EXH. PAH-1CT
DOCKETS UE-240004/UG-240005
2024 PSE GENERAL RATE CASE
WITNESS: PHILIP A. HAINES

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

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

PREFILED DIRECT TESTIMONY (NONCONFIDENTIAL) OF

PHILIP A. HAINES

ON BEHALF OF PUGET SOUND ENERGY

REDACTED VERSION

FEBRUARY 15, 2024

PUGET SOUND ENERGY

PREFILED DIRECT TESTIMONY (CONFIDENTIAL) OF PHILIP A. HAINES

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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 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. Please see the first exhibit to the Prefiled Direct Testimony of Philip A. Haines, Exh. PAH-2, for my professional qualifications.

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

A. As Director of Energy Supply Merchant my responsibilities include the following:

(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. What topics are you covering in your testimony?

A. My prefiled testimony addresses the following topics relevant to PSE's power supply operations in this proceeding:

(i) an overview of PSE's governance structure within which the Energy Supply Merchant ("ESM") function operates, as well as PSE's power supply portfolio and how it is managed;

(ii) a discussion on how ESM is adapting its portfolio to changing market conditions while implementing statewide decarbonization policy requirements, and

(iii) a description of PSE's acquisition of new power supply resources and transmission contract renewals, with a request for the Commission to determine that costs of these new resources are prudent.

II. PSE'S MANAGEMENT OF ITS POWER PORTFOLIO AND FUEL SUPPLY

A. Power Supply Costs Overview

Q. What governance structure guides 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.

Independently monitored, measured, and quantified, PSE's official risk position reporting and credit analyses are performed and housed within 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. On a regular basis, the EMC meets to review position reports, set risk exposure limits, assess proposed risk management strategies, approve procedures executed by PSE staff, and steward 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, capacity optimization, and portfolio hedging to manage power supply costs while meeting reliability requirements and policy objectives, including statewide decarbonization requirements under Washington State's Clean Energy Transformation Action ("CETA") and Climate Commitment Act ("CCA").

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, CETA-compliant resources available—subject to reserve requirements and various transmission or generation constraints. This strategy seeks to minimize portfolio costs while maintaining system reliability and compliance with legal, policy, and regulatory obligations.

Q. Please explain optimization.

A. The variable nature of PSE's load and resources, including short-term market purchases, coupled with the need to plan for peak demand means available resource capacity is often in excess of that required to serve retail demand at a particular point in time. The ESM department seeks to maximize the value of PSE's electric portfolio assets by selling transmission, generation, and natural gas

pipeline capacity into regional wholesale markets when 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 net 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 ("MWh"), 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 transactions are executed under approved master agreements.

Q. Has PSE changed risk policy and management framework for hedging practices?

A. Not recently, but PSE is currently in the process of reviewing and updating its risk policy and management framework for hedging practices to align with evolving wholesale market conditions.

Q. Does the ESM department rely only on net exposure to implement the hedge programs?

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 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 (weather trends, hydro generation conditions, etc.). 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.

III. PSE'S PORTFOLIO CHANGES AND EXPANSION OF REGIONAL MARKET COORDINATION

A. Overview of changing regional power market conditions and how PSE is addressing them

Q. What changes to market conditions are motivating changes to PSE's energy supply strategy?

A. Regional efforts to mitigate the effects of climate change and meet decarbonization policy objectives have fueled significant power supplier investment in renewable and non-emitting resources. As discussed in the Prefiled Direct Testimony of Ronald J. Roberts, Exh. RJR-1T, investment into and accelerated deployment of variable, non-dispatchable resources like wind and solar, combined with retirements of traditional baseload generation resources, have contributed to a tightening of available supply relative to demand in western wholesale electric markets and a subsequent increase in price volatility and

system constraints. These changing market dynamics have necessitated changes in PSE's resource adequacy planning and how it meets near-term electric capacity needs. They have also prompted regional efforts to coordinate resource adequacy and led to proposals for organized electric market structures. Policies including CETA and the CCA Cap and Invest program are driving the need for further changes in PSE's energy supply operations

Q. How is PSE's energy supply function addressing near-term resource adequacy requirements?

PSE's ESM department is tasked with filling the projected near- and intermediate-term, summer and winter peak capacity deficits identified in PSE's long-term resource planning processes. In addition to filling these identified capacity deficits, PSE's ESM department must also acquire power supply to fill open transmission capacity that is included as a resource in the long-term planning projections. As described in the Prefiled Direct Testimony of Ronald J. Roberts, Exh. RJR-1T, it is PSE's near- and intermediate-term projected capacity deficits plus the amount of open transmission that informs PSE's resource need to reliably serve PSE's customers in the near and intermediate term.

Since the development and building of new resources are inherently long-term planning activities, PSE's ESM must fill the projected near-term resource adequacy deficit by securing existing electric capacity via power purchase agreements ("PPA"); the near- and intermediate-term resource need referenced above directly informs how PSE's energy supply function selects and/or bids on

short and intermediate-term PPAs as further discussed in section IV of my testimony.

Q. Is PSE acquiring short-term resources to meet near-term resource adequacy needs and clean energy targets?

A. Yes. As discussed in the Prefiled Direct Testimony of Joshua J. Jacobs, Exh. JJJ-1T, PSE's Clean Energy Implementation Plan ("CEIP")[1] has identified an interim CETA goal to serve 60 percent of retail load with renewable, non-emitting resources by 2025. This interim 2025 CETA goal and the resource adequacy needs discussed above are the basis for the pursuit and execution of a number of short-term PPAs in 2023 that were introduced in PSE's August 1, 2024 power cost update filing[2] that annotated changes to the variable portion of the baseline rate which took effect on January 1, 2024.

Section IV of this prefiled direct testimony provides a discussion of these PPAs, and requests that the Commission determine PSE's decisions to enter them were prudent. Please see the Prefiled Direct Testimony of Zacarias C. Yanez, Exh. ZCY-1CT, for discussion of a long-term supply agreement with Chelan County PUD, for which PSE is requesting a prudence determination from the Commission in this proceeding.

[1] Corrected 2023 Clean Energy Implementation Plan Biennial Update, Table 2.5: Comparison of annual goals based on forecasted load and generation, p. 2.2 (Nov. 20, 2023).

Q. How is the ESM shifting its market strategy to face challenges associated with dynamic market conditions like price volatility and capacity constraints?

A. As discussed in the Prefiled Direct Testimony of Ronald J. Roberts, Exh. RJR-1T, PSE's capacity deficit and resource adequacy ("RA") risk to reliably serve customer demand is a looming concern. In an effort to face the challenges of this industrywide energy market transition, PSE is shifting away from its reliance on short-term[3] market purchases to meet dynamic demand and toward regional coordination in organized market and resource adequacy programs.

Two frameworks PSE is actively participating in to reduce price volatility risk and address capacity and transmission constraints include exploring participation in organized day-ahead markets and participation in the Western Resource Adequacy Program ("WRAP"). Joining a day-ahead market that serves entities in the Western Interconnection along with PSE's participation in the WRAP provides parallel structures for PSE to provide reliable energy delivery to customers while lowering price volatility risk and dependence on short-term market transactions.

Moreover, the regional coordination required for both a day-ahead market and the WRAP enable PSE to cost-effectively acquire resources and capacity necessary to meet customer demand and achieve decarbonization policy objectives.

[3] Short-term defined as less than 12-month term market purchases for unspecified resource products.

Q. Now that the CCA "Cap-and-Invest" program is operational, how is the ESM managing CCA in its power portfolio?

A. The ESM is responsible for certain aspects of the cost-effective management of the CCA "cap-and-invest" program, including the accounting of no-cost allowances in resource dispatch, consistent with PSE's current understanding of Washington Department of Ecology's no-cost emissions allocation process and how PSE anticipates actually dispatching its resources for the rate years in this proceeding. Please see the Prefiled Direct Testimony of Brennan D. Mueller, Exh. BDM-1T, for a discussion on how PSE is forecasting and accounting for CCA in dispatch.

Q. Why do market and policy implementation challenges emphasize the need to formalize an Annual Power Cost Update compliance filing?

A. The complexities of changing market fundamentals involve issues I have laid out above regarding resource needs, market challenges, and implementation of new statewide decarbonization policies. All these factors contribute to the diminished reliability in multi-year supply power cost forecasts, which is tied to a sharp increase in power cost under-recoveries.

Formal continuation of the Annual Power Cost Update filing allows for proper alignment of resource costs and customer rates. The Commission's approval of a formal annual power cost update is essential in aligning recovery of costs with

PSE's ability to satisfy statewide clean energy targets and provide safe, reliable energy supply to meet customer demand.

Please see the Prefiled Direct Testimony of Brennan D. Mueller, Exh. BDM-1T, for an in-depth discussion on the need to formalize an annual power cost update filing.

