EXH. DJL-4
DOCKETS UE-240004/UG-240005
2024 PSE GENERAL RATE CASE
WITNESS: DAVID J. LANDERS

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **PUGET SOUND ENERGY,** **Respondent.**	**Docket UE-240004** **Docket UG-240005**

THIRD EXHIBIT (NONCONFIDENTIAL) TO THE PREFILED DIRECT TESTIMONY OF

DAVID J. LANDERS

ON BEHALF OF PUGET SOUND ENERGY

FEBRUARY 15, 2024

PUGET SOUND ENERGY

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I. CUSTOMER GROWTH AND SERVICE NEEDS

A. Overview

Q. Please briefly describe Puget Sound Energy's ("PSE") customer growth and new service investments presented in this case.

A. PSE responds to typically 15,000 to 17,000 incoming requests annually from customers, builders, and contractors for new service connections to homes and businesses, including the extension of gas mains and electric lines as needed. A key activity that drives investments is also the need to address load in an area that is increasing through the collective addition of new or modified services such that the mains and feeders reach their capacity limit and must be upgraded to provide adequate service, pressure, and voltage, to all customers. In addition to increasing load, PSE is continuing to see an increase in customer-side distributed energy resources which when integrated can provide supply support. Distributed energy resources are forecasted to increase and in addition to planning for their load impacts, PSE is proactively planning to maintain grid capability to leverage benefits of this two-way power flow.

Q. Please provide PSE's planned customer growth and new service capital investments over the rate period presented in this case.

A. Table 1 provides the planned capital investments from January 1, 2025 through December 31, 2026, which are estimated based on historic trends and programmatic plans. Gas investments have been adjusted based on the current tariff, Gas Rule 06 (Extension of Distribution Facilities), which has and will continue to reduce the margin allowance, requiring the customer to pay a larger proportion of the actual cost of new or modified services. PSE anticipates fewer new customers at the end of the rate plan and an increasing number of retirements into the future. PSE anticipates increased investment in the capacity of the electric system as new load continues to increase and less customers use gas to meet their energy needs. The capacity of the pipeline system will likely support the additional gas customer load over the next few years and therefore there are no pipeline capacity investments envisioned except where there are current reliability deficiencies. This assumes characteristics of the system and supply remain the same.

Table 1: Summary of total customer growth and service needs capital investments by year.

Customer growth and service needs ($ Millions)	Rate Plan Year 1 2025	Rate Plan Year 2 2026
Electric Capital investment	104.1	120.6
Gas Capital investment	33.6	18.5

Additionally, there is incremental operations and maintenance ("O&M") related to capital investment ("OMRC") associated with the above investments that totals about $3.7 million over the two-year period.

Q. Please describe cost controls employed to efficiently deploy capital investments.

A. The cost controls deployed by PSE for investments follows the general approach discussed in the Prefiled Direct Testimony of Roque B. Bamba, Exh. RBB-1T. A project manager is assigned who manages the project from inception through closeout, driving the schedule, managing budgets, and coordinating construction and design activities and milestones with both internal and external team members. Additional cost controls exist through fixed unitized pricing from established construction contracts.

B. Equity

Q. Please describe how PSE has considered equity in responding to customer requests and relevant investments.

A. While PSE has little control regarding the location of the customer requests or where capacity constraints result from growing load, PSE recognizes that decisions in how PSE responds to customer requests or prioritizes actions can advance energy equity. There are several business functions in which incorporating equity into decisions has or is being considered:

- PSE considers equity when faced with material shortages. Supply chain constraints have become more frequent since disruptions of the COVID-19 pandemic and PSE is taking into account customer requests that are

associated with vulnerable communities when allocating material that is in short supply. An example is when PSE experienced a J-Box shortage during the COVID-19 pandemic and screened for equity indicators such as health and wellness, low income housing, and jurisdictional projects, in managing project delays.

- PSE is expanding awareness of the vulnerabilities of communities from which customers are requesting service in order to consider construction, service priority, outage concerns, or capacity solution options that help to relieve burdens where possible. PSE field, planning, and engineering employees have access to GIS maps that include identification of highly impacted communities and vulnerable populations and this information and its usability will continue to improve. That said, a challenge is that PSE often deals with developers/property managers that may not provide adequate information for a full understanding of specific end use customers, or customer groups that will be the eventual customer, or that are contracting to agencies.

