Puget Sound Energy
P.O. Box 97034
Bellevue, WA 98009-9734
pse.com

September 26, 2024

Filed Via Web Portal

Jeff Killip, Executive Director and Secretary
Washington Utilities and Transportation Commission
621 Woodland Square Loop SE
Lacey, WA 98503

Re: Staff investigation regarding policy issues related to the implementation of RCW 80.28.360, electric vehicle supply equipment, Docket UE-160799, Comments of Puget Sound Energy (September 26, 2024)

Dear Executive Director Killip,

Puget Sound Energy (PSE or Company) appreciates the opportunity to provide the following comments to the Washington Utilities and Transportation Commission (Commission) in response to the August 28, 2024, Notice of Opportunity to File Written Comments (Notice) issued in this Docket UE-160799.

Background

On June 14, 2017, the Commission issued its Final Policy and Interpretative Statement (2017 Policy Statement) on utility investment in, and Commission regulation of, electric vehicle charging services.

On April 25, 2024, the Commission issued a notice of an introductory workshop to discuss the scope of a revised policy statement, transportation electrification issues within the Commission's purview, and considerations from interested parties. The Workshop took place on July 2, 2024.

On August 28, the Commission issued the notice of opportunity to file written comments, ahead of the next workshop that will cover the topic of rate recovery and rate design for utilities.

As such, PSE provides the following general comments and responses to the specific questions listed in the Notice. PSE has consulted with its investor-owned utility (IOU) peers

regarding the issues raised in this policy statement review, and PSE's general comments and responses to specific questions raised in the Notice are in general agreement and supportive of comments filed by PacifiCorp and Avista utilities.

General Comments

PSE is committed to creating a better and cleaner energy future as we proactively work to do our part to support Washington State's clean energy goals. Accelerating widespread transportation electrification (TE) is vital to Washington State achieving its carbon reduction and clean air goals. Continued close collaboration with policymakers, regulators, customers, environmental groups, social justice advocates, business leaders, fellow electric utilities, and other interested parties is required to successfully achieve Washington State's goals in electrifying transportation. Charging infrastructure is ta critical components of the TE transition, and, as the Commission points out in the Notice, utilities must plan to add charging infrastructure and to ensure grid reliability given the anticipated increases in charging infrastructure capacity and Electric Vehicle (EV) load.

PSE launched its first customer-facing TE pilot in 2014, which aimed to measure load impacts of Level 2 (L2) charging at single-unit dwellings. After the Commission's 2017 EV Policy Statement was issued, PSE operated its "Up & Go" EV Charging pilot programs, which expanded EV charging to workplaces, fleets, public, multi-unit dwelling, and equity charging along with studying opportunities for load management in single unit dwellings. PSE's first five-year Transportation Electrification Plan (TEP) was acknowledged by the Commission in August 2021. PSE completed Phase 1 of its TEP implementation in 2023 and is currently implementing Phase 2. In the July 2, 2024 Workshop in this docket, PSE provided an overview of its TEP, presented progress achievements in implementation of TE activities, and discussed challenges and successes related to equity in the transportation electrification space.[1] More information can be found on PSE's TE website: https://www.pse.com/en/pages/electric-cars/transportation-electrification.

[1] For more information, see "PSE's Transportation Electrification Plan & Activities," UTC EVSE Workshop, July 2, 2024. Docket UE-160799.

The Notice indicates that the next workshop will cover the topic of rate recovery and rate design for utilities. Additional incentives for EVs, EV charging, and alternative EV-specific rate designs can be considered through this Commission process. Any additional incentives and alternative rate design options should be considered using thorough analyses with each utility evaluating the impacts of options on its customers, planning, operations, and finances. Flexibility should be maintained to ensure utility-specific differences are addressed. To be able to reach PSE's TE goals, PSE should be enabled, including in the implementation of rate recovery and rate design, to provide proactive investment into electric vehicle supply equipment (EVSE), distribution system upgrades, and energy and capacity that is Clean Energy Transformation Act (CETA) compliant to serve these loads.

Responses to Specific Questions Raised in the Notice

1. *What types of ratemaking tools should the Commission consider for EV charging infrastructure? For each option, please explain why such tools are appropriate:*

   a. *A system benefits charge for all customers that create a budget for utilities?*

   PSE supports a system benefits charge so long as it provides PSE sufficient funding to support transportation electrification in its service area. PSE recognizes that TE can benefit the entire grid and all electric retail customers, therefore recovery of costs from all customers—not just those directly participating—is appropriate. PSE currently funds its TE initiatives through Schedule 141TEP (Transportation Electrification Plan Adjustment Rider), which applies to nearly all electric customers excluding retail wheeling, lighting classes, and special contracts. In addition to these TE programs, system upgrades necessary for EV charging are funded using traditional methods, such as line extension policy and recovery in base rates. Recovering costs from all ratepayers ensures equitable funding for infrastructure investments that support cleaner, more efficient energy usage for all electric retail customers. In addition to clean energy and efficiency benefits, EV resources may be used as resources to the grid in the future meaning long-term benefits in the integrated system for all customers. A system benefits charge would need to fund these same expenses or exist alongside of these funding mechanisms. Such a system benefits charge would need to consider the application of the charge (e.g., what customer types it is

applied to, fixed versus volumetric charge, and more) to ensure the funding is sufficient to support TE in PSE's service territory.

b. Capital expenses for EV infrastructure recovered in base rates?

