2025 Integrated Resource Plan Work Plan

PacifiCorp

January 1, 2024

INTRODUCTION

In accordance with the Washington Utilities and Transportation Commission's Integrated Resource Planning (IRP) rules (WAC 480-100-625), PacifiCorp d/b/a Pacific Power & Light Company (PacifiCorp or Company) submits this work plan for its 2025 integrated resource plan (2025 IRP). PacifiCorp outlines the expected content of its 2025 IRP, the general method for assessing potential resources, and the anticipated timing and extent of public participation in this work plan.

This work plan is based on the best information available to PacifiCorp at this time, and may change for reasons including:

- During the 2025 IRP public process, PacifiCorp will consider stakeholder input and may implement methodology changes, as appropriate, to support the 2025 IRP.
- Market or regulatory developments may prompt the need for additional system modeling or impact assessment.
- The Washington Utilities and Transportation Commission's current IRP and Clean Energy Transformation rulemaking proceedings may prompt changes.

For the most updated information on the stakeholder input process, please visit: https://www.pacificorp.com/energy/integrated-resource-plan/public-input-process.html

CONTENTS OF THE 2025 INTEGRATED RESOURCE PLAN

The contents of the 2025 IRP are expected to be similar to the 2023 IRP, which included two volumes: a main document and supporting appendices. As dictated by the size of the appendices, PacifiCorp may split the supporting appendices for the 2025 IRP into two volumes, which could add a third volume. The main document, or Volume I, is expected to contain the following chapters:

- Executive Summary
- Introduction: This chapter summarizes any notable planning process improvements and modeling advancements implemented in the planning cycle, summarizes significant events and accomplishments including an overview of the public process, and lists the report contents.
- The Planning Environment: This chapter profiles major external influences that impact t'
- he PacifiCorp's long-term planning (market conditions and developments, legislative and regulatory events, etc.) and summarizes activities supporting resource procurement.
- Transmission: This chapter describes PacifiCorp's long-term transmission planning initiatives, focusing on activities associated with the Energy Gateway Transmission projects and other regional planning efforts.
- Reliability and Resiliency: This chapter describes PacifiCorp's strategic efforts to harden existing and future infrastructure to accommodate future load stress and outages exacerbated by the effects of climate change.

- Load and Resource Balance: This chapter presents PacifiCorp's load and resource balance, which characterizes PacifiCorp's capacity and energy positions on a system and control area basis for the next 10 years if no incremental future resource actions were taken.
- Resource Options: This chapter provides background information on the resources considered in the IRP, detailing cost and performance attributes and current market outlook. Resources covered include utility-scale generation technologies, demand-side management (DSM), energy storage technologies, and firm market purchases by market hub.
- Modeling and Portfolio Evaluation: This chapter describes the modeling methods and portfolio evaluation techniques used to determine the relative portfolio cost/risk performance attributes and the overall portfolio selection process. The CEAP will require modifications (or additions) to the modeling and portfolio evaluation approach relative to meeting Washington State resource requirements. Ideally these modifications will take the form of additional modeling requirements that can be accurately and endogenously implemented into the Company's multi-state system-level modeling. If this is not possible, the Company will perform additional distinct analysis to fulfill CEAP requirements.
- Modeling and Portfolio Selection: This chapter summarizes the portfolio development and production cost modeling results and presents PacifiCorp's preferred resource portfolio. Depending on the modeling solution(s) arrived at relative to the chapter on modeling and portfolio evaluation methodology, there may be additional portfolio selection considerations. If an accurate and endogenous modeling approach can be created incorporating CEAP requirements as a set of optimization constraints, it is possible that the portfolio selection process will not require major revisions. All Washington resource selections will be evaluated under the proscribed social cost of greenhouse gases cost assumption.
- Action Plan and Resource Procurement: This chapter presents PacifiCorp's action plan and an acquisition path analysis that describes how resource acquisition strategies will be modified in response to changing conditions as informed by the modeling process. Other resource risk management issues are also discussed. The Action Plan also addresses state-specific requirements. CEAP-related activities will be delineated in this section to indicate necessary steps the Company will take in the short-term action planning period and will also provide a roadmap for items to be addressed in the Compliance appendix of the Company's 2025 IRP Two-Year Progress Report to be filed two years later.

Volume II is expected to contain technical data and supplemental analysis covering: (1) Load Forecast; (2) Regulatory Compliance; (3) Public Input Process; (4) Demand Side Management; (5) Smart Grid; (6) Flexible Reserve Study; (7) Plant Water Consumption Data; (8) Stochastic Parameters; (9) Capacity Expansion Results; (10) Stochastic Simulation Results; (11) Capacity Contribution; (12) Private Generation Study; (13) Renewable Resources Assessment; (14) Energy Storage Potential.

