



PSE 2025 GAS AND ELECTRIC INTEGRATED RESOURCE PLAN WORK PLAN UPDATE

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1. Introduction

Puget Sound Energy (PSE) filed a joint work plan for both the 2025 Gas Utility Integrated Resource Plan (IRP) and Electric IRP on September 29, 2023, in accordance with WAC 480-90-238 and WAC 480-100-625. This document is an update to that work plan, which can be found under dockets [UG-230807](#) and [UE-230806](#) on the Washington Utilities and Transportation Commission (Commission) [website](#).

The integrated resource plans (IRP) are a 20-plus year view of PSE's energy resource needs, which are developed through a planning process that evaluates how a range of potential future outcomes could affect PSE's ability to meet our customers' electric and natural gas supply needs. The analysis considers policies, costs, economic conditions, and the physical energy systems, and proposes the starting point for making decisions about what resources may be procured in the future.

Since the preliminary work plan filing on September 29, 2023, PSE has been exploring how to evolve its existing planning processes to reflect a more integrated system planning approach aimed at better aligning our delivery and transmission as well as our clean energy planning and implementation efforts.

This updated work plan reflects incremental changes to better integrate existing planning processes and assumes Commission approval of our petition to extend the filing dates of the electric and gas utility IRPs to March 31, 2025. Should that petition not be approved, PSE will file an update to this work plan reflecting the final, approved filing date and any changes to meetings or other elements of this work plan.

2. Methods for assessing resources

The **gas analysis** in the 2025 IRP will follow the six-step process outlined below:

1. Establish resource need

PSE will rely on the demand forecast and existing resources to establish peak capacity needs over the study period, along with daily and monthly demand for gas sales customers.

2. Determine planning assumptions and identify resource alternatives

PSE will analyze potential futures through scenarios and sensitivities that will have different natural gas prices, demand, environmental policies, and supply-side and demand-side resource alternatives. Scenarios and sensitivities are analyzed using deterministic and stochastic risk analysis. Sensitivities determine how different potential futures and factors affect resource strategies, costs, emissions, and risks.

3. **Analyze alternatives and portfolios using deterministic and stochastic risk analysis**

Deterministic analysis identifies the least-cost mix of demand-side and supply-side resources that will meet need, given the set of static assumptions defined in the scenario or sensitivity. Scenarios and sensitivities are analyzed using deterministic optimization analysis.

Stochastic risk analysis deliberately varies the static inputs to the deterministic analysis to test how the different portfolios developed in the deterministic analysis perform with regard to cost and risk across a wide range of potential future natural gas prices and loads.

The PLEXOS model is also used for portfolio optimization to select PSE's reference portfolio and alternative scenario portfolios. The PLEXOS portfolio model is a linear programming optimization model that will optimize the portfolio given the objective function to minimize the portfolio cost and the constraints to serve customers while also meeting peak capacity need.

4. **Embed equity considerations**

While no specific guidance exists to inform how equity should be incorporated into the gas utility resource planning process, PSE will consider highly impacted communities and vulnerable populations in developing the resource plan. PSE plans to consult with the EAG and other parties in 2024 to refine and deepen our approach.

5. **Analyze results**

Results of the quantitative analysis – both deterministic and stochastic – are studied to understand the key findings that lead to decisions about the resource plan forecast.

6. **Develop resource plan**

Taking all the analysis into consideration a final resource plan is created with a lowest reasonable cost portfolio of the 20-year time horizon.

The **electric analysis** in the 2025 IRP will include the seven-step process outlined below. PSE anticipates the planning assumptions step will include additional considerations as delivery system planning is better integrated into the analysis.

1. **Establish resource need**

Three types of resource need are identified: peak capacity need, renewable need, and energy need.

PSE has contracted with Energy and Environmental Economics (E3) who will use their Renewable Energy Capacity Planning (RECAP) model to establish the peak capacity need for the electric portfolio and peak capacity contributions of generating resources.

2. Determine planning assumptions and identify resource alternatives

The AURORA model will be used for electric price forecasting and conducting stochastic risk analysis of the electric market prices. PSE will analyze potential futures through scenarios and sensitivities that will have different gas prices, electric prices, electric demand, environmental policies, and supply-side and demand-side resource alternatives.

