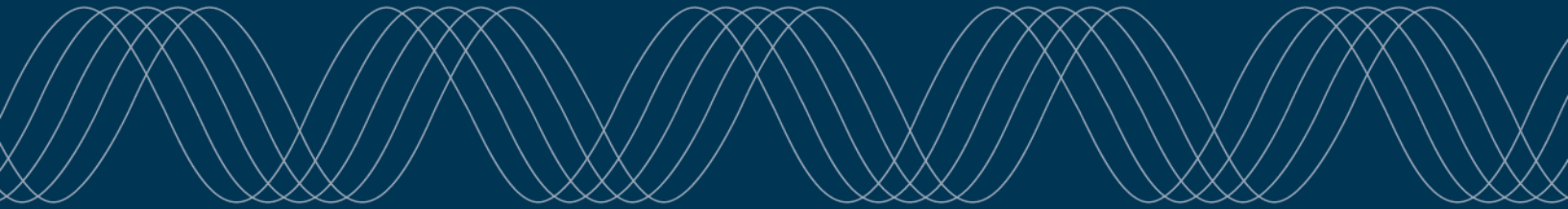


Appendix Q

Resource Needs



2021 All-Source RFP



Intro

In this appendix, PGE provides additional information regarding its forecasted resource needs. This appendix includes the same information as was shared in PGE’s September 13, 2022 Reply Comment in OPUC docket UM 2166. In addition, this appendix provides additional information as was requested in Commission Order 21-320.

PGE Needs Assessment Update

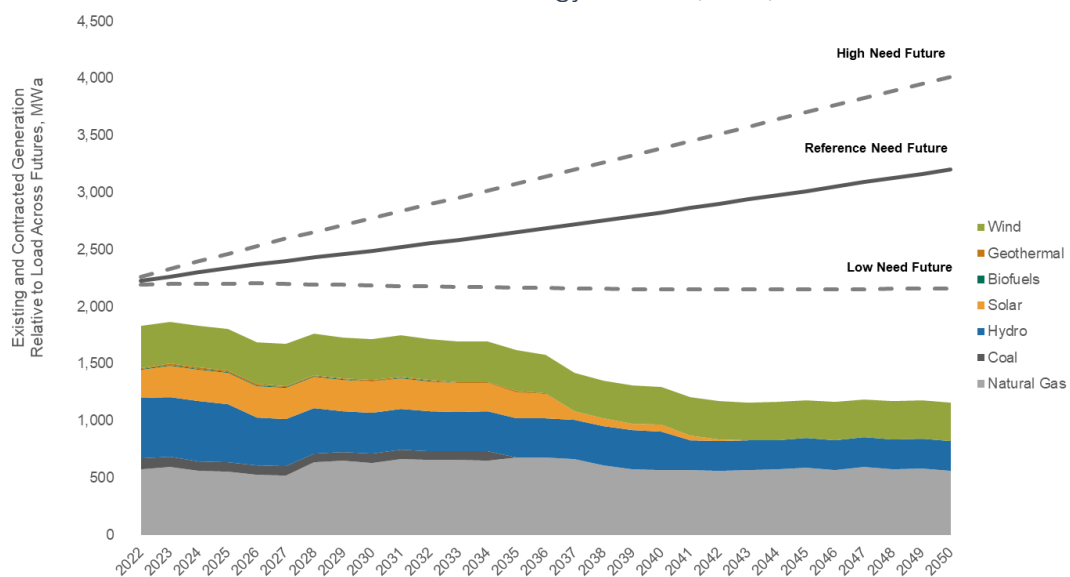
In accordance with Order No. 20-152, PGE provided updated needs assessments within the 2019 IRP Update. That update included the latest available econometric load forecast at that time, sensitivities for recent Green Future Impact procurements, market capacity information, and QF assumptions.

In Order No. 20-152, the Commission also outlined its expectation that PGE provide a formal needs assessment within the IE Selection docket. This update includes the executed contract with the Confederated Tribes of Warm Springs, latest load forecast, all signed agreements for Green Future Impact (“GFI”), and several sensitivities around QF procurements using information from the latest QF snapshot. PGE is not including sensitivities for GFI at this time as it is looking to procure only for the PGE supply option through this solicitation and has not received a request to procure or execute PPAs for the Customer Supply Option.

Energy Position Update

PGE’s net market position is calculated by the difference between forecasted load and the expected contribution of PGE’s baseline portfolio (all owned and contracted resources). While hydro and renewable resources are expected to contribute based on average capacity factors, existing thermal resources are economically dispatched against forecasted market prices. In this forecast, PGE used price forecasts from the 2019 IRP Update. The forecasted net market position through 2050 is displayed below in Figure 1.

Figure 1: PGE’s Forecasted Reference Case 2025 Energy Position (MWa)



Updated analysis for this RFP suggests that PGE remains in a net-market purchasing position. While the inclusion of PGE’s most recent load forecast increased PGE’s net reliance on the market, the extension of PGE’s purchase of 100% of the output from the Pelton and Round Butte Project (PRB Extension) and the second resource from Phase 1 of the Green Energy Affinity Rider (GEAR) led to a net reduction of PGE’s energy position relative to that from the 2019 IRP Update filed in January 2021, shown in Table 1 below. This position remains through 2050 as shown below in Figure 1. It is important to note that consistent with the methodology used in both the 2019 IRP and IRP Update, this calculation totals the economic generation from dispatchable resources while not considering the emission targets established in HB2021. The later inclusion of these policy mandates these is expected to limit the generation from existing thermal resources and create an increased reliance on market purchases.

