PGE CEP & IRP Roundtable 26-8

October 21, 2026

Meeting Logistics



Focus on Learning & Understanding

- Team members will take clarifying questions during the presentation, substantive questions will be saved for the end (time permitting)
- Attendees are encouraged to ‘raise’ their hand & chat to ask questions

Follow Up

If we don’t have time to cover all questions, we will rely on the CEP/IRP feedback form

Meeting Details

Wednesdays from 9 to 12 pm, Online Via Zoom

1

Electronic version of presentation

https://portlandgeneral.com/about/who-we-are/resource-planning/combined-cep-and-irp/combined-cep-irp-public-meetings

2

Zoom meeting details

- Join Zoom Meeting https://us06web.zoom.us/j/84372774388?pwd=WGdNfwfAFGcWgHxYjX0Mk2QbhDDaa7.1
- Meeting ID: 843 7277 4388
- Passcode: 108198

3

Participation

- Use the raise the hand feature to let us know you have a question
- Put questions into the chat
- Unmute with microphone icon or *6

CEP/IRP Roundtables For 2026 Filing

Date	Roundtable Topics
September 3, 2025	IRP 101, 2026 CEP/IRP Analysis Refinements, 2026 CEP/IRP Timeline & Q&A
October 22, 2025	Corporate Load Forecast – Methodology & Trends, Draft AdopDER Forecast, Existing Resources & Resource Topology, Future/Markets
December 10, 2025	Supply-Side Resource Options, Capacity Need & Its Drivers, Transmission Options, Role of VPP in the IRP, EE integration into IRP
January 14, 2026	PGE Longer Term Local Transmission Plan For the 2024-2025 Planning Cycle, Resource Contract Extension - Update, Flexibility study - Overview, Clean Energy Plan – Overview, Community Benefit Indicators, PGE'S Community Engagement Approach for 2026 CEP, Portfolio/Scenarios- Designs
February 24, 2026	PGE Announcement To Acquire WA Utility, Clean Energy Plan & Integrated Resource Plan Community Engagement Updates, Flexibility Study Draft Results, CBRE Update, IRP Emissions Forecasting, Diverse Market Transmission Framework, Portfolio Scoring, ELCCs, RFP Update and Proxy
April 8, 2026	Community Engagement, Transmission Constraints: Methodology & Approach, Price Futures Update, Energy Value for Resources, Generic Resource Cost Update, Market Emission Factor Scenarios
May 20, 2026	Stakeholder Feedback Responses, Community Benefit Indicators (CBIs), Portfolio Analysis Scenarios, Cost Cap (now Continued Progress) Scenario Update, Transmission Constraint: Results and Analysis, VPP Integration & ELCC Review
June 10, 2026	Community Impacts Metrics, Report Outline, Draft Portfolio Analysis Results, Corporate Load Forecast Update
July 22, 2026	Updated Transmission Analysis, Energy Strategies Transmission Analysis, Capacity Need & ELCCs Update, Updated Draft Portfolio Results, Draft Portfolio Resource Adequacy Assessment, & Backcast Review
August 27, 2026	Resource CBIs (rCBIs), Tax Credit Extensions, Portfolio Scoring, Preferred Portfolio & Continued Progress Portfolio, & Draft Action Plan
October 21, 2026	Welcome & Stakeholder Feedback Responses, Final Action Plan and Long-Term Strategy, HB 2021 Preferred Portfolio and Other Key Portfolio Results, Report Structure, Next Steps & Office Hours - Open Q&A and Discussion

October 21, 2026 – Agenda

9:00 | Welcome & Stakeholder Feedback Responses

9:05 | Final Action Plan and Long-Term Strategy

9:30 | HB 2021 Preferred Portfolio and Other Key Portfolio Results

9:45 | Report Structure

10:15 | Next Steps

10:25 | Office Hours – Open Q&A and Discussion

11:00 | Close

Final Action Plan and Long-Term Strategy

Sam Newman, Senior Principal Strategy Integrator

Key Messages of the 2026 CEP/IRP

PGE has made significant progress

Since 2021, PGE, along with customers, have added thousands of MW of renewable energy to the system, reducing emissions from HB2021 baseline by 25%

The planning environment is challenging

Federal tax credits are expiring, resource procurement processes are challenged, and competition for resources continues to increase. These headwinds create significant challenges to PGE's decarbonization journey

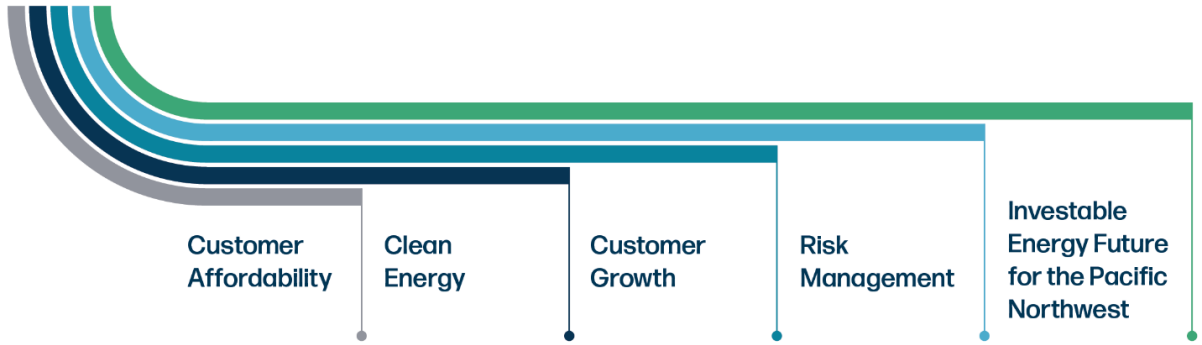
Flexibility is key

Flexibility is critical in being able to balance customer affordability, minimize execution risk and make continued progress towards decarbonization targets utilizing a least-cost, least-risk framework

