. Promotions and events

Through customer promotions and community events, PSE seeks to expand access to and reduce barriers for customers to learn about PSE's clean energy efforts, so that customers can participate in and benefit from clean energy programs and products at their homes or businesses. This includes developing culturally-sensitive promotional materials, campaigns, content and event experiences, using transcreation and trusted community partners to support our in-language customer engagement efforts, and applying targeted, relevant communications to reach income-qualified customers when we they need support.

Highlights include:

- Developing in-language communications and promotional campaigns for a variety of PSE's programs and products to reach customers in their spoken languages, including Spanish, Chinese (simplified), Korean, Vietnamese, Hindi, Russian and Ukrainian; engagements include direct mail, radio and digital advertising, print materials, email, social media, search engine marketing, media engagement, video and web content, partnering with community influencers and institutions to help build trust within communities, and events at community cultural festivals featuring multilingual staffers, in-language collateral and booth experiences
- Hosting cultural-sensitivity listening sessions with customers, to gather feedback on PSE's creative materials, to help ensure our materials resonate with, feel inclusive of and represent all customers
- Launching a translation/language localization tool on pse.com, offering most of the website's content in Spanish, Chinese (simplified) characters, Russian, Vietnamese, Korean and Hindi
- Incorporating live in-language interpretation for virtual webinar events in Spanish, Vietnamese and Chinese (simplified), including our “Ask An Expert” events, which invited customers to learn about payment assistance programs, ways to lower their monthly bill and make their homes more energy efficient at low- or no-cost

2.2.4. Partnering

Through all our work, we aim to create and maintain local, long-term, transformational relationships for the benefit of the community and PSE. Equity serves as the foundation of our partnerships, ensuring that any monetary contributions or resources we invest into the community go to organizations addressing a significant community need and are guided by equitable principles.

Since 2021, we have reviewed historical partnerships to ensure our local contributions are directly reaching underserved communities. We have attended hundreds of community events throughout our service territory in a continual effort to build relationships with hundreds of community-based organizations (CBOs) and their ongoing, mission-based work. These trusted, reciprocal relationships

advance both the mission of the organization from our investment and the work of PSE reaching our 2030 clean energy goals.

We continually work to establish reciprocal relationships that honor the mission of our community partners, while identifying the prime access points and opportunities for PSE collaboration.

Our staff has enabled numerous equity-focused engagements with our community partners, such as:

- Connecting nonprofits to our Customer Outreach team to provide products and services that reach named communities with organizations such as SeaMar Community Health Centers (region-wide), WWU Foundation (Whatcom, student population), and Island Senior Resources (senior, limited income population)
- Identifying and connecting organizations such as HomesNow (Thurston) and Lighthouse Mission (Whatcom) as eligible partners for the Transportation Electrification Phase 1 Fleet Electrification programs
- Supporting education and workforce development through partnerships with community college foundations providing scholarships to undeserved student populations
- Conducting in-depth clean energy transformation interviews with organizations such as Fishline (Kitsap), Oak Harbor Senior Center (Island), Boys & Girls Club of Skagit County (Skagit), and Habitat for Humanity Whatcom County (Whatcom)
- Working alongside PSE's Customer Energy Management team to build a public participation approach reaching named communities with active community partnerships
- Providing community feedback to PSE's Customer Care team about conversations with local Community Action Partnership agencies around assistance access and customer needs

2.2.5. Project delivery

Infrastructure projects can have significant and lasting community impacts, and it is important to ensure communities are informed and have opportunities to provide input into our project planning efforts. In 2023, PSE developed a framework for equitable communications and community engagement for infrastructure projects. This framework documents expectations and best practices for engaging with customers in named communities. To supplement the framework and ensure consistent application of best practices across PSE, we are also developing a "how to" guide to help with the tactical application of the framework.

Examples of the components of the framework document include:

- Developing communications and community engagement plans based on the unique community, using research from the Customer Insights team and trusted external sources like the US. Environmental Protection Agency's environmental justice (EJ) mapping and screening tool (EJScreen)
- Based on local demographics, translating written materials and/or offering interpretation services at events, having both online and printed materials, etc.

- Partnering with internal teams to connect with community-based organizations providing support to customers in named communities in a given project area. Often, these trusted community partners can provide input into our community engagement plans and share project information with their clients
- An increased emphasis on using in-person tools like door-to-door and tabling events to meet customers and community members where they are
- Proactively including language on engagement materials inviting those who may have barriers to participation to reach out to discuss accommodations

2.3. Program design and delivery

Programs and services are one of the primary ways we engage with all customers. There is opportunity to engage customers at multiple points from ideation and design of new programs, to implementation and rollout, to enrollment, and beyond as we evaluate the effectiveness of our engagement work. The following examples offer insights into how PSE is engaging customers, particularly those in named communities, in the design of programs and services.

➔ For more information on our efforts to promote these programs to customers, please see Chapter 5: Specific Actions.

2.3.1. Distributed energy resources including demand response

Puget Sound Energy is increasing procedural justice in its product design by inviting customers in named communities and their service providers to have a seat at the design table. From September 2022 through May 2023, PSE conducted community engagement on future distributed energy resource (DER) products, including batteries, solar and demand response (DR).

We engaged over 300 residents in named communities and 61 agencies, municipalities, organizations, and tribal entities who serve named community residents in focus groups, workshops, and surveys to hear from them directly about the benefits and barriers customers face when it comes to DER products, and how future product design can alleviate these barriers and maximize the desired benefits.

For more details on the outcomes of this work please see section 3.2.3 and the full DER Community Engagement Report.[7]

2.3.2. Delivery system planning / Maple Valley

Puget Sound Energy piloted a customer engagement framework to better understand the impacts and customer energy burdens from power outages in the Maple Valley / Lake Youngs area. PSE solicited customer input from approximately 200 customers in this named community utilizing surveys,

7. 2023 Distributed Energy Resources Community Engagement Summary

postcards, and one-on-one conversations to inform project needs and solutions for a distribution system reliability project. PSE will use this customer engagement framework to inform the delivery system planning process and help identify ways customer input can provide an equitable distribution of benefits to named communities.

3. Public participation approaches and metrics

As described in the 2021 Public Participation Plan and its 2023 update, PSE uses a range of approaches to ensure diverse and thoughtful engagement. The following outlines some key approaches and the metrics used to measure progress.

3.1. Advisory bodies

Advisory bodies, which include the EAG, Low Income Advisory Committee (LIAC), Conservation Resource Advisory Group (CRAG), and interested parties that engage in the Integrated Resource Planning processes, are fundamental to our progress towards an equitable transition to clean energy. Consistent with the approach in 2021, PSE engaged each of these advisory bodies in topics related to the Biennial Update.

3.1.1. Equity Advisory Group

Following submittal of the 2021 CEIP and through 2023, PSE collaborated with the EAG on a diverse range of topics. The following describes key engagement topics and milestones.

➔ Appendix C: Public Participation includes a full list of members, meeting dates and objectives, and comments from EAG members and associated PSE responses.

Steering committee

In 2022, the EAG recommended forming a steering committee to provide flexible leadership and help shape discussion topics and approaches. Recognizing the need for better collaboration, PSE worked closely with members of the EAG to form the steering committee, which consists of self-selected members who meet monthly and inform agenda topics, engagement strategies, and make recommendations to the full EAG.

New member recruitment

Members of the EAG serve multi-year terms with terms ending in April. Members may elect to renew their terms or step away. As a result, PSE must recruit, select, and set new members each year. Beginning with the 2022 recruitment cycle, PSE collaborated with existing EAG members to assist with applicant outreach, interview applicants and offer new memberships. During both the 2022 and 2023 cycles, a self-identified EAG member participated in prospective member interviews and selection. It is

our intent to include EAG members in this process in the 2024 cycle and beyond with a goal of continual improvement of the recruitment process.

Infrastructure Investment and Jobs Act

In late 2022 and early 2023, PSE identified opportunities to seek infrastructure grants through the Infrastructure Investment and Jobs Act. The EAG collaborated with PSE to draft and collectively endorse a letter of support for PSE's applications. In that letter the EAG recognized PSE's efforts to address affordability, accessibility, and accountability for named communities through PSE's applications for Grid Resilience Grants and Smart Grid Grants under DE-FOA-0002740 established by the Bipartisan Infrastructure Law (BIL).

Climate Commitment Act

In February 2023, PSE invited EAG members to join a group of interested parties to discuss the Climate Commitment Act (CCA)[8] implementation for PSE. In 2021, the Washington State Legislature passed the CCA, which creates a market-based program (called the "cap-and-invest" program) to limit and reduce greenhouse gas emissions. This new program puts a price on greenhouse gas emissions emitted in the state and increases the cost to deliver electricity and natural gas to our customers.

PSE took a proactive approach to engaging with eleven interested Parties, including the EAG, on a multitude of complex CCA implementation issues over four months from February through May 2023 in advance of filing a proposed natural gas tariff (on June 9, 2023, in Docket UG-230470). The proposed tariff would allow PSE to recover partial 2023 allowance (compliance instruments) costs and pass back auction proceeds mandated under the CCA. Four members of the EAG joined the engagement and provided valuable feedback.

PSE appreciated the active, engaged, and respectful participation by the interested Parties through all the workshops, and PSE stressed the importance of their feedback to help identify common ground and creative solutions for implementation pathways that would respect all voices. In the proposed gas CCA tariff filing, PSE incorporated key feedback received from interested Parties, such as proposing to recover only partial 2023 allowance costs in order to mitigate potential large bill impacts to customers.

The Commission approved the proposed tariff in August 2023, stating as follows in the final order:

> The proposed tariff schedule, which addresses highly complex issues under the CCA, is the first of its kind. As CCA markets and implementation continue to develop, the tariff will correspondingly require further development.[9]

PSE will continue to work with interested Parties, including the EAG who bring the crucial equity lens, to tackle various outstanding CCA implementation issues.

8. Climate Commitment Act
9. UG-230470 Order 01 (Aug. 3, 2023) at p. 6.

Green Power Solar Grant

Historically, an internal PSE team evaluated Green Power Solar Grant (GPSG) applications. To increase procedural justice and bring community voices into funding decisions, PSE invited two Equity Advisory Group members to participate in the review panel for the 2022-2023 funding round and score applicants alongside PSE staff. These members of the EAG also suggested improvements to the GPSG program and PSE is working to implement a number of those suggestions, including giving further consideration to community impacts in the application review criteria and providing grant-writing support for applicants. PSE will invite EAG members to participate in the review panel for the upcoming 2023-2024 funding round of the GPSGs.

Equity Forum

In late 2022, PSE and the EAG formed an Equity Forum Planning Committee (EFPC) to collaborate on the design and execution of a first of its kind Equity Forum. The EFPC met regularly to design this event and identified the following goals:

- Explain what the EAG is and what members have been working on to consider equity with clean energy opportunities
- Learn about the challenges communities face in the Puget Sound region
- Brainstorm opportunities to collaborate and address challenges related to PSE's areas of influence
- Understand different people's definitions of and perspectives regarding "equity"
- Build relationships and networks between event participants

Initially described as a convening of equity-minded individuals, PSE and the members co-created two forums, inviting colleagues and peers from throughout the Puget Sound region to meet, enjoy a meal, and share their collective experiences. The forums were held in Mount Vernon (on September 16, 2023) and Renton (on September 23, 2023).

Participants shared from their collective lived experience working in and with customers in named communities. These conversations identified and reinforced known barriers such as lack of trust, language, and lack of resources, time, and stability. Participants then identified a range of key strategies that PSE could use to address some of these barriers. As of this filing PSE is still identifying next steps, but the collaboration and outcomes exceeded PSE's expectations. Additionally, PSE believes this format was well received by participants and offers a potential model for future regional engagements.

Organizations participating in the Equity Forums included:

- Asia Pacific Cultural Center
- Boys & Girls Clubs of Skagit County
- Brigid Collins Family Support Center Team
- Catholic Community Services Farmworker Center

- Chinese Information and Service Center (CISC)
- City of Snoqualmie
- Commission staff
- Community Harm Reduction Volunteer
- Community Member
- El Centro De La Raza
- Emerald Cities Collaborative
- HealthPoint
- Immigrant Resources & Immediate Support
- Immigrant Resources & Immediate Support
- Indivisible Skagit
- Iraqi Community Center Of Washington
- King County Library System
- Latino Civic Alliance
- Lydia Place
- Mt. Baker Planned Parenthood
- New Chapter Weddings
- Newcastle City Council
- Northwest Agriculture Business Center
- Northwest Youth Services
- Parents as Teachers Program
- Patriot Fire Protection
- Peer Kent
- Rural Unincorporated Area Community Member
- Skagit Chapter - Citizens' Climate Education/Citizens' Climate Lobby
- Skagit Chapter Citizen’s Climate Lobby
- Skagit Legal Aid
- Skagit Valley Clean Energy Coop
- Triumph Teen Life Center
- Unkitawa
- UTOPIA Washington
- Whatcom County Health and Community Services, Syringe Exchange Program
- World Relief Western Washington

3.2. Other advisory bodies and joint engagement

Since the 2021 CEIP filing, PSE has engaged with our advisory groups — the Low-Income Advisory Committee (LIAC), Conservation Resource Advisory Group (CRAG), and interested parties in the Integrated Resource Plan processes, to seek their input on key topics. These advisory groups have a long history with PSE and deep experience in low-income programs, energy efficiency, and resource planning. As we worked with the advisory groups, we sought to join them in their existing meetings when possible. The following summarizes key topics discussed with these advisory bodies.

➔ Appendix C: Public Participation includes a list of meetings, dates, and objectives.

3.2.1. Portfolio benefits analysis

In 2023, we expanded the 2021 Integrated Resource Plan (IRP) approach to building a preferred portfolio to include a portfolio benefit analysis using customer benefit indicators (CBIs) developed for the 2021 CEIP with extensive input from the EAG and Integrated Resource Plan interested parties. Our goal in using customer benefit indicators (CBIs) was to identify a preferred portfolio that balances customer benefits with portfolio costs while reducing burdens to vulnerable populations and highly impacted communities. We first developed this approach in fall 2021 and hosted three joint workshops with EAG and interested parties to the Integrated Resource Plan to refine that tool before its use in the 2023 Electric Progress Report. That collaboration led to an improved preferred alternative in the Report and also provided insights into the value of this type of joint collaboration for future topics.

3.2.2. Defining deepest need and related minimum designation

In response to Condition 20 of Order 08, PSE began a collaborative effort in the summer of 2023 to develop a definition for customers with deepest need and a related minimum designation. PSE first initiated conversations with key interested parties, Northwest Energy Coalition and Front and Centered. These discussions helped PSE develop a framework for ongoing dialogue and collaboration in a compressed timeline.

We then hosted, for the first time, a joint meeting with the CRAG, LIAC, and EAG on Aug. 18, 2023 to introduce the deepest need concept to members and begin collecting feedback on elements of the definition. Members of the advisory groups provided a wide range of ideas and concepts to consider but several key themes emerged:

1. Low-income customers with high energy burden should be the starting point for developing a definition
2. Intersectionality and compounding factors in addition to economics should be considered
3. Energy benefits (megawatts and megawatt hours) need to be connected to non-energy benefits to ensure customers are seeing benefits “on the ground”

These conversations continued with two joint work sessions (August 12 and 23, 2023) and a final joint meeting on Sept. 18, 2023. During this time, PSE also participated in additional discussions with NW Energy Coalition and Front and Centered, and their outside consultant, to further collaborate on this critical definition. NW Energy Coalition and Front and Centered presented a recommendation on defining deepest need by layering the following:

1. From vulnerable populations, select customers at or below 100% Federal poverty level
2. Select customers with high energy burden
3. Select customers with high arrearages (both depth and breadth)
4. Select customers with high rates/clusters of disconnections

Building upon this approach, PSE, and advisory group members recommended adding non-economic factors to the definition of deepest need. These engagement efforts resulted in a shared definition for deepest need (see Chapter 3: Equity for additional details) and served as a model for future collaboration with interested parties and advisory bodies.

➔ Feedback heard in these and other advisory group meetings can be found in Appendix C: Public Participation.

3.3. Engagement with communities, customers, and organizations

This section 3.3 summarizes how we have engaged with communities, customers, and organizations directly with a focus on the core clean energy tracks described above.

3.3.1. Biennial Update

From July to October 2023, PSE's Clean Energy Strategy team initiated conversations with community partners to hear about community interests, values, and barriers to accessing clean energy. Community organizations provided valuable insights on the different barriers and benefits communities could experience in this transition. Conversations with members of highly impacted communities and vulnerable populations shed light on their unique needs and challenges; including opportunities for PSE to help address them. By meeting these communities "where they are", these engagement efforts contributed to PSE's goal to reach more customers within named communities.

Puget Sound Energy coordinated engagements to leverage existing relationships and develop newly engaged community partners throughout PSE's electric service area. By building on past work with community organizations and other partners, we reached out to 35 organizations, and successfully met with 21 (Table 4.2).

These community organizations represented named communities throughout the region including BIPOC, youth, senior, immigrant/refugee, low-income, rural agricultural, at-risk of homelessness, and

LGBTQIA+ populations. Organizations included Green Power Solar Grant recipients, Equity Advisory Group member organizations, those engaged during the 2021 CEIP processes and others.

Conversations with community organizations were open-ended listening sessions adapted to meet the community partner's awareness of the clean energy transition and their interests and expertise.

Example questions included:

1. What are the biggest barriers facing the communities you serve/your organization?
2. What questions do you have regarding clean energy, PSE's clean energy transition and how it impacts your community?
3. What clean energy technologies (solar panels/community solar, electric vehicles, smart appliances etc.) would you find most beneficial to your organization and community? Why?
4. How would you suggest we continue to engage with you and customers in your community?

Table 4.2: Community organizations participating in interviews (summer and fall 2023)

Organization	County
Asia Pacific Cultural Center	Pierce
Boys and Girls Club of Skagit County	Skagit
Citizens Climate Lobby Skagit	Skagit
Community Action of Skagit County	Skagit
Emerald Cities Collaborative	King
Ferndale Food Bank	Whatcom
Fishline Food Bank	Kitsap
Habitat for Humanity Whatcom	Whatcom
Helping Link	King, Pierce, Snohomish
Kandelia	King
Kiwanis	King
Rainbow Center	Pierce
RE Sources	Whatcom, Skagit
Senior Center in Oak Harbor	Island
NAACP- Bremerton	Kitsap
Skagit Valley Clean Energy Cooperative	Skagit
Thurston County Food Bank	Pierce
Transition Fidalgo	Skagit
UTOPIA	King
Western Washington Agriculture Association	Skagit
Whidbey Camano Land Trust	Island

Community organizations emphasized that customers most vulnerable to cost increases are also the most at risk of being left behind in the clean energy transition. Renters or customers at risk of homelessness find it difficult to take ownership of their energy decisions due to program restrictions or navigating property-owner relationships. Additionally, without a baseline understanding of and

education on clean energy, underserved customers will continue to question their part in the transition. Therefore, PSE is focusing on further expanding clean energy education through teams such as the CCEAP and investing in programs supporting those in named communities.

Energy resiliency was identified as one of the greatest benefits for communities at risk of climate change and natural disasters. In areas of rural Skagit and Whatcom counties, many customers in named communities are at risk of experiencing compounding barriers and burdens. Therefore, clean energy was seen as a desirable alternative to reduce the increasing threat of climate change induced natural disasters. However, with many rural communities facing uncertainty, community partners were concerned that the transition would force customers to give up gas, wood, generators, and propane as energy options.

In addition, feedback from urban areas stated that gentrification and decreased post-pandemic funding have constricted the work that community partners can accomplish. To accommodate the needs and challenges of these customers, some organizations proposed that PSE hire more energy advisors and staff to handle increasing climate impacts and clean energy demands.

Next steps with many of these community organizations include furthering their partnership with PSE through consistent communication, engagement, and trust building. Many expressed interest in hosting PSE for multilingual workshops, information sessions, tabling events, resource sharing, and bill assistance application with a holistic approach. Additionally, community partners highlighted the importance of culturally sensitive information and resources that build customer's understanding and comfort with PSE and clean energy. These trusted community partners will be instrumental in helping PSE reach our clean energy goals.

3.3.2. Customer education listening sessions

The CCEAP team reached out to community organizations that serve customers in named communities and communities facing language access barriers about their experiences in successfully and meaningfully serving their communities. We sought their knowledge on how to build trust with communities, how to develop co-created community content and experiences, best practices from their experiences, a better understanding of challenges and barriers their communities are facing, and successful engagement approaches. The information we gathered from these organizations has helped shape our guiding principles, our understanding of our audiences, and our program's engagement model. In the future, we hope to be able to continue learning from CBOs with on the ground experience in the named communities we serve.

Program design

Through interviews, focus groups, workshops, and surveys focused on DR, solar, and battery products, participants identified the following common themes of feedback:

Cost

Upfront costs associated with asset procurement and installation, along with the ongoing cost of maintenance, were consistently highlighted as the largest barriers across all DER products, and for all customer segments. While suggestions to alleviate the barriers were unique among the three products, there was a clear request for financial incentives that substantially offset or entirely remove the financial costs customers may encounter when participating in DER products. Participants also preferred these incentives be applied instantly so that customers do not need to manage lengthy rebate processes that exacerbate their cash flow issues.

Installation and maintenance support

The installation and maintenance associated with DER implementation can feel daunting to customers. To facilitate adoption of DERs, PSE will need to be prepared with tailored, holistic, and hands-on installation and maintenance support for the customers who request it.

Flexibility of products

While similar themes emerged across many engagements, it also became clear how diverse each customer's needs and interests could be. The final products PSE designs must be flexible enough to alleviate the nuanced challenges each customer will face based on their size, geographic location, the services they provide, and whether they rent or own their property.