Table 1: PGE’s Forecasted Reference Case 2025 Energy Position (MWa)

	2019 IRP Update	RFP Update
Reference Case	595	521
10th Percentile	428	380
90th Percentile	887	791

Capacity Need Update

Table 2 below identifies PGE’s updated capacity needs in 2025. With the updates outlined above, PGE’s reference case forecasted capacity need decreased to 372 MW. There remains a wide range of uncertainty in these values, reflected in the capacity need associated with the high and low need futures.¹

Table 2 : PGE’s Forecasted 2025 Capacity Needs (MW)

	2019 IRP	RFP Update
High	737	587
Reference	511	372
Low	292	160

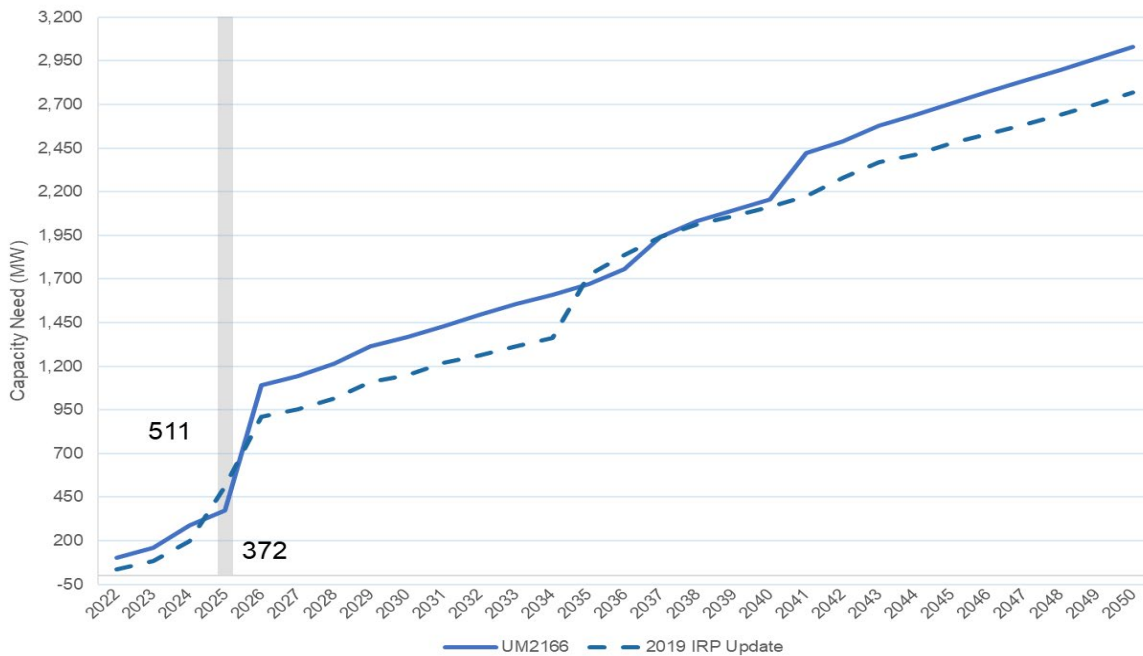
Order 21-320 requested additional information regarding PGE’s capacity need forecast. The Order requested a forecast of PGE’s capacity needs across the planning horizon.² PGE’s forecasted capacity needs are presented in Figure 2. Figure 2 compares PGE’s forecasted capacity needs across the planning horizon to those that were forecasted in the 2019 IRP Update. Several changes are visible in this forecast update. A lower 2025 capacity need is reflective of the inclusion of both the PRB Extension and the second GEAR Phase I resource (138 MW solar). Capacity needs increase 2026 as Colstrip reaches the end of its planned depreciable life and is removed from PGE’s portfolio. Additional

¹ See LC 73, PGE’s 2019 IRP Table 3-1 at 73 for the construction of need futures.

² Order 21-320 at Appendix A Page 15

resources reach the end of their contract life later in the planning horizon including the second GEAR Phase I resource and extended Pelton Round Butte contract in 2036 and 2040, respectively.

Figure 2: PGE' Forecasted Capacity Needs (MW)



Lastly, Order 21-320 calls for additional clarity on the drivers behind PGE's increased capacity need forecast. ³ Since August 2021, PGE has presented three different forecasted capacity needs: one in this docket and two sensitivities in UM 1953. These two latter values investigated two specific questions in that docket while keeping most of the forecasts from the 2019 IRP Update. In addition to PRB Extension and GEAR resource added in the two UM 1953 filings, this RFP's 2025 Reference Case value included updated a load forecast and QF snapshot, producing the most current value (372 MW in the Reference Case for 2025). These changes are summarized below in Table 3.

³ Order 21-320 at Appendix A Page 15

Table 3: PGE 2025 Reference Case Capacity Need Estimates

	IRP Update⁴	UM 1953: GEAR⁵	UM 1953: QTS⁶	UM 2166⁷
Filing Date	Jan-21	Aug-21	Sep-21	Sep-21
2025 MW Need	511	275	335	372
Load Forecast	June 2020	June 2020	June 2020, with QTS load added	March 2021
QF Snapshot	June 2020	June 2020	June 2020	June 2021
Baseline Portfolio	IRP Update	IRP Update	IRP Update	IRP Update
Resource Additions		Second GEAR Phase I resource, PRB Extension	Second GEAR Phase I resource, PRB Extension	Second GEAR Phase I resource, PRB Extension
Notes			Not run in Sequoia	

⁴ Available here: <https://edocs.puc.state.or.us/efdocs/HAH/lc73hah13049.pdf>

⁵ Available here: <https://edocs.puc.state.or.us/efdocs/HAD/um1953had17169.pdf>

⁶ Available here: <https://edocs.puc.state.or.us/efdocs/HAA/um1953haa14249.pdf>

⁷ PGE Reply Comments available here:

<https://edocs.puc.state.or.us/efdocs/HAC/um2166hac162833.pdf>



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