GENERAL METHOD FOR ASSESSING POTENTIAL RESOURCES

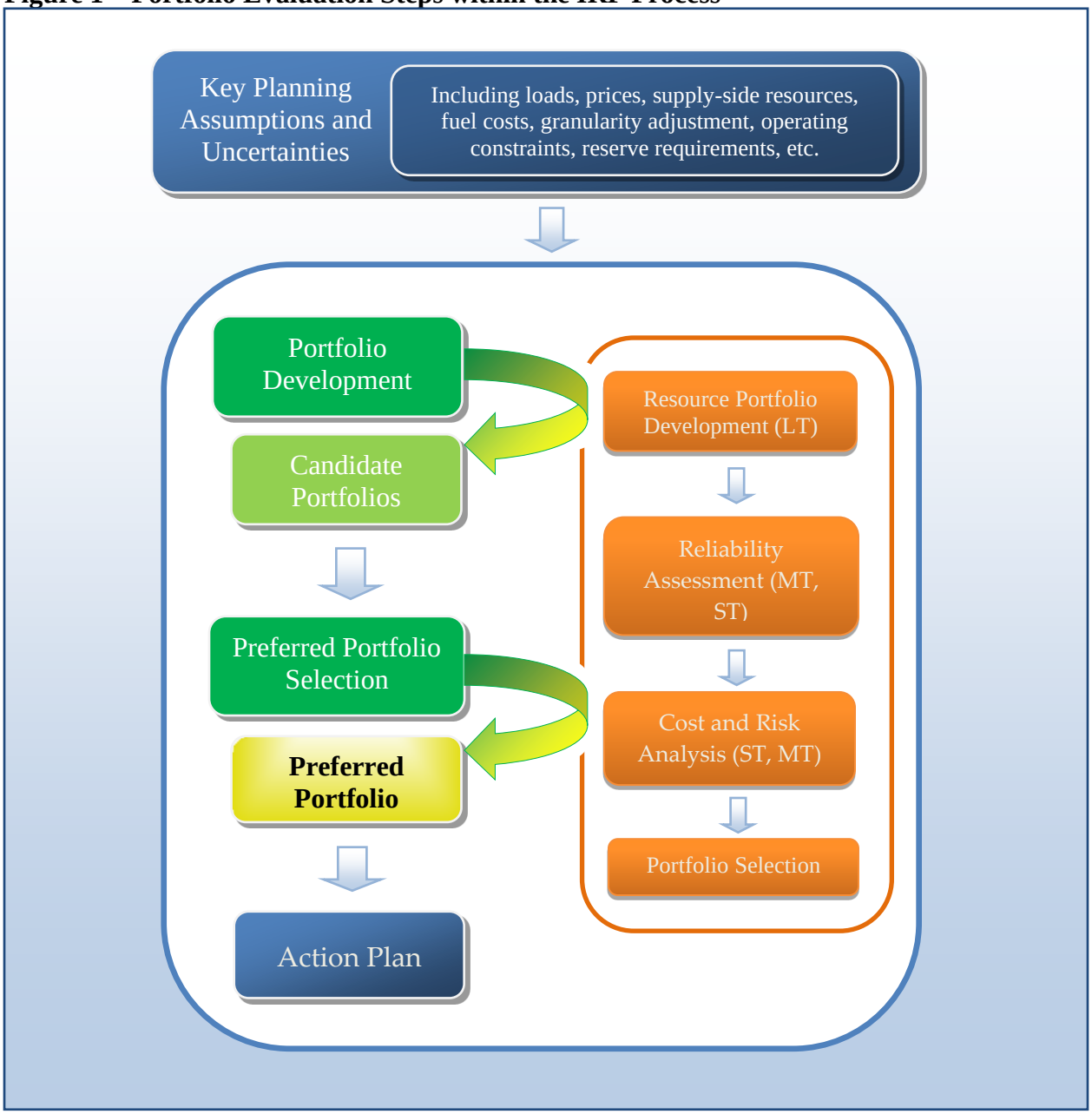
The main elements of the 2025 IRP work plan include the following:

1. Revisit strategic assumptions (*i.e.*, resource adequacy, market depth, carbon dioxide regulatory scenarios and cost adders, *etc.*) and update model data appropriately.

2. Implement modeling and methodology enhancements to improve the IRP process and address new analytic requirements from state commissions or in response to public stakeholder recommendations.
3. Use PacifiCorp's modeling systems to develop a diverse set of candidate portfolios that considers known and potential costs for environmental requirements and compliance alternatives and perform risk analysis using a stochastic production cost model. PacifiCorp will use present value of revenue requirement (PVRR) as the main cost-effectiveness measure for comparing portfolios.
4. Apply an initial portfolio screening process that focuses on two key metrics—mean stochastic PVRR and upper-tail PVRR—followed by a final screening process based on measures such as risk-adjusted PVRR, carbon dioxide emissions, supply reliability, customer rate impact, and others.

