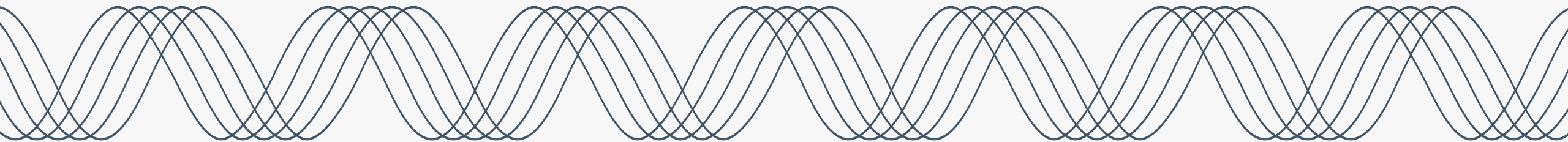




PGE CEP & IRP Roundtable 26-5

Jun 10, 2026



Meeting Details

Wednesdays from 9 to 12 pm, Online Via Zoom



Electronic version of presentation

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



Zoom meeting details

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



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

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

Jun 10, 2026 – Agenda

9:00 | Welcome

9:05 | Community Impacts Metrics

9:30 | Report Outline

09:45 | Draft Portfolio Analysis Results

10:45 | BREAK

11:00 | Corporate Load Forecast Update

11:30 | Next Steps and Close

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

CEP/IRP Roundtables For 2026 Filing



Date	Roundtable Topics
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 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	TBD
August 2026	TBD
September 2026	TBD
October 2026	TBD

Community Impacts Metrics

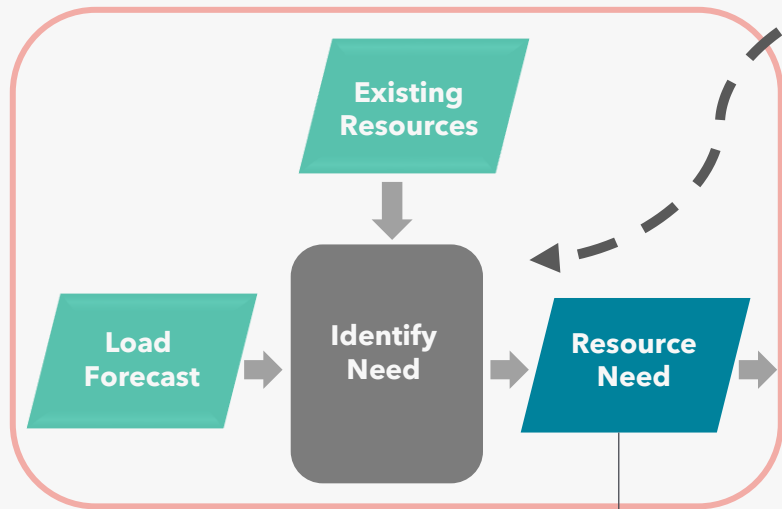
Kyle Billeci and Lauren Slawsky



High-Level IRP Analysis Process

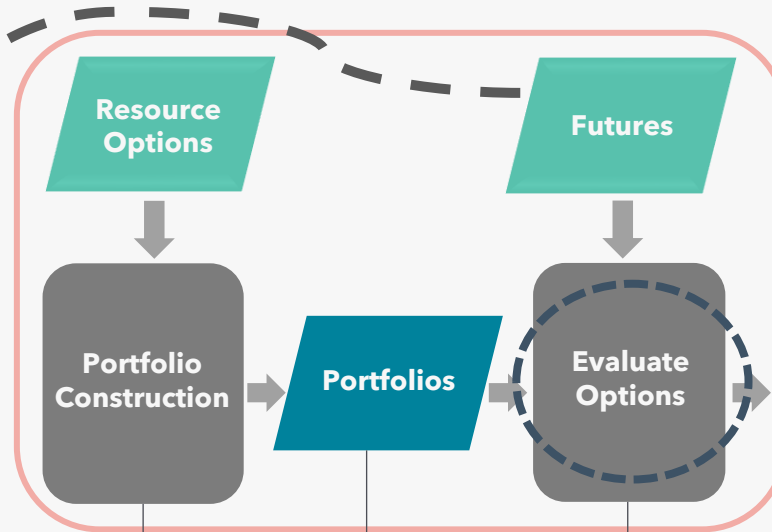


Estimate System Needs



MWs of capacity and
aMWs of energy
for system to reliably operate

Evaluate Resource Options



potential resource
additions to our system

to test resources,
incorporate regulatory
requirements, assess
impacts to needs

scenarios and sensitivities
for an informative set of
future conditions

Develop Plan



IRP has a 20-year planning
horizon, Action Plan covers
the next 2-4 years

Outline



Tracking CBIs and Community Impacts

Historical Data

Portfolio Analysis

Informing Planning

CBIs: Refining the Approach Over Time

Engagement and stakeholder feedback has continued to progress the development of CBIs in the IRP/CEP



Tracking CBIs and Community Impacts

CBI Review

- Staff directed utilities to develop **Community Benefit Indicators** (CBIs) as part of Oregon's Clean Energy Plan framework under UM 2225, with input from communities, stakeholders, and OPUC Staff.
- CBIs were intended to **supplement traditional least-cost, least-risk planning** by incorporating measurable community impact considerations into IRP and CEP portfolio evaluation.

CBI Categories

Initial guidance directed utilities to develop quantifiable and measurable indicators covering:

- Resilience
- Health & Community Well-Being
- Environmental Impacts
- Energy Equity
- Economic Impacts

CBI Functional Structure

Staff further directed CBIs to span three functional categories:

- Resource CBIs (rCBI)
- Portfolio CBIs (pCBI)
- Informational CBIs (iCBI)

List of CBIs from CADEO Assessment (2024)



1	Economic development impact	7	Ancillary services	13	Increased availability of electricity storage in Tribal and non-Tribal communities	19	Increased satisfaction and pride	25	Improved grid resiliency
2	Increased access to jobs	8	Reduction in GHG Emissions	14	Increased number of clean energy generation that powers Tribal communities	20	Improved comfort in home	26	Increased resilience/reliability in targeted communities
3	Increased property or asset values	9	Improved access to reliable clean energy	15	Improve efficiency and housing stock in utility service territory, including LI housing	21	Improved public health outcomes	27	Reduction in recovery time and increase in survivability from outages
4	Economic well-being	10	Improved participation in clean energy programs by EJ communities	16	Increased energy affordability/reduction in energy burden for EJ communities	22	Improved community health outcomes in targeted communities	28	Reduction in frequency and duration of black/brownouts in target communities
5	Increased productivity	11	Increased awareness of utility programs for EJ communities	17	Reduced arrearages/late payments	23	Reduced local emissions (pollution burden, pollution exposure)	29	Reduced risk to targeted communities from outages
6	Energy security	12	Meaningful bilateral engagement between utilities and tribes on siting	18	Reduced residential disconnections and collections	24	Improved household health and safety outcomes in targeted communities	30	Increased neighborhood safety from natural disasters

By OPUC Category

- Economic Impacts
- Energy Equity
- Health + Community Wellbeing
- Environmental
- Resiliency/Reliability

By CBI Type

- Portfolio CBIs (pCBIs)
- Resource CBIs (rCBIs)
- Informational CBIs (iCBIs)

DRAFT CBI Tracking: Summary of Historical Measured Values

CBI Category	Example Metrics
Economic Impacts	<ul style="list-style-type: none"> • Number of public charging stations in targeted communities • Public charging port access (% of population by community) • PGE resource and contracted capacity
Energy Equity	<ul style="list-style-type: none"> • DR participation in targeted communities • Households taking part in IQBD • Community engagement activities and events • Disconnections & arrearages
Health & Community Wellbeing	<ul style="list-style-type: none"> • Participation in EE programs in targeted communities • Customer satisfaction with PGE
Resiliency & Reliability	<ul style="list-style-type: none"> • DR enrolled capacity in targeted communities (average MW per event) • Renewable resources installed in targeted communities (solar, BESS) • Outage frequency and duration by community (SAIDI/SAIFI, etc.) • Grid & asset hardening for natural disasters and wildfire
Environmental Impacts	<ul style="list-style-type: none"> • GHG and other air pollutant emissions metrics

DRAFT CBI Report Out

Historical: measured values for past three years

Metric	CBI Category	CBI Ref #	Values for previous years
*Number of public charging stations in targeted communities	Economic Impacts (+)	1, 3	Count of AFDC-listed public charging stations by community
Public charging port access	Economic Impacts (+)	1, 3	Charging ports per population by community, using AFDC and ACS data
Generating capacity owned and contracted by PGE	Economic Impacts	6	Installed MW of PGE-owned and contracted generation
Number or % of households/businesses, in targeted communities, participating in demand response programs	Energy Equity	10	Percent of residential customers enrolled by program and community
*Number of households participating in IQBD	Energy Equity	10	Count of residential customers enrolled in IQBD by year
Bill savings for IQBD customers	Energy Equity	16	Estimated annual customer bill savings from IQBD enrollment
Community engagement activities & events	Energy Equity (+)	11, 12	Count of engagement activities by year
Energy burden tracking	Energy Equity	17	Percent of customers by LEAD energy burden category and census block group
Residential customer disconnections by targeted communities	Energy Equity	18	Percent of customers disconnected by community
Residential arrearages and late payments by targeted communities	Energy Equity	18	Percent of customers with arrearages or late payments by community

Note: Some metrics may be relevant for tracking across multiple CBIs and categories (+)

DRAFT CBI Report Out

Historical: measured values for past three years

Metric	CBI Category	CBI Ref #	Values for previous years
*GHG & other air pollutant emissions metrics	Environmental (+)	8, 21-23	Service area emissions from DEQ and PGE emissions reporting
Energy efficiency participation in targeted communities	Health & Community (+)	15, 20	Percent of residential customers taking part by program or technology
*Satisfaction survey results	Health & Community	19	Historical satisfaction surveys from PGE customers
Demand response enrolled capacity in targeted communities	Resiliency/Reliability (+)	25, 26, 29	Enrolled MW by year in targeted communities
Renewable energy resources in targeted communities	Resiliency/Reliability (+)	9, 13, 14	Historical installations of solar & storage by community
Renewable energy adoption rate in targeted communities	Resiliency/Reliability (+)	5, 27- 29	Adoption rate of solar & storage by community
*Outage frequency in targeted communities	Resiliency/Reliability (+)	5, 27- 29	SAIFI by community (System Average Interruption Frequency Index)
Outage duration in targeted communities	Resiliency/Reliability (+)	5, 27- 29	SAIDI by community (System Average Interruption Duration Index)
Resilience spending	Resiliency/Reliability	25	Annual dollars spent on resilience-related investments

Note: Some metrics may be relevant for tracking across multiple CBIs and categories (+)

List of CBIs and Draft Tracking Summary



1 ●	Economic development impact	7 ●	Ancillary services	13 ●	Increased availability of electricity storage in Tribal and non-Tribal communities	19 ●	Increased satisfaction and pride	25 ●	Improved grid resiliency
2 ●	Increased access to jobs	8 ●	Reduction in GHG Emissions	14 ●	Increased number of clean energy generation that powers Tribal communities	20 ●	Improved comfort in home	26 ●	Increased resilience/reliability in targeted communities
3 ●	Increased property or asset values	9 ●	Improved access to reliable clean energy	15 ●	Improve efficiency and housing stock in utility service territory, including LI housing	21 ●	Improved public health outcomes	27 ●	Reduction in recovery time and increase in survivability from outages
4 ●	Economic well-being	10 ●	Improved participation in clean energy programs by EJ communities	16 ●	Increased energy affordability/reduction in energy burden for EJ communities	22 ●	Improved community health outcomes in targeted communities	28 ●	Reduction in frequency and duration of black/brownouts in target communities
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6 ●	Energy security	12 ●	Meaningful bilateral engagement between utilities and tribes on siting	18 ●	Reduced residential disconnections and collections	24 ●	Improved household health and safety outcomes in targeted communities	30 ●	Increased neighborhood safety from natural disasters

By OPUC Category

- Economic Impacts
- Energy Equity
- Health + Community Wellbeing
- Environmental
- Resiliency/Reliability

By Proposed Tracking

- Available & quantifiable historical data (at least 2-3 years)
- Metric is still being evaluated

Economic Impacts

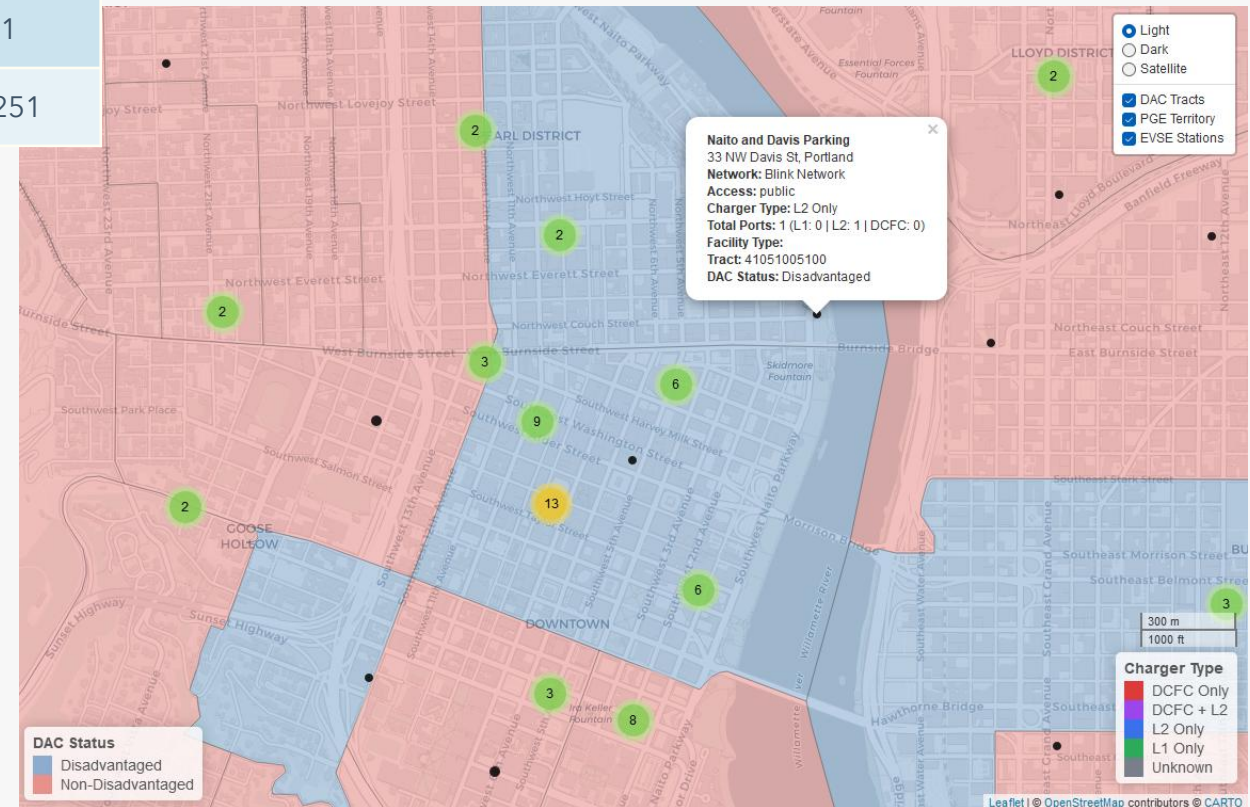
Metric 1: Number of public charging stations in targeted communities

Community	Access	Stations	Total Ports	DCFC Ports	L2 Ports
Disadvantaged	Public	300 (32%)	708	143	561
Non-Disadvantaged	Public	626 (68%)	1,575	324	1,251

What does this support?

Public charging availability is a leading indicator of whether disadvantaged communities can access and benefit from transportation electrification. Low availability may signal adoption barriers, while increased deployment can support lower transportation costs, improved air quality, and broader community benefits.

Community	2024 Stations	2024 Total Ports	2023 Stations	2023 Total Ports
Disadvantaged	292	666	214	548
Non-Disadvantaged	584	1,460	412	1,064



Energy Equity

Metric 2: Number of households participating in IQBD (Income-Qualified Bill Discount)

What does this support?

IQBD enrollment helps assess whether income-qualified customers are accessing bill assistance designed to reduce energy burden. Tracking the number and percentage of enrolled customers can identify participation gaps, support targeted outreach, and show whether affordability benefits are reaching customers with the greatest need.

County	2025 Enrollees	2024 Enrollees	2023 Enrollees
Total	104,834	89,811	69,006

Environmental

Metric 3: Greenhouse gas (GHG) and other air pollutant emissions at the service territory level

What does this support?

- PGE reports service-territory environmental metrics
- GHG and air pollutant metrics help assess the environmental benefits of resource investments, including progress toward lower carbon emissions and emissions intensity, and improved air quality.

Sustainability Reporting



Select Example Metrics

Ref. No.	Metric	2023	2024	2025
6	Nitrogen Oxide (NO_x), Sulfur Dioxide (SO₂), Mercury (Hg)			
6.1	Generation basis for calculation ⁵			
6.2	Nitrogen Oxide (NO_x)			
6.2.1	Total NO _x Emissions (MT)	2,787	2,495	2,149
6.2.2	Total NO _x Emissions Intensity (MT/Net MWh)	0.000171	0.000146	0.000124
6.3	Sulfur Dioxide (SO₂)			
6.3.1	Total SO ₂ Emissions (MT)	953	853	876
6.3.2	Total SO ₂ Emissions Intensity (MT/Net MWh)	0.000059	0.000050	0.000051
6.4	Mercury (Hg)			
6.4.1	Total Hg Emissions (kg)	7.7	7.5	5.9
6.4.2	Total Hg Emissions Intensity (kg/Net MWh)	0.00000047	0.00000044	0.00000034

5.1.2	Carbon Dioxide Equivalent (CO₂e)			
5.1.2.1	Total Owned Generation CO ₂ e Emissions (MT) ¹	5,022,755	4,670,286	4,892,526
5.1.2.2	Total Owned Generation CO ₂ e Emissions Intensity (MT/Net MWh) ¹	0.42	0.38	0.39

Health & Community Wellbeing

Metric 4: Increased satisfaction and pride, measurement TBD

What does this support? Tracking this helps PGE understand whether the actions and investments it implements are creating perceived value across communities. The metric for measurement is still in process.