PSE-owned and customer-owned options

Engagement participants differed on their preference for renting versus owning assets, like solar panels. Those who preferred PSE-owned options articulated an inability to afford the associated equipment, installation, and maintenance costs. Those who preferred customer-owned options typically valued the autonomy and control of ownership. Similar to the flexibility theme, PSE should provide both options to meet diverse customer preferences.

Strong motivation to participate in Distributed Energy Resources

While certain DERs are a better fit for some customers, participants indicated across all engagements a strong interest in participating in future DER products. Participants highlighted the importance of energy independence, community or personal energy resilience, and reduction in energy bills as the benefits that will most motivate them to participate in DER products.

Education and outreach

While participants expressed a strong motivation to participate in DERs, there are many education and outreach gaps left to fill. The existing knowledge gap often translates into skepticism about whether DERs can deliver on the promised benefits. Participants wanted answers to foundational questions about costs, environmental impacts, and community benefits to help them make informed decisions

about product participation. Participants suggested PSE partner with CBOs and utilize their deep, existing community relationships to educate customers.

For more details, please see the DER Community Engagement Report.[10]

3.4. Online surveys

In 2023, PSE hosted online surveys via the Clean Energy Strategy and CCEAP team to gain a wider knowledge of the barriers and burdens that affect customers' ability to benefit from clean energy. Through these surveys we hope to measure changes since the 2021 CEIP related to clean energy knowledge as well as how feedback may have evolved over time.

3.4.1. Biennial Update

In 2021, PSE hosted an online survey to better understand customer general interests and challenges with the hope of identifying opportunities to address these issues through clean energy program design and implementation. For this Biennial Update, PSE repeated a subset of these questions to understand how feedback may have evolved over time.

In this most recent survey, PSE collected more than 2,562 responses from residential customers, and 385 from business customers. This is an increase of about 1,700 survey responses compared to the survey in 2021. The community survey was informal and aimed to reach PSE's electric customers and community members, including the perspectives of low-income populations, Black, Indigenous, People of Color (BIPOC), and community members who speak English as a second language.

Part of the purpose of this effort was to comparatively understand our ability to engage directly with these communities via online survey. The percentage of responses collected from people who reported speaking a language other than English at home doubled from 9 percent in 2021 to 22 percent in 2023. Additionally, the percentage of responses collected from people who identified as a race/ethnicity other than white tripled, from 12 percent in 2021 to 36 percent in 2023.

While the demographic data and following survey results are not scientific and are not predictive of the opinions of PSE customers or people in PSE's service area, they do provide insights and valuable information to guide work going forward.

Customer challenges

The top challenges that residential respondents selected in 2023 were similar compared to those identified in 2021 (Table 4.3). High cost of living and affordable housing were the top two challenges in both years, and a higher percentage of respondents selected these challenges in 2023. Climate change remained the third most selected challenge, but other environmental concerns dropped below health

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care and homelessness in priority rankings. Access to jobs and education remained the least selected challenges.

Table 4.3: Most significant challenges in residential customers

Option	2021	2023
High cost of living, including energy costs	60% (2)	80% (1)
Affordable housing	64% (1)	67% (2)
Climate change	54% (3)	36% (3)
Homelessness	37% (5)	35%(4)
Healthcare	36% (6)	35% (4)
Environmental pollution – air, water, noise	41% (4)	28% (6)
Access to jobs	16% (7)	13% (7)
Education	12% (8)	12% (8)
Other	10% (9)	7% (9)

Similarly, business customers were most focused on high costs and affordability (Table 5.4). Note: the choices for business customer survey were modified in 2023 to be more consistent with the residential customer survey.

Table 4.4: Most significant challenges for business customers

Option	2021	2023
High cost of living/overhead - including energy	49% (1)	78% (1)
Affordable housing/business space	14% (9)	32% (2)
Healthcare	12% (11)	30% (3)
Homelessness	16% (9)	21% (4)
Environmental pollution – air, water, noise	18% (8)	19% (5)
Climate change	19% (7)	18% (6)
Education	12% (12)	11% (7)
Access to jobs/job market	25% (6)	10% (8)
Other	10% (13)	17% (9)

Climate change

When asked specifically about climate change, residential customers rated their concern for climate change to be on average one point lower in 2023 compared to 2021. This is consistent with the previous question's findings that customers in 2023 placed more emphasis on cost of living and other immediate needs than they did previously in 2021.

Clean energy benefits

When asked about the types of clean energy benefits, both residential and business customers continue to show most interest in benefits that reduce the amount they pay on energy bills, reduce climate change impacts, and reduce dependence on fossil fuels (Tables 4.5 and 4.6). Although the

order was similar, the number of responses collected on each type of benefits was more evenly distributed among choices in 2023 compared to 2021.

Table 4.5: Clean energy benefits for residential customers

Option	2021	2023
Spend less on my energy bills	35% (4)	53% (1)
Reduce climate change impacts	60% (2)	49% (2)
Decrease our reliance on fossil fuels	64% (1)	39% (3)
Make my community more prepared for natural disasters	25% (7)	33% (4)
Bring innovation and technology to my community	29% (6)	29% (5)
Reduce the environmental impacts of the electric system	39% (3)	27% (6)
Reduce personal energy consumption	25% (7)	27% (6)
Improve the air quality in my region	30% (5)	26% (8)
Make my home more comfortable	9% (9)	21% (9)
Other	8% (10)	4% (10)

Table 4.6: Clean energy benefits for business customers

Option	2021	2023
Spend less on my business's energy bills	42% (2)	50% (1)
Reduce climate change impacts	39% (3)	38% (2)
Decrease our reliance on fossil fuels	64% (1)	36% (3)
Make my community more prepared for natural disasters	24% (6)	28% (4)
Reduce the environmental impacts of the electric system	34% (4)	26% (5)
Bring innovation and technology to my community	26% (5)	26% (5)
Create more jobs in my community	19% (9)	21% (7)
Make my community more prepared for natural disasters	24% (6)	21% (7)
Improve the air quality in my region	24% (6)	18% (9)
Other	13% (10)	14% (10)
Make my business space more comfortable	8% (11)	11% (11)

Clean energy transition challenges

Similar to the priorities expressed about general challenges, customers are most concerned that the transition to clean electricity may lead to increases in their energy bills (Tables 4.7 and 4.8). The responses collected in 2023 were generally consistent with 2021 for both residential and business customers, with a larger percentage of customers selecting costs and potential bill increases in 2023.

Table 4.7: Clean energy challenges for residential customers

Option	2021	2023
Costs and potential bill increases	66% (1)	81% (1)
Potential environmental impact of course materials for clean energy technology	51% (2)	46% (2)
Dependability of variable clean energy sources like wind and solar	45% (3)	38% (3)

Option	2021	2023
Construction impacts for new electric infrastructure	40% (4)	29% (4)
Potential job loss in industries that depend on fossil fuels	24% (5)	20% (5)
Knowing where to find information on clean electricity programs	20% (6)	20% (6)
Other	16% (7)	5% (7)

Table 4.8: Clean energy challenges for business customers

Option	2021	2023
Costs and potential bill increases	74% (1)	82% (1)
Dependability of variable clean energy sources like wind and solar	51% (2)	39% (2)
Potential environmental impact of course materials for clean energy technology	49% (3)	39% (2)
Construction impacts for new electric infrastructure	38% (4)	28% (4)
Potential job loss in industries that depend on fossil fuels	27% (5)	19% (5)
Knowing where to find information on clean electricity programs	15% (6)	14% (6)
Other	11% (7)	9% (7)

The survey also asked customers new questions about how their sense of pride and self-sufficiency relates to opportunities in the clean energy transition. These questions were an attempt to better understand comments from interested parties collected in 2021 that recommended development of a customer benefit indicator related to customer sense of pride and self-sufficiency. PSE will consider this information during development of the 2025 CEIP.

A purpose of this effort was to judge any improvement in engaging directly with communities via this online survey. The percentage of responses collected from people who reported speaking a language other than English at home doubled from 9 percent in 2021 to 22 percent in 2023. Additionally, the percentage of responses collected from people who identified as a race/ethnicity other than white tripled, from 12 percent in 2021 to 36 percent in 2023.

Customer awareness survey

In August and September of 2023, CCEAP fielded a quantitative survey to understand current levels of understanding of clean energy, awareness of clean energy goals and programs, and engagement preferences. CCEAP worked with a vendor to field the survey online and over the phone, garnering responses from 1,311 adults who share named communities characteristics in PSE's electric and dual-fuel service areas.

PSE tracked responses for specific audience segments according to high-level shared characteristics, with response quotas for audiences ranging from 60 to 300. The survey lasted 15 minutes in online and phone formats and was fielded in five different languages (English, Chinese simplified, Korean, Spanish, and Vietnamese). Table 4.9 describes specific audience segments that the survey targeted and the quantity of responses for each audience. Please note respondents can fit multiple audience categories; respondents who qualified for multiple audiences were included in each applicable group's total counts.

Table 4.9: Audience types, target quota, and actual sample size

Audience name	Target quota	Sample size
Washington BIPOC adults	300	657
Young BIPOC adults	150	237
Tribal communities	60	93
Rural communities	115	249
SMBs	150	294
Military communities and veterans	150	336
Low-income households	150	893
Communities facing language access barriers	86	128
Seniors	150	294
TOTAL	**1,311**	**3,181**

The results of this survey will measure customers in named communities' baseline familiarity with clean energy. Survey results will also directly inform CCEAP's strategy for creating and distributing information for different audiences according to their clean energy awareness levels.

CCEAP plans to share results from the baseline survey, when available, with the EAG and other PSE teams to help create shared understanding about range of sentiments and knowledge about clean energy from customers in named communities.

Finally, the survey findings will help uncover further pathways for customer and community research using qualitative methods such as focus groups or interviews. The CCEAP will continue to expand its understanding of customers in named communities views and knowledge of clean energy with an iterative approach to research, with the goal of optimizing the reach and accessibility of clean energy information.

3.5. Other engagement opportunities

During the summer of 2023, the Clean Energy Strategy team created an in-person strategy to make progress towards its goals outlined in 2021 to meet people where they are and understand the barriers and burdens amongst customers in named communities during the clean energy transition. To focus on these communities, we identified three ways of achieving this goal using in-person activities, including interviews with community-based organizations [outlined in section 3.2.1], attending conferences focused on customers in named communities, and adding clean energy strategy staff at PSE Outreach events. Through this strategy, we received better understanding of community needs through high-quality conversations and personal interactions.

3.5.1. Northwest Tribal Clean Energy Summit

The 2023 Northwest Tribal Clean Energy Summit hosted by the Affiliated Tribes of Northwest Indians convened June 13-15, 2023 for Tribes to learn, share information, and advance Tribal clean energy initiatives in the Pacific Northwest. Staff from the PSE Clean Energy Strategy, Community Affairs, and

CCEAP teams engaged Tribal leaders, citizens, staff, and collaborators in conversation about navigating the cultural, economic, and social challenges of implementing clean energy projects. Through the additional workshop on Tribal Relations entitled “Beyond Checking the Box,” PSE staff were able to learn about the history and complexity of tribes, project siting, emerging clean energy technologies, energy planning and development, and grid resilience through the lens of tribal members. Throughout this discussion came several key takeaways.

Tribes are not “stakeholders,” in that they are defined by the United States as “domestic dependent nations under its protection.”[11] Tribal histories with governments and utilities are complex. During the conference, PSE staff listened as Tribal leaders expressed a desire to achieve energy sovereignty – the ability and right to decide, as a government, what their energy future looks like. PSE also listened as leaders explained what sovereignty meant to them, and if or how it differed from energy independence.

A main concern heard throughout the workshop was the proper siting of clean energy projects. What tribal leaders made clear is that working alongside tribal governments and their members can not only help project developers avoid opposition, but it can lead to potentially beneficial outcomes when tribes are in clear alignment with a project’s objectives. In this regard, leaders made clear that “if you know one tribe – you know one tribe” and that proper research of tribal families, local concerns and history was paramount to success in fostering the relationships that can lead to longer term project development success.

While the workshop and concurrent sessions on clean energy topics made up the core of the conference, PSE’s real learning was done in-between sessions while listening to the tribal members and energy leaders themselves. Project siting was a huge topic of interest and concern. Several tribes, especially the Confederated Tribes of the Yakama Nation, expressed disquiet with third-party solar companies developing projects on their traditional hunting grounds. The concept of energy sovereignty was top of mind with many interested in exploring virtual power plants and microgrids. Our presence as a utility and our willingness to explore new approaches with tribes – as communities that are more than customers, and as potential partnerships – spurred valuable conversations as we strive to continue our work with tribal entities in the region.

In addition, PSE repeatedly heard the challenges that many tribes in Washington face in engaging grant opportunities of the U.S. Department of Energy and Environmental Protection Agency grant opportunities due to resourcing challenges, and a need to address community issues other than energy at this time. PSE has given thought to these challenges and is discussing ways that we can help facilitate or provide assistance to tribes seeking to pursue federal funding opportunities through the Bipartisan Infrastructure Law, or the Infrastructure Investment and Jobs Act.

11. Executive Order 13175 of November 6, 2000, Department of the Interior

3.5.2. Nisqually Tribe partnership

While our Tribal Relations team works in partnership with sovereign tribal nations to ensure that we are our customers' energy partner of choice, and that we can work with tribal nations to reach our goal of getting Beyond Net Zero Carbon by 2045, other teams such as Customer Outreach have made great strides in growing these relationships. During a presentation in 2023 with the Nisqually Tribe, Outreach noticed the lighting in their gym had older style light fixtures. This simple observation led to a series of projects in upgrading their lighting to energy efficient bulbs and fixtures. With future projects on the horizon, PSE has become their go-to partner for clean energy program questions and resources.

The Nisqually Tribe has expressed a desire to be the leading tribe in sustainability and renewable energy. The Nisqually Tribe is looking to use renewable resources to help preserve the land and to help better the future for their tribal community. We hope to continue to strengthen our relationships with the Nisqually and other Tribes by working in partnership towards our shared clean energy goals and supporting their pursuits for to lower their environmental impacts through the deployment of distributed renewable energy and battery storage solutions.

3.5.3. Refugee Community Building Conference

On June 22, 2023, PSE staff from the CCEAP, Community Affairs, and Clean Energy Strategy team had the honor to listen to the refugee community at the Refugee Community Building Conference held in SeaTac. Through educational sessions and conversations with those who work with refugees and refugees themselves, our team heard first-hand the burdens on the community and how the clean energy transformation is viewed.

The Immigration and Nationality Act (INA) defines a refugee as an individual who has experienced past persecution or has a well-founded fear of persecution on account of their race, religion, nationality, membership in a particular social group, or political opinion.[12] The United States Refugee Act of 1980, which established the Federal Refugee Resettlement Program, only supports refugees for the first three months after placement through the Reception and Placement Program.[13] While services are available during this period, the systems are not currently in place to provide aid in the long-term with many falling off of programs and data tracking. Refugee status also does not include those paroled via the Humanity Parole Status such as refugees from Afghanistan and Ukrainian. Therefore, reaching many in the refugee community may be difficult through traditional services.

During the conference, entities such as PSE were advised to "meet them where they are" such as through networking, outreach, and by "not waiting for them to come to you" for programs and services. Many in refugee communities are at-risk of homelessness and are vulnerable to missed bill payments due to language barriers and difficulty navigating complex systems. Understanding unique community needs is critical to developing comprehensible programs such as the Bill Discount Rate that streamline

12. US Department of State, Refugee Admissions
13. US Department of State, Reception and Placement

the enrollment process. We plan to continue targeted outreach in these types of named communities using these methods of engagement, further language targeting, and working directly with those who can reach customers by word of mouth.

3.5.4. Other community events

In addition to listening to the community via CBOs, over the summer of 2023 the Clean Energy Strategy team joined existing events alongside the Outreach team. While the Events and Outreach team accomplished 172 events in named communities since December 2021, the Clean Energy Strategy team joined specific events to hear first-hand what is being said on the ground. We focused on those customers in named communities such as senior citizen, low-income and Spanish speaking low-income customers.

As an example, at Renton River Days in July 2023, two Spanish speaking staff were available each of the three days in order to inform PSE customers about the Green Power and Solar Choice programs, as well as providing other rebate, weatherization, and bill assistance material. Many in the Spanish speaking community voiced concerns on the clean energy transition as they were in older homes in need of weatherization.

Through our conversations we were able to provide more information on weatherization programs, and also explain in more detail the benefits of switching to renewable energy. Many were also interested in the rebate program to update outdated appliances to more energy efficient ones. However, the concern was raised among renters that some of these upgrades would be more difficult because they did not own the appliances in their residences.

On August 1, 2023, the Clean Energy Strategy team joined Outreach at Auburn's National Night Out. The event – focused on community safety – brought Auburn neighborhoods out to celebrate and learn. Outreach focused on low-income senior citizens on fixed incomes – by joining local facilities providing services – to learn about programs such as PSE HELP and LIHEAP. In terms of the clean energy transition, many in the community were interested in learning more about single-family solar potential or home assessments for energy efficiency. However, many were also renters that had concerns about working with their property-owners on updates, as well as how that might affect their rental costs.

4. Key lessons learned

We learned several lessons through more than two years of engagement work across a range of efforts. The following summarizes some of those lessons but is not an all-inclusive list. We will continue to learn and evolve our approaches as we work to achieve an equitable clean energy transition.

Meet people where they are and listen first

Meeting people "where they are" is a procedural justice concept that helps bring new and diverse voices into conversations. This concept includes engaging in physical and virtual spaces that are safe

and comfortable and attending events and activities that are hosted by trusted entities in the community. It also means accommodating people in other ways, like time of day or events that are kid friendly, and using common language.

Basic needs must come first before engaging on clean energy

It is critical to consider immediate, basic needs like food and shelter before raising clean energy topics, particularly for communities that face multiple and severe barriers and burdens. It is particularly important to bring awareness and empathy to these conversations while meeting customers "where they are" in multiple ways. For example, simply hosting a meeting in a named community is not enough. Our content, approach, tactics, and staff must be tailored to the unique needs of the community.

Compensation for participation is crucial

Compensating customers or organizations in named communities for their time is critical. Compensation, in the form of stipends or donations, helps incentivize participation by providing a direct and tangible benefit to those who share their time and lived experiences with us. Stipends must be timely, reasonable, and in a form that can readily be used by the recipient. Cash, check, or unrestricted gift cards (e.g., Visa) are generally preferred. When inviting participants to travel for activities, we also should consider travel costs, transit options, and child care.

Clean energy familiarity is highly varied across communities

Although customers expressed a strong motivation to participate in clean energy programs, there are many education and outreach gaps to fill. The existing knowledge gap often results in skepticism about whether programs can deliver on the promised benefits. Participants wanted answers to foundational questions about costs, environmental impacts, and community benefits to help them make informed decisions about program participation.

Interest in learning more about clean energy is high across most groups, but also highly varied

While similar themes emerged across many engagements, it also became clear how diverse each customer's needs and interests could be. Our products, programs, and services must be flexible enough to alleviate the nuanced challenges each customer will face based on their size, geographic location, available services, and whether the customers rents or owns their residence.

The clean energy transition is seen as both a risk and an opportunity across communities

Upfront costs associated with clean energy purchases and installation, along with the ongoing cost of maintenance, were consistently highlighted as the largest barriers across all DER products, and for all customer segments.

The installation and maintenance associated with DER implementation can feel daunting to customers. To facilitate adoption of DERs, PSE will need to be prepared with tailored, holistic, and hands-on installation and maintenance support for the customers who need it.

Reliability and resiliency are a key concern in many communities

Although certain DERs are a better fit for some customers, participants across all engagements indicated a strong interest in participating in future DER products. Participants highlighted the importance of energy independence, community or personal energy resilience, and reduction in energy bills as the benefits that will most motivate them to participate in DER products.

Community organizations and leaders are extremely important as partners and messengers, but many are resource-constrained

Participants suggested that PSE partner with community organizations and utilize their deep, existing community relationships to educate customers. This concept goes beyond community-based organizations to include a wide range of institutions, organizations, and businesses. We also heard that word of mouth and personal referrals from trusted sources can be more effective than traditional marketing methods. Similarly, we heard repeatedly that community organizations and leaders are resource-constrained and often lack the capacity to accommodate additional requests for their time and support, even when those added conversations are of value in their communities. Compensation is important, but time is often of the most value.

5. Future work (2024 – 2025)

PSE will continue to engage the audiences as described in our Public Participation Plan. We look forward to continuing to engage with customers, advisory groups, tribal governments, and others on CEIP components, program design, and clean electricity education. The following summarizes emerging areas of focus for the remainder of the 2022-2025 compliance period.

5.1. Distributed Energy Resources public engagement pilot update

In response to Condition 27 of Order 08 PSE must develop and implement a DER Public Engagement Pilot to gain experience with and understanding of engaging customers in Named Community at the “Empowerment” level on the International Association for Public Participation’s Public Participation Spectrum in developing DER offerings specifically for customers in named communities.

PSE is currently developing an approach for this pilot and has convened a cross-functional team that includes members representing product design and delivery, resource planning, energy justice, and public participation to lead this effort. Members of this team have met with Commission Staff and key interested parties, including representatives from NW Energy Coalition and Front and Centered, to begin outlining objectives and design parameters.

In addition to these initial conversations, in September 2023 PSE and the Equity Advisory Group hosted two Equity Forums (please see details in section 3.1.1). These forums resulted in wide-ranging discussions on equity including potential DER pilot projects to support customers in named communities and also offer insights into how we might conduct engagement for the pilot.

Within three months of this filing, PSE plans to engage the EAG in focused conversations related to design and deployment of the pilot. This will initiate the next phase of pilot development, which will include ongoing engagement with the EAG and other relevant advisory groups. PSE intends to implement the pilot in 2024 and 2025 and report outcomes in the 2025 CEIP.