B. Western Resource Adequacy Program

Q. What is the Western Resource Adequacy Program?

A. The Western Resource Adequacy Program ("WRAP")[4] is a voluntary program that offers common resource adequacy planning and benchmarking standards for entities throughout the Western Interconnection. Designed by the Western Power Pool ("WPP"), formerly the Northwest Power Pool ("NWPP"), and operated by the Southwest Power Pool ("SPP"), the WRAP was designed to enhance market transparency, facilitate capacity sharing, and provide regional reliability through increased coordination and compliance across regional entities (participants) in the West. A fundamental aspect of the program is a requirement for participants to demonstrate resource adequacy through a Forward Showing ("FS") of projected load and available capacity resources. Program participants lacking adequate capacity, according to the program's planning standard will be required to procure

[4] *Western Power Pool Western Resource Adequacy Program Tariff*, Docket No. ER22-2762-000, (August 31, 2022) ("Tariff" or "WRAP Tariff").

additional capacity resources or pay a capacity charge in order to access the program during the binding period.

Q. Has PSE determined whether or not it will participate in the WRAP?

A. Yes. PSE actively participated in development of the WRAP program and evaluated the benefits of participation throughout this process. In October 2022 PSE determined that it would officially participate in the WRAP's binding phases beginning in [redacted].

Q. Why did PSE decide to be a part of the WRAP?

A. Due to a number of factors referenced in the Prefiled Direct Testimony of Ronald J. Roberts, Exh. RJR-1T, and in the regional market overview discussed above, PSE and entities throughout the West are predicted to experience a capacity shortfall that threatens the ability of PSE and other regional utilities to provide reliable electric service during periods of peak demand. PSE vetted its decision to join the WRAP through an extensive cost benefit analysis. Please see Exh. PAH-5C for a report evaluating the costs and benefits of PSE's WRAP participation.

The report demonstrated an opportunity for PSE and its customers to realize significant cost savings while securing resource adequacy, including a lower capacity requirement (i.e., volume) and lower cost relative to not participating in the program. In addition, the analysis showed additional qualitative benefits that can result in risk reduction across several categories, including reliability, price, investment, modeling, and regulatory benefits. Given the potential significant cost

savings, qualitative benefits discussed above, along with WRAP's robust governance structure, and the program's flexibility to pause entry or even exit the program with two years' notice, PSE determined that participation in WRAP is the lowest cost and least risky option for ensuring PSE can continue to reliably serve customer demand.

Q. Did the EMC and PSE's Board of Directors authorize PSE joining the WRAP?

A. Yes. Please see Exh. PAH-6C for ESM's presentation to the EMC for approval to join the WRAP from which approval was authorized on September 22, 2022. Please see Exh. PAH-7C for ESM's presentation to PSE's Board of Directors, from which approval was authorized on November 3, 2022.

Q. Is the WRAP an organized market?

A. No; the WRAP is a voluntary resource adequacy planning framework that is designed to leverage existing bilateral market structures, current transmission framework, and the West's unique regional diversity in resources to secure resource adequacy for participants. Although the WRAP is a formalized resource adequacy program, it is not a centralized capacity market and operates independent of a FERC approved Regional Transmission Organization ("RTO") or Independent System Operator ("ISO"). In its Order[5] approving the WRAP

[5] *Order Accepting Western Resource Adequacy Program (WRAP) Proposed Tariff*, 182 F.E.R.C. ¶ 61,063 at ¶ 50 (2023).

proposed tariff, the FERC accepted WPP's proposal that the WRAP resource adequacy program is distinct from an organized market.

Q. What is the current status of the program?

A. PSE submitted its FS capacity position in March 2023 to participate in WRAP's current phase and inaugural non-binding operations program which commenced on November 1, 2023. The binding phases begin as early as June 1, 2025, with flexibility as to when participants officially join the binding program. PSE anticipates full participation in the binding phase of the program beginning [redacted].

Q. Is PSE acquiring new capacity resources to comply with the WRAP's resource adequacy standard?

A. Yes and no. PSE's participation in the WRAP necessitates that PSE acquire new capacity resources to comply with WRAP's resource adequacy standard. However, the program just formalizes and standardizes an approach to address pre-existing capacity needs, it does not create the need for new capacity. Put differently, PSE would have to acquire new capacity resources with or without participation in the WRAP. The standardized requirements of WRAP provide visibility into the regional supply landscape and common definitions to facilitate coordination in addressing a regional concern.

Q. Is PSE seeking recovery of any costs associated with WRAP participation in this proceeding?

A. Yes, some. PSE is currently incurring costs associated with continued development and early implementation of the WRAP program. These costs are primarily administrative in nature – they include fees payable to the Western Power Pool for their administration of the program and labor expense for PSE staff working on program implementation. PSE projects such costs will total $[redacted] in fiscal year 2024-2025, $[redacted] in fiscal year 2025-2026 and $[redacted] in fiscal year 2026-2027. These costs are included in the "Other power supply expense" component of the power cost forecast presented in the testimony of Brennan D. Mueller, Exh. BDM-1T. PSE does not currently project any costs associated with charges for actual capacity accessed via the WRAP.

Q. Does PSE include explicit benefits of WRAP participation in projected power costs in this proceeding?

A. PSE will have access to limited program resources before the binding period begins in [redacted]. Further, rate period power cost projections currently only include the cost of resources that PSE has already acquired–PSE does not include costs for projected new resource additions or model a scenario wherein the region's resources are not sufficient to meet load (e.g., a blackout or "reliability event"). So, while the WRAP will provide benefits in the form of reduced reliability ris[redacted]costs that are lower

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than they otherwise would be, such benefits will not be explicit in PSE's power cost forecast for any particular year. But overall power costs over time will be lower than they otherwise would have been.

C. Regional Market Design Exploration

Q. What is an organized day-ahead market?

A. A typical organized day-ahead market is structured as a centralized forward market where participating entities engage in a formal bidding process to buy or sell wholesale electricity 24 hours before the operating day. A key feature of a day-ahead market is the central market operator's function as a clearing house for the financially binding transactions entered into by participating entities. Day-ahead market processes are dictated by the unique market design of a given day-ahead market, but in most cases, the central market operator also functions to optimize market aspects like price and generation through the economic dispatch and import and export transfers of energy between participating entities. In the organized day-ahead markets currently being evaluated, each transmission provider continues to perform transmission service functions and each balancing authority retains its NERC balancing authority responsibilities. This is a key distinction between an organized day-ahead market and a full independent-system-operator or regional-transmission-organization structure.

Q. Has PSE explored joining a day-ahead market?

A. Yes, PSE is currently vetting two emergent day-ahead markets in the West, one proposed by the California Independent System Operator ("CAISO") called the Extended Day Ahead Market ("EDAM")[6] and the other proposed by the Southwest Power Pool ("SPP"), called Markets+.[7]

Q. Is PSE participating in EDAM or Markets+?

A. PSE is participating in market design and stakeholder engagement activities for both EDAM and Markets+. PSE is still evaluating the costs and benefits of participating in either of these markets but anticipates making a recommendation to the EMC and PSE Board of Directors in the coming months.

Q. What is the timeline for PSE to enter a day-ahead market?

A. PSE is targeting participation in a day-ahead market at some point during 2026. Both markets PSE is evaluating are expected to begin operation in early 2026. PSE also expects other entities to transition to one of these markets during this timeframe. Being an early entrant into a market would give PSE the advantage of having more time to work directly with the market operator to understand market mechanics, optimize PSE's portfolio, and respond to changes in PSE's generation fleet as a result of participation. Additionally, delaying entry may expose PSE

[6] *California Independent System Operator Corporation Day-Ahead Market Enhancements and Extended Day-Ahead Market Tariff Filing*, FERC Docket No. ER23-2686 ("DAME/EDAM Filing") (Aug. 22, 2023).
[7] Materials related to the Markets+ proposal are available on the SPP website at https://www.spp.org/western-services/marketsplus/.

customers to the risk of a loss of bilateral market liquidity as participants in the region join a day-ahead market and commit more of their supply to these markets. A day-ahead market will also help PSE achieve Washington's clean energy mandates and PSE's goals in a more efficient and cost-wise manner for its customers. A large benefit of a day-ahead market is the ability to efficiently share resources among a more geographically and resource-diverse set of participants, which may result in reduced emissions and reduced renewable curtailments. Excess renewable production in one balancing authority in the day-head market can be distributed to other market participants instead of being curtailed.

IV. NEW POWER RESOURCES AND TRANSMISSION CONTRACTS

A. New Resources

1. Overview of New Resources

Q. Why is PSE's ESM department acquiring new resources?

A. As discussed in the Prefiled Direct Testimony of Joshua J. Jacobs, Exh. JJJ-IT and the Prefiled Direct Testimony of Ronald J. Roberts, Exh. RJR-IT, PSE faces both capacity and CETA needs, and PSE's Merchant function has executed short and intermediate-term purchases to supplement PSE's long-term acquisition strategy. As described below, and in the associated exhibits, these existing resource acquisitions will help PSE bridge its resource adequacy and CETA needs while new long-term resources can be built or acquired.

Q. Please provide a summary of recent opportunities for PSE to acquire resources addressing its near and intermediate term power supply needs.

A. Below is a list of resource acquisition opportunities recently pursued by PSE. PSE used the same methodology described in more detail below to develop its valuation and pricing strategy for each of these opportunities. See Exh. PAH-8C for more detailed information.

