EXH. PAH-1CT
DOCKET UE-24___
2023 PCA COMPLIANCE FILING
WITNESS: PHILIP A. HAINES

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

In the Matter of the Petition of **PUGET SOUND ENERGY** **For Approval of its 2023 Power Cost Adjustment Mechanism Report**	**Docket UE-24____**

PREFILED DIRECT TESTIMONY (CONFIDENTIAL) OF

PHILIP A. HAINES

ON BEHALF OF PUGET SOUND ENERGY

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REDACTED VERSION

APRIL 30, 2024

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 Philip A. Haines, and my business address is 355 110th Avenue NE, Bellevue, Washington 98004. I am the Director of Energy Supply Merchant ("ESM") for Puget Sound Energy ("PSE").

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

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

Q. What are your duties as Director of Energy Supply Merchant?

A. As Director of Energy Supply Merchant ("ESM") my primary responsibilities include:

(i) managing the dispatch and utilization of PSE's electric generation assets, energy supply contracts, merchant transmission, and associated environmental attributes or compliance instruments;

(ii) directing PSE's power and gas trading operations and commodity hedging program functions;

(iii) managing work groups that address resource adequacy, regional market design, merchant transmission optimization, and the integration of new generation assets.

Q. Please summarize your prefiled direct testimony.

A. First, I provide an overview of market conditions, power supply operations, and power cost results in 2023 and 2024. Next, I describe PSE's governance structure within which the ESM function operates, as well as PSE's power supply portfolio. Finally, I discuss how the Washington State Climate Commitment Act's ("CCA"), "cap-and-invest" program impacts power supply operations and how PSE is incorporating carbon costs in dispatch decisions.

II. OVERVIEW OF MARKET CONDITIONS AND POWER COST RESULTS FOR 2023 AND 2024 YEAR-TO-DATE

Q. Please provide a brief overview of wholesale energy market conditions and power cost results in 2023.

A. In 2023 the wholesale energy markets were generally characterized by consistently high power prices and relatively low natural gas prices that caused PSE to rely consistently on its natural gas-fueled generation fleet to serve retail demand and enabled significant sales of surplus generation that offset other power supply costs. Consistently high power prices during the year are an indication of the tightening supply and demand balance in the region, as well as increased reliance on existing thermal generation to serve the region's demand as legacy fossil-fueled generators retire and that capacity is so far only gradually replaced with new renewable resources.

The implementation of Washington's Climate Commitment Act ("CCA") "cap-and-invest program" at the beginning of 2023 added cost to the thermal

generation needed to meet regional demand and contributed to consistently high power prices during the year. Despite the relatively tight supply and demand conditions reflected in market prices throughout the year, it is notable that 2023 did not feature any extreme market price or weather events like those experienced in December 2022 or, more recently, January 2024. The lack of such extreme events and associated high power costs that usually accompany them was one key reason that PSE over-recovered its PCA power costs in 2023 compared to the persistent under-recoveries experienced since 2019.

Another notable factor contributing to PSE's 2023 over-recovery of power costs was the Commission's approval of a power cost update immediately prior to the start of 2023. This update meant that for the first time since 2018, rates in effect for the calendar year were based on a relatively recent forecast of the costs PSE actually expected to incur during that same calendar year.

Overall, generally favorable market conditions combined with a proximal power cost forecast update led to PSE's over-recovery in 2023.

Q. Does PSE anticipate similar power cost outcomes in 2024?

A. No. PSE expects to significantly under-recover power costs in 2024. This is primarily due to an extreme weather and market price event in January 2024 that coincided with record-breaking PSE demand and extraordinarily high power supply costs. Year-to-date ("YTD") thru March 2024, PSE under-recovered $110.7 million, and current projections estimate a total under-recovery of $127.5 million by year end.

Q. What happened in January 2024?

A. Between January 11 and January 17, 2024, the Pacific Northwest experienced a period of sustained cold temperatures that triggered a region-wide supply scarcity event and threatened the ability of Pacific Northwest utilities to reliably serve customer demand.

Peaking at a record high of nearly 5,000 megawatts ("MW"), PSE retail electric demand greatly exceeded normal or forecasted levels throughout the seven-day period. Similarly high customer demand for utilities across the Pacific Northwest was compounded by a minimal supply contribution from wind resources amid freezing conditions. Several Pacific Northwest utilities, including PSE, were forced to declare Energy Emergency Alerts.

Regional supply constraints and record demand conditions were exacerbated by the Western Electricity Coordinating Council's ("WECC") holiday calendar, with pre-schedule trades occurring two to four days in advance of real-time operations. As conditions tightened even further than expected in the pre-schedule period, real-time spot market prices rose to—and then surpassed—WECC's $1,000 per megawatt-hour ("MWh") soft price cap for most of the Martin Luther King, Jr. Holiday weekend.

Record-breaking demand and low output from PSE renewable resources forced PSE to purchase supply in the wholesale market to meet demand. PSE was ultimately able to secure enough supply to meet the extraordinary customer demand, but exposure to spot market prices during this period drove PSE's power

supply costs well above the amount forecasted in rates.