5.2. Additional customer benefit indicators

In the 2021 CEIP, we committed to explore three potential CBIs that were identified through customer and EAG engagement: wildfire impacts, fish and wildlife impacts, and sense of pride and self-sufficiency. Since that time, we have engaged the EAG and customers regarding these potential CBIs and continue to consider these for the 2025 CEIP. PSE plans to re-engage the EAG in 2024 to revisit these topics and solicit recommendations on whether additional CBIs and metrics are needed.

Wildfire impacts

Over the past decade, wildfires have emerged as a significant public health and safety concern for much of the western United States. Puget Sound Energy is taking a comprehensive approach to mitigating the evolving risk of wildfires, working to ensure safety while maintaining the reliable delivery of energy.

Our Wildfire Mitigation and Response Plan[14] documents our year-round efforts to prepare for and help prevent wildfires in PSE's service area. In 2023, PSE focused on enabling Public Safety Power Shutoff (PSPS), maturing the analysis of ignition tracking and root cause analysis, creating wildfire mitigation portfolio work for 2025 and 2026, pre-wildfire season customer education and awareness campaign, emergency response communications during an active wildfire, and PSPS communications and outreach planning. We have also established wildfire metrics and report them annually in our Wildfire Mitigation and Response Plan.

Fish and wildlife impacts

Fish and wildlife impacts may occur for existing and new facilities. However, operation and permitting processes typically require consideration, mitigation, and reporting for fish and wildlife impacts. While requirements may vary by location and facility type, these requirements are generally extensive. PSE recognizes that customers, particularly Tribes, are highly concerned about the impacts to fish and wildlife due to infrastructure development. Accordingly, we will continue to explore alignment between regulatory metrics and CBIs while avoiding reporting duplication through 2024.

14. 2023 PSE Wildfire Mitigation and Response Plan

Sense of pride and self-sufficiency

Understanding how the clean energy transition impacts our collective and individual sense of pride and/or self-sufficiency is a complex challenge. To date, our focus, through engagement discussions with community organizations and interested parties and the two previously mentioned surveys (data analysis pending) has aimed to understand the relevance. In other words, we must first understand the relationship between the clean energy transition and this metric to later understand how we might measure progress.

Conversations to date suggest the clean energy transition does impact the collective and individual sense of pride and/or self-sufficiency of customers but the impact varies widely. For example, customers who own or have interest in owning solar panels are likely to feel pride and self-sufficiency as a result, but the conversation is much more nuanced because there are many ways to think about these characteristics beyond personal ownership. We intend to evaluate results of the surveys and engagements further and engage the EAG in 2024 to consider this CBI.

Communities and customers in deepest need and non-energy benefits

The process to define deepest need occurred on a compressed timeline. PSE is committed to further discussions with the advisory bodies as the Commission provides feedback on the approach and definition and as programs and services are implemented for this important segment of customers.

Additionally, feedback during the joint meetings stressed the importance of connecting energy benefits, and MW and MWh, to non-energy benefits to ensure customers with deepest need are truly benefiting from the minimum designation and related programs and services. Although customer benefit indicators are designed to help us measure progress, more work is needed to create a clear connection between energy benefits to non-energy benefits through customer benefit indicators. As a result, PSE committed to additional engagement work going forward to address this information gap and ensure the delivery of benefits to customers in deepest need.

5.3. Customer education and awareness

Through the CEIP Customer Education and Awareness program, PSE will engage communities on the clean energy transition with information and outreach strategies that are responsive to communities' needs and level of interest in clean energy. We'll build on learnings from the 2023 survey of customers in named communities and clean energy familiarity (see Section 3.3.2, Customer awareness survey) to conduct more geographically- and demographically-specific community listening and engagement methods, including:

- **Community listening** with a focus on Tribal audiences and select communities facing language barriers. These sessions will provide space for these audiences to give substantive feedback and reflection on how they understand the clean energy transition and its benefits.

- **Educational campaign** for customers in named communities. PSE will use a mix of digital, in-person, and traditional outreach methods to distribute information about clean energy, its benefits, and how communities can reap those benefits.
- **Peer-to-peer outreach model pilot**. Stemming from feedback that information is more likely to travel and carry weight within informal peer networks in named communities, PSE will trial a peer-to-peer outreach approach that hires community-based "mentors" to conduct community listening, small-group workshops, and one-on-one conversations on a range of clean energy topics.

SPECIFIC ACTIONS
CHAPTER FIVE

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1. Introduction

This chapter updates the specific actions contained in Puget Sound Energy's (PSE) first Clean Energy Implementation Plan (the 2021 CEIP) with more details regarding the actions PSE has taken, or plans to take, over the 2022-2025 compliance period, consistent with WAC 480-100-640(5) and Washington Utilities and Transportation Commission's (the Commission) Order 08 and Condition 16 of such order. This chapter covers programs and product offerings in the areas of energy efficiency, demand response, time-varying rates, Distributed Energy Resources (DER) solar, DER storage, DER enablement, and energy assistance. It also discusses grid modernization efforts and provides an update on the 2021 All-Source RFP process.

2. Energy efficiency

2.1. Purpose

Energy efficiency programs and actions reduce the amount of electricity used by customers to meet their energy needs, which reduces customers' carbon footprints, lowers bills, and reduces the overall electric supply needed. This load reduction results in a lower need for new renewable and non-emitting resources and brings PSE closer to meeting the CETA standard of serving 100 percent of retail electric load with renewable and non-emitting electric generation resources by 2045.

As PSE was drafting this 2023 Biennial CEIP Update (this Biennial Update), PSE was also drafting the 2024 – 2025 Biennial Conservation Plan (BCP), which PSE will publish on November 1, 2023. For detailed information about energy efficiency targets, budgets, and program specifics please see the BCP.

➔ For more information on the updated energy efficiency target and methodology, see Chapter 2: Updating the Clean Energy Targets.

The section below highlights several of PSE's specific actions that further the equitable distribution of energy and non-energy benefits and reduction of burdens to vulnerable populations and highly impacted communities within PSE's energy efficiency programs.

➔ To review equity considerations at the program-by-program level for energy efficiency, please see the 2024 – 2025 Biennial Conservation Plan filed on November 1, 2023, the same day as this filing, in a new docket at the Commission.

Most of the energy efficiency programs contribute to the following targets in Table 5.1 and are broken down further by the 30 percent named communities energy benefit target and the 2.5 percent deepest need minimum designation.

Table 5.1: Energy efficiency target and named communities designation

Year	Energy efficiency total conservation savings target (MWh)	30% named communities energy benefit target (MWh)	2.5% deepest need minimum designation (MWh)
2024 - 2025	397,620 MWh	104,987 MWh	3,727 MWh

2.1.1. Named communities two-year savings designation

Table 5.2 shows the minimum amount of energy benefits that will be delivered to named communities and customers in the deepest need by the energy efficiency tranche of resources. The calculated named communities' distributional equity target number meets the 30 percent energy benefit minimum designation requirement in Condition 20 of Order 08.[18]

The named communities minimum designation is calculated by taking the total utility conservation goal (the same as the CEIP energy efficiency goal), and subtracting program savings from two programs that cannot be directed toward named communities from the total to derive an applicable total savings number by which the 30 percent can be multiplied. One of these programs is the Northwest Energy Efficiency Alliance (NEEA) savings. These savings are distributed regionally, with no customer location attached. The other program is PSE's Schedule 258, which is a four-year "self-directed" program for large customers. PSE cannot target these funds toward named communities.

Through the summer of 2023, PSE discussed the concept of subtracting Schedule 258 and NEEA savings from the total with the joint advisory group[1] as well as defining energy benefits as the MWhs saved for purposes of the named communities and deepest need calculations.

Table 5.2: Named communities distributional equity two-year target calculation

Description	Savings	Notes
PSE energy efficiency total utility conservation goal	397,620 MWh	
Subtract Schedule 258 – Large Power User Self-Direct Savings	11,965 MWh	Sch. 258 is only for large self-directed customers and cannot be directed toward named communities by PSE
Subtract Northwest Energy Efficiency Alliance Savings	35,698 MWh	Savings distributed region-wide with no location attached
Named communities applicable Total Savings	349,957 MWh	-

1. The joint advisory group included the Low-Income Advisory Group, the Conservation Resource Advisory Group, and the Equity Advisory Group.

Description	Savings	Notes
Named communities distributional equity target	**104,987 MWh**	Named communities applicable total savings x 30 percent

2.1.2. Deepest need two-year savings designation

Table 5.3 calculates the deepest need minimum designation of energy benefits for the energy efficiency tranche. The deepest need minimum designation is calculated using only residential program savings because customers in the deepest need do not experience energy burden reduction from commercial and industrial projects. New construction program savings are then subtracted from the two-year residential savings goal. These are subtracted because the definition of deepest need refers to customers in existing housing stock, not new construction. The applicable residential savings number is then multiplied by 2.5 percent to arrive at the deepest need minimum designation.

Table 5.3: Deepest need distributional equity two-year target calculation

Description	Savings	Notes
Residential energy efficiency goal	158,100 MWh	-
Subtract residential multi-family new construction	8,015 MWh	New construction does not meet the definition of “Deepest Need”
Subtract Residential single-family new construction	1,002 MWh	New construction does not meet the definition of “Deepest Need”
Deepest need applicable Total savings	149,083 MWh	-
Deepest need distributional equity target	**3,727 MWh**	Deepest need applicable total savings x 2.5 percent

2.2. Equity-focused program updates

The following equity-focused program highlights aim to demonstrate specific actions within Customer Energy Management programs that will deploy innovative and human-centered approaches that — in the 2024-2025 biennium — will benefit customers ranging from single- and multifamily residential, renters, small-to-medium sized businesses, and commercial customers.

2.2.1. Single family existing — Space Heat

The Space Heat program accounts for a significant amount of anticipated electric and natural gas savings. This program manages incentives and installations of natural gas and electric home heating systems. The Space Heat program focuses on addressing high customer energy burden and increasing accessibility within named communities. To that end, the program is pursuing the following concrete actions:

1. Increasing in-person outreach through trade allies. PSE will identify these customers by Census blocks. To increase accessibility, the Space Heat program is utilizing all existing transcreated materials to reach customers in Spanish. These outreach materials will be distributed at events, and via social media, email, and mail

2. Educating customers about the program's offerings through the development of relationships with community partners that reach senior citizens, refugees, and people accessing food banks, employment resources, and language resources. PSE will prioritize regions most in need as identified through customer mapping tools.

Additionally, the Space Heat program will continue to cultivate innovation in the following key initiatives:

- Directly offering higher incentives to manufactured home residents and to moderate-income customers through the Efficiency Boost program
- Directly offering higher incentives to income-qualified customers; and
- Simplifying program offerings to improve customer experience and increase participation

2.2.2. Single family existing — Home Appliances

The Home Appliances program incentivizes residential customers to upgrade to ENERGY STAR appliances. Major program revisions for the 2024-2025 biennium include the inclusion of ENERGY STAR heat pump dryer rebates.

In the 2024-2025 biennium, the Home Appliances program will continue to address barriers to participation with a heightened focus on the areas listed below.

Higher energy burden

The Home Appliances program is part of the Efficiency Boost program, which is designed to reduce the financial burden of purchasing energy efficiency equipment and to provide low-to-moderate income customers with increased access to PSE's programs. Additionally, the Efficiency Boost program offers limited-time offer rebates at an increased level, including for low-to-moderate income customers. These will be timed with store- and manufacturer-based sales, allowing customers to take advantage of multiple savings opportunities.

Language

The Home Appliances program rebate forms and marketing materials are transcreated in Spanish, and other languages will become available in the next biennium. In addition, the Customer Outreach team has three Spanish-speaking staff to connect with customers in language at community events.

Education

The named communities dashboard indicates a high percentage of customers with General Education Development (GED) credentials. Customers with GEDs are more likely to reside in energy-burdened housing in highly impacted communities, while having lower-paying jobs or employment outside of normal working hours. PSE's field service team will ensure 50 percent of store events are within named communities, providing additional educational material and customized, accessible conversations to better reach these customers.

2.2.3. Multifamily Retrofit

The Multifamily Retrofit program provides comprehensive whole-building and property design assistance that aggregates both in-unit and common area opportunities. The program serves existing multifamily buildings with five or more attached residential dwelling units as well as multifamily campuses that have a mixture of building types including buildings with fewer than five units.

During the 2024-2025 biennium, the Multifamily Retrofit program expects to serve approximately 35,000 customers, and a key focus will be to ensure 40 percent of those customers are within highly impacted communities and high vulnerability census block areas. Program staff will direct most program marketing and outreach resources within these named communities. However, property managers, owners, or contractors are unfamiliar with the location of census blocks. Therefore, the program utilizes a simplified moderate-income definition so that property owners can easily determine if their site or premise qualifies for higher rebates.

Increased rebates are available if a site meets the following moderate-income definition:

- Buildings within Tribal communities, or
- Buildings built before 1986, or
- Buildings with tenants using rent assistance often characterized as “affordable” or “mixed (market/affordable)”, which includes military housing

Additionally, income-eligible (low-to-moderate income) individual condominium owners may submit an Efficiency Boost application even when their building does not meet the preceding qualifications. To amplify access to this program to seniors or retiree customers living on fixed incomes, PSE makes this incentive available to income-eligible individual condominium owners. Increased incentives for moderate-income properties place a strong emphasis on building envelope measures such as windows, insulation, and air sealing.

2.2.4. Commercial rebates — lodging

Lodging rebates are designed to help hotel and motel customers afford the significant cost associated with making changes to their greatest energy burden — heating and cooling. This program, which PSE reintroduced in 2021 with enhanced incentive amounts, is offered through a downstream model and rebates are set at an “up to” amount based on the individual cost of the equipment.

Lodging rebates are available to all hotel and motel customers utilizing PSE electricity for heating and cooling, and participation is not limited due to size. However, PSE’s small and medium-sized hotel and motel customers are the greatest focus. This design allows these customers to address multiple retrofits (ideally whole building) in their facilities and not be limited to installing one or two at a time as their tight budgets permit. This is why the incentive is strategically set at a high dollar value.

A key specific action in the 2024-2025 biennium will be a strong focus on reaching the remaining 30 percent of the hotels within PSE’s named communities that have not yet participated in the program.

Specifically, PSE will offer them direct and one-on-one outreach to help overcome any barriers that might inhibit their completing qualifying projects with PSE. The program will also utilize strategic marketing tactics for the sector, including search engine marketing, email, and social media campaigns, as well as direct mailers in-language to customers identified with a language need. In collaboration with the Washington Hospitality Association and their newly announced Latino Chapter, as well as other smaller local hotel associations, PSE intends to market the program and increase program awareness.

3. System wide demand response

3.1. Purpose

Demand response (DR) is a measure for reducing energy load in response to supply constraints, generally during periods of peak demand. DR provides an opportunity for consumers to play a significant role in the operation of the energy grid by reducing or shifting their energy usage during peak periods in response to time-based rates or other forms of financial incentives. By shifting load away from the grid-constrained peak usage period, DR helps manage and maintain system reliability.

In the 2021 CEIP, PSE committed to an overall 23 MW target for its demand response programs. After completing an RFP in 2022, PSE adjusted the target to 86 MW to reflect all cost-effective resources in compliance with Condition 4.

➔ See Chapter 2: Updating the Clean Energy Targets for write-up regarding the target update.

The demand response portfolio consists of Automated Demand Response (ADR), Behavioral Demand Response (BDR) and Business Demand Response (C&I DR). Within the portfolio PSE developed four programs with three vendors to serve its customers. See Table 5.4 for a high level overview of the programs and Section 3.3 for more details.

Table 5.4: Demand response overview

Resource	Description	Vendors	Counties	Launch Date
Flex Rewards	Incentivized residential behavioral demand response - rewards customers for adjusting their energy usage during a defined DR event, communicated via email and SMS (opt-in program)	AutoGrid	Territory wide	Winter 2023
Business Demand Response	Commercial and industrial program with a combination of ADR and BDR - customers will be incentivized and supported by vendors to develop a custom curtailment plan for peak system and emergency DR	AutoGrid Enel X	Territory wide	Winter 2023
Flex Smart	Incentivized automated residential demand response - Rewards customers to opt-in and enroll their eligible appliances (ex. smart thermostats, water heater, EV, etc.) to participate in DR events	AutoGrid	Territory wide	August 2023

Resource	Description	Vendors	Counties	Launch Date
Flex Events	Residential behavioral demand response - Customers receive notifications to be made aware of the event time and duration, and are given tips on how to reduce energy consumption during the event (opt-out, no incentive)	OPower	Territory wide	August 2023

These DR programs combine to account for the targets in Table 5.5 and are broken down further by the 30% target for named communities and the deepest need minimum designation.

Table 5.5: Demand response target and named communities designation

Year	Demand response cumulative capacity target (MW)	30% named communities energy benefit target (MW)	2.5% deepest need minimum designation (MW)
2025	86 MW	25.8 MW	1.15 MW

In this designation, PSE assumes that only residential programs are applicable in the calculation of energy benefits that could be attributed to customers in the deepest need. See Table 5.6 for a breakdown of how the energy benefits are calculated for demand response programs. Since deepest need is defined at the residential customer level, PSE separates the MWs attributed to residential customers only, to inform the calculation of energy benefits targeted towards customers in the deepest need.

Table 5.6: Demand Response calculation of energy benefits designated for residential customers in the deepest need

Description	Demand response cumulative capacity target (mw)	30% named communities energy benefit target (mw)	2.5% deepest need minimum designation (mw)
DR – Residential & Commercial	86 MW	25.8 MW	-
DR – Residential only	46 MW	-	1.15 MW

3.2. Engagement with named communities

Through the knowledge gained from program design experiences and lessons learned from various other initiatives, PSE aims to develop comprehensive engagement strategies for its DR programs. These strategies aim to 1) increase customer awareness of the value and purpose of DR, 2) inform customers about available programs that can address their needs, and 3) eliminate barriers hindering customer participation. Given the growing importance of these technologies and programs, it is essential to educate customers and dispel any misconceptions regarding their benefits. To ensure engagement with named communities, PSE will select program marketing and outreach tactics. These may include transcreation of materials, email, direct mail, advertising, leveraging owned and earned media, local events, partnerships with community-based organizations, workshops, and other locally appropriate approaches tailored to connect with customers where they are.

3.3. Program updates

This section provides a detailed breakdown of the four DR programs PSE is launching in 2023.

Flex Rewards is an opt-in, incentivized Behavioral Demand Response (IBDR) program that rewards customers for adjusting their energy usage during a defined DR event, communicated via email and texts. These events take place during summer and winter DR seasons. Within 72 hours after an event, customers may log into their customer account to review their event participation statistics and learn what incentives they earned for their participation. This program requires the customer to have an email to sign up with, and the ability to log into their MyPSE account. Flex Rewards is launching in the winter of 2023.

Business Demand Response will be offered through two products to business customers: 1) a year-round Peaking Demand product and 2) an Emergency Demand product. In both products customers will be supported by vendors to develop a custom curtailment plan and paid for their participation. Table 5.7 provides more details on the maximum number of events, duration, and notification prior to the event.

- **Peaking Demand** - This plan will look at historical usage data and assess where and how customers can effectively shed load during peak events. This plan will help customers understand the actions they should take during a Demand Response event and give them an idea of what they can earn as a participant in the program.
- **Emergency Demand** - If PSE deems conditions have been met to require immediate capacity available, an emergency event will be called giving customers 10-60 minutes of notification prior to the event. These types of events can be called at any time throughout the year and have a maximum of 12 events per year.

Table 5.7: Business Demand Response threshold events

Product	Season:	Months	Max number of events	Event duration	Event days and times	Notification time prior to event
Peaking Demand	Winter	November – March	8	1-4 hours	M-F, 6am - 10pm	Minimum 2 hours
Peaking Demand	Summer	May – September	8	1-4 hours	M-F, 6am - 10pm	Minimum 2 hours
Emergency	All	Year Round	12	1-4 hours	N/A	10-60 minutes

Flex Smart is PSE's opt-in, incentivized Direct Load Control DR program. Customers enroll and have their enrolled appliance (see Appendix K: Demand Response Additional Information for eligible devices) automatically controlled during periods of peak demand. Customers may enroll their eligible smart thermostats to participate in DR events during the summer and winter DR seasons. Within 72 hours (about 3 days) after a DR event, customers may log into their customer account to review what their participation performance results were and learn more about participation incentives they qualify for. Flex Smart launched August 1, 2023.

Flex Events is an opt-out, non-incentivized BDR (NIBDR) program that automatically enrolls customers in email and interactive voice response notifications to make customers aware of a system peak event. During an event, customers receive notifications to be made aware of the event time and duration and are given tips on how to reduce energy consumption during the event. Within 72 hours (about 3 days) after an event, customers may receive an email reviewing their event participation statistics and learn how their usage compares to neighbors with similar home-types and usage schemas. PSE's first Flex Event took place on August 15, 2023 (see Appendix K: Demand Response Additional Information for detailed overview of the first event).

All DR programs are managed by the Customer Energy Management Demand Response team and implemented by third party vendors to support the program. The Customer Energy Management Demand Response will be responsible for program design, program policies, reward-setting, management of third party vendor activity, and measurement and verification reporting.

Third-party vendors are responsible for implementing these programs including aggregating customers into DR programs, managing Distributed Energy Resources (DER) original equipment manufacturer relationships, issuing incentives, event notifications to customers, and customer support.

DR program costs will be recovered through rates as power costs in power purchase agreements, while DR development and administration costs will be funded through the Schedule 120 conservation rider (e.g., contracting and program management labor, program marketing, etc.). See Appendix K: Demand Response Additional Information for DR funding overview.