Near-Term Action Plan

- Across 6 categories
- Anchored in flexibility
- Prioritizing affordability

Long-Term Strategic Priorities



Near-term Action Plan (2027-2032)

The IRP Preferred Portfolio is required by rules to achieve the GHG emissions reduction targets of HB2021 – resulting in a HB 2021 Preferred Portfolio being selected from GHG Glidepath results

Given the substantial resource volumes and costs added under this portfolio, PGE has also utilized Continued Progress portfolio results to inform the near-term Action Plan

IRP Requirement: OAR 860-090-0060(10)

1 Energy Efficiency Action

- Fund Energy Trust of Oregon to support acquiring cost-effective energy efficiency

2 Virtual Power Plant Action

- Pursue available cost-effective flexible load and dispatchable distributed resources
- Maximize resource value of customer sited solar

3 CBRE and SSR Actions

- Seek projects with tangible community benefits across procurement pathways
- Acquire SSR-eligible resources by 2030

4 Utility-scale Resource Actions

- Acquire firm and dispatchable capacity contracts
- Acquire approximately 3,000 MW of renewables that maximize use of existing transmission plans
- Acquire additional 1,800 to 5,700 MW of renewables, informed by resource acquisition progress

5 Transmission Actions

- Leverage GETs
- Support advancement of Warm Springs Power Pathway, North Plains Connector and Harborton-Trojan #3 projects
- Maintain options for additional transmission projects

6 Resource Planning Action

- File 2026 CEP/IRP Updates in 2027 and 2028
- File 2029 CEP/IRP

Long-term Resource Strategy

PGE approaches resource planning with a simple objective: deliver safe, reliable, affordable and increasingly clean electricity by meeting customer needs while mitigating cost impacts to customers.

Rather than treating these as competing objectives, PGE evaluates resource decisions through an integrated planning process that strives to balance all three.

PGE's long-term resource strategy builds on this approach.

IRP Requirement: OAR 860-090-0060(9)

Customer Affordability

- Seek to acquire all available and cost-competitive on-system resources
- Where cost-effective, utilize existing infrastructure and options to avoid investment
- Support fair allocation of costs and risks across all utility and DA customers

Clean Energy

- Rely near-completely on clean energy resources to meet long-term load growth
- Pursue transmission expansion that provides geographic diversity to renewables
- Continued CBRE procurement while maintaining affordability and strengthening community benefits

Customer Growth

- Center acquisition strategy on reliability and Integrate VPP
- Evaluate opportunities for special contracts with large customers, with fair cost allocations

Investable Energy Future for the PNW AND Risk Management

- Pursue state and federal actions to address wildfire risk
- Continue to collaborate with OPUC on important regulatory mechanisms related to the Power Cost Adjustment Mechanism (PCAM), long-lead utility infrastructure and resources, and others as relevant

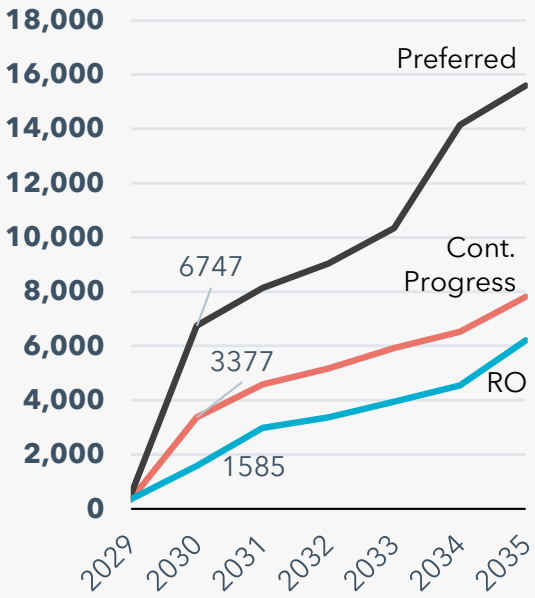
HB 2021 Preferred Portfolio & Other Key Portfolio Results

Sydnie Hinds, Integrated Resource Planning Manager

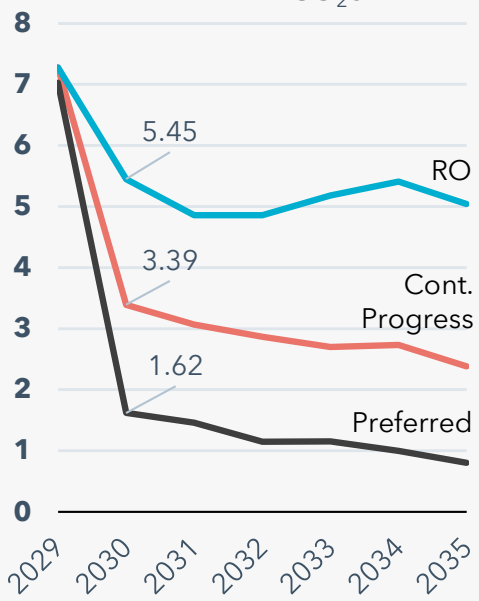
Select Results for Key Portfolios

Portfolio	Description	Results
HB21 Preferred Portfolio HB 2021 GHG Glidepath	Thermal resources for retail load decline along linear glidepath	**6.7GW** needed by 2030 to meet reliability needs and add sufficient renewables to achieve **80%** emissions reduction from Baseline
Continued Progress HB 2021 Cost Cap	Limits expenditures on renewable resources to 6% above that of RO portfolio	**3.4GW** needed by 2030 for reliability needs and continued decarbonization, limited to 6% above RO portfolio spend. Achieves **58%** emissions reduction
Reliability Only No GHG limits	Minimal incremental generation needed to meet reliability and RPS, no GHG constraints	**1.6GW** needed by 2030 to meet reliability needs, achieves **33%** reduction in emissions from Baseline

