EXH. WTE-1CT
DOCKETS UE-22___/UG-22___
2022 PSE GENERAL RATE CASE
WITNESS: WILLIAM T. EINSTEIN

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **PUGET SOUND ENERGY,** **Respondent.**	**Docket UE-22____** **Docket UG-22____**

PREFILED DIRECT TESTIMONY (CONFIDENTIAL) OF

WILLIAM T. EINSTEIN

ON BEHALF OF PUGET SOUND ENERGY

REDACTED VERSION

JANUARY 31, 2022

PUGET SOUND ENERGY

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I. INTRODUCTION

Q. Please state your name, business address, and position with Puget Sound Energy.

A. My name is William T. Einstein. My business address is 355 110th Ave. NE, Bellevue, Washington 98009-9734. I am employed by Puget Sound Energy ("PSE" or the "Company") as Director New Product Development.

Q. Have you prepared an exhibit describing your education, relevant employment experience, and other professional qualifications?

A. Yes, I have. It is Exh. WTE-2.

Q. What are your duties as Director New Product Development of PSE?

A. I am responsible for the development and marketing of new customer products including PSE's transportation electrification program, community solar product, voluntary renewable electric and natural gas products, the Green Direct product, the customer product elements of PSE's Time Varying Rates ("TVR") pilots, and the customer facing elements of PSE's future Distributed Energy Resource ("DER") products outlined in PSE's Clean Energy Implementation Plan

("CEIP"). I also oversee the operation of PSE's equipment leasing, street lighting and telecommunications siting programs.

Q. What is covered in your prefiled direct testimony?

A. My testimony covers the following topics.

- PSE's Product Development Process: I provide an overview of PSE's product development process to provide the Commission with an understanding of how PSE identifies, designs, and deploys new customer products and services.

- Green Direct Customer Collaborative: I provide a summary of the ongoing Green Direct customer collaborative work and PSE's recommendation for establishing a more durable methodology for calculating the Green Direct credit going forward.

- TVR Pilots: I provide an overview of the customer elements of PSE's plan for implementation and deployment of the TVR pilots and the costs required to implement these pilots through 2025.

- Transportation Electrification: I provide a discussion of PSE's current Electric Vehicle Supply Equipment ("EVSE") pilot products and services and the costs incurred to implement them. I also provide an outline of new or expanded EVSE products and services described in the Transportation Electrification Plan ("TEP") which will also detail expected expenditures through 2025, cost recovery, and benefits of the products and services.

- Distributed Energy Resources: I provide a review of the DERs necessary to implement PSE's CEIP, including an outline of the preferred products and services the Company intends to offer, the implementation strategy for those products and services, and the costs required to implement these products and services through 2025.

- Prudency of Voluntary Renewable Natural Gas Product Information Technology Expenditures: I provide an explanation of the benefits and request a prudency determination for the information technology costs expended to enroll and bill customers for PSE's Voluntary Renewable Natural Gas service (Schedule 138).

- Sale of and Exit from Water Heater and Conversion Burner Rental Services: I provide information regarding the finalized sale of the natural

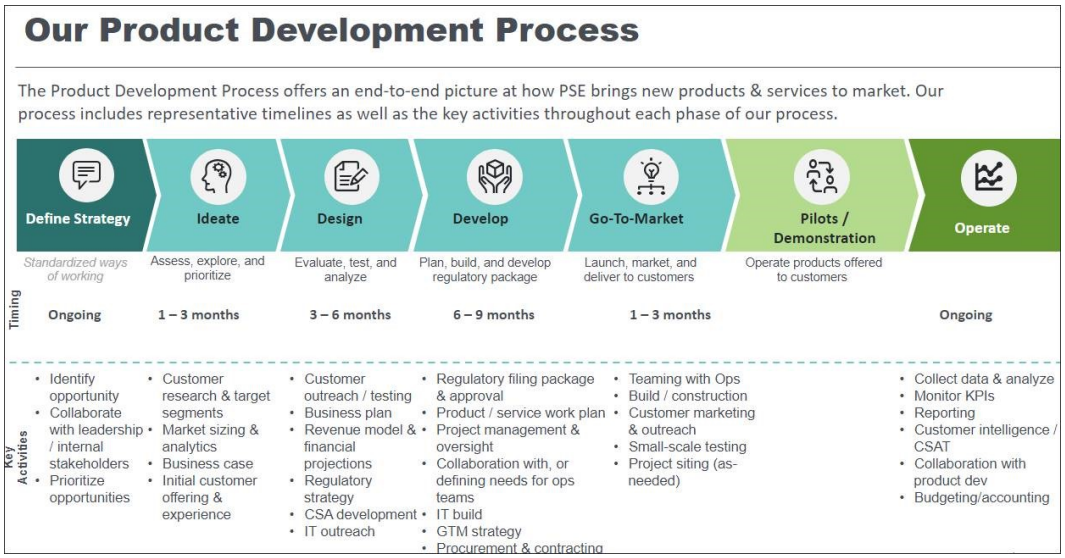
gas Water Heater Rental service, the discontinuation of the natural gas Conversion Burner Rental service, and the costs incurred to exit these product offerings.

II. PRODUCT DEVELOPMENT PROCESS

Q. Does PSE utilize a standard process to facilitate new product development?

A. Yes. PSE has established an end-to-end process to aid in introducing new products and services to market as detailed in Figure 1 below. This is the process PSE generally uses for the implementation for all new customer-facing products and services.

FIGURE 1: PRODUCT DEVELOPMENT PROCESS



Q. When and how did PSE establish its product development process?

A. PSE engaged an outside service provider in 2018 to help define and establish its product development process. This was accomplished by assessing current industry best practices for product development and conducting internal

interviews with product groups and internal stakeholders to understand the current state and to document any areas for improvement. Out of this process, goals and objectives were identified, a high-level design framework and detailed process flows were created, and that detail was then shared with product groups and internal stakeholders for further refinement.

Q. What were the intended key outcomes of this work?

A. The key outcomes were first, to develop a new product development process; second, to create new business tools and templates to facilitate that process; and finally, to establish next steps for implementation.

Q. Why did PSE establish this product development process?

A. PSE established this product development process to mature and formalize its ability to:

- Develop and deliver new products and services more effectively;
- Incorporate industry best practice;
- Incorporate customer feedback into the development process;
- Establish a consistent framework for both internal and external stakeholders; and
- Drive business efficiencies.

Q. When did PSE begin to use the product development process?

A. PSE first began using this formalized product development process in 2019.

Q. What are the product development phases before a product is operational?

A. There are four distinct phases, as detailed below, that PSE may leverage in bringing a new product to market:

- Ideate
- Design
- Develop
- Go-To-Market

Q. How long does the product development process usually take?

A. The average product development process can take anywhere between 12 to 18 months from ideation to product launch to customers depending on the complexity of the product, market readiness, duration of regulatory review, and other internal/external interdependencies.

Q. What occurs during the ideation phase and how long does this phase usually last?

A. The ideation phase allows PSE to assess, explore, and prioritize various product concepts. To accomplish this, PSE conducts customer research and segmentation, completes market sizing and analytics, develops an initial business case, and details preliminary customer offering and experience. These activities can take anywhere between one to three months.

Q. What type of activities does PSE include in the design phase and how long does this phase usually last?

A. During the design phase, PSE focuses on evaluating, testing, and analysis. Key activities for this phase include customer outreach and testing, development of a formal business plan, creation of financial models, determination of regulatory requirements, identification of information technology requirements and initial cost estimates, and securing of internal corporate approvals. Given the breadth of activities in this phase, the various steps can take approximately three to six months.

Q. What type of activities does PSE include in the develop phase and how long does this phase usually last?

A. In the development phase, the primary objectives are to plan, build, and develop the final regulatory package and operational capabilities. Some activities include creation of the regulatory filing package and securing Commission approval, finalization of the product and service work plan, definition of project management requirements, development of a go-to-market strategy, and execution of any necessary information technology infrastructure development, material procurement, and/or service provider contracting and onboarding activities. The development phase can take anywhere between six to nine months to complete.

Q. What type of activities does PSE include in the go-to-market phase and how long does this phase usually last?

A. The go-to-market phase is when PSE formally delivers the product to market and enrolls customers. This launch phase includes customer outreach and marketing, any initial installation or enrollment activities, and project siting or small-scale testing as needed. This phase can last approximately one to three months.

Q. Did or will the Company use its product development process for the new products or services discussed in your testimony?

A. Yes.

III. GREEN DIRECT

Q. Please describe Green Direct.

A. "Green Direct" is the product name for PSE's Voluntary Long Term Renewable Energy Purchase Rider under electric Schedule 139 created to meet the renewable energy needs of PSE's governmental and large corporate customers who consume at least 10,000 megawatt-hours (MWh) annually. The primary purpose of Green Direct is to provide large existing customers with an affordable and project specific renewable energy option for up to 20-year contract terms.

Q. What objective does the Green Direct product serve?

A. Many of PSE's large corporate and governmental customers have goals to meet 50 percent or more of their loads with renewable energy within the next 10-15 years. While PSE is taking action to move toward a renewable energy future under the Washington Clean Energy Transformation Act ("CETA"), these customers expressed interest in transitioning to significant amounts of renewable energy prior to the adoption of CETA. Through Green Direct, they are driving the development of new renewable energy resources in Washington State and advancing the transition to a clean energy future while meeting their own goals for renewable energy from a dedicated resource.

Q. Why is PSE addressing Green Direct in this case?

A. PSE is addressing Green Direct in this case is to resolve outstanding questions regarding the allocation of costs and benefits to Green Direct participants, including the calculation of Green Direct customer charges and credits, that arose during PSE's 2020 Power Cost Only Rate Case, Docket UE-200980 ("2020 PCORC").

In PSE's 2020 PCORC, PSE asked for a prudency determination from the Commission on the selection of the projects selected to supply Green Direct customers. PSE also sought to finalize several accounting and reporting issues raised as part of PSE's last general rate case where the Commission asked PSE to work with its regulatory staff to track all revenue and costs associated with Green

Direct. During settlement negotiations, however, questions were raised by other parties regarding the methodology used for calculating the Green Direct Energy Charge Credit. The calculation of Green Direct Customer charges and credits was not part of PSE's 2020 PCORC filing and only arose during settlement negotiations.

Q. Were those questions resolved in the 2020 PCORC?

A. Not entirely. The parties in the 2020 PCORC reached a settlement that resulted in a change from the previous Energy Charge Credit calculation methodology but reserved the right to reevaluate the method to calculate the revenue requirement and to track PCA imbalances pertaining to the treatment of Green Direct cost, revenue, and load in future proceedings. The settling parties agreed to work toward a path forward on a durable method for calculating the energy credit for Green Direct customers.

Q. Please describe the change to the Energy Charge Credit resulting from the 2020 PCORC settlement.

A. The Energy Charge Credit provides participating customers with a credit for the energy that they do not purchase as a traditional commercial customer of PSE since they are being charged for renewable energy through the Green Direct program. The 2020 PCORC settlement changed the Energy Charge Credit from the original peak credit methodology that was used at the initiation of the product and Schedule 139 to the Variable PCA Baseline Rate adjusted to include

normalized test year load. This change resulted in an 11 percent decrease in the Energy Charge Credit, and an increase in the total bill cost to Green Direct customers of over six percent.

Q. Were Green Direct customers a party to the 2020 PCORC settlement?

A. No, Green Direct customers were not a party to the settlement as they were not parties to the 2020 PCORC proceeding.

Q. Did PSE propose changing the Energy Charge Credit?

A. No. PSE did not propose or advocate for a change to the Energy Charge Credit in its 2020 PCORC filing or at any point during the case. As noted above, changes to the credit calculation arose during settlement discussions with the other parties to the 2020 PCORC.

Q. Did Green Direct customers have concerns about the settlement when it was proposed to the Commission?

A. Yes, given the cost increases that the changes created, Green Direct customers had significant concerns about the change in the methodology for calculating the energy credit. These concerns were expressed by some customers to the Commission during the public hearing on the settlement.