Capital expenses for EV infrastructure should be recovered from all electric retail customers since all electric retail customers can benefit from TE, as PSE stated in the previous response. This can be achieved through base rates, but PSE's preference is a TEP-specific rider/tracker (e.g., PSE's existing Schedule 141TEP rider) as it helps advance the Commission and state's policy goal and will allow the costs recovered in the tracker to avoid being subject to overall cost cutting measures that may need to be employed by investor owned utilities.

c. Increased incentives for Multi-Unit Dwelling building owners or developers?

Yes, increased incentives for Multi-Unit Dwelling owners or developers are critical, especially for older buildings requiring costly upgrades. Electrifying these properties can be prohibitively expensive, even with tenant agreements in place. Offering incentives through TEP programs to cover the costs of installing common electric lines, panel upgrades, and distribution infrastructure would encourage broader adoption of EV charging infrastructure in these harder-to-electrify buildings, contributing to a more equitable distribution of charging access. PSE has experienced the usefulness of this type of allowance through its multi-family charging program called "Up & Go Electric for Multifamily" (Electric Tariff Schedule 552), in which PSE provides additional funding to cover the costs of utility-side infrastructure upgrades for properties primarily housing low-income populations and tribal members. Prior to providing this additional funding, several customers elected to decline participation due to the costs of infrastructure upgrades.

d. A line extension allowance similar to that proposed in Oregon[2]?

An EV line extension allowance, in addition to the existing electric line extension policy, could help reduce barriers for customers looking to install EV charging infrastructure. The cost of line extensions can undermine the individual economics of EV adoption, even though society as a whole benefits. A special line extension allowance would help

[2] *[Footnote 5 in Notice to Comment] See* Oregon CUB comments re: Line Extension Allowances Docket UM-2033 (Dec. 6, 2019).

overcome some of these cost barriers, making EV adoption more feasible for customers. PSE has already modified its multifamily tariff to fully cover line extensions for certain communities, which demonstrates how this approach can be applied.

For example, even with the incentives covering up to 100% of installation costs through PSE's "Up & Go Electric for Multifamily" program (Electric Tariff Schedule 552), PSE identified early on that additional incentives would be needed to fully account for properties requiring transformer upgrades or other service upgrades. PSE filed and received approval in January 2024 to fully cover utility-side infrastructure upgrades for properties primarily housing low-income or tribal communities.

e. An option not listed here (please describe both the preferred option and why it is preferred.)

Alternative EV charging rates that reflect the unique load behavior of EVs compared to traditional customers could be beneficial. By aligning cost recovery with cost causation and usage patterns, these rates would better reflect the actual cost of providing service to EV customers. This could help incentivize transportation electrification, helping to advance broader TE goals while ensuring fair cost allocation.

2. In a time of upward pressure on utility rates, how can the Commission balance the need for more proactive planning with transportation electrification infrastructure while sufficiently protecting ratepayers and mitigating risks? (i.e. overbuilding or unanticipated costs):

a. Please provide any known resources or examples demonstrating your proposal.

The scale of EV adoption within PSE's service area suggests that the risk of overbuilding is minimal, as the current number of public charging ports represents less than 10 percent of the anticipated need for charging that PSE forecasts for 2030. PSE forecasts that it will need to install 1.5 times the number of currently existing charging ports each year until 2030, making underbuilding a more significant concern than overbuilding.

PSE expects that underbuilding can manifest in three ways:

1. Failure to install sufficient charging infrastructure. If the market actors (including PSE) do not install sufficient charging infrastructure to support the rapidly growing

EV population, this transition to EVs will be marred with significant disruption to transportation and quality of life for all Washingtonians. To avoid this, large quantities of EVSE need to be installed throughout a vast geographic area to ensure all communities have access to sufficient charging.

2. Failure to make sufficient distribution system upgrades. EVs dramatically increase the load requirements for PSE's distribution system and while this load increase can be managed (e.g., through time varying rates and demand response programs), utilities must be able to prepare for significant increases in load requirements. If PSE cannot make adequate investment into upgrading the distribution system to accommodate EV charging, then PSE customers will be faced with an inability to charge their vehicles, a lack of confidence in the system's ability to support their transition to a plug-in vehicle (PEV), or significant reductions in grid reliability. These consequences threaten customer access to transportation, the improved health and economic benefits of an EV, and reliable access to electricity.