Resiliency & Reliability

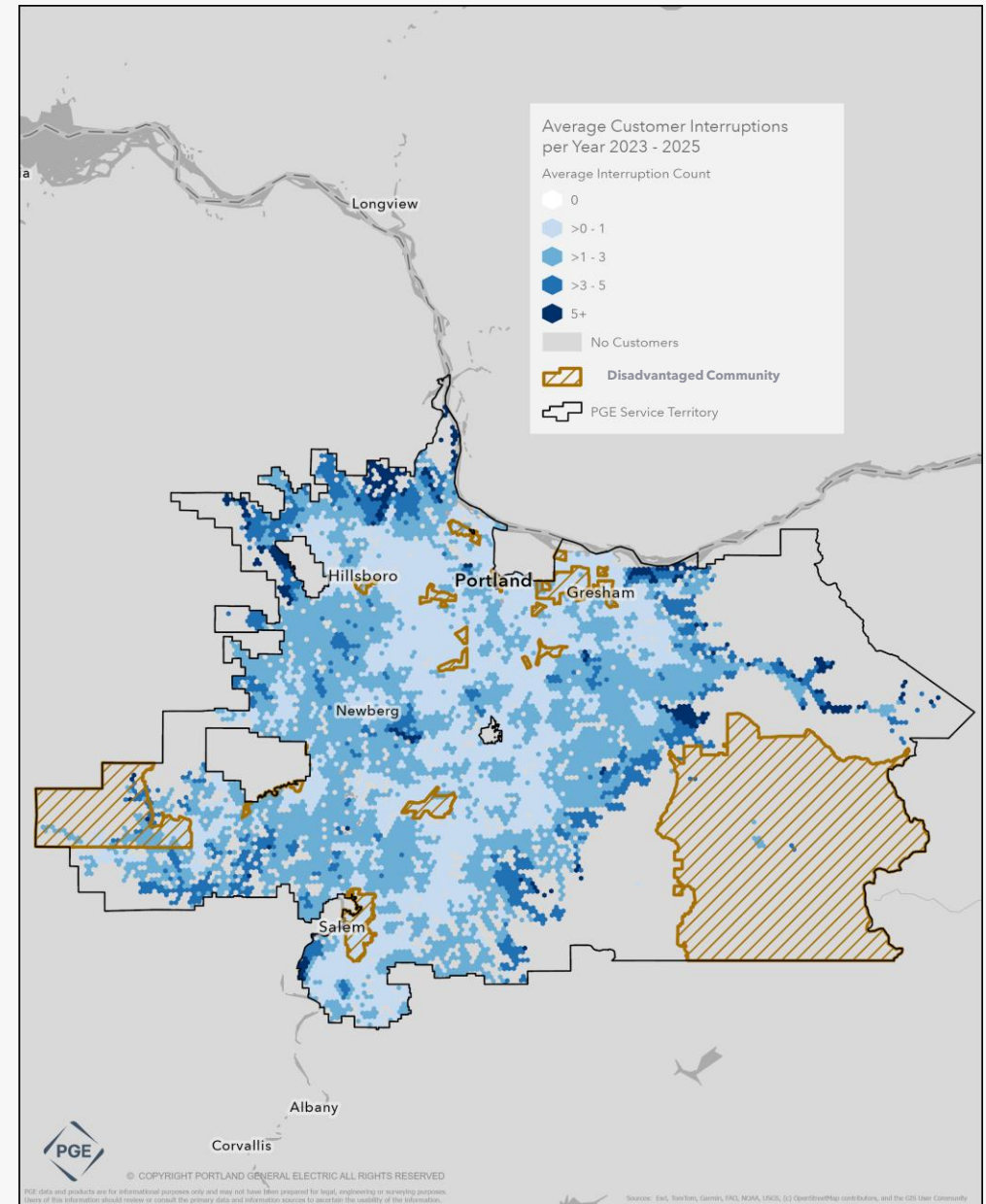
Metric 5: Outage or interruption frequency in targeted communities

What does this support?

Outage frequency in targeted communities helps assess whether certain communities experience a disproportionate reliability burden. Tracking this metric can show areas where customers may face more frequent service disruptions and where resiliency investments could provide the greatest community benefit.

Community	2025 Avg Interruptions	2024 Avg Interruptions	2023 Avg Interruptions
Disadvantaged	0.430	0.753	0.432
Non-Disadvantaged	0.669	0.783	0.668

The table presents annual average interruption data by year, broken down by community.



The map illustrates the multi-year average interruption frequency (2023-2025) across PGE's service territory, including a visualization of disadvantage communities

Other Available Resources

PGE publishes several public resources with service-territory-level information related to decarbonization, social impacts, resilience, equity, and other community benefits; the underlying data can support CBI development via current public reporting forums.

Public Resource	Descriptions/Available Metrics
<u>Purpose & Progress</u>	Reports public metrics on clean energy progress, emissions, reliability, affordability, community engagement, workforce, safety, and environmental stewardship.
<u>Annual Reports (10-K)</u>	Reports public financial and operational metrics including customer counts, retail revenues, energy deliveries, customer usage and rates, load growth, capital investments, resource capacity, clean energy supply, reliability performance, and wildfire/resilience-related investments.
<u>DEQ Reporting</u>	Provides public reporting on electricity-sector greenhouse gas emissions, baseline emissions, required emissions reductions, and projected progress toward Oregon’s clean electricity targets for PGE
<u>Foundation Impacts</u>	Reports annual community investment metrics, including grant funding, rural funding share, workforce and education support, food security response, and climate resilience priorities.

CBIs: forward-looking in planning

Modeling Refinements for CBIs in IRP

2023 CEP/IRP
(filed 2023)

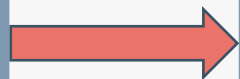


- Initial approach to meet UM 2225 requirements; **only applied to CBREs**
 - **pCBI**: 1 MW of CBRE = 1 unit of community benefit
 - **rCBI**: 10% cost reduction

Logic: Established an initial approach for incorporating community benefits into resource planning.

Reason: Community benefits were recognized as relevant to planning, but the methodology was still early-stage and not yet broadly quantified across resource types

2023 CEP/IRP Update
(filed 2025)



- Expanded CBIs; apply to other resources and portfolios (inc. CBREs)
 - **pCBI**: 1 MW = 1 unit-benefit (scorecard-style evaluation)
 - **rCBI**: cost-adjusted by resources based on quantifiable benefits

Logic: Expanded the CBI methodology from a CBRE-focused proxy to a broader portfolio scoring framework across multiple resource types.

Reason: Different resources can provide different types of community benefits, and some impacts can be more directly measured than others.

DRAFT CBI Report Out

Portfolio Analysis: Measured Values in modeling

- **Draft pCBI scoring results to be shown as part of Draft Portfolio Analysis Results section later in today's agenda**
 - pCBIs are reported as part of portfolio scoring
 - Method previously discussed in [January](#) and [May](#) Roundtables
- Results are reported out but not used directly in any further quantitative-specific analysis to compare portfolios or for determining a "least cost least risk" portfolio
- Considerations for not using these results in data-based analysis:
 - Represents a view of community benefits but doesn't quantify nor monetize all potentially relevant community benefits
 - Is directionally helpful for understanding which portfolios are adding more clean energy, but this metric alone does not show the full picture of benefits nor costs
 - Is a different representation of / separate from real-world community-specific impacts
 - Only one of many metrics relevant to complex decision-making that must balance community benefit with affordability, reliability, safety, clean energy, and other key objectives

How do community impacts inform planning?

Rather than relying on modeling alone, planning and the Action Plan are more realistically and directly considering **community impacts** as informed by a range of sources including learnings from:

- Historical measured values and findings of CBI and other related analysis
- Community Engagement activities
- Other planning efforts such as the Distribution System Plan, MYP, Transmission and Wildfire planning
- Public, Stakeholder, Customer input, feedback, concerns and interests heard throughout the planning cycle



Summary and Guided Feedback

Summary:

- PGE is advancing its CBI approach from broad stakeholder-defined indicators into draft, measurable metrics that can track historical community impacts across economic, equity, environmental, health, and resiliency categories.
- The current framework uses available data to identify where community benefits are occurring and where gaps remain.
- In planning, these metrics are intended to supplement—not replace—least-cost, least-risk analysis by providing a more transparent view of community impacts alongside affordability, reliability, safety, and clean energy objectives.

Content: Do you have any questions on PGE’s proposed tracking and quantifiable metrics for CBIs and community impacts as they relate to each: historical measured values, portfolio analysis, informing planning?

Purpose: Do you have any concerns on PGE’s approach to tracking and/or quantifying CBIs and community impacts?

Report Outline

Sydney Hinds and Ashwini Prasad



DRAFT 2026 CEP/IRP Chapters

Chapter	Title	Sections (overview of topics to be covered)
ES	Executive Summary	
Intro	Introduction	
1	Clean Energy Plan	<ul style="list-style-type: none"> • PGE’s CEP is integrated into the IRP. This chapter acts as summary; not a sole source of all info • Progress on HB 2021 • RECs discussion • Community Engagement, CBIs, CBREs
2	IRP Action Plan	<ul style="list-style-type: none"> • Actions to be taken by 2032 • Summary of IRP findings and learnings
3	Modeling and Process Overview	<ul style="list-style-type: none"> • Overview of analytical approach, models used, scenario analysis framework, considerations for modeling • More methodological details to be described in Appendices
4	Planning Environment	<ul style="list-style-type: none"> • Uncertainties, challenges, opportunities of the planning environment for this IRP • Customer affordability • State and federal regulatory landscape; regional considerations • Market, labor, supplier dynamics
5	Resource Needs	<ul style="list-style-type: none"> • Overview of results of needs assessments: reliability adequacy, load forecast, energy and capacity needs, transmission landscape, RPS, small-scale renewables, and more • More methodological details to be described in Appendices
6	Portfolio Analysis	<ul style="list-style-type: none"> • Overview of results of portfolio analysis: summary of key scenarios, preferred portfolio results, yearly cost estimates, transmission and new resource build results, VPP uptake in modeling, and more • More methodological details to be described in Appendices

DRAFT 2026 CEP/IRP Appendices

Appendix	Title	Sections (overview of topics to be covered)
Appendix A: IRP Requirements		
1	Acronyms	<ul style="list-style-type: none"> Frequently used acronyms
2	Compliance Requirements	<ul style="list-style-type: none"> CEP/IRP rules and where to find them in the document
3	Federal Funding	<ul style="list-style-type: none"> Grants awarded/not awarded, applications submitted, and more
4	Stakeholder and Community Engagement	<ul style="list-style-type: none"> Stakeholder meetings, roundtable materials Community engagement activities detailed report
Appendix B: IRP Analysis Methodology and Assumptions		
1	Existing PGE system and Contracts	<ul style="list-style-type: none"> System overview, existing resources, QF forecast, current transmission landscape
2	IRP Modeling Details	<ul style="list-style-type: none"> Detailed overview of each model used and analyses supported
3	Transmission Options	<ul style="list-style-type: none"> Transmission options within IRP analysis
4	Resource Options	<ul style="list-style-type: none"> New resource options and economics eg renewables, batteries, EE, VPP, CBREs, and more
5	CBIs	<ul style="list-style-type: none"> CBI methodology in IRP portfolio analysis
6	Futures: Price Uncertainties	<ul style="list-style-type: none"> Needs futures, wholesale market prices, technology costs, fuel and carbon pricing, and more
7	Scenario Descriptions	<ul style="list-style-type: none"> More detailed information on scenarios analyzed and relevant assumptions and methods, eg: <ul style="list-style-type: none"> Reliability only scenario definition HB 2021 emissions compliance: GHG glidepath, new PZM, hourly emissions analysis, etc. Cost cap scenario methodology And more
Appendix C: RPS RPIP		<ul style="list-style-type: none"> Newly required to be filed with IRP (per HB 3161)
Appendix D: GETs Strategy		<ul style="list-style-type: none"> NEW Grid Enhancing Technologies (GETs) strategy report (per HB 3336)
Additional Appendices: Studies		<ul style="list-style-type: none"> ETO: EE cost-effectiveness test methodology Sylvan Energy Analytics: Flexibility Study methodology

Summary and Guided Feedback

Summary: A draft CEP/IRP outline was provided for review.

Content: Are there any topics that are missing from the report outline?

Draft Portfolio Analysis Results

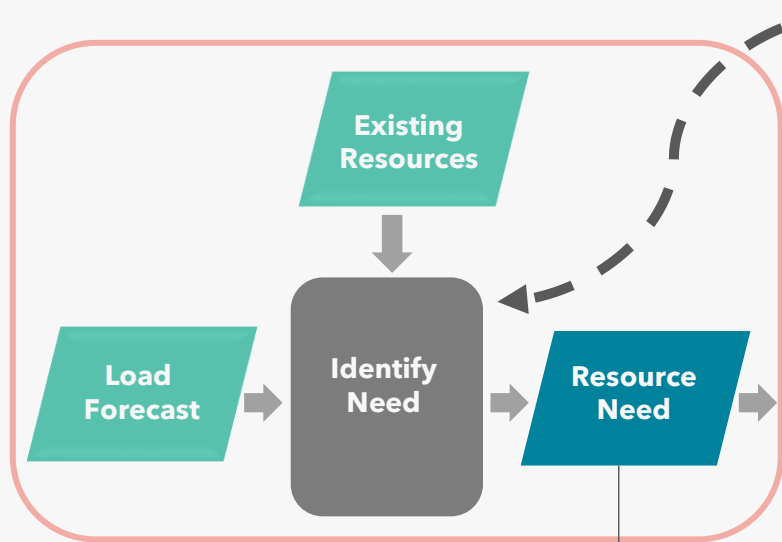
Rob Campbell



High-Level IRP Analysis Process

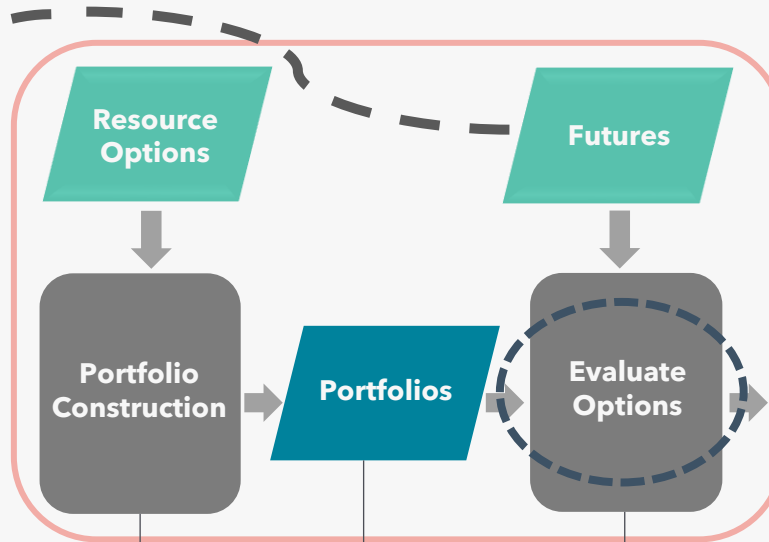


Estimate System Needs



MWs of capacity and
aMWs of energy
for system to reliably operate

Evaluate Resource Options



potential resource
additions to our system

to test resources,
incorporate regulatory
requirements, assess
impacts to needs

scenarios and sensitivities
for an informative set of
future conditions

Develop Plan



IRP has a 20-year planning
horizon, Action Plan covers
the next 2-4 years

Outline

Review of portfolios analyzed

Draft results of select portfolios

Portfolio Design

The **purpose of portfolio design** is to create a set of portfolios that allow us to gain insights on key questions of interest.

Thoughtful portfolio design:

1. Reasonably captures the realities of a complex long-term planning environment in a simplified modeling exercise.
2. Narrows the focus of analytical effort to key questions of interest.
3. Allows the impacts of alternative decisions to be compared.

Today, we will review draft analysis for select portfolios that represent optimized resource selections under a given planning scenario.

Note: *these portfolios utilize PGE's September 2025 Corporate Load Forecast.*

DRAFT: Planned Scenarios for Portfolio Analysis

- “Standard” load forecast = for each high, reference, low
- No NLL = No New Large Load growth included
- RA= resource adequacy



23 main scenarios proposed to analyze a range of policy and utility considerations

Portfolio #	Regulatory Environment	Load Forecast	Resource Considerations		Capacity Methodology	Transmission Expansion
			New Gas Contracts Available	Resource Availability		
1	80% Emissions Glidepath	Reference	No		IRP Metrics	Available
2	Reliability Only	Reference	Yes		IRP Metrics	Available
3	HB 2021 - Cost Cap	Reference	Yes		IRP Metrics	Available
4	80% Emissions Glidepath	No NLL (No DSG Growth)	No		IRP Metrics	Available
5	Reliability Only	No NLL (No DSG Growth)	Yes		IRP Metrics	Available
6	HB 2021 - Cost Cap	No NLL (No DSG Growth)	Yes		IRP Metrics	Available
7	80% Emissions Glidepath	Reference	No	Hydro	IRP Metrics	Available
8	Reliability Only	Reference	Yes	Hydro	IRP Metrics	Available
9	HB 2021 - Cost Cap	Reference	Yes	Hydro	IRP Metrics	Available
10	80% Emissions Glidepath	No NLL (No DSG Growth)	No	Hydro	IRP Metrics	Available
11	Reliability Only	No NLL (No DSG Growth)	Yes	Hydro	IRP Metrics	Available
12	HB 2021 - Cost Cap	No NLL (No DSG Growth)	Yes	Hydro	IRP Metrics	Available
13	Reliability Only	Reference	Yes	Colstrip	IRP Metrics	Available
14	Reliability Only	No NLL (No DSG Growth)	Yes	Colstrip	IRP Metrics	Available
15	Reliability Only	Reference	Yes	Colstrip + Hydro	IRP Metrics	Available
16	Reliability Only	No NLL (No DSG Growth)	Yes	Colstrip + Hydro	IRP Metrics	Available
17	80% Emissions Glidepath	Reference	No		IRP Metrics	Unavailable
18	Reliability Only	Reference	Yes		IRP Metrics	No WSPP
19	Reliability Only	Reference	Yes		IRP Metrics	No NPC
20	Reliability Only	Reference	Yes		IRP Metrics	No Cascades
21	80% Emissions Glidepath	Reference	No	SSR Eligibility	IRP Metrics	Available
22	80% Emissions Glidepath	Reference	No	rCBI	IRP Metrics	Available
23	Reliability Only	Reference	Yes		State RA Metrics	Available

Key considerations for draft results

As discussed at the [May 2026 Roundtable](#), PGE has designed portfolio analysis under three main regulatory environments.