Q. Did the Commission approve the 2020 PCORC settlement?

A. Yes, the Commission approved the settlement, but it also recognized the complexity of the issue and the need for additional discussions between stakeholders and the Green Direct customers to further refine the methodology for calculating the Energy Charge Credit. The Commission directed PSE "to follow-through with encouraging Green Direct customers to participate in the future discussions on this issue."[1]

Q. Did PSE meet with Green Direct customers to discuss the impacts of the 2020 PCORC settlement?

A. Yes. Following the 2020 PCORC proceeding, PSE began meeting with Green Direct customers in June and July 2021 to explain the changes that the 2020 PCORC settlement created for the Energy Charge Credit and to discuss customer interest in participating in collaborative discussions with the other parties to the 2020 PCORC settlement. The first formal meeting with all Green Direct customers was held on July 28, 2021, to provide additional information on various credit calculation methodologies and to explain potential paths forward as part of a collaborative process. Following the July 28 meeting, customers expressed concerns regarding the proposed timeline, and asked PSE to provide more time

[1] *WUTC v. Puget Sound Energy*, Docket UE-200980, Order 05 ¶ 18 (June 1, 2021).

for them to secure consulting service support from experts in rate making and regulatory proceedings.

Q. What is the status of the collaborative discussions PSE was directed to initiate as a result of the 2020 PCORC settlement?

A. On September 24, 2021, PSE held the first Green Direct Credit Collaborative meeting. Stakeholders who attended included representatives for Commission Staff, Public Counsel, Alliance of Western Energy Consumers, Renewable Northwest, and the Green Direct customers. There was consensus from all parties to continue discussions to further define and account for all the costs and benefits that should be attributed to Green Direct and reflected in the Energy Charge Credit calculation. Follow-up technical meetings were held on November 19 and December 13, 2021, and January 11, 2022, to allow interested parties to discuss various credit calculation methodologies, costs, and benefits in greater detail.

Q. Were the parties to the collaborative able to reach agreement on a new methodology for calculating the Energy Charge Credit prior to the filing of this general rate case?

A. No, the parties to the collaborative were not able to reach an agreement prior to the filing of this case. There is consensus among the collaborative stakeholders that the proceeding should continue to determine if an agreement can be reached among the collaborative participants and that the collaborative discussions should not be rushed.

Q. What are the next steps for the Green Direct collaborative discussions?

A. The participants to the collaborative will continue their efforts to reach an agreement on the Energy Charge Credit. Should those discussions not be successful during the pendency of this case, PSE recommends the Commission approve the Renewable Peak Credit methodology proposed by PSE in this case as described in the Prefiled Direct Testimony of Jon A. Piliaris, Exh. JAP-1T, as the most appropriate means for calculating the Energy Charge Credit.

IV. TIME VARYING RATE PILOT

A. Overview

Q. Why is PSE implementing the TVR pilot and testing alternative rate designs?

A. PSE is implementing this pilot because the Company strongly supports 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. These new pricing structures also increase the number of rate choices available to customers who can select the rate option that best suits their lifestyles and preferences. By piloting these rates on a smaller scale and understanding customer response and preference, PSE will be able to extend these pricing options to the broader customer base in the future. In addition, implementing these pilots is consistent with recommendations from Commission Staff. As detailed in the Prefiled Direct Testimony of Birud D. Jhavari, Exh. BDJ-1T, the Commission Staff in PSE's 2019 general rate case

recommended the creation of Time-of-Use ("TOU") and Critical Peak Pricing ("CPP") pilots.[2] Moreover, the pilots are part of the Company's broader effort to maximize customer benefits by leveraging its investment in Advanced Metering Infrastructure ("AMI"). The Company's AMI system deployment is underway, with an expected system-wide completion in 2023. Consistent with the Commission's guidance in the previous rate case,[3] PSE anticipates that TVRs will be one of the core use cases for its AMI investment that will be available and yield benefits to all customers (pending the Commission's approval and positive results from the pilot). Please see the Prefiled Direct Testimony of Dr. Sanem I. Sergici, Exh. SIS-1T, for a discussion of these AMI-enabled benefits.

Q. How will the TVR pilots benefit customers?

A. As detailed in the Prefiled Direct Testimony of Dr. Ahmad Faruqui, Exh. AF-1T, the TVR pilots aim to:

- Minimize systems costs
- Increase customer choice
- Enhance equity and accessibility
- Expand renewable integration

[2] *WUTC v. Puget Sound Energy*, Dockets UE-190529/UG-190530 et al., Prefiled Direct Testimony of Jason L. Ball, Exh. JLB-IT at 37:1-37:7 (Nov. 22, 2019).

[3] *WUTC v. Puget Sound Energy*, Dockets UE-190529/UG-190530 et al., Final Order 08/05/03 ¶ 157 (July 8, 2020).

Sergici, Exh. SIS-1T, elaborates that the system benefits related to TVRs specifically include:

- Avoided generation capacity cost
- Avoided transmission and distribution ("T&D") capacity costs
- Avoided energy costs
- Avoided emissions[4]
- Avoided T&D losses

Q. Please describe PSE's TVR pilot proposal.

A. PSE's TVR pilot proposal will allow the Company to explore the efficacy of time varying pricing designs and gauge the ability of price signals to influence customer behavior. Through the pilot, the Company will evaluate TVR's potential to reduce system costs, reduce carbon emissions, offer customers an opportunity to reduce bills, and increase customer choice. These objectives are explained further in Faruqui, Exh. AF-1T and Jhavari, Exh. BDJ-1T.

Q. Please describe the TVR pilot products and services.

A. As detailed in Faruqui, AF-1T, and Jhavari, Exh. BDJ-1T, PSE is exploring time-varying pricing for its residential and smaller general service customers. Based on input from stakeholders and internal subject matter experts, PSE is proposing to

[4] While the direct impacts of TVRs in reducing emissions is likely minimal and is not quantified in Dr. Sergici's testimony, TVRs indirectly lead to substantial avoided emissions by enabling the integration of renewable resources and reducing renewable curtailments.

test six different treatments in the proposed TVR pilot, as shown in Table 1 below.

TABLE 1: PROPOSED TREATMENT GROUPS IN THE PILOT

Rate	Non-Low-Income Residential	Low Income Residential	All Residential	Small Business
Time Of Use (TOU)	√	√	N/A	N/A
TOU + Peak Time Rebate (PTR)	√	√	N/A	√
Three-period TOU (EV)	N/A	N/A	√	N/A

Q. Is the Company's three-period TOU (EV) rate applicable to the electric vehicle ("EV") load only? If not, why didn't the Company propose an EV-only treatment group in the above pilot rates?

A. No, the three-period TOU (EV) rate is not applicable to just the EV load. Instead, it applies to the whole-house load including the EV load. At this time, it is not technologically feasible for the Company to include an EV-only treatment group in the pilot (where EV charging is metered separately from the rest of the house) because PSE is still in the process of evaluating and implementing a suitable methodology for accurately billing customers (either through smart chargers, vehicle telematics, or load disaggregation software). The Company determined that a three-period whole-house TOU rate that features a super off-peak period can appeal to customers with EVs, and such a rate can similarly accomplish the pilot objectives. Further, this approach allows PSE to utilize and leverage existing

metering capabilities. As EV metering technology continues to evolve, PSE will conduct feasibility demonstrations as part of its transportation electrification efforts discussed in section V below. Through this parallel initiative (but differentiated from the TVR pilot), PSE will further explore and assess various technologies for obtaining billing grade consumption data specific to the customer's EV usage.

Q. Will customers with residential energy storage systems be eligible to participate in the above pilot rates?

A. While residential energy storage customers will not be specifically targeted for the pilot. To the extent that they are either contacted for recruitment, or volunteer to participate through word-of-mouth knowledge, will be allowed to participate in the pilot. However, they will not be included in the evaluation, measurement, and verification ("EM&V").

Q. Will the proposed treatments be paired with enabling technologies?

A. No, the pilot will focus on customer responsiveness to pricing without imposing enabling technology requirements. However, it is widely established that enabling technologies can boost customer responsiveness, so the use of such tools will be encouraged, and customers may be referred to existing PSE energy efficiency programs that provide subsidized devices. Additionally, PSE may explore other methods to identify customers who are utilizing enabling technologies and

analyze them as a subgroup during the EM&V stage to directionally measure marginal impacts.

Q. What research was conducted to understand customer receptiveness and preferences for TVR?

A. To inform the TVR design the Company conducted five customer focus groups. These focus groups allowed PSE to better understand how different customers perceive and respond to the idea of time-varying electricity rates, and how TVRs may, or may not, impact electricity usage behaviors. PSE, through the focus groups, was able to gauge the overall interest, appeal, and barriers to acceptance of TVRs. The results of these focus groups are detailed in Exh. AF-4.

B. Implementation Strategy

Q. Please describe the steps necessary for PSE to implement the TVR pilot.

A. In order to successfully build, deploy, and manage the TVR pilot, PSE will execute its product development process as outlined in section II above. Additionally, PSE anticipates there will be four distinct efforts that will result in a successful pilot which include: (1) customer education, outreach and enrollment; (2) information technology development and management; (3) EM&V; and lastly (4) pilot program management.

Q. Please describe what PSE expects to include in the customer education, outreach, and enrollment effort.

A. PSE plans to develop several customer education and enrollment capabilities to successfully recruit a statistically appropriate sample size of customers in each treatment group. This will require PSE to communicate to customers why PSE is offering the pilot, to share with customers educational materials detailing the concepts PSE is seeking to address, terms and conditions of participation, and steps to enroll. PSE will also consider any information or digital tools that help educate participants on how the pilot rates would impact their bills with respect to their expected behavior. For example, bill impact analysis tools can help estimate customer bills under the new rate based on their usage choices. Given that some customers may not have access to digital tools, PSE plans to educate and enroll those customers through other channels such as direct mail or engagement with Customer Care or Energy Advisor personnel.

Q. Does PSE anticipate that it will provide customers with an incentive as part of the enrollment process?

A. The Company has included in its plan, based on best practice, an incentive of no more than $25 per customer as a customer appreciation recognition for their participation in the pilot.

Q. Please describe what PSE plans to include in the Information Technology ("IT") development and management effort.

A. The key IT expenditures for the TVR pilots will include preparation of a digital platform that allows for customers to enroll in the pilot for PSE to track enrollment. In addition, the IT investment will enable configuration of the billing system to apply the various TVR structures under the pilot. These expenditures include software updates to revise the customer bill presentation, automating customer communication, and integrating and testing systems, including the bill impact modeling tool detailed above. PSE expects that the IT investments made to support this pilot will enable the deployment of rates to the broader customer population.

Q. Please describe what PSE anticipates may be included in the EM&V process.

A. As detailed in Faruqui, Exh. AF-1T, there will be four specific 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 surveys before, during, and at the conclusion of the pilot. For a more in-depth description of what may be included in each of the EM&V stages please see Faruqui, Exh. AF-1T.

Q. Please describe what PSE anticipates including in the pilot program management effort.

A. The Company expects that the key pilot program management activities may include:

- Managing the successful implementation of education, outreach, and enrollment strategies with both internal and external stakeholders;
- Evaluating customer issues, proposing solutions, and managing customer expectations;
- Developing and managing all program related activities including goal and target setting, budget planning, and program direction; and
- Conducting any necessary ongoing customer research, data analysis, and reporting needed to support the success of the pilot.

The Company will develop and file these plans following the Commission's approval of the TVR pilot.

C. Cost Recovery

Q. What is the total estimated budget PSE anticipates it will spend through 2025 to implement the TVR pilot?

A. The total amount PSE estimates it will spend on the TVR pilot through 2025 is $7.5 million.

Q. What is the estimated split between capital versus operating and maintenance ("O&M") expenditures for the TVR pilot?

A. The expected split is approximately 79% capital versus 21% for O&M expenditures.

Q. What is the total expenditure broken down by year that PSE expects to spend through 2025 on implementing the TVR pilot?

A. The total amount PSE has included in this filing to spend on the TVR pilot by year through 2025 is detailed in the table below.