3. Failure to obtain sufficient CETA compliant energy and capacity to supply EV charging. Despite the significant benefit of EVs, EV load produces significant demand for electricity. PSE is obligated to meet its mandate to achieve least cost, reliable, and clean electricity. If the Company cannot make sufficient investments to obtain CETA compliant energy and capacity for the purposes of EV charging, then it cannot meet this mandate.

To avoid the consequences of underbuilding, PSE should be enabled to provide proactive investment into EVSE, distribution system upgrades, and CETA compliant energy and capacity.

If supported by adequate investment, transportation electrification can provide benefit to PSE customers through direct benefits (such as fuel & maintenance savings) and indirect benefits such as emissions reductions, improved grid load factor, and rate relief from increased energy sales. PSE has previously demonstrated that if TE charging makes efficient use of the electric system (e.g., through load management), it can provide rate relief to customers as the increase in energy demand enables PSE to spread fixed costs

across a greater number of killowatt-hour sales. PSE previously estimated that to provide the necessary system upgrades to meet the forecasted demand for EV charging for the period of 2023-2025, the costs would be less than the forecasted revenue generated through sales of electricity at existing rate schedules for the purpose of that same EV charging.[3] This net of revenue generated in excess of cost to serve can result in less revenue requirement that needs to be recovered from other sales of electricity. To this extent, TE can serve as a counterbalance to other forces driving rate increases. This can remain true as long as PSE's investment in system upgrades and EVSE is less than the benefit resulting from transportation electrification.

Existing regulatory processes for transportation electrification planning and standard processes for determining prudency are sufficient for protecting ratepayers and mitigating risks. While TE provides substantial net benefit, PSE continues to focus on deploying infrastructure efficiently. To achieve this, PSE employs strategies such as circuit-level EV adoption and load forecasting, targeted system improvements (e.g., all electric retail customers High Risk Circuit detection), and expanded research into EV load profiles and diversity factors. Additionally, PSE is implementing load management solutions such as Time-of-Use (TOU) rates, Demand Response (DR) programs, and Vehicle-to-Grid (V2G) integration. These approaches ensure that infrastructure investments are made efficiently and align with projected EV adoption growth, minimizing the risk of overbuilding while maximizing the benefits to customers and the grid.

3. *At what point should Transportation Electrification programs be rate-based rather than customer specific tariff schedules?*

Transportation electrification can provide a net benefit to all electric retail customers. Utilities like PSE play an integral role in promoting TE market transformation and so PSE's TE products and services promote that net benefit to all electric retail customers. As a result, TE program costs should be recovered through rate base or other similar mechanisms as is already the case. While PSE's TE products are detailed through various rate schedules, the

[3] Docket UE-220066 et. al., Exh. WTE-1CT, pages 49-59.

costs for these products are recovered through the Schedule 141TEP Adjustment Rider, which is levied on all electric customers (except retail wheeling, lighting, and special contracts).

a. *At what percentage of use (percent of time used for charging) do public chargers "break even" for EVSE owners?*

PSE's role in the market is to promote market transformation through system planning, education and outreach, and installing EVSE in areas with insufficient charging or nascent demand for EV adoption. As a result, PSE's public charging stations are not installed solely with consideration for being independently cost effective. Rather, the entire portfolio of the Company's TE products is weighed against the entire net benefit of TE in our service area to determine cost effectiveness.

b. *Does this percentage of use vary based on geographic location? If yes, please describe the variation and causes of variation by geographic location.*

PSE has intentionally spread its public chargers across a diverse geographic area and has observed a difference in cost and utilization by area. However, the Company does not have sufficient installations at this time to determine if this variation is statistically significant and so cannot conclude if the cost or utilization varies based on geographic location nor identify the causes of such variation.

c. *Does this percentage of use vary for L1, L2, or DCFC? If so, please provide the percentages for each charging type, and explain the reason for the variation.*

While PSE does not have break-even calculations due to the nature of its product offering, PSE suspects there is a difference based on charging technology. This difference would exist due to differences in upfront cost, the charge PSE levies on customers using the EVSE, differences in maintenance costs, and differences in rate structures.

- Upfront cost: The costs to install Direct-Current Fast Chargers (DCFC) are typically higher than Level 1 (L1) and Level 2 (L2) charger installations due to the higher power requirements of the DCFC. In addition to higher costs for the DCFC itself, the units also require larger conduit and wire to power the DCFC, plus other equipment such as a switchboard or service gear. DCFC projects typically require transformer upgrades as well, which add to the overall cost per DCFC port.