- PSE maintains a document that identifies the pros and cons as well as maturity and cost of distributed energy resources to guide customer and developer decision making. PSE is updating this document and tool to incorporate equity benefits for planners to leverage as the pace of adoption of distributed energy resources increases.

- PSE has developed a circuit planning tool that provides an initial view of performance, health, seasonal loading, ratings, phasing, overloading, voltage, electric vehicle forecasts, generation, and equity for planners to identify which circuits require study for development of capacity and reliability solution proposals. PSE can use this tool to identify where carrying capacity could be increased through distributed energy resource options relieving burdens on the Delivery System and to named communities through avoided disruption from construction activities and operations, and utilization of distributed energy resources as a local resource. In addition, the tool allows PSE to identify named communities to engage with to understand consequences of existing or future system performance, recognizing that system performance data provides a sense of availability, not consequences which may be different for named communities than other communities.

- PSE's investments in backbone Delivery System infrastructure to meet customer capacity and reliability needs incorporate equity through the Investment Decision Optimization Tool ("iDOT"), ensuring a targeted percentage of the investment occurs in named communities for distributional justice. Following guidance and input from the Equity Advisory Group in 2023, capacity and reliability project investments developed for the years covered in this rate plan were selected to meet or

exceed a threshold for thirty percent of investments to provide an equity benefit to highly impacted communities.

- Additionally, analysis used in determining non-wire / pipe alternatives considers equity in the process of determining final solution and capacity investments are optimized through iDOT which has incorporated equity alongside the benefit to cost analysis.

- PSE's project execution team is typically responsible for determining whether the system must be shut down to complete project construction (i.e., planned outage) for all capacity, customer, and reliability projects. While planned outages are dictated by safety and the system's configuration and ability to shift load, in the future, PSE will consider impact on named communities which may influence scheduled time of day or duration of planned outages.

C. Customer Requests

Q. Please describe PSE's customer requested investments and core objectives and priorities.

A. In response to customers requesting new or modified loads, PSE installs new or upgraded service lines to the requested homes and building locations. In some cases, the existing Delivery System electrical circuit lines or gas mains are extended or upgraded to accommodate the request or additional load. Also included, in accordance with tariffs, are contributions by customers where they are required to pay for all or a portion of these costs, or contributions in aid of construction ("CIAC") dollars. While customer requested investments take priority over discretionary work so customer service expectations are met, not every customer request proceeds to plant being installed and sometimes the plant is put in service in a future year from when the request was made. For larger projects, this can spread capital expenses over multiple years. PSE is also seeing an increase in property redevelopment where existing houses are being

demolished and new, often larger, homes are constructed. This creates incoming work but does not increase the number of PSE customers. This makes it difficult to equate investments in a given year with new customers added. These investments are supported by the Corporate Spending Authorization ("CSA") – Customer Construction Gas and Electric provided in Appendix A. PSE CSAs provide project background, statement of need, scope, benefits, cost estimate, alternatives, and funding risk.

Q. Please provide PSE's planned customer requested capital investments over the rate period presented in this case.

A. Table 2 provides the planned capital investments from January 1, 2025 through December 31, 2026, which are estimated based on historic trends and forecasted customer growth. Investments are net of any CIAC dollars, which may be required as a condition of service as described in PSE's tariffs.

Table 2: Summary of customer requests capital investments by year.

Customer requests	Rate Plan Year 1 2025	Rate Plan Year 2 2026
Electric Capital investment ($ Millions)	73.4	75.5
Electric Customer plant in service orders (#)	19,000 to 20,000 annually	
Gas Capital investment ($ Millions)	33.6	18.5
Gas Customer plant in service orders (#)	8,500 to 9,500 annually	

Additionally, there is incremental OMRC associated with the above rate periods of about $2.2 million.

Q. With gas line extension margin allowances reducing to zero by January 1, 2025, why are capital investments still planned for gas customer requests?