Table 2. Planned TVR pilot expenditures by year

Category	2023	2024	2025	Total
Capital	$6M	-	-	$6M
O&M	$655K	$295K	$599K	$1.5M
Total	$6.7M	$295K	$599K	$7.5M

Q. How will these estimated expenditures be allocated to execute the TVR pilot?

A. Below is an approximate allocation of the estimated expenses required to execute the TVR pilot. This is an estimated allocation and is provided as an example. It is subject to change as the pilot moves through the design, deployment, and evaluation phases.

Table 3. Estimated expense allocations for TVR pilot

Education, Outreach & Enrollment	6%
Information Technology Development and Management	80%
Evaluation, Measurement & Verification	6%
Pilot Program Management	8%

Q. Why does the information technology development and management expense make up such a significant portion of the pilot expenses?

A. As described above, the TVR pilots will require custom configuration of PSE's meter data management and customer billing systems to allow the Company to document the appropriate usage data and apply multiple time varying pricing structures as proposed under the pilots. This will also require complex software updates to revise the customer bill presentment. Finally, PSE will leverage technology solutions to support its education, outreach, and enrollment efforts which will require similar custom configuration and integration of any associated digital tools.

Q. Are there future cost efficiencies that could be leveraged from this work?

A. Yes, the Company believes that the IT development expenses will establish the technology necessary to fully deploy future dynamic pricing capabilities to all customers should the pilot be successful, and should the parties agree that PSE should implement a full-scale TVR program.

Q. How is PSE expecting to recover these expenditures?

A. As detailed in the Prefiled Direct Testimony of Susan E. Free, Exh. SEF-1T, PSE is seeking to recover current estimated expenditures for the TVR pilot through this multiyear rate case.

V. TRANSPORTATION ELECTRIFICATION

A. Overview

Q. Why is PSE addressing transportation electrification in this case?

A. I am addressing transportation electrification issues for two reasons: first, my testimony provides an overview of PSE's current EVSE charging pilot products and services, the associated tariffs, and the costs to implement them; second, I describe the expanded EVSE products and services set forth in the TEP and the associated costs of these products and services through 2025 that PSE is seeking recovery for in this case.

B. Electric Vehicle Supply Equipment Charging Pilot Products and Services

Q. What are PSE's current EVSE charging pilot products and services and associated tariffs?

A. PSE's EVSE products and services are a portfolio of pilot products that provide a balanced portfolio of services to customers and support market transformation. The services include:

- **Schedule 583: Electric Vehicle Charging Products and Services –** This schedule provides the terms and conditions of the products and services;

- **Schedule 551: Electric Vehicle Non-residential Charging Products and Services –** This schedule includes the Workplace & Fleet and Public EV charging products, which allows for the installation of up to 150 Level 2 EVSE in workplaces or fleet buildings and up to eight locations for public fast charging. PSE collects anonymized data from these chargers and participants, including data on usage of the chargers and customer awareness of electric transportation. PSE also collects revenue from the use of the public fast chargers at a rate set to the market average and adjusted periodically in filings with the Commission;

- **Schedule 552: Electric Vehicle Residential Charging Products and Services –** This schedule includes the Multi-Family Residential charging and Single-Family Residential charging and off-peak charging products. Under these products, PSE installed up to 75 Level 2 chargers in multi-family residential buildings and 500 chargers in single-family residential buildings. PSE collects data from these chargers and participants, including data on usage of the chargers and customer awareness of electric transportation. PSE also provides incentives to customers in single-family residential buildings to charge at specified times and measures the customer performance in charging at those times. The results of customer performance will be used to inform future off-peak charging products and services;

- **Schedule 553: Electric Vehicle Education and Outreach –** In this service, PSE provides general information and education on transportation electrification technologies, charging, and benefits to customers. The information is provided through a variety of channels, including PSE's website, digital and paper communications, and through online and in-person events. This work is completed through PSE's existing communication channels, such as newsletters and social media, and partnerships with other stakeholders in electric transportation; and

- **Schedule 554: Electric Vehicle Low Income Transportation Service –** In this service, PSE is testing electric transportation in applications that can be used by low-income customers. Several potential opportunities, including electrification of medical transportation, shared transportation programs in housing developments, and electrification of services to low-income customers were identified in the filing. These were developed in collaboration with agencies serving low-income customers. Partnerships with agencies providing transportation services to customers is part of providing these products. In 2021, PSE determined that "Low Income" did not fully capture the customer segment served by the projects under this

service; they are now referred to as "Diversity, Equity and Inclusion (DEI) Electric Vehicle Transportation."

Q. Why is PSE providing EVSE products and services?

A. PSE is committed to creating a better and cleaner energy future, including aspiring to be a Beyond Net Zero Carbon company by 2045. In support of this goal, PSE will target reducing its carbon emissions to net zero while also going beyond to help other sectors enable carbon reduction. Transportation emissions are also the largest contributor to carbon emissions in Washington. Supporting electrification of PSE's transportation choices is a key part of how PSE can help Washington achieve our mutual carbon reduction goals. PSE customer research in 2019 showed that 68 percent of residential customers plan on buying or leasing an EV in the next five years and it is estimated that there will be over 200,000 EVs in PSE's service area by 2030. This portfolio of services was designed to balance several factors:

- Improving access to EV charging in multi-family residences, workplaces, and fleets, which have been identified as challenging areas of market development that need improved access;
- Focusing on load management in the area where most energy for electric vehicle charging is delivered today—single-family homes—and building a baseline for potential future load management in multi-family, workplace, and fleet settings; and
- Providing additions to the network of fast charging sites to improve its availability to customers.

In addition, the portfolio provides for customer education and outreach programs to support on transportation electrification and partnerships with low-income

service providers to extend greater transportation electrification benefits to underserved customers.

Q. What are the goals of the EVSE pilot products and services?

A. The overarching goals of the EVSE products are to (1) support market transformation and promote and drive adoption of EVs in Washington State; (2) support carbon reduction goals for customers, PSE, and Washington State as a whole; and (3) provide an EV charging infrastructure to meet growing demand for charging services.

Q. How were PSE's EVSE products and services initiated?

A. PSE's EVSE products were initiated and launched in phases following Commission approval of the Schedules described above in December 2018. The Education and Outreach product was the first product to launch to customers in early 2019. It was positively received with the EV newsletter reaching over 7,000 subscribers only six months after its creation.

The Single-Family Residential Charging product opened to customer enrollment in July 2019. Participants applied for the product on PSE's website. Despite conducting only limited marketing, word of the product quickly spread through social media and PSE closed the product to additional applicants in November 2019 after receiving over 750 applicants for 500 product slots. The Multi-Family Residential and Workplace & Fleet products opened to participant enrollment in

November 2019. Applications to the products were available to all who were interested, but PSE's community outreach, government affairs, and major accounts teams also worked directly with customers who were potential participants to apply.

For the Public Charging product, PSE first conducted a thorough analysis to identify potential public charging locations that would support market transformation but did not conflict with charging stations already in service or under development. The first step to this process was a quantitative evaluation of where EV charging options would be needed based on travel patterns and projected EV penetration. These results were then prioritized based on where existing or planned chargers were located, travel, and the presence of amenities. From this list of geographic areas, 35 high priority sites were identified in 20 different cities/regions. Over 6,000 EV drivers and potential EV drivers in PSE's service area were then sent a survey that asked them to rank their top three sites, of which 1,082 responded. From these results, a preference list of the top sites was identified while ensuring that no city/region received more than one site. PSE then began engaging with local jurisdictions and potential site hosts based on the list.

Q. How have the EVSE pilot products and services performed to date?

A. As of December 1, 2021, participants of the pilot charging products consumed 1,744,554 kWh, which resulted in an estimated 174,445 gallons of gasoline saved and 1,708 tons of CO2 avoided.

Q. How did PSE report the performance of these pilot products and services?

A. PSE distributes a report to stakeholders and the Commission and its staff twice per year, which covers progress, lessons learned, and product performance in six-month periods. The first report was released in September 2019, with subsequent reports released biannually. The latest report was submitted to stakeholders in September 2021 and is provided in Exh. WTE-3.

Q. Did the EVSE pilot products and services follow the estimated schedule provided in the tariff?

A. No. A number of factors delayed installation for all EVSE-related products. Most notable among those factors was, and continues to be, supply chain and staffing impacts as a result of COVID-19. The pandemic halted all work in early 2020 when the Multi-Family Residential and Workplace & Fleet products were beginning installations and did not resume until two months later. The pandemic also impacted interest in the Workplace & Fleet program. Since many employees in PSE's service area were working from home, the pace in applications slowed and applicants were not available to meet for site evaluations. Finally, in 2021,

vendors began reporting significant delays due to supply chain and manufacturing shortages. These delays resulted in lead times as much as six months for equipment related to EVSE installations.

Q. Did the EVSE pilot products and services follow the estimated budget described in the filed pilot product descriptions?

A. To date, costs have not exceeded the total estimated budget. In August 2019, PSE provided a more detailed description of estimated costs in Attachment B to its Accounting Petition in Docket UE-190129. In comparison to the estimated costs in Attachment B, capital expenditures were higher than originally planned while operating costs have been lower. There were several factors in the difference in spending:

- The release of more powerful, and thus more expensive, EVSE, particularly direct current ("DC") fast chargers. Cost estimates available when forecasting was being developed primarily used data from 2016, when most DC fast chargers only reached a 50 kW output. Instead of using outdated technology, PSE opted to install more powerful DC fast chargers which can reach speeds of over 150 kW;

- Installation costs for public, workplace and fleet, and multi-family properties were higher than originally forecast. This was especially common with fleet customers, where more infrastructure upgrades or trenching was required. The larger loads as a result of installing more powerful DC fast chargers, as discussed above, also necessitated additional investment in utility infrastructure;

- Labor costs to operate the pilot products and services were lower than originally planned. This was achieved through streamlining product processes and finding other efficiencies, such as combining requests for proposals, to reduce the number of staff needed to operate the products; and

- Software licensing for the EVSE, also known as networking costs, were estimated prior to issuance of the requests for proposals. The actual networking costs were lower than planned.

Q. How are costs being recovered for the EVSE pilot products and services?

A. PSE's Accounting Petition in Docket UE-190129 outlined its plan for deferring costs spent under the approved EV pilot products and services, and which was approved by the Commission in that case. PSE's expenditures under the EV pilot programs have remained consistent with those activities outlined in Attachment A of that filing. Please see Free, Exh. SEF-1T, for PSE's request to recover the deferred costs of the products and services.

Q. What has PSE learned from the current EVSE pilot products and services?

A. PSE has learned much from its pilot products that will be valuable for future EVSE products. PSE learned best practices for ensuring a smooth installation process to common challenges faced by commercial property owners when managing charging. For all EVSE products, PSE developed direct knowledge about the actual costs of installation in different types of properties, which has helped improve cost estimates for future EVSE products and services. In addition, PSE learned how commercial properties manage charging for tenants, employees, and fleet vehicles, and continues to learn about barriers or challenges those properties experience as it relates to charging. Despite the valuable lessons applicable to all products, some lessons from individual pilot products and

services stood out as more significant than others for developing future EVSE products and services described in the TEP, including:

- **Workplace & Fleet –** A key learning from the Workplace & Fleet product is that workplaces and fleets have different needs and operating models, even though the EVSE may be shared in certain cases. With that in mind, PSE determined that creating separate programs to address these different needs would provide customers a better experience. Another takeaway is that some organizations may have already invested in a specific charging network or have a preferred charging network, which hindered their participation in the pilot. How PSE used this learning for its future Workplace product is further described in section C.

- **Single-Family Residential –** The Single-Family Residential product's off-peak load shifting study revealed that customers respond to both educational and financial incentives to shift charging to off-peak hours, but financial incentives provide a stronger response. Customers in the control group indicated a tendency to perform an average of fifty percent of their charging in in off-peak hours without any incentive or education. Introducing education about the benefits of charging off-peak and how the customer can engage in off-peak charging resulted in an increase in off-peak charging of about nine percent. Adding financial incentives resulted in a roughly 20 percentage point increase in off-peak charging compared to the control group. Without education or financial incentives, customers demonstrated an average charging load shape featuring a sharp charging peak in demand during evening peak hours which rapidly reduced by morning peak hours. Customers receiving either education or financial incentives demonstrated significantly less of a charging peak during the evening peak window, but a sharp increase in demand immediately after the close of the window.