Scenarios and sensitivities are analyzed using deterministic and stochastic risk analysis. Sensitivities determine how different potential futures and factors affect resource strategies, costs, emissions, and risks.

PSE contracted with multiple consultants to conduct studies on the following:

- Energy efficiency and demand response potential studies for demand-side resources
- Technology assessment for supply-side resources
- Resource adequacy analysis for peak requirements
- Flexibility analysis to evaluate reserve requirements

All of these studies will serve as the basis for new resource alternatives and assumptions for the model.

3. Analyze alternatives and portfolios using deterministic and stochastic risk analysis

Deterministic analysis identifies the least-cost mix of demand-side and supply-side resources that will meet need, given the set of static assumptions defined in the scenario or sensitivity. All scenarios and sensitivities are analyzed using deterministic optimization analysis.

Stochastic risk analysis deliberately varies the static inputs to the deterministic analysis, to test how the different portfolios developed in the deterministic analysis perform with regard to cost and risk across a wide range of potential future power prices, gas prices, hydroelectric generation, wind generation, loads, and plant forced outages.

The AURORA model is also used for portfolio optimization to select PSE's reference portfolio and alternative scenario portfolios. The AURORA portfolio model is a linear programming optimization model that will optimize the portfolio given the objective function to minimize the portfolio cost and the constraints to: 1) meet peak capacity need from E3s RECAP model, 2) meet the hourly energy need, and 3) meet the renewable requirements from the Energy Independence Act and the Clean Energy Transformation Act (CETA).

4. Embed equity considerations

We approach this step with the goal of providing benefits and reducing burdens to vulnerable populations and highly impacted communities. PSE utilizes Customer Benefit Indicators (CBIs) to provide insight to the benefits and burdens of each portfolio beyond costs. PSE developed CBIs with input from their Equity Advisory Group (EAG) and is continuing to refine CBI methodology for the 2025 IRP.

At the December 12 2023, RPAG meeting, PSE sought input from advisory group members on what to consider and how to best approach developing “maximum customer benefit scenario” pursuant to WAC 480-100-620(10)(c). PSE will use this input to develop at least one scenario for the 2025 IRP.

5. **Analyze results**

Results of the quantitative analysis – both deterministic and stochastic – are studied to understand the key findings that lead to decisions about the resource plan forecast. Results of the quantitative analysis – both deterministic and stochastic – are studied to understand the key findings that lead to decisions about the resource plan forecast and the Clean Energy Action Plan.

6. **Develop resource plan**

Taking all the analysis into consideration, a final resource plan is created with a lowest reasonable cost portfolio for the 20-year time horizon.

7. **Create the 10-year Clean Energy Action Plan**

Resource decisions are not made in the IRP. What we learn from the IRP forecasting exercise and the development of the preferred portfolio determines the Clean Energy Action Plan. The Clean Energy Action Plan takes into consideration equity and other factors and communicates the actions PSE plans to take to meet the resource needs over the next 10 years. The Clean Energy Action Plan informs the 4-year Clean Energy Implementation Plan (CEIP).

3. Integrated Resource Plan outline

The following describes our draft outline for the 2025 Gas and Electric IRP, which PSE may add to or change as it gets farther along in the development process. In response to feedback on the 2023 IRP and Electric Progress Report regarding improving document accessibility, PSE intends to prepare a streamlined resource plan (book) with detailed analysis compiled into appendices.

Book

1. Chapter One: Executive Summary
2. Chapter Two: Clean Energy Action Plan
3. Chapter Three: Resource Plan

Appendices

- A. Appendix A: Public Participation

- B. Appendix B: Legal Requirements
- C. Appendix C: Legislative and Policy Change
- D. Appendix D: Existing Resource Inventory
- E. Appendix E: Technology Assessment
- F. Appendix F: Conservation and Demand Response Assessment
- G. Appendix G: Demand Forecast
- H. Appendix H: Electric Analysis
- I. Appendix I: Resource Adequacy
- J. Appendix J: Flexibility Analysis
- K. Appendix K: Gas Analysis
- L. Appendix L: Electrification
- M. Appendix M: Transmission & Distribution
- N. Appendix N: Economic, Health, and Environmental Assessment

4. Regulatory schedule

Table 1.1 reflects the schedule for an IRP as reflected in the Commission’s rules and PSE’s requests for extension on key deadlines.