A. Per the Settlement Stipulation and Agreement on Revenue Requirement and All Other Issues Except Tacoma LNG and Green Direct in PSE's 2022 General Rate Case,[1] PSE agreed to reduce natural gas line extension margin allowances to a two-year net present value ("NPV") timeframe beginning July 1, 2023 in alignment with the effective date of new state building codes, further reduce margin allowances to a one-year NPV timeframe effective January 1, 2024, and eliminate the margin allowance effective January 1, 2025.

Although the margin allowance for new service applications will end on January 1, 2025, elapsed time between receipt of completed customer applications and placement of new customer load into service will result in continued investment in line extensions during this multiyear rate plan. These investments will diminish to zero after five years have elapsed, the amount of time for new customer load to be placed in service per PSE Natural Gas Tariff Rule No. 6,[2] and become fully covered by customer-paid CIAC.

[1] *WUTC v. Puget Sound Energy*, Dockets UE-220066/UG-220067 et al., Settlement Stipulation and Agreement on Revenue Requirement and All Other Issues Except Tacoma LNG and PSE's Green Direct Program, at 26 (Dec. 22, 2022).

[2] https://www.pse.com/-/media/Project/PSE/Portal/Rate-documents/Gas2/gas_rule_06_line.pdf?rev=d1b9c3ee109a4d2c8f53e1079951df90&sc_lang=en.

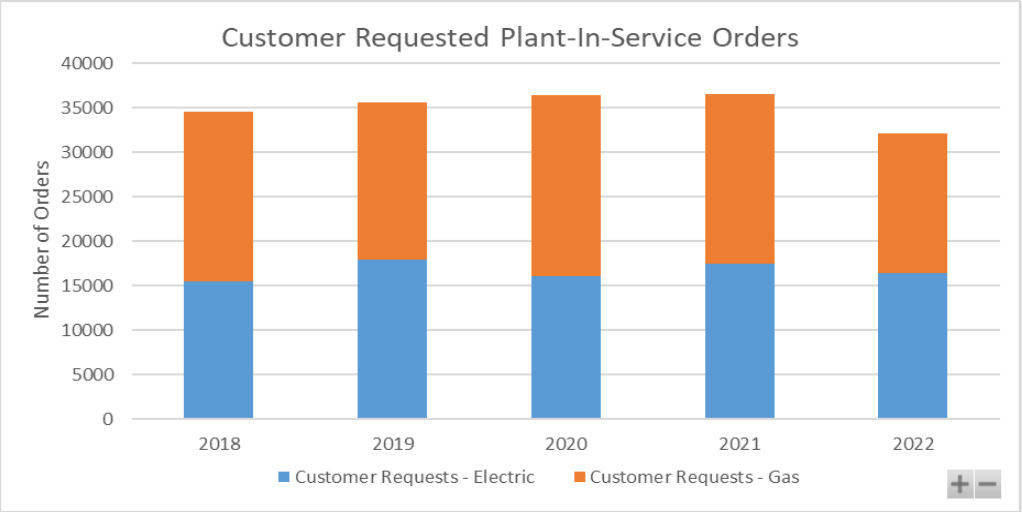
Q. Please describe the work completed and anticipated through the end of the rate plan.

A. PSE anticipates addressing approximately 82,000 electric customer work orders and 35,000 gas customer work orders from January 1, 2025 through December 31, 2026. PSE does a large volume of work for existing customers. These numbers include work that alters/modifies services for existing customers. Many customer projects require multiple work orders as well.

Q. Please describe the basis for the forecasted customer requested investments in more detail.

A. The annual funding level is re-forecasted each year with the new corporate load forecast which varies as a result of econometric analysis, codes, standards, and other dynamic impacts to these short cycle investments. Under the multiyear rate plan, this means other planned investments may need to be adjusted annually since customer requests are not discretionary. As such, these investments are also not ranked against the evaluation criteria in the iDOT planning model. Forecasts include the margin allowance under both electric and gas tariffs that are applied as a credit against the cost of the project. Figure 3 provides the customer requests trend since 2018.

Figure 1: Customer request plant in service orders (2018-2022).



Q. Please describe cost controls employed to efficiently deploy capital investments.

A. The cost controls deployed by PSE for investments follows the general approach discussed in the Prefiled Direct Testimony of Roque B. Bamba, Exh. RBB-1T. A project manager is assigned who manages the project from inception through closeout, driving the schedule, managing budgets, and coordinating construction and design activities and milestones with both internal and external team members. Additional cost controls exist through fixed unitized pricing from established construction contracts.