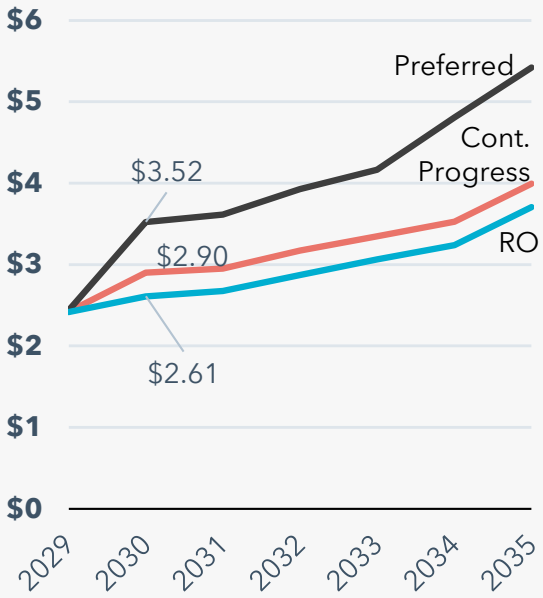
Resource Additions
Cumulative MW



Retail GHG Emissions
MMTCO$_2$e



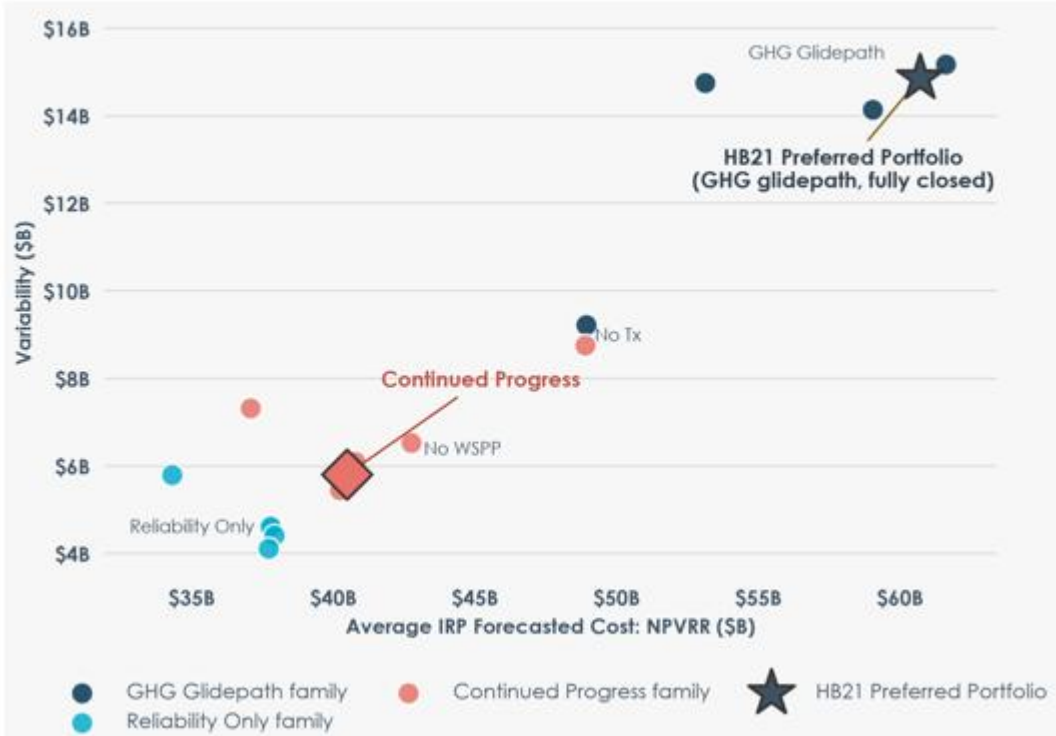
IRP Annual Costs
$Billion



HB 2021 Preferred Portfolio

- **The Preferred Portfolio should achieve the emissions reductions targets set forth in ORS 469A.410**[1]
  - Scenarios that achieve exact emissions reductions of HB21 are in the "GHG Glidepath" regulatory environment structure.
- Portfolio scoring identified the resource buildout associated with the reference need, RHHN price, high tech cost future for the GHG Glidepath scenario as the HB 2021 Preferred Portfolio.
  - Consists of new resource additions made in ROSE-E plus non-emitting resources added through iterative analysis to meet targets at hourly modeling granularity.

Figure 85. Costs and Risks of HB 2021 Preferred Portfolio Compared to Others for the Full Planning Horizon