Q. Why does PSE anticipate further under-recoveries for the rest of the year?

A. Power cost under-recovery is expected for the rest of year largely due to anticipated lower generation from hydroelectric plants. Hydro conditions in the Pacific Northwest are projected to be below normal for the remainder of the year. PSE must replace these lower hydro volumes with additional market purchases (or make fewer wholesale sales), which increases power costs relative to the normal hydro conditions assumed in the forecast included in rates. Replacing not just the energy but also the clean-energy attributes of hydroelectric power with respect to PSE's goals for compliance with Washington State's Clean Energy Transformation Act ("CETA") further increases the expense and estimated impact to 2024 power cost recovery. For details of the actual 2024 YTD results and PSE's projection for the remainder of the year, please see the Prefiled Direct Testimony of Brennan D. Mueller, Exh. BDM-1CT.

III. PSE's MANAGEMENT OF ITS POWER PORTFOLIO AND FUEL SUPPLY

A. Power Supply Costs Overview

Q. What governance structure operates as a control over PSE's power cost management activities and wholesale market transactions?

A. PSE's ESM department is responsible for the development and implementation of portfolio management strategies and power and gas sector wholesale market transactions. A team comprised of energy market analysts, energy traders, and

other professionals carry out the ESM departmental objectives.

PSE's official risk position reporting and credit analyses are independently monitored, measured, and quantified by PSE's Energy Risk Control ("ERC") department. The ERC is led by the Director of Enterprise Risk Management.

Composed of five PSE officers, the Energy Management Committee ("EMC") oversees the activities performed by both the ESM and ERC departments. The EMC is responsible for authorizing long-term resource contracts and acquisitions and also assesses and provides direction on all portfolio risk matters.

The EMC meets on a regular basis to review position reports, set risk exposure limits, assess proposed risk management strategies, approve procedures executed by PSE staff, and steer strategic and policy-level objectives. Governing documents include PSE's Energy Risk Policy ("Policy") and Energy Supply Transaction & Hedging Procedures Manual ("Procedures"). PSE's Policy and Procedures delineate the policies that govern PSE's energy portfolio management practices and define roles and responsibilities of various departments. PSE's Board of Directors provides executive-level oversight of portfolio risk and other matters through its Audit Committee. The current Policy and Procedures are provided as Exh. PAH-3 and Exh. PAH-4C, respectively.

B. Portfolio Hedging and Power Cost Management

Q. What strategies does ESM employ to manage its power supply portfolio and power costs?

A. PSE's ESM department uses a combination of least cost dispatch, resource optimization, and portfolio hedging to manage power supply costs while meeting reliability requirements and policy objectives, including statewide de-carbonization requirements under CETA and CCA's "cap-and-invest" program.

Q. What is least-cost dispatch?

A. Each day, PSE's ESM department plans for sufficient electric supply to meet forecasted day-ahead demand for electricity using the least cost resources available—subject to reserve requirements, various transmission or generation constraints, and prioritization of clean energy supplies to meet CETA targets. This strategy seeks to minimize portfolio costs while maintaining system reliability and compliance with legal, policy, and regulatory obligations. In practice, least cost dispatch generally means choosing to run PSE's thermal generation facilities when they are less expensive than buying power from the wholesale market, or buying power from the wholesale market when it is less expensive than running PSE's thermal generators.

Q. Please explain optimization.

A. The variable nature of PSE's load and resources coupled with the need to plan for peak demand means available resource capacity is at times in excess of that required to serve retail demand. The ESM department seeks to maximize the

value of PSE's electric portfolio assets by selling generation, transmission, and natural gas pipeline capacity into regional wholesale markets whenever it is not needed to meet PSE demand. The benefits of these portfolio optimization activities provide a direct reduction to PSE's power costs, helping to offset the cost of energy supply used to serve customers. All portfolio optimization activities are conducted in accordance with PSE's Policy and Procedures.

Q. How does PSE use portfolio hedging to manage power supply costs?

A. The objective of PSE's hedging program is to reduce the impact of commodity price volatility on power costs. PSE does not enter into risk positions for the purpose of earning trading profits. PSE's risk management strategy for hedging market price exposure is outlined in PSE's Policy and Procedures, organized by a two-component structure: 1) the Programmatically Managed Hedge period and 2) the Actively Managed Hedge period.

The Programmatically Managed Hedge period begins [redacted] in advance of delivery. During the Programmatically Managed Hedge period, PSE's ESM department executes hedges to systematically reduce PSE's net electric portfolio exposure (including natural gas for power generation) so that, as the months roll into the Actively Managed Hedge period, exposure for that month will be within the monthly EMC-approved exposure limit.

The Actively Managed Hedge period begins [redacted] in advance of delivery. During this period, the ESM department monitors positions on a daily basis and authorized traders execute transactions to manage exposure within monthly and

annual limits established by the EMC.