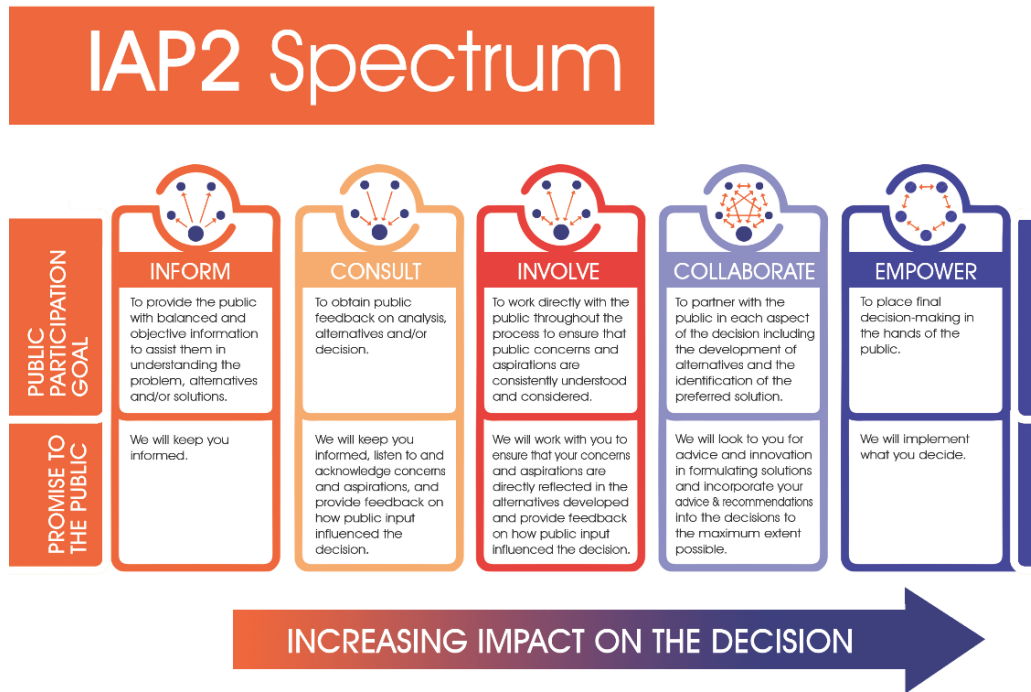
Table 1.1: Updated regulatory filing deadlines for the 2025 IRP

Date	Event description
October 1, 2023	PSE files work plan for Electric and Gas IRP with Commission
November 22, 2023	PSE files petition to align gas and electric IRP completion dates (March 31, 2023, Commission decision pending)
December 15, 2023	PSE files updated work plan for Electric and Gas IRP with Commission (assumes approval of petition referenced above)
December 2, 2024	PSE files draft 2025 Electric and Gas IRP with Commission
TBD	Commission public comment opportunity and open meeting
March 31, 2025	PSE files final 2025 Electric IRP and Gas IRP with Commission

5. Public participation

Puget Sound Energy is continuing to utilize the International Association for Public Participation (IAP2) framework to guide how we structure effective public engagement. PSE will endeavor to communicate clearly with interested parties how their feedback may influence components of key inputs, assumptions, and decisions throughout the process in accordance with the IAP2 spectrum of public participation, shown below in Figure 1.1.