1. November 2022 – Grant County Public Utility District ("GCPUD") annual auction, GCPUD auctioned a four and twenty-two hundredths (4.22) percent slice of the Priest Rapids project for the 2023 calendar year. The imputed price of the winning offer was $[redacted]/MWh.

2. February 2023 – HF Sinclair requested bids to purchase the net output of the PSR Cogen project. PSE was selected as the winning bid.

3. March 2023 – Chelan County Public Utility District ("CCPUD"), requested bids to purchase a 5 percent slice of the Rock Island and Rocky Reach hydro projects. PSE, bid $[redacted]/MWh, and was selected as the winning bid.

4. March – June 2023, GCPUD issues a request for offers to purchase a 20 percent Slice, with an energy return obligation, of the PRP. PSE bid $[redacted]/MWh and was selected as a short list candidate but was not ultimately selected as the winning bid.

5. May 2023, Douglas County Public Utility District ("DCPUD") requested offers for a sale of up to 10 percent of their share of the Wells Hydroelectric project. PSE submitted a bid of about $[redacted]/MWh and was not awarded the contract.

6. August 2023, PSE issued a short-term RFP [redacted]

7. September to December 2023, PSE negotiated a contract to renew the purchase of the Colville Tribe's five and half percent (5.5 percent) share of the Wells Hydroelectric project for a price of $[redacted]/MWh.

8. November 2023 – GCPUD annual sale, GCPUD auctioned a four and twenty-two hundredths (4.22) percent slice of the Priest Rapids project for the 2024 calendar year. The imputed price of the winning offer was $[redacted]/MWh.

Q. How did PSE value and develop bid prices for the acquisition opportunities listed above?

A. The list of resource opportunities described above involved PSE's engagement through direct or indirect competitive market processes. For example, the Chelan Slice 38 Agreement was open to any market participant to respond, while PSE negotiated the Colville Slice Agreement Extension through a bilateral negotiation process. While the Colville Slice Agreement Extension was negotiated bilaterally,

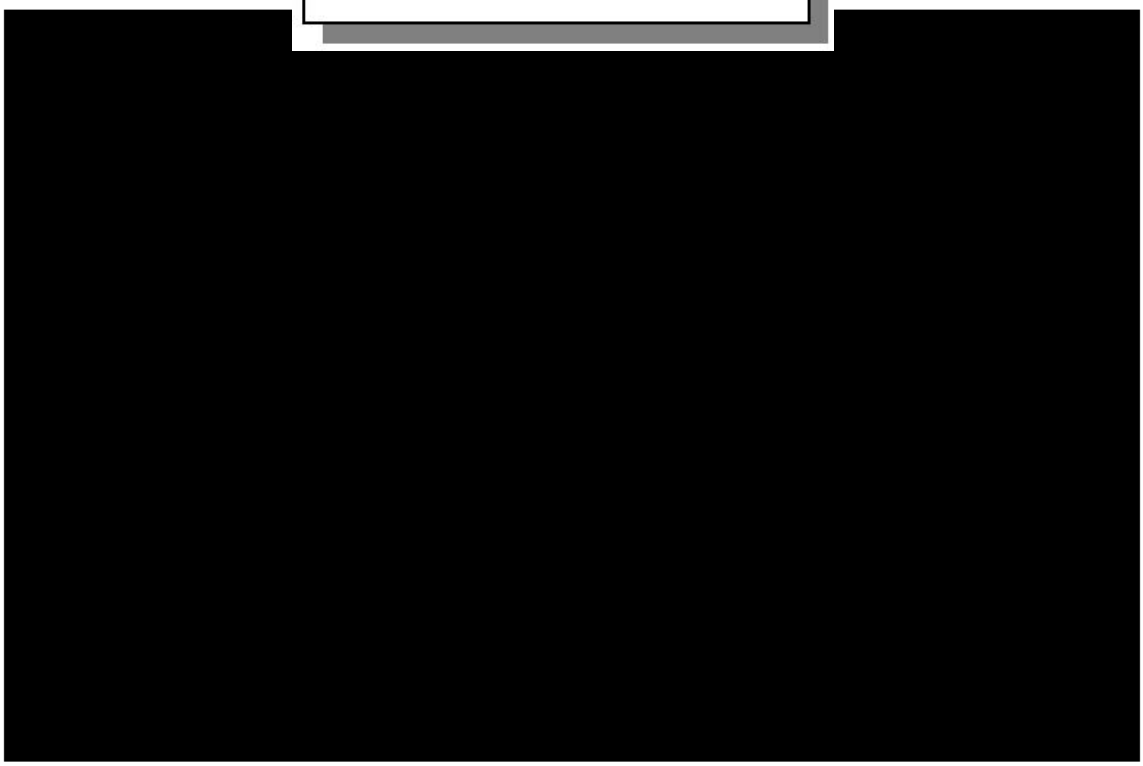
PSE understood that the Colville tribe would compare PSE's bid with potential offers made by other market participants, similar to a directly competitive market process. In all cases, PSE balanced the potential value a resource opportunity could provide PSE customers with the calculus of establishing a competitive bid, through evaluation of wholesale market expectations and price signals.

To balance market expectations and value to customers, PSE used a valuation and pricing process consistent with the process first used to price the Colville Slice Agreement Extension and the Chelan Slice 35 Agreement in PSE's 2022 General Rate Case.[8] In its 2022 General Rate Case PSE established that an appropriate pricing strategy reflects the total value of those contracts based on (1) Avoided Energy Value, (2) Flexibility Value, and (3) Avoided Carbon Emission Value.

PSE has updated this methodology to reflect the current market conditions and the unique value of each opportunity. In general, PSE estimates the total value of each opportunity based on the total value of individual components which include:

- Energy – This represents the value of [redacted].
- [redacted]

[8] Dockets UE-220066/UG-220067 *et al.*



This valuation methodology has allowed PSE to develop competitive market bids based on a range of expected values that the individual resources will add to PSE's portfolio.

Q. Are PSE's bid strategy and the resulting prices reasonable and competitive?

A. Yes; as summarized above, PSE's bid and valuation strategy is reflective of the expected value streams that each resource would bring to PSE's portfolio. Additionally, the results of resource opportunities where PSE bid unsuccessfully, namely the 2022 GCPUD Annual Auction, the 2023 20 percent GCPUD Slice Sale, the 2023 GCPUD Annual auction, and the DCPUD ten percent share, illustrate that other market participants assessed these same resources at similar and even greater value than PSE. This demonstrates that PSE's methodology is competitive, but also that the market is signaling higher prices for resources.

Q. How does PSE's bid strategy value the energy provided by a particular resource or PPA?

A. [redacted]. This energy value represents the price PSE could expect to pay for an energy only product that has the same output and shape as the product being evaluated. Each contract below discusses the specific assumptions used in its valuation.

Q. How does PSE's bid strategy incorporate the value of firm, reliable capacity provided by a particular resource or PPA?

A. A liquid capacity market does not exist in the Pacific Northwest; therefore, to submit competitive bids, PSE has to rely on experience in the bilateral market to estimate a value that a party may pay for a capacity-only product. Table 1 below provides a summary of market comparisons. [redacted]

Based on PSE's experience in the [redacted]

[redacted] This price is reasonably consistent with the $[redacted]/KW-year [redacted] cost of [redacted] for a Peaking resource published in the 2021 IRP. The Market [redacted] Average value of $[redacted]/MWh reflects the average [redacted] value of three market opportunities, [redacted]. Based on recent market experience, this is a reasonable price range for a [redacted] only product.

Table 1: [redacted] Value of Recent Market Comparisons

[redacted] value of recent market comparisons	$/kW-Year
[redacted]	$[redacted]
[redacted]	$[redacted]
[redacted]	$[redacted]
[redacted]	$[redacted]

Q. How does PSE estimate the value of [redacted] when valuing resource acquisition opportunities?

A. The Northwest Market is still adapting to the changes brought by both Climate Commitment Act and CETA. Traditional market purchases do not include any claims to environmental attributes associated with the underlying energy. The market has developed products to sell into California markets that do include claims on the emission or on the renewable energy attributes. The products trade at a premium to comparable energy only products. The market has yet to develop standard market products for compliance with Washington's CETA [redacted]

[redacted]

[redacted]

Q. What is PSE's understanding of the Commission's prudence standard?

A. For an in-depth explanation of PSE's understanding of the Commission's prudence standard, please see the Prefiled Direct Testimony of Zacarias C. Yanez, Exh. ZCY-1CT.

2. HF Sinclair PSR Cogen Agreement

(i) Background and Key Terms of the HF Sinclair PSR Cogen Agreement

Q. Did PSE's decision to enter into the HF Sinclair PSR Cogen Agreement meet the Commission's prudence standard?

A. Yes. As Described in the Prefiled Direct Testimony of Joshua J. Jacobs, Exh. JJJ-1T, PSE has a clear, documented need for capacity and clean energy resources to meet CETA[9] interim targets. PSE also performed the competitive market analyses, decision-making and documentation processes expected by the Commission, as summarized in this testimony.