Regulatory Environment	Description
HB 2021 80% Emissions Reductions	<ul style="list-style-type: none"> • Energy from thermal resources retained to serve retail load will decline along a linear glidepath. • No additional natural gas resources can be added.
Reliability Needs Only	<ul style="list-style-type: none"> • Minimal incremental generation needed to meet system reliability regardless of GHG constraints. • Able to select a new contract with an existing natural gas facility, in limited quantities, in addition to the already existing natural gas fleet. <ul style="list-style-type: none"> • 200 MW starting in 2027 • Additional 400 MW starting in 2035 • Modeled using cost and performance characteristics of combined-cycle natural gas proxy resource
HB 2021 Cost Cap	<ul style="list-style-type: none"> • Aims to meet reliability needs and make incremental progress towards emissions reductions targets (depending on the cost cap), without being constrained to meet a GHG reduction glidepath • Able to select a new contract with an existing natural gas facility, the same as the Reliability Needs Only scenario, above

Tax Credit Assumptions

Federal tax credits for wind and solar resources are sunsetting for projects that do not begin construction by July 2026.

PGE's IRP models approximately 2300 MW of resources available for selection with tax credits through 2030: 1000 MW of wind, 670 MW of solar, and 670 MW of storage.

This assumption represents PGE's expected outcome of the acknowledged 2025 RFP final shortlist.

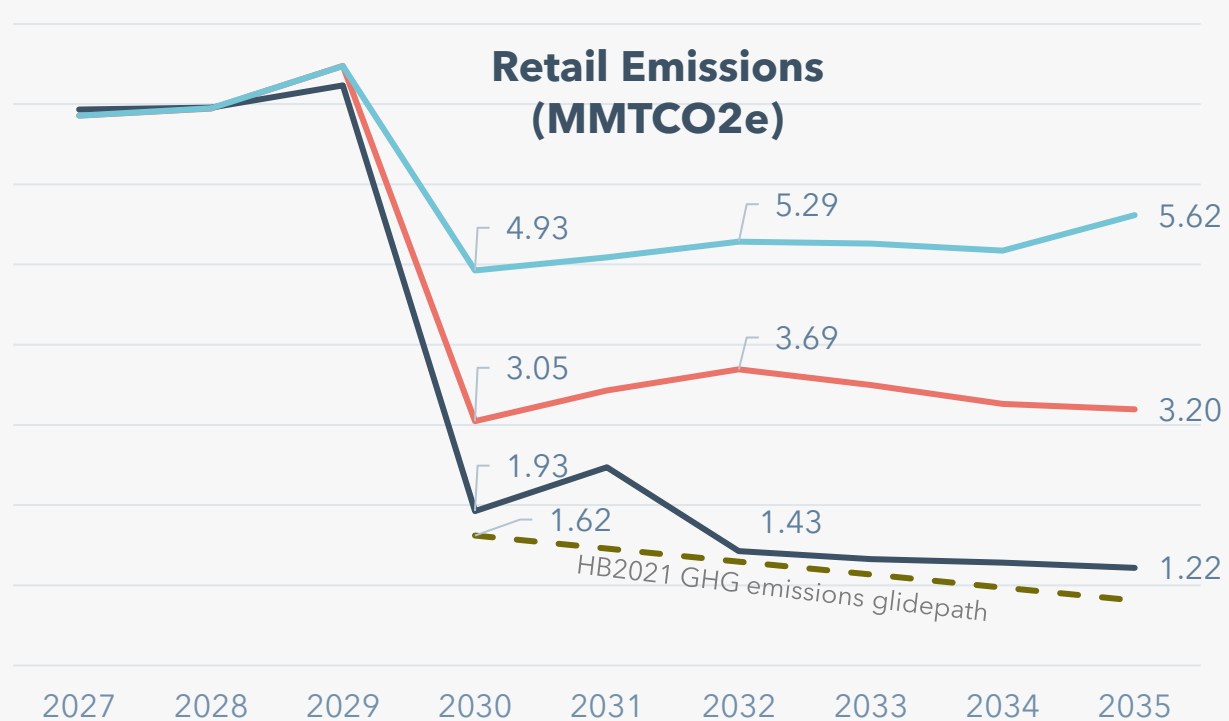
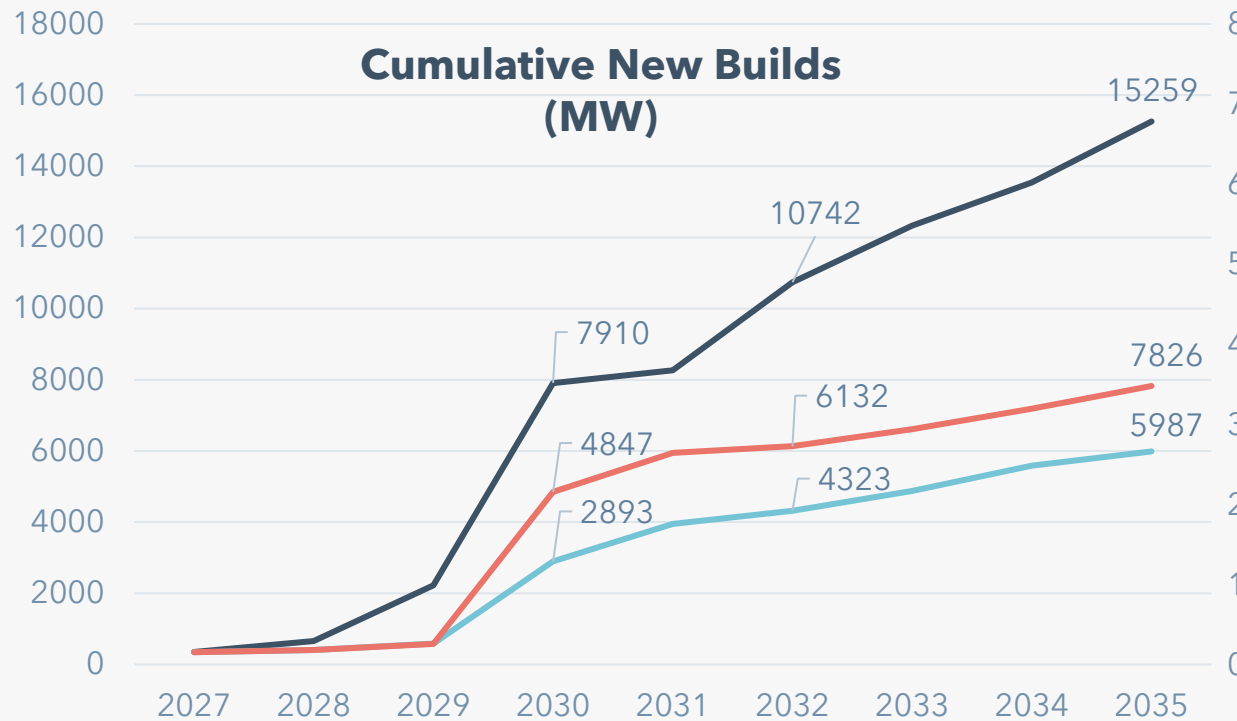
PGE's capacity expansion model (ROSE-E) is free to select renewable quantities greater than 2300 MW in 2030, and beyond, and will do so consistent with resource need.

Resources not representative of the 2025 RFP shortlist face increasing tax uncertainty due to development timelines, as such they are assumed ineligible for tax credits for modeling purposes.

Draft Outcomes for Key Portfolios

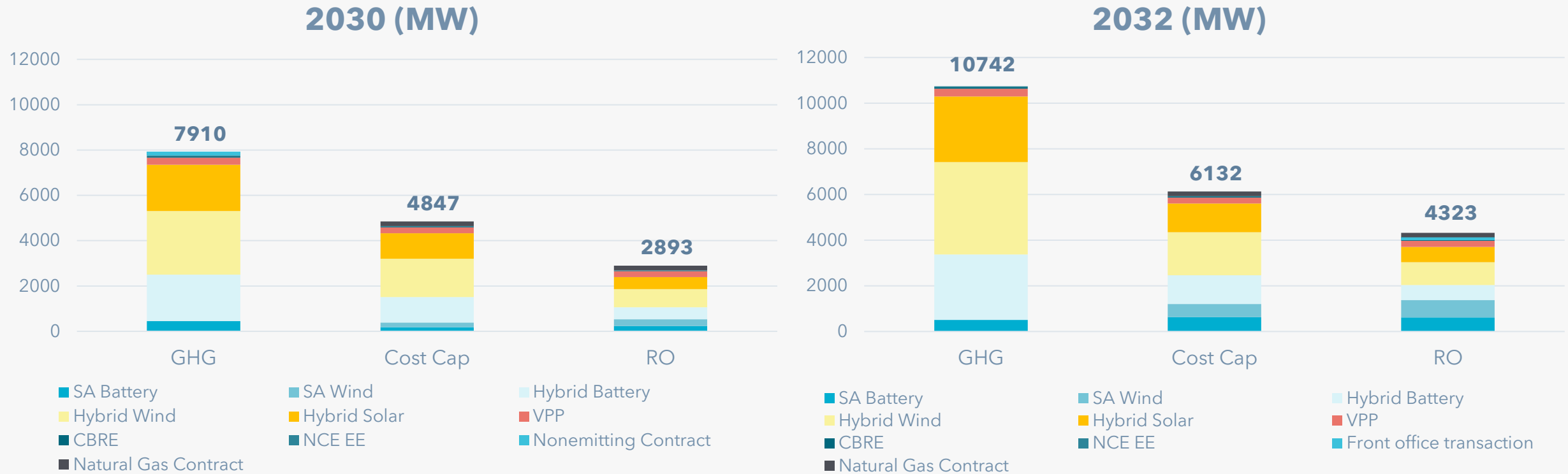


Portfolio	Description	Draft Result
GHG Glidepath	Thermal resources for retail load decline along linear glidepath	7.9GW needed by 2030 to meet reliability needs and add sufficient renewables to achieve 76% emissions reduction from Baseline
Reliability Only	Minimal incremental generation needed to meet reliability and RPS, no GHG constraints	2.9GW needed by 2030 to meet reliability needs, achieves 39% reduction in emissions from Baseline
Cost Cap	Limits expenditures on renewable resources to 6% above that of RO portfolio	4.8GW needed by 2030 to meet reliability needs and continue to decarbonize, limited to "cost cap". Achieves 62% emissions reduction



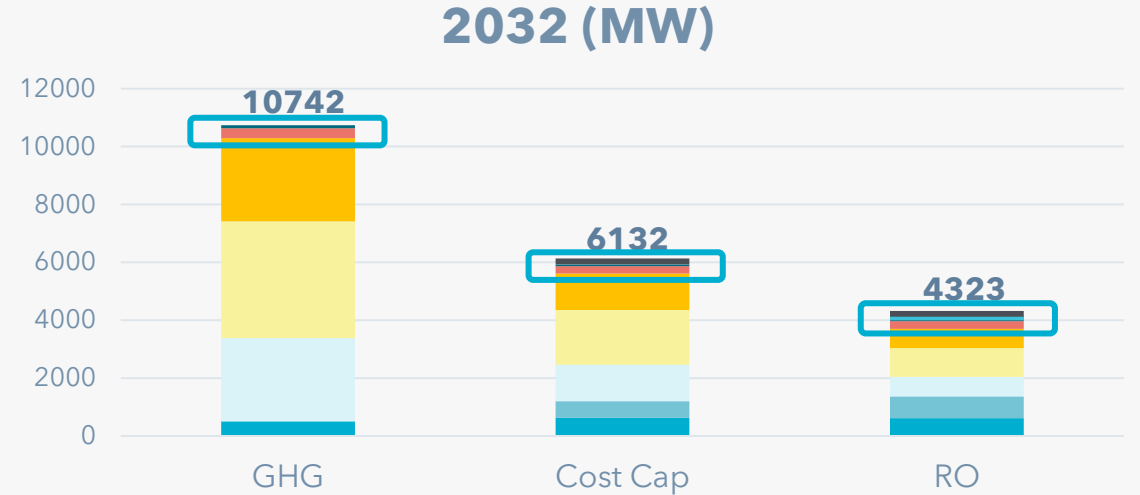
Summary of New Resource Buildout by Portfolio

- Reliability Only results in the lowest resource needs in 2030 and 2032, followed by the Cost Cap and then the GHG Glidepath (80% emissions reduction scenario)
- Significant volume of hybrid resources (wind/solar/storage) selected across all portfolios in the near-term. These resources maximize transmission utilization, which is a critical need across the region

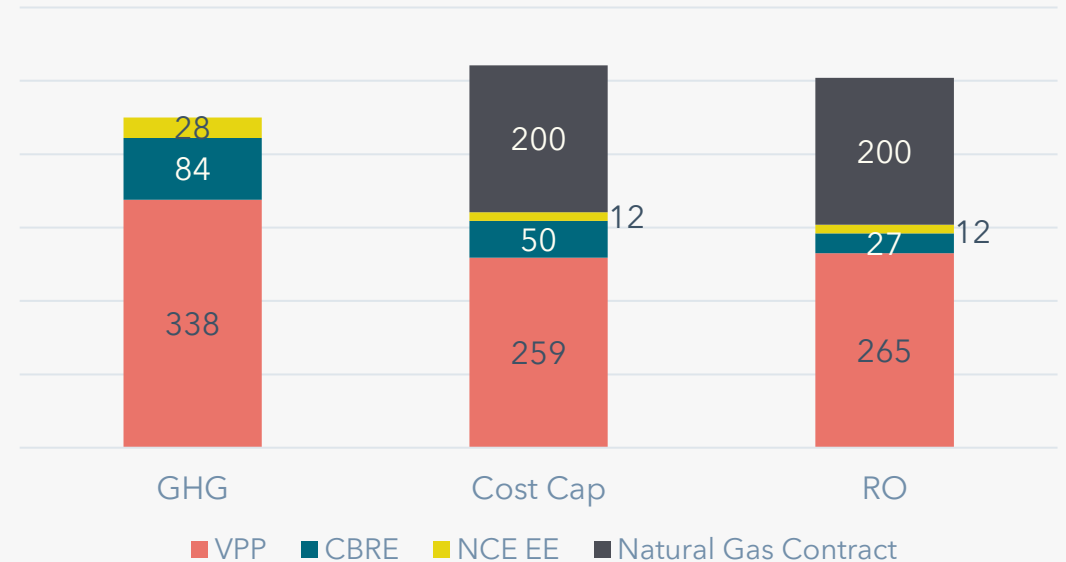
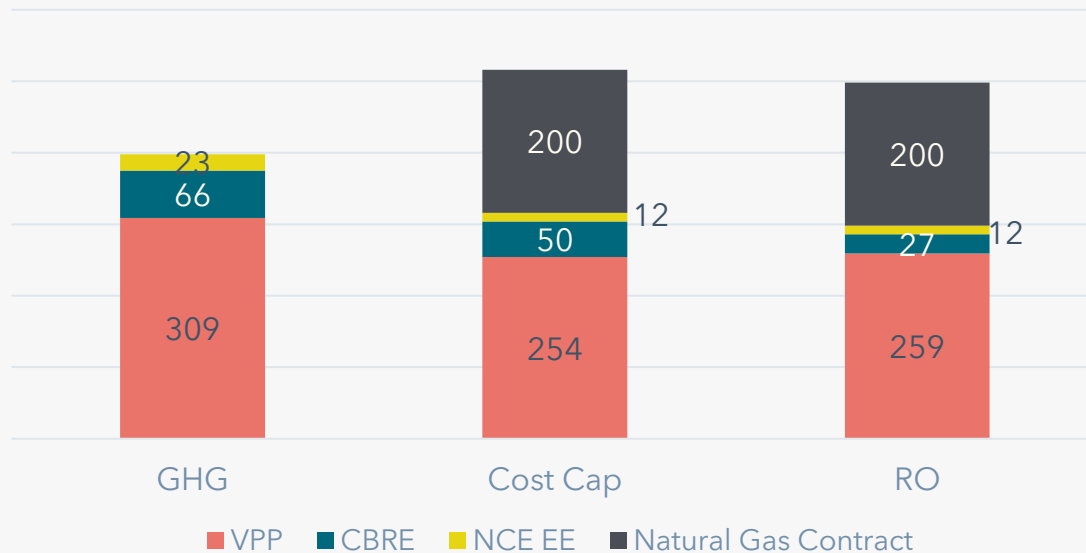


Non-emitting contract - Representative of a PPA contract for non-emitting MW
 Front office transaction (FOT) - Representative of a bilateral contract for capacity with peer utilities

Closer look at Subset: VPP, CBRE, EE & Natural Gas



Virtual Power Plant (VPP) and Community Based Renewable Energy (CBRE) resources selected across all portfolios



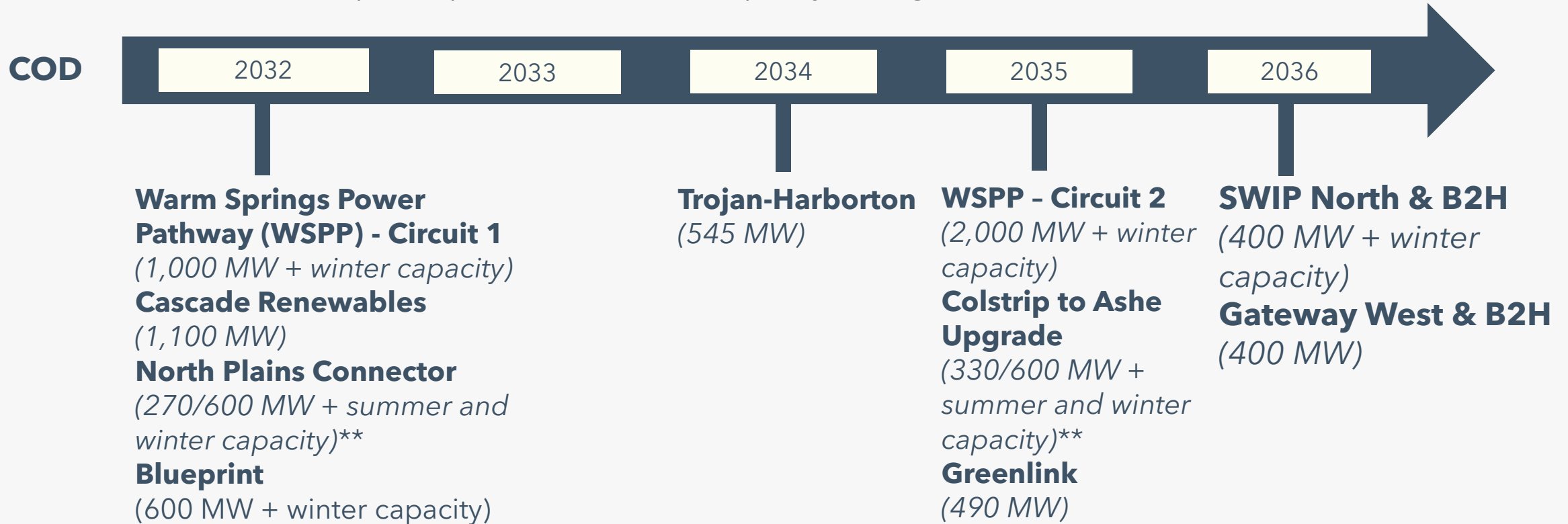
Transmission Additions – COD & MW Available



Transmission expansion and upgrades are a critical component for the creation of a reliable and HB 2021-compliant portfolio.