3.4. Equity

In 2023, PSE's DR programs will expand access for all PSE customers, helping to ensure an equitable distribution of benefits. Below are two ways that PSE will ensure equity is prioritized:

- Residential demand response programs are designed to dispatch events uniformly across the region to ensure no single customer gets over-utilized as a capacity savings resource. In some rare instances, PSE may dispatch DR events to specific localities in pilot areas or commercial and industrial customers with the intent of reducing localized capacity constraints which demonstrate a higher propensity for peak demand.
- We will develop channels to provide DR-enabled technology to named communities who may not have the means of acquiring devices themselves, with the intent of extending accessibility to PSE customer programs. Examples of support PSE customers may expect include, but are not limited to:
    - Device provisioning: At-cost to free devices that enable DR connectivity for their heating and/or cooling.
    - Enhanced incentives: Increased enrollment incentives for enrolling their already-owned device in a demand response program.

- Minimum designation: PSE will aim to direct 30 percent of the total MW capacity capabilities of the demand response platform to named communities, measured by Census tract, at the portfolio level.

3.5. Forecasted benefits

Residential customers may qualify for incentive rewards based on the type of program in which they enroll. Through the end of 2023, customers will qualify for additional enrollment incentives. Flex Smart and Flex Rewards customers are rewarded through an online redemption process utilizing Tango.[2] Once enrolled in the program, the third party vendor responsible for implementation issues a reward to the customer which may be claimed online in the form of retail gift cards, visa gift cards, or direct money transfer. These incentives support making smart devices more affordable for customers, particularly those in named communities, as well as layer in energy efficiency incentives for the devices, drastically reducing the upfront cost. These incentives also reduce energy burden for all participants in the Flex Rewards program by lowering their energy usage during an event and also providing a financial incentive for their participation, in the form of a financial, seasonal reward per kWh shed, as well as an enrollment reward.

➔ See Appendix K: Demand Response Additional Information for an overview of incentives available to residential customers who enroll in the Flex Smart and Flex Rewards program.

3.6. Program marketing

PSE will work closely with third party vendors responsible for implementation to ensure that vendor industry experience is combined with PSE's knowledge of its customer base to maximize recruitment results. Planned activities include leveraging many marketing channels, including traditional mailers, email, PSE.com program pages, social media, direct marketing, and community event outreach.

The core message of the demand response programs will be communicated to customers using PSE's brand voice, characterized by a personal, conversational, and accessible tone:

"With PSE's Flex Programs, you have the power to make a significant difference when energy demand is at its peak – benefiting you, your community, and the planet. Shifting energy usage moves us closer to a carbon-free future by matching usage to availability."

2. Tango is an incentive payment platform that allows customers to select their reward for enrolling and participating in DR programs. It provides customers with the ability to choose how they receive their incentives by allowing them to select from a wide variety of store or visa gift cards.

➔ See Appendix K: Demand Response Additional Information for detailed program marketing plan.

3.7. Future work

Starting in 2024, Flex Smart will include Mini-Split controls, EV Telematics, EV Chargers, Electric Vehicle Supply Equipment (EVSE), Water Heaters, and Water Heater Controls in the DR portfolio.

➔ See Appendix K: Demand Response Additional Information for eligible devices.

As PSE looks to expand its goals through 2025, PSE will assess additional incentivized measures for residential customers, increase commercial and industrial customer product offerings, consider how demand response can be layered with other PSE rates and programs, and find additional innovative services and partnerships to bring to customers.

3.8. Relevant Order 08 Condition summary

In Order 08, the Commission included the following Condition 4:

> **CONDITION 4:** PSE will increase its demand response target to include all cost-effective bids it received in response to its recent RFP. PSE will include expanded Direct Load Control offerings in this increased target.[1]

See Chapter 2: Updating the Clean Energy Targets for detailed explanation for changing DR targets to include all cost-effective DR bids received. The details on direct load control programs are discussed above in the Flex Smart program.

In Order 08, the Commission included the following Condition 20:

> **CONDITION 20**. Minimum Designations. PSE will file with the Commission an amendment to this CEIP to designate for Named Communities a minimum of 30% of the energy benefits of its DER solar, DER storage, DR, and EE programs, with benefits measured across each tranche of resources. PSE will commit to developing a targeting approach to identify the customers and communities with deepest need within the broader category of Named Communities in consultation with interested persons and advisory groups. By the

> 2023 Biennial CEIP Update, PSE will designate a minimum percentage of energy benefits that will flow to Named Communities with deepest need.[3]

To ensure a minimum threshold of 30 percent energy benefits is met across DR programs, PSE is working with its selected DR vendors to ensure named communities outreach, recruitment, and engagement is a priority and committed to in agreements with selected vendors.

In Order 08, the Commission included the following Condition 22:

> **CONDITION 22:** In the 2023 Biennial CEIP Update, PSE will include information regarding any planned DR programs for commercial and industrial customers as required by WAC 480-100-640(5) and (6) as well as information regarding the expected cost-effectiveness of these programs.

Information regarding PSE's planned business demand response program can be found in the discussion above. Cost-effectiveness is deemed based on the Societal Cost Test and an overview of how each bid scored is discussed in Chapter 2: Updating the Clean Energy Targets. Most of the commercial and industrial programming is provided by EnelX, which has a societal cost test score of 10.76.

In Order 08, the Commission included the following Condition 23:

> **CONDITION 23:** PSE must include a narrative in the 2023 Biennial CEIP update and 2025 CEIP describing anticipated impacts on customer benefits and burdens from DR programs.

Sections 3.4 and 3.5 describe the incentives and rewards from the programs.

4. Time-varying rates

4.1. Purpose

Time-varying rates are designed to lower system costs by providing customers with a price signal that encourages them to lower their monthly energy bills by reducing consumption during the peak period and building it in the off-peak period. Well designed and marketed time-varying rates represent a win-win opportunity for the utility and its customers. PSE is exploring time-varying and other outcome-based pricing mechanisms as tools to help manage system and local peaks, reduce customer costs, and help integrate variable renewable generation. Its time-varying-rates consultant, The Brattle Group, guides PSE to conduct a two-year pilot.

3. See Order 08, infra note 1, Appx. A at ¶ 22.

4.2. Program updates

In 2023, PSE is enrolling residential customers, residential bill discount customers, and small commercial customers in time-of-use (TOU) rates or a TOU rate with a peak time rebate (PTR). As Table 5.8 shows, the pilot will test six treatments and enroll approximately 7,500 customers. The Super Off-Peak rate is intended for residential customers with EVs. At least half of the low-income customers on bill discount rates will receive bill protection and at least half will receive free enabling technology (e.g. smart thermostat).

Table 5.8: TVR Pilot treatment groups[4]

Treatment	Minimum Statistically Significant Sample Size
Residential Service Time-of-Use	1,000 customers
Residential Service Time-of-Use Bill Discount Rate(s)	1,000 customers
Residential Service Time-of-Use with Peak Time Rebate	1,500 customers
Residential Service Time-of-Use with Peak Time Rebate Bill Discount Rate(s)	1,500 customers
General Service Time-of-Use with Peak Time Rebate	2,000 customers
Residential Service Time-of-Use with Super Off-Peak	500 customers
TOTAL	7,500 customers

Table 5.9 shows the design of the TOU and PTRs, including the number of pricing tiers and peak-to-off peak price ratios.

Table 5.9: TVR Pilot rate design

Rate Design(s)	Time-of-Use	Time-of-Use w/ Peak Time Rebate	Time-of-Use w/ Super-Off-Peak
Customers	Residential Sch. 307 + Bill Discount Rate levels 1-6	Residential Sch. 317 + Bill Discount Rate levels 1-6 General Service Sch. 324	Residential Sch. 327 + Bill Discount Rate levels 1-6
Pricing Tiers	2	2 Fixed + 1 Dispatchable	3
On-Peak : Off-Peak Ratio(s) (Winter)	4.9 : 1	2.2 : 1 | 2.3 : 1	6.7 : 1.7 : 1
On-Peak : Off-Peak Ratio(s) (Summer)	3.1 : 1	1.9 : 1 | 2.0 : 1	3.6 : 1.6 : 1
PTR : Off-Peak (Winter)	-	7.6 : 1 | 8.2 : 1	-
Seasons	2	2	2

4. Source: PSE General Rate Case Witness Testimony of Ahmad Faruqui, 2022

Rate Design(s)	Time-of-Use	Time-of-Use w/ Peak Time Rebate	Time-of-Use w/ Super-Off-Peak
Weekend/Holiday	Off-Peak	Off-Peak	Off-Peak, Super Off-Peak
Max Annual Callable Events		20 (15 winter & 5 summer)	
Enrollment	Opt-in	Opt-in	Opt-in

Program marketing and enrollment began for up to 175,000 pre-selected Schedule 7E residential customers in summer 2023. Program marketing and enrollment for Schedule 24E commercial customers will begin in late fall 2023. The pilot will run for two years (October 1, 2023-September 30, 2024, and October 1, 2024-September 30, 2025) and be evaluated at the end of each year.

To select pilot participants, PSE will use a unique approach. At a high level, PSE will offer the opportunity to participate in the pilot to customers who are selected randomly. Customers in a control group (no treatment) can be drawn from the customer population pool and matched with customers in the treatment group based on how similar they are to each other. The effects of TVR (e.g., amount of electricity that a customer reduces during peak hours) can be determined by comparing the performance of the customer in the treatment group against that of the customer in the control group. PSE's proposed "random sampling with a matched control group" approach preserves the random element in the "randomized controlled trial" approach.

For residential customers, PSE is targeting a minimum 3 percent opt-in rate. In alignment with the randomized controlled trial pilot design, PSE pre-selected 175,000 residential electric customers to recruit 5,500 residential electric customers into the pilot. Five customer groups ranging from 25,000-50,000 were targeted with a "Rate Education Report" and online tools allowing customers to compare a personalized estimate of TOU rate with their current Schedule 7 inclining block rate. The average opt-in rate to date is approximately 4%, which is in line with Brattle's estimate of 3-5%.

We plan for four distinct Evaluation, Measurement & Verification (EM&V) activities:

1. Load impact evaluation after the first year of the pilot;
2. Load impact evaluation after the second year of the pilot;
3. Process evaluation after the second year of the pilot, and
4. Customer feedback before, during, and at the conclusion of the pilot.

A comprehensive approach to EM&V allows PSE to maximize its experience from the pilot and use these learnings for a successful broader scale roll-out in the future.

4.3. Equity

4.3.1. Impacts to named communities

The TVR pilot demand, energy, and billing impacts will vary by customer characteristics such as education or income, the availability of enabling technology, home characteristics, and other observable

characteristics. PSE's independent evaluator, Cadmus, will estimate the TVR pilot impacts for different customer segments based on known attributes. Customers will be identified and verified as income eligible at 80 percent are median income (AMI) or 200 percent federal poverty level (whichever is greater) based on enrolled TVR customers qualifying for the Bill Discount Rate program and self-attesting their income. Once the Bill Discount Rate program is launched in October 2023, enrolled TVR customers will be invited to apply to receive a tiered discount rate on their time-of-use bill. Only customers enrolled in TVR and Bill Discount Rate will be evaluated separately as part of the income eligible treatment groups.

For income-eligible customers enrolled in both TVR and Bill Discount Rate, 50 percent will also be eligible to receive bill protection. PSE and Cadmus will estimate the difference between the counterfactual bill under the standard rate through a shadow bill comparison and the actual customer bill under the TOU rate for each enrollee. PSE will use this data to issue annual bill protection credits to the selected Bill Discount Rate customers, if they end up paying more on a TOU rate.

Furthermore, for income eligible customers enrolled in both TVR and Bill Discount Rate, 50 percent will also be eligible to receive free enabling technology. If income eligible customers have a compatible electric heating system, they will receive a free Nest smart thermostat with instructions on how to install, program, and optimize to align with the peak and off-peak periods.

4.4. Forecasted benefits

4.4.1. Tracking and measuring benefits and burdens

In collaboration with Cadmus, PSE will estimate the energy, demand, and billing impacts of the TOU rate for each treatment group and PTR for the applicable groups. PSE will estimate separate impacts for the summer, winter, and shoulder seasons and for the TOU rate on-peak, mid-peak, and off-peak periods.

Cadmus will estimate TVR bill impacts based upon actual weather conditions during the reporting period. Cadmus will estimate the average TVR bill impacts as a difference-in-differences by comparing the bills of participants and matched nonparticipants before and after enrollment as follows:

- Use ex ante regression models (of the pre-TVR pilot consumption) to predict the hourly electricity consumption for each participant and match nonparticipant under actual weather for the reporting (evaluation) period. This counterfactual prediction represents the customer's expected consumption for pilot Year 1 weather under the standard residential rate.
- Calculate each customer's counterfactual bill for the predicted consumption under the current standard residential rate. This is the amount each customer would have paid if their consumption during pilot Year 1 followed their consumption in the year preceding the pilot.
- For each participant, calculate the difference between the counterfactual bill under the standard rate and the actual customer bill under the TOU rate bill. For each nonparticipant, calculate the

difference in the counterfactual bill under the standard rate and the actual customer bill under the standard rate.

- Calculate the TOU rate bill impacts as a difference-in-difference.
- The second term captures how participants' bills would have evolved if they had not enrolled in a TOU rate.

Note that the TOU rate bill impacts reflect two factors: any behavioral response of participants to the new TOU rate (e.g., the shifting of load from peak to off-peak periods or changes in consumption) and changes in the hourly price customers pay for electricity.

The level of peak demand reduction corresponds with the peak to off-peak price ratio: the higher the price ratio, the higher the peak impact. However, the price responsiveness increases at a decreasing rate as the price ratio increases. Using The Brattle Group's Arcturus[5] database and the load impact model, PSE estimated the average customer response to the new rates. For a residential customer with Residential TOU rate, the peak impact on a winter day can be as high as 10.9 percent. The full results are shown below in Table 5.10. It is important to note that most of the data in the Arcturus database is from summer-peaking utilities as the winter-peaking utility experience with TVRs has been more limited.

Table 5.10: Expected peak reduction impacts for the proposed TVR programs

Rate	Season	Ratio (P:OP)	Estimated Peak Demand Reduction
Residential TOU	Winter	5.2:1	10.9%
	Non-winter	2.8:1	6.8%
Residential TOU+PTR	Winter	2.3:1	5.5%
	Non-winter	2.2:1	5.2%
Residential Three-Period TOU (EV)	Winter	7.5:1	12.6%
	Non-winter	3.6:1	11.9%
Small C&I TOU+PTR	Winter	2.3:1	5.5%
	Non-winter	8.9:1	11.3%

4.5. Program marketing

PSE will not conduct additional program marketing outside of the targeted recruitment campaign in summer and fall of 2023.

4.6. Future work

PSE is targeting General Service Schedule 324 "Time-of-Use with Peak Time Rebates" for release and subsequent study in the Pilot EM&V process starting in 2024.

5. PSE General Rate Case Witness Testimony of Ahmed Faruqui, 2022

4.7. Relevant Order 08 Condition summary

In Order 08, the Commission included the following Condition 24:

> **CONDITION 24:** PSE must include in its 2023 Biennial CEIP Update an explanation of the TVR pilot program and how the program will be structured to gather data about the program's impacts on benefits and burdens for Named Communities.[6]

The above discussion on the TVR pilot program addresses this condition. The program is structured with distinct treatment groups with specific rate designs and an evaluation, measurement, and verification plan that will allow PSE to gather data about impacts and benefits and burdens for named communities. This plan is outlined in Section 4.2. PSE has also partnered with Cadmus to conduct the impact evaluation as discussed in Section 4.4.1 above.

5. 2021 All-Source Request for Proposal

5.1. Purpose

In 2021, PSE issued the 2021 All-Source Request for Proposals (the 2021 All-Source RFP) to meet all or part of PSE's capacity and renewable energy needs. The 2021 All-Source RFP seeks bids from commercially proven and CETA-eligible resources five MW or larger to supply CETA-eligible resources by 2026. PSE analyzed resources through a qualitative and quantitative evaluation as described in Chapter 2: Updating the Clean Energy Targets. In 2022, PSE incorporated resource adequacy improvements to its analysis, including but not limited to, updating its load forecast to include temperature data reflective of climate change and updating its electric load carrying capability (ELCC) values to be consistent with the 2023 Electric Progress Report.

5.2. Program updates

As of November 1, 2023, PSE has signed and executed one (1) contract and has a shortlist of other resources, some of which PSE anticipates being signed under contract by the end of the first quarter of 2024. PSE has executed a 15-year power purchase agreement (PPA) with Invenergy for the Vantage Wind Energy Center in Ellensburg, Washington. The agreement enables PSE to acquire ninety (90) MW of clean energy per year, beginning in 2025.

Other projects on the shortlist are mostly outside the 2022 – 2025 compliance period.

5.2.1. Negotiations and contract executions

PSE completed its Phase 2 analysis for the 2021 All-Source RFP and identified a shortlist in the fourth quarter of 2022. PSE is currently in the negotiations phase of its 2021 All-Source RFP and, as such, the

6. See Order 08, infra note 1, Appx. A at ¶ 26.

resources, pricing and counterparties with whom PSE is actively engaged remain highly confidential. As required by WAC 480-107-145(2)(d), PSE will provide the median and average bid prices of its responses to the 2021 All-Source RFP, categorized by technology type in a close-out report within 90 days of concluding the RFP.

PSE is also evaluating and/or negotiating with other RFP and bilateral offer counterparties for additional resources to help meet PSE's clean energy and capacity needs consistent with the requirements of CETA. Among these resources, PSE has identified a number of projects that are currently in contract negotiations. Combined, these RFP and bilateral offers represent more than 1,000 MW of additional wind and solar energy that will help to meet PSE's CETA target in 2030, and more than 500 MW of additional CETA-compliant capacity resources. These resources are expected to be online after the 2022-2025 compliance period but would help PSE meet CETA requirements for 2030.

Bidders and interested parties can find more information about the 2021 All-Source RFP on PSE's RFP web site. New RFP resource acquisition announcements will be shared in the Updates and Notifications section of the site as they become available.

5.3. Future work

A variety of potential buyers and off-takers of renewable and storage projects are seeking resources to meet their organizations' energy and capacity targets. To stay on track to meet PSE's substantial CETA and capacity needs by 2030, PSE is also exploring and evaluating resource opportunities submitted on a bilateral basis outside the 2021 All-Source RFP. In general, these resource offers represent time-sensitive opportunities of unique value that not only supplement the resources PSE is pursuing through the 2021 All-Source RFP but also contribute to meeting CETA's clean energy and reliability goals. Additionally, PSE is evaluating a handful of projects on its shortlist that would contribute towards the 2026-2029 compliance period and the CETA goals for 2030. More details will be shared in the closeout report for the 2021 All-Source RFP.

PSE also anticipates filing a voluntary All-Source RFP in 2024 to continue to secure clean energy resources to meet its CETA and capacity needs over the next several years.

5.4. Relevant Order 08 Condition Summary

In Order 08, the Commission included the following Condition 3:

> **CONDITION 3**. In the 2023 Biennial CEIP Update, PSE must include an update regarding the impact of inflation, supply chain, and permitting issues, if any, on the estimated costs of and likelihood of attaining the accelerated target. PSE should also include an updated target if the 63 percent target is no longer viable by 2025.[7]

7. See Order 08, infra note 1, Appx. A at ¶ 5.

Nearly all of the proposals submitted in response to the 2021 All-Source RFP were early-stage development projects, which has resulted in ongoing updates that have affected negotiations due to material changes to project risks, including schedule delays and increased costs. Furthermore, at a macro level, the following risks and issues are ongoing:

- Supply chain constraints have extended lead times for major equipment such as main power transformers and other high voltage equipment
- High interest rates have put upward cost pressures on projects
- Congested regional interconnection and transmission queues are creating delays in the completion of system upgrade studies required to grant service – Bonneville Power Administration's generation interconnection queue has increased by eight times (8x) on a MW basis from 2016 to 2022
- The Inflation Reduction Act (IRA) has created longer term support for increased renewable development, but currently there is pricing uncertainty as specific rules for elements of the IRA such as domestic content bonus incentives are being studied and interpreted by developers and equipment manufacturers
- Clean energy targets for regional utilities and commercial entities are creating a competitive environment for resources and a challenging backdrop for new resource procurement

Nonetheless, PSE has identified several attractive projects that will make meaningful progress toward meeting CETA energy and capacity needs and is actively engaged in negotiating for these resources. PSE anticipates wrapping up any negotiations stemming from the 2021 All-Source RFP by the end of the first quarter of 2024. As discussed in Chapter 2: Updating the Clean Energy Targets, these challenges and other factors, including significant load growth since the original plan was filed, impact PSE's ability to meet its original annual goal of 63% in 2025 and lead PSE to update its 2025 annual goal to 60%. While the original annual goal of 63% in 2025 may still be viable, it may be difficult to achieve, as described in more detail in Chapter 2: Updating the Clean Energy Targets.

6. Distributed Energy Resources – Solar

6.1. Purpose

PSE is committed to delivering distributed solar programs for our customers that are affordable, safe, and accessible to all. PSE developed an initial DER preferred portfolio selection process in the 2021 CEIP to derive a selection of distributed solar program concepts that will help PSE achieve its goals. The Suite 6, illustrative DER portfolio and DER selection process outlined in the 2021 CEIP were a starting point only and are superseded by the programmatic details in this chapter. PSE will work with the EAG and an advisory group with sufficient expertise to develop a new or revised DER selection process consistent with the provisions in Condition 8 of Final Order 08.

Furthermore, through the filing of this Biennial Update, PSE is amending its CEIP to designate a minimum of 30 percent of the energy benefits for DER Solar to flow to named communities per

condition 20. DER program design will intentionally serve customers in named communities in each DER program per condition 21.