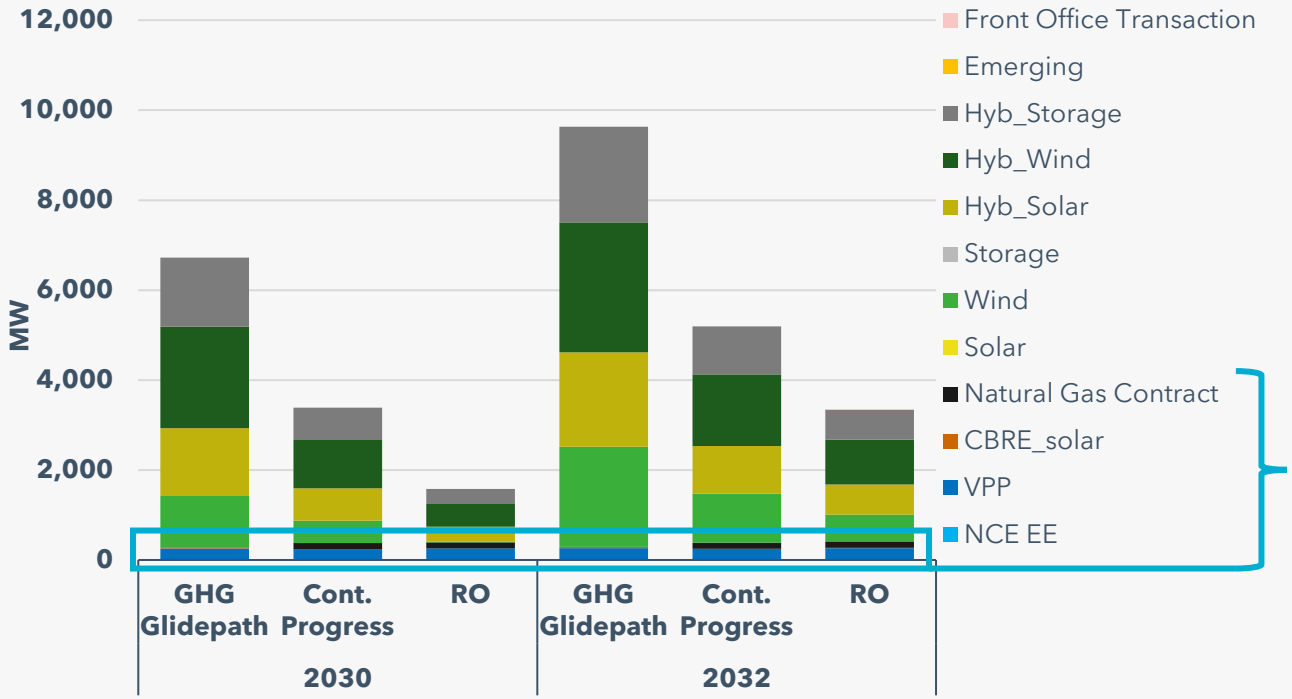


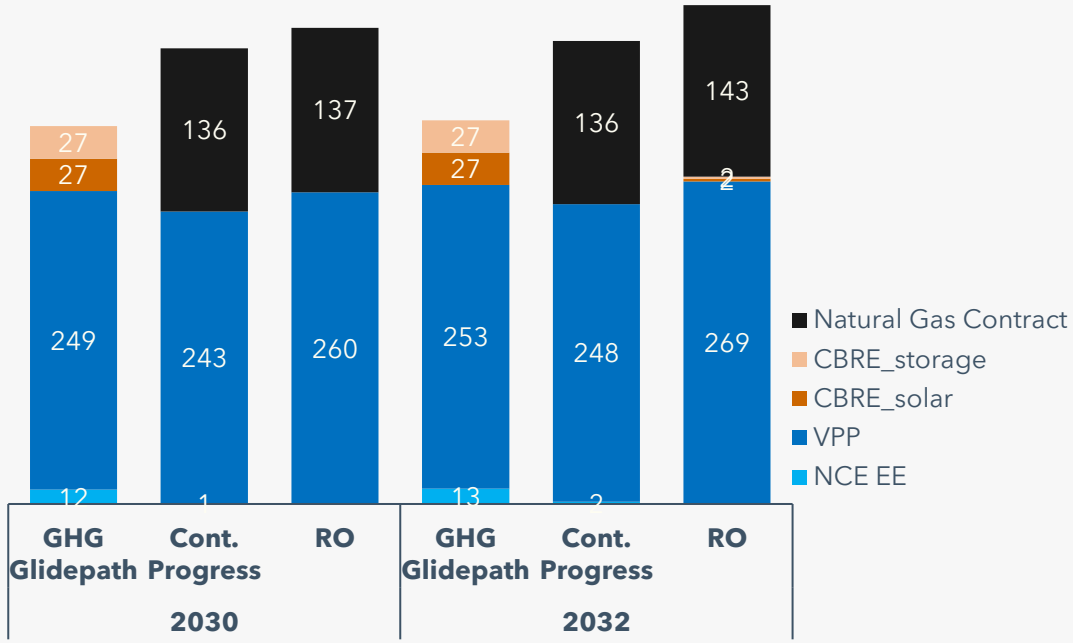
- **The costs and risks of the HB 2021 Preferred Portfolio are significantly higher** than other portfolios, suggesting that actual resource additions likely need to be tempered to a volume that is executable and can also address customer affordability concerns.
- Balancing affordability, reliability, and clean energy in the current planning environment has further underscored the importance of approaching near-term decisions purposefully.
- Results from both the ★ **HB 2021 Preferred Portfolio** and the ◆ **Continued Progress Portfolio** directly inform the Action Plan.