Q. Please describe customer benefits of customer requested investments.

A. Individual customers benefit from the availability of electric and gas service through a regulated service provider. All system customers benefit from economies of scale that customer growth provides. For example, the vast majority of delivery service costs (both electric and gas) are fixed in nature. System growth

costs are spread across all customers so as customer growth increases, the cost per customer decreases.

Q. Please describe the performance metrics that these investments impact.

A. These investments predominately impact the following corporate performance metrics based on performing the work with customer satisfaction in mind:

- SQI #10 – Percent of service appointments kept; and
- SQI #2 – Complaints to the WUTC per 1,000 customers.

Additionally, Delivery System upgrades performed as part of fulfilling the customer requested work often includes removing older plant and installing new facilities which is accompanied by improved reliability benefits:

- SQI #3 – SAIDI
- SQI #4 – SAIFI

Q. Are there O&M cost reductions that are expected to result from these program investments?

A. No. These investments serve customers, which marginally increases O&M expense associated with increased maintenance for additional infrastructure and customers.

D. Capacity

Q. Please describe PSE's capacity investments and core objectives and priorities.

A. Capacity investments are targeted at maintaining service quality and ensuring a safe, reliable, and available Delivery System for new customer connections, especially as loads grow and load types evolve. For PSE's pipeline systems, more or larger pipes are required to remain within required performance standards, such as maintaining adequate gas pressure. For PSE's electric system, more or larger wires are required to remain within required performance standards (such as power quality), serve new, growing, and forecasted loads, or increase hosting capacity to enable distributed energy resources. All of these investments help customer appliances and equipment work correctly.

The core objective of the capacity investments is to prevent utility or customer equipment from being damaged or failing due to poor power quality or gas pressure. Capacity investments address broad system load increases in a proactive and planned manner. Prioritization of capacity investments avoids delays related to necessary but unplanned system upgrades needed to fulfill new customer service requests. Capacity investments are planned several years in advance of need. As mentioned above, PSE anticipates increasing electric capacity investments to meet growing electric load. Electric distribution planned work is supported by the Targeted Capacity Upgrades business plan, provided in Appendix B.

As discussed above, capacity investments can also be made to enable or add customer-side of meter or utility-scale distributed energy resources to enhance distribution or transmission load-supporting capacity in lieu of making traditional wire investments. This work is supported by the CSA – Grid Modernization: DER Circuit Enablement and the DER and Microgrids Business Plan provided in Appendix C. The business plan provides background, statement of need, plan detail and scope, benefits, cost estimates, alternatives, and funding risks.

PSE is not currently investing in pipeline capacity projects to address future or growing needs. Any investments that increase pipeline capacity are to maintain reliability for serving customer demand. Please reference Exh. DJL-6 for more information.

Q. Please provide PSE's planned capacity capital investments over the rate period presented in this case.

A. Table 3 provides the planned capital investments from January 1, 2025 through December 31, 2026. These are estimated based on plans developed from modeling load growth forecasts and trended system needs. PSE's pipeline investments currently only address load that cannot be served today without manual, real-time field adjustments. These pipeline investments address reliability concerns and are discussed in Exh. DJL-6.

Table 3: Summary of electric capacity investments by year.

Electric capacity	Rate Plan Year 1 2025	Rate Plan Year 2 2026
Targeted Capacity Capital investment ($ Millions)	25.2	20.2
Projects (#)	5	10

DER enablement Capital investment ($ Millions)	5.5	24.9
Projects (#)	1	11

Additionally, there is incremental OMRC associated with the above rate periods of about $1.5 million.

Q. Please describe the work anticipated through the end of the rate plan.

A. Targeted capacity investments address ongoing and emerging capacity needs across PSE's entire population of distribution circuits. With the Clean Energy Transformation Act (CETA)[3] signed into law in 2019 and changes in energy codes, customer electric loads are increasing as buildings, homes, and transportation shift toward carbon-free resources. Growth is seen across the service territory: from industrial additions of electric vehicle battery testing facilities in Whatcom County, to commercial installations of electric vehicle charging stations in retail parking lots, and electric-only, multi-home plat developments in King County. To meet these evolving demands, this investment focuses on installing, upgrading, and replacing assets and infrastructure to distribute safe, clean, and reliable electric energy. During the rate plan, PSE anticipates completing 15 targeted capacity projects, representing approximately 1.4 percent of PSE's distribution circuits.