Q. Please describe the HF Sinclair PSR Cogen project.

A. A full description of the HF Sinclair project can be found in Exh. PAH-9. In summary, the PSR Cogen project, owned and operated by HF Sinclair Puget

[9] Chapter 19.405 RCW.

Sound Refining LLC and located in PSE service territory near Arlington Washington, is comprised of three GE Frame six gas turbines with a combined capacity of 120 MW plus a 20 MW steam turbine with a total combined name plate of 140 MW. The PSR Cogen project is a qualifying facility under the Public Utility Regulatory Policies Act of 1978 ("PURPA") and provides both energy and heat to generate steam for the Puget Sound Refinery ("PSR") which is a PSE schedule 449 customer.

Q. Please describe the key terms of the HF Sinclair PSR Cogen Agreement.

A. HF Sinclair marketed the PSR Cogen Project Agreement through a competitive RFP process and originally solicited offers for the net output of the PSR Cogen project for a two year term commencing [redacted]. Negotiations between PSE and HF Sinclair resulted in PSE securing a [redacted] contract with a term that began [redacted]. The HF Sinclair PSR Cogen Agreement allows PSE to act as HF Sinclair scheduling entity. As the Scheduling entity PSE will schedule the gross output of the PSR Cogen project. The gross output will be scheduled first to meet PSR load obligations, about 40 MW on average. The net output of the PSR Cogen project, is forecasted at approximately (i) [redacted] MW of WRAP qualified capacity, and (ii) [redacted] GWh of energy per year, will be purchased by PSE.

PSE offered a [redacted] bid and, at the seller's request, negotiated a price of [redacted] per MWh for the [redacted] of energy

from the PSR Cogen project and a [redacted] rate price of $[redacted]/KW-month of the average of monthly on-peak generation time.

(ii) Need for the HF Sinclair PSR Cogen Agreement

Q. Please describe the need for the HF Sinclair PSR Cogen Agreement.

A. As described on page two of Exh. PAH-10C, PSE forecasted a short-term capacity deficit of up to [redacted] MW during the contract term. The HF Sinclair Agreement will contribute approximately [redacted] MW of capacity towards PSE's PSE capacity position during the contract term.

Q. What would have been the risk if PSE had chosen not to enter into the HF Sinclair PSR Cogen Agreement?

A. PSE could have missed an opportunity to secure approximately [redacted] MW of baseload capacity at a time when market participants are increasingly competing for limited operating resources. Absent PSE securing this resource PSE would need to acquire similar energy and capacity benefits through other market alternatives that may or may not have materialized. Finally, had PSE not secured this resource, the output of the plant would have been purchased by a third party, and the power would have likely been exported from PSE's system for the benefit of other market participants.

(iii) Comparison of the HF Sinclair PSR Cogen Agreement to Alternatives

Q. What alternatives did PSE consider in its analysis of the HF Sinclair PSR Cogen Agreement?

A. HF Sinclair marketed the PSR Cogen project through a competitive auction that closed in March 2023. PSE compared the PSR Cogen to a proxy short-term market purchase alternative that includes the [redacted], and [redacted] components identified in this product.

Q. Describe PSE's comparison of the HF Sinclair PSR Cogen Agreement to other alternatives.

A. As described above, PSE compared the value streams, or components, of the HFS PSR Cogen Agreement based on estimates of market equivalents. For this specific product PSE focused on the following individual value components of the product:

- Energy – This represents the value of [redacted]
- [redacted]

Q. Please summarize the value PSE estimated for the PSR Cogeneration Agreement.

A. Using the methodology described above, PSE estimated the value of the PSR Cogen Agreement at $[redacted] per year. Table 2 below summarizes range of values, by component, at the time of evaluation.

Table 2: Components of PSR Cogen Valuation

Value stream	Original Bid	Basis
[redacted]		

Q. Please describe the key assumptions PSE used in its analysis of the HF Sinclair PSR Cogen Agreement.

A. Key inputs used by PSE in the analysis include: (i) [redacted]

Q. Please describe the forecast of [redacted] assumed by PSE for analysis of the HF Sinclair PSR Cogen Agreement.

A. PSE used the [redacted] published on February 7, 2023. PSE shaped the power price forecast over the [redacted]-month forecast output of the PSR Cogen Agreement to estimate the value of the energy displaced by the

contract. Since the energy price forecast [redacted], PSE adjusted the prices by $[redacted].

Additionally, PSE subtracted the estimated cost of transmission wheel off PSE's system, since PSE would expect a third-party bidder to adjust its bid to reflect this cost. [redacted], resulting in PSE not needing to update the power price forecast prior to finalizing the contract.

Q. Please describe PSE estimate for avoided capacity value.

A. This resource was being evaluated in February 2023, which was only a few months removed from the results of the 2022 GCPUD annual auction. The results of the 2022 GCPUD annual auction are support using the Market [redacted] Average value of [redacted] KW-year[10] as the proxy [redacted] value.

Q. Please describe how PSE considered [redacted] in its evaluation of the HF Sinclair PSR Cogen project.

A. As a combined heat and power resource, the PSR Cogen project is a qualifying facility under PURPA. The demand for heat to produce steam and power for the refinery mean that the project will be generating power, and producing emissions, even if PSE were not to purchase the output. As such, the HF Sinclair PSR Cogen project carries all the [redacted] associated with the dispatch of the plant.

[10] See Table 1.2.

PSE did not assess a [redacted] to the output of the project as it is only a [redacted] month term, not a mid- or long-term contract per RCW 80.80.010. PSE's purchase of the HF Sinclair PSR Cogen's output will not result in incremental [redacted]

Q. Please describe the contract price and the projected annual costs of the HF Sinclair PSR Cogen Agreement.

A. Based on estimates at the time of evaluation, PSE expects an annual cost of $[redacted]. However, the actual costs will be based on actual net energy output time the Day Ahead index price [redacted] per MWh and the actual net capacity output times the capacity price, $[redacted]/KW-month.

Q. Please describe the benefits of the HF Sinclair PSR Cogen Agreement.

A. The HF Sinclair PSR Cogen project provides three key benefits to PSE. As previously noted, it is expected to provide about [redacted] MW of capacity and [redacted] GWh of energy per year. As a qualifying facility under PURPA the net output of the plant also reduces PSE retail load calculation for the purposes of calculating CETA energy targets.

PSE faces significant capacity needs during the term of this contract. As presented to the EMC in 2023, PSE has a resource adequacy need of [redacted] MW for the 2024-2025 winter period. This contract is expected to reduce that need by up to [redacted] MW.

In addition to PSE's capacity need, there is also a need for resources to help fill the interim CETA goal of 63 percent of retail load by 2025.[11] As shown in Table 3 below, as a PURPA resource, the net output of the project reduces PSE need for CETA resources by [redacted] GWh in 2025. This will help PSE achieve its 2025 interim goal. Based on broker quotes at the time of evaluation, an equivalent amount of [redacted] would cost about $[redacted] million. It is important to note that while PSE estimates $[redacted] in savings, it did not include this value in the pricing evaluation.

Table 3: 2025 CETA Needs Analysis Based on the Electric Progress Report

CETA Benefit	Current Position	Current Position + PSR Cogen
CETA interim target	63%	63%
Adjusted load (23 EPR)	20,764,848	20,764,848
CETA load adjustments*	[redacted]	[redacted]
PSR Cogen (New PURPA)	[redacted]	[redacted]
CETA Retail Load	[redacted]	[redacted]
CETA Interim target MWh	[redacted]	[redacted]
Existing CETA resources	[redacted]	[redacted]
CETA surplus/(deficit)	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]

[11] CETA need presented to the EMC is based on the interim target published in the 2021 CEIP. In June 2023 the Commission approved PSE's 2021 CEIP with conditions in Docket UE-210795. On November 11, 2023, PSE filed an updated CEIP that proposes a modified interim target of a four-year average (2022 – 2025), of 54.5 percent of retail load being served by CETA eligible resources. This results in an interim annual goal of 60 percent in 2025.

Q. Did PSE's Energy Management Committee approve the HF Sinclair PSR Cogen Agreement?

A. Yes. PSE's EMC approved the HF Sinclair PSR Cogen Agreement on February 24, 2023. Please see page seven of Exh. PAH-8C for the presentation to the EMC for the HF Sinclair Agreement. See Exh. PAH-10C for internal memoranda supporting the decision to enter into the HF Sinclair PSR Cogen Agreement and see Exh. PAH-11C for a copy of the HF Sinclair PSR Cogen Agreement itself.

Q. Was the decision to enter into the PSR Cogen Agreement prudent?

A. Yes. PSE developed a price using a methodology consistent with its methodology for evaluating similar resource opportunities.[12] As part of this methodology PSE compared the resource to alternatives using the best available market information. The contemporaneous documentation provided in this testimony and exhibits demonstrates that PSE met the Commission's prudency standard. The PSR Cogen Agreement will provided an additional baseload resource and the associated energy and capacity benefits. Additionally, as a PURPA qualifying combined heat and power cogeneration facility, the energy output of the project will contribute to PSE meeting its interim CETA energy targets.

3. Chelan Slice 38 Agreement

(i) Background and Key Terms of the Chelan Slice 38 Agreement.