Q. How is electric portfolio exposure measured?

A. Exposure is calculated discretely for on-peak power, off-peak power, and gas-for-power positions. EMC-approved exposure limits apply to the aggregated net spot market exposure of all three positions. Spot market exposure is measured by multiplying the net open position, in megawatt hours or million British Thermal Units ("MMBtu"), by a forward power or gas market price, respectively. It represents the net dollar amount that PSE has not hedged during a specific period, given forecasted load and generation volumes and simulated market prices. PSE performs this calculation through a series of simulations comprised of forward power and gas prices to generate a probabilistic measurement of portfolio exposure.

Q. How does PSE use the electric portfolio exposure limits to help make hedging decisions?

A. Once PSE's aggregated energy position and net exposure are defined for a particular period, the ESM department executes fixed-price transactions for the purchase or sale of gas or power to stay within EMC-determined exposure limits. Execution entails entering into specific transactions with approved counterparties that are subject to credit limits. These transaction are executed under approved master agreements.

Q. Does the ESM department rely only on net exposure to make hedging decisions?

A. No. The ESM department also analyzes market prices and fundamentals that impact the wholesale electric and gas markets. The ESM department has limited discretion regarding when hedging transactions are required, but it does determine with whom to execute transactions to manage net exposure (among counterparties approved by the ERC department and subject to counterparty credit limits).

Q. What information does the ESM department rely on to inform portfolio management decisions?

A. In addition to the net energy position and power portfolio exposure, the ESM department utilizes a wide set of tools and sources of data to make informed decisions concerning plant dispatch, fuel purchases, and execution of hedges within EMC-approved limits. The ESM department collects and analyzes regional supply and demand data (e.g., weather trends and hydro generation conditions). Additionally, ESM reviews forecasted wholesale market prices and industry publications. ESM receives real-time data from sources including the Intercontinental Exchange ("ICE") Data Analytics, live ICE price data, and brokers.

The ESM department reviews operational events, discusses market trends, and reviews supply and demand information. The data is used to ascertain portfolio risks and identify hedging priorities. The ESM department may also use such information to support proposals made to the EMC, which may recommend

modifying PSE's hedging strategies, and/or engaging in transaction types outside the scope of standard instruments.

IV. EFFECT OF CCA "CAP-AND-INVEST" PROGRAM ON POWER PORTFOLIO OPERATIONS

Q. Does PSE consider CCA allowance costs when deciding how to dispatch resources in its portfolio?

A. Yes. PSE factors CCA allowance costs into resource dispatch decisions of its power portfolio supply. According to its current understanding of the no-cost allowance allocation and adjustment process, PSE receives no-cost allowances only for greenhouse gas emissions from PSE generation and market purchases used to serve its retail electric demand. PSE is obligated to purchase allowances for any emissions from emitting resources that generate electricity sold in the wholesale market or delivered to other utilities.

This means that PSE will not incur allowance purchase costs for emissions associated with serving retail demand, but it will incur allowance purchase costs for emissions associated with any wholesale market sales. To minimize total electric supply costs, only costs that will actually be incurred should be considered in resource dispatch decisions. Therefore, CCA allowance costs must be considered in dispatch decisions when generation is sold in the wholesale market but do not need to be considered when generation is used to meet retail demand.

Accordingly, PSE considers CCA allowance costs when deciding whether to

dispatch units in its thermal fleet to make wholesale sales. In other words, PSE only executes economic wholesale sales when the spark-spread (the difference between wholesale market price of electricity, expressed in dollars per MWh, and PSE's cost of production using natural gas, also expressed in dollars per MWh) is sufficiently high to cover the cost of purchasing CCA allowances to cover emissions associated with such sale.

Q. How do CCA allowance costs impact PSE's least cost dispatch and optimization strategies regarding surplus generation?

A. Although dispatch of thermal resources to serve retail load has not been directly affected by CCA, dispatch of PSE's thermal fleet for wholesale market sales has been affected. As discussed above, PSE factors in the cost of carbon in decisions to dispatch its plants for wholesale market sales, which means PSE's thermal plants dispatch less than they otherwise would.

Due to the increased cost of dispatch, PSE may not be able to make as many economic wholesale sales of electricity as it otherwise would. This limits the benefit from optimization of surplus capacity available to reduce power costs. For a discussion of estimated CCA impacts to actual resource dispatch and power supply costs since the CCA "cap-and-invest" program commenced in January 2023, please see the Prefiled Direct Testimony of Brennan D. Mueller, Exh. BDM-1CT.

V. CONCLUSION

Q. Were PSE's power costs during the 2023 PCA Period prudently incurred?

A. Yes. PSE's power costs for the 2023 PCA Period were prudently incurred. PSE's management of its power costs during the 2023 Period was reasonable. PSE has structures and processes in place to formulate strategies for managing a complex resource portfolio within a dynamic market environment.

Q. Does that conclude your prefiled direct testimony?

A. Yes, it does.