- **Multi-Family Residential –** The significant customer interest in the Multi-Family Residential product demonstrated that this customer segment is not being well served by current market offerings and needs additional focus. The interest was large enough that PSE decided to increase the planned property installations from 25 to 35, which was announced in a 2020 UTC Stakeholder Report. Due to the strong customer response, PSE determined expansion of this product would also be a priority in its upcoming tariff filings.

- **Education & Outreach –** Finally, customer response to the Education and Outreach product showed that PSE is filling a key need for customers who may want to learn more about EVs but want to do so in a way where

they are not pressured to purchase a vehicle. Customer engagement for this product has remained high despite the pandemic halting in-person events, particularly after PSE launched quarterly webinars. These webinars provide a way for those interested in EVs to learn from experts or hear directly from EV owners about their experience. Strong participation and satisfaction from customers helped PSE determine that customers would benefit from expansion of the current education and outreach offerings as part of the next round of tariff filings to support transportation electrification.

Q. Does PSE intend to offer additional EVSE products and services?

A. Yes, PSE's plans for additional EVSE products and services are described in PSE's TEP discussed below.

C. PSE's Acknowledged Transportation and Electrification Plan

Q. Please describe PSE's TEP filing with the Commission.

A. On March 19, 2021, in Docket UE-210191, consistent with RCW 80.28.365(1), PSE voluntarily provided its 2021 TEP for the Commission's review and acknowledgment per RCW 80.28.365(3).

Q. Did PSE submit any supplemental details to the Commission for consideration?

A. Yes, on July 14, 2021, PSE filed an Addendum to the TEP under Docket UE-210191 containing refinements to the TEP resulting from its recent learnings and ongoing engagement with Commission Staff and other stakeholders.

Q. Please describe what PSE included in its Addendum to the TEP.

A. The Addendum to the TEP provided additional details about (1) stakeholder engagement, (2) PSE's filing strategy, (3) initial program concepts, (4) load management and alternative rate design options, (5) system planning and optimization, (6) data management and analysis, and (7) reporting.

Q. Did any stakeholders file comments in Docket UE-210191?

A. Yes, there were over 30 comments filed by various stakeholders and customers. All of these comments recommended acknowledging PSE's TEP as well as offering some suggestions related to plan implementation.

Q. Did PSE present its TEP at a Commission Open Meeting?

A. Yes, on August 12, 2021, PSE presented its TEP at the Commission's Open Meeting and addressed questions from the Commission.

Q. Did the Commission acknowledge PSE's TEP?

A. Yes, PSE received a letter of acknowledgement from the Commission on August 12, 2021, pursuant to RCW 80.28.365(3) under Docket UE-210191.

D. New EVSE Products and Services

Q. Please describe how PSE intends to implement its TEP.

A To account for evolving public policy, market, and stakeholder inputs since PSE initially filed its TEP in March 2021, PSE modified its tariff filing strategy to better reflect the current transportation electrification environment. PSE's anticipated product and service suite and initial tariff filing timelines have been broken into two phases.

Q. Please describe what new EVSE products and services will be included in the first phase of PSE's filing.

A. Phase I will include new and revised tariffs to implement the following EVSE products and services detailed in the TEP (Docket UE-210191):

- Education and Outreach
- Commercial, Public & Private Fleets
- Multi-Family Residential

Q. What does PSE expect to include in PSE's Education and Outreach product and service offerings?

A. PSE plans to expand its education and outreach activities including website resources, online, in-person EV events, and partnerships (e.g., dealerships, original equipment manufacturers, DEI customers, and more). PSE is also looking

to incorporate education about the importance of charging in off-peak periods and the benefits of doing so.

PSE expects to expand Schedule 553 education and outreach programs to include information tailored for all fleet customers to learn about the benefits and total cost of ownership of fleet electrification. This expansion may include access to information on commercial vehicle availability and opportunities for fleet customers to attend vehicle demonstration events as new commercial models become available. PSE is also contemplating providing customers with access to online calculator tools and tailored consultation and enrollment services.

Additionally, PSE plans to continue to offer customers access to information resources to help customers make informed purchase decisions. These resources will include an online EV guide, a monthly EV newsletter, and social media channels to share information and news articles that illustrate how customers can achieve significant savings after just a few years of EV ownership despite the greater upfront cost to purchase an EV.

Q. What may be included in PSE's Commercial, Public & Private Fleet product and service offerings?

A. PSE is exploring new fleet of EV products to support the growing needs of this unique customer group by building on some of the lessons learned from PSE's EVSE pilot work with low-income service provider fleets. This may include:

- utility and customer side products and services and incentives;
- technical advisory services; and
- expanded support for highly impacted communities, vulnerable populations, and their service providers such as non-emergency medical transportation or food banks, school buses serving highly impacted communities and vulnerable populations, and tribal-owned transportation programs.

PSE is exploring two separate service opportunities in this offering. One option contemplates a PSE-owned service in which PSE would own the EVSE and provide any necessary meter and make ready work for the customer, including maintaining the charger for the customer. Another option would allow for the customer to own the EVSE and leverage incentives from PSE to rebate a capped percentage of costs for the EVSE, meter upgrades, and any necessary make-ready work. These products will be designed to cater to fleets of all types including light, medium, and heavy-duty vehicles, and may include non-automobile vehicles (e.g., forklifts, planes, bicycles, and more).

Q. What may be included in PSE's Multi-Family Residential product and service offerings?

A. To continue to meet the demand of site hosts and tenants PSE intends to expand on its current Up & Go Electric Multi-Family program and own, operate, and maintain all EVSE to support deployment of charging infrastructure at multi-family private parking and shared parking locations including the potential of exploring multi-model options for electric bicycles and other future options. PSE is also exploring providing EVSE make-ready incentives to support installations

at newly constructed multi-family properties beyond what may already be required by existing building codes.

Q. When does PSE anticipate it will submit its Phase I filings for consideration?

A. As detailed in PSE's TEP presentation before the Commission at the August 12, 2021 Open Meeting, PSE is targeting to file Phase I tariffs around the first quarter of 2022.

Q. Why didn't PSE file its Phase I filings before the end of 2021 as originally detailed in its TEP?

A. There are two key stakeholder groups the Company needed to engage with to help shape the anticipated filings which has resulted in the modification to its original filing timeline.

First, to promote equity in the DEI transportation electrification products, PSE is engaging with future customers of those products including highly impacted communities, vulnerable populations, and their service providers. To accomplish this, the Company created a Community Engagement Plan for DEI transportation electrification products to collect and assess feedback from highly impacted communities, vulnerable populations, and their service providers. The Company will apply the outcomes of those engagements towards product design with the goal of maximizing benefits of and minimizing barriers to accessing the products.

Second, the Company will submit draft tariffs, plans, and other filings to the Washington Utility EVSE Stakeholder Group, as directed by the Policy and Interpretive Statement Concerning Commission Regulation of Electric Vehicle Charging Services under Docket UE-160799, at least 60 days prior to filing those tariffs with the Commission.

To provide sufficient time for PSE's engagement with highly impacted communities, vulnerable populations, and their service providers—and accommodate the 60-day advance review period by the Washington Utility EVSE Stakeholder Group—the Company needed to delay the filing of these tariffs until the first quarter of 2022.

Q. Please describe what new EVSE products and services will be included in the second phase of the Company's filing.

A. Phase II will include new or revised tariffs to implement the following new EVSE products and services as detailed in the TEP (Docket UE-210191):

- Single-Family Residential
- Public Charging and Multi-Modal
- Workplace
- Alternative Technology Demonstrations
- Diversity, Equity and Inclusion products and partnerships

Q. What may be included in PSE's Single-Family Residential product and service offerings?

A. PSE will explore a continuation of its Up & Go Electric Residential Program, building on the lessons learned from its existing residential EV pilot product and best practices developed by other utilities around the nation. Specifically, PSE is exploring different utility/customer EVSE ownership models (e.g., lease/rental) to provide flexibility and financing options to customers. PSE and other utilities have received positive feedback from stakeholders that providing customers with a variety of options to help reduce the cost of acquiring EVSE will increase adoption, particularly with income challenged customers. Beyond the purchase of the EVSE, PSE determined through its existing Up & Go Electric Residential Program that financial incentives are an effective means of incentivizing single-family customers to adjust their charging behavior. PSE intends to rely on similar offerings with a shift to TVR or other dynamic pricing models to manage this load at a future date. The TVR pilot, as noted above, has been included in this filing. As with other programs, PSE will also leverage non-rate-based load management options where appropriate.

Q. What does PSE expect to include in its Public Charging and Multi-Modal product and service offerings?

A. PSE again expects to expand upon its Up & Go Electric Public Charging Program by continuing to deploy public charging infrastructure to support market needs,

while adding new make-ready options for private sector EVSE investments. To serve customers who may not be able to install dedicated EVSE due to accessibility issues (i.e., no driveway or garage, or electrical panel limitations), PSE is exploring a use case in which Level 2 EVSE could be installed on PSE owned streetlights to satisfy the single unit dwelling segment of EVSE in PSE's forecast. This segment of public charging is meant to satisfy the charging needs of a neighborhood rather than commuters on the go.

PSE also recognizes the cost disparity for customers that must rely upon Level 2 public charging and will engage with stakeholders to identify potential solutions that may solve this issue. PSE may also expand public chargers to serve multi-modal customers (e.g., ride-share, shuttles, etc.).

Within this product, PSE intends to install and operate public charging stations with both DCFC and Level 2 chargers, provide make ready support for third party-owned stations, and offer EVSE rebates for DEI eligible customers who are members of highly impacted communities and vulnerable populations. Recognizing that demand charges are a significant cost barrier for providing abundant public charging access, PSE is exploring the option of reducing, reshaping, or removing demand charges for public EV charging.

Q. What may be included in PSE's Workplace product and service offerings?

A. As discussed above, a key learning of the current Up & Go Workplace Program is that some employers may already have invested in a charging network and

participating in PSE's EVSE program would introduce a separate system to manage. While PSE will continue to offer a PSE-owned, operated, and maintained service, PSE will also explore a product or service where employers can choose to continue with their existing charging network but still participate in the PSE service.

Q. What does PSE expect to include in PSE's Alternative Technology Demonstrations product and service offerings?

A. PSE is exploring demonstrations that will act as an opportunity for research and development of innovative EV supporting technology including vehicles, charging infrastructure, data management, and vehicle-to-grid capabilities in limited applications such as school buses. PSE will continue to design services and test technologies as they come to market. Each of these technology demonstrations will be designed with load impact mitigation as a priority.

Q. What does PSE expect to include in PSE's DEI product and service offerings?

A. While the DEI portion of each product will be customized based on community feedback, PSE is expecting to either own, operate, and fund meters, make-ready and EVSE for these products (at no cost to the DEI customer), or to provide rebates for DEI customer-owned installations.

Q. When does the Company anticipate it will submit its Phase II filings for consideration?

A. As detailed in the Company's TEP presentation before the Commission at the August 12, 2021 Open Meeting, the Company is targeting to file Phase II tariffs around the first quarter of 2023.

Q. What barriers to EV adoption will PSE seek to address in its upcoming EVSE products and services?

A. PSE has heard resoundingly that the incremental cost of the EV itself, particularly for medium to heavy-duty vehicles, is a critical barrier to gaining product participation from highly impacted communities, vulnerable populations, and their service providers. To alleviate this barrier and provide equitable participation in its transportation electrification products, PSE is exploring the potential of providing EV rebates to these customers to help offset a portion of the initial cost of transitioning from an internal combustion engine vehicle to a battery electric vehicle. PSE also plans to expand its Education and Outreach product as it pertains to increasing engagement and access to transportation electrification products for all customer segments.