Transmission expansion allows for expanded access to diverse geographic locations and new resource development.

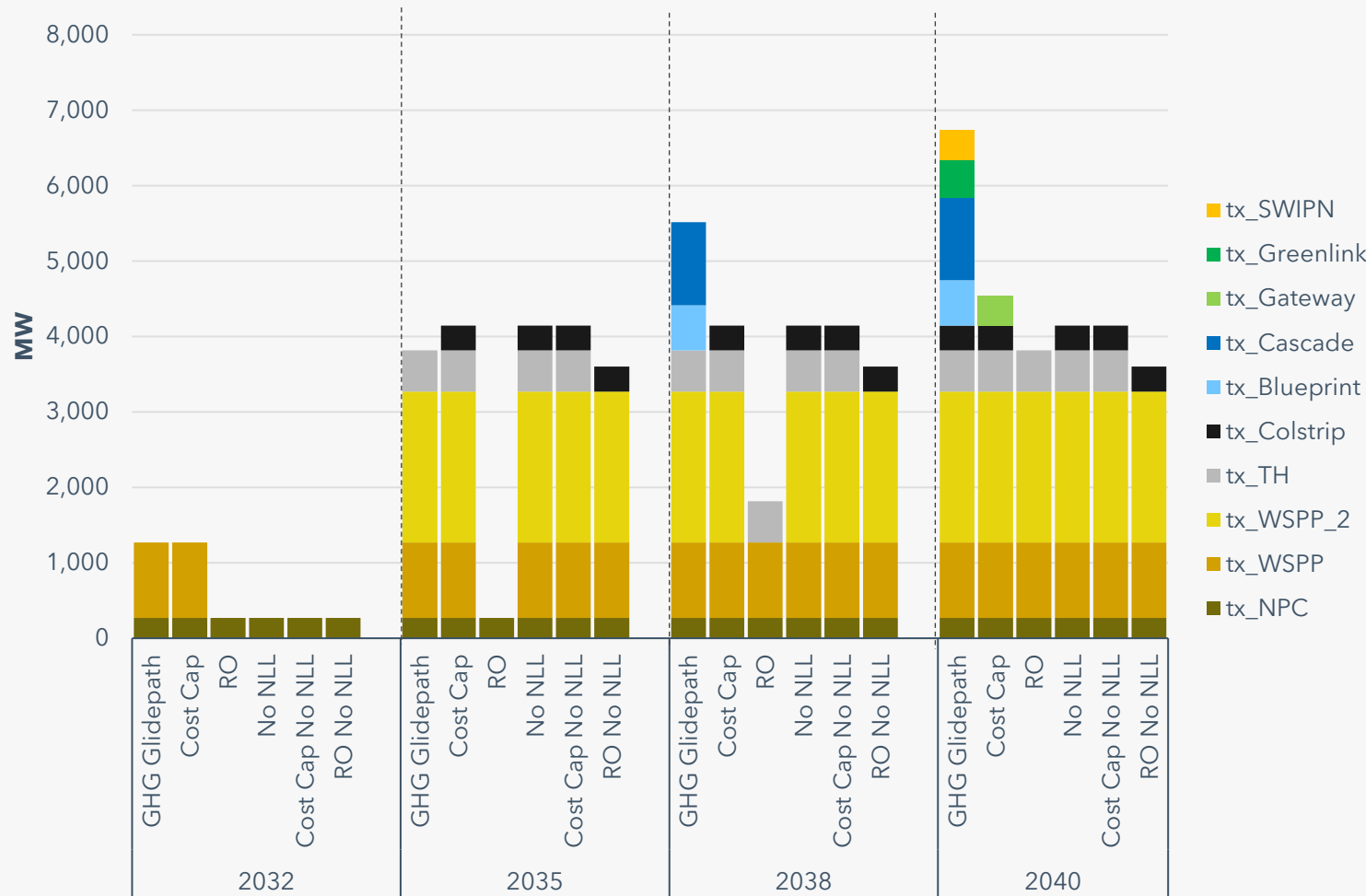
Some transmission options provide additional capacity through access to diverse markets.



**PGE will not have enough firm transmission rights to use all 600MW of North Plains Connector capacity until the Colstrip to Ashe Upgrade. We are modeling NPC as 270MW with PGE's existing rights and Colstrip to Ashe as 330MW.

Transmission Expansion Results

Select Scenario Comparisons



Key Takeaways

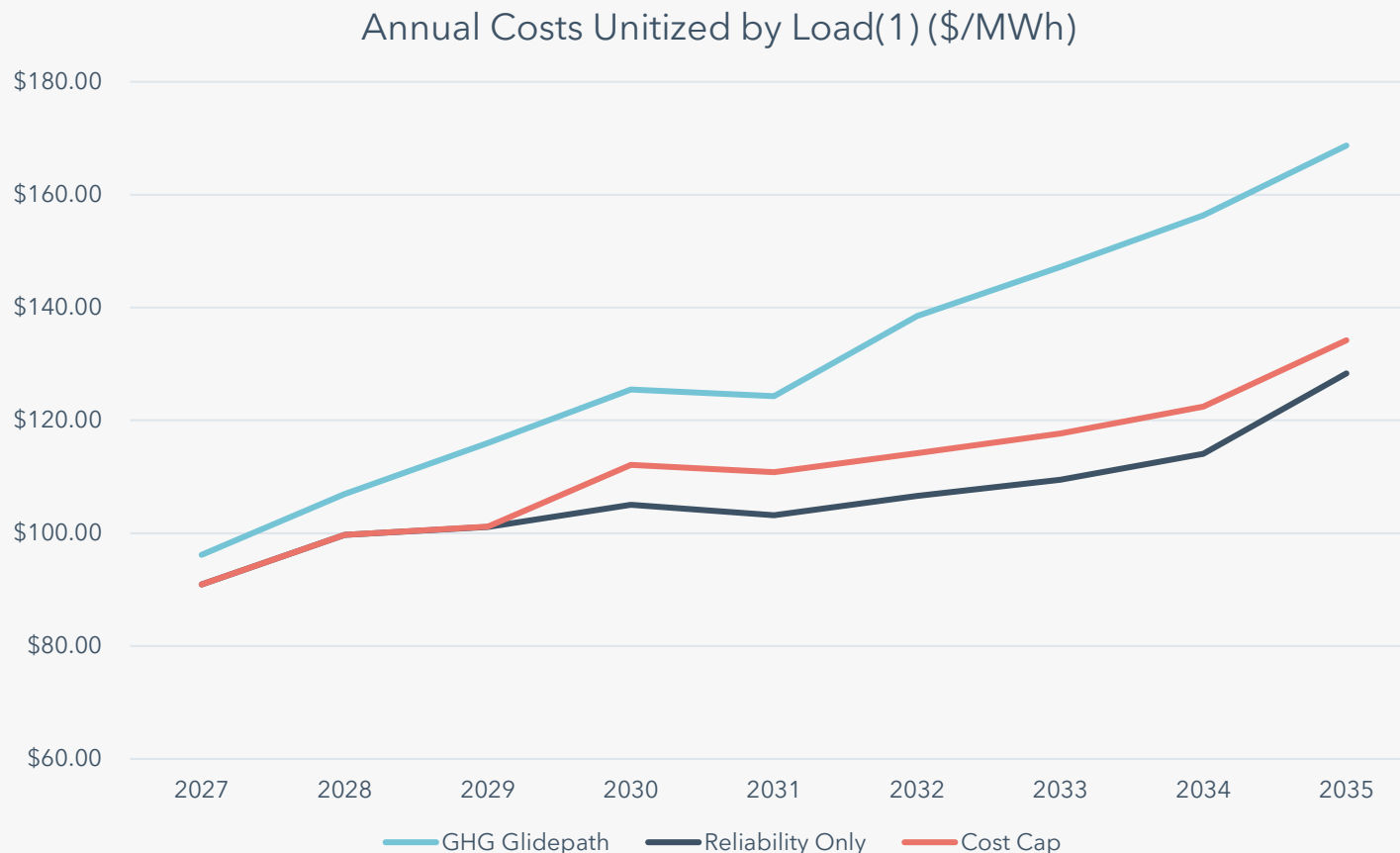
- All reference load scenarios, regardless of policy assumptions, are adding tx to meet growing needs over time
- **NPC** selected in 2032 across all portfolios for 270 MW
- **WSPP Circuit 1** selected in most scenarios by 2032, with all scenarios adding it by 2036
- **WSPP Circuit 2** added in all scenarios by 2039
- **Trojan Harborton (TH)** selected often in mid-2030s across scenarios. Assumes Trojan scheduling point

Note: Analysis does not include specific project cost estimates - all transmission cost relies on generic cost estimates

Scenario Comparison - Annual Costs

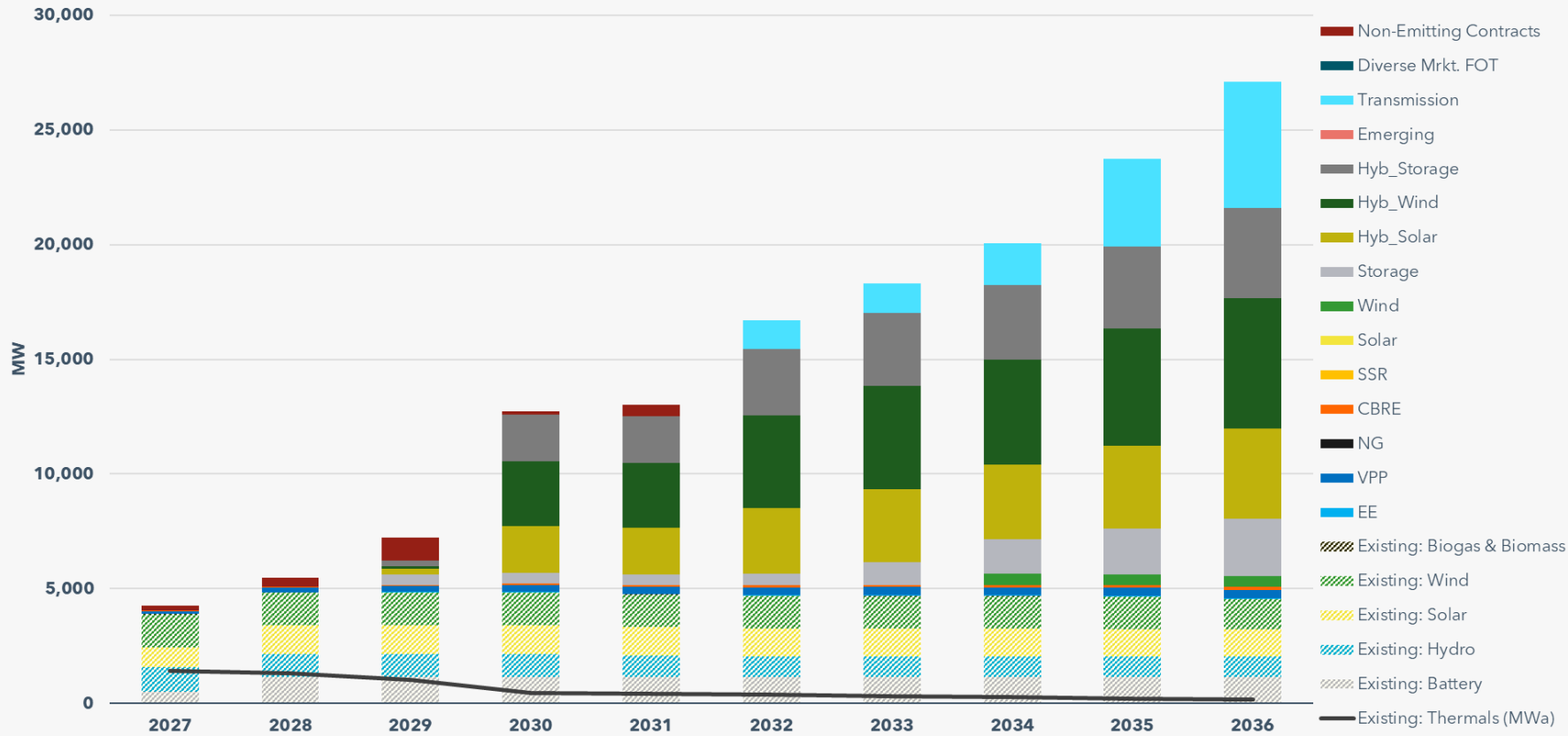


Draft analysis is suggestive that system costs⁽¹⁾ are likely to increase significantly in order to comply with HB 2021



(1) Above includes costs evaluated in IRP, namely generation and transmission. These values are not inclusive of all system costs such as distribution, labor, PGE transmission, wildfire, O&M, and other costs included in total revenue requirement that are outside of the scope of IRP analysis. Thus, this cost projection is indicative of the cost structure changes PGE is facing but is not a comprehensive assessment of customer costs nor rate projection.

GHG Glidepath Portfolio through 2036: Existing and Incremental



2030 Resource Additions

- 6,905 MW hybrid resources
 - 2,805 MW hybrid Wind
 - 2,050 MW hybrid Solar
 - 2,050 MW hybrid BESS

450 MW standalone BESS

309 MW VPP

66 MW CBRE

23 MWa EE

157 MW Non-emitting contract

7,910 TOTAL

Key takeaways

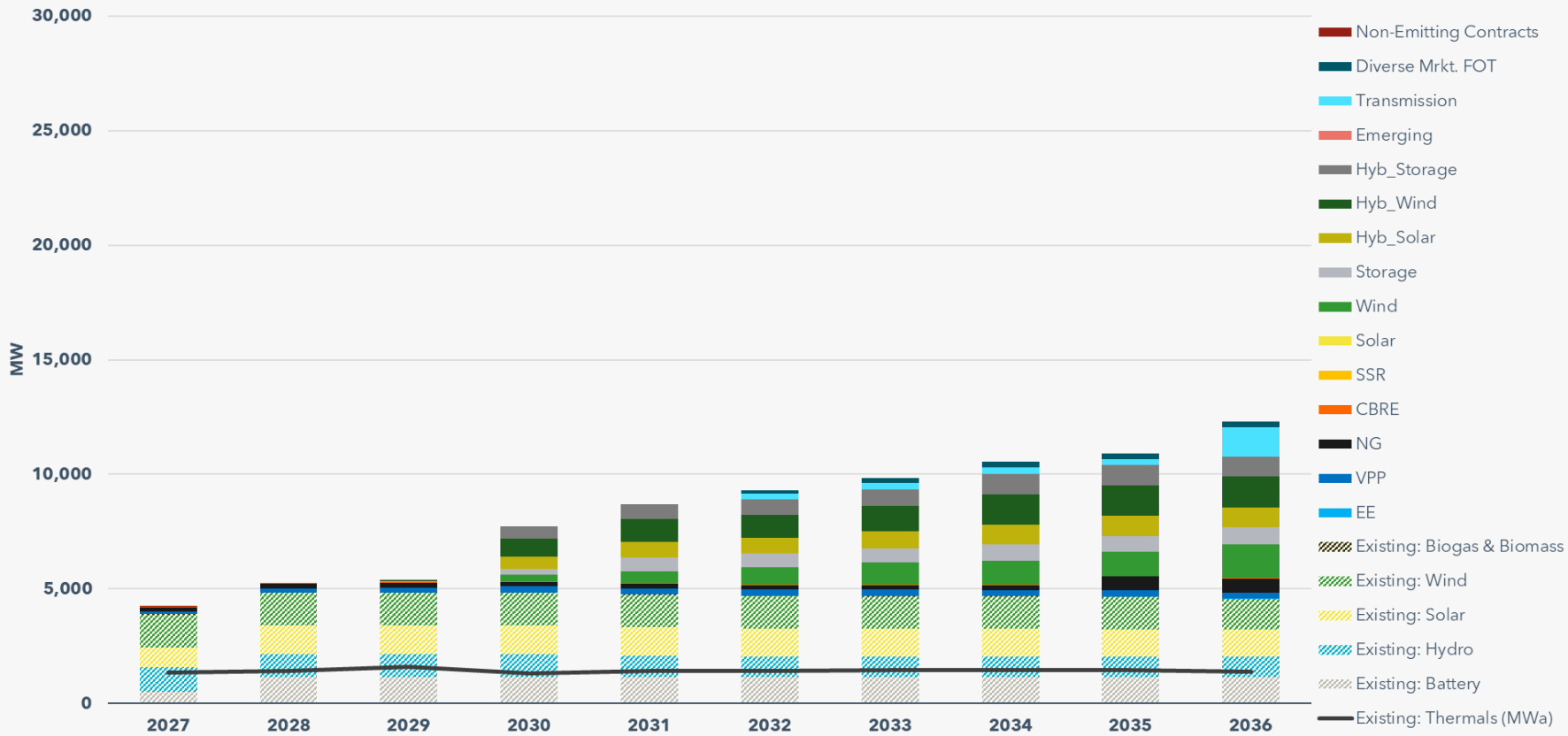
2030 resource needs have increased compared to the 2023 IRP Update

High reliance on transmission with 5,515 of the 7,135 MW available added through 2036

¹ Of 2030 resources additions, 712 MW hybrid wind, 475 MW hybrid solar, and 475 MW hybrid storage use non-firm transmission and provide less capacity and energy than firm resources.

