Appendix B. Compliance guidelines

The appendix catalogues, in tabular format, IRP requirements and lists where in the IRP the requirements are addressed.

B.1 Integrated Resource Plan guidelines

Table 78. Guideline 1: Substantive requirements

No.	Requirement	Compliance	Chapter
Guideline 1a	All resources must be evaluated on a consistent and comparable basis.	Resources are evaluated on a consistent and comparable basis as part of portfolio analysis work.	**Chapter 11, Portfolio analysis**
	All known resources for meeting the utility's load should be considered, including supply-side options which focus on the generation, purchase, and transmission of power – or gas purchases, transportation, and storage – and demand-side options which focus on conservation and demand response.	PGE's IRP includes known supply- and demand-side options that are expected to be available for meeting portfolio needs, including: wind, solar PV (photovoltaic), geothermal, biomass, standalone energy storage, solar PV with energy storage hybrid, energy efficiency, demand response, and incremental transmission resources. Supply-side resource options are tested with estimates of associated transmission wheeling costs.	**Chapter 8, Resource options** **Chapter 10, Resource economics** **Chapter 11, Portfolio analysis**

No.	Requirement	Compliance	Chapter
	Utilities should compare different resource fuel types, technologies, lead times, in-service dates, durations, and locations in portfolio risk modeling.	PGE's portfolio analysis compares resources across each of these factors.	**Chapter 8, Resource options** **Chapter 10, Resource economics** **Chapter 11, Portfolio analysis**
	Consistent assumptions and methods should be used for evaluation of all resources.	All resources are compared by using the same assumptions and methods.	**Chapter 11, Portfolio analysis**
	The after-tax marginal weighted-average cost of capital (WACC) should be used to discount all future resource costs.	Future costs are discounted at PGE's estimated long-term after-tax weighted-average cost of capital of 6.168% as a proxy for the long-term cost of capital.	**Appendix H, 2023 IRP modeling details**
Guideline 1b	Risk and uncertainty must be considered. At a minimum, utilities should address the following sources of risk and uncertainty:	PGE accounts for multiple sources of risk and uncertainty in the 2023 IRP.	**Chapter 11, Portfolio analysis**

No.	Requirement	Compliance	Chapter
	1. Electric utilities: load requirements, hydroelectric generation, plant forced outages, fuel prices, electricity prices, and costs to comply with any regulation of greenhouse gas emissions.	Portfolio modeling is conducted over multiple future conditions for technology costs, energy prices, hydroelectric conditions, load conditions, combining for 1134 different potential future conditions. Uncertainty in costs associated with compliance with Green House Gas (GHG) emissions reductions is accounted for through analysis of alternative GHG reduction glidepaths. Plant forced outages and other sources of uncertainty in reliability planning is accounted for in resource adequacy modeling in Sequoia.	**Chapter 8, Resource options** **Chapter 10, Resource economics** **Chapter 11, Portfolio analysis**
	2. Natural gas utilities: demand (peak, swing, and baseload), commodity supply and price, transportation availability and price, and costs to comply with any regulation of greenhouse gas emissions.	N/A for PGE	N/A for PGE

No.	Requirement	Compliance	Chapter
	Utilities should identify in their plans any additional sources of risk and uncertainty.	Refer to 1.b.1 for sources of uncertainty and risk considered by PGE in this IRP.	**Chapter 8, Resource options** **Chapter 10, Resource economics** **Chapter 11, Portfolio analysis**
Guideline 1c[388]	The primary goal must be the selection of a portfolio of resources with the best combination of expected costs and associated risks and uncertainties for the utility and its customers.	Portfolio modeling used optimization to create portfolios that minimize expected costs. Portfolios were evaluated using traditional scoring metrics quantifying cost and risk as well as Portfolio Community benefits indicators (pCBIs) to select a Preferred Portfolio that performed well across all metrics.	**Chapter 11, Portfolio analysis, Table 92. Roadmap Acknowledgement**
	The planning horizon for analyzing resource choices should be at least 20 years and account for end effects. Utilities should consider all costs with a reasonable likelihood of being included in rates over the long-term, which extends beyond the planning horizon and the life of the resource.	The planning horizon in portfolio analysis is 20 years (2024-2043). The costs and benefits associated with the resources considered extend over the entire expected lifetime. End effects are captured through levelized costs that account for the lifetime costs of resources procured within the planning horizon.	**Chapter 11, Portfolio analysis**

[388] In Order 23-060, OPUC waived Guideline 1c and directed utilities to follow revised planning guidance for the first IRP/CEP. PGE's approach to traditional cost and risk metrics is discussed below in **Appendix B.1**, with an additional description of our approach to new expectations described in the CEP RMA 1.5.a-h compliance section in **Appendix B.2**.