Q. How will PSE incorporate load management into its upcoming EVSE products and services?

A. For all of PSE's EVSE products, PSE will explore methods of separately metering the EV load through telematics, smart chargers, AMI meters, current transformer meters, or other means. Separately metering the EV load could allow PSE to develop a robust understanding of the load shapes of the many charging use cases and could enable PSE to better forecast load impacts that result from those use cases. Further, by sub-metering the EV load, PSE may be able to leverage alternative rate design and more direct load management options to mitigate load impacts to both the customer and PSE's electric distribution system.

As noted above, PSE has determined that financial incentives are an effective means of incentivizing single-family customers to adjust their charging behavior and intends to rely on similar non-rate-based load management options where appropriate as TVR pilots or other dynamic pricing capabilities mature.

Q. Is PSE exploring alternative rate design to help mitigate potential load impacts?

A. Alternative rate design could apply directly to EV loads and could include TVR components such as a time-of-use rate combined with critical peak pricing, super off-peak rates, or other components. The specifics of these rate designs are being developed in part through PSE's development of TVR pilots and through

engagement with stakeholders; see the Prefiled Direct Testimony of Birud D. Jhaveri, Exh. BDJ-1T.

Q. Is PSE proposing performance metrics as part of the multiyear rate plan in this case related to the Company's progress in implementing EVSE products and services?

A. Yes. PSE is proposing three performance metrics related to its EVSE products and services and one performance incentive mechanism ("PIM"). The distinction between performance metrics and PIMs is discussed in the Prefiled Direct Testimony of Mark N. Lowry, Exh. MNL-1T. Collectively, I refer to these generally as "performance measures."

Q. What are the proposed EVSE performance measures?

A. The EVSE related performance metrics include:

- Number of residential electric vehicles registered in PSE service territory;
- Number of commercial electric vehicles registered in PSE service territory; and
- Number of charging stations in highly impacted and vulnerable communities.

The EVSE related PIM is the number of residential and fleet EV customers on managed charging programs or time of use rates.

Q. Can you provide further details about how each of these performance measures are calculated?

A. The PIM for EV load management will count the number of residential and fleet EV chargers that are used in managed load programs or under TOU rates that apply to the customer's entire load.

The metrics for commercial and residential vehicles in PSE service territory will be calculated using Washington Department of Licensing data on light-duty plug-in EVs registered in zip code tabulation areas of PSE's electric service territory. It should be noted that residential or personal vehicle data is currently available but data for commercial vehicles is not. PSE will commence reporting any commercial vehicle data once available.

The metric for the number of publicly available charging ports in highly impacted and vulnerable communities will utilize geographic information for these designations developed in PSE's CEIP. This metric will be based on PSE's own records of EV installations it has completed and a count will be determined for those installations occurring in the geographic areas identified as highly impacted or with highly vulnerable population numbers. Going forward, PSE will investigate other sources of reliable information regarding EV charger installations across its service territory.

Q. Do any of these performance measurements propose associated targets?

A. Yes. In this case, PSE is proposing performance targets for the EV load management PIM. Please see Lowry, Exh. MNL-1T, for a discussion on the associated targets.

Q. Do these performance measures overlap with the customer benefit indicators developed for the CEIP?

A. No. The CEIP does not include EVSE programs and services in its scope.

Q. What is the purpose of utilizing these performance measures?

A. EVSE programs and services figure prominently in PSE's decarbonization efforts as well as being responsive to customer demands for services. The costs associated with these programs are included in the multiyear rate plan. The proposed performance measures will provide transparency and accountability for PSE's EVSE programs and services throughout the duration of the multiyear rate plan and would be consistent with PSE's TEP.

Q. Do some of the performance measures support demonstration of progress toward PSE's broader Beyond Net Zero Carbon goals?

A. Yes. As I mentioned previously in my testimony, in support of PSE's Beyond Net Zero carbon goal, PSE will help its customers reduce their carbon footprint through transportation electrification programs and services that achieve

significant greenhouse gas emission reductions in Washington State. The above EVSE performance measures will provide transparency and accountability to measure PSE's progress in this area.

Q. Do some of these performance measures support demonstration of progress toward PSE's commitment to an equitable clean energy transition?

A. Yes. Metrics that measure the number of EV chargers in highly impacted and vulnerable communities will help PSE target programs and services in these areas, ensuring that the benefits of transportation electrification efforts are provided equitably across PSE's customer population.

Q. Do these performance measures provide transparency and accountability on other public policy or stakeholder goals beyond decarbonization and equity?

A. Yes. As discussed in Lowry, Exh. MNL-1T, SB 5295 itemized criteria for evaluating metrics pertaining to multiyear rate plans. In addition to the goal of attainment of state energy and emissions reduction policies and equity goals, the metrics I describe above provide performance evaluation related to customer satisfaction and engagement, demand-side management expansion, and affordability.

E. New EVSE Cost Recovery

Q. What is the total spending as described in the TEP that the Company expects to spend through 2026?

A. The total spending as described in the TEP under Docket UE-210191 is expected to be between $75 and $109 million.

Q. What is the total spending included in this filing that the Company expects to spend through 2025 on implementing its TEP?

A. The total amount the Company has included in this filing to spend on its TEP products and services through 2025 is detailed in the table below.

Table 4. Expected TEP expenditures through 2025

Category	2023	2024	2025	Total
Capital	$10.3M	$14.2M	$13.8M	$38.3M
O&M	$6.3M	$8.8M	$8.5M	$23.6M
Total	**$16.6M**	**$23M**	**$22.3M**	**$61.9M**

Q. What is the expected split between capital versus O&M expenditures included in this filing for implementing its TEP?

A. The expected split is approximately 62 percent capital versus 38 percent for O&M expenditures.

Q. Does the Company know how these expenditures will be allocated across the various TEP products and services anticipated in its phase I and II filings noted above?

A. As an illustration of the approximate allocation by product and service please see the table below. The Company will detail the specific expenditure allocations as part of future tariff filings for each of individual products and services noted above so the below is provided only as an example and is subject to change as future filings are developed and reviewed by the Company and various key stakeholder groups.

Table 5. Estimated TEP expenditure allocation by product

Education & Outreach	9%
Commercial, Public & Private Fleets	39%
Residential Multi-Family	13%
Residential Single-Family	12%
Public Charging and Multi-Modal	15%
Workplace	4%
Alternative Technology Demonstrations	4%
Diversity, Equity and Inclusion	3%

Q. How is DEI considered when developing new program funding and projects?

A. DEI funding and projects will not be represented exclusively in their own specific track, but will be woven into all transportation electrification products, in addition to having their own dedicated product line as detailed above. PSE will target approximately 30 percent of spend within each integrated product and services category towards DEI.

Q. Has the Company previously detailed how it anticipates these expenditures will result in customer benefits?

A. Yes. In comments submitted by PSE under Docket UE-160799 in Response to Notice of Opportunity to Comment on Draft Policy and Interpretive Statement Describing Commission Policy Related to Utility Investment in Electric Vehicle Supply Equipment pursuant to RCW 80.28.360 and Commission Regulation of Electric Vehicle Charging Services, PSE commented that a significant customer benefit is reduced fuel costs based upon PSE's residential electricity rate in 2016 being the equivalent of approximately $1.26 per gallon when compared to gasoline. Further, customers will benefit from lower maintenance costs for electric transportation due to fewer oil changes and brake replacements. Lastly, customers benefit from decreased volatility in fuel costs when comparing electricity to gasoline or diesel. These benefits can be difficult to quantify and vary based on the individual customer and their driving habits.

Q. What type of environmental benefits did the Company detail in its comments submitted under Docket UE-160799?

A. Use of electricity as a transportation fuel in PSE's service territory produces lower lifetime carbon emissions than use of gasoline and diesel. While this value is often considered societal, there are also direct effects on the consumer. Notably, when carbon emissions carry a price, the difference in carbon emissions produces direct costs to the consumer, which vary depending on the fuel they use.

Electrified transportation also reduces emissions of traditional pollutants. In some regions of the country, there are direct prices on these pollutants. In the Northwest, no direct prices currently exist, but there is still value in improved human health and air quality due to reduced emissions.

Q. Did the Company detail how it anticipates these expenditures will result in customer benefits in its TEP?

A. Yes, in Table 11 of its TEP, from which I provide certain excerpted data below, PSE provided calculations of potential customer benefits based on EV adoption forecasts over the 2021-2030 period. As the Company finalizes more specific information about final rate or product designs it will detail updated or other customer benefits in the subsequent future tariff filings.

Table 6. Estimated benefits of TEP products and services.

Year	Avoided CO2 Emissions (Tons)	Avoided Social Cost of Carbon	Customer Transportation and Fuel Maintenance Savings
2021	38,236	$2.9M	$49.6M
2022	63,937	$4.8M	$63.2M
2023	85,171	$6.4M	$90.2M
2024	114,220	$8.6M	$123.6M
2025	151,275	$12.6M	$168.5M
2026	196,428	$16.3M	$219.7M
2027	248,660	$20.6M	$276.4M
2028	308,924	$25.6M	$336.5M
2029	374,704	$31.1M	$402.7M
2030	448,004	$39.8M	$473M

Q. What cost-benefit inputs does PSE believe are necessary or appropriate to use for EVSE investments?

A. As stated in Docket UE-160799, cost-benefit inputs that consider the overall costs and benefits of transportation electrification across all utility ratepayers is appropriate to determine the allowable level of investment by the utility to support users of electric transportation while providing net benefit to all ratepayers. As PSE stated in comments filed on December 14, 2021 in Docket UE-210804, the costs and benefits should consider at least the following factors:

Table 7. Cost-benefit inputs for EVSE investments

Costs	**Benefits**
Incremental Vehicle Costs	Vehicle Operations & Maintenance Savings
Electric Vehicle Supply Equipment Costs	Avoided Direct Carbon Costs
Marginal Energy Costs	Avoided Gasoline Costs

Marginal Generation Capacity Costs	Federal Tax Credits
Ancillary Services or Other Energy Supply Costs	Revenues from Electric Transportation
Transmission & Distribution Costs	

Q. Is PSE seeking revenue recovery for EVSE products?

A. Yes, PSE is seeking revenue recovery for its EVSE Products & Services. The recoverable expenses have been included within the Company's revenue requirement in this case. Please see Free, Exh. SEF-1T.

Q. Will seeking revenue result in upward rate pressure for customers that do not use electrified transportation?

A. Yes, EVSE Product & Service-related revenue recovery contributes to upward rate pressure for all customers including those who use electrified transportation and those who do not. However, this upward rate pressure is more than offset by the financial and societal benefits of electrified transportation.