² WSPP1, WSPP2, Cascade, NPC, Trojan-Harbor, and Blueprint are added through 2036.

Reliability Only Portfolio Buildout



2030 Resource Additions

- 1,868 MW hybrid resources
 - 800 MW hybrid Wind
 - 534 MW hybrid Solar
 - 534 MW hybrid BESS

- 230 MW standalone BESS
- 298 MW standalone Wind
- 259 MW VPP
- 27 MW CBRE
- 12 MWa EE
- 200 MW Natural Gas Contract

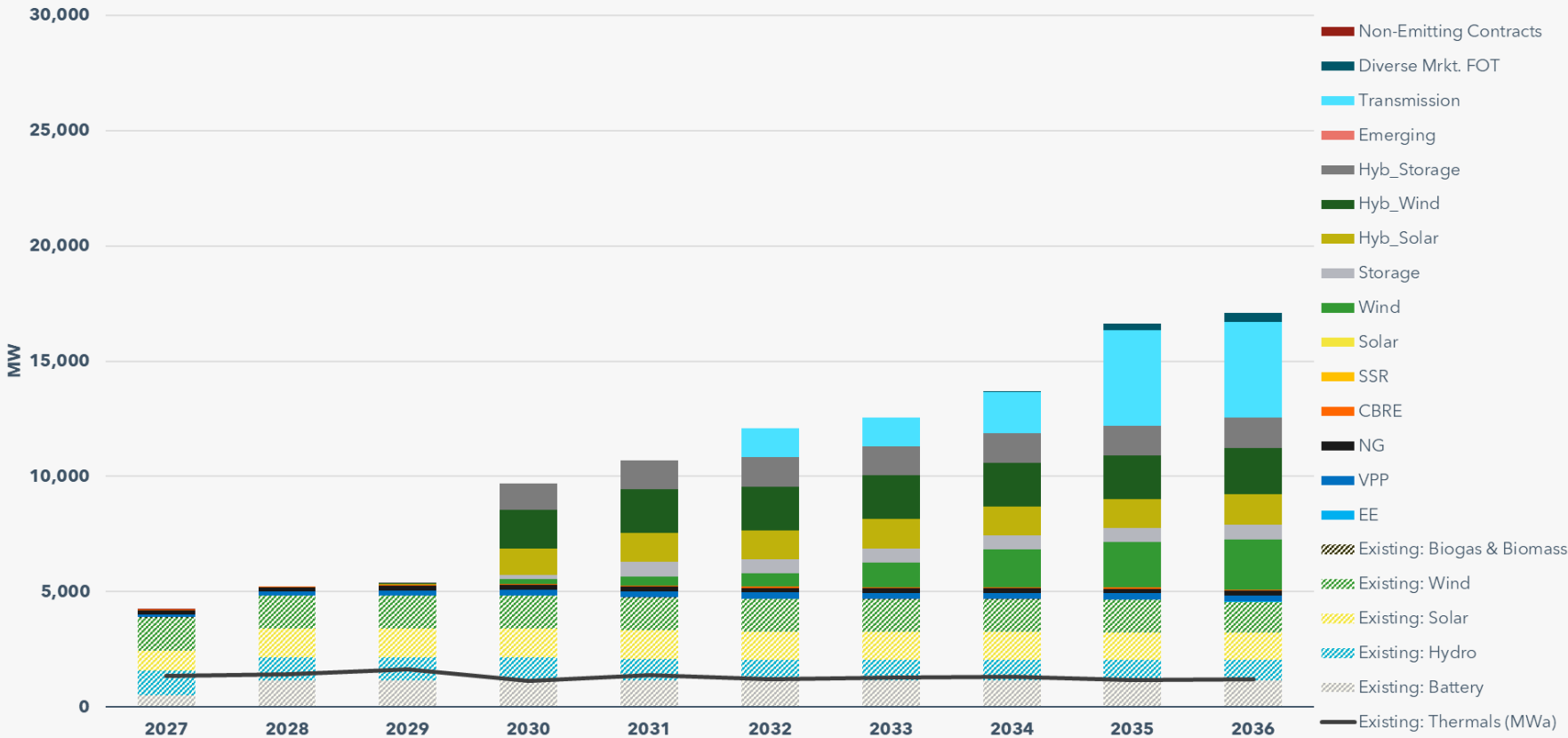
2,893 TOTAL

Key takeaways

2030 resource needs have decreased ~35% compared to the 2023 IRP Update (~4.4 GW), largely driven by recent procurement of 1 GW of non-emitting resources. Thermal resources held constant, suggesting resource adequacy is a main driver of resource additions.

¹ WSPP1 and NPC transmission options are added through 2036.

HB 2021 Cost Cap Portfolio Buildout



2030 Resource Additions

- 3,947 MW hybrid resources
 - 1,691 MW hybrid Wind
 - 1,128 MW hybrid Solar
 - 1,128 MW hybrid BESS

- 179 MW standalone BESS
- 205 MW standalone Wind
- 254 MW VPP
- 50 MW CBRE
- 12 MW EE
- 200 MW Natural Gas Contract

4,847 TOTAL

Key takeaways

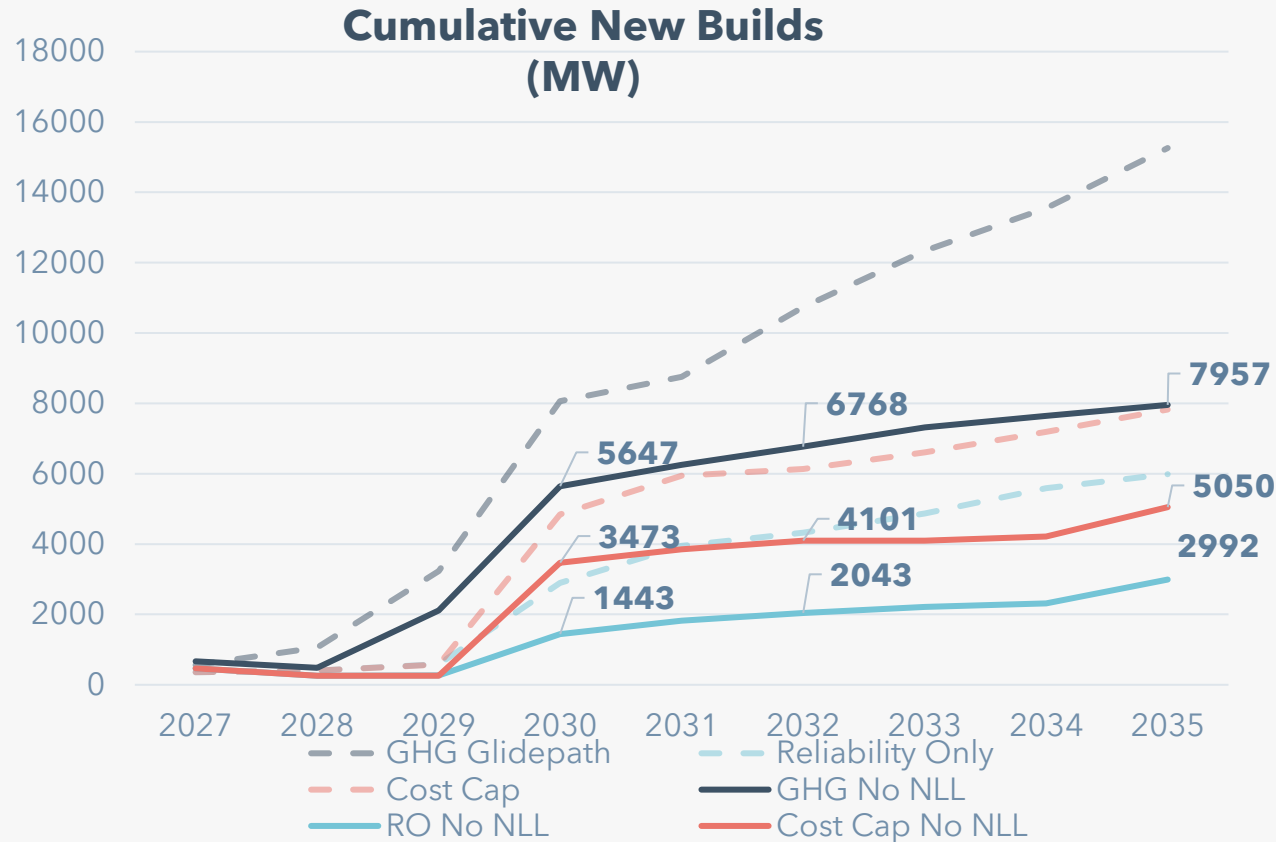
Adds 68% more resources in 2030 compared to reliability only scenario, continued procurement to make progress towards HB21 decarbonization targets.

¹ WSPP1, WSPP2, NPC, Trojan-Harborton, and Colstrip-Ashe transmission options are added through 2036.

Draft New Resource Build Outcomes for No New Large Load Growth



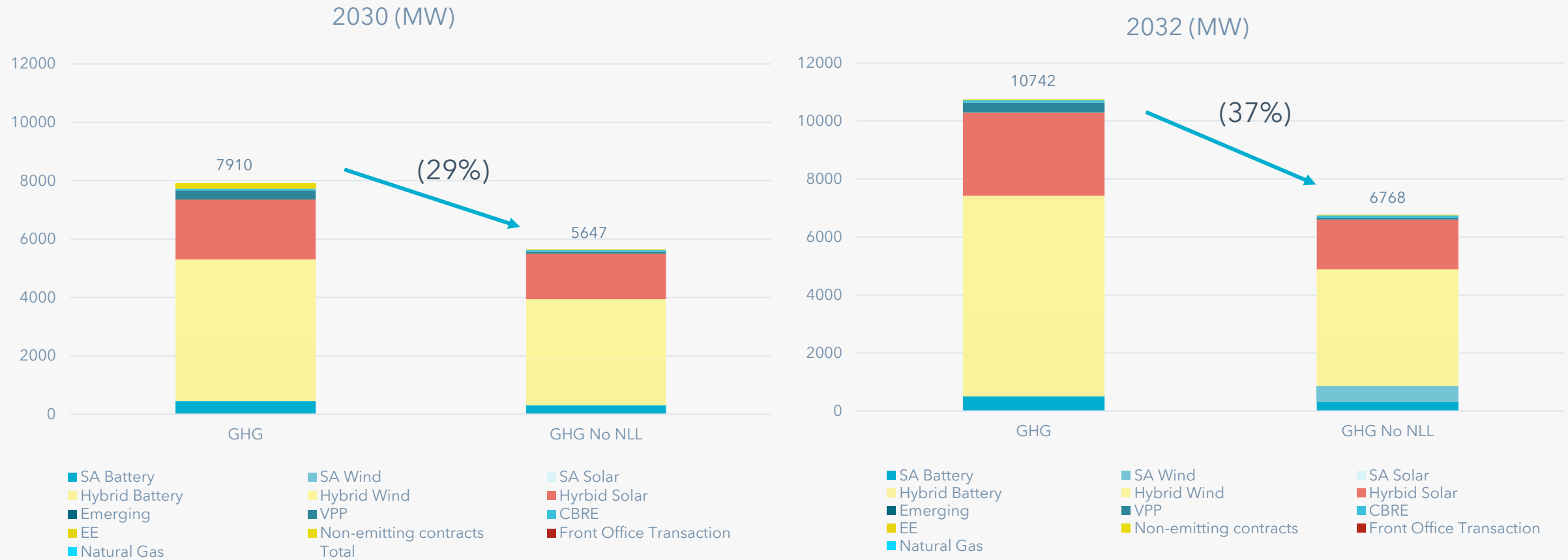
PGE has developed a **“no new large load growth”** forecast. This forecast excludes growth associated with Schedule 96 (data center) customers, consistent with the definition of House Bill 3546.⁽¹⁾ This approach is subject to change based on further review of the final order from UM 2377.



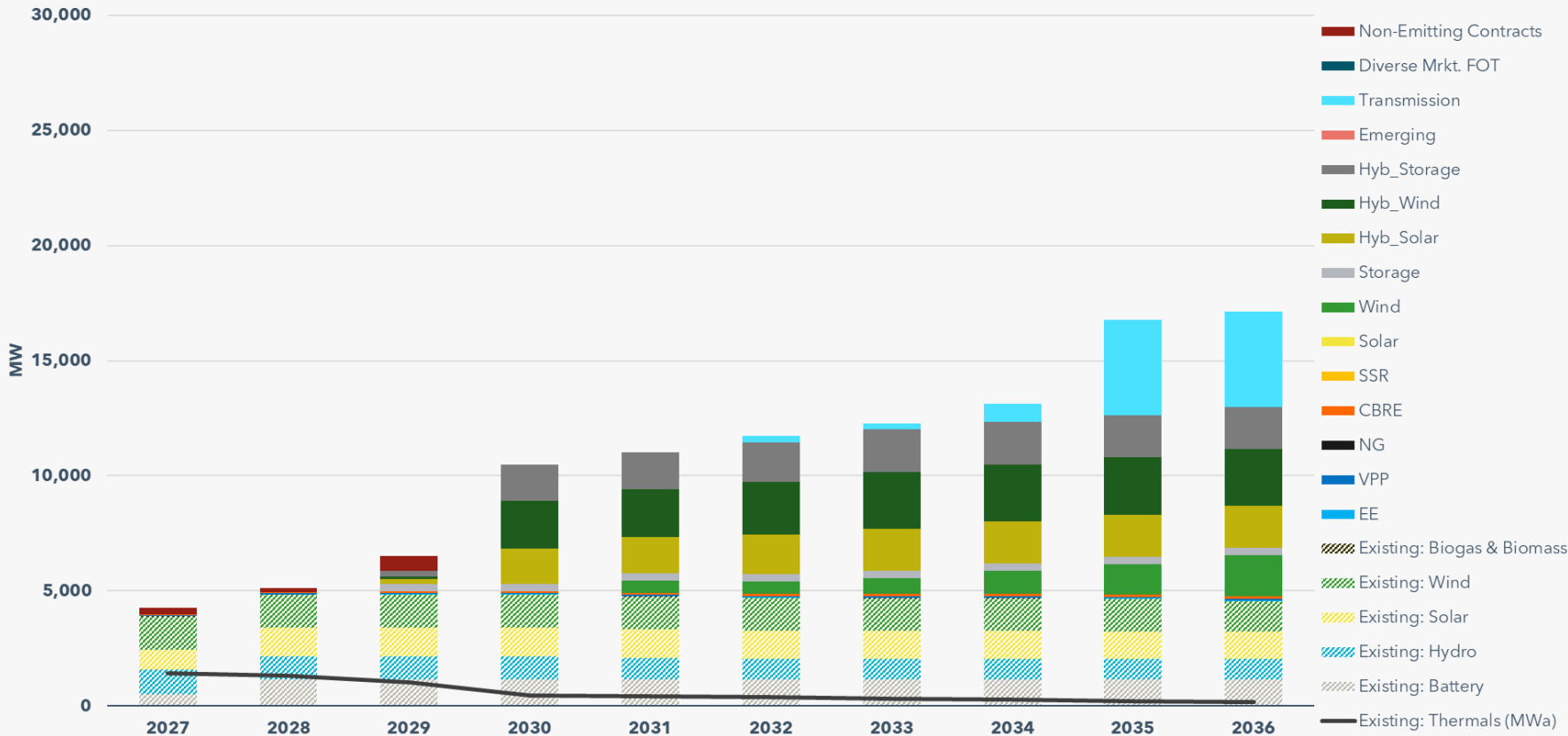
GHG Glidepath



Draft analysis indicates that significant renewable resources are needed, with and without new large load growth, in order to meet reliability needs and meet emission reduction targets. Roughly 30% of 2030 resource needs attributed to new large load growth.



No NLL GHG Glidepath Portfolio Buildout through 2036



2030 Resource Additions

- 2,071 MW hybrid Wind
 - 1,560 MW hybrid Solar
 - 1,560 MW hybrid BESS
- 309 MW standalone BESS
- 59 MW VPP
- 66 MW CBRE
- 21 MWa EE

Portfolio Highlights

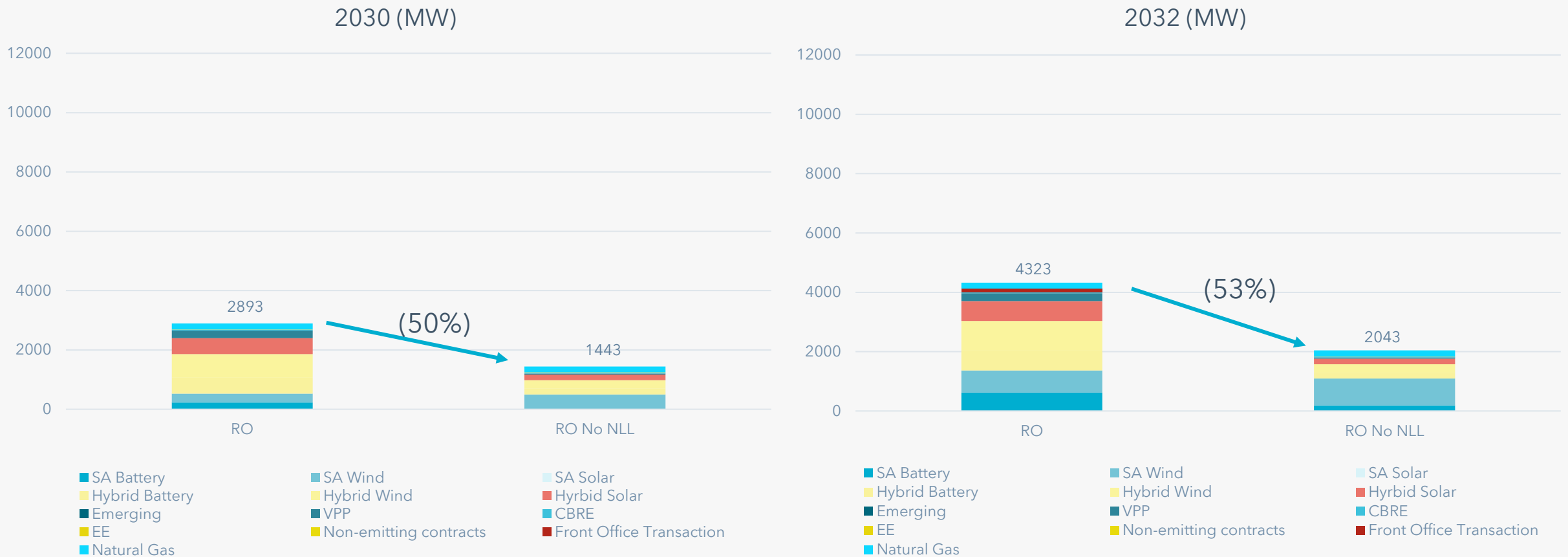
2030 resource additions are 29% lower than GHG Glidepath portfolio with NLL

¹ WSPP1, WSPP2, NPC, Trojan-Harborton, and Colstrip-Ashe transmission options are added through 2036.