[12] See Dockets UE-220066, *et al*. See also Exh. ZCY-1CT in that consolidated proceeding.

Q. Did PSE's decision to enter into the Chelan Slice 38 Agreement meet the Commission's prudence standard?

A. Yes. As described in the Prefiled Direct Testimony of Joshua J. Jacobs, Exh. JJJ-1T, PSE has clear and well documented capacity and CETA resource needs. The Chelan Slice 38 product will contribute up to [redacted] MW of capacity and [redacted] GWh of CETA eligible energy per year. [redacted]. As further described in this testimony, PSE's analysis, decision-making, and documentation process performed for the Chelan Slice 38 resource is consistent with previous acquisitions the Commission has found to be prudent.

Q. What is the Chelan Slice 38 Agreement?

A. The Chelan Slice 38 Agreement is a new five-year contract for a five percent share of the output of the Rocky Reach and Rock Island Projects offered by Chelan PUD to PSE through a competitive auction process in 2023. Chelan PUD selected PSE as the winning bidder in March 2023, and PSE and Chelan PUD subsequently executed the Chelan Slice Agreement on March 31, 2023.

The Chelan Slice 38 Agreement's term is [redacted]. When paired with PSE's existing transmission rights, the Chelan Slice 38 Agreement provides approximately [redacted] MW of [redacted]

and [redacted] GWh of clean, zero-emission power to contribute toward PSE's resource needs. PSE negotiated a [redacted] of $[redacted] for the [redacted], paid in equal monthly amounts of about $[redacted]. This [redacted] represents an hourly price of approximately $[redacted] per MWh, assuming historical average water conditions.

(ii) Need for the Chelan Slice 38 Agreement

Q. Why did PSE need to acquire the Chelan Slice 38 Agreement?

A. As described on page 18 of Exh. PAH-8C, PSE forecasted a short-term winter capacity position deficit of [redacted] MW starting in 2024 that grows to [redacted] MW in 2029. PSE also forecasted a need for [redacted]1 GWh of CETA-eligible energy in 2025. The Chelan Slice 38 Agreement is a [redacted] contract that provides PSE [redacted] MW of capacity and [redacted] GWh of CETA-eligible energy under expected water conditions.

Q. What would have been the risk if PSE had chosen not to execute the Chelan Slice 38 Agreement when it was awarded in March 2023?

A. If PSE had not executed the Chelan Slice 38 Agreement in March 2023, PSE would have risked losing the opportunity to acquire a clean, flexible capacity resource to another off-taker through Chelan PUD's competitive auction process. Failing to acquire Chelan Slice 38 would have resulted in PSE losing a highly flexible resource that provides both capacity and CETA eligible generation.

Given PSE's forecasted capacity and CETA needs, PSE would have had to secure alternate resources to meet customer needs. Based on recent market experience, PSE faces growing competition for existing generation resources. For example, a November auction for a 4.22 percent share of the Priest Rapids Project[13] settled at a price of $[redacted]/MWh, approximately $[redacted]/MWh [redacted].

(iii) Comparison of the Chelan Slice 38 Agreement to Alternatives

Q. What alternatives did PSE consider in its analysis of the Chelan Slice 38 Agreement?

A. Chelan PUD marketed the Chelan Slice 38 Agreement through a competitive auction that closed in March 2023. Therefore, PSE had a limited window to decide whether or not to submit an offer to compete for the Chelan Slice 38 Agreement and subsequently enter into the agreement with Chelan PUD. PSE compared the Chelan Slice 38 Agreement to a proxy short-term market purchase alternative that includes the identified value streams (energy, capacity, flexibility, and CETA) identified in this product.

Q. How did PSE determine the value of the Chelan Slice 38 product?

A. PSE used a process consistent with the Colville Slice Agreement Extension and Chelan Slice 35 Agreement in PSE's 2022 General Rate Case. PSE has updated this methodology to reflect the values of the Chelan Slice 38 Agreement. PSE

[13] Priest Rapids Project includes the output of both the Priest Rapids hydroelectric and the Wanapum hydroelectric projects.

estimates the total cost of the following individual value components of the product:

- Energy – This represents the value of the [redacted]

[redacted]

Q. What did PSE determine to be the value of the Chelan Slice 38 Agreement?

A. Using the methodology described above, PSE estimated the Chelan Slice 38 Agreement to have an annual value of [redacted]. Table 4 below summarizes range of values, by component, on the day PSE submitted its bid of [redacted].

Table 4: Components of PSE Valuation for Chelan Slice 38

Value stream	Bid $/MWh	Bid $M/year	Low $M/year	High $M/year	Basis
Energy	[redacted]				
Capacity / Resource Adequacy					
Capacity/Flex & Optimization					
CETA/REC					
Less hydro risk					
Total					

Q. What key assumptions did PSE use in its analysis of the Chelan Slice 38 Agreement?

A. [redacted]. See page four of Exh. PAH-10C for more details.

Q. What did PSE offer to pay for the Chelan Slice 38 product?

A. After analyzing the benefits of the Chelan Slice 38 Agreement, PSE made an offer at a price that would be competitive and was in the range of PSE's [redacted]. PSE staff submitted a bid for [redacted] term at a cost of $ 4[redacted] per year (about $[redacted] per MWh based on historical average water conditions).

Q. What benefits does the Chelan Slice 38 Agreement provide?

A. As stated above, the Chelan Slice 38 Agreement is expected to add up to [redacted] MW towards PSE's capacity need and an average of [redacted] GWh towards PSE's CETA needs. As a slice contract, Chelan Slice 38 allows PSE to access the storage and dispatch flexibility of the Rocky Reach and Rock Island project. Additionally, as a [redacted] contract, it provides power cost certainty over the contract term.

Q. Did PSE's Energy Management Committee approve the Chelan Slice 38 Agreement?

A. Yes. PSE's EMC approved the Chelan Slice 38 Agreement on March 23, 2023. Based on the valuation, the EMC authorized a bid up to the [redacted] on March 28, 2023, plus $[redacted] per MWh, with a total price [redacted] $[redacted]/MWh. Please see Exh. PAH-8C, beginning on page 18, for the EMC presentation for the Chelan Slice 38 Agreement. See Exh. PAH-10C, beginning on page four, for internal memoranda regarding the Chelan Slice 38, and see Exh. PAH-12C for a copy of the Chelan Slice 38 Agreement itself.

Q. Was the decision to enter into the Chelan Slice 38 Agreement a prudent decision?

A. Yes. PSE developed a price using a methodology consistent with the methodology used to evaluate similar market acquisitions.[14] As part of this methodology, PSE compares the resource using the best available information from market alternatives. The contemporaneous documentation provided in this testimony and exhibits demonstrates that PSE met the Commission's prudency standard. The Chelan Slice 38 Agreement is an additional resource that provides both CETA energy and capacity benefits.

4. Short-term RFP and Acquisition of Short-term Capacity Agreements

[14] See Dockets UE-220066 *et al*. See also Exh. ZCY-1CT in that consolidated proceeding.

(i) Background and Key Terms of PSE's RFP Short-term Capacity Agreements

Q. Was PSE's decision to enter into PSE's RFP Short-term Capacity Agreements prudent?

A. Yes. As described in the Prefiled Direct Testimony of Joshua J. Jacobs, Exh. JJJ-1T, PSE has a clear, documented need for capacity and clean energy resources to meet CETA interim targets. PSE also performed the competitive market analyses, decision-making, and documentation processes expected by the Commission.

Q. How did PSE come to acquire the Short-term Capacity Agreements?

A. In August 2023 PSE's Energy Supply function identified capacity and renewable energy needs and received authorization to issue a voluntary short-term RFP which sought bids for firm energy and/or capacity to meet the needs in 2024 and 2025. Due to the need for capacity on a short-term basis, PSE anticipated that respondents to the solicitation would be large, sophisticated organizations with significant resource portfolios and existing transmission arrangements in the region to meet PSE's needs. PSE requested that respondents either be an existing party to the WSPP Agreement[15] or prepared to become a party to the WSPP Agreement. The RFP identified PSE's potential interest in the fixed-price, firm energy, and capacity products under the WSPP Agreement with a preference for products that would also meet PSE's CETA need.

[15] WSPP Inc., WSPP Agreement, First Revised Rate Schedule FERC No. 6.

PSE planned to rank offers submitted to the solicitation based on cost and ability to meet PSE's capacity and CETA energy needs. PSE also expressed a preference to offers that demonstrated clear equity benefits relative to otherwise similarly priced offers. The RFP expressly requested that respondents identify all equity benefits. Please see Exh. PAH-13 for a copy of the RFP.

Q. Please summarize the schedule of PSE's RFP.

A. The 2024-2025 "Short-Term Firm Energy and Capacity" RFP has identified the following schedule for the solicitation:

- August 15, 2023: Petition for Exemption of WAC 480-107-021(1);
- August 25, 2023: Interested parties submit a notice of intent to participate[16] by 5:00 pm (PDT);
- August 26, 2023, through September 6, 2023: PSE conducts preliminary credit review for parties that have submitted a notice of intent to participate;
- September 6, 2023: Firm offers due by 12:00 pm (PDT);
- September 11, 2023: PSE notifies selected respondents of an intent to accept the firm offer, and
- September 13, 2023: PSE and selected respondents execute confirmations pursuant to the WSPP Agreement.