Q. Will the revenue recovery for EVSE Products & Services be less than the benefit from electrified transportation?

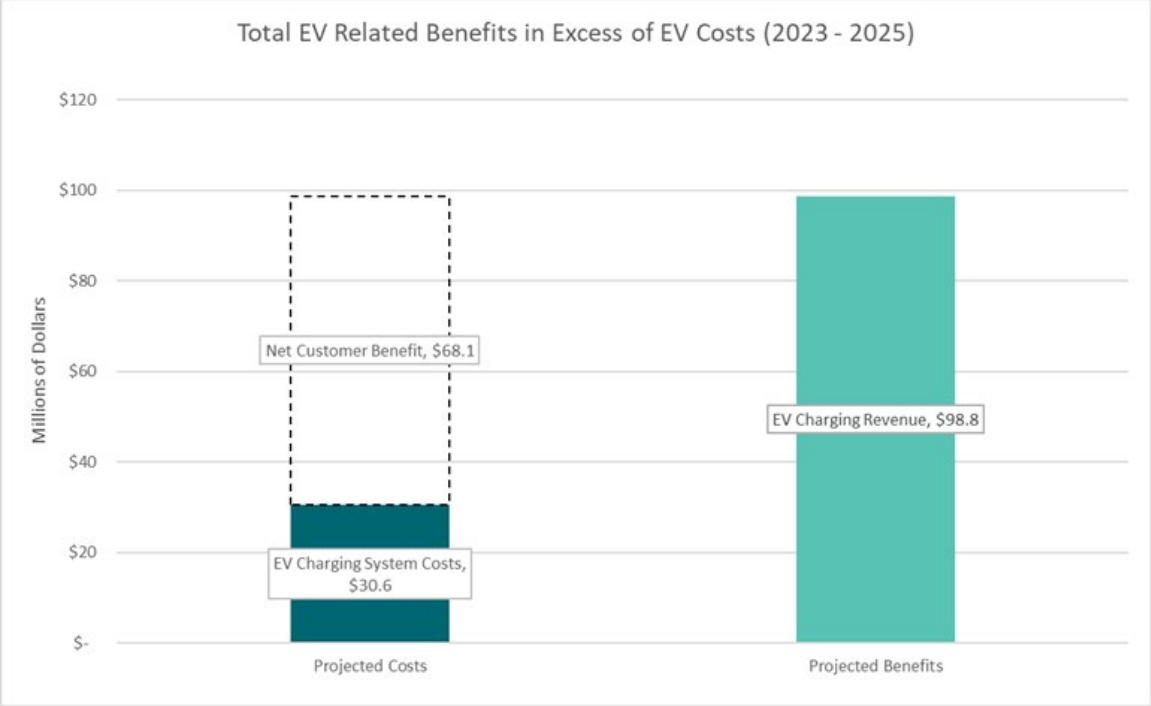
A. Yes, the benefits of electrified transportation to all customers significantly exceed the revenue requirement associated with EVSE product expenses over the period of 2023-2025 as detailed in Figure 2 below, which presents the benefits in excess of costs for electrified transportation during the proposed rate plan period. The

right stacked bar presents the primary economic benefit to customers from transportation electrification: increased revenue. The bar presents forecasted electric service revenue associated with EV charging in PSE's service territory during the period of 2023-2025.

The left stacked bar presents the cost of serving the additional EV charging load—including energy, capacity, transmission, and distribution costs ($30.6 million)—and the difference between the system costs and the benefits column ($68.1 million). The net benefit exceeds the total amount the Company has included in this filing to spend on its new EVSE products and services through 2025, ensuring all customers receive a portion of the benefit.

The values presented in the visual are consistent with Table 11 in PSE's TEP (page 71), but the values have been refreshed to reflect prices consistent with PSE's 2021Integrated Resource Plan ("IRP") and rates approved as of January 1, 2022. The projections are modeled using the EV load forecast used within PSE's TEP and PSE's F21 Load Forecast. As a result, these projections do not reflect the forecasted impact of Washington's Low Carbon Fuel Standard nor major sources of EV load that have come to PSE's attention since the development of this forecast.

Figure 2. Total EV Related Benefits in Excess of Costs



Q. Does PSE intend to pursue the up to two percent additional rate of return on capital expenditures for EVSE as allowed under RCW 80.28.360(2)?

A. Yes, PSE intends to pursue this additional rate of return and has developed its transportation electrification budget to fit within the constraint that the EVSE portfolio increases the Company's annual retail revenue requirement by 0.25 percent or less.

Q. Why is PSE seeking the incentive rate of return?

A. In the Commission's Policy and Interpretative Statement Concerning Commission Regulation of Electric Vehicle Charging Services, Docket UE-160799, the Commission defines eligibility for an incentive rate of return as follows:

> Assuming that an electrical company's EV charging services are "offered on a fully regulated basis," as discussed above, a company's investment may be eligible for an incentive rate of return if it also meets the other requirements of RCW 80.28.360, and the services are "reasonably expected, at the time they are placed in the rate base, to result in real and tangible benefits for ratepayers by being installed and located where electric vehicles are most likely to be parked for intervals longer than two hours.[5]

Q. Does PSE's EV program meet these requirements?

A. Yes, it does, as described below:

1. **Offered on a "fully regulated basis":** PSE's EVSE Products & Services satisfy this criteria as they are being offered on a fully regulated basis and are held to the standards outlined in the above policy statement regarding the ability for electric companies to offer EV charging as a regulated service.

2. **Meet other requirements of RCW 80.28.360:** PSE's EVSE Products & Services satisfy all requirements within RCW 80.28.360. RCW 80.28.360(1) permits an incentive rate of return on EVSE investment after July 1, 2015 through December 31, 2030, so long as it is deployed for the benefit of ratepayers and the program cost does not increase the annual retail revenue requirement by 0.25 percent. As indicated previously, the Company's EVSE Products & Services benefit ratepayers by promoting transportation electrification, improving access to EV charging, focusing on load management, and improving the availability of PSE's fast charging network to its customers. Further, PSE's proposed EVSE cost recovery will not increase annual retail revenue requirement by 0.25 percent or more. This is discussed further below.

3. **Installed and located where electric vehicles are most likely to be parked for intervals longer than two hours:** This criteria within Docket UE-160799 was established because at the time of the policy statement RCW 80.28.360 restricted the incentive rate of return to EVSE, "which are reasonably expected, at the time they are placed in the rate base, to result in real and tangible benefits for rate payers by being installed and located where electric vehicles are most likely to be parked for intervals longer

[5] *In the Matter of Amending and Adopting Rules in WAC 480-100*, Docket UE-160799, Policy and Interpretive Statement Concerning Commission Regulation of Electric Vehicle Charging Services ¶ 51 (June 14, 2017).

than two hours."[6] However, RCW 80.28.360 was revised in 2019 to strike out this language.[7] As the language was removed from the RCW, there does not appear to be a reason for upholding this criteria from the policy statement, thus PSE believes its request for the incentive rate of return on EVSE Products & Services is justified.

Q. How does PSE factor in the incentive rate of return into its revenue requirement calculation?

A. The incentive rate of return is calculated within the Company's revenue requirement model (see NEW-PSE-WP-SEF-6E-ElectricVehicles-22GRC-01-2022). Within the revenue requirement model, PSE applied the incentive rate of return of two percent to the eligible net plant, and then grossed up for federal income taxes to calculate the EV incentive rate of return on TEP products and services.

Q. How does the Company define eligible EVSE?

A. PSE considers EVSE as eligible if it satisfies the criteria defined within RCW 80.28.360[8] with the interpretations outlined in Docket UE-160799, as described above.[9] PSE's definition of EVSE adheres to the National Electric Code definition, as adopted annually by the Commission in WAC 480-100-999. This defines EVSE as "The conductors, including the ungrounded, grounded, and equipment grounding conductors and the electric vehicle connectors, attachment

[6] Substitute House Bill 1853 § 2(3).
[7] Substitute House Bill 1512 § 5(3).
[8] RCW 80.28.360, https://app.leg.wa.gov/rcw/default.aspx?cite=80.28.360.
[9] *In the Matter of Amending and Adopting Rules in WAC 480-100*, Docket UE-160799, Policy and Interpretive Statement Concerning Commission Regulation of Electric Vehicle Charging Services (June 14, 2017).

plugs, and all other fittings, devices, power outlets, or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle."[10]

Q. Will PSE's EVSE portfolio increase its annual retail revenue requirement by 0.25 percent or more?

A. No, it does not increase annual retail revenue requirement by 0.25 percent or more.

VI. DISTRIBUTED ENERGY RESOURCES AND DEMAND RESPONSE

A. Overview

Q. What Distributed Energy Resources ("DER") and Demand Response ("DR") concepts are included in this filing?

A. PSE has included DER and DR concepts that support the Company's CEIP as well as a DER energy storage demonstration strategy that will allow PSE to further develop its understanding of various DER storage use cases including grid reliability applications and innovative customer energy storage solutions.

[10] National Electric Code, Article 625, http://mydocs.epri.com/docs/publicmeetingmaterials/1112/PDNNSH5Q3Z2/Day%201%20PlugIn%20Electric%20Vehicle%20Codes%20Standards/D1_7C%20G%20Kissel%20Article%20625%20Restructure%20Proposal.pdf.

Q. Please describe PSE's CEIP filing with the Commission.

A. On October 15, 2021, PSE submitted a draft CEIP with the Commission in Docket UE-210795 consistent with the requirements of General Order R-601 in Dockets UE-191023 and UE-190698 and WAC 480-100-640. As detailed in the CEIP Executive Summary, "this 2021 Draft CEIP describes PSE's initial plan to implement the CETA for 2022–2025. It charts new directions in our electricity supply, includes new voices in the process, and seeks to achieve low cost, clean electricity, and an electric supply that benefits our customers and reduces burdens on our vulnerable customers."[11] On December 17, 2021, PSE filed its final CEIP following months of public comment and stakeholder engagement. Please see the Prefiled Direct Testimony of Joshua J. Jacobs, Exh. JJJ-1T, for further details on PSE's CEIP filing.

Q. Did PSE include details about DER and DR concepts in its CEIP filing?

A. Yes, chapter two of the CEIP filing[12] noted that to meet the 80 MW of distributed solar (incremental to the 2021 IRP) net metering forecast) and 25 MW of distributed battery storage targets detailed in the 2021 IRP, PSE will need to develop a draft preferred portfolio of DER programs from both customers and third parties. Additionally, the CEIP identified a DR target of 23.7 MW

[11] Exh. JJJ-3 at 18 (Puget Sound Energy, *Clean Energy Implementation Plan* (Dec. 17, 2021)).
[12] *Id.* at 39, 41, 43.

Q. Has PSE developed a DER preferred portfolio?

A. Yes. As detailed in the CEIP, PSE first benchmarked other utility DER programs to assess the use of technology, ownership models, and anticipated benefits. This detail was coupled with additional industry inputs to build program concepts that were prioritized based on scalability, feasibility, and accessibility for evaluation before inclusion in the CEIP actions.

Q. How did PSE conduct its suite selection process to create the DER preferred portfolio?

A. As detailed in chapter two of the CEIP, PSE analyzed groupings ("suites") of programs based on program designs and objectives that resulted in sensitivity analysis methods which allowed PSE to evaluate how a portfolio is shaped when optimized for various criteria. Next, PSE compared and contrasted portfolio options in the suite selection process to create a balanced DER preferred portfolio that promotes equity, diverse offerings, and minimizes costs. PSE engaged a third-party consultant, Black & Veatch, to complete an independent cost and market potential assessment for each concept. PSE followed guidance from the National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources and applied the Societal Cost Test and Participant Cost Test to the suites that resulted in the draft DER preferred portfolio of programs. Lastly, PSE considered the potential for programs to impact customer benefits, as defined

by the Customer Benefit Indicators, in establishing the final DERs selected for the preferred portfolio.

Q. What methodology did PSE employ to analyze potential DR opportunities in PSE's service territory?

A. As detailed in the CEIP,[13] the Company commissioned a Critical Peak Analysis to identify DR programs to reduce PSE's winter peak demand, define each program, and produce technical and achievable potential estimates for each product with a bottom-up method that used number of customers, equipment saturation rates, expected load impact, market conditions, and customer adoption estimates.

B. PSE Preferred DER Products and Services

Q. Please describe what new DER products and services are included in the Company's DER preferred portfolio.

A. The DER preferred portfolio consists of the following DER programs:

Customer-Sited Distributed Solar:

- Community solar, including low-income and multi-family community solar;
- Commercial and industrial ("C&I") Rooftop Solar Incentive;
- Third-party Distributed Solar PPA (or Solar Lease);
- Customer-sited Solar+Storage Offering;

[13] *Id.* at 39.

- Residential Rooftop Solar Leasing (including income-eligible portion);
- Multi-Family Solar Partnership; and
- Multi-Family Rooftop Solar Incentive.

Customer-Sited Distributed Battery Storage:

- Customer-sited Solar+Storage Offering;
- C&I Space Leasing for Batteries; and
- Residential PSE Battery Leasing (including income-eligible portion).

Q. What may be included in PSE's Community Solar products and service offering?

A. This product will build upon the current voluntary Community Solar service approved by the Commission under Docket UE-210386 in June 2021. Under this service, PSE will offer customers, including low-income and multi-family customers, the ability to subscribe to the output of solar panels deployed throughout the service territory. This includes an additional 5.2 MW of Multi-Family Community Solar in addition to the existing 20 MW filed under Docket UE-210386 to better provide DER program options for customers unable to accommodate customer sited DER technologies. Customers will pay a monthly fee and receive a monthly credit for any generation associated to the shares to which they voluntarily subscribe.