- Maintenance and Opex Cost differences: Maintenance and operating costs for DCFC are typically higher than those for L2 for both maintenance and networking. While Level 2 chargers do not usually require any preventive maintenance, original equipment manufacturers (OEMs) of DCFC recommend at least annual preventive maintenance inspections to ensure proper operation of DCFC. In PSE's charging pilots and programs, preventive and corrective maintenance packages are purchased for each DCFC while L2s only require corrective maintenance packages. Package costs for DCFC typically are in the thousands of dollars per unit, depending on the provider and manufacturer, while packages for Level 2 chargers are typically in the hundreds of dollars per unit, depending on provider and manufacturer. Networking packages for DCFC are also typically higher than those for L2s, with some manufacturers also requiring their own software packages for proper DCFC station monitoring. These costs can range from $200 to $1,000 higher per port than installing a Level 2 charger.

- Rate Structure differences and Utilization:
    - Charging price differences: Different charging technologies are often priced at different rates. The rates listed in PSE's Public Charging Service (Schedule 551 – Electric Vehicle Non-Residential Charging Products and Services, effective June 16, 2023) are based on market averages. Within this rate schedule, L2 charging is billed at $0.28 per kWh of charging while DCFCs are billed at $0.42 per kWh of charging. Additionally, there is a $0.40 per minute Idle fee imposed after a grace period. The difference in price that a customer pays to charge inevitably changes the level of utilization required for achieving a breakeven point.

    - Demand charges vs utilization: Utilization rate requirement may vary greatly to reach the breakeven point. The key driver of this difference is the demand charge. When a charger has a low utilization rate, the demand charge represents a significant portion of their bill.

d. Are there any other factors that contribute to differences in percentage of use?

PSE has not conducted sufficient study of public charging stations at this time to provide an answer to this question.

4. *Some utilities across the country have implemented (or plan to implement) a flat-rate charging program for EVs. (i.e. For $35 per month, a customer can charge as much as they want during off-peak hours) Would a similar construct be viable in Washington?*

   This is a potentially viable construct in PSE's electric service area, which PSE is actively exploring in terms of Commercial alternative rate designs.

   a. *If so, what dollar amount would the utility need to recover for such a program to be economically feasible?*

      To calculate this value PSE estimates that such a charge would be roughly $45 - $65 per month.[4] However, the specifics of this value are heavily dependent on the specifics of the rate design including which customers are available, metering level (e.g., whole house or submetered EV charging), and more. Further analysis is needed to understand the customer base and potential revenue implications. If high-usage customers switch to this flat rate, it could create a substantial revenue shortfall due to PSE's rate tiers, which would need to be considered. Besides a flat-rate charging program design, PSE is examining other alternatives to traditional demand charges, such as EV-specific TOU rates, redesigned demand charges, or subscription-based pricing models.

   b. *Would this practice be equitable if a discounted flat-rate option was available for low-income EV customers? (i.e., low-income customers could pay $20 per month for unlimited off-peak charging, whereas other customers would pay $35 per month)*

      A discounted flat-rate option could join PSE's many assistance programs and special rates for reducing bills for low-income customers. PSE's TEP includes a commitment to allocating a large portion of each TE product & service to "Empower Mobility" programs.[5] However, it is important to note that any discount provided to one group must

[4] Based on the cost of service in docket UE-240004 et. al.
[5] "Under Empower Mobility, all PSE Up & Go Electric programs include enhanced incentives for transportation electrification projects benefitting historically underrepresented communities and the community-based organizations, government agencies and Tribal entities that serve them." *See more here:* https://www.pse.com/en/pages/electric-cars/empower-mobility.

be offset by increased rates for others. This means that any discount below the standard price would need to be recovered through higher rates from all other customers, effectively increasing their flat rate.

c. *For charging stations with high intensity, but infrequent use, the utility may assess a demand charge which may be passed on to the charging provider and ultimately customers. Do third-party providers absorb significant costs for demand charges?*
Yes, third-party charging station providers often face substantial costs related to demand charges, especially for stations characterized by high intensity but infrequent use. Demand charges are typically assessed based on the peak electricity demand during a billing cycle, irrespective of the total energy consumed. For EV charging stations, the energy demand can surge during charging sessions, but remain low when not in use, leading to high demand charges.
These peak demands can drive significant costs for providers, even if the station's overall energy usage is relatively modest. As a result, third-party providers frequently absorb these demand charges, which may create financial strain. In many cases, providers either directly pass these costs onto consumers through higher charging fees or indirectly by increasing service charges.
Recognizing the growing need for EV infrastructure, PSE is examining alternatives to traditional demand charges. Solutions under consideration include TOU rates, redesigned demand charges, or subscription-based pricing models. These approaches aim to better reflect the actual usage patterns of EV charging stations, reduce the financial burden on providers, and minimize cost pass-through to consumers. Ultimately, such reforms could encourage broader investment in charging infrastructure while promoting affordability and sustainable growth in the EV market.
d. *If so, provide the percentage of all chargers subject to a demand charge detailed by utility owned chargers and third-party owned chargers.*
PSE does not track the percentage of all chargers subject to a demand charge however the majority of PSE rates have demand charges associated, with the major exception being residential (Schedule 7), small general service (Schedule 24), and lighting service

schedules.