The 2021 CEIP preferred portfolio identified 80 MW of DER – Solar needed by 2025 and planned to establish final program designs based on the results of the 2022 DER RFP. As discussed in Chapter 2: Updating the Clean Energy Targets, PSE initiated a DER RFP in 2022 and an additional Distributed Solar and Storage RFP in 2023. Both RFP processes were used to assess projects to help meet the 80 MW target.

Table 5.11 provides an overview of the existing and future projects and programs underway and how they may contribute towards PSE's 80 MW DER – Solar target.

Table 5.11: DER Solar MW targets overview

Resource	Type	Description	Capacity (2025)	Commercial Operation Date (COD)	Number of projects	Counties
Community Solar	Existing	Customer subscription to shares in renewable energy benefits from local solar projects	50 MW	2023-25	~25	Kittitas, Thurston, King, Pierce, Whatcom, Skagit
Green power solar grants	Existing	Annual endeavor that funds solar arrays at nonprofits, public housing authorities and Tribal entities serving low-income and/or BIPOC community members.	1.5 MW	2023-2025	20 - 30	All
Net metering	Existing	Customer-owned, behind the meter, solar <100 kW that is installed AFTER PSE's net metered capacity reaches 179.2 MW (the threshold for required net metering per RCW 80.60.030).	59 MW	2024-2025	5500-7000	All
Distributed generation (solar and hybrid) [from DSS RFP]	Existing	Developer and PSE owned projects in the range of 200 kW – 5 MWs. Projects include solar, storage and hybrid (solar + storage).	Solar: 9 MWs; Hybrid: 8.9 MWs solar	2025	10-15	Whatcom, Skagit, South King, Pierce, Thurston, and Kitsap
Solar Export Rate	Future	Customer owned distributed solar energy credits. Qualified Equity-Focused projects can receive an interconnection	13.6 MW	various	30-60	Any

Resource	Type	Description	Capacity (2025)	Commercial Operation Date (COD)	Number of projects	Counties
		allowance and upfront incentive.				
Residential Rent-to-Own	Future	PSE developing rent-to-own options for rooftop solar and residential battery for named communities and other residential customers	2 MW	various	TBD	various
Total	**All**		**144 MW**			

The above DER Solar programs combine to account for the following targets in Table 5.12 and are broken down further by the 30% named communities targets and the 2.5 percent deepest need minimum designation.

Table 5.12: DER – Solar target and named communities designation

Year	DER Solar Capacity Target (MW)	30% named communities energy benefit target (MW)	2.5% deepest need minimum designation (MW)
2025	80 MW	24 MW	2.0 MW

6.2. Engagement with named communities

Following common feedback from the DER Community Engagement Report[8], PSE is committed to shape tariff design and planned product operations for named communities and their service providers, where possible.

As discussed in the DER community engagement process, cost was consistently highlighted by customers as the largest barrier throughout the community engagement process. Although a majority of the voluntary customer solar products are still in development, PSE filed Schedule 667 - Purchases from Distributed Solar Photovoltaic Systems Tariff, on October 6, 2023, in Docket UE-230827, which includes additional financial benefits for named \communities to offset the cost of installing customer-owned solar. Through this tariff schedule, incentives are issued in this way:

- All customers receive a credit for energy purchased by PSE, and
- Customers in named communities receive an upfront incentive and interconnection allowance

When the tariff was filed with the Commission so that they could offer public comment, PSE notified community engagement participants. Additionally, PSE will consider additional community engagement feedback during the go-to-market phase of the product. We will notify community engagement participants when the products they helped design are available to customers so they can apply

8. Puget Sound Energy, Community Engagement Summary: Distributed Energy Resources (DER) Batteries, Solar and Demand Response.

themselves or make other eligible customers in their communities aware of the offering. Additionally, PSE will apply the same methodology to future DER – Solar products that PSE develops.

6.3. Existing program updates

6.3.1. Community Solar

Community Solar allows customers to share the costs and benefits of local solar projects in PSE's service area. Customers subscribe to shares in a newly constructed, local solar energy site of their choice and receive bill credits for their energy produced from their interests in the project. This renewable energy replaces some or all regular electricity use for subscribing customers and helps drive a cleaner energy supply, which would not be possible without support from subscribers.

Originally intended to be a 20 MW product offering, Community Solar launched the first site for customer subscription in November 2021 with a 200-kW system located at Olympia High School. The first 136 shares were fully subscribed to in less than 24 hours and showed customer interest and support for the product.

In 2022, PSE worked to meet the demand of the Community Solar product by:

- Adding 5.625 MW of solar generation
    - 3,850 general shares
    - 1,139 income eligible shares
- Conducting education and outreach to fully subscribe the shares and improve customer understanding of the product and how solar works.
- Utilizing marketing and outreach tactics including email, direct mail, social media, earned media and local partnerships utilizing site-host owned channels.
- Subscribing 1,107 no-cost shares of Community Solar to income-eligible customers, which reduced customer bills by $181,807 that year.

When researching and developing the Community Solar product, customers expressed a 50/50 split for desired Community Solar locations. About half of the customers surveyed expressed interest in having Community Solar projects at the neighborhood level, like Olympia High School, Pine Lake Middle School, and the Bonney Lake Water Reservoir. The other half desired projects in eastern Washington where energy production can be higher. Thus, five MW of the 2022 added capacity is in Ellensburg, Washington, and secured via a third-party distributed solar power purchase agreement.

These five megawatts of capacity, along with another 9.98 MW added in 2023 (also through a PPA) have allowed PSE to meet demand for customers looking for the best return on their subscription cost, as well as work toward the installed capacity target of 50 MWs (see Table 5.13).

Table 5.13: Community Solar MW distribution 2023-25

Status	Type	2023	2024	2025
Existing	PSE owned CS	1 MW	-	-
Existing	non-PSE owned CS	10 MW	-	-
New	PSE owned CS		0.66 MW	1.3 MW
New	Non-PSE owned CS	5 MW		32 MW [from DSS RFP]
	Yearly Total	16 MW	0.66 MW	33.3MW
	TOTAL	**50 MW***		

* PSE will conduct a DEA Solar Pilot, as described below, on approximately 2 MWs of new community solar

In 2023, PSE issued a Phase 2 Request for Information for additional Community Solar resources located within PSE's service area. Counterparties have submitted offers, and PSE has evaluated bids in response to this Phase 2 Request for Information, and PSE is pursuing several proposals with site hosts.

Equity

In 2022, the Community Solar program enabled access to solar energy within PSE's highly impacted communities and vulnerable population customer base through both paid shares and "no-cost" shares to income-eligible customers. Table 5.14 describes customer participation.

Table 5.14: Breakdown of Community Solar participation by share-type (2022)

Participant type	All participants in PSE's electric service territory	Participants living in Highly impacted communities	Participants identified as highly vulnerable population
General - $20 per share	2,698	178	172
Income-Eligible $0/share	1,101	318	507

Effective October 1, 2023, with the Commission's approval of Schedule 134, the Community Solar program will broaden income eligibility requirements, increase the number of no-cost income eligible shares for which customers can subscribe, expand funding sources, and increase the value of the energy credit for all subscribers. These changes will expand access to the program and increase the value of participation. These changes also help further the requirement that all customers, and particularly those living in highly impacted communities and vulnerable populations, benefit from the clean energy transition.

Forecasted benefits

Table 5.15 shows the actual and forecasted financial benefits distributed to income-eligible Community Solar participants. The program will continue to build new capacity until it achieves 50 MW, with a minimum of 30 percent of the shares reserved for income-eligible customers at no cost.

Table 5.15: Financial benefits to income-eligible Community Solar participants

Year	Money saved on bills for IE participants	Number of shares allocated to IE participants
2022 (actuals)	$181,807.32	1107
2023 (actual + forecast)	$380,453.77	1,166
2024 (forecast)	$850,779.43	4,216
2025* (forecast)	$865,909.92	4,421

* Numbers for 2025 assume the balance of the capacity will come online at the end of 2025 – resulting in benefits showing on customer bills in 2026 and beyond.

Future work

With the changes enabled by Schedule 134, PSE will make more than 3,000 new, no-cost income-eligible shares available in the fourth quarter of 2023, bringing the percentage of income eligible shares to 39 percent of all those available. To ensure these available shares benefit qualified customers as soon as possible, PSE will conduct an extensive marketing and outreach campaign to reach customers at the neighborhood level through events and media as well as traditional marketing tactics like email and direct mail until fully subscribed.

As PSE works toward achieving 50 MW of Community Solar capacity, PSE will continue to identify opportunities to install projects throughout the service area, including:

- Constructing six additional solar projects throughout Whatcom, Skagit and King County Counties, identified through the early 2023 Request for Information
- Pursuing new locations to site solar through the "Host an Energy Project" portal where property owners can submit ideas to place new solar arrays.
- Evaluating responses from the 2023 DSS RFP for potential Community Solar locations
- Partnering with CBOs and tribal entities to host solar projects, which will provide an income stream to the participating organizations or Tribes through annual lease payments.

Distributional equity analysis pilot

Within the Community Solar program, PSE is testing a distributional equity analysis pilot program. Consistent with the conditions established in the Commission's Order in Dockets UE-220066, et al.[9]

In partnership with Lawrence Berkeley National Laboratory (LBNL), PSE will conduct a distributional equity analysis (DEA) pilot centered on at least one product in PSE's DER portfolio. The pilot's purpose is to develop a publicly available decision support tool and accompanying practical guide for enhancing traditional cost-effectiveness tests for DERs with recognition equity and distributional equity considerations. PSE initiated this work with LBNL in July 2023. For the first phase of the project, LBNL, working with PSE, started with data gathering and DEA design.

9. WUTC v. Puget Sound Energy, Dockets UE-220066, et al., Order 24 (Dec. 22, 2022).

Equity goals and metrics were developed for a demonstration project centered on PSE's Community Solar product – a key piece of PSE's 80 MW DER portfolio. We will apply preliminary components or tools to the solar pilot and will document methods used and initial results. The final phase of the 18-month pilot will include presenting the methodology and results in March 2024. An Advisory Board comprised of representatives, including regulatory agencies/utilities across the country, is being formed to peer review the tool and accompanying guide.

6.3.2. Green Power Solar Grants

Green Power Solar Grants is an annual program that funds solar arrays at nonprofits, public housing authorities, and Tribal entities serving low-income and/or BIPOC community members.

In 2021, PSE awarded $954,418 across thirteen eligible solar projects within its electric service area. Many projects started construction in 2022 and, once constructed and commissioned, will result in .513 MW of new solar capacity.

In 2022, PSE awarded another $753,620 across ten eligible projects within its electric service area. Once constructed and commissioned, the ten projects will result in 0.373 MW of new solar capacity.

Equity

Green Power Solar Grants provide customer benefits in burden reduction in named communities and environmental benefits through the deployment of renewable energy within PSE's service area. The installed solar offsets energy purchases, resulting in electric bill savings that reduce overheads for the recipients, which they can reinvest into providing more core services for community members. In addition to providing savings on their energy bills, these localized renewable energy projects support PSE's decarbonization goals and aspirations. The program also allows highly impacted communities and vulnerable populations to actively participate in clean energy.

Forecasted benefits

Table 5.16 describes the benefits for the Green Power Solar Grant program.

Table 5.16: Green Power Solar Grant program benefits by year

Targeted installation year	# of CBOs, public Housing authorities and Tribal entities awarded	Total $ awarded to offset upfront financial costs of installing solar *	Total kW (DC) planned for installation * **	Estimated total energy bill reduction for recipients for one year ***
2022	13	$954,418	513.13 kW	$59,173.64
2023	10	$753,620	373.47 kW	$43,068.19

* These figures represented the amounts requested or shared by applicants in their original application. Sometimes, during installation, these values change nominally.

** In some instances, PSE was one of multiple funders contributing to the planned system size

*** Assumes current average (summer & winter) per kWh under Schedule 24

Future work

In the 2022-2025 compliance period, PSE will provide two more rounds of grant funding (one round of grant funding in 2023-2024 and one round of grant funding in 2024-2025). We will have $750,000 to award for both rounds. PSE continues to fund the grants at the same level, through 2025. The solicitation for the 2023-2024 round will close in the third quarter of 2023; PSE will notify grant recipients in December 2023. Projects resulting from grant funding in the 2023-2024 round should be completed by the end of third quarter of 2024.

6.3.3. Net Metering

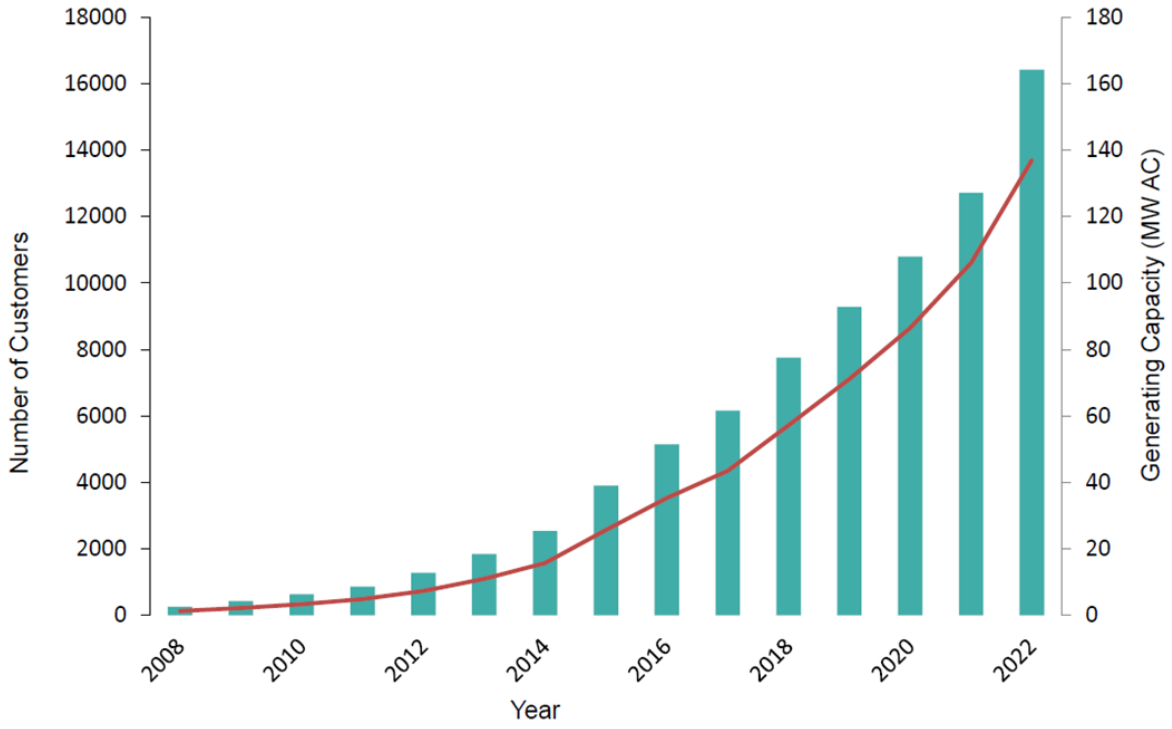
The Net Metering program allows for interconnection services for qualifying customer-generators. This program is based on a Washington State law enacted in 1999. Customers may connect fuel cells, hydroelectric, solar, wind, or animal waste gas generators as part of this program.

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

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

In net metering, PSE continues to see significant year-over-year growth. In 2022, PSE interconnected 3,745 customer projects under the Net Metering program, a 96.5 percent increase over 2021. In total, the 3,745 customer projects added in 2022 added 31 MWs of solar, bringing the total installed capacity to 136.8 MWs. As noted in the figure below, PSE's system count for customer-generators and its generating capacity has grown tremendously since 2008.

Figure 5.1: Net metering customer counts and generating capacity by year



We continue to assist customers in establishing systems that qualify for the Net Metering program. In 2022, PSE responded to 4,193 customer calls regarding solar and generated 1,162 solar referrals upon customer request.

Equity

The current net metering program, including customer interconnection, is a product/service PSE offers customers as required by state law. There are no goals, targets, or added incentives to increase the share of current net metering program benefits that go to named communities, historically underserved communities or vulnerable communities.

Additionally, PSE is participating in statewide efforts to study and evaluate the costs and benefits of the Net Metering program, including impacts to low income and vulnerable populations. PSE expects the findings of this work to help guide PSE in developing a more equitable successor tariff to Schedule 150, for new customer generators.

Forecasted benefits

Per RCW 80.60, PSE is required to offer the current terms of the Net Metering program (under Schedule 150) to customers on a first-come basis until PSE reaches 179.2 MW of net metered capacity on the PSE system. We expect to hit this threshold in early 2024. Once the threshold is reached, PSE plans to continue offering Schedule 150 until a successor tariff is in place for new systems. Under a new Net Metering program, PSE projects it will add 59 MW of added capacity between 2024 and 2025

from systems installed after PSE meets the threshold of 179.2 MW of net-metered capacity. This amounts to between 5,500-7,000 additional, customer-owned, and distributed solar systems able to generate approximately 65,000 MWh annually.

Future work

To broaden the Net Metering program opportunities for single occupancy homes and buildings to multi-family and multi-tenant properties, PSE is working to expand metering and billing system capabilities. This will support a business model for builders, owners, and property managers of multifamily buildings, to invest in solar energy and pass on the benefits to tenants through bill savings

6.3.4. Distributed Generation (solar and hybrid) [2023 DSS RFP]

In Order 08, the Commission included the following Condition 18:

> **CONDITION 18:** Community Solar. PSE will increase its community solar target from 25.4 MW to 50 MW by 2025.[10]

In 2023, PSE developed a Distributed Solar and Storage RFP (the 2023 DSS RFP) to procure DER – Solar and DER – Storage resources. All short-listed projects are currently in contract negotiations. To meet Condition 18, PSE will acquire 30 MW of DER – Solar proposals for PSE's Community Solar program, with the remaining projects used to support the entire system. These DER assets will still go through the same negotiation, development, and construction timeline as their counterparts in the Community Solar program; however, they will not be linked with the Community Solar tariff and customer enrollment program.

Equity

To encourage more energy benefits directed to named communities, PSE included evaluation criteria that ranked projects located in named communities higher during the 2023 DSS RFP evaluation process. Chapter 2: Updating the Clean Energy Targets provides further details on the 2023 DSS RFP evaluation process and its emphasis on equity focused project selection.

Of the shortlisted DER – Solar resources, including hybrid projects, about 80 percent of the MWs and 70 percent of the number of projects are in medium to high designated vulnerable populations, and about half of both MWs and the number of projects are in highly impacted communities. However, this value will change if any projects fail to achieve operation.

Forecasted benefits

The energy benefits for these projects can be broken up into two distinct categories; 1) those provided during the development phase and 2) those provided when the project is operational. During the

10. See Order 08, infra note 1, Appx. A at ¶ 20.

development phase, developers commit to complying with RCW 82.08.962 and 82.12.962 regarding clean energy labor standards, contracting a percentage of their overall bid to Small, Minority, Women-owned Business Enterprises, and additional benefits. For the operational phase of the projects, PSE is looking to convert some of the solar projects, where applicable, to Community Solar. This will allow additional benefits to be distributed to community members through enrollment in these Community Solar programs.

Benefits will also be provided to communities through the property taxes collected over the life of the projects. The main use case for shortlisted DER – Solar projects acquired through the 2023 DSS RFP is to provide more distributed renewable energy onto the grid. For projects acquired for the Community Solar program, they will also provide a large increase in capacity available for customer subscription.

Future work

For the projects shortlisted through the 2023 DSS RFP, PSE and developers will work on the following steps before commercial operation:

- Negotiating ownership and power purchase agreements to define commercial, operational, and pricing terms
- Interconnection studies and interconnection agreement execution
- Project development, which includes developer led community engagement, permitting, site control and additional duties
- Procurement and construction of generation and interconnection facilities
- Commissioning of facilities

While PSE was able to shortlist numerous projects to meet our short-term CEIP goals, more RFPs will be required to achieve our future distributed generation targets.

6.4. Future programs

6.4.1. Solar Export Rate

In 2023, PSE developed a ‘Purchases from Distributed Solar Photovoltaic Systems’ tariff to provide customer owned photovoltaic (PV) systems sized above the net metering threshold with financial compensation for energy returned to the grid. This program applies to customer owned PV systems with an alternating current (AC) capacity between 100 kW and 1000 kW. This program will address two specific actions proposed in the 2021 CEIP: multi-family and commercial and industrial (C&I) rooftop solar incentives.

This tariff aims to grow customer owned DER – Solar capacity and encourage the equitable installation of customer-owned DER – Solar systems throughout the PSE service territory. The rate improves the financial outlook for participating customers by reducing the payback period. Additional equity-focused incentives help named communities participate in the clean energy transformation.

PSE recognizes there are barriers to non-residential solar PV in the Pacific Northwest. PSE non-residential energy prices are low, and the available solar insolation is lower than many other regions of the United States. These factors make it difficult for non-residential customers to receive an overall reduction in energy bills after installing solar PV. To improve the financial return due to investment in solar PV, the Solar Export program increases the performance-based compensation for energy.

The Solar Export program's equity-focused design is for DER – Solar projects that are part of a named community or a customer that shares demographic characteristics with customers in named communities, and the community-based organizations (CBOs), government agencies and Tribal entities that serve them.

The equity-focused design elements also address barriers identified through community engagement. Specifically, this takes the form of an upfront incentive and interconnection cost allowance for new Equity-Focused solar PV projects. The benefits expected for equity focused projects are a further reduction of energy bills with the aim of an overall payback on the financial investment.