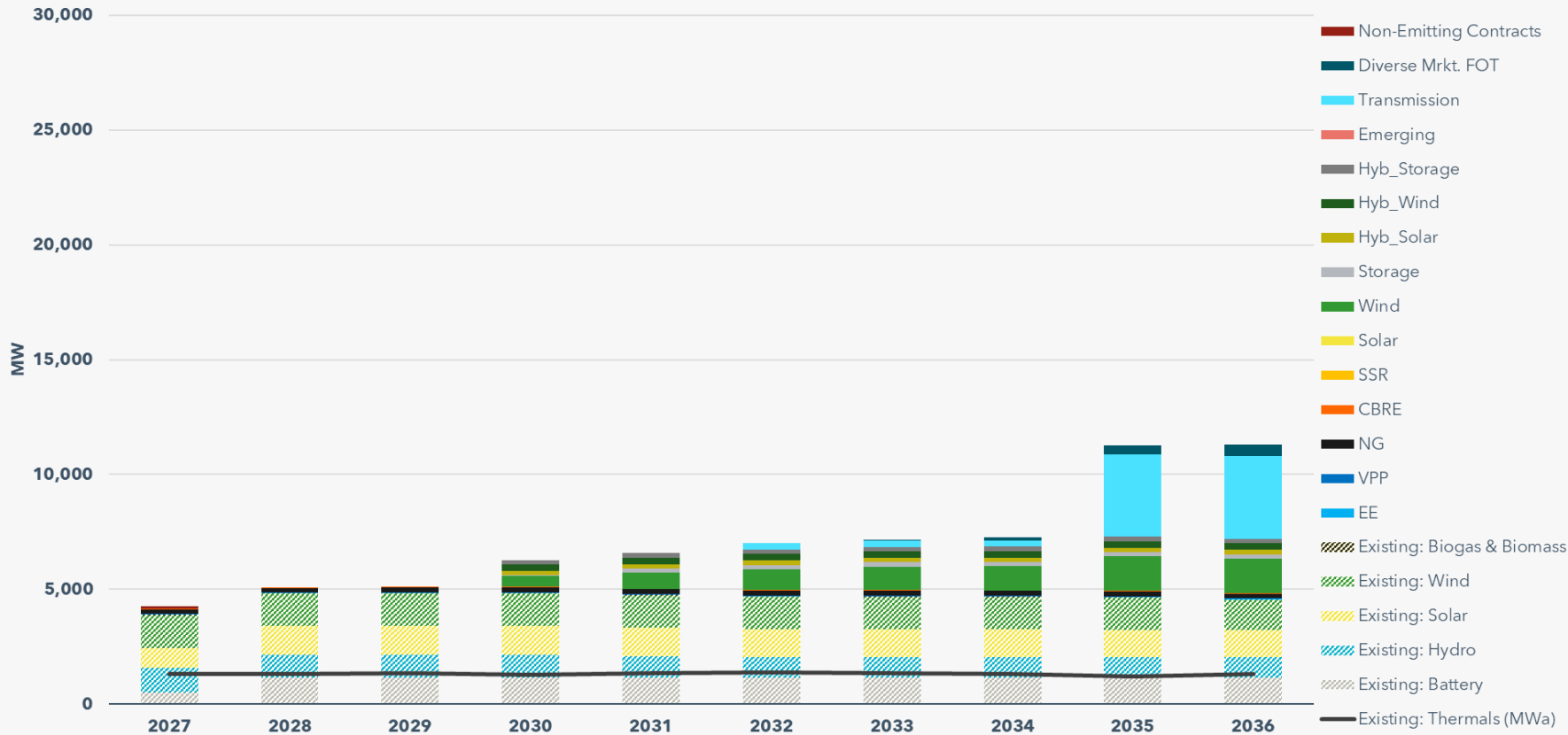
Reliability Only



New large load growth driving ~50% of resource needs in reliability only scenarios.



No NLL Reliability Only Portfolio Buildout through 2036



2030 Resource Additions

- 286 MW hybrid Wind
 - 191 MW hybrid Solar
 - 191 MW hybrid BESS

- 490 MW standalone Wind
- 12 MW standalone BESS
- 35 MW VPP
- 27 MW CBRE
- 11 MWa EE
- 200 MW Natural Gas Contract

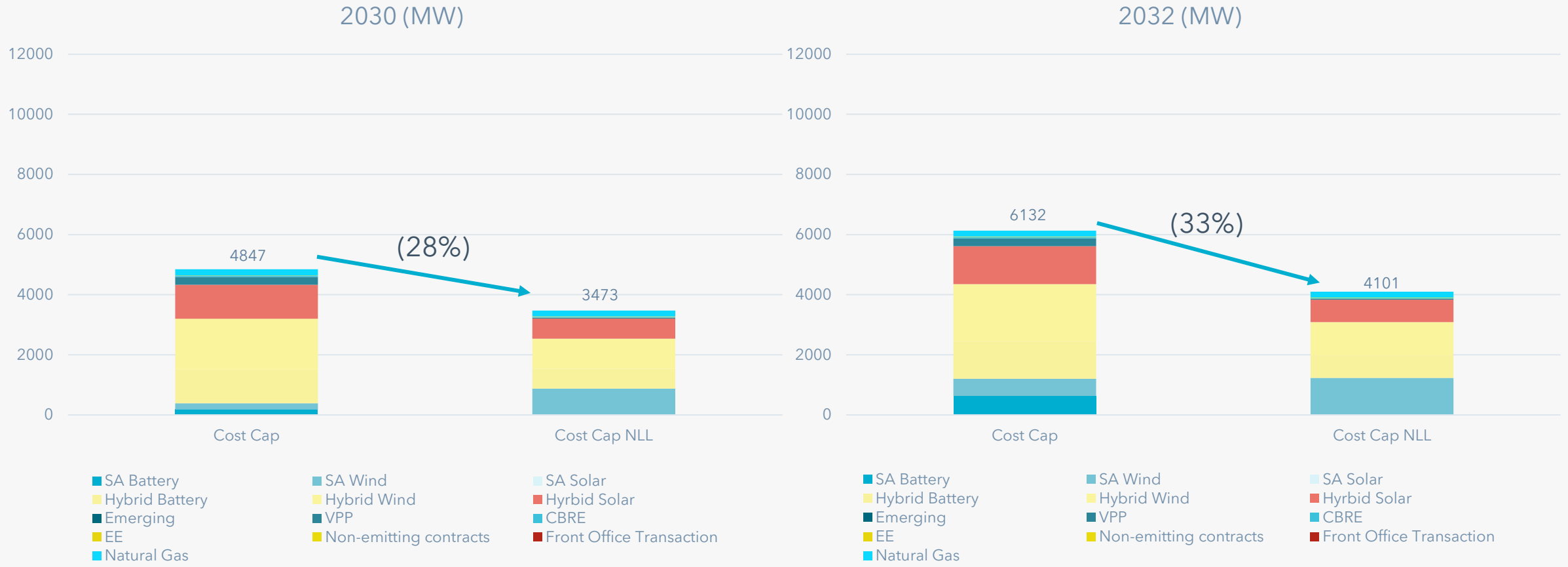
Portfolio Highlights

2030 resource additions are 50% lower than Reliability Only portfolio with NLL

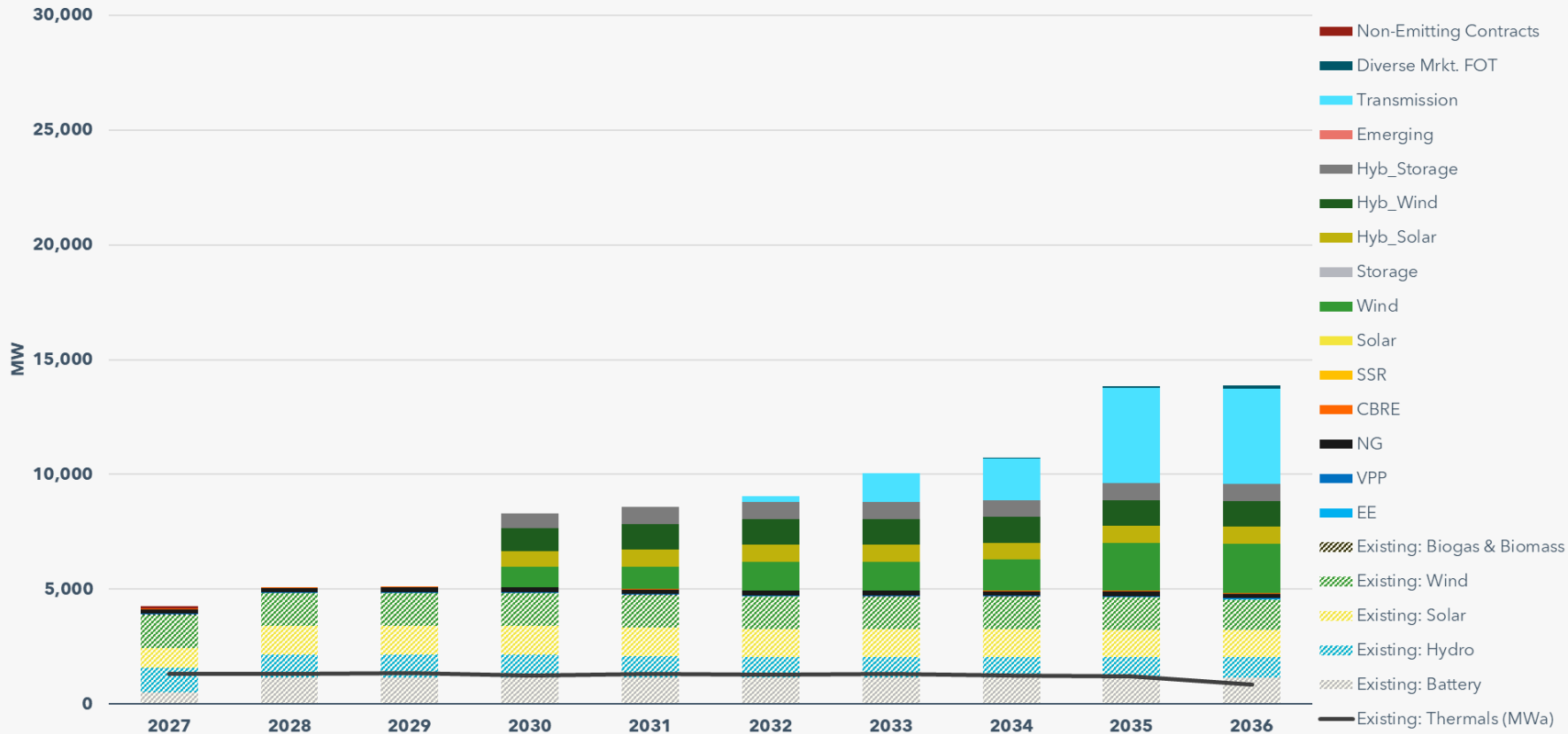
¹ WSPP1, WSPP2, NPC, and Colstrip-Ashe transmission options are added through 2036.

Cost Cap

Draft analysis shows new large load is driving ~30% of resource needs under Cost Cap scenarios.



No NLL HB 2021 Cost Cap Portfolio Buildout through 2036



2030 Resource Additions

- 873 MW standalone Wind
- 1000 MW hybrid Wind
 - 667 MW hybrid Solar
 - 667 MW hybrid BESS
- 27 MW VPP
- 27 MW CBRE
- 12 MWa EE
- 200 MW Natural Gas Contract

Portfolio Highlights

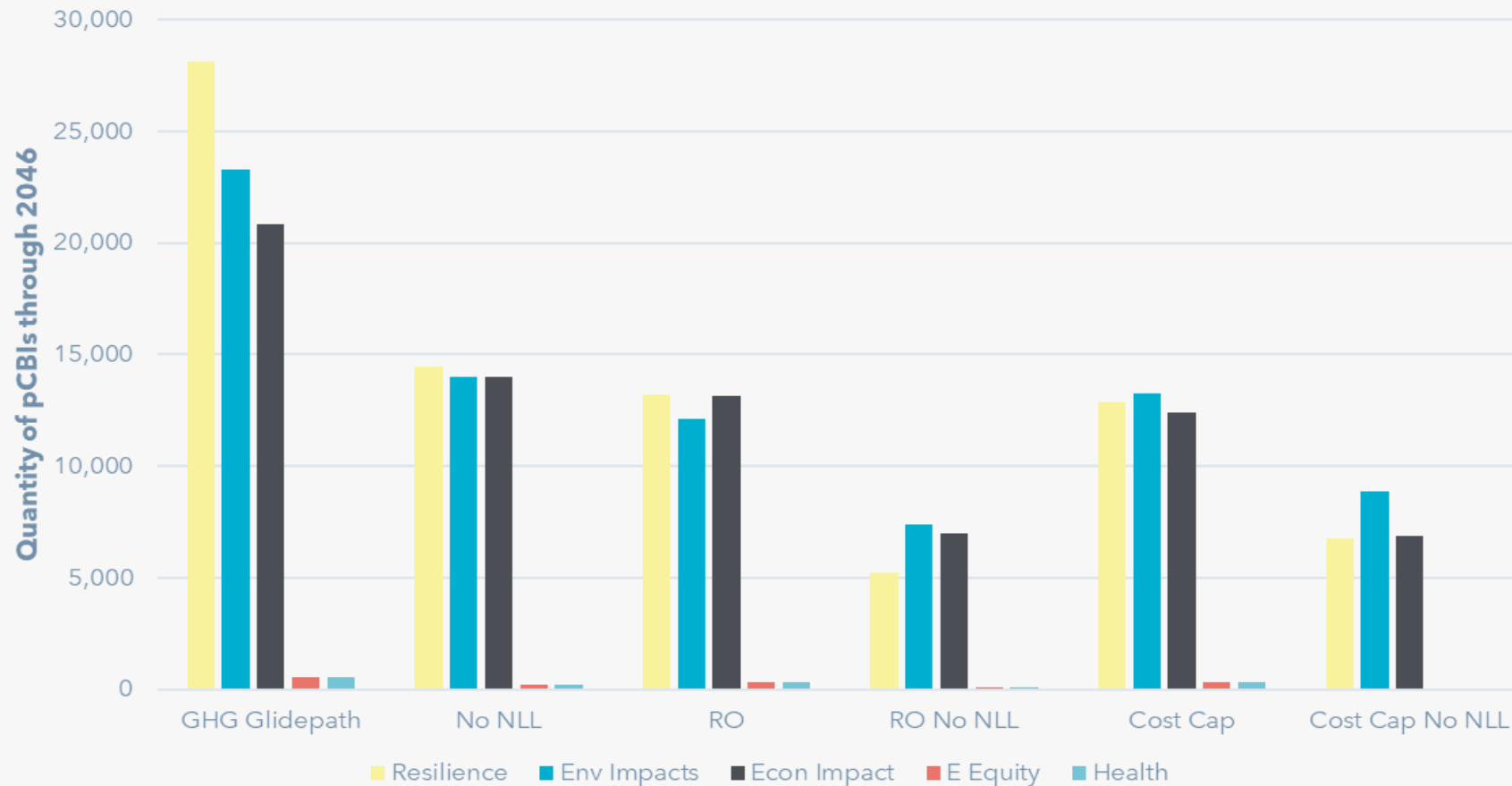
2030 resource additions are 42% lower than Reliability Only portfolio with NLL

¹ WSPP1, WSPP2, NPC, Trojan-Harborton, and Colstrip-Ashe transmission options are added through 2036.

Scenario Comparison: pCBIs

pCBI qualifications for each resource type were described in the [May 2026 roundtable](#).