Figure 1.1 IAP2 Spectrum of Public Participation



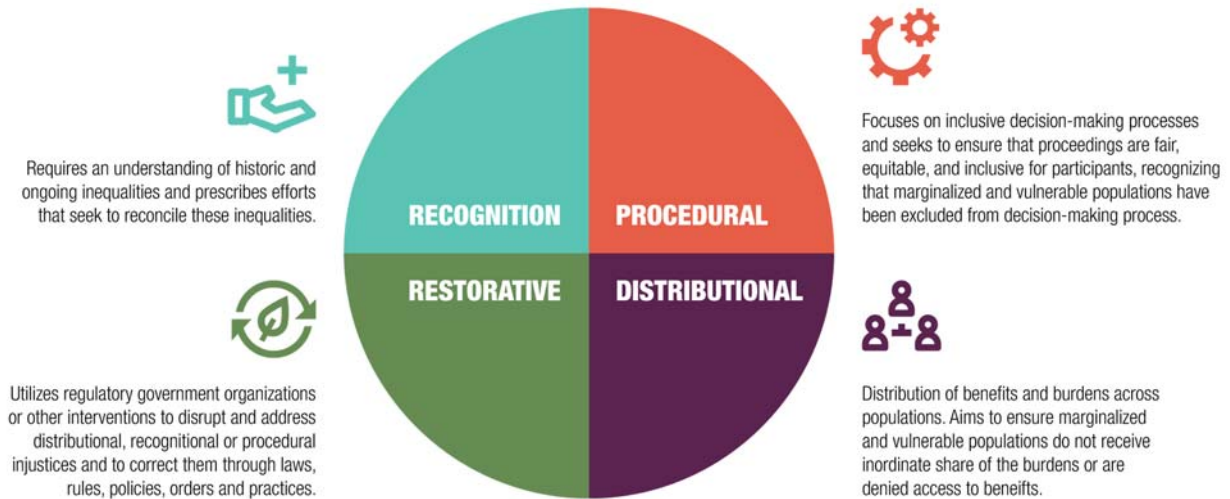
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The CETA provided an opportunity for PSE to grow and advance equity in clean electricity transition activities to ensure that all customers benefit from and participate in the clean electricity transition, and we are continually working on embedding equity considerations into resource planning.

Going further, the Washington Utilities and Transportation Commission (Commission) provided guidance regarding expectations for utility implementation of equity through its 2022 decision in the Cascade Natural Gas Corporation rate order, stating its commitment to “ensuring that systemic harm is reduced rather than perpetuated by its processes, practices, and procedures.”¹ Integral to this work is exploring the concept of energy justice and its core tenets, shown below in Figure 1.2.

¹ Cascade Natural Gas Corporation, Final Order 09, pg.17, paragraph 55

Figure 1.2 Core tenets of energy justice as outlined by the Commission



During the 2023 Electric Progress Report and Gas Utility IRP cycle we initiated an intentional process to integrate equity into the planning process. In our continued efforts to more deeply integrate equity into future IRPs, we are developing definitions of how our planning process relates to each of the core energy justice tenets:

- **Recognition Justice:** The key aspects of recognition justice in the IRP include (1) identifying, defining, and mapping named communities and (2) identifying and tracking disparities in the clean energy system. These key aspects will be presented in detail in the Economic, Health, and Environmental Burdens and Benefits (EHEB) Assessment in Appendix N of the 2025 IRP and will build upon the analysis reflected in the 2023 Biennial CEIP Update.
- **Procedural Justice:** Prior to the 2025 IRP cycle we identified the need to evolve our public participation approach to be more inclusive of participants that have not traditionally been a part of energy planning conversations.

Additionally, we received feedback from numerous interested parties, including Commission staff, encouraging us to:

- Evaluate and improve outreach efforts with a focus on increasing the number and diversity of participants
- Make a concerted effort to solicit meaningful feedback during IRP development with a focus on groups who have not historically been represented in the process
- Implement new engagement pathways that support dialogue with interested parties

The improved public participation approach reflected in Section 5.1 of this document is intended to help PSE hear from more and diverse interested parties and create spaces for meaningful changes to how we receive and use feedback.

- **Distributional Justice:** We presented the Portfolio Benefit Analysis in the 2023 Electric Progress Report ([Appendix I](#)) as a tool to evaluate portfolio sensitivities for equity enabling elements. We plan to improve upon this evaluation in the 2025 IRP and use the analysis to inform our preferred portfolio selection.
- **Restorative Justice:** The IRP process will include deliberate actions to incorporate equity and minimize inequities in the future through advancing recognition, procedural, and distributional justice in the planning process. This will include how we engage with interested parties, including named communities, our approach to selecting a preferred portfolio, and how we track disparities in the clean energy system through the EHEB Assessment.