Q. What may be included in PSE's Commercial and Industrial Roof-top Solar Incentives product and service offering?

A. PSE is exploring incentives for commercial customers to discount their upfront cost to install and own distributed solar generation throughout PSE's service territory.

Q. What may be included in PSE's Customer-Sited Solar and Storage product and service offering?

A. This product offering will likely include enrolling customer installed solar and storage systems in a monthly incentive program that could offset customers load from the grid in response to operating settings or dispatch signals from PSE or a one-time upfront incentive to offset the high initial system and installation costs.

Q. What may be included in PSE's Residential Roof-top Solar Leasing product and service offering?

A. PSE is exploring leasing space on PSE electric residential customers' rooftops to install solar photovoltaic ("PV") systems. In this program, the participating customers would receive recurring lease payments from PSE for the use of their roof. The renewable energy generated by the PV system would be fed directly into PSE's system to provide renewable energy to serve all customers.

Q. What may be included in PSE's Multi-Family Solar Partnerships product and service offering?

A. PSE intends to facilitate installations of solar PV systems at multi-family buildings by engaging with technology and/or billing providers such that the on-site renewable energy production can be shared across all units at the selected properties.

Q. What may be included in PSE's Multi-Family Rooftop Solar Incentive product and service offering?

A. For this product, PSE will offer incentives to multi-family unit building owners, discounting their upfront cost to install and own solar in PSE's service territory.

Q. What may be included in PSE's Commercial and Industrial Space Leasing for Batteries product and service offering?

A. PSE would lease space at commercial and industrial customer sites to deploy utility owned Battery Energy Storage Systems ("BESS") to improve power quality and/or resiliency and to help manage system or local peaks.

Q. What may be included in PSE's Residential Battery Leasing product and service offering?

A. This product would include installing utility owned batteries in customer homes with customers paying a monthly fee for backup power services, and PSE using the battery to manage peak energy or system demands.

C. PSE DER Energy Storage Demonstrations

Q. Please detail PSE's DER energy storage demonstration strategy.

A. PSE seeks to expand its DER storage programs to provide grid reliability through ancillary services, reduce the need for infrastructure investments through non-wires alternatives, and mitigate new demands on the energy system from transportation electrification and partner with customers on innovative storage solutions. These use cases for distributed storage solutions are in addition to the reliability and peak shaving focus of the energy storage programs in PSE's CEIP. Doing so will allow PSE to fully realize the value of the tools, skilled resources, and operational procedures developed to deliver its first set of DER programs from the CEIP while providing significant grid and customer benefits. Such energy storage demonstrations will build internal expertise with new uses of batteries and other storage technologies to provide safety, cost effectiveness, and efficacy of future product deployments.

Q. What concepts may be included in PSE's DER energy storage demonstrations?

A. The concepts included in PSE's energy storage demonstrations depend in part on uptake of planned full programs as well as the interest level of customers in utility/customer partnerships. These demonstrations will be instrumental in ensuring that PSE continues to understand the optimal uses for energy storage deployments in partnership with customers and to support the local distribution grid. The energy storage demonstration projects may include the following types of projects:

- Energy storage at transportation hubs (ferries, buses) to shape new loads from transportation electrification;
- Partnerships with commercial customers to use batteries to reduce peak loads from building system starts as well as other requests for dispatchable load and demand charge management;
- Inclusion of energy storage in campus micro grids;
- Co-location of storage with community solar projects to maximize grid benefits; and
- Programming of energy storage to maximize benefits through stacked use cases such as ancillary benefits, locational benefits, and system peak shaving.

D. Implementation Strategy

Q. Please describe how PSE intends to implement the DER and DR product and service offerings identified in the CEIP.

A. To implement the identified preferred DER and DR portfolio of products and services as filed its CEIP in December 2021, PSE will first need to conduct a thorough Request for Proposal ("RFP"). After completing a comprehensive evaluation and scoring of submittals, PSE will follow its product development process, as outlined above, to fully design any identified DER customer programs and service offerings.

Q. Has PSE developed a RFP strategy as detailed above?

A. Yes, PSE filed a draft DER RFP with the Commission on November 15, 2021, in Docket UE-210878.

Q. What are PSE's priorities for this draft DER RFP?

A. The Company's priorities for the DER RFP are as follows:

- Identify opportunities to add DERs to the PSE grid to meet system level capacity needs, increase PSE's clean energy portfolio, and explore additional DER grid benefits;
- Maximize customer benefits of DERs in every stage from procurement through the life-cycle of the DER equipment, focusing on Highly Impacted Communities and Vulnerable Populations; and
- Learn from respondent submissions and resulting programs to inform future RFPs and program development.

Q. How does PSE plan to acquire DERs and DR through this draft DER RFP?

A. As detailed in the draft RFP in Docket UE-210878, PSE plans to acquire DERs under two broad categories: turnkey pay-for-performance contracts for delivering solar, BESS, and DR; and vendor service components from local firms who specialize in providing specific types of services but whom may not be equipped to offer turnkey solutions for deployment of DERs.

Q. When does PSE anticipate it will release its formal DER RFP?

A. PSE intends to issue its final DER RFP on February 7, 2022, assuming Commission approval of the RFP by January 31, 2022.

Q. How will PSE evaluate the responses from the RFP to finalize program design and implementation plans for the identified product and service offerings?

A. As stated above, detailed program design, as well as the availability of vendors and equipment to support these different models, will be identified through the RFP evaluations that will be conducted through third quarter 2022 as part of a two-phase process. During the first phase, RFP responses will be filtered for program/product viability and like programs/products will be ranked based on quantitative and qualitative metrics. The second phase will consist of development of a shortlist portfolio that includes turn-key responses as well as PSE programs that make use of products that were bid through the RFP as

program components. After a short list suite of programs is developed that meets PSE's capacity needs and maximizes customer benefits at the lowest reasonable cost, the short list will be included in a combined analysis with the shortlist from the All-Source RFP. This process creates an optimal portfolio, consistent with WAC 480-107-009(4). This structured evaluation process is designed to screen and rank proposals based on costs, risks, and benefits using modeling tools and methodologies that are consistent with the 2021 CEIP. PSE is also using an Independent Evaluator to safeguard the transparency and impartiality of the DER RFP process.

Q. Please describe what will happen once the DER RFP evaluation process has been completed.

A. Upon completion of the RFP evaluation process, PSE may elect to negotiate pricing, terms, and conditions for those proposals shortlisted. This is one of the key activities of the development phase of the product development process I outlined in section II above in which the primary objectives are to plan, build, and develop the final regulatory package and operational capabilities phases.

Q. When does PSE anticipate it will initiate the development phase?

A. As detailed in Figure 1-3: Summary of Draft Specific Actions 2022-2025 of the CEIP,[14] PSE anticipates it will initiate customer-centered program design work,

[14] *Id.* at 22.

including initiating any necessary planning for enabling technologies as well as developing customer outreach, enrollment, and education strategies, beginning in 2022. During this period, the Company may also start drafting initial tariff filings to support any identified DER and DR product and service offerings.

Q. Has PSE developed an initial tariff filing plan for any identified DER and DR product and services?

A. Yes. PSE anticipates that the initial tariff filings for any identified DER and DR products and services will be conducted in two separate phases.

Q. Please describe what new DER products and services may be included in the first phase of PSE's filing.

A. As detailed in Figure 4-3: PSE's Preliminary DER Program Roadmap of the CEIP,[15] Phase I will include new or revised tariffs to outline the new DER products and services noted below:

- Commercial and Industrial Roof-top Solar Incentives
- Residential Roof-top Solar Leasing
- Residential PSE Battery Leasing
- PSE Customer-Sited Solar and Storage
- Multi-family Rooftop Solar Incentives
- Multi-family Solar Partnerships

[15] *Id.* at 94.

Q. When does PSE anticipate it will submit its Phase I filings for consideration?

A. As detailed in PSE's CEIP, the Company is targeting to file Phase I tariffs around the first quarter of 2023.

Q. Please describe what new DER and DR products and services will be included in the second phase of PSE's filing.

A. As detailed in the CEIP, Phase II will include new or revised tariffs to outline a new Commercial and Industrial Space Leasing for Batteries as well as demand response.

Q. When does PSE anticipate it will submit its Phase II filings for consideration?

A. As detailed in the Company's CEIP, PSE is targeting to file Phase I tariffs around the fourth quarter of 2023.

Q. Please describe how PSE intends to implement the DER energy storage demonstrations.

A. PSE will continue to refine its DER strategy in consultation with its internal and external stakeholder groups. The DER strategy team will work across the Company to identify demonstration opportunities that align with the overall strategy as well as the needs of other internal organizations. Customer-facing groups will facilitate partnerships so that customer needs remain at the forefront

of all demonstration projects. Each project's business case will be presented to a DER Steering Committee for approval prior to moving forward. In the case of competing priorities of PSE or customers, a cost-benefit analysis will be used, along with an assessment of customer benefits, to determine which projects will move forward. Once a project is approved, PSE will use a competitive process to obtain equipment and services, incorporating DEI best practices into the procurement process as well as project design. Lessons learned will be incorporated into business-as-usual practices and measurement and verification of demonstration project outcomes will be used to begin the expansion to full programs as appropriate.

E. Cost Recovery

Q. What is the total amount of capital spending included in this filing that PSE expects to spend through 2025 on implementing its DER and DR strategy?

A. The total amount PSE has included in this filing to spend on its DER and DR strategy through 2025 is detailed in the table below.

Table 8. Expected capital expenditures for DER and DR strategy

Year	2023	2024	2025	Total
DER	$17M	$33.5M	$60.1M	$110.6M
DR	$1M	$1M	$1M	$3M
Total	$18M	$34.5M	$61.1M	$113.6M

Q. How will the above expenditures be allocated between the DER concepts that support the Company's CEIP and the DER Energy Storage Demonstration Strategy?

A. The expected split is approximately 74 percent versus 26 percent.

Q. Does PSE know how the 74 percent noted above will be allocated across the various DER products and services that will support the CEIP?

A. PSE hired Black & Veatch to complete a study of forecasted equipment and program costs, and associated market potential for a set of distributed energy solar and storage programs to provide a current view of the total anticipated costs of a utility-owned and customer-owned distributed energy resources which have been detailed in Appendix K of the CEIP.

Q. How is PSE expecting to recover these expenditures?

A. Please see Free, Exh. SEF-1T, for further details on how and when these costs will be recovered.

VII. RENEWABLE NATURAL GAS

A. Overview

Q. Please describe PSE's Voluntary Renewable Natural Gas service.

A. PSE's Voluntary Renewable Natural Gas ("RNG") service provides a new clean energy option for all natural gas customers to purchase RNG as part of their

monthly gas service to decrease the carbon emissions associated with their gas consumption.

Q. How did PSE determine its need for the Voluntary RNG service?

A. This program was filed as Schedule 138 with the Commission in Docket UG-210194 pursuant to RCW 80.28.390, which requires all natural gas companies to "offer by tariff a voluntary renewable natural gas service available to all customers to replace any portion of the natural gas that would otherwise be provided by the gas company."

Q. How does the Voluntary RNG service differ from PSE's existing Carbon Balance product?

A. The Voluntary RNG service is a monthly subscription product under Schedule 138 where PSE's natural gas customers can purchase blocks of RNG that replace a portion of their conventional gas usage. Gas service under Schedule 138 is provided through the purchase or generation of RNG from resources PSE owns or contracts for, that is delivered to the Company's distribution system.

In contrast, PSE's Carbon Balance product allows customers to reduce their carbon footprint by purchasing third-party verified carbon offsets from local projects that work to reduce or capture greenhouse gases.

B. Benefits

Q. What customer benefits does the Voluntary RNG service provide?

A. The Voluntary RNG service provides all customers with the opportunity to share in the direct benefits of new RNG resources within PSE's territory. In addition to providing a voluntary clean energy option available to all customers, participation in the voluntary service increases the overall supply of RNG that PSE can procure and thus expands benefits for all customers. Increased voluntary service participation facilitates the transition to lower-carbon gas alternatives in support of the state clean energy strategy. Increased reliance on RNG benefits all customers as it decreases carbon emissions from gas production and consumption, it supports the clean energy economy in Washington State, and it provides a sustainable pathway for organic waste. These benefits are consistent with the 2020 Washington State Energy Strategy and the new Washington State Climate Commitment Act's cap and invest carbon reduction plan.