5. *What data sources does your utility utilize when estimating EV ownership within your territory?*

   a. *How does your utility incorporate these datasets into your resource planning/distribution system planning/capital decision planning assumptions? Please include at least the following planning assumptions and how you determine them:*

   PSE utilizes a forecast of electric vehicle adoption, EV charging infrastructure, and usage (kW/kWh) developed by Guidehouse Consulting for existing and new EVs in PSE's service area. Guidehouse gathers and benchmarks against industry standard data sources for EV forecasting. Sources cited in Guidehouse Consulting's work include: IHS-Markit (registration data), MarkLines, Federal Highway Administration Highway statistics series, U.S. Department of Energy Fuel Economy Guide, GHI Fuel Institute, Environmental Defense Fund/M.J. Bradley & Associates Medium & Heavy-Duty Vehicle Report, California Air Resources Board (ARB)/ Eastern Research Group, Inc. Heavy Duty Vehicle Accrual Rates.

   In addition to forecasting, PSE leverages customer research techniques and advanced meter infrastructure (AMI) data to better understand EV adoption throughout PSE's service territory. PSE regularly surveys customers to understand their EV adoption and maintains an EV adoption propensity model based on census level data. Further, PSE's Service Transformer Upgrade program leverages AMI data to predict whether a transformer has had Level 2 EV charging on it. Overloaded transformers with predicted Level 2 EV charging are then prioritized for replacement to ensure reliability and cost efficiency for PSE's customers.

   The most recently produced electric vehicle forecast was covered in PSE's 2025 Integrated Resource Plan (IRP) Process, and presented to PSE's Resource Planning Advisory Group (RPAG) on April 17, 2024 (available at https://www.pse.com/en/IRP/Get-involved).

      i. *Number of EVs (broken down by LDV and MHD) in service territory by 2030, 2035, and 2040.*

Table 1 below presents the number of Plug-In Electric Vehicles that PSE predicts will be in its electric service area in 2030, 2035, and 2040 by vehicle duty.

Table 1: Projected number of electric vehicles in PSE service territory

Year	Light-Duty Vehicles (LDV)	Medium-Duty Vehicles (MDV)	High-Duty Vehicles (HDV)
2030	522,995	7,832	3,641
2035	1,140,978	18,909	7,910
2040	1,739,346	30,806	13,457

Source: PSE 2023 Integrated Resource Plan Chapter 6, section 5.3 pages 30-35; available at: https://www.pse.com/en/IRP/Past-IRPs/2023-IRP.

ii. The number of chargers needed at each level (L1, L2, DCFC)

Table 2 below presents the number of total charging ports PSE anticipates are needed to service all electric vehicle load in PSE's electric service area by year and technology level. Note that this forecast includes all charging use cases, not just public charging.

Table 2: Number of chargers needed in PSE service territory

Year	L1	L2	DCFC
2030	160,957	276,577	10,123
2035	273,946	571,625	22,812
2040	306,550	822,940	37,531

Source: PSE 2023 Integrated Resource Plan Chapter 6, section 5.3 pages 30-35; available at: https://www.pse.com/en/IRP/Past-IRPs/2023-IRP.

iii. Distribution, transmission, and resource acquisition needs specifically attributed to EV load growth

While the Company does conduct a supplemental EV Adoption & Load forecast to model EV load growth, PSE does not separately model the distribution, transmission, and resource acquisition needs to support that load growth. Instead, the needs are modeled in combination with all other sources of electric demand in the Company's service area.

iv. *Distribution of costs to ratepayers (all customer classes for all investments? Just EV customers? Both?)*

PSE recovers TE-related costs for its TEP products and system upgrades driven by TE adoption from all retail electric customers. This recovery occurs through Schedule 141TEP and through general rate making.

b. *How do these datasets influence distribution system planning processes?*

PSE leverages these datasets as a component of a county-level load forecast that the Company uses for substation capacity and distribution feeder capacity planning. If the overall load forecast triggers a need within the studied time-horizon (typically around 10 years), the Company then uses the information to establish a need and potential corresponding solution.

c. *What barriers has your utility identified that prevents widespread EV adoption within your territory?*

PSE perceives that the key limitations from a customer adoption perspective are insufficient charging infrastructure, the upfront cost of new EVs and limited used car market, insufficient consumer education on EV charging, and range anxiety.