5.1. Enhanced engagement approach

PSE launched an enhanced engagement approach for the 2025 IRP cycle building on the success of other PSE processes like the Equity Advisory Group (EAG). Through this enhanced process we aim to create more and better spaces for meaningful, equitable engagement in our resource planning process.

The 2025 IRP engagement process will have two integrated participation tracks:

- A formal Resource Planning Advisory Group (RPAG) convened to advise PSE on an array of highly-technical resource planning matters, including the IRP
- Public webinars to discuss and solicit public feedback on key topics related to PSE’s resource planning work

5.2. Meeting timeline and topics

Meetings for the 2025 IRP will be conducted remotely via Zoom and livestreamed on PSE’s [IRP YouTube channel](#) in order to improve access for members of the public. Table 1.2 below outlines key meetings and engagement opportunities for the general public through the beginning of 2025. Table 1.3 outlines anticipated key meetings for the RPAG.

Table 1.2: 2025 Public IRP meetings

Date	Topic	Participation impact
September 20, 2023	Public Engagement Approach	Inform, consult
October 16, 2023	CEIP Biennial Update	Inform
November 6, 2023	Equity in Delivery System Planning	Inform, consult
November 15, 2023	Energy Efficiency and Demand-Side Resources	Inform, consult
December 7, 2023	Emerging Resource Alternatives: Hydrogen	Inform*
February 27, 2024	Emerging Resource Alternatives: Small Modular Nuclear and Alternative Fuels (renewable natural gas, biodiesel)	Inform*
April 23, 2024	Resource alternatives for energy storage	Inform*
May 9, 2024	Local and regional delivery infrastructure needs	Inform*

Date	Topic	Participation impact
June 6, 2024	Equity in the IRP	Inform, consult, involve
December 5, 2024	Review Draft Electric and Gas Resource Plans	Inform, consult
TBD	Commission public comment period	Consult
March 1, 2025	Final Gas and Electric Integrated Resource Plans	Inform

* These meetings are offered to build awareness around what resources will be modeled for the 2025 IRP. Individual meetings will generally be at the “inform” level, the public will be invited to provide feedback at the consult level when considering the draft resource plans.

Table 1.3: 2025 RPAG IRP meetings

Date	Topic	Participation impact
October 30, 2023	RPAG Kickoff	Inform, consult, involve
December 12, 2023	Conservation Potential Assessment (CPA) IRP Scenario Themes	Inform, consult, involve
January 12, 2024	Electric and Gas Load Forecast Before Conservation* Emerging Resource Assessment Overview**	*Inform, **consult and involve
January 17, 2024	Resource Adequacy Methodology Overview RPAG Feedback Debrief	Inform, consult
February 13, 2024	Equity in Delivery System Planning Decarbonization in the Gas and Electric IRP	Involve, collaborate
March 12, 2024	Resource Adequacy modeling and resource needs (electric)	Inform
March 25, 2024	Gas & Electric Resource Alternatives: Supply-side Alternative fuels Scenarios and sensitivities	Inform, consult
April 18, 2024	Conservation Potential Assessment Results	Inform
June 12, 2024	Equity in the IRP	Inform, consult, involve
September 12, 2024	Draft Results and Decision Process Decarbonization Update	Inform, consult
December 6, 2024	Draft Gas and Electric Preferred Resource Plans	Inform, consult
March 6, 2025	Final Gas and Electric Integrated Resource Plans	Inform

Equity Advisory Group (EAG) meetings are expected to occur on the 3rd Tuesday of each month in 2024, however, not all meetings will specifically include IRP topics. PSE expects to engage the EAG in IRP-related equity topics during their June and/or July 2023 meetings.

5.3. Meeting materials and information

Meeting materials are located at pse.com/irp/get-involved. These may include:

- Meeting registration information
- Meeting agendas
- Presentations
- Supplemental meeting files
- Meeting summaries

- Feedback reports

Puget Sound Energy will post final agendas and presentations on the IRP website at least three business days prior to any public or RPAG IRP meeting. Meetings will be livestreamed with transcription and posted on the [PSE IRP YouTube channel](#), and meeting summaries and feedback reports will be posted within four weeks after IRP meetings.

Anyone interested in PSE's resource planning may sign up for the IRP email newsletter for meeting announcements and IRP updates via pse.com/irp/get-email-updates.