Q. How is PSE managing the tracking, verification and banking of environmental attributes associated to the Voluntary RNG service?

A. PSE will use M-RETS (the Midwest Renewable Energy Tracking System) to track its renewable thermal certificates ("RTCs") and verify the environmental attributes thereof. PSE will include carbon intensity calculations in its specifications around the tracking and verification process and will comply with RTC banking criteria and guidance described in the Commission's policy

statement (Docket U-190818, Staff investigation into RNG programmatic design and pipeline safety standards) for implementation of the renewable natural gas provisions of HB 1257.[16] PSE will report on the RTCs used for the voluntary service and the portfolio program, including details of sources and uses for RTCs leveraged for each, upon request, in its annual PGA filing.

C. Cost Recovery

Q. Is PSE seeking to recover the initial start-up costs associated with providing the Voluntary RNG service in this filing?

A. Yes, as detailed in Docket UG-210194, PSE is seeking to recover expenditures incurred to establish this service for all natural gas customers. These start-up costs were incurred prior to the generation of revenues from customers electing to participate in this optional service under Schedule 138.

Q. What types of expenses are included in the initial start-up costs?

A. The key initial start-up costs are IT expenditures for the preparation of the digital platform that will allow for: customers to sign up on PSE.com, PSE to track enrollment, configuration of the billing system to calculate both a charge for RNG and a credit for conventional natural gas, software updates to revise the customer bill, automating customer communication, and integrating and testing systems.

[16] *In the Matter of the Investigation into Renewable Natural Gas Programmatic Design and Pipeline Safety Standards*, Docket U-190818, Report and Policy Statement on Investigation of Renewable Natural Gas Programmatic Design and Pipeline Safety Standards (Dec. 16, 2020).

PSE initially estimated these costs to be $1.5 million.[17] These costs were not included in the rate developed for this tariff service and PSE is requesting to recover these initial start-up costs in this general rate case. This is consistent with conversations with the Commission during approval of Schedule 138 to implement this program.

Q. What are the initial start-up costs PSE is seeking to recover?

A. Now that the Company has completed the development and implementation of the IT upgrades necessary to start this new, legislatively-required program, PSE is seeking to recover $1 million in initial start-up expenditures required to establish this service for all natural gas customers. This actual cost is $500,000 less than the original development estimate referenced above.

Q. Did PSE consider alternative approaches to customer enrollment and management?

A. Yes. PSE initially considered a range of approaches from providing customers with a simple self-serve web form on the product landing page on PSE.com to an automated enrollment process leveraging PSE's existing start, stop, and move workflow.

[17] Exh. WTE-4 at 4.

Q. Which approach was selected and why?

A. PSE decided to implement both a customer self-serve web enrollment form, as well as integrating the RNG service into the existing start, stop, and move workflow for enrollment and product management. This provided that the RNG service paralleled the experience customers have come to expect when engaging with PSE's existing renewable programs.

Q. Was PSE able to leverage any existing processes or capabilities to reduce these start-up costs? If so, please explain?

A. Yes. PSE was able to leverage some of the processes and capabilities developed for the Community Solar program and utilized the same development team to minimize IT related program initiation costs. Additionally, the team utilized the existing Start/Stop/Move process and capabilities that a number of other PSE renewable programs use to inform and enroll participants. This resulted in a cost reduction of approximately 33 percent below the original estimate.

Q. Should all gas customers incur the initial start-up costs?

A. Yes. RCW 80.28.390 references the fact that RNG provides benefits to customers and the public, and that the development of RNG resources should be encouraged to support a smooth transition to a low carbon energy economy in Washington State. The Washington State Energy Strategy aligns with this directive, stating that natural gas companies should increase the use of RNG to achieve near-term

reductions in emissions, and that the Legislature and the Commission should explore legislative and regulatory actions to advance cleaner options when available.[18] PSE appreciates the flexibility intended by the Commission's policy statement under Docket UG-190818 to support the development of robust RNG programs and to empower utilities to achieve the goals of state policy and law.

PSE believes that costs to implement a statute-required natural gas service established to benefit all customers and the public should be borne by all customers who have the opportunity to participate. If these costs were to be borne by participants only, the costs of offering the product will increase and the amount of RNG that each customer will buy per block will decrease. PSE expects that this could reduce customer interest in the product and decrease the total quantity of RNG supplied through the voluntary service, limiting the extent to which the new service facilitates the transition to a cleaner gas supply that is envisioned by state policy and law.

Q. Is PSE seeking to recover any additional costs associated to providing the Voluntary RNG service?

A. No. Any additional expenses associated to providing the Voluntary RNG service, apart from the initial start-up costs detailed above, are being recovered from those

[18] Washington State Department of Commerce, *Washington 2021 State Energy Strategy*, at 82 (Dec. 2020), https://www.commerce.wa.gov/wp-content/uploads/2020/12/Washington-2021-State-Energy-Strategy-December-2020.pdf.

customers electing to participate in this optional service under natural gas Schedule 138, which was approved under Docket UG-210194.

VIII. WATER HEATER AND CONVERSION BURNER UPDATE

A. Gas Water Heater Rental Service Update

Q. Has the sale of the gas water heater rental service to Grand HVAC Leasing ("GHL") been completed as approved in Docket UG-200112?

A. Yes. PSE completed the sale of the gas water heater rental service to GHL on December 22, 2020 and discontinued the Natural Gas Water Heater Rental Service Schedules 71 and 72 in accordance with the Full Settlement Stipulation and Settlement Agreement as approved in Docket UG-200112, Order 04, Final Order Approving Settlement effective July 29, 2020.

Q. What commitments did PSE make as part of the Docket UG-200112 Full Settlement Stipulation and Agreement?

A. In summary, PSE agreed to the following commitments in the Full Settlement and Stipulation and Agreement.

1. **Payment Plans:** PSE agreed to offer payment plan options to all water heater customers, including low income customers who choose to purchase their water heater and have an undepreciated balance.

2. **Customer Communications:** PSE agreed as part of customer communications to inform customers of the sale to differentiate letters based on whether a pay-off balance remains; and include communication of PSE/GHL program differences. PSE also included a phone call to customers as part of the communication plan.

3. **Accounting Treatment of Transaction:** PSE agreed that the final disposition of any losses from the transaction are preserved until such time PSE files for the final treatment of any losses.

Q. Did PSE offer payment plans for customers who desired to take ownership of their water heater and had a payoff as described in the Docket UG-200112 Full Settlement Stipulation?

A. Yes. PSE offered a payment plans to any customer, including low income customers, who chose to purchase their water heater. The payment plans allowed leasing customers to spread their payoff balance across equal installments up to a twelve-month period without interest.

Q. Did PSE complete the customer communication as described in the Docket UG-200112 Full Settlement Stipulation?

A. Yes. PSE began customer communications on September 1, 2020 and completed the customer notices as described in the Full Settlement Stipulation. These communications included separate letters and emails for customers who had a payoff and for those customers whose water heater was fully depreciated whereby the customer could take ownership at no cost. The communications also included a GHL/PSE service comparison document. Additionally, PSE made telephone calls to contact customers who were undecided in the fourth month of transition.

Q. What choices did PSE give to customers in the customer communications?

A. As committed to in the Settlement Agreement, PSE provided three options for customers to choose from during the transition: 1) remove their water heater, 2) take ownership of their water heater and pay off any undepreciated value or 3) continue their water heater rental service with GHL. Of the nearly 25,000 leasing customers in the service as of December 31, 2019, approximately 87 percent of customers selected one of these options. The remaining customers were transitioned to GHL for continued coverage on their water heater rental.

Q. How many customers requested removal or took ownership of their water heater?

A. Since September 1, 2020, when customer communications began, 386 customers requested removal of their water heater and 5,194 took ownership.

Q. How many of the customers who took ownership of their water heater had a payoff for undepreciated value?

A. Since September 1, 2020, when customer communications began, 2,159 water heater customers were billed for a payoff on undepreciated value totaling $1,073,967. Proceeds from these asset payoffs were included in the final calculation of the gain or loss calculation. Please refer to Free, Exh. SEF-1T, for accounting treatment of these assets.

Q. How many customers chose to continue their water heater rental service with GHL?

A. There were [redacted] water heater leases transitioned to GHL in the sale on December 22, 2020. Of those, [redacted] customers enrolled with GHL, and [redacted] continued service under the legacy lease agreements transitioned to GHL.

Q. What was the final sales price for the Gas Water Heater Rental Service to GHL?

A. The final sales price for the Gas Water Heater Rental Service to GHL, based on the number of transitioned customer leases, was $[redacted]. The sales price met PSE's forecasted expectations to receive $4-6 million for the purchase of the water heater service as described in my Prefiled Direct Testimony in Docket UG-200112, Exh. WTE-1CT. See Exh. WTE-5C for the sales price calculation.

Q. Did the sale of the gas water heater rental service result in a gain or loss?

A. The sale of the Water Heater Service resulted in a loss of $[redacted] including selling costs. This loss met PSE's forecasted expectations for a loss of $4-6 million. Please refer to Free, Exh. SEF-1T, for the accounting treatment of the loss.

Q. What were the selling costs associated with the sales transaction?

A. The selling costs associated with the sales transaction totaled $701,343. This is less than the $900,000 that PSE forecasted it would incur to complete this transaction in Docket UG-200112. The costs were incurred over an 18-month period from July 2019 through December 2020 when the transaction closed. The selling costs include legal counsel to complete the sales transaction and regulatory filing and approval process; consultant costs to manage the sale, develop and execute the sales process, and oversee customer engagement processes and communications; and costs of printing and mailing customer communications to over 25,000 water heater rental customers. Please refer to Free, Exh. SEF-1T, for the accounting treatment of selling costs.

Q. Is PSE filing for the final treatment of the loss in this proceeding?

A. Yes. Per the Commission's direction in Docket UG-200112,[19] PSE recorded all proceeds of the sale to be held until PSE's next general rate case. PSE is filing for the final treatment of the loss including selling costs in this general rate case proceeding. Please refer to Free, Exh. SEF-1T, for the recovery request and final treatment of the losses.

[19] *WUTC v. Puget Sound Energy*, Docket UG-200112, Final Order 04 ¶ 13 (July 29, 2020).

B. Conversion Burner Rental Service Update

Q. Has the Schedule 74 Gas Conversion Burner Rental Service been discontinued per tariff revision effective November 1, 2019?

A. Yes. The conversion burner rental service was discontinued as of March 31, 2020, in accordance with Natural Gas tariff Schedule 74 – Conversion Burner Rental Service, revision effective November 1, 2019.

Q. Are the costs to discontinue the conversion burner rental service included in this proceeding?

A. Yes. The costs to discontinue the conversion burner rental service are included in a deferral account along with the costs of selling the water heater rental business discussed above this proceeding. Refer to Free, Exh. SEF-1T, for the requested recovery of this deferral.

IX. OTHER ITEMS

Q. Are there any other matters you would like to address?

A. Yes. There are additional revenues associated with products and services that are expected in the multiyear rate plan.

Q. What are the additional revenues associated with products and services expected in the multiyear rate plan?

A. The below table contains expected revenues for current and future products and services. Please see Free, Exh. SEF-1T, who discusses how these revenues are included in the filing to help lower the requested rate increase.

Table 9. Expected revenues for current and future products and services

Program	2022	2023	2024	2025
Community Solar	$623,760	$997,894	$1,797,894	$2,444,469
Current EVSE Products and Services (Up & Go)	$31,775	$46,312	$52,190	$52,190
Transportation Electrification Plan Products and Services	-	-	$32,953	$95,910
Totals	$655,535	$1,044,206	$1,883,037	$2,592,569

X. CONCLUSION

Q. Does this conclude your prefiled direct testimony?

A. Yes, it does.