Distributed energy resource enablement investments create more opportunities for customers seeking to interconnect distributed energy resources or form

[3] Chapter 19.405 RCW.

microgrids. These customers include developers, commercial facilities, residential installations, and named communities. Key tasks to achieve circuit enablement for distributed energy resources and microgrids include:

- Upsizing of assets such as conductors and service transformers to accommodate additional renewable energy capacity.
- Adding line capacitors, regulators, and/or substation transformer upgrades for voltage regulation.
- Adding reclosers and protective relays.
- Substation upgrades such as smart circuit breakers, 115 kV circuit switchers, or communications to protect the system from higher fault currents.
- Improving communication networks for granular loading data.

During the rate plan, PSE anticipates completing 12 electric distribution projects to facilitate the enablement of distributed energy resources.

Q. Please describe the basis for the forecasted capacity investments in more detail.

A. Forecasted funding is developed through the Delivery System Planning process and evaluating system performance with increasing loads, as discussed in my Prefiled Direct Testimony, Exh. DJL-1T. Solution costs are estimated using tools provided by PSE's Project Delivery organization, based on historical average costs. Forecasted funding is a combination of known planned projects supplemented by the historic programmatic trend of these types of investments. Between 2018 and 2022, the number of circuits that exceeded 85 percent utilization, based upon summer peak loading, increased from 20 to 41. This trend

indicates the impacts of growing load through economic shifts, electrification, and decarbonization, and is in-line with spatial forecasting through LoadSEER. Moving forward, PSE will continue to utilize forecasting data to improve the Delivery System to allow capacity for new loads and operational flexibility, a key requirement for maintaining reliability.

Additionally supporting the ability to meet growth of electrical load on the Delivery System is distributed energy resource acquisition. Upon completion of its 2023 Distributed Solar and Storage Request for Proposals (DSS RFP), PSE is forecasting the acquisition of 22 photovoltaic, six battery, and three hybrid distribution interconnected projects by the end of 2025. The total AC nameplate of these projects will add a combined 52.0 megawatts of solar and 32.9 megawatts of battery capacity integrated into and benefiting the Delivery System. Six Community Solar projects are in the design stage with ongoing lease negotiations totaling 0.82 MW. Two additional projects at PSE sites are in design stage only and total 0.658 MW.

Q. Please describe cost controls employed to efficiently deploy capital investments.

A. The cost controls deployed by PSE for these investments follows the general program management approach discussed by Roque Bamba in Exh. RBB-1T.

Q. Please describe the benefits of the capacity investments.

A. The primary benefit of capacity investments is the ability to serve load and to provide operational flexibility for temporary service restoration while the cause of

an outage is remediated. If capacity concerns are left unaddressed, the increased energy load will overload equipment resulting in energy quality concerns or even dropped load due to equipment failure. Table 4 provides a summary of the avoided unserved energy (load at risk of being served) that will be addressed by these investments.

Table 4: Summary of capacity investments benefits by year.

Type of benefit	Rate Plan Year 1 2025	Rate Plan Year 2 2026
Unserved Energy (MWh)	2,207	1,984
DER Hosting Capacity Enabled (MW)	12.9	19.7
T&D Investment deferred ($ millions)	39.5	60.5

Q. Please describe the performance metrics that these investments impact.

A. These investments generally impact the SAIDI and SAIFI corporate performance metrics by avoiding outage restoration delays caused by lack of capacity for operational flexibility. The following SAIDI and SAIFI metrics will be impacted if PSE fails to address capacity constraints:

- SQI #3 – SAIDI
- SQI #4 – SAIFI

Q. Are there anticipated O&M cost reductions that are expected to result from these program investments?

A. No. As discussed above, these investments are made to afford new customers access to electricity and avoid outages not accounted for in current O&M expense plans.

II. CONCLUSION

Q. Does this conclude your testimony?

A. Yes, it does.