No.	Requirement	Compliance	Chapter
	Utilities should use present value of revenue requirement (PVRR) as the key cost metric. The plan should include analysis of current and estimated future costs for all long-lived resources such as power plants, gas storage facilities and pipelines, as well as all short-lived resources such as gas supply and short-term power purchases.	Each of these sources of costs are accounted for in portfolio analysis, which uses Net Present Value Revenue Requirement (NPVRR) as the main cost metric. For all existing resources in PGE's portfolio, including long-lived resources and short-term contracts, all costs the Company would expect to incur to access and operate the resource (i.e., fuel cost and transportation, transmission, fixed cost recovery, contract costs, etc.) are accounted for throughout the lifetime of the resource in revenue requirement modeling.	**Chapter 11, Portfolio analysis**
	To address risk, the plan should include, at a minimum:		

No.	Requirement	Compliance	Chapter
	1. Two measures of PVRR risk: one that measures the variability of costs and one that measures the severity of bad outcomes.	Both variability and severity are used as risk metrics in portfolio analysis. Variability is measured using the semi-deviation of NPVRR across all futures, relative to the Reference Case. Severity is measured using the tail value at risk (TailVAR) at the 90Th percentile of NPVRR across all futures.	**Chapter 11, Portfolio analysis**
	2. Discussion of the proposed use and impact on costs and risks of physical and financial hedging.	Costs and risks of the resource additions which could provide a physical hedge against future wholesale market volatility are part of the considerations made during PGE's portfolio analysis. PGE does not consider any other long-term financial or physical hedging activities beyond those considerations.	**Chapter 11, Portfolio analysis**

No.	Requirement	Compliance	Chapter
	The utility should explain in its plan how its resource choices appropriately balance cost and risk.	Groups of portfolios are designed to target key sources of uncertainty around transmission, Distributed Energy Resources (DERs), Community-based Renewable Energy (CBRE), etc. Comparison of costs and risk metrics amongst portfolios within each group provides insights on these key topics to inform the design of the Preferred Portfolio. The portfolio analysis chapter describes the logic of how cost and risk are balanced.	**Chapter 11, Portfolio analysis**
Guideline 1d	The plan must be consistent with the long-run public interest as expressed in Oregon and federal energy policies.	All known federal and state energy policies in Oregon are reflected in the 2023 IRP, including the requirements of HB 2021.	**Chapter 11, Portfolio analysis**

Table 79. Guideline 2: Procedural requirements

	Requirement	Compliance	Chapter
Guideline 2a	The public, which includes other utilities, should be allowed significant involvement in the preparation of the IRP. Involvement includes opportunities to contribute information and ideas, as well as to receive information. Parties must have an opportunity to make relevant inquiries of the utility formulating the plan. Disputes about whether information requests are relevant or unreasonably burdensome, or whether a utility is being properly responsive, may be submitted to the Commission for resolution.	PGE began providing an opportunity for public involvement in the 2023 IRP starting in January 2020. Thirty-six public meetings, including seven Learning Labs, have been held seeking stakeholder feedback. PGE provides email, meetings, and a public feedback form as venues to submit additional or written input to IRP content.	**Appendix C, 2023 IRP public meeting agendas**

	Requirement	Compliance	Chapter
Guideline 2b	While confidential information must be protected, the utility should make public in its plan any non-confidential information that is relevant to its resource evaluation and action plan. Confidential information may be protected through the use of a protective order, through aggregation or shielding of data, or through any other mechanism approved by the Commission.	PGE provides non-confidential information used for portfolio evaluation and development of the Action Plan in the 2023 IRP.	All chapters and supporting appendices
Guideline 2c	The utility must provide a draft IRP for public review and comment prior to filing a final plan with the Commission.	PGE filed a motion on November 22, 2022, requesting this guideline be waived. Guideline waived via Order No. 23-010[389], adopting Staff's recommendation at the 1/24/23 Public Meeting.	N/A for this filing