6.4.2. Residential Rent-to-Own [customer product]

In Order 08, the Commission included the following Condition 19:

> **CONDITION 19:** Eliminate Leasing. PSE will remove the residential rooftop solar leasing and residential battery leasing program concepts from consideration in its list of DER programs and will instead develop rent-to-own or other options for named communities and other residential customers.[11]

Per Condition 19, PSE will remove the residential rooftop solar and residential battery leasing program concepts from consideration and will instead assess the opportunity to offer rent-to-own or other options for named communities and other residential customers. This section includes specific actions for both solar and storage rent-to-own options, as PSE sees these as complementary rather than independent applications. Therefore, the DER – Storage section of this Chapter 5 will not cover rent-to-own details.

The specific actions that PSE has taken or plans to take related to rent-to-own options are listed below:

- In June of 2023, PSE initiated a modeling exercise to re-evaluate solar, storage, and solar + storage rent-to-own concepts for both residential and commercial applications, with the focus on creating pathways to ownership through a rent-to-own program.
- We included a rent-to-own residential solar concept in periodic customer surveys in January, April, and July of 2023 to gather customer interest in a service in which:

  PSE will size and install a solar system at your residence. You pay an installation down payment as well as a monthly fee on your electric bill for a contract period of 15 yrs. You

11. See Order 08, infra note 1, Appx. A at ¶ 21.

get the energy produced & anything you return to the grid will contribute to the clean energy transition. And at the end of the term, PSE will transfer the ownership of the system to you at no additional cost, to gather customer interest in the concept. Table 5.17 is a summary of customer interest expressed in the periodic customer surveys.

- In the fourth quarter of 2023, PSE will begin development of a combined analysis to further understand the key program components that will incentivize the greatest customer participation and benefit realization. Some items that will be tested include upfront payment amount, monthly rent, term of rental period, and customer benefits.
- We will also use the feedback from our community engagement to shape the program's design. One consistent theme we heard through community engagement is both overall and upfront costs are barriers to participation.
- We have also started an assessment of existing utility programs to inform program design, best practices, and lessons learned.

Table 5.17: Customer interest levels in residential rent-to-own solar

Customer interest	All respondents	Residential homeowners
Very interested	20%	22%
Somewhat interested	31%	35%
Not very interested	18%	19%
Not at all interested	30%	24%

After completion of the aforementioned customer research, modeling and benchmarking, PSE plans to finalize product design in 2024, which will culminate with a tariff schedule submittal to the Commission for consideration. Prior to that filing, PSE will engage with its Equity Advisory Group (EAG), the Conservation Resource Advisory Group (CRAG), and other interested parties to review product concepts and garner feedback and input. Beyond this, PSE will develop a go-to market plan in 2024 and launch a product in 2025.

6.5. Program marketing

PSE intends to incorporate learnings achieved through the community engagement process and lessons learned through other programs into the marketing and outreach plans for the program, and future DER - Solar programs. In addition to product specific marketing, there is a need to educate and raise customer awareness of the value of distributed solar, and to inform customers about available products that can address their needs and remove barriers for customers to participate.

PSE will provide education through mass-market commercial and residential channels such as online, bill inserts, and partnerships with market actors. To ensure engagement with named communities, PSE will consider the following tactics for marketing and outreach: transcreation of materials, email, direct mail, advertising, owned and earned media, local events, partnerships with community-based organizations, workshops, and other locally appropriate tactics to connect with customers where they are located.

6.6. Relevant Order 08 Condition summary

> **Condition 19:** Eliminate Leasing. PSE will remove the residential rooftop solar leasing and residential battery leasing program concepts from consideration in its list of DER programs and will instead develop rent-to-own or other options for Named Communities and other residential customers.

PSE has eliminated the residential solar leasing program concepts from consideration as part of its DER programs and will instead develop rent-to-own or other options.

> **Condition 20 and 21:** Minimum Designations. PSE will file with the Commission an amendment to this CEIP to designate for Named Communities a minimum of 30% of the energy benefits of its DER solar, DER storage, DR, and EE programs, with benefits measured across each tranche of resources. PSE will commit to developing a targeting approach to identify the customers and communities with deepest need within the broader category of Named Communities in consultation with interested persons and advisory groups. By the 2023 Biennial CEIP Update, PSE will designate a minimum percentage of energy benefits that will flow to Named Communities with deepest need.

➔ Please see the discussion in Chapter 3: Equity, Sections 6.1.4 and Chapter 4: Public Participation, Section 3.2.2 regarding minimum designation and deepest need.

7. Distributed Energy Resources – Storage

7.1. Purpose

Battery Energy Storage Systems (BESS) projects and customer products and programs are an important aspect of the clean energy transition that will help enable a reliable supply of electricity, despite the intermittent nature of the energy grid.

In 2021, PSE's CEIP preferred portfolio identified 25 MW of DER- Storage needed by 2025 and planned to establish final program designs based on the results of the 2022 DER RFP. Table 5.18 provides an overview of the storage resources and their expected contribution. The DER – Storage project resources listed in the first row of the table below represent projects that are PSE or developer owned that provide service to PSE's entire electric territory. These differ from Residential BESS Services listed on the second row of the table, which are customer facing resources that directly support those enrolled participants.

Table 5.18: Storage resources and expected contribution

Resource	Description	Commercial operation date (COD)	Location	BESS capacity (MW AC)
Distributed Storage Projects (BESS)	Standalone storage procured from the DSS RFP ranging from 1 – 5 MWs in size.	2025	Pierce, Thurston, King, and Whatcom counties	Up to 33.5 MWs*
Residential BESS Services	Voluntary residential program that makes BESS services available to certain customers	2025	Throughout PSE's service territory	5 MW**
Total				38.5 MW

* The BESS capacity amount represents the total amount of MWs on PSE's shortlist. The total amount could decrease some as projects go through negotiations, development, and construction.

** Estimate from AutoGrid proposal and Statement of Work provided in September 2023.

These DER – Storage programs combine to account for the following targets in Table 5.19 and are broken down further by the 30 percent named communities targets and 2.5 percent deepest need minimum designation.

Table 5.19: DER – Storage target and named communities designation

Year	DER Storage capacity target (MW)	30% named communities energy benefit target (MW)	2.5% deepest need minimum designation
2025	25 MW	7.5 MW	0.6 MW

7.2. Engagement with named communities

PSE is committed to using the common themes of feedback from the DER Community Engagement Summary to shape tariff design and planned product operations for named communities and their service providers, where possible.

As discussed previously, cost was consistently highlighted by customers as the largest barrier throughout the community engagement process. Our proposed new tariff schedule (see Residential BESS Services section below) includes financial incentives to offset the upfront costs and installation and maintenance support for vulnerable populations, as requested throughout the community engagement process.[12] Please see the DER Community Engagement Summary for additional information.

Additionally, PSE notified community engagement participants after submitting the tariff to the Commission on October 6, 2023, ensuring that they could offer public comment at the Commission's Open Meeting, if desired. We will consider additional community engagement feedback during the go-to-market phase of this product (see the Program Marketing section below for additional information).

12. 2023 Distributed Energy Resources Community Engagement Summary

Looking ahead, PSE will notify community engagement participants when the products they helped design are available to customers so they can apply themselves or make other eligible customers in their communities aware of the offering. The same methodology will apply to future storage products that PSE develops.

7.3. Program updates

Below is a detailed breakdown of the two storage resources/programs highlighted in the table above:

7.3.1. Distributed Storage projects

PSE issued the 2023 Distributed Solar and Storage RFP ("DSS RFP") in December 2022 and began accepting bids in 2023. PSE received nineteen DER – Solar bids, and PSE shortlisted six stand-alone storage bids based on the Societal Cost Test (SCT).

The six short-listed DER – Storage projects are starting the interconnection process. Table 5.20 provides a summary of the aggregated DER - Storage projects. Note: some projects could potentially fall through during the development and negotiation processes.

In the remainder of 2023, PSE expects to execute contracts with 2022 DER RFP bidders and shortlist bids from the 2023 DSS RFP.

Table 5.20: DER – Storage projects by type and location

Resource [Origination]	Description	COD	Counties	BESS Capacity (MW AC)
Distributed generation (solar and hybrid) [DSS RFP]	Hybrid projects 1, 2 and 3	2025		Hybrid: 3.5 MW BESS
BESS [DSS RFP]	BESS 1	2025	King	4.99 MW
BESS [DSS RFP]	BESS 2	2025	Pierce	4.99 MW
BESS [DSS RFP]	BESS 3	2025	Pierce	4.99 MW
BESS [DSS RFP]	BESS 4	2025	Pierce	4.99 MW
BESS [DSS RFP]	BESS 5	2025	Thurston	4.99 MW
BESS [DSS RFP]	BESS 6	2025	Thurston	4.99 MW
				Total: ~33.5 MW

Equity

To support more energy benefits going to named communities, during the RFP process, PSE included evaluation criteria that ranked projects in named communities higher. Most benefits come from these projects being located within the community and cannot be provided remotely.

Of the short-listed BESS resources, half the MWs and number of projects are in medium to high designated vulnerable populations, and a third in highly impacted communities. Of the hybrid resources, all MWs and projects are in medium to high designated vulnerable populations, and two thirds are in highly impacted communities.

Forecasted benefits

The energy benefits for these projects can be broken up into two distinct categories; 1) those provided during the development phase and 2) those provided when the project is operational. During the development phase, developers commit to complying with RCW 82.08.962 and RCW 82.12.962 regarding clean energy labor standards, contracting a percentage of their overall bid to Small, Minority, Women-owned Business Enterprises, and additional benefits. During operation, benefits such as property taxes provided to communities, income eligible enrollees into community solar programs and additional benefits may be provided. For BESS projects there may also be an additional benefit of greater local resiliency depending on the final use cases developed.

The main use case for short-listed DER – Storage projects through this RFP is system peak reduction. However, PSE recognizes there are numerous additional local and system wide benefits that could be realized with DER – Storage projects. As these resources are developed, PSE will look for opportunities to pursue additional benefits such as fast frequency response, energy arbitrage, voltage support, local feeder peak shaving, and any other benefits that can be supported by the project's capabilities.

Future work

For the DER – Solar projects short-listed through the 2023 DSS RFP, PSE and developers are working on the following steps before commercial operation:

- Negotiating ownership and power purchase agreements to define commercial, operational, and pricing terms
- Interconnection studies and interconnection agreement execution
- Project development, which includes developer led community engagement, permitting, site control and additional duties
- Procurement and construction of generation and interconnection facilities
- Commissioning of facilities

7.3.2. Residential BESS Services

Throughout 2023, PSE has been working to develop a 'Residential Battery Energy Storage System Services' program to make available electric residential BESS services to customers.

After working with interested parties[13] and prospective customers to help ensure the tariff schedule would include incentives that would encourage an equitable outcome, on October 6, 2023, PSE filed Schedule 611 - Residential Battery Energy Storage System Services Tariff Schedule with the Commission in Docket UE-230827.[14] This proposed tariff schedule makes several types of incentives available to residential customers who allow PSE to access their batteries during peak energy times, when there is the greatest power demand. Program participants contribute to peak demand reduction resulting in lower energy rates for everyone. The incentive amounts that customers qualify for is based on whether the customer can be identified as a vulnerable population, or a reliability-focused customer[15] as defined in the proposed tariff filing[16] and through verification during the application process.

To support the development of the residential DER – Solar product and tariff filing, PSE:

- Developed product concept brief for a residential storage program in 2022
- Received one bid for residential distributed batteries in the 2022 DER RFP. This bid was selected, and contracting is ongoing. Concurrently, PSE is updating internal standards and processes, and implementing a virtual power plant to prepare for the wide-scale deployment of distributed batteries
- Conducted community engagement on future DER products, including storage, from September 2022 through May 2023 Conducted benchmarking of residential battery programs and assessed secondary research across industry and academic publications. Peer utilities, vendors, and government agencies were contacted to shape and inform program design in 2023.
- Consulted with and presented community engagement feedback and program concepts to the Equity Advisory Group (EAG) and Conservation Resource Advisory Group (CRAG) in 2023.

Equity

As discussed in the engagement with named communities section above, PSE will provide a limited quantity of BESS purchase incentives to reduce the upfront cost of installing a BESS to assist with overcoming barriers toward adoption. BESS purchase incentives will be exclusively offered to vulnerable populations and reliability-focused customers taking service under the proposed schedule. Load management incentives (both participation and enrollment) will be available to all participating customers.[17]

13. PSE engaged with interested parties throughout the product and tariff development process. Those groups were comprised of representatives from highly impacted communities, Vulnerable Populations, and their service providers, as well as the Conservation Resources Advisory Group (“CRAG”), the Equity Advisory Group (“EAG”), and contractors and installers.
14. 230827-Advice-2023-47-PSE-CLtr-(10-06-23).pdf
15 Reliability-Focused Customer refers to a customer who is located in an area of greatest concern as reported by the Company per WAC 480-100-398, electric service reliability reports.
16. 230827-Advice-2023-47-PSE-CLtr-(10-06-23).pdf
17. 230827-Advice-2023-47-PSE-CLtr-(10-06-23).pdf

To address the specific conditions stipulated in Order 08, PSE has implemented several design components to further support vulnerable populations by incorporating findings from the equity-focused community engagement in these tariff filings. These design details are summarized in Table 5.21. In designing future programs for DER – Solar and DER – Storage, PSE will continue to look for opportunities to better ensure benefits flow to named communities.

Table 5.21: Design components in tariff related to Order 08

Condition	Description	Design component in tariff filing	Community engagement input
21	"developing targeting for Named Communities beyond using income as the sole criterion for program eligibility;	Expanded, flexible, eligibility criteria.	Upfront costs were consistently highlighted as the largest barrier to adoption; customers preferred upfront incentives and programs with low to no initial cost Participants highlighted the importance of energy independence and community or personal energy resilience Benefits should be available to all communities, including historically disadvantaged communities that have been left out of programs like these in the past.
21	"offering higher incentives for low-income customers and Named Communities;"	Higher incentives for customers that qualify as a Vulnerable Population customer, as defined in the tariff filing.	
21	"and targeting storage programs to Vulnerable Populations where increased reliability would reduce vulnerabilities."	Higher incentives for customers that qualify as a Reliability-Focused Customer, as defined in the tariff filing.	

Forecasted benefits

In Schedule 611 - Residential Battery Energy Storage System Services Tariff Schedule that PSE filed with the Commission in Docket UE-230827, PSE proposed making available several types of incentives to customers who enroll a qualifying BESS and allow PSE to access their battery during peak energy times. Participating customers will receive load management incentives (both for participation and enrollment). Customers who take part in the program will receive an incentive of up to $1,000 for enrolling their battery in the virtual power plant (VPP). Customers who take part in dispatch events via the virtual power plant will also receive participation incentives of up to $500 per year.

In addition, PSE proposed providing a limited quantity of BESS purchase incentives to reduce the upfront cost of installing a BESS for vulnerable population customers or reliability-focused customers. We have also proposed providing an incentive of up to 100 percent (up to $10,000) of eligible installation and equipment cost for a BESS for a customer identified as a member of a vulnerable population and an incentive of up to 100 percent (up to $5,000) of eligible installation and equipment cost for a BESS for a customer that is identified as a reliability-focused customer.

We will offer BESS exclusive purchase incentives exclusively for vulnerable population and reliability-focused customers taking service under this schedule. The available incentives are shown in Table 5.22.

Table 5.22: Residential BESS incentives

Incentive Type		Availability
Load management incentives	One-time Enrollment incentive	All qualified customers
	Annual Participation incentive	All qualified customers
BESS purchase incentive		Exclusively offered to vulnerable population customers and reliability-focused customers

Program marketing

The go-to-market strategy is under development for the residential battery product launch in 2024. That strategy will incorporate feedback received through PSE's community engagement process and lessons learned through other programs PSE will ensure that future marketing and outreach plans also incorporate those elements. In addition to product specific marketing, PSE needs to educate and raise customer awareness of the value of distributed storage, inform customers about available products that can address their needs, and remove barriers for customers to participate.

We will provide education through mass-market commercial and residential channels such as online, bill inserts, and partnerships with market actors. To ensure engagement with named communities, PSE will consider the following tactics for marketing and outreach: transcreation of materials, email, direct mail, advertising, owned and earned media, local events, partnerships with community-based organizations, workshops, and other locally appropriate tactics to meet customers where they are.

Future work

To create a successful program, PSE will complete the following actions over the next two years:

- Completing contracting with bidders for the 2022 DER RFP in 2023;
- Continuing to update internal standards and processes throughout 2024;
- Completing work related to the build out of the virtual power plant to prepare for the wide-scale deployment of distributed batteries in 2023 and 2024;
- Engaging in customer education and outreach in 2024;
- Engaging in contractor and installer education and outreach in 2024; and
- Building PSE internal processes, including billing, rebate processing, website updates, etc., in 2024.

7.4. Future programs

In addition to the residential battery product, PSE anticipates launching new distributed storage products in 2024 and 2025 for both residential and commercial and industrial customers, with varying ownership structures, informed by community engagement feedback.

In 2023, PSE conducted community engagement on future DER products, including batteries. PSE also began to conduct benchmarking of residential rent-to-own battery programs offered by other utilities

and assessed secondary research across industry and academic publications. Finally, PSE began to develop a product concept brief for a potential rent-to-own battery product.

Looking ahead, PSE plans to:

- Complete benchmarking and secondary research in 2024
- Complete product concept brief in 2024
- File a product tariff in 2024
- Develop a go-to-market plan in 2024
- Launch a product in 2025

The next round of customer facing battery storage program concepts to develop are discussed below.

7.4.1. Residential Rent-to-Own (behind the meter)

In compliance with Condition 19 in Order 08, PSE removed the residential rooftop solar and residential battery leasing program concepts from consideration and will instead assess the opportunity to offer rent-to-own or other options for named communities and other residential customers. These opportunities for storage and solar rent-to-own option are discussed in the DER – Solar section of this chapter.

7.4.2. C&I Battery Program

PSE is considering a program that leases space from commercial and industrial customers to deploy battery storage with an option to provide on-site backup power on site for customers at a small fee. PSE will also consider a commercial and industrial program that can build on the residential BESS program as a complement or alternative offering for commercial and industrial customers. The storage program will contribute to system peak energy management.

7.4.3. Commerce Solar and Storage Program

In 2022, the Washington State legislature allocated $37 million dollars to be dispersed by the Washington State Department of Commerce in 2023 as grants to "increase solar deployment and installation of battery storage in community buildings to enhance grid resiliency and provide backup power for critical needs, such as plug load and refrigeration for medication, during outages."[18] The Department of Commerce launched the Solar plus Storage for Resilient Communities grant program[19] to disperse the funds allocated by the State to fund:

> Solar and battery back-up power so community buildings can provide essential services when the power goes out. Grants support installation as well as planning work for solar plus storage systems at community buildings, including schools, community centers,

18. FY2023 Washington State Supplemental Operating Budget (section 128, subsection 227)
19. Solar plus Storage for Resilient Communities program – The Washington State Department of Commerce

libraries, and other buildings owned by local, state, tribal governments, and non-profits in Washington.[20]

Program projections

The intent of the Solar plus Storage for Resilient Communities grant program is to provide funding for two distinct tracks. Track 1 is for applicants needing additional technical assistance before applying for Track 2. Track 2 provides funding resulting in the completion of solar plus battery projects.

Track 1 provides funding for planning and predevelopment services for projects that:

- Complete community outreach and engagement to identify community needs and preferences for backup power provided by solar and battery storage
- Complete feasibility studies, cost estimates, specifications, or other design work
- Identify sites suitable for solar and battery storage equipment

Track 2 provides funding for projects that complete the installation of solar and battery storage systems including:

- Final design
- Purchase and installation of equipment
- Commissioning, development of operational plans, and workforce training for maintenance and operation of equipment
- Community outreach to increase the awareness of a facility funded under this grant

In early 2023, PSE announced an offer to partner with Track 2 grant recipients, whereby PSE would provide Track 2 awardees with the 30 percent minimum matching funds (or 10 percent for Tribal entities) as required by the Solar + Storage for Resilient Communities grant program. Track 2 awardees accepting PSE's offer would enter a contract with PSE, in which the awardees would provide PSE with ten years of grid services during peak periods or provide other grid services to PSE.

In 2023, PSE provided Track 2 applicants operating within PSE's service area with Letters of Intent indicating PSE's offer to partner with Solar + Storage for Resilient Communities grant program awardees. Three award recipients initiated discussions with PSE regarding a partnership since the Department of Commerce announced the first round of Track 2 funding recipients in the third quarter of 2023. Additionally, PSE has signaled its continued interest in partnering with future applicants for Track 2 funding.

Finally, while PSE intends to include partnered MWs of installed solar and storage as part of the Solar plus Storage for Resilient Communities grant program towards meeting PSE's 2025 CEIP DER targets, exact MWs will not be known until all projects awarded Track 2 grants in 2023 are installed and interconnected.

20. Solar plus Storage for Resilient Communities program – The Washington State Department of Commerce

8. DER Enablement

8.1. Purpose

The 2021 CEIP presents an initial layout of the DER enablement activities needed to design, launch, and manage a portfolio of DER pilots and programs efficiently and effectively. The following section provides an update on major work streams and the associated enablement activities. PSE also provides an action plan for each of the remaining years of the 2022-2025 compliance period.

In Order 08, the Commission included the following Condition 30:

> **CONDITION 30:** PSE must remove the following costs from the CETA portfolio: Hosting Capacity Analysis ($6.19m); Virtual Power Plant ($9.62m); Data Lake and Analytics ($3.65m); Substation SCADA – Accelerated ($41.36m); and Circuit Enablement-DER and Microgrid ($57.5m). The removal of these costs from the projected incremental cost of compliance with CETA in this Docket should not impact PSE's ability to request cost recovery for these investments in a future filing.[21]

Consistent with Condition 30, PSE will remove the following projects from the incremental cost calculation: Hosting Capacity Analysis; Virtual Power Plant; Data Lake and Analytics; Substation SCADA – Accelerated; and Circuit Enablement-DER and microgrid. We still provide an update on the projects above as the work will continue to enhance the grid for future DER development.