6. *What data does your utility obtain from EV telematics software on private chargers in its service territory? How does your utility use this data?*

PSE is able to obtain usage data from chargers it owns through transportation electrification products and services, plus home chargers enrolled into PSE Flex program. Utilization is used to help determine system planning needs, compliance with demand response or load management programs, and planning for future transportation electrification products and services.

a. *Provide the number of public and private chargers in your service territory broken down by L1, L2, and DCFC.*

PSE does not maintain a record of private chargers in its electric service area. For public charging infrastructure, the company relies on data reported by the Alternative Fuels Data Center (AFDC). As of August 28, 2024, the AFDC reported that there were 2,514 public charging stations in Washington with an estimated 1,895 of those charging stations located

in PSE's electric service area.[6] The following table shows the distribution of Public EV charging stations in Washington state by Named Community designation, including Highly Impacted Communities (HIC) and Vulnerable Populations (VP).[7] Named Community designations are at the census tract level. Therefore, an EVSE installation is considered to be within a Named Community if the EVSE is within that same census tract. Further, a census tract is considered in PSE's electric service area if PSE provides electric service to at least one customer.

Table 3: Number of chargers in PSE service territory by Named Community designation

		Stations			
HIC Designation	**Vulnerable Populations Label**	**Total**	**L1**	**L2**	**DCFC**
Yes	High	271	2	232	49
	Medium	321	-	300	29
	Low	84	-	69	17
	subtotal	***676***	***2***	***601***	***95***
No	High	231	1	193	51
	Medium	519	-	463	67
	Low	469	-	444	28
	subtotal	***1,219***	***1***	***1,100***	***146***
Grand Total		**1,895**	**3**	**1,701**	**241**
Outside of PSE Electric Service Area		*619*	*4*	*502*	*140*

Source: PSE Alternative Fuels Data Center (data as of August 28, 2024), PSE Named Communities.

b. Provide the number of customers/vehicles on a managed charging program in your service territory.

[6] This value is estimated as "Electric Service Area" here is defined as census tracts in which PSE offers electric service to at least one customer. As a result, the boundary does not perfectly align with PSE's service area.
[7] PSE's Clean Energy Implementation Plan (CEIP) provides the following definitions (Source: PSE CEIP, Chapter 3, available at: https://www.cleanenergyplan.pse.com/library):

- Highly Impacted Communities (HIC): A community designated by the Department of Health based on the cumulative impact analysis required by RCW 19.405.140 or a community located in census tracts that are fully or partially on "Indian country," as defined in 18 U.S.C. Sec. 1151.
- Vulnerable Populations (VP): Communities that experience a disproportionate cumulative risk from environmental burdens due to: Adverse socioeconomic factors, including unemployment, high housing and transportation costs relative to income, access to food and health care, linguistic isolation, and sensitivity factors, such as low birth weight and higher rates of hospitalization.

At the time of this response, PSE has four EV Fleet customers enrolled in a passive load management program under tariff Schedule 556, and 1,349 EVSE and 2,609 Telematics enrolled in its Virtual Power Plant (VPP) for Demand Response (DR) dispatch events under tariff Schedule 272.

c. What are the most common consumption rates for utility owned chargers within your service territory specified by charger type? (L1, L2, and DCFC)

PSE's owned and operated public chargers are billed under rate Schedule 997e. PSE's owned residential chargers are billed to the customer under rate Schedule 7 (Residential Service). For PSE's non-residential chargers that the Company owns but does not operate, the customer is typically billed under commercial rate Schedules 24 (General Service), 25 (Small Demand General Service), or 26 (Large Demand General Service).

d. What are the most common consumption rates for all chargers within your service territory specified by type? (L1, L2, and DCFC)

This is not tracked, but most commercial customers would be on Schedule 24 and 25.

e. What is the average usage or utilization rates for utility owned chargers of each type? (L1, L2, and DCFC)

Table 4: Average annual usage by charger type

Year	Level 2 Average (kWh)	DCFC Average (kWh)
2022	3,134	4,365
2023	3,745	6,302

Source: PSE Transportation Electrification Plan programs as of June 2024.

f. What is the average usage or utilization rates for all chargers within your service territory by type? (L1, L2, and DCFC)

PSE is only able to record electric consumption at the meter level and does not have a record of the number of EVSE installed at a particular location, therefore is not able to track the average usage or utilization rates for all chargers within PSE's service territory.