Figure 1 summarizes the portfolio evaluation steps within the IRP process. The 2025 IRP will follow a similar approach with the potential for modifications. This plan is based on the use of two computer optimization models: a capacity expansion plan model which employs linear optimization to efficiently meet capacity needs; and a production cost simulation model with stochastic capabilities which employs unit commitment/dispatch simulation logic and risk assessment metrics. As in the 2019 and 2021 IRPs, both products are proprietary integrated software products from a third-party vendor.

Figure 1 – Portfolio Evaluation Steps within the IRP Process



Using existing resources and a representation of PacifiCorp's transmission system as the starting point, the company will perform capacity expansion model runs with a set of updated proxy resource options (supply-side, demand-side, energy storage, and transmission). The resource selections may be based on specific planning strategies to be developed incorporating public input. The key input variables will include, but are not limited to, regional haze compliance, state policies, natural gas/electricity prices, and load forecasts. PacifiCorp will also develop additional CO_2 and renewable portfolio standard regulatory compliance scenarios. The purpose of the alternative future scenario analysis is to determine how portfolios and their associated resources perform under a variety of input assumptions, serving as an indicator of portfolio robustness.

Once portfolios are developed, the production cost model will be used to implement stochastic sampling of load, electricity price, natural gas price, hydro availability, and thermal unit availability input variables. Portfolio costs are calculated as the mean PVRR of the stochastic iterations. This mean cost, along with least-favorable (or upper-tail) costs and supply reliability risk measures, constitute the main metrics for determining comparative portfolio risk performance profiles.

PacifiCorp will also evaluate the preferred portfolio and associated resource acquisition strategies in the context of potential changes to planning assumptions and procurement risks, referred to as acquisition path analysis.

PLANNED MODELING ENHANCEMENTS AND ANALYSIS PROJECTS

PacifiCorp's 2025 IRP work plan accounts for the following key modeling and analysis projects that are planned or underway:

- Update the DSM resource supply curves based on a new conservation potential assessment to be completed in 2024.
- Update the private generation study. This will incorporate costs and penetration levels for distributed resources, along with sensitivities.
- Update the storage study examining commercially viable storage technologies.
- Provide an updated flexible resource need assessment, including estimates of integration costs.
- Complete an updated loss of load probability study and planning reserve margin analysis.
- Complete an updated wind and solar capacity contribution study using loss of load probability principals. For the 2025 IRP, the Company will calculate wind and solar capacity contributions on a locational basis, meeting or exceeding the state-by-state granularity required by Order 01 in docket UE-190666, ¶22-23.
- Evaluate the portfolio marginal stochastic costs of alternative planning reserve margin and LOLP levels.
- Assess compliance alternatives for near-term significant emission control installation decisions applicable to certain coal generating facilities.

ANTICIPATED TIMING AND PUBLIC PARTICIPATION

The estimated timeline for the 2025 IRP public meetings is shown in Table 1. The 2025 IRP meeting schedule consists of a combination of general public meetings and may include status report conference calls, if needed. PacifiCorp is also facilitating numerous state-specific stakeholder meetings to discuss topics of regional interest—a practice used since the 2008 IRP. Although the scheduling has not yet occurred, the Company will update its online scheduling information accordingly as updated information becomes available. The first general public meeting is planned for January 2024, and will serve as the official kick-off to the 2025 IRP process. The kick-off meeting is expected to cover the 2025 IRP schedule, public process, conservation potential assessment draft supply curves, and an initial discussion of supply-side resource options.

Table 1 also shows the high-level 2025 IRP development schedule. PacifiCorp will file its Draft IRP by January 1, 2025, and its final IRP no later than April 1, 2025. PacifiCorp will continue to provide information constituting the core of the draft IRP throughout the public process for stakeholder input. In addition, PacifiCorp will communicate participation options for stakeholders and review relevant stakeholder feedback at each meeting. Proposed stakeholder meeting dates and topics are subject to change.