➔ Further details for all DER enablement work streams are provided in Appendix G: DER Enablement.

8.2. Program updates

8.2.1. Strategy & Portfolio Planning workstream

Innovation project and emerging technology process

Specific actions

In 2021, PSE issued an RFI for DERs, which enhanced PSE's understanding of DER options available in its service territory and informed the development of the 2022 DER RFP. PSE also developed a roadmap of DER demonstration projects through 2028 to test new technology and customer engagement strategies. Additionally, PSE has continued work on the Samish Island Community Microgrid demonstration project. The microgrid was installed in June 2023 with commissioning on-going as of November 1, 2023, and will test the ability of the microgrid to island during grid outages and load-

21. See Order 08, infra note 1, Appx. A at ¶ 32.

level a distribution circuit with a high penetration of solar. This project followed a New Technology Framework that facilitates incorporating the learnings from the development and operations of past projects and helps PSE to incorporate new technology with agility and high confidence.

Future work

Through the remainder of 2023, PSE will refine the demonstration project roadmap to prioritize the highest impact projects from customer, equity, and grid benefit lenses. In 2024, PSE plans to begin development of a grid-interactive efficient building and a community solar and battery microgrid demonstration projects, and in 2025 will begin vehicle-to-grid, smart electric panel, and consumer-scale battery demonstration projects.

Non-Wires Alternative (NWA) evaluation tool & methodology

Specific actions

Demonstration projects will be prioritized and evaluated using feedback from the DER Community Engagement summary and sites for future projects will be evaluated using the CETA Equity Plan scoring criteria used in the 2023 DSS RFP.

- Bainbridge Island
  - PSE has completed the RFP to select an Engineering, Procurement, and Construction battery vendor and has been working on completing the design for the full NWA solution.
  - Based on the current project timeline, PSE expects the project to be installed in 2027.
- Issaquah Area Distribution Capacity
  - PSE completed a non-wires analysis as part of the Issaquah area distribution capacity solutions assessment. Industry experts performed this assessment and concluded that a Non-Wires Alternative would not be cost competitive when compared with the proposed wires alternatives.
  - Although the Issaquah area distribution capacity solutions assessment did not result in the installation of a NWA solution, it helped PSE better understand NWA solutions and how they can be applied to needs on the system.
- Sumner Valley Area Distribution Capacity
  - PSE is currently in the evaluation of feasible NWAs that could meet the needs of the Sumner Valley area. PSE is completing this analysis in partnership with industry experts and will help to advance PSE's knowledge of NWAs and how they can be applied to meet the needs of the system.

Future work

- **Kitsap Transmission Capacity Upgrade project**

  PSE plans to issue a Non-Wires Alternatives Request for Proposal (the NWA RFP) for Kitsap County in late 2023 to investigate potential non-wires solutions for Kitsap County transmission

needs. This is consistent with the Commission requirement for PSE to evaluate non-wires solutions in its solutions development process. PSE will evaluate bid responses to the NWA RFP and integrate potential projects in developing potential transmission solutions to meet transmission needs in Kitsap County. PSE will compare potential solutions in terms of cost, benefits, and risks to determine a final solution that could be traditional wire upgrades, non-wires upgrades, or a hybrid solution (combination of wires and non-wires upgrades) to meet Kitsap County transmission needs.

- **Future NWA projects**

  PSE will continue to utilize the tools available to evaluate NWAs as part of the solution alternatives for major projects. These tools include NWA filter criteria, basic analysis, and detailed analysis. PSE will also continue to evaluate the effectiveness of RFP and other methods of soliciting NWAs to evaluate project solutions.

Relevant Order 08 Condition Summary

In Order 08, the Commission included the following Condition 25:

> **CONDITION 25:** In the 2023 Biennial CEIP Update, PSE must explain the selection process for NWA projects developed prior to preparing the CEIP and clarify how the Company views DERs as compared to NWAs. PSE must also describe the differences between the DER selection process and the NWA selection process and why they follow different evaluations and selection processes. PSE must also explain how it distinguishes between NWA projects that are necessary to meet CETA requirements and NWA projects that should be considered part of the Company's core business operations (i.e., reliability, etc.).[22]

Before preparing the 2021 CEIP, PSE evaluated NWA projects using established tools and processes developed in partnership with industry experts. These tools consider the system needs identified for a particular area and determine if NWA technologies would be an applicable alternative for that project. After identifying NWA opportunities in comparison with traditional solutions, NWA resources were identified based on local area needs without consideration of overall system-wide resource requirements. The benefits of these NWAs were localized to the specific area they served, and the needs identified within the project. NWA are cost-effective solutions for customers to provide reliable alternatives to traditional capital investment.

We identify the use case of a resource as the primary difference between DERs and NWAs. DERs are resources identified to meet system resource needs, whereas NWAs are installed to defer or eliminate the capital infrastructure investment and to meet specific needs identified on the grid. PSE evaluates NWAs on an individual project by project basis and are limited by technical criteria, project time, and economics, whereas PSE evaluates DERsas part of a system-wide evaluation. Once PSE identifies

22. [1] See Order 08, infra note 1, Appx. A at ¶ 27.

resources as feasible DERs, PSE evaluates whether these resources can solve local grid needs in addition to system-wide resource requirements. It is important to note that both DERs meant to provide system-wide resource and NWAs meant to the needs of local system are made up of the same technology and have secondary use cases serve as both system-wide DERs and local area NWAs.

Although all NWA installations are identified to meet specific needs and will operate as part of PSE's core business operations, there are opportunities for some of these resources to have an additional benefit of addressing CETA compliance requirements. These projects must be evaluated using PSE's NWA evaluation tools to ensure they can reliably contribute to CETA requirements while also meeting local grid needs.

In Order 08, the Commission included the following Condition 26:

> **CONDITION 26:** In the 2023 Biennial CEIP Update, PSE must explain why the NWAs evaluation tool and associated costs are included in the CEIP and explain why the tool is necessary for CETA compliance.

To ensure that PSE provides holistic, cost-effective solutions to customer needs, PSE's NWA evaluation tool is necessary for CETA compliance. By evaluating both the ability of installed DERs to meet identified local system needs and of NWAs to meet system-wide needs, PSE can increase the benefit of installed resources. We must utilize the NWA evaluation tool to identify how DERs can potentially have multiple use cases and can contribute to CETA compliance requirements. As mentioned previously, it is important to note that both DERs meant to provide system-wide resource and NWAs meant to the needs of local system are made up of the same technology and have the potential to serve as both system-wide DERs and local area NWAs. The cost of the NWAs evaluation tool was included in the CEIP because it is part of PSE's plans to meet its CETA obligations for compliance.

Data Lake and Data Analytics

Specific actions

The Data Lake and Data Analytics project includes implementation of a data repository capable of bringing together large, complex and isolated data sets and connecting them to analytics tools.

Actions completed or planned to be completed in 2023:

- Submitted a Request for Proposals (RFP) for a data lake and data analytics solution. PSE is currently negotiating contracts.
- Developing configuration, policy, test plan and training plan documents for solution implementation. Currently scheduled to begin installing and configuring the solution in 2023.
- Identified target data sources, interested parties and analytics use cases from electric operations groups. The use cases have been prioritized and requirements are being defined for the first two use cases.

Future Work

In 2024 and 2025 PSE will connect target data sources to the data lake, develop processes for managing data sets and analytics tools, implement data governance policies, training, and define requirements for and complete prioritized use cases.

Geospatial load forecasting

Specific actions

Through the LoadSEER program and the development of the DER Optimizer tool, PSE will continue to develop Geospatial Load Forecasting use to benefit DER installations.

Future work

As more DERs are installed on the system, PSE will continue to develop its knowledge regarding DER Optimizer.

Battery interconnection and standards strategy

Specific actions

Detailed below, PSE has broken the battery interconnection and standards strategy into three main categories:

1. The first category is strategy and alignment. PSE subject matter experts are synchronizing efforts between PSE's DER enablement strategy, other IT initiatives, such as complex billing, and regulatory impacts and policy hurdles.
2. The second category outlines the process and analysis methodology for safe and effective interconnection. PSE will develop processes and identify divergent steps for different battery types. Planning teams will also develop an analysis methodology for the current and future influx of battery interconnections. The last activity is to update the GIS mapping and billing setup processes for battery interconnections to reduce the time and effort required.
3. The third category of this strategy is standards. PSE will work to develop design and communication standards for all distribution-interconnected batteries. Additionally, the Schedule 152 Technical Specifications detailing the interconnection requirements will be updated.

Future work

The strategy team aims to identify, outline and finalize the standards and interconnection processes in the fourth quarter of 2023. Customer battery programs will start to enroll in the first quarter of 2024, and PSE must finalize all interconnection and standard processes before enrollment.

Hosting Capacity analysis

Specific actions

Hosting Capacity results estimate the amount of load or generation that can be accommodated by the electric distribution system at a given time and location without requiring infrastructure upgrades.

In 2021, PSE launched a “proof of concept” Hosting Capacity Heat Map to provide visibility and transparency into the solar generation capabilities of a given area. This was a successful first step to support PSE’s DER resource planning goals. To continue this momentum, PSE kicked off a project in mid-2023 to expand the map’s capabilities and improve the customer interconnection portal. This project focuses on developing additional hosting capacity capabilities and use cases, such as load-serving hosting capacity for large new customer load requests like fleet EV charging.

Future work

The Hosting Capacity enhancement project consists of three deliverables:

1. **The hosting capacity analysis tool**: This deliverable includes expanding the type of hosting capacity analysis to include both energy production (addition of generation) and consumption (addition of load). PSE will update the existing process for solar HCA, and establish new process for calculating load-serving capacity (referred to as EV charging capacity). The main hosting capacity analysis tool is Synergi, which takes in data from a variety of other sources including GIS, PI System data, SAP, etc. PSE will update these data streams and processes to increase the accuracy of the hosting capacity analysis results and streamline the refresh process.
2. **Hosting capacity map**: This deliverable focuses on expanding the usability of PSE’s heat map application for both internal and external interested parties. PSE will expand the web portal to include maps for both photovoltaic generation and EV hosting capacity use cases. More relevant data points will be available to end users along with an enhanced user guide for interpreting the results of the map.
3. **Enhanced interconnection portal**: This deliverable focuses on streamlining the interconnection process by prescreening and prioritizing applications. The interconnection portal enhancement effort aims to build out additional functionality in PowerClerk to automatically screen incoming customer applications.

Through this project, PSE desires to produce a self-service portal for distribution system capacity information, primarily for photovoltaic generations and EV use cases. The hosting capacity will in turn be integrated with the customer interconnection portal and business processes at PSE to increase efficiency for project screening and prioritization. Estimated completion for these enhancements is by the end of 2024.

8.2.2. Operations workstream

Asset management strategy and planning

Specific actions

To build the foundation for our scaling DER portfolio, PSE defined roles and responsibilities as well as outlined DER assets prioritization. The first DER assets PSE prioritized and established roles and responsibilities for were Community Solar assets. The asset strategy, which PSE outlined in the second and third quarters of 2023, defined internal processes, while also outlining the scope PSE will contract to Engineering, Procure and Construct ("EPC") vendors. PSE's asset strategy team defined a maintenance plan and standard document which will be utilized for all internal and external (EPC) community solar assets moving forward.

Future work

Once PSE has finalized the Community Solar strategy, the team will work to outline roles and responsibilities of PSE's larger utility scale solar projects (connected to ADMS/SCADA) in the fourth quarter of 2023. The last phase of the strategy will be for the PSE asset management strategy team to outline roles and responsibilities for front of the meter (FTM) battery projects in the first quarter of 2024.

Dispatch operations strategy and planning

Specific actions

To manage controllable thermostats and water heaters for demand reduction for targeted demand side management resources in the winter season of 2022-23, PSE implemented a virtual power plant (VPP). The targeted customers were in specific geographic areas where a demand reduction program was identified as a non-wires alternative (NWA) to defer the need for a new substation. The winter 2022-23 dispatch strategy tested various preheat parameters and demand reduction periods through eight separate events to determine the optimal dispatch parameters for a reduction event.

Moving forward, PSE will monitor weather conditions, temperature, and event results to determine if changes to the optimal dispatch parameters are warranted.

Future work

In 2024 and 2025, PSE will build off the dispatch strategies established in the first biennium with the following projects:

- As discussed previously in this chapter, PSE will launch a residential BESS program in 2024 using the virtual power plant to dispatch events
- PSE will deploy Tenino and Bucoda microgrids in 2025 with resiliency as their primary use case.
- PSE will deploy the DER – Solar projects acquired through the DSS RFP in 2025, which will follow the same dispatch and communication structure as the Poulsbo battery.

ADMS Advanced Apps

Specific actions

In 2023, PSE defined business requirements and contracted external technical expertise to develop a feasible design as highlighted below:

- Began design phase for advanced applications and established contracts to leverage external technical expertise.
- Procured and lab-tested new field devices needed for advanced applications.
- Built-out communication infrastructure to support software and hardware integrations.

Future work

In early 2024, PSE will continue design work. In the second quarter of 2024, PSE will transition from design to execution with initial documentation of learnings and familiarizing business units with the new technology. The following activities highlights the execution tasks:

- Transition from design to execution phase to implement advanced applications.
- Build out distribution infrastructure.
- Integrate distribution infrastructure to advanced applications.
- Document processes (i.e., modifying existing processes and/or to-be processes).
- Document learnings from pilots to determine how best to operationalize and scale systems post-pilot.
- Determine next potential substations for deployment.

Virtual Power Plant

A virtual power plant (VPP) is a cloud-based scheduler and controller that aggregates DERs for system peak capacity management. This technology capability is focused on behind the meter resources. In 2021, PSE began working on a VPP to provide a centralized application for enrolling, forecasting, dispatching, and assessing the performance (measurement and verification) of individual and combined programs across PSE's portfolio. Included in the portfolio are programs that support residential demand response (thermostats, batteries, EV/EVSE, water heaters), flex events, commercial and industrial demand response, residential batteries, commercial and industrial batteries, and more.

Program timeline

In 2021 PSE selected AutoGrid as the VPP vendor. The following year, PSE and AutoGrid worked together to design and implement a functional VPP platform. The platform allowed the manual enrollment, monitoring, aggregation, forecasting, dispatch, reporting, and management of DERs. Utilizing the VPP, PSE executed a series of demand response events supporting a pilot program for Bainbridge Island and some selected areas in Duvall, Washington.

This year PSE has expanded the VPP platform and scaled to support the system peak demand response use case in alignment with PSE's Integrated Resource Plan. Customers will have the option to enroll in a variety of programs from anywhere in the PSE service area. The VPP will be enhanced to

provide automated enrollment, validation, aggregation monitoring, reporting, and management of customers for all participating programs.

Future work

To fully integrate a VPP, PSE will require additional platform development. Future efforts include the development and execution of programs that support additional capabilities beyond demand response, integration with the trade floor and supporting transportation electrification efforts. VPP enhancements will also extend automation capabilities to include the forecasting, scheduling, and dispatch of DERs. Given that VPPs are a trending technology in the industry, PSE is working to establish system peak capacity management as the primary use case. Additionally, PSE is tracking industry developments of VPPs to maintain awareness of potential future opportunities.

Benefits

Some utilities have encountered growing pains because they built disjointed DER and DR programs that were managed by a variety of internal teams, vendors, and applications. Conversely, PSE is building a common platform that will manage all the programs under one umbrella as one “power plant.” This approach results in significant operational efficiencies, maximization of participation and visibility of DER and DR programs. Over the next few years, PSE is expecting to manage up to 100 MW by this platform; equivalent to large scale traditional thermal power plant or wind farm providing a significant contribution to PSE’s CEIP.

8.2.3. Resource Acquisition workstream

Project and site selection

Specific actions

As part of PSE’s new site solicitation process, we will include a continuously rolling submission process. We collect information and evaluates sites, both rooftop and ground from an online “Host an Energy Project” portal, and determines feasibility including potential for energy production, cost effectiveness, and equity considerations. By using PSE’s resources and broad outreach abilities, we can mitigate one of the harder issues of project development, site identification.

Future work to be done

As PSE solidifies the internal processes for the site solicitation process and develops additional customer products, PSE will promote the portal and spur site owner activity to collect more sites for DER development.

8.2.4. Customer Care workstream

Market engagement and benchmarking

Specific actions

Since filing the 2021 CEIP, PSE has pursued secondary research and benchmarking to inform DER product development. The residential and non-residential market segmentation has been evaluated from a DER perspective. PSE has connected with federal, state, local, and utilities to assess programs and enablement. PSE continues to participate in key industry organizations and meet with vendors and emerging technology providers. Demonstration projects continue to inform standards, process, and technology enablement. PSE has also obtained benchmarking through the DER, DSS, and Community Solar RFPs.

Future work

In the next biennium, PSE will continue to assess and adjust plans according to the evolving DER market. PSE will continue to build on specific actions and include customer, environmental, regulatory, technology, commercial, and interested party engagement and benchmarking.

Digital Experience (formerly known as DER Customer Care & Experience Strategy)

Specific actions

By the end of 2023, the PSE Digital Experience program will enable a multi-channel customer experience by building:

1. A product/service landing page on the pse.com website that allows customers to search and/or browse products and services
2. Consistent detail pages on the pse.com website for access to product/service education information, eligibility criteria, enrollment, and management, and
3. Enhancements on the My Account and My Bill pages on the pse.com website that present products/services, including DERs, to customers.

Future work

In 2024, the PSE Digital Experience project will expand the work completed in 2023 by:

- Adding the ability to “personalize” DER product/service recommendations to customers on the pse.com website based on account data
- Enhancing the business/commercial customer experience to display DER product/service recommendations on the pse.com website
- Expanding the customer preference center to include additional communication consent categories

- Making it easier for returning customers to manage their communications and product/service enrollments by adding customer communication consent and program enrollment to the start service transaction flow
- Implementing role-based access to give customers more flexibility to manage their products/services through their online account or when contacting PSE customer care

Customer Relationship Management (CRM) platform

Specific actions

As part of the Customer Relationship Management project, PSE will implement an industry leading marketing platform to enable more data-driven program marketing tactics to support the DER program outreach, resulting in increased program participation per dollar spent.

Future work

In 2023, the Customer Relationship Management project team will complete the product selection, select an implementation partner, and define the business requirements. In 2024, PSE will complete the system build and launch, thereby providing PSE with the ability to better communicate with its customers. Scope will also include proper training of staff to ensure that customers receive the best possible service.

Complex Billing Functionality

Specific actions

To enable multiple DER programs with common billing functionality such as fixed monthly payments, event-based compensation, time-of-use periods, and interconnection billing/payments, PSE will use a coordinated approach to IT billing system upgrades. This project will incrementally deliver new functionality and services to support DER programs, as well as new products and services supporting CETA goals.

Future work

In 2023, the complex billing functionality project will deliver several billing products including: Fleet Charging Incentives, Time-of-Use Incentives, Bill Discount Rates, and Demand Response Incentives. In 2024, the project will deliver Peak-Time-Rebate Billing, Net Metering 2.0 Billing, and Community Solar Billing.

All new billing and incentive capabilities will enable benefits for named communities, including recently implemented tiered reductions through the Bill Discount Rate program. Community Solar will provide new, non-traditional solar opportunities for named communities.

8.2.5. Equity

Investment Decision Optimization Tool

The Investment Decision Optimization Tool ("iDOT") is PSE's terminology for its optimization software. The tool optimizes benefits and costs for a given financial portfolio and selects the best set of feasible projects against a set of constraints and dependencies.

In April 2023 PSE updated its iDOT with new benefits and costs related to equity in response to paragraph 26 of the Settlement Stipulation and Agreement on Revenue Requirement and All Other Issues Except Tacoma LNG and Green Direct in Dockets UE-220066, et al.,[23] which paragraph 26 states as follows:

> **26.** Investment decision optimization tool ("iDOT"). PSE will develop new benefits and costs (with associated weights) related to equity for use in the optimization step in its replacement software for iDOT.
>
> **a.** PSE must, at minimum, collaborate with its Equity Advisory Group, Integrated Resource Plan ("IRP") Advisory Group, and its customers, particularly in named communities. Engagement with these groups will occur at least at the "Collaboration" level on the International Association for Public Participation Spectrum.
>
> **b.** New benefits and costs in the iDOT should include, but are not limited to, societal impacts, non-energy benefits and burdens, and the Social Cost of Greenhouse Gases, as well as any other benefits and costs deemed appropriate after engagement with PSE's advisory groups.
>
> **c.** PSE will establish a process for including new iDOT benefits and costs within the Solutions Assessment of projects.
>
> **d.** Once PSE has completed its pilot distributional equity analysis, participated in the Commission Staff-led process, and has received approval from the Commission for its methods (and updated its analysis as necessary to reflect the approved methods), PSE will incorporate such analyses as a decision-making tool alongside the Benefit/Cost Analysis ("BCA"), which is currently performed in the Optimization step and the Alternatives and Solutions Analysis step.[24]

These requirements culminated in PSE's first effort of adding an additional equity benefit category for ability to consider distributional effects in the optimization step. All projects optimized in iDOT are evaluated for how customer equity is addressed in each alternative. To align with broader company objectives and programmatic analysis, PSE leverages Customer Benefit Indicators (CBIs) and information established as part of the Biennial Update to identify an equity framework to evaluate

23. WUTC v. Puget Sound Energy, Order 24, Appx. A (Settlement Stipulation and Agreement on Revenue Requirement and All Other Issues Except Tacoma LNG and Green Direct) (Aug. 26, 2022)
24. WUTC v. Puget Sound Energy, Order 24, Appx. A (Settlement Stipulation and Agreement on Revenue Requirement and All Other Issues Except Tacoma LNG and Green Direct) (Aug. 26, 2022) at 16.

system projects. As the process continues to mature, PSE will continue to adjust and refine equity consideration in specific projects when necessary.