[16] Failure of an interested entity to provide a notice of intent to participate will not disqualify that entity from consideration but will create delays in the execution of a confirmation because PSE will required additional time to conduct the credit review that normally would have occurred in the period after notices of intent to participate are due and before final firm offers are due.

Q. Did PSE decide to contract with any counterparties after reviewing their respective voluntary short-term RFP offers?

A. Yes. PSE's CETA and capacity needs justify executing short-term capacity agreements as a result of PSE's voluntary short-term RFP. Please see Exh. PAH-14 for the 2024-2025 Short-term Capacity Firm Energy RFP: Proposal Summary, originally filed with the Commission on September 15, 2023.[17]

ii. Need for Short-term Capacity Agreements

Q. Please describe the need for the Short-term Capacity Agreements.

A. PSE identified a need for capacity resources as well as a need for resources to make progress towards PSE's interim CETA targets. Exh. PAH-10C at page 7 where Table 1 shows PSE's monthly capacity needs between October 2024 and December 2025. As shown in the table, PSE's faces a capacity need in 13 of the 15 months in the table.

In addition to a capacity need, PSE's filed Clean Energy Implementation Plan ("CEIP") set a 2025 interim goal of 63 percent[18]of retail load to be served by CETA resources. Please see Exh. PAH-10C at page 8 under Table 2 showing an estimated 1,410 GWh need for CETA resources in 2025.

[17] Docket UE-230664.

[18] Note that the 63 percent interim goal was the most current interim goal at the time of resource acquisition, but that goal has since been updated in PSE's biennial CEIP update, November 2023 in Docket UE-210795. That update revises the 2025 interim goal to 60 percent.

Q. What would have been the risk if PSE had chosen not to execute the Short-Term RFP offers?

A. PSE would have attempted to source alternative resources that could provide similar capacity and CETA benefits. However, the resources and timeline PSE sought in its short-term RFP are in limited supply. Alternatively, PSE would have had to rely on shorter term and potentially more volatile market opportunities. Given the tightening Northwest energy market, PSE executed the physical delivery contracts to secure energy and capacity.

(ii) Comparison of the PSE Voluntary RFP Short-term Capacity Agreements to Alternatives

Q. What alternatives did PSE consider in its analysis of the Short-term Capacity Agreements?

A. Given PSE's identified needs and the limited volume offered, PSE considered all physical offers received in its voluntary short-term RFP issued in 2023. PSE compared the price of the offers to proxy market opportunities.

Q. Describe PSE's approach to analyzing the value of the Short-term Capacity Agreements.

A. On page 10 of Exh. PAH-10C, Table 3 summarizes the offers and the [redacted]. PSE found that in aggregate, offers were being priced at $[redacted]/MWh, with a range of

$ MWh to /MWh, . PSE found this range to be in line with recent market trends and Energy Supply Merchant recommended the EMC authorize acceptance of the offers recommended by ESM.

Q. What are the projected annual costs of the Short-term Capacity Agreements?

A. The contracts have a cost of $ million, or about $. This pricing is within a reasonable range given PSE's needs and recent market experience, for example:

- November 2022, Grant County PUD's 4.22 percent auction settled at $ /MWh or $ MWh ;
- March 2023, PSE successfully bid on Chelan County PUD's Slice 38 product at a price of $ /MWh or $ /MWh ;
- April 2023, PSE was selected as one of two finalists for Grant County PUD's 20 percent Slice product. The bid was $ /MWh, or $ MWh PSE was not awarded this contract.

Q. Please describe the benefits of the Short-term Capacity Agreements.

A. The selected resources help PSE make significant progress in securing capacity and CETA resources. In addition to the identified capacity and CETA positions

identified earlier, PSE actively manages an energy position. As fixed price resources, these offers provide price certainty and close the open energy position during their contract terms.

PSE has clear and well documented capacity and CETA resource needs. By executing these contracts, PSE secured competitively priced resources. The purchase of the Short-term products will contribute up to [redacted] MW of capacity during peak winter months and [redacted] GWh of CETA eligible energy in 2025.

Q. Did PSE's Energy Management Committee approve the Short-term Capacity Agreements?

A. Yes. In September 2023, PSE's ESM function received authorization from the EMC to execute contracts for ESM recommended offers. Please see page 56 of Exh. PAH-8C for the presentation to the Energy Management Committee recommending acceptance of the ESM-selected Short-term Agreements. See page seven of Exh. PAH-10C for internal memoranda supporting the decision and see Exh. PAH-15C and Exh. PAH-16C the Short-term Capacity Agreements themselves.

Q. Was the decision to enter into the Short-term Capacity Agreements prudent?

A. Yes. PSE developed a price using a methodology consistent with methodology used to evaluate similar market acquisitions.[19] As part of this methodology PSE

[19] Docket UE-220066 *et al.*, and Exh. ZCY-1CT in that consolidated docket.

compares the resource(s) using the best available information from market alternatives. The contemporaneous documentation provided in this testimony and exhibits demonstrate that PSE met the Commission's prudency standard. The Short-term Capacity Agreements will provide additional resources to serve capacity needs.

5. Colville Slice Agreement Extension

(i) Background and Key Terms of the Colville Slice Agreement Extension

Q. Did PSE's decision to enter into the Colville Slice Agreement Extension meet the Commission's prudence standard?

A. Yes. As described in the Prefiled Direct Testimony of Joshua J. Jacobs, Exh. JJJ-1T, PSE has clear and well documented capacity and CETA resource needs. The Colville Slice Agreement Extension product will contribute up to [redacted] MW of capacity and [redacted] GWh of CETA eligible energy per year. The pricing structure accounts for risk associated with hydro resources and is priced [redacted] of a product that provides [redacted]. As I describe in this testimony, PSE performed an analysis, decision-making, and documentation process consistent with previous acquisitions the Commission has found to be prudent.

Q. What is the Colville Slice Agreement Extension?

A. The Colville Slice Agreement Extension is a [redacted] contract with a term from [redacted], through [redacted]. The Colville Slice Agreement

Extension effectively extends the Colville Slice Agreement, which would have otherwise expired on September 30, 2024. When paired with existing Mid-C transmission rights held by PSE on the transmission system of the Bonneville Power Administration, the Colville Slice Agreement Extension provides PSE with approximately (i) [redacted] MW of dispatchable and flexible capacity and (ii) [redacted] GWh of CETA-qualifying energy per year. PSE negotiated a price of about [redacted] per MWh assuming historical average water conditions and an exclusive [redacted] renegotiation period for a potential future extension.

The Commission previously approved the prudence of PSE's purchase of the Colville Slice Agreement as part of its approval of various new resources in PSE's General Rate Case in Dockets UE-190529 and UG-190530, and PSE's 2022 General Rate Case, Dockets UE-220066/UG-220067 *et al*.

Q. Please describe the Colville Tribe's share of the output of the Wells Hydroelectric Project.

A. The Wells Hydroelectric Project ("Wells Project") is a 10-unit, 840 MW hydroelectric facility owned and operated by Douglas PUD and located on the Columbia River. The Wells Project began commercial operation in 1967. The FERC issued a new 40-year license for the Wells Project in May 2012. The Wells Project produces an average of four-million MWh of electricity per year.

On November 1, 2004, Douglas PUD entered into a Settlement Agreement and a Power Sales Contract with the Colville Tribe as part of the FERC licensing

proceeding. FERC approved both the Settlement Agreement and the Power Sales Contract on February 11, 2005.

Based on the terms of the Power Sales Contract, the Colville Tribe is entitled to purchase five and one-half percent of the output of the Wells Project. PSE initially purchased the Colville Tribe's share from September 1, 2018, through September 30, 2021. PSE was able to secure an extension with a term of [redacted] through September 30, 2024. In 2023, PSE was able to secure another extension with a term of [redacted], through [redacted].

(ii) Need for the Colville Slice Agreement Extension

Q. Why did PSE enter the Colville Slice Agreement Extension?

A. As described on page 12 of Exh. PAH-10C, PSE forecasts a short term winter capacity position deficit of [redacted] MW starting in 2024 that grows to [redacted] MW in 2029. PSE also forecasted a need for [redacted] GWh of CETA eligible energy in 2025. The Colville Slice Agreement Extension is a [redacted] contract that provides PSE [redacted] MW of capacity and [redacted] GWh of CETA eligible energy under expected water conditions.

Finally, the Colville Slice Agreement Extension maintains PSE's access to one of the region's most valuable and scarce hydroelectric resources. The output of the Wells Project is flexible and allows frequent and rapid changes to generation levels. PSE can use this flexible dispatch to balance its system within each hour

and to respond to rapid changes in load or the output of other resources, especially renewable energy resources.