1) 860-090-0100 (8)

Reference Case New Resource Buildout

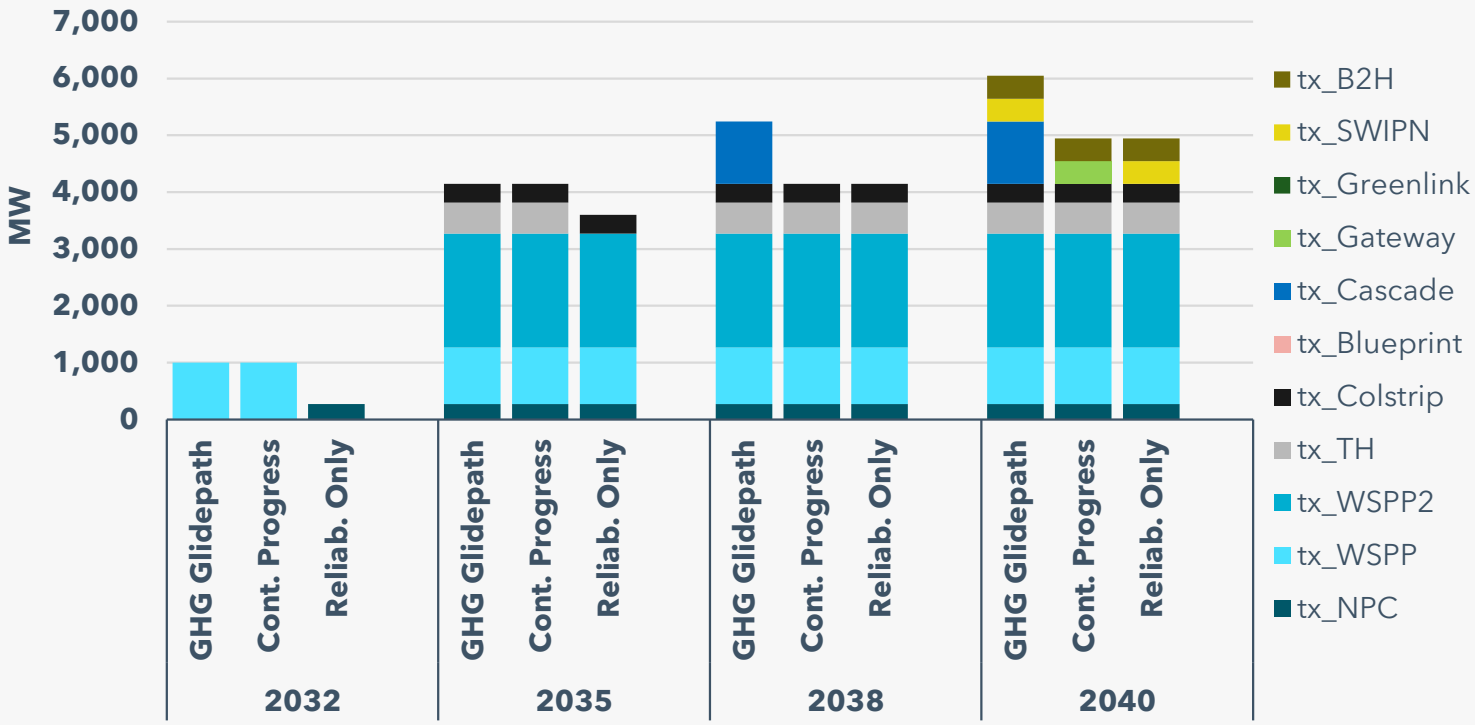
- **Hybrid Resources** (wind/solar/storage) selected across all portfolios in the near-term. These resources maximize transmission utilization, which remains a critical need across the region.
- **VPP** resources selected across all portfolios.
- **CBRE and NCE EE,** modest amounts selected in GHG compliant portfolios. Low volume of CBRE selection across portfolios given high resource costs.
- **Natural gas contract** selected when available, but not at the maximum amount (200MW).





Note: VPP totals include volumes associated with DSG and both summer and winter demand response program totals.

Reference Case Transmission Additions



Transmission expansion and upgrades are a key component of all three portfolios.

- **6,045 MW** of transmission add in GHG Glidepath.
- **4,945 MW** of transmission add in Reliability Only and Continued Progress.

Transmission unlocks access to many GWs of off-system renewables, hybrids, and front-office transactions for capacity.

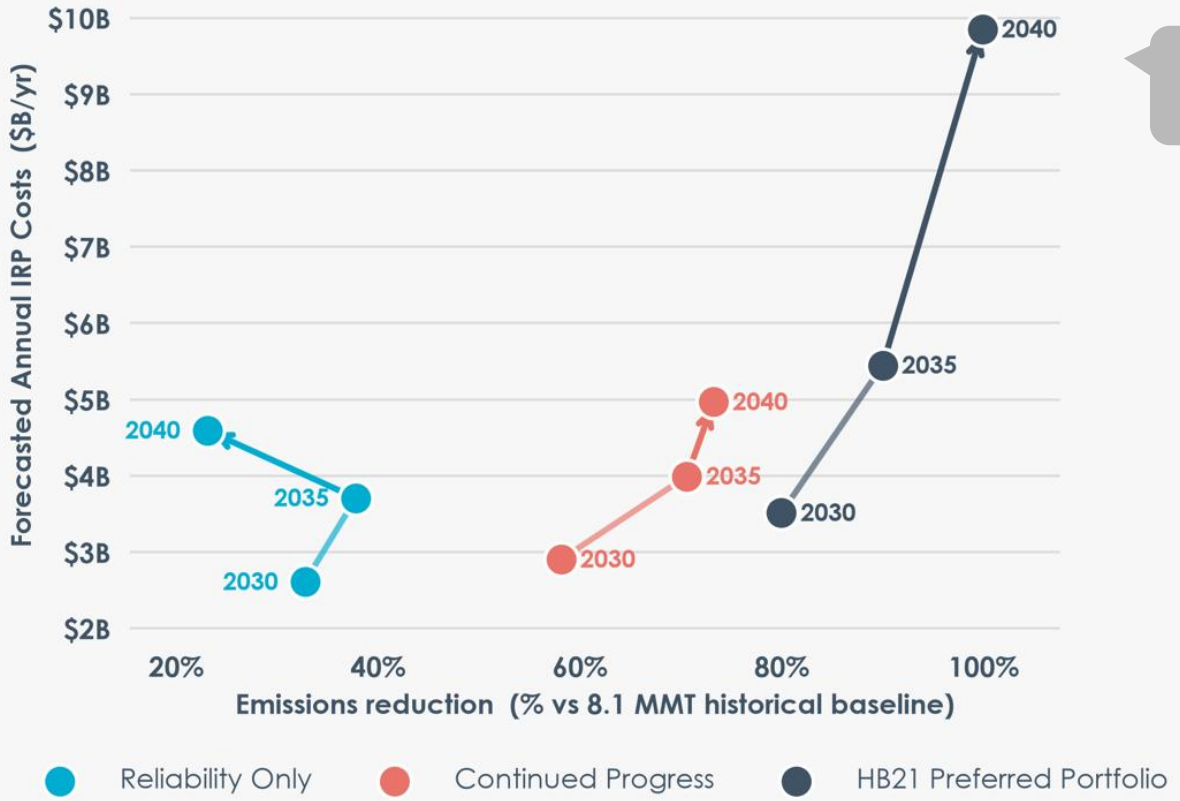
Key projects identified as needing near-term action to support resource needs:

- **WSPP**
- **NPC**
- **Trojan-Harborton #3**

Deep Decarbonization Becomes Increasingly Expensive

Given current technology, emission reductions beyond 80% become increasingly expensive for fewer marginal CO2e savings. PGE's flexible action plan first prioritizes the most cost-effective emission reductions from 25% to 80% below baseline emissions.

Forecasted Annual IRP Costs x GHG Emission Reduction Performance



More expensive,
More decarbonized

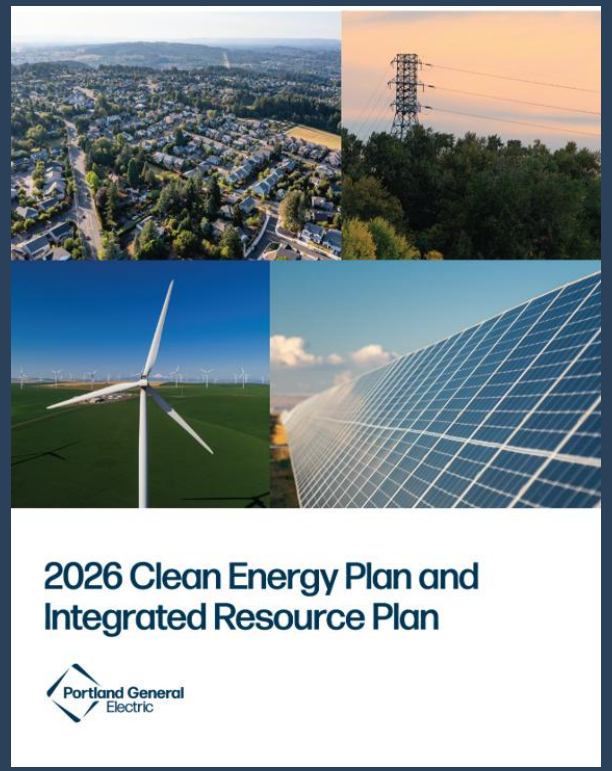
Less expensive,
Less decarbonized

Report Structure

Jimmy Lindsay, Director of Resource Planning

Clean Energy Plan & Integrated Resource Plan

Filed the Integrated Resource Plan and Clean Energy Plan jointly October 15, 2026.



Report structure

7 Chapters

Executive Summary—Clean Energy Plan and Integrated Resource Plan
1 Clean Energy Plan
2 Near-Term Action Plan
3 Planning Environment
4 Modeling and Process Overview
5 Transmission Requirements
6 Generation Requirements
7 Portfolio Analysis

17 Appendices

Appendix A Acronyms
Appendix B Compliance Summary
Appendix C Community Engagement—2026 Clean Energy Plan and Integrated Resource Plan
Appendix D Community Benefits Indicators
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Appendix Q Sylvan Energy Analytics Flexibility Study
Appendix R Energy Strategies Analysis

Ch 1: Clean Energy Plan

1 Clean Energy Plan
- 1.1 PGE's Forward-Looking Approach
  - 1.1.1 Building from a Solid Foundation
  - 1.1.2 Emission Reduction Approach
  - 1.1.3 Key Decarbonization Strategies
- 1.2 Detailed Progress and Milestones
  - 1.2.1 Reductions in Greenhouse Gas (GHG) Emissions
  - 1.2.2 Deploying Clean Energy
  - 1.2.3 Leading Customer Programs
  - 1.2.4 Virtual Power Plant
  - 1.2.5 Customer Affordability Priority
  - 1.2.6 Advancing Regional Integration and Resource Adequacy
  - 1.2.7 Improving Clean Energy Planning Accessibility
- 1.3 Moving Forward towards 2030 and Beyond
  - 1.3.1 External Landscape
  - 1.3.2 Evaluation of Planning Pathways
  - 1.3.3 Opportunities Identified Across Portfolios
- 1.4 Informed Decisions on Behalf of PGE's Customers and Communities
  - 1.4.1 Prioritizing Affordability in Planning Decisions
  - 1.4.2 Community Benefits of PGE's Actions
  - 1.4.3 Prioritizing Resilience in Resource Actions
  - 1.4.4 Assessing Opportunities for Community Based Renewable Energy
- 1.5 PGE's Resource Portfolio Actions
  - 1.5.1 Long-term Resource Strategy

Chapter Highlights

- The CEP is jointly filed with the IRP therefore the whole report should be read as containing the CEP and further details, though this Chapter aims to summarize key themes.
- PGE is reducing emissions and maintaining reliable service by replacing emitting generation and market purchases with non-emitting energy and capacity resources, even as load grows.
- Uncertainties regarding the most cost-effective path to accelerate emissions reductions have increased due to external factors such as changes to federal tax credits, trade policy, and more.
- Transmission solutions are integral to maintaining reliability and providing long-term pathways for decarbonized power supply.