9. Grid Mod

9.1. Purpose

The 2021 CEIP has helped to bring visibility to some of the fundamental capabilities needed for the electric grid in preparation for clean energy transformation. For years, PSE has been investing in the modernization of the grid; this reporting is going to focus specifically on the efforts driven by the CEIP. These efforts fall into the three categories below:

- Substation Supervisory Control and Data Acquisition (Sub SCADA)
- Resiliency Enhancement
- Circuit Enablement – DERs and Microgrids

The electric distribution system was not originally designed to accommodate reverse power flow, so system upgrades are often necessary as part of DER interconnection. The main goal of the Circuit Enablement – DERs and Microgrids, is to proactively address system constraints that limit DER penetration and microgrids. As a result, PSE will ideally encourage more customer DER adoption by reducing interconnection barriers.

Note**:** Substation Supervisory Control and Data Acquisition (Sub SCADA) and Resiliency Enhancement projects have been removed from this update in accordance with the GRC settlement, where these projects will be discussed and costs attributed. PSE also will remove Substation SCADA from the incremental cost calculation based on Condition 30 of Order 08.

With the removal of these other three projects, the subsequent sections only describe the Circuit Enablement – DERs and Microgrid project.

9.2. Project update

9.2.1. Circuit enablement – DERs and Microgrid

The 2021 CEIP outlined the targets for this project as described in Table 5.23.

Table 5.23: 2021 CEIP project targets

Year	# of Circuits Enabled	MWs of DERs
2023	7-8	5 MW
2024	8-9	5 MW
2025	12	5 MW

In 2023, PSE scoped ten different circuits, five of which are located in highly impacted communities, to add approximately 18 megawatts of DER hosting capacity.

The projects outlined in Table 5.23 targeted circuits in areas projected to have higher DER penetration. In the process of fine-tuning the scope of our projects, PSE found it was operationally more beneficial to prioritize increasing the number of megawatts of hosting capacity over the number of circuits enabled.

The strategy for this project's initial phase identified circuits that were most likely to install more DERs, both in front of and behind the meter. Initial assessment involved identifying circuits with existing DER connections, high net-metering (residential solar), high-solar production, and circuits identified as serving highly impacted communities. With this priority list, PSE conducted deeper studies to upsize small conductors that limit hosting capacity.

In the early stages of incorporating equity considerations into system planning efforts, PSE created the highly impacted communities circuits list by identifying circuits that intersected with a highly impacted communities' geography. As data capabilities evolve, PSE will revise this methodology as equity definitions, and strategies.

Equity considerations are performed within Investment iDOT, PSE's project portfolio optimization and multi-variable attribute value-based decision analysis tool.

9.3. Engagement

With our engagement strategy, PSE has opened and driven conversations to explore further developments between DER and equity, as the strategy team is actively looking into other partnerships with Community Solar, Community Resilience Hubs, Washington State Resiliency Grants, PSE's Distributed Solar, and Storage RFP. Three notable efforts are:

1. In collaboration with Community Solar, future partnerships with Community Resilience Hubs, creating circuit scorecards to apply more effective and strategic solutions (i.e., targeting DER in capacity-constrained areas, layering on equity analysis)
2. Integrated wildfire strategies for system improvements in wildfire-risk areas
3. Benefits increasing load hosting capacity as circuit enablement efforts improve expanded customer connections, whether generation or load

9.4. Future work

To continue upgrade implementation and system replacements in areas that PSE forecasts deficiencies in hosting capacity, PSE plans to increase hosting capacity for the enablement of DERs and microgrids. Depending on location and type of DER interconnection to the electric grid, some or all the following solutions are necessary:

- **Upsizing of assets such as conductors and service transformers:** Additional DERs typically exceed the rating of existing service transformers and conductors feeding smaller neighborhoods or areas near the end of a circuit. Investing in upgrades directly offsets DER interconnection costs.
- **Line capacitors/regulators or substation transformer upgrades for voltage regulation:** Proper voltage is necessary for the electrical equipment to operate correctly. Interconnecting new DERs can introduce voltage variation above PSE's standard service requirements; PSE's Schedule 80 dictates the allowed voltage at the customer services. Equipment to manage the voltage throughout the distribution circuit such as capacitors/regulators and/or substation transformer upgrades are required to prevent voltage variations during DER interconnections. These directly offset DER interconnection costs.
- **Additional reclosers and protective relays to form microgrids:** Microgrid creation requires isolating load and generation from the utility power grid. Additional reclosers and protective relays are needed to achieve proper microgrid isolation, inclusion, and protection. These do not offset DER interconnection costs but are needed to provide enhanced resiliency to customers once DERs are included in the system.
- **Substation upgrades such as smart circuit breakers, 115 kV circuit switchers, or communications to protect the system from higher fault currents:** Interconnecting DERs can introduce additional fault currents in case of equipment failure. Proper protection and prevention of catastrophic equipment failure require upgrades to existing high voltage circuit breakers, switches, or related communications. These upgrades directly offset DER interconnection costs.
- **Improving communication networks for granular loading data:** Knowledge of the existing load trends and real-time management of the circuit must be refined. Upgrades to the existing communication network to support real-time visibility are needed. These upgrades directly offset DER interconnection costs.

Additionally, PSE is assessing the usage of a DER optimizer tool to apply to our system assessments to strengthen strategy development.

9.5. Impacts from Conditions

In Order 08, the Commission included the following Condition 30:

> **CONDITION 30:** PSE must remove the following costs from the CETA portfolio: Hosting Capacity Analysis ($6.19m); Virtual Power Plant ($9.62m); Data Lake and Analytics ($3.65m); Substation SCADA – Accelerated ($41.36m); and Circuit Enablement-DER and Microgrid ($57.5m). The removal of these costs from the projected incremental cost of compliance with CETA in this Docket should not impact PSE's ability to request cost recovery for these investments in a future filing.[25]

25. See Order 08, infra note 1, Appx. A at ¶ 32.

In this Biennial Update, PSE removed two projects from the Grid Mod section of the incremental cost calculation: Substation SCADA and Circuit Enablement – DERs & Microgrid. This change is reflected in Appendix E: Biennial Cost Update.

10. Energy assistance

10.1. Purpose

One of PSE's current CBIs addresses Energy Security, which is measured through residential arrearages and disconnections for non-payment. On October 1, 2023, PSE implemented a new Bill Discount Rate program designed specifically to reduce energy burden for customers with the greatest need. PSE designed the program through a collaborative process with members of our Low-Income Advisory Committee over an intensive series of meetings and conversations. The Bill Discount Rate program includes improvements over previous energy assistance programs such as self-declaration of income and household size, simplified online forms, and automated applications for PSE Home Energy Lifeline Program.

10.2. Current and future work

To support the Bill Discount Rate program and ensure rapid customer adoption, PSE is implementing a focused effort to deliver over 150 outreach activities in support of the program launch to share information with customers and local service providers. The effort includes workshops at libraries, food banks, health clinics, senior centers, immigrant assistance centers, veteran resource centers and other community organizations in multiple languages to provide one-on-one assistance to customers in named communities.

Community organization staff trained by PSE have also been able to assist customers through the sign-up process, some indicating that it will be their top priority during the heating season.

➔ The program was also a focus of our Equity Forums discussed in Chapter 4: Public Participation.

This engagement work is ongoing as we work to enroll customers long-term.

11. Leveraging public funding

11.1. Funding

Through state and federal programs, PSE is working to leverage available funding opportunities that can accelerate our efforts to reduce carbon emissions, as well as reduce the costs associated with the transition to clean energy and improve affordability for our customers.

An overview of current funding sources:

- Infrastructure Investment and Jobs Act grant funding
- Inflation Reduction Act tax credits for consumers and businesses
- U.S. Department of Energy loan programs
- Washington state programs – state appropriated funds and federal allocations

When Congress passed the Infrastructure Investment and Jobs Act (IIJA) in November 2021, PSE hired external consulting support to evaluate funding opportunities that would provide benefits to customers and align with PSE's strategic needs. The consultant worked with a cross-section of PSE leaders to build an approach for the IIJA application process. From December 2021 to February 2022, PSE evaluated all grant opportunities where a utility could directly receive funding as well as opportunities where utilities could partner or be a sub-grantee; PSE projects and programs were assessed for readiness and impact against grant descriptions and scoring criteria released by the U.S. Department of Energy. Based on this scoring process, PSE decided to proceed with grant applications in three areas: Grid Flexibility, Grid Resilience, and Regional Clean Hydrogen Hub.

Grid Flexibility: On March 16, 2023, PSE submitted a Grid Flexibility grant application for the maximum possible award of $50 million.

Grid Resilience: On April 6, 2023, PSE submitted a Grid Resilience grant application for the maximum possible award of $100 million.

The competition for these grants was high, with over 700 applications received. On October 18, 2023, the U.S. Department of Energy released the list of 58 winning applications for the first round of Grid Flexibility and Grid Resilience grants. Unfortunately, PSE's projects were not among those selected. There are two additional rounds of funding expected for these grants and PSE intends to pursue these opportunities in the future.

Regional Clean Hydrogen Hub: PSE is a member of the Pacific Northwest Hydrogen Association (PNWH2), a consortium of public and private entities spanning Washington, Oregon and Montana working together to bring clean hydrogen power solutions that leverage the region's vast renewable energy resources, to market. On April 7, 2023, PNWH2 submitted a grant application to secure funding for a regional clean hydrogen hub. PSE is one of 17 companies that has projects proposed as part of

the hub. PSE's project is centered on using hydrogen for peak power generation to help maintain a clean, reliable grid.

On October 13, 2023, the U.S. Department of Energy selected PNWH2 for award negotiations following a competitive nationwide process. The PNWH2 Hub (Hub) is eligible to receive up to $1 billion in federal funding over four development phases spanning nine years. The Hub's projects will drive economic opportunity across all demographics, creating or supporting more than 10,000 good-paying jobs and stronger energy security to improve the lives and futures of people throughout the region. The Hub's vision and projects were developed with leadership from Tribes, unions, industry and many others and will help deliver a shared vision of clean and equitable energy systems in the Pacific Northwest.

11.2. Future work

PSE has established an internal program to track, evaluate and report on public funding opportunities (grants, tax credits, loans) as they become available. These opportunities fall into three main categories:

- Direct funding – Opportunities that directly enable PSE's clean energy strategy and goals and where PSE would be the main recipient of the funds
- Strategic partnerships – Opportunities where PSE is not the main recipient, but we can help drive funding to strategic partners (Tribes, municipalities, industry, academia, etc.) that complement or accelerate our clean energy strategy and goals
- Broad customer education and engagement – Funding that is available through state and federal programs that can help our customers decarbonize or lower their energy costs

Through this program, PSE hopes to create a transparent and efficient system for managing public funding opportunities within the organization.

CUSTOMER BENEFIT INDICATORS

CHAPTER SIX

PUGET SOUND ENERGY

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1. Introduction

In this chapter, Puget Sound Energy (PSE) updates its customer benefit indicator (CBI) table, including addition of some, and removal of other, indicators and metrics; removal of directional language from metrics; and addition of a specific actions column, which identifies the programs that will help achieve the desired directionality for each indicator. Table 6.1 incorporates each of these changes.

Since filing its first Clean Energy Implementation Plan (the 2021 CEIP), PSE has continued to collect and refine CBI data. The original definition of vulnerable populations from the 2021 CEIP defined the metric data shown in Table 6.1. Although PSE has updated its definition of vulnerable populations in accordance with the Washington Utilities and Transportation Commission's (the Commission) Order 08, PSE will require additional time to convert metric data to align with the new definition of vulnerable populations. CBI data in the 2025 CEIP filing will incorporate the definition of vulnerable populations explained in Chapter 3: Equity.

➔ See Appendix H: Customer Benefit Indicator Metrics for all updates to CBIs and associated data.

Table 6.1: Updated CBI and metrics table

CETA category	Indicator	Direction	Specific actions	Metric
Energy Benefits Non-energy Benefits Reduction of burdens	Improved participation in clean energy programs from highly impacted communities and vulnerable populations	Increase	• Energy Efficiency • Demand Response • Distributed Resources	• Number and percentage of participation in energy efficiency, demand response, and distributed resource programs or services by PSE customers within highly impacted communities and vulnerable populations • Percentage of electricity generated by distributed renewable energy projects • **NEW - Number of residential appliance and equipment rebates provided to customers residing in Named Communities** • **NEW - Number of residential rebates provided to customers residing in rental units**

CETA category	Indicator	Direction	Specific actions	Metric
Non-energy Benefits	Increase in Quality and quantity of clean energy jobs	Increase	• Energy Efficiency • Demand Response	Quantity of jobs based on: • Number of jobs created by PSE programs for residents of highly impacted and vulnerable populations • Number of local workers in jobs for programs • Number of part-time and full-time jobs by project Quality of jobs based on: • Range of wages paid to workers • Additional benefits offered • Demographics of workers
Non-energy Benefits	Improved home comfort	Increase	• Energy Efficiency	Dollar in net present value (NPV) in NEI benefits for EE programs.[1]
Reduction of burdens	Increase in Culturally-and-linguistically accessible program communications for Named Communities	Increase	• Energy Efficiency • Demand Response • Distributed Resources	• Outreach material available in non-English languages • Outreach material available in English languages • Outreach material impressions in non-English languages • Outreach material impressions in English languages
NEW - Reduction of Burdens	**Decrease number of households with a high energy burden**	**Decrease**	• **Energy Efficiency** • **Energy Assistance** • **Distributed Resources**	• **Number and percent of households** • **Average excess burden per household**
Environment	Reduced Greenhouse gas emissions	Reduce	Utility-scale resources	• PSE-owned electric operations metric tons of annual CO2e emissions • PSE contracted electric supply metric tons of annual CO2e emissions
Public Health	Improved outdoor air quality	Reduce	Utility-scale resources	Regulated pollutant emissions (SO2, NOx, PM2.5)
Public Health	Improved community health	Reduce	N/A[2]	Occurrence of health factors like hospital discharge
Resilience	Decrease frequency and duration of outages	Decrease	• Utility-scale resources • DER Storage • Demand Response	• **Utility-scale and DER Storage:** Number of outages, total hours of outages, and total backup load served during outages using System Average Interruption Duration Index (SAIDI) and System Average Interruption

1. PSE is updating the metric for this CBI to be consistent with direction provided in Order 08, paragraph 152.
2. PSE is unsure how its current metric of tracking hospital discharge rates will inform any current or future specific actions to improve community health as it relates to clean energy. PSE will continue to explore alternative metrics for inclusion in the 2025 CEIP.

CETA category	Indicator	Direction	Specific actions	Metric
				Frequency Index (SAIFI) Reduction in peak demand through demand response programs • **DR:** Peak demand through demand response programs
Risk Reduction Energy Security	Improved access to reliable, clean energy	Increase	• DER Storage • Net Metering	Number of customers who have access to emergency power
NEW - Energy Security	**Decrease residential arrearages and disconnections for nonpayment**	**Decrease**	**Energy Assistance programs like PSE's Bill Discount Rate program (https://www.pse.com/en/account-and-billing/assistance-programs/bill-discount-rate)**	• **Number and percentage of residential electric disconnections for nonpayment by month, measured by location and demographic information (zip code/census tract, KLI customers, Vulnerable Populations, Highly Impacted Communities, and for all customers in total). If residential disconnections are not required to be reported quarterly to the Commission in any other docket (e.g., U-200281 or U-210800) or rule, PSE must report residential disconnections as reported pursuant to Commission Order 04 (Appendix A Third Revised Term Sheet, Section J, Part 2.a), in Docket U-200281, on a quarterly basis through the end of this CEIP implementation period (December 31, 2025).** • **Residential arrearages as reported pursuant to Commission Order 04 (Appendix A Third Revised Term Sheet, Section J, Part 8 a-c) in Docket U-200281. If residential arrearages are not required to be reported to the Commission in any other docket (e.g., U-200281 or U-210800) or rule, PSE must track the following residential electric data by month, measured by location and demographic information (zip code/census tract, KLI customers, Vulnerable Populations, Highly Impacted Communities, and for all customers in total)** • **The number of customers with past-due balances (arrearages)**

CETA category	Indicator	Direction	Specific actions	Metric
				• **The amounts of past-due balances that are past due 30+, 60+, and 90+ days, as compared to total arrearages.**

2. Relevant Order 08 Conditions

In Order 08, the Commission included the following in Condition 12:

> **CONDITION 12:** PSE must begin tracking data immediately and incorporate the following CBI metrics in its 2023 Biennial CEIP Update.
>
> a. PSE must add the following CBIs and metrics to the CETA category of Reduction of Burden:
>
> i. CBI: Decrease number of households with a high energy burden (≥6%)
>
> ii. Metrics:
>
> 1. Number and percent of households
>
> 2. Average excess burden per household
>
> This CBI must be separately tracked and reported for all PSE electric customers that include Known Low-Income (KLI) customers and Named Communities. KLI customers are defined as those who have received energy assistance during the prior two years.
>
> b. PSE must add the following CBI and metrics to the CETA category of Energy Security:
>
> i. CBI: Decrease residential arrearages and disconnections for nonpayment
>
> ii. Metrics:
>
> 1. Number and percentage of residential electric disconnections for nonpayment by month, measured by location and demographic information (zip code/census tract, KLI customers, Vulnerable Populations, Highly Impacted Communities, and for all customers in total). If residential disconnections are not required to be reported quarterly to the Commission in any other docket (e.g., U-200281 or U-210800) or rule, PSE must report residential disconnections as reported pursuant to Commission Order 04 (Appendix A Third Revised Term Sheet, Section J, Part 2.a), in Docket U-200281, on a quarterly basis through the end of this CEIP implementation period (December 31, 2025).
>
> 2. Residential arrearages as reported pursuant to Commission Order 04 (Appendix A Third Revised Term Sheet, Section J, Part 8 a-c) in Docket U200281. If residential arrearages are not required to be reported to the Commission in any

other docket (e.g., U-200281 or U-210800) or rule, PSE must track the following residential electric data by month, measured by location and demographic information (zip code/census tract, KLI customers, Vulnerable Populations, Highly Impacted Communities, and for all customers in total) and

3. The number of customers with past-due balances (arrearages); and,

4. The amounts of past-due balances that are past due 30+, 60+, and 90+ days, as compared to total arrearages.

c. PSE must add the following metrics to the CBI for "Improved participation in clean energy programs from Highly Impacted Communities and Vulnerable Populations":

i. Number of residential appliance and equipment rebates provided to customers residing in Named Communities.

ii. Number of residential rebates provided to customers residing in rental units.[3]

Consistent with this Condition 12's requirements requiring metrics for "decrease number of households with a high energy burden" and "decrease residential arrearages and disconnections for nonpayment," PSE added two additional CBIs, which PSE must track and report for all known low-income and named communities' electric customers.

PSE also added the following metrics to the "Improved participation in clean energy programs from highly impacted communities and vulnerable populations" CBI:

- The number of residential appliance and equipment rebates provided to customers residing in Named Communities
- The number of residential rebates provided to customers residing in rental units

Additionally, with input and guidance from Commission Staff, PSE removed the following two CBIs from this Biennial Update and future CEIPs:

- The first removed indicator was the reduction of climate change impacts, which examined the social cost of carbon related to avoided emissions.
- The second removed indicator was improved affordability of clean energy, which tracks and monitors how much of a customer's income is attributed to the electricity portion of their energy bills.

In Order 08, the Commission included the following Conditions 13 and 14:

> **CONDITION 13:** In the 2023 Biennial CEIP Update, PSE must remove directionality language from any discussion about metrics and distinctly separate the language suggesting a goal or directionality from the metrics. The directionality language may be

3. Order 08, infra note 1, Appx. A at ¶ 14.

included in the CBI or may be developed into a specific target. PSE must track metrics without regard to directionality and must immediately modify its data collection of any metrics that currently include directionality language to meet this requirement.[4]

CONDITION 14: In the 2023 Biennial CEIP Update, PSE must update Table 7-5 to remove directionality from metrics and create a separate column that indicates the desired directionality for each CBI (e.g., "increase" or "reduce," etc.) or specific target (if available). PSE must also add a new column to the table that lists specific actions that are relevant to or directly intended to achieve the desired directionality for each relevant CBI.[5]

In compliance with these Conditions 13 and 14, PSE removed directionality language from the metrics and added specific actions to Table 6.1.

On June 16, 2023, PSE filed a CBI metric report card of all CBIs and metrics with the Commission in Docket UE-210795.[6]

➔ Appendix H: Customer Benefit Indicator Metrics provides this report card.

3. Future work

Looking forward, PSE will continue to work on developing and understanding the following customer benefit indicators: 1) fish and wildlife 2) wildfire 3) and sense of pride and self-sufficiency, per the commitment PSE made in the 2021 CEIP. We also heard feedback from advisory groups related to understanding benefits for customers in the deepest need, such as bill reduction and rate impacts.

➔ Chapter 4: Public Participation discusses engagement for these indicators in further detail, and the data discovered thus far.

As we implement this CEIP, we intend to evaluate the baseline data collected for each CBI and understand trends or stories underlie this data. In evaluating baseline data, PSE will assess disparities or burdens faced by customers. PSE will undertake this work in collaboration with the Equity Advisory Group (EAG) in 2024. Once baseline data is developed, PSE will look to establish interim goals for some or all of its CBIs for the 2025 CEIP.

4. Order 08, infra note 1, Appx. A at ¶ 15.
5. Order 08, at ¶ 16.
6. CBI Metric report card