Q. What would have been the risk if PSE had chosen not to enter into the Colville Slice Agreement Extension?

A. Had PSE not executed the Colville Slice Agreement Extension in December 2023, it would have risked losing a valuable, non-emitting, flexible capacity resource to another party when the Colville Slice Agreement expires in accordance with its terms on September 30, 2024. PSE would have had to search the market for other existing generation or be forced to rely on short term market purchases leaving it exposed to changes in market prices. Given PSE's forecasted capacity and CETA needs, PSE would have had to secure alternate resources to meet customer needs. Based on recent market experience, PSE faces growing competition for existing generation resources. For example, a November auction for a 4.22 percent share of the Priest Rapids Project[20] settled at a price of [redacted]/MWh, approximately $[redacted] MWh above [redacted]

(iii) Comparison of the Colville Slice Agreement Extension to Alternatives

[20] Priest Rapids Project includes the output of both the Priest Rapids and the Wanapum hydroelectric projects.

Q. What alternatives did PSE consider in its analysis of the Colville Slice Agreement Extension?

A. The Colville Tribe contacted PSE directly indicating that it had starting to receive interest for other market participants regarding the desire to negotiate a contract upon the expiration of the current contract with PSE. PSE recognized an opportunity to negotiate with Colville ahead of the exclusivity period provided by the current contract. PSE compared the Colville Slice renewal to a proxy short-term market purchase alternative that includes [redacted] identified in this product. Additionally, PSE compared the product to other resources that have been recently on the market.

Q. Describe PSE's approach to analyzing the value of the Colville Slice Agreement Extension.

A. PSE used a process consistent with the Colville Slice Agreement and Chelan Slice 35 agreement in PSE's 2022 General Rate Case. PSE has updated this methodology to reflect the values of the Colville Slice Agreement Extension. PSE estimates the total cost of the following individual value components of the product:

- Energy – This represents the value of the [redacted]
- [redacted]

[redacted]

Q. Please summarize the value PSE estimated for the Colville Slice Extension.

A. Using the methodology described above, PSE estimated the Colville Slice Agreement Extension to have a value between [redacted]/MWh to $[redacted]/MWh per year based on [redacted] on November 8, 2023. See page 14, Table 3, of Exh. PAH-10C for a summary range of values, by component, at the time of evaluation.

Q. Please describe the key assumptions PSE used in the analysis of the Colville Slice Agreement Extension.

A. Key assumptions used by PSE in the analysis include: (i) [redacted] The assumptions are further discussed in Exh. PAH-10C at page 14.

Q. Please describe the contract price and projected annual costs of the Colville Slice Agreement Extension when compared to the value it adds to PSE power portfolio.

A. Based on estimates at the time of evaluation, PSE expects the average price of $[redacted]/MWh over the life of the contract. Per the terms of the contract PSE will make [redacted] payment as described below:

[redacted]

Q. Please describe the benefits of the Colville Slice Agreement Extension.

A. The Colville Slice Agreement Extension is expected to add up to [redacted] MW towards PSE's capacity need and an average of [redacted] GWh towards PSE's CETA needs. As a slice contract, Colville Slice allows PSE to access the storage and dispatch flexibility of the Wells project. Additionally, as a [redacted] contract, the Colville Slice Agreement Extension provides power costs certainty over the contract term.

Q. Did PSE's Energy Management Committee approve the Colville Slice Agreement Extension?

A. Yes. PSE's EMC approved the Colville Slice Agreement Extension on November 10, 2023. Please see page 64 of Exh. PAH-8C for the EMC presentation. See Exh. 10C for internal memoranda supporting the decision to enter into the extension and see Exh. PAH-16C for the Colville Slice Agreement Extension itself.

Q. Was the decision to enter into the Colville Slice Agreement Extension prudent?

A. Yes. PSE developed a price using a methodology consistent with that used to evaluate similar market acquisitions.[21] As part of this methodology, PSE compares the resource using the best available information from market alternatives. The contemporaneous documentation provided in this testimony and exhibits demonstrate that PSE met the Commission's prudency standard. The Colville Slice Agreement Extension will provide an additional resource that provides both CETA energy and capacity benefits.

B. New Transmission Contracts and Transmission Contract Renewals

Q. Please provide an overview of PSE's transmission contracts.

A. PSE uses transmission to wheel power from both its owned and contracted resources to PSE's system to serve load. In addition to relying on its own

[21] See Docket UE-220066 *et al.*, and Exh. ZCY-1CT in that consolidated docket.

transmission, PSE relies extensively on transmission contracts with Bonneville Power Administration ("BPA") to transmit generated or purchased power to PSE's system. A substantial percentage of this BPA transmission is used for wheeling short-term market purchases from the Mid-C trading hub. Transmission contracts are a vital component of PSE's electric portfolio and are essential to supplying capacity and energy.

Q. Has PSE entered into new transmission contracts or renewed existing contracts since the Commission approved contracts that were presented in PSE's 2022 General Rate Case?

A. Yes. PSE both entered new transmission contracts and renewed several existing transmission contracts that will be in effect during the 2025-2026 rate period in this proceeding. Transmission contracts are typically executed for a five-year term, and PSE reserves renewal rights in these agreements. It is routine for PSE to renew these contracts on an ongoing basis:

- Renewal of 23 BPA transmission contracts, including a 516 MW renewal to take delivery from the Mid-C hub, 2,315 MW to take delivery of existing generation resources,[22] and 34 MW to deliver energy to existing load points. These total 2,865 MW in transmission contract renewals within the 2025-2026 rate period in this proceeding.
- Acquisition of one new BPA transmission contract totaling 40 MW to take delivery of an existing generation resource.

[22] *WUTC v. Puget Sound Energy, Inc.,* UE-111048 and UG-111049, Order 08 (May 7, 2012).

Q. Has PSE prepared a summary of transmission renewals and additions including in this filing?

A. Yes. Table 5 below shows new and renewed BPA transmission contracts that will be in effect during the calendar 2025 and 2026 rate period in this proceeding.

Table 5 New and Renewed Transmission Contracts

Type	Seller	Reference	Assigned Reference No.	Start Date	End Date	MW Capacity
New	BPA	Clearwater	93091387	6/1/2022	6/1/2027	40
Renew	BPA	Colstrip	100152553	8/1/2024	8/1/2029	300
Renew	BPA	Clymer	100152575	8/1/2024	8/1/2029	4
Renew	BPA	Colstrip	100152826	8/1/2024	8/1/2029	100
Renew	BPA	Colstrip	100152797	8/1/2024	8/1/2029	263
Renew	BPA	Eastern Intertie	99966712	10/1/2027	10/1/2037	680
Renew	BPA	Goldendale	94955584	11/1/2022	11/1/2027	20
Renew	BPA	Goldendale	97897433	1/1/2024	1/1/2029	250
Renew	BPA	Goldendale	99053613	3/1/2024	3/1/2029	6
Renew	BPA	Goldendale	99053606	3/1/2024	3/1/2029	21
Renew	BPA	Hopkins Ridge	92494962	1/1/2027	1/1/2032	21
Renew	BPA	Hopkins Ridge	90011132	1/1/2027	3/1/2029	54
Renew	BPA	Klahanie	97748521	9/1/2023	9/1/2028	30
Renew	BPA	Mid-C (Midway)	97897269	10/1/2023	10/1/2028	115
Renew	BPA	Mid-C (Midway)	99053620	3/1/2024	3/1/2029	35
Renew	BPA	Mid-C (Vantage)	97897319	11/1/2023	11/1/2028	50
Renew	BPA	Mid-C (Wells)	97748494	9/1/2023	9/1/2028	128
Renew	BPA	Mid-C (Wells)	97748356	9/1/2023	9/1/2028	69
Renew	BPA	Mid-C (Wells)	97748461	9/1/2023	9/1/2028	69
Renew	BPA	Mid-C (Wells)	97897399	11/1/2023	11/1/2028	50
Renew	BPA	PG&E Exchange (N>S)	100152927	8/1/2024	8/1/2029	300
Renew	BPA	PG&E Exchange (S>N)	100152959	8/1/2024	8/1/2029	50
Renew	BPA	PG&E Exchange (S>N)	100152934	8/1/2024	8/1/2029	100
Renew	BPA	PG&E Exchange (S>N)	100152968	8/1/2024	8/1/2029	150

1. 516 MW Mid-C BPA Transmission Renewals

Q. What alternatives does PSE consider in renewing the Mid-C transmission contracts?

A. As Mid-C contracts become eligible for renewal, PSE considers two primary alternatives: (1) renew BPA's Mid-C transmission, or (2) decline PSE's right of first refusal and forego renewal.

Q. What are the factors that PSE considers when evaluating the risks and benefits of each option?

A. PSE considers several factors when evaluating the benefits and risks of the two options, including:

- The on-going need for Mid-C transmission to serve load, meet resource adequacy through long-term PPAs and market purchases, and support Western Resource Adequacy Program (WRAP) requirements when paired with qualifying capacity contracts,
- PSE's longer-term need for regional transmission to meet CETA and/or future resource adequacy requirements,
- Value of Mid-C transmission within a larger portfolio of BPA transmission, and
- Availability of future transmission from BPA if we forego renewal.

Q. How does Mid-C transmission support PSE serving load and meeting resource adequacy requirements?

A. PSE will continue to categorize a portion of its Mid-C transmission as capacity to make market purchases for meeting peak load. The 2023 Electric Progress Report

includes a stepped transition towards less market reliance at Mid-C by adding replacement capacity resources through 2028. In addition, the Mid-C transmission can be paired with qualifying capacity contracts to meet peak capacity requirements in the WRAP.