Ch 2: Near-Term Action Plan

- 2 Near-Term Action Plan
  - 2.1 Action Plan Background
    - 2.1.1 Portfolio Analysis Overview
    - 2.1.2 Portfolio Analysis Key Findings
  - 2.2 Near-Term Action Plan
    - 2.2.1 Energy Efficiency Action
    - 2.2.2 Virtual Power Plant Actions
    - 2.2.3 Community-Based Renewable Energy and Small-Scale Renewables Actions
    - 2.2.4 Utility-Scale Resource Actions
    - 2.2.5 Transmission Actions
    - 2.2.6 Resource Planning Actions
    - 2.2.7 Regional Initiatives
  - 2.3 Resource Acquisition Timing and Coordination
    - 2.3.1 Near-Term Procurement Actions
    - 2.3.2 Bilateral Energy and Capacity Contracting
    - 2.3.3 All-Source RFP

Chapter Highlights

- Priority actions through 2032 needed to meet identified system needs on a planning-basis and in the context of the evolving planning and policy environment.
- Current analysis suggests resource need has increased thus PGE continues to identify the need for more RFPs and other procurement channels to secure additional resources for resource adequacy, reliability, and continued progress on HB 2021 GHG emissions reduction targets.
- PGE will continue to pursue cost-effective energy efficiency, flexible load and dispatchable resources that customers choose to provide, and emphasize VPP.
- Includes community and transmission focused actions.



Ch 3: Planning Environment

3 Planning Environment
- 3.1 Customer and Policy Expectations
  - 3.1.1 Customer Affordability
  - 3.1.2 Increasing and More Uncertain Electric Demand
  - 3.1.3 Climate Policy and Expectations
- 3.2 Resource Development Headwinds and Competition
  - 3.2.1 Federal Incentives and Resource Economics
  - 3.2.2 Trade Policy, Supply Chains, and Long-Lead Equipment
  - 3.2.3 Competition with Utilities and Large Customers for Viable Projects
  - 3.2.4 Direct Access and Resource Adequacy Responsibility
- 3.3 Regional Reliability Outlook
  - 3.3.1 WECC-Wide Load Growth
  - 3.3.2 Renewable Adoption Trend
  - 3.3.3 Pacific Northwest Reliability Landscape
  - 3.3.4 Emerging Technology Progress
  - 3.3.5 Gas and Electric Transmission Utilization
- 3.4 Regional Market and Transmission Development
  - 3.4.1 Day Ahead Market Expansion
  - 3.4.2 BPA Transmission System Investment
  - 3.4.3 Regional Transmission Planning Coordination
  - 3.4.4 Resource Adequacy Program Landscape
- 3.5 Other Regulatory and Market Dynamics Impacting Planning
  - 3.5.1 Wildfire Risk
  - 3.5.2 Holding Company Structure
  - 3.5.3 Workforce Availability
  - 3.5.4 Regulated Ratemaking Frameworks

Chapter Highlights

- Customers are increasingly seeking affordability over all other priorities given macroeconomic trends.
- At the federal level, tax incentive changes for new non-emitting generation and storage resources create cost-competitive headwinds for new procurement opportunities.
- Regionally, market design and transmission development have become increasingly important.
- Continued expansion in expected future load growth for large industrial customers compared to previous IRP assumptions.



Ch 4: Modeling and Process Overview

4 Modeling and Process Overview
- 4.1 Analytical Process Overview
- 4.2 Modeling Overview
- 4.3 Modeling Considerations

Chapter Highlights

- High-level overview of modeling tools and analytical process.
- PGE's resource planning process tests resource options under a broad range of possible futures. PGE's analysis continues to be comprised of three core exercises: production cost simulation, resource adequacy, and capacity expansion.
- Significant updates to planning analysis methods have been made since the 2023 IRP cycle. These updates include hourly emissions forecasts, comprehensive transmission expansion and alternative analysis, inclusion of increased market integration benefits, and a more rigorous analysis of portfolio risks.



Ch 5: Transmission Requirements

5 Transmission Requirements
- 5.1 PGE Transmission Planning Background
  - 5.1.1 Concentric Circles of Transmission
- 5.2 Key Developments Since the 2023 IRP Update
  - 5.2.1 Increasing Regional Transmission Constraints
  - 5.2.2 Key BPA Projects Affecting PGE
  - 5.2.3 Advancement of Major Transmission Projects
  - 5.2.4 Western Transmission Expansion Coalition (WestTEC)
- 5.3 Long-Term Transmission Options for Portfolio Analysis
  - 5.3.1 Short-Term Transmission Options
  - 5.3.2 Transmission Requirements for New Generation Resources

Chapter Highlights

- Transmission availability is increasingly determining resource availability. Access to clean energy, firm capacity, and regional markets depends not only on the availability and economics of generation, but also on whether that generation can be reliably delivered to PGE customers.
- Existing regional transmission capacity is increasingly scarce and changing power flows are creating new constraints.
- PGE is pursuing a portfolio of transmission solutions including optimizing existing infrastructure and rights, grid enhancing technologies, new development options, and regional coordination.