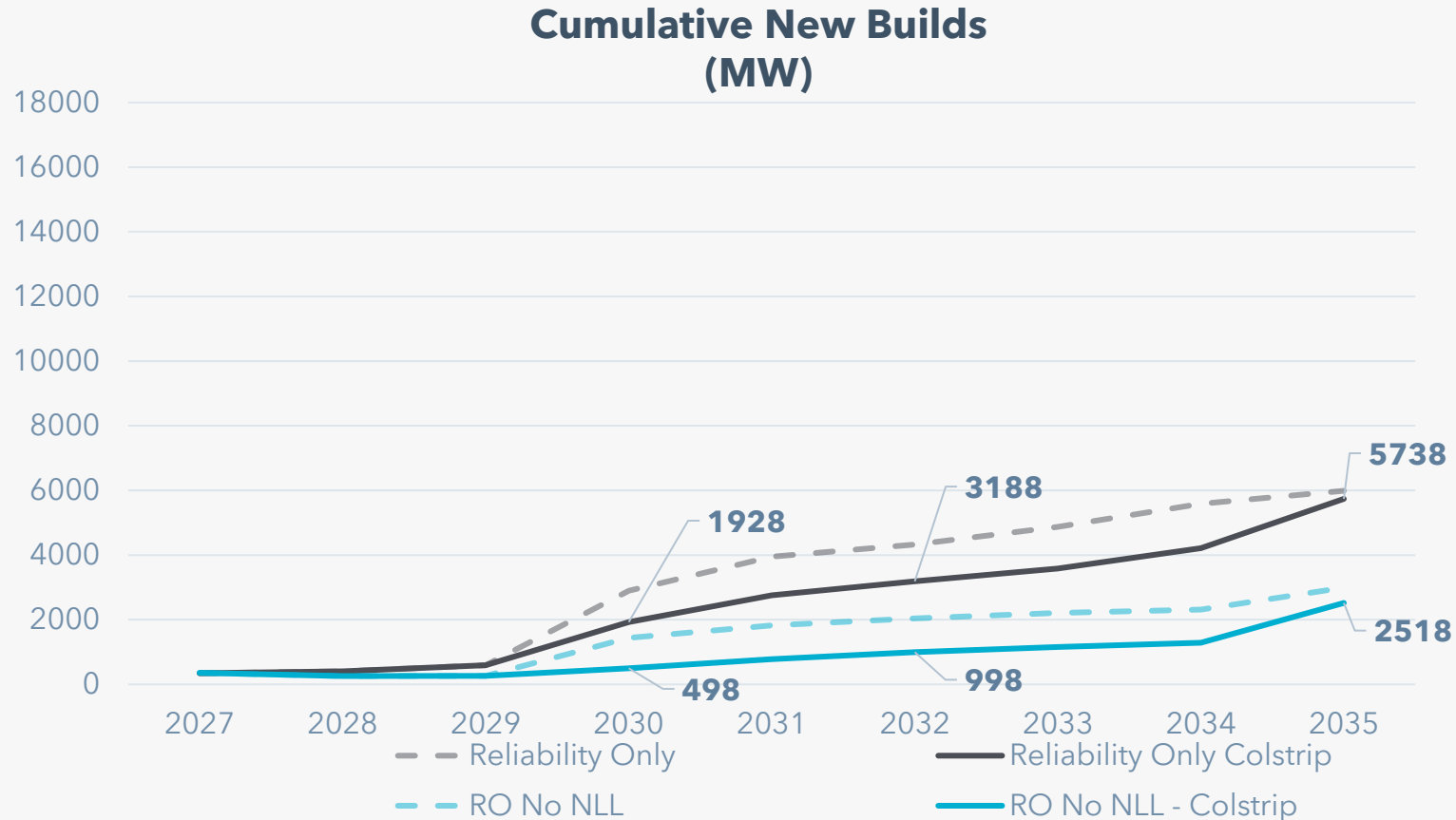
GHG Glidepath scenario, which has the highest resource needs, produces the most pCBIs of all types.



Draft New Resource Build Outcomes for Colstrip Extension Scenarios



Extension of Colstrip through the end of 2034, as contemplated under SB 1547, reduces 2030 resource needs by **33%** under the reference load forecast and **65%** under the no new large load forecast.



Summary and Guided Feedback

Summary: PGE provided draft results of resource needs for multiple scenarios. Draft analysis shows significant resources are needed (7,910 MW) to continue to serve customers reliably and achieve 2030 emissions reduction targets. PGE is also analyzing scenarios under a cost cap and reliability only environment to inform PGE's possible paths forward to serve customers.

Content: Are these results in line with your expectations? What questions do you have as it relates to these draft results?

BREAK



Corporate Load Forecast Update

Amber Riter



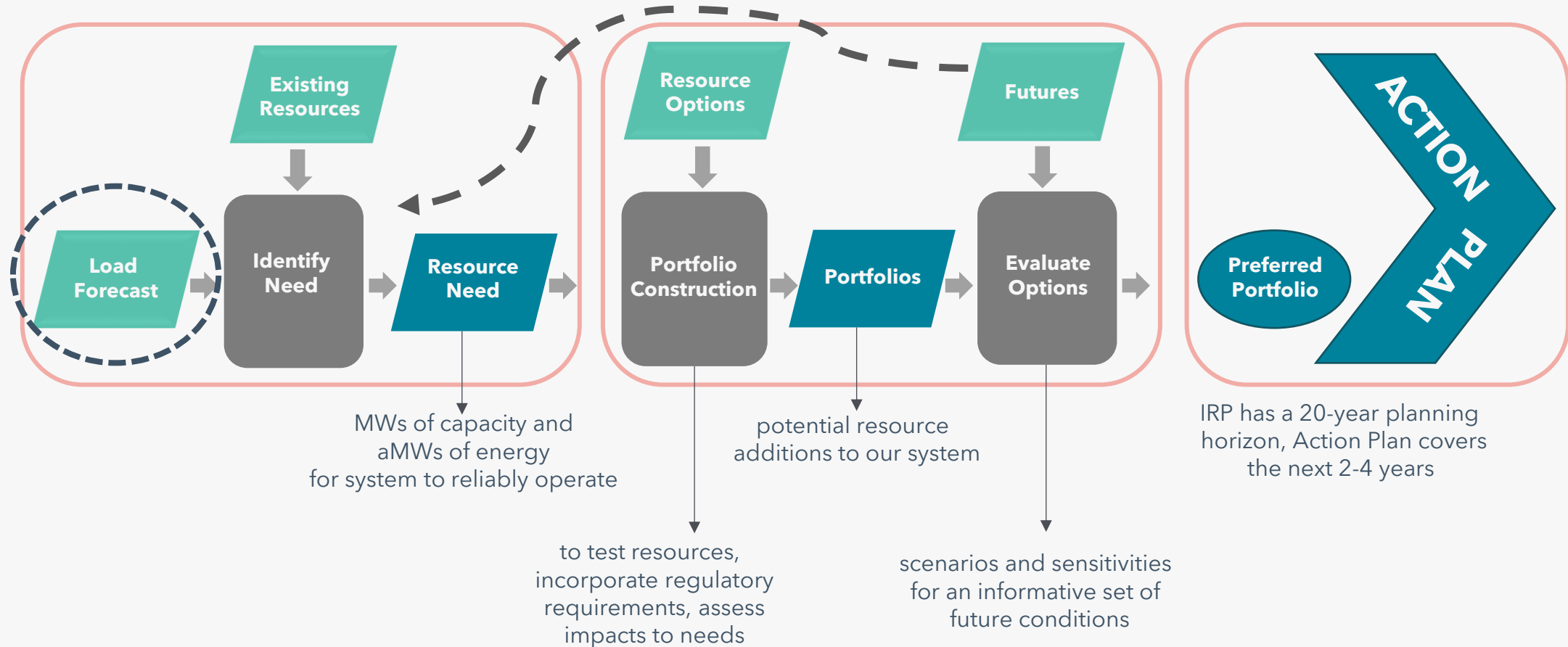
High-Level IRP Analysis Process



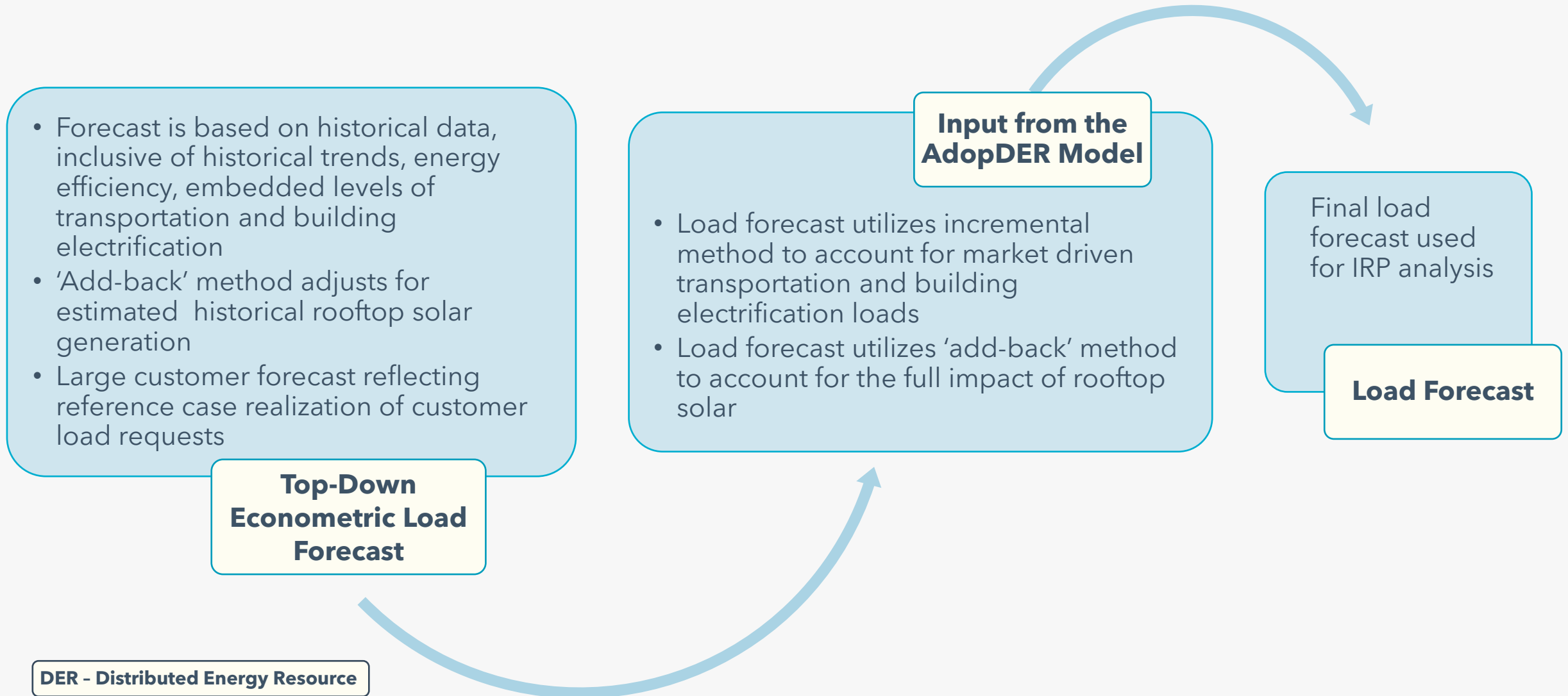
Estimate System Needs

Evaluate Resource Options

Develop Plan



PGE's Load Forecasting Model

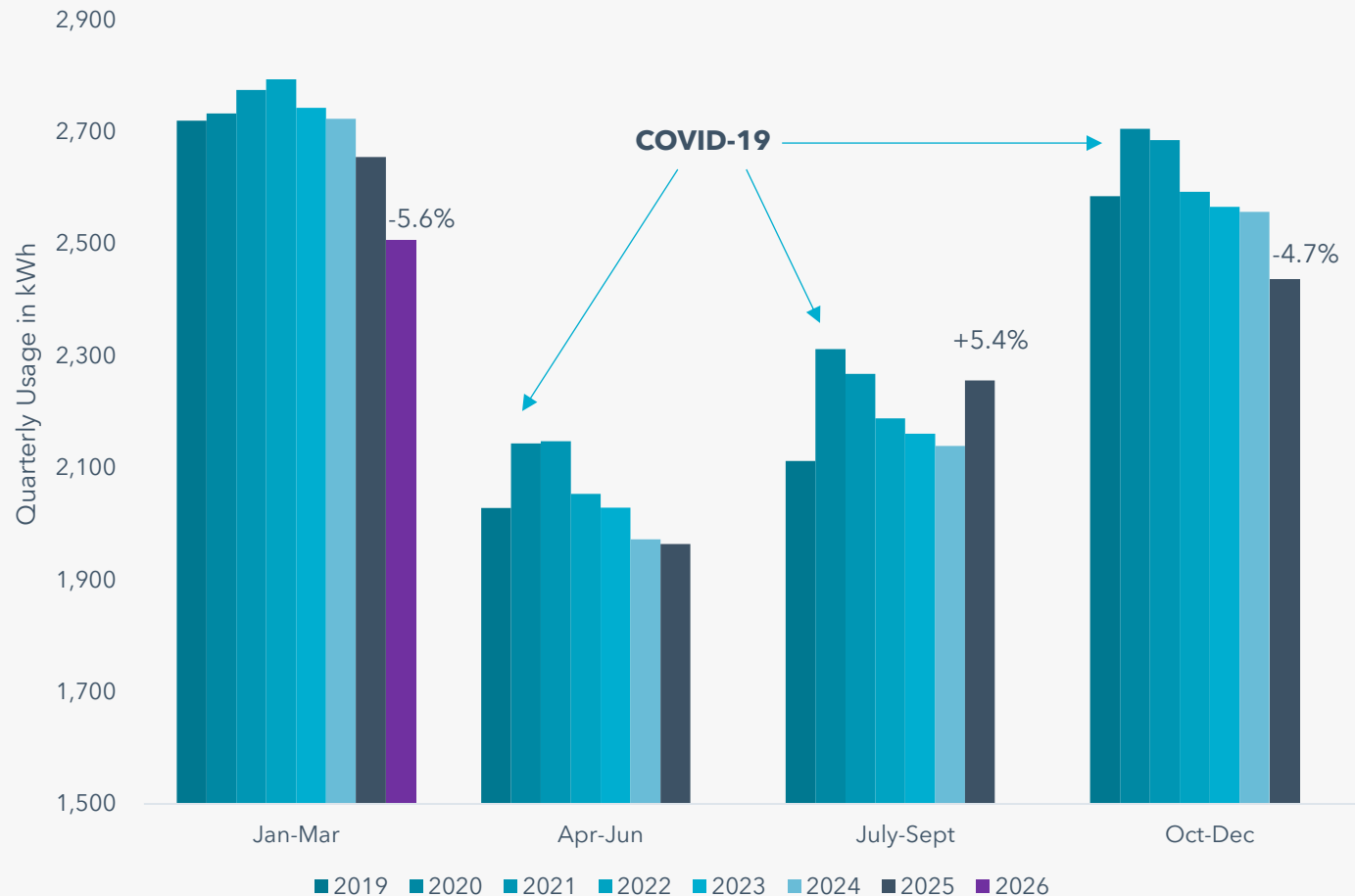


DER - Distributed Energy Resource

Recent Trends and Model Updates

Residential

Weather Adjusted Average Usage Per Customer

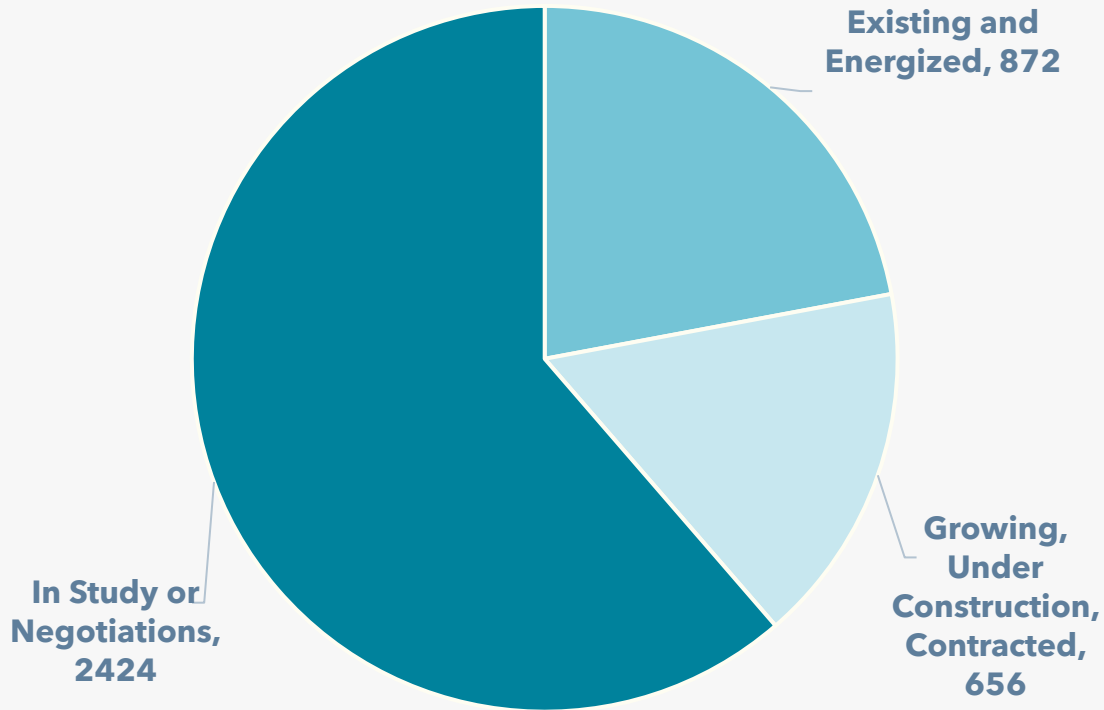


How do we capture these changes in the model?

Shortened estimation period	Incorporated trend in the single-family model to capture AC adoption	Incorporated step in multifamily model to capture decreased heating response
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Large Load Update*

Robust Capacity Request Pipeline Informs the Load Forecast



Existing and Energized

872 MW of capacity from existing customers to date



Growing, Under Construction, Contracted

656 MW of capacity growing and under construction with energization and ramping occurring throughout 2026 to 2034



In Study or Negotiations

2,424 MW under study or in negotiation for a contract, energizations range from 2027 to 2035

May 2026 Energy Deliveries Forecast



Long term growth rates and comparison to September 2025

The **residential and commercial** sectors show only modest growth on the five-year horizon.