Q. What are alternative long-term uses of the Mid-C transmission if it is no longer used for market purchases to meet capacity?

A. PSE will need to secure several thousand MWs of new regional transmission to deliver off-system renewable resources to PSE's system to meet CETA 2030 and 2045 requirements, and PSE's Mid-C transmission portfolio can be repurposed to deliver energy from new renewable resources. For example, PSE's Mid-C rights could be used to deliver new renewable resources interconnecting on the Mid-C transmission system or to deliver energy from new renewables that deliver their power to Mid-C. In addition, PSE could redirect a portion of the Mid-C transmission to nearby locations on BPA's system for delivery of new renewables.

Q. What other value does Mid-C transmission have in PSE's larger BPA portfolio?

A. PSE can take delivery of power from third parties with qualifying capacity resources to meet WRAP, resell unused transmission to third parties, redirect unsold or unscheduled transmission into the Western Energy Imbalance Market,

or redirect unused transmission to other points on BPA's transmission for bilateral purchases or sales.

Q. If PSE foregoes renewal, what is the likelihood of securing future Mid-C transmission capacity with BPA?

A. It is very unlikely that PSE could secure new Mid-C transmission for at least a decade. Analysis of BPA's long-term pending transmission request queue confirms a lack of future capacity on their system across the Cascades to PSE's load. For example, in August 2023, BPA's long-term pending queued transmission requests for 2030 exceeded available transmission capacity by 5000 MW across the Cross Cascades flowgate.

If PSE does not renew these transmission contracts, it is unlikely that the capacity could be replaced in the foreseeable future after the contracts expire due to BPA system constraints. PSE manages the risk of losing necessary transmission capacity by renewing contracts before their renewal deadlines.

Q. When does PSE evaluate Mid-C transmission renewals?

A. PSE evaluates Mid-C transmission renewals one year and two months prior to their expiration date. Renewing a transmission contract one year prior to expiration enables PSE to execute right of first refusal. The additional two months are required for PSE's internal review process, including presentation to and approval by the EMC. PSE renews each of these contracts for the minimum term

of five years to retain renewal rights and allow flexibility to reevaluate transmission needs in the future.

Q. Please describe the 516 MW of firm Mid-C transmission contracts with BPA.

A. PSE's existing Mid-C transmission contracts for 516 MW originating at the Midway (150 MW), Vantage (50 MW), and Sickler (316 MW) substations were set to expire between the third quarter of 2023 and first quarter of 2024. The contracts may be applied to contribute to PSE's forecasted transmission needs identified in the IRP for CETA, as well as PSE's forecasted need for resource adequacy. In addition to enabling Mid-C market connectivity, PSE may repurpose Mid-C transmission to take delivery of new generation resources connecting to Mid-C.

Q. Did PSE's EMC approve the 516 MW of firm Mid-C transmission contracts?

A. Yes; the EMC approved renewals of the 516 MW Mid-C transmission contracts. See Exh. PAH-17 for information presented to the EMC supporting these contract renewals.

2. <u>2,315 MW Existing Generation BPA Transmission Renewals</u>

Q. Please describe the 297 MW of Goldendale transmission contracts with BPA.

A. PSE's existing Goldendale transmission contracts for 297 MW originating at the Harvalum substation were set to expire between the fourth quarter of 2022 and first quarter of 2024. These contracts are used to secure the continued delivery of energy from the existing Goldendale generating facility.

Q. Please describe the 75 MW of Hopkins Ridge transmission contracts with BPA.

A. PSE's existing Hopkins Ridge transmission contracts for 75 MW originating at the Tucannon River substation were set to expire in the first quarter of 2024. After PSE's renewal request, BPA initially awarded transmission contracts for 75 MW of partial service through 2026. For the continuation of service, BPA later awarded a 21 MW conditional firm reassessment transmission contract set to expire in the first quarter of 2032, as well as the remaining 54 MW transmission contract set to expire in the first quarter of 2029. These contracts have full rollover renewal rights and are used to guaranty the continued delivery of energy from the existing Hopkins Ridge generating facility.

Q. Please describe the 663 MW of Colstrip transmission contracts with BPA.

A. PSE's existing transmission contract for 663 MW originating at the Garrison substation expired in the third quarter of 2023. This contract is used to deliver output from the existing Colstrip and Clearwater generating facilities, as well as future generation resources following the retirement of Colstrip. This set of transmission contracts was executed on August 22, 2023, for a five-year term with the renewal going into effect on August 1, 2024. It has an expiration date of August 1, 2029.

Q. Please describe the 680 MW of Eastern Intertie transmission contracts with BPA.

A. PSE's existing Eastern Intertie transmission contract for 680 MW originating at the Townsend substation was originally established under the Montana Intertie Agreement ("MIA"), which expires in the third quarter of 2027. Following expiration of the MIA, PSE will receive BPA tariff service for the same segment and capacity to provide continued delivery of energy from the existing Clearwater generating facilities, as well as future generation resources as they are brought online.

Q. Did PSE's EMC approve the 680 MW of Eastern Intertie transmission contracts?

A. Yes; the EMC approved the renewal of the 680 MW Eastern Intertie transmission contract. See Exh. PAH-17 starting at page 20 for the information presented to the EMC supporting this contract renewal.

Q. Please describe the 600 MW of PG&E Exchange transmission contracts with BPA.

A. PSE renewed transmission contracts for 600 MW of capacity to and from the John Day substation that were set to expire in the third quarter of 2024. These contracts are used to deliver and receive output under PSE's 1991 Capacity and Energy Exchange Agreement with Pacific Gas & Electric ("PG&E Exchange"). PSE provided advance notice in 2022 to discontinue the PG&E Exchange agreement

(tentatively ending December 31, 2027), but PSE must retain bi-directional transmission for the remainder of the agreement term. PSE expects to repurpose this transmission capacity to facilitate delivery of new resources following expiration of the PG&E Exchange.

Q. Did PSE's EMC approve the 600 MW PG&E Exchange transmission contracts?

A. Yes; the EMC approved renewals of the 600 MW PG&E Exchange transmission contracts. See Exh. PAH-18 starting at page 26 for the information presented to the EMC supporting these contract renewals.

3. 34 MW Existing Load BPA Transmission Renewals

Q. Please describe the four MW Clymer transmission contract with BPA.

A. PSE renewed a four MW transmission contract with BPA for the purpose of providing reliable service to PSE retail loads in the area near Ellensburg, Washington. The Clymer substation was constructed in this area to improve reliability, requiring the interconnection of BPA's Ellensburg – Moxee transmission line for a path through BPA's system. The PSE load served out of Clymer substation is approximately five MW. PSE secured two transmission contracts with rollover rights to enable delivery from PSE's system to Clymer, one reserving four MW and the other reserving one MW. The contract for four MW was set to expire in the third quarter of 2024 and was renewed to secure

continued delivery of energy to PSE retail customer load served from the Clymer substation.

Q. Please describe the 30 MW Klahanie transmission contract with BPA.

A. Klahanie substation is a PSE load point on the Sammamish-Maple Valley transmission line. PSE's existing Klahanie transmission contract for 30 MW was set to expire in the third quarter of 2023. This contract is necessary to deliver energy to PSE retail customers served from the Klahanie substation.

4. <u>40 MW New BPA Transmission Contract</u>

Q. Please describe the 40 MW Clearwater transmission contract with BPA.

A. In the first quarter of 2021, a PPA was executed for 350 MW of capacity from the Clearwater wind project. Three wheels of transmission are required to deliver the power from the Clearwater project to PSE's system: (1) the Colstrip Transmission System (Colstrip-Broadview-Townsend, "CTS"), (2) the Eastern Intertie (Townsend-Garrison), and (3) the BPA Main Grid. 350 MW of secured firm transmission is required to allow for full delivery of the resource output. PSE had previously secured 350 MW of long-term firm transmission on the CTS and BPA Main Grid. In addition, PSE is party to the MIA, which allocates 680 MW of firm transmission on BPA's Eastern Intertie. Of that 680 MW, only 310 MW is available for the Clearwater project. PSE requested the additional 40 MW to secure full deliverability of the 350 MW Clearwater wind contract to PSE's system.

Q. Did PSE's EMC approve the 40 MW Clearwater transmission contract?

A. Yes; the EMC approved the new 40 MW Eastern Intertie transmission contract for Clearwater wind. See Exh. PAH-18 for the information presented to the EMC supporting this contract renewal.

Q. What does PSE request from the Commission regarding PSE's new and renewed transmission contracts?

A. PSE respectfully requests the Commission determine PSE's decisions to enter or renew these contracts were prudent and allow PSE to fully recover associated expenses in rates. Estimated 2025 and 2026 expenses for each of PSE's new or renewed BPA transmission contracts are included in the rate period power costs presented in the testimony of Brennan D. Mueller, Exh. BDM-1T.

V. CONCLUSION

Q. Does that conclude your prefiled direct testimony?

A. Yes, it does.