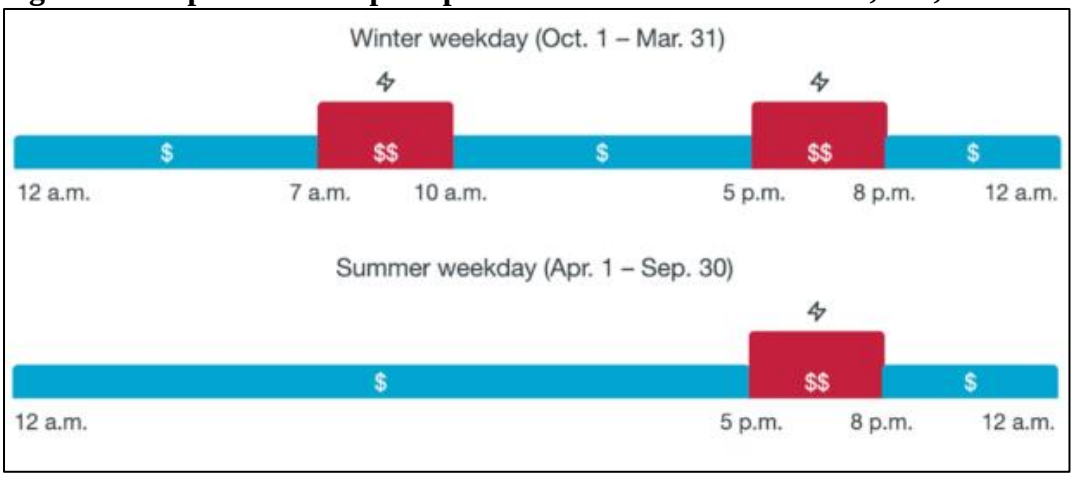
7. *Some estimates note that approximately 80 percent of light-duty vehicle (LDV)*[8] *charging is completed at home. If this charging is unmanaged, the periodic demand increases can quickly eliminate any available capacity at the distribution level. Managed charging mechanisms can help spread this demand to off-peak hours and mitigate the load stress of the system. What managed charging programs does your utility offer?*

   PSE is currently offering four time-varying rate (TVR) Schedules: 307, 317, 324 and 327. These rates are provided on an opt-in basis with a cap on maximum number of participants per rate schedule defined in the tariff for the duration of the pilot phase.

   a. *For utilities with time-of-use rates (on-peak, off-peak, and etc.) please provide graphs displaying your on-peak hours, off-peak hours and any super off-peak hours. Please include whether participation in these programs is the default option or if customers must opt-in.*

      Figure 1 below visualizes the on-peak and off-peak periods for Schedules 307, 317, and 324. On winter weekdays, the morning peak begins at 7 a.m. and ends 10 a.m. while the evening peak begins at 5 p.m. and ends at 8 p.m. On summer weekdays, there is no morning peak window and the evening peak window remains 5 p.m. to 8 p.m. There is no peak window on weekends.

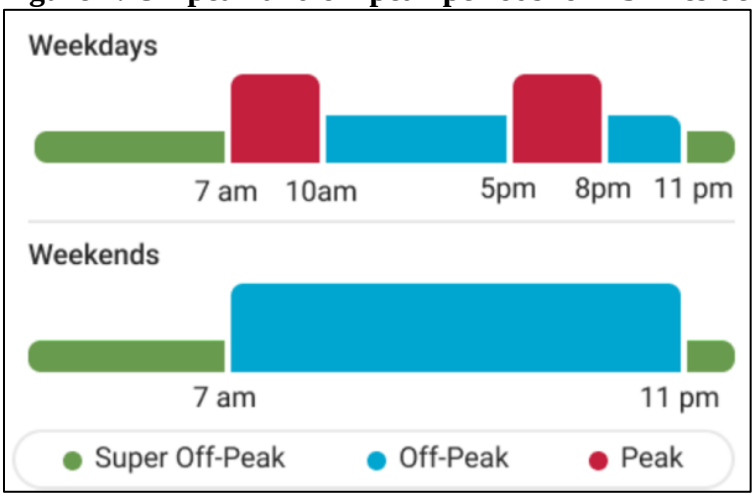
Figure 1: On-peak and off-peak periods for PSE TVR Schs. 307, 317, and 324



[8] NREL "Incorporating Residential Smart Electric Vehicle Charging in Home Energy Management Systems" (April 2021). https://www.nrel.gov/docs/fy21osti/78540.pdf

Figure 2 below visualizes the on-peak and off-peak periods for Schedule 327, which contains a "super off-peak" period. On weekdays, the morning peak window is 7 a.m. to 10 a.m. and the evening peak is 5 p.m. to 8 p.m. The off-peak period is 10 a.m. to 5 p.m. and 8 p.m. to 11 p.m. The super off-peak period is 11 p.m. to 7 a.m. On weekend days, the off-peak period is 7 a.m. to 11 p.m. and the super off-peak period is 11 p.m. to 7 a.m. There is no peak period on weekend days and there is no seasonal difference in periods.

Figure 2: On-peak and off-peak periods for PSE residential TVR Sch. 327



b. *Please provide the raw number (and percentage) of EV customers that participate in some form of static load control. (i.e., customers that allow for the utility to dictate when charging occurs by use of vehicle telematics or software on the smart charging device)*

PSE cannot directly calculate the number of EV customers that participate in some form of static load control as the Company does not have access to customer level data about EV possession. However, the Company can rely on data provided by the Washington Department of Licensing (DOL) to identify the count of light duty plug-in electric vehicles in PSE's service area. As of September 16, 2024, the Washington DOL reports that there are 98,863 Battery Electric Vehicles and 24,307 Plug-In Hybrid Electric Vehicles identified as being registered in PSE's electric service area or a shared service area with a neighboring utility. For the purpose of this modeling, PSE assumes that each vehicle represents a unique customer.