[389] Order No. 23-010. Request for waiver of Integrated Resource Plan guideline 2(c), available online: https://apps.puc.state.or.us/orders/2023ords/23-010.pdf

Table 80. Guideline 3: Plan filing, review, and updates

	Requirement	Compliance	Chapter
Guideline 3a	A utility must file an IRP within two years of its previous IRP acknowledgment order. If the utility does not intend to take any significant resource action for at least two years after its next IRP is due, the utility may request an extension of its filing date from the Commission.	PGE filed its last IRP on July 16, 2019. Commission acknowledged with conditions on March 15, 2020. PGE requested a waiver to delay the IRP filing date from March 2022 to March 2023 on October 15, 2021. The Commission approved the motion on November 18, 2021.	N/A for this filing
Guideline 3b	The utility must present the results of its filed plan to the Commission at a public meeting prior to the deadline for written public comment.	PGE will comply with this Guideline as arranged in the procedural schedule.	N/A for this filing
Guideline 3c	Commission staff and parties should complete their comments and recommendations within six months of IRP filing.	N/A for PGE	N/A for PGE

	Requirement	Compliance	Chapter
Guideline 3d	The Commission will consider comments and recommendations on a utility's plan at a public meeting before issuing an order on acknowledgment. The Commission may provide the utility an opportunity to revise the plan before issuing an acknowledgment order.	N/A for PGE	N/A for PGE
Guideline 3e	The Commission may provide direction to a utility regarding any additional analyses or actions that the utility should undertake in its next IRP.	N/A for PGE	N/A for PGE

	Requirement	Compliance	Chapter
Guideline 3f	Each utility must submit an annual update on its most recently acknowledged plan. The update is due on or before the acknowledgment order anniversary date. Once a utility anticipates a significant deviation from its acknowledged IRP, it must file an update with the Commission, unless the utility is within six months of filing its next IRP. The utility must summarize the update at a Commission public meeting. The utility may request acknowledgment of changes in proposed actions identified in an update.	N/A for this filing	N/A for this filing
Guideline 3g	Unless the utility requests acknowledgment of changes in proposed actions, the annual update is an informational filing that:		
	Describes what actions the utility has taken to implement the plan;	N/A for this filing	N/A for this filing

	Requirement	Compliance	Chapter
	Provides an assessment of what has changed since the acknowledgment order that affects the action plan, including changes in such factors as load, expiration of resource contracts, supply-side and demand-side resource acquisitions, resource costs, and transmission availability; and	N/A for this filing	N/A for this filing
	Justifies any deviations from the acknowledged action plan.	N/A for this filing	N/A for this filing

Table 81. Guideline 4: Plan components

	Requirement	Compliance	Chapter
	At a minimum, the plan must include the following elements:		
Guideline 4a	a. An explanation of how the utility met each of the substantive and procedural requirements;	The purpose of this table and **Appendix A** is to show compliance with this Guideline.	**Appendix A, 2019 IRP Action Plan in review** **Appendix B, Compliance guidelines**
Guideline 4b	b. Analysis of high and low load growth scenarios in addition to stochastic load risk analysis with an explanation of major assumptions;	PGE has included low, reference, and high Need Futures that capture variance in load growth, DER adoption, and market capacity. Stochastic load risk is integrated within our assessment of capacity needs.	**Chapter 4, Futures and uncertainties** **Chapter 6, Resource needs**

	Requirement	Compliance	Chapter
Guideline 4c	For electric utilities, a determination of the levels of peaking capacity and energy capability expected for each year of the plan, given existing resources; identification of capacity and energy needed to bridge the gap between expected loads and resources; modeling of all existing transmission rights, as well as future transmission additions associated with the resource portfolios tested;	The 2023 IRP includes a capacity adequacy assessment, a flexibility-adequacy study, and an energy load resource balance calculation. These studies are used to inform portfolio analysis. The portfolio analysis chapter describes which resources would be the best option to fill the gaps between supply and demand while incorporating resource adequacy needs and transmission constraints.	**Chapter 11, Portfolio analysis** **Appendix F, Load resource balance**
Guideline 4d	For natural gas utilities, a determination of the peaking, swing, and base-load gas supply and associated transportation and storage expected for each year of the plan, given existing resources; and identification of gas supplies (peak, swing, and baseload), transportation, and storage needed to bridge the gap