Ch 6: Generation Requirements

6 Generation Requirements
- 6.1 Load Forecast
  - 6.1.1 Load Trends
  - 6.1.2 Load Forecast Model
  - 6.1.3 Uncertainty and Load Scenarios in IRP
  - 6.1.4 Comparison of 2026 IRP to 2023 IRP Update
- 6.2 Key Load Inputs
  - 6.2.1 Distributed Energy Resources (DERs) Impact on Load
  - 6.2.2 Load-Modifying DERs
  - 6.2.3 Demand Response Impacts
  - 6.2.4 Energy Efficiency Impact on Load
- 6.3 RFP Results
  - 6.3.1 2023 All-Source RFP
  - 6.3.2 2025 All-Call PPA Solicitation
  - 6.3.3 2025 All-Source RFP
  - 6.3.4 CBRE RFO
- 6.4 New Resource Energy Values
- 6.5 New Resource Capacity Contributions
- 6.6 Portfolio Construction Futures
  - 6.6.1 Need Futures
  - 6.6.2 WECC Price Futures
  - 6.6.3 Energy Technology Cost Futures

Chapter Highlights

- PGE has committed to additions of 1,015 MW of clean energy resources. These solar and battery storage resources, achieved through recent procurement actions, are expected to come online in the next two years and are incorporated into analysis.
- Forecasted energy and capacity needs grow throughout the planning horizon.
- Planning analysis uses a diverse set of futures to assess cost and risk. This IRP models portfolios across 333 futures, reflecting variations in system needs, market prices, and technology costs.



Ch 7: Portfolio Analysis

7 Portfolio Analysis
- 7.1 Purpose of Portfolio Analysis
- 7.2 Portfolio Analysis Design Framework
- 7.3 Scenarios Analyzed
- 7.4 Portfolio Analysis Results
  - 7.4.1 Regulatory Structure Scenarios
  - 7.4.2 Core Growth Only Scenarios
  - 7.4.3 Resource Structure Scenarios
  - 7.4.4 Transmission Availability Scenarios
  - 7.4.5 Tax Credit Extension Scenarios
  - 7.4.6 State Reliability Metrics Scenario
- 7.5 Portfolio Scoring
  - 7.5.1 Enhanced Cost/Risk Assessment Tool
  - 7.5.2 Summary of Portfolio Scoring
- 7.6 HB 2021 Preferred Portfolio
  - 7.6.1 Continued Progress Portfolio
- 7.7 Yearly Cost Estimates
- 7.8 SSR Analysis
  - 7.8.1 SSR Acquisition Strategy
- 7.9 rCBI Sensitivity Analysis
- 7.10 VPP Results
- 7.11 Portfolio Reliability
  - 7.11.1 Reliability Position in ROSE-E
  - 7.11.2 Reliability Position in Sequoia

Chapter Highlights

- Planning analysis deploys a diverse set of proxy new resource and transmission options across the West and investigates 24 distinct scenario designs to assess future uncertainties and options.
- Clean energy, including co-located utility-scale battery hybrid resources remain central to near- and long-term strategies.
- PGE's existing thermal fleet continues to provide valuable system benefits and reliability backstop.
- Achieving 80% GHG emissions reduction by 2030 comes at a significant cost and deeper decarbonization targets further in the planning horizon will require new firm clean technologies to become available.



Appendices

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Appendix Highlights

- Includes compliance summary
- Details methodologies, assumptions, underlying data
- Additional filing requirements concurrent with IRP:
  - Appendix J: GETs Strategy (HB 3336)
  - Appendix M: RPIP (HB 3161)
- Supporting external studies included

Next Steps

- The 2026 CEP/IRP was filed with the OPUC as part of an open and transparent process, in OPUC Docket No. LC 88
- Visit the OPUC website to follow the docket, view the procedural schedule and provide comments
  - Note that the IRP feedback form on PGE's website will be closed while the procedural schedule advances
- PGE expects the review process for the 2026 CEP/IRP to last into Q2 of next year
- PGE expects to file an IRP Update in October 2027
  - PGE will return to hosting public IRP roundtables in 2027



Office Hours

Open Q&A and Discussion

Thank you

Contact us at
IRP.CEP@PGN.COM



NEXT STEPS

A recording from today's webinar will be available on our website in one week

An



kind of energy

ACRONYMS

ARIMA: autoregressive integrated moving average
ART: annual revenue-requirement tool
ATC available transfer capability
BPA: Bonneville Power Administration
C&I: commercial and industrial
CBI: community benefit indicators
CBIAG: community benefits and impacts advisory group
CBRE: community based renewable energy
CDD: colling degree day
CEC: California energy commission
CEP: clean energy plan
CF: conditional firm
DC: direct current
DER: distributed energy resource
DR: demand response
DSP: distribution system plan
EE: energy efficiency
ELCC: effective load carrying capacity
EJ: environmental justice
ETO: energy trust of Oregon
EUI: energy use intensity
GHG: greenhouse gas
HB 2021: House Bill 2021
HDD: heating degree day
HVDC: high-voltage direct current
IE: independent evaluator
IOU: investor-owned utilities
ITE: information technology equipment
ITC: investment tax credit
kW: kilowatt
LOLH: loss of load hours
LT/ST: long term/ short term
LTF: long-term firm
MW: megawatt
MWa: mega watt average
NAICS: North American industry classification system
NCE: non-cost effective
NG: natural gas
NPVRR: net present value revenue requirement
OASIS Open Access Same Time Information System
ODOE: Oregon department of energy
PPA: power purchase agreement
PSH: pumped storage hydro
PUC: public utility commission
PURPA: Public Utility Regulatory Policies Act
PV: photovoltaic
REC: renewable energy credit
RLRR: low carbon price future
ROSE-E: resource option strategy engine
RPS: renewable portfolio standard
RRRR: reference case price future
RTO: regional transmission organization
SoA: South of Allston
T&D: transmission and distribution
TSR: transmission service request
TSEP: TSR study and expansion process
Tx: transmission
UPC: usage per customer
UPS: uninterruptible power supply
VER: variable energy resources
VPP: virtual power plant
WECC: western electricity coordinating council