Table 1 – 2025 IRP Public Input Meeting Schedule (with Draft and Final IRP Filings)

Milestone	Date	Proposed Topics
Public Input Meeting 1	January 25, 2024	• 2025 IRP Public Meeting Kick-off • 2023 IRP Update / 2025 IRP Overview • Conservation Potential Assessment Planning • Supply-Side Resource development
Public Input Meeting 2	March 14,2024	• Conservation Potential Assessment • Planning Environment Update • Modeling Overview • 2023 IRP Update filed
Public Input Meeting 3	May 2, 2024	• Conservation Potential Assessment • Climate • Transmission modeling strategy • RFP Update(s) • March price update

Public Input Meeting 4	June 26-27, 2024	• Greenhouse Gas and Renewable Portfolio Standards
		• State Policy Update
		• Load Development
		• Interconnection Options
		  o Contract expirations
		  o Queue resources
		  o Cluster study
		• SSR Alternative Fuels
		• 2023 IRP Status Update

Public Input Meeting 5	August 14-15, 2024	• Introductions • Draft Load Forecast Update • Draft Private Generation Study • Draft Distribution System Planning • Renewable Portfolio Standards • Supply Side Resource Table Offshore Wind

Public Input Meeting 6	September 25-26,2024	• Existing Thermal Resource Options • Qualifying Facility Renewal • Transmission Modeling • Market and CO2 Price Forecasting • Hydro Forecast • Customer Preference • Conservation Potential Assessment Draft Results • Generation Transition, Equity and Justice • Market Reliance Assessment • State Updates

Public Input Meeting 7	November 6-7, 2024	• Coal and gas modeling options
		• Regional Haze Update
		• Load Forecast (Final)
		• Transmission Option Modeling
		• Modeling:
		  ○ Reliability assessment
		  ○ Stochastics
		  ○ Portfolio Development
		• Sensitivities and Variants

Public Input Meeting 8	December 18-19, 2024	• Conservation Potential Assessment (Final) • MSP Status, State Allocation • DSM Bundling Portfolio Methodology (Final) • Transmission Options • Renewable Resource Shapes Update • Distributed Resource Planning Update • State Policy Update
Draft IRP Filed	January 1, 2025	• Draft IRP document filing date
Public Input Meeting 9	January 22-23, 2025	Stakeholder Topics
Public Input Meeting 10	February 26-27, 2025	• Portfolio Development • Stochastics Update • Granularity Adjustment Results • Multi-StateProcess/Nodal,Pricing • Model/Extended,Day-Ahead Market Update
IRP Filed	March 31, 2025	• IRP document filing date

In addition to the full IRP Public Input Meeting process, which will be open to the public and participants from the Equity Advisory Group (EAG), IRP topics will be directly discussed in four EAG meetings occurring in February, April, June and September of 2024 per the EAG schedule:

Washington Equity Advisory Group 2024 Meeting Schedule

Date / Time / Meeting Format	Proposed Agenda Topics*
January 11, 2024 (1pm-4pm) **Online**	Transportation Electrification New Programs (WA) Residential Demand Response (DR) Program General Rate Case Information & Upcoming Public Hearing Community Connections
February 8, 2024 (1pm-4pm) **Online**	Weatherization Programs Presentation Presentation of the 2025 Integrated Resource Work Plan Community Connections
March 14, 2024 (1pm-4pm) **Hybrid: WorkSource Yakima**	South Central Workforce Council Presentation Energy Efficiency Updates Community Connections
April 11, 2024 (1pm-4pm) **Online**	Multi-Family Electric Vehicle Supply Equipment (EVSE) Program Integrated Resource Planning (IRP) Intro Community Connections
May (Dates TBD)	**Local, in-person visits with the WA Equity Advisory Group** ***May – Wildfire Awareness Month***
June 13, 2024 (1pm-4pm) **Online**	Integrated Resource Planning (IRP) Update Energy Efficiency Updates Communications Update Community Connections
July 11, 2024 (1pm-4pm) **Online**	Filed Clean Energy Implementation Plan Annual Progress Report Demand Response Program Updates Disconnections Community Connections
August	**No Meeting**
September 12, 2024 (1pm-4pm) **Hybrid: TBD (Walla Walla Area)**	Integrated Resource Planning (IRP) Update Energy Efficiency Updates - (Preview 2025 Annual Conservation Plan including potential updates to Utility Actions and preview 2025 program changes) Community Connections
October 10, 2024 (1pm-4pm) **Online**	Community Connections
November	**No Meeting**

December 12, 2024 (1pm-4pm) **Online**	End of the Year Reflection; 2025 Planning Integrated Resource Planning (IRP) Update

*Proposed agenda topics and timing may be subject to change

CONCLUSION

PacifiCorp's 2025 IRP work plan represents its current view of the processes and activities needed to file its IRP by April 1, 2025, that meets state IRP standards and guidelines and aligns with PacifiCorp's 2025 business activities.

PacifiCorp encourages Washington stakeholders to attend public-input meetings and actively participate in this planning process. To join the 2025 IRP participants' list, please send an email request to IRP@PacifiCorp.com.