Decrease compared to the September 2025 forecast is driven by low case for building electrification

The **industrial** sector is expected to continue to **grow rapidly**, driven primarily by data centers

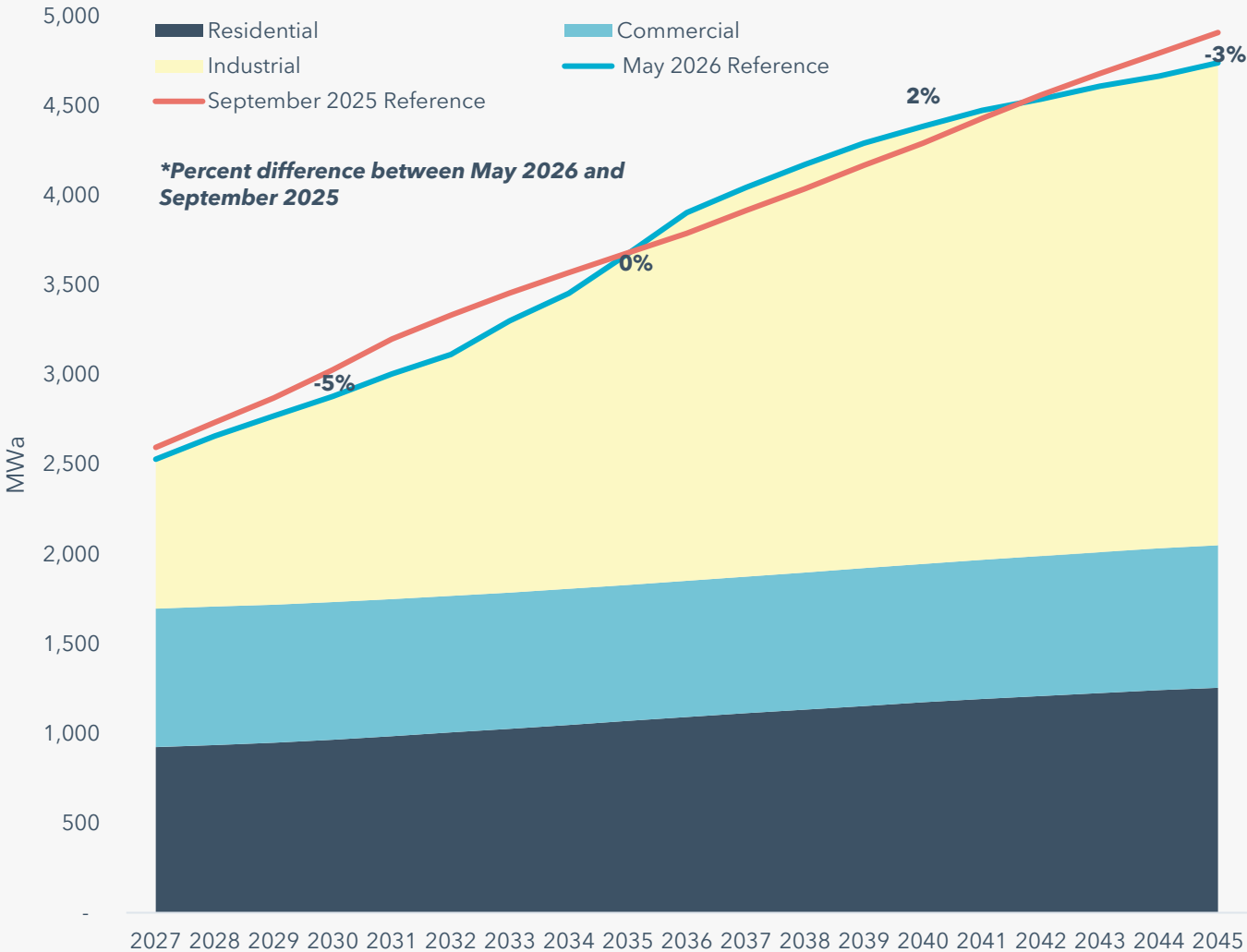
Significant uncertainty remains in the long-term realization of new load requests
 May 2026 forecast shows slightly slower growth in the next 5 years compared to September 2025

The industrial segment **quickly outsizes** residential and commercial segments



May 2026 Energy Deliveries Forecast

Comparison to September 2025 Forecast



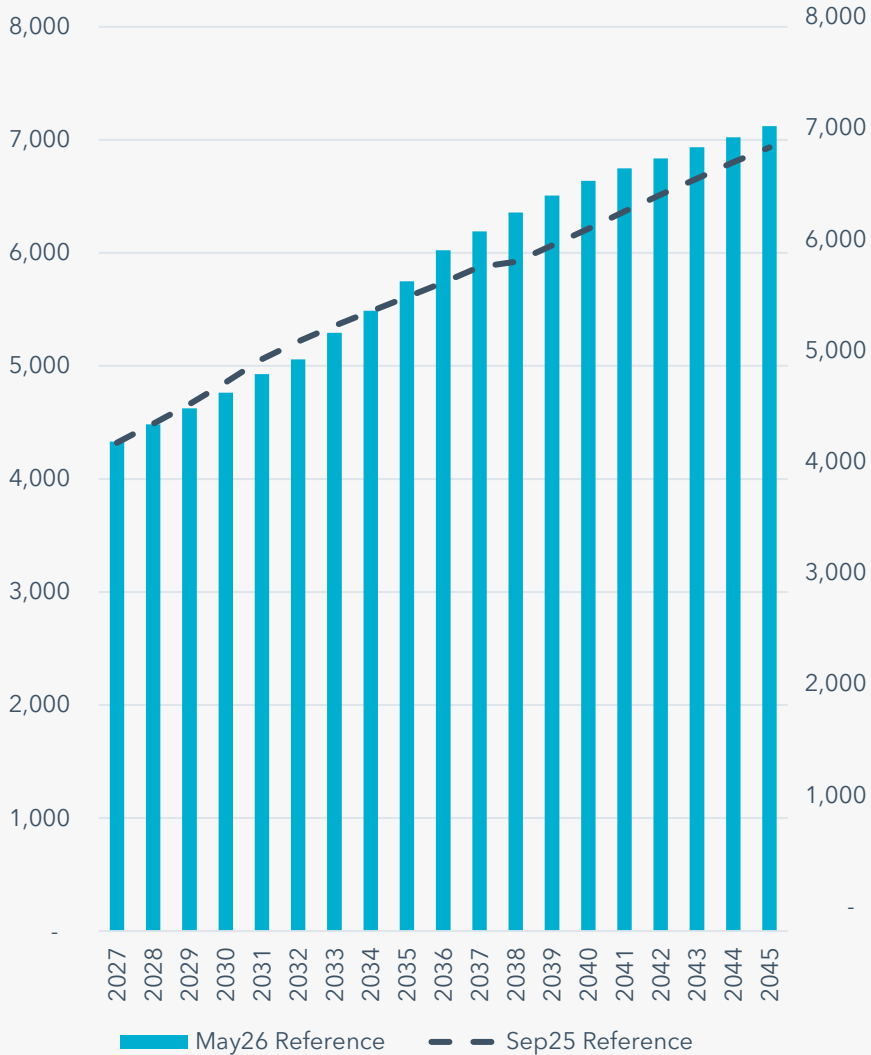
20 Year Average Annual Growth Rates		
	September 2025 Reference	May 2026 Reference
Total Energy	3.8%	3.6%
Residential	2.2%	1.7%
Commercial	0.3%	0.2%
Industrial	7.2%	6.8%

May 2026 to September 2025 Forecast Comparison

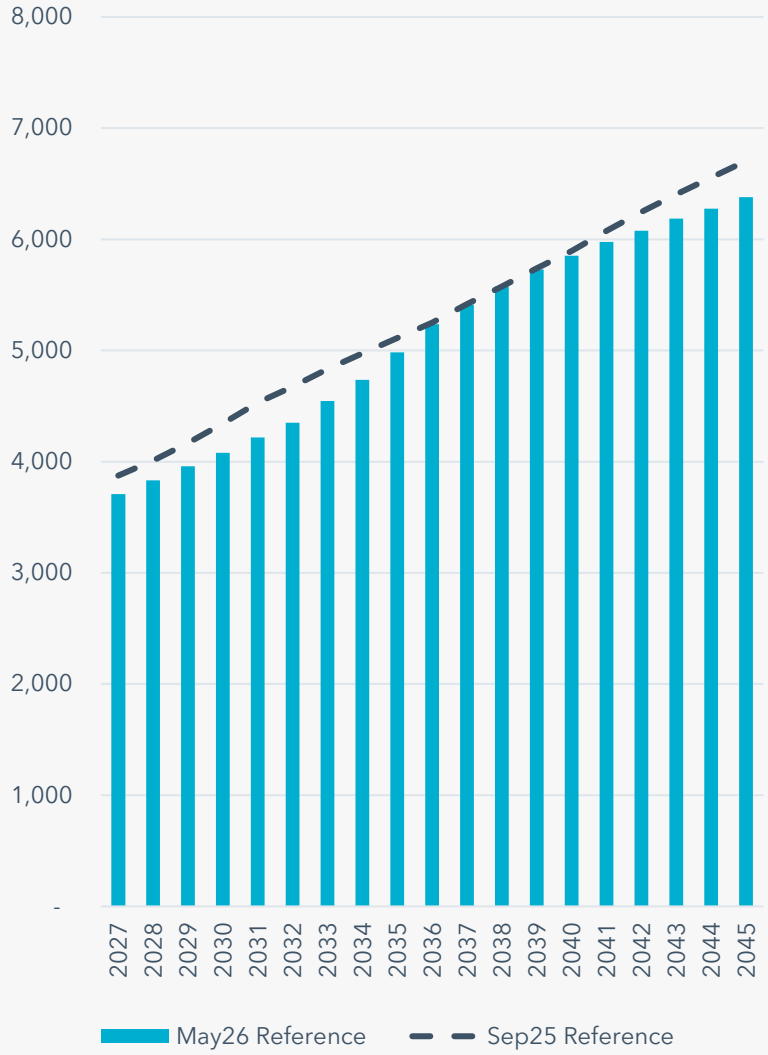
Seasonal Peak Demand and Average Energy



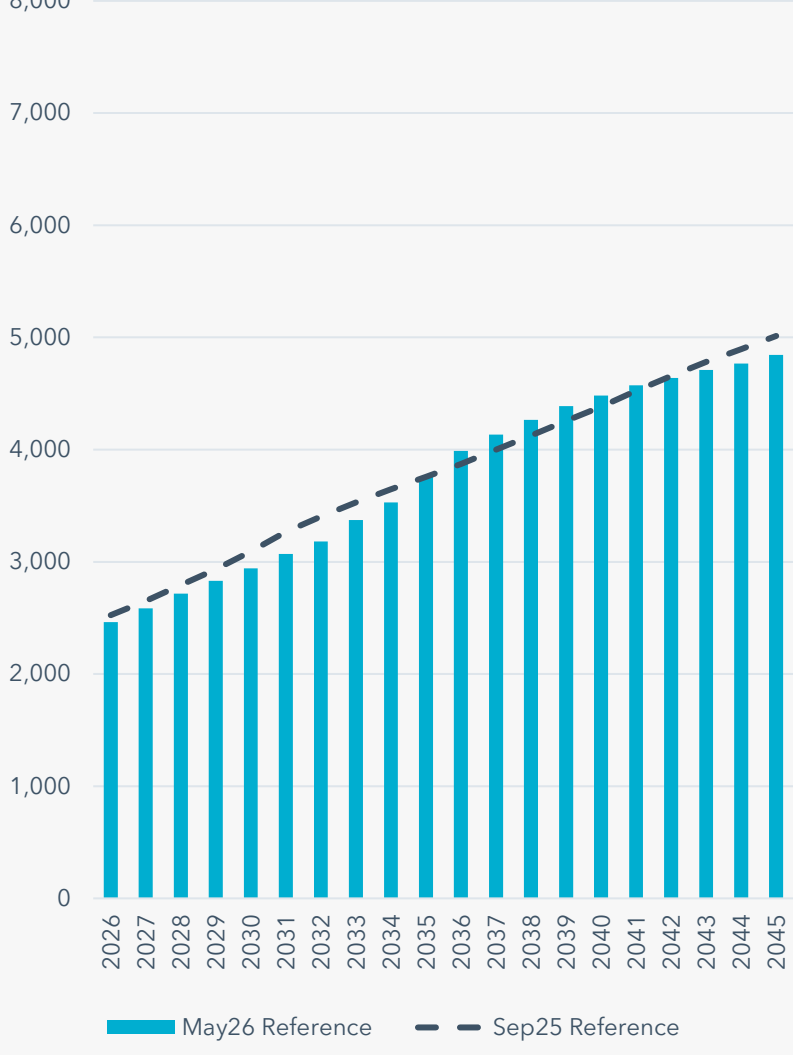
Summer Peak (MW)



Winter Peak (MW)



Average Energy (MWh)



Scenario Inputs May 2026

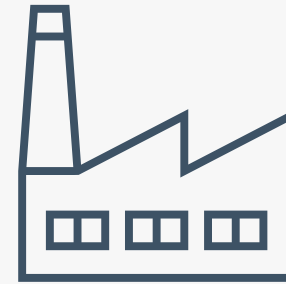
Key Inputs



Customer Growth



Economic Conditions



Data Center & Semi Expansion



DER Adoption

Reference Case

March 2026 forecast from Oregon's Office of Economic Analysis. 10-year avg customer count growth 1.0%

March 2026 forecast of Oregon Employment from Oregon's Office of Economic Analysis. 10-year AAGR of 0.6%

Existing data center segment of approx. 400 MW doubles by 2030 and is 2 GW by 2037. Modest growth in semiconductor

Reference case includes rooftop solar capacity of 351 MW and 206,000 EV's by 2035 and low case BE. Contributes 0.5% to 20-year CAGR (base=2027)

High Case

Policy steps are successful at encouraging increased building. Growth in customer count is 0.7% higher.

Optimistic case, employment in Oregon posts modest gains in the near term 10-year AAGR of 0.9%

Resurgence of semiconductor segment: Data center to 2.0 GW by 2035 and growth cycle continues into the 2040s. Semiconductor grows at a moderate pace, adding 100 MW by 2030.

High case includes rooftop solar capacity of 284 MW and 304,000 EV's by 2035 and reference case BE. Contributes 0.7% to 20-Year CAGR

Low Case

Economic conditions weigh on housing. Growth in customer count is 0.7% lower.

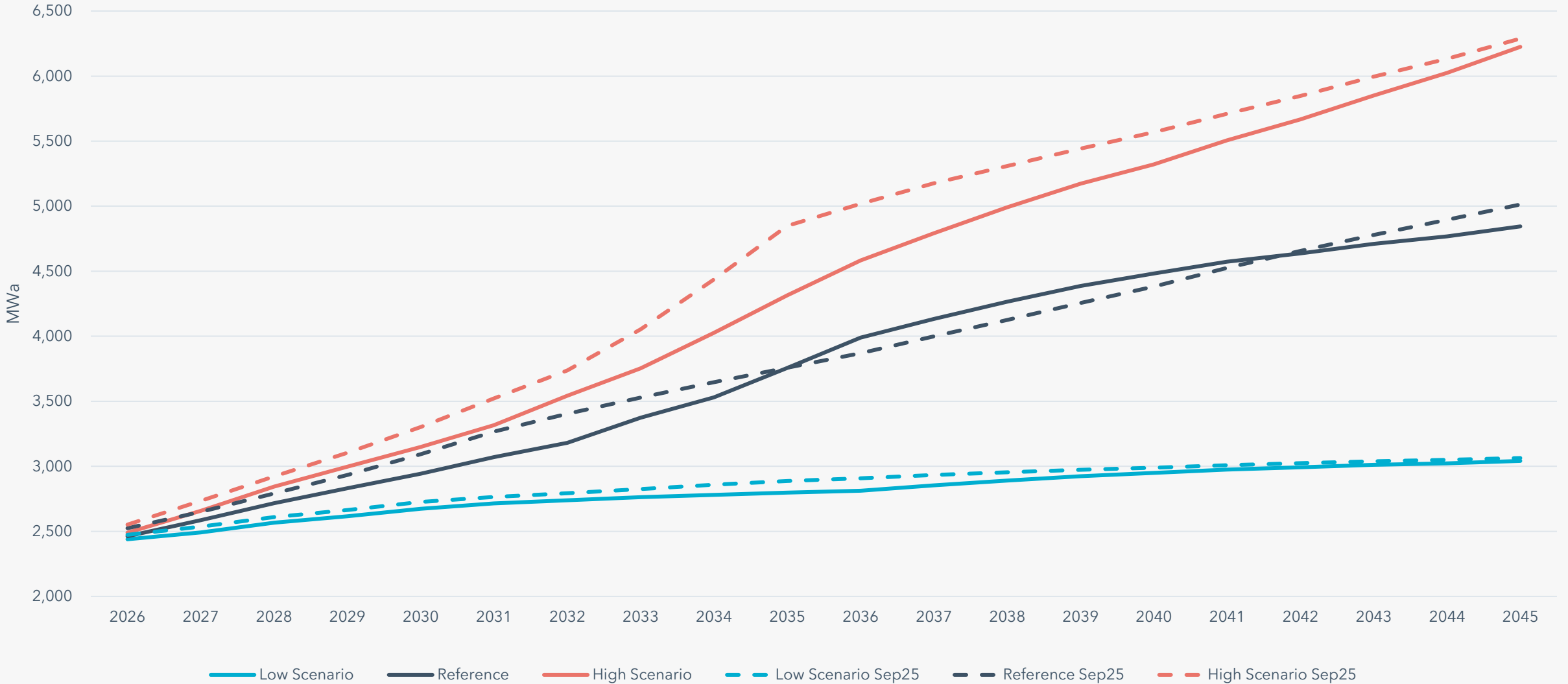
Near term recession case, employment growth continues to fall in Oregon before a slow recovery. 10-year AAGR of -0.4%

Constrained growth: Data center of 600 MW in 2030 and 800 MW by 2041. Modest growth in semiconductor

Low case includes rooftop solar capacity of 408 MW and 180,000 EV's by 2035 and low case BE. Contributes 0.6% to 20-Year CAGR

May 2026 to September 2025 Forecast Comparison

Average Energy Reference High and Low Scenarios



Summary / Highlights / Next Steps

Load forecast shows decrease total energy outlook, driven by updates to large customer and building electrification

This forecast will inform the 2026 IRP resource need and portfolio/scenario analysis

Details regarding updated analysis to be discussed at a future roundtable.

Summary and Guided Feedback

Summary: Refer to previous slide.

Content: Do you understand the drivers of the changes in the Corporate Load Forecast from the September 2025 vintage to the May 2026 vintage?

A photograph of an electric vehicle charging station with several cars plugged in, set against a dark blue background.

NEXT STEPS

A recording from today's webinar will be available on our [website](#) in one week

Upcoming Roundtable: July 22, 2026

Thank you

Contact us at
IRP.CEP@PGN.COM

An

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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

MW_a: 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