As of September 10, 2024, there are total of 1,377 EVSE and 2,634 Telematics customers enrolled in our VPP for DR dispatch events. Enrollment is open and ongoing for these

programs. Therefore, PSE estimates that 3.26% of Light Duty Electric Vehicle customers in PSE's electric service area are participating in static load control programs.

i. *For those customers using active load control, please detail the load reductions at the most granular level available as a result of these programs.*

For PSE's EV and Telematics demand response programs, the Company achieved 6.53 MWs of average load reduction during the flex event on August 8, 2024, from 5-8 p.m. These results are subject to an independent third-party evaluation at the conclusion of the program season.

c. *Please provide the raw number (and percentage) of EV customers that participate in some form of dynamic load control. (i.e., customers that participate in time-of-use rates or other charging programs specifically for EV customers)*

A total of 1,634 All Electric and 223 Plug-In Hybrid Vehicles are enrolled into PSE's Time Varying Rate pilot program. Therefore, PSE estimates that 1.51% of Light Duty Electric Vehicle customers in its electric service area are participating in dynamic load control programs.

i. *For those customers using passive load control, detail the load reductions at the feeder level seen at the most granular level available as a result of these programs?*

Load reduction for PSE's TVR pilots are not yet available as the evaluation, measurement and verification process is still in progress.

8. *EV infrastructure are common targets for theft and vandalism. What studies or programs are you aware of that address issues of vandalism and/or theft of EV supply equipment?*

There is a consortium of charging network operators with EVSE in the Puget Sound area that has been collaborating since spring 2024 on the rising issue of charging cable theft, with an initial focus on the Seattle metropolitan area. The group has developed a list of engagement strategies and plans to begin contacting identified stakeholders to gauge support and determine next steps toward prevention.

a. *Does your utility track information and expenses related to instances of damage, theft, or vandalism of EVSE?*

Yes.

b. If so, please detail the costs your utility has spent for 2022 and 2023 to repair or replace vandalized EVSE infrastructure in your service territory?

- 2022: $5,702
- 2023: $18,440

9. What is your utility's process to repair inoperable EVSE equipment? Please detail the process and timelines from the moment the utility is notified to re-energization of the EVSE.

If the notification does not come from the charging station network operator (who also provides maintenance services), PSE usually first notifies the network operator of the issue. If the issue is safety-related, such as if cables are cut with wires being left exposed, PSE dispatches the Emergency First Response team to shut off power to the EVSE. If the issue is not related to cable theft, the network operator then attempts to resolve the issue remotely via the charger network management platform. If the issue is not able to be resolved remotely, a technician is dispatched within 48 hours to assess the EVSE and determine if any parts are needed for repair. Following the diagnosis, the maintenance service provider orders necessary parts to repair the EVSE. The timeline between ordering the parts and repairing the charger varies greatly by manufacturer and part type, with some parts able to be shipped within a week of ordering and others, such as DCFC cables taking up to 3 or 4 months. Once the parts are delivered, a technician resource is dispatched within 24-72 hours to repair the charger and confirm it is again functional. If the EVSE was shut off due to a safety issue, PSE Emergency First Response is dispatched within 5 business days to restore power.

a. Does your utility track and maintain records on the operability of EVSE equipment in your service territory? If so, does your utility track solely public or utility-owned EVSE or does it track 3rd party owned as well?

Yes, only utility-owned EVSE.

b. Does your utility contract with a 3rd party provider to fix and/or repair EVSE? If so, please provide the names of each third-party contractor.

Yes. Shell Recharge and Enel X Way provide repair services to EVSE purchased through them.

c. Please provide the names of each 3rd party provider contracted with your utility as well as the cumulative costs your utility has incurred for these services for 2022 and 2023.

PSE pays for 5-year corrective maintenance packages upon installation of EVSE. Packages range in price by provider and EVSE manufacturer, with Level 2 maintenance packages typically ranging from approximately $400-$700 per Level 2 charger annually and $3,000-$10,000 per DCFC annually.

Conclusion and Contacts

PSE appreciates the opportunity to provide these comments. Please contact Kelima Yakupova, State and Regional Policy Consultant, at Kelima.Yakupova@pse.com or (425) 462-3051, for additional information about this filing. If you have other questions, please contact me.

Sincerely,

/s/ Wendy Gerlitz

Wendy Gerlitz
Director, Regulatory Policy
Puget Sound Energy
PO Box 97034, BEL10W
Bellevue, WA 98009-9734
425-462-3051
Wendy.Gerlitz@pse.com

cc: Tad O'Neill, Public Counsel