



PSE 2025 GAS AND ELECTRIC INTEGRATED RESOURCE PLAN WORK PLAN

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1. Introduction

Puget Sound Energy (PSE) is filing a joint work plan for both the 2025 Gas Utility Integrated Resource Plan (IRP) and Electric IRP on October 1, 2023 in accordance with WAC 480-90-238 and WAC 480-100-625. Any subsequent revisions to this work plan will be found on the Washington Utilities and Transportation Commission (Commission) website and on the PSE IRP website, pse.com/irp.

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.

This work plan reflects the major topics PSE intends to pursue as part of the IRP process, largely consistent with prior IRP cycles. It is important to note, though, that this work plan is likely to change as PSE considers ways to improve how it integrates delivery system planning and transmission assumptions into its approach. PSE is currently 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.

As such, this work plan should be considered an interim document that meets the necessary regulatory requirements for an IRP work plan, but also anticipates PSE will engage with interested parties, the Commission, and the public over the next two to three months to explore and develop what an integrated system approach could look like in the short-term (by 2025), and in the longer-term. Following those conversations, PSE will file an updated work plan no later than December 15, 2023, that will provide details on additional work anticipated for 2024 and 2025.

2. Methods for assessing resources

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

1. Establish resource need

Puget Sound Energy 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 early 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 will use its Resource Adequacy Model (RAM) to establish the peak capacity need for the electric portfolio and peak capacity contributions of generating resources using Monte-Carlo style risk analysis.

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 energy efficiency and demand response potential studies for demand-side resources, a technology assessment for supply-side resources, resource adequacy analysis for peak requirements, and a flexibility analysis to evaluate reserve requirements. All of the 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 the RAM model, 2) meet the hourly energy need, and 3) meet the renewable requirements from the Energy Independence Act and the Clean Energy Transformation Act.

4. **Embed equity considerations**

We approach this step with the goal of maximizing 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.

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 preliminary outline for the 2025 Gas and Electric IRP, but may be updated later this year to reflect the outcome of integrated system planning conversations with interested parties and the public. 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 Requirement
- C. Appendix C: Existing Resource Inventory
- D. Appendix D: Generic Resource Alternatives
- E. Appendix E: Conservation Potential and Demand Response Assessments

- F. Appendix F: Demand Forecasting Models
- G. Appendix G: Electric Price Models
- H. Appendix H: Electric Analysis and Portfolio Model
- I. Appendix I: Electric Analysis Input and Results
- J. Appendix J: Economic, Health, and Environmental Assessment of Current Conditions
- K. Appendix K: Delivery System Planning
- L. Appendix L: Resource Adequacy
- M. Appendix M: Legislative and Policy Change
- N. Appendix N: Key Analytical Assumptions
- O. Appendix O: Demand Forecast
- P. Appendix P: Resource Adequacy Analysis
- Q. Appendix Q: Electric Analysis
- R. Appendix R: Gas Analysis

4. Regulatory schedule

Table 1.1 reflects the schedule for an IRP as reflected in the Commission’s rules. PSE anticipates it will need to request an extension on key deadlines if, after engagement with interested parties and the public, PSE determines moving forward with an integrated system plan approach should be pursued this cycle.

Table 1.1: Regulatory filing deadlines for the 2025 IRP¹

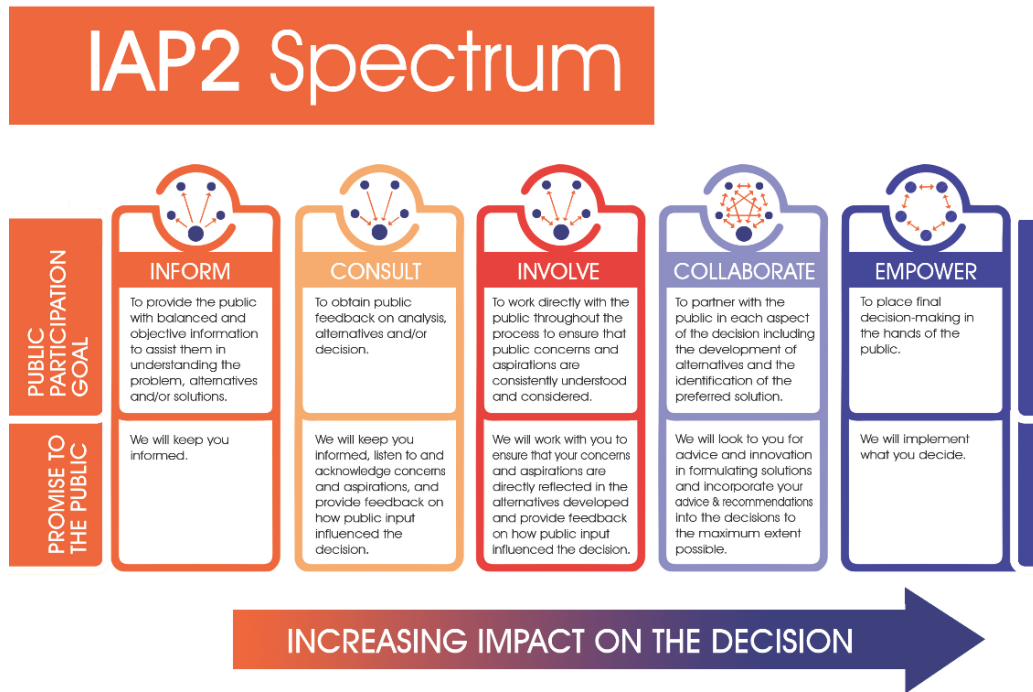
Date	Event description
October 1, 2023	PSE files work plan for Electric and Gas IRP with Commission
September 1, 2024	PSE files draft 2025 Electric and Gas IRP with Commission
January 1, 2025	PSE files final 2025 Electric IRP and Gas IRP with Commission

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 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.

¹ As described above, PSE is evaluating the feasibility of moving towards an integrated system approach. PSE anticipates an extended timeline may be necessary in order to produce a more integrated system plan. Any changes to the timeline would be requested by PSE by the end of 2023 and reflected in an updated work plan.

Figure 1.1 IAP2 Spectrum of Public Participation



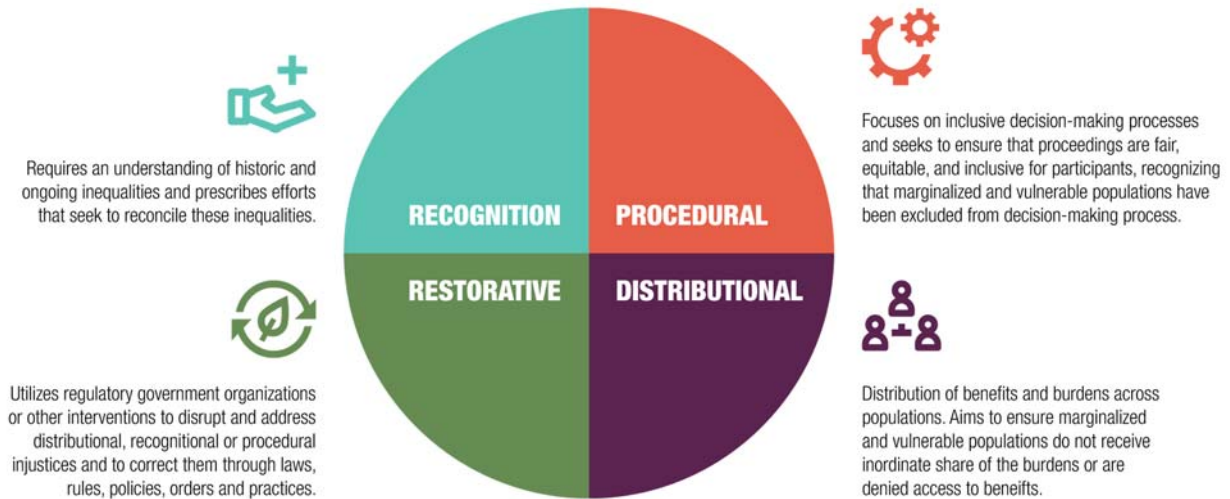
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iap2.org

The Clean Energy Transformation Act (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.”² Integral to this work is exploring the concept of energy justice and its core tenets, shown below in Figure 1.2.

² Cascade Natural Gas Corporation, Final Order 09, pg. , 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. One of our commitments was to continue that work and more deeply integrate equity in future IRPs. To do this, we believe we 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

An improved public participation approach will help PSE hear from more and diverse interested parties and create spaces for meaningful changes to how we receive and use feedback.

5.1. Enhanced engagement approach

PSE is launching 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 end of 2023. Table 1.3 outlines anticipated key meetings for the RPAG. Meetings topics and cadence in 2024 are still under development through engagement with interested parties and more details will be provided in a subsequent updated work plan.

PSE will update this work plan by December 15, 2023 to reflect the remaining topics and meetings necessary to continue engagement through the remainder of the IRP process. As mentioned previously, PSE anticipates additional meeting topics may be added, and more time may be necessary, if PSE moves forward with a more integrated system planning approach after consultation with interested parties and the public this fall.

Table 1.2: 2025 Public IRP meetings

Date	Topic	Participation impact
Sept. 20, 2023	Public Engagement Approach	Inform, consult
Oct. 16, 2023	CEIP Biennial Update	Inform
Nov. 6, 2023	Equity in Delivery System Planning	Inform, consult
Nov. 14, 2023	Energy Efficiency and Demand-Side Resources	Inform, consult
Dec. 7, 2023	Focus on Emerging Resource Alternatives: Hydrogen	Inform, consult
September 2024	Review Draft Electric Preferred Portfolio	Inform, consult
September 2024	Review Draft Gas Preferred Resource Plans	Inform, consult
December 2024	Final Resource Plans	Inform

Table 1.3: 2025 RPAG IRP meetings

Date	Topic	Participation impact
Oct. 26, 2023	RPAG Kickoff	Inform, consult, involve
December 12, 2023	Draft Scenarios and Sensitivities	Inform, consult, involve
January 2024	Resource Adequacy Modeling and Resource Needs	Inform, consult
January 2024	Hydrogen in Electric and Gas IRP	Inform, consult, involve
February 2024	Resource Alternatives: Supply-Side	Inform, consult
March 2024	Equity Considerations in the IRP	Inform, consult, involve
July 2024	Final Demand Forecast and Draft Portfolio Results	Inform, consult
August 2024	Draft Electric and Gas Preferred Portfolios	Inform, consult
November 2024	Final Preferred Resource Plans	Inform, consult

Equity Advisory Group (EAG) meetings typically occur on the 3rd Monday of each month however, not all meetings will specifically include IRP topics. Additionally, the meeting schedule must be approved by the group each year and that process of determining the EAG's meeting cadence in 2024 is ongoing as of this filing. This work plan will be updated as needed to reflect changes to the EAG schedule and more details about specific IRP topics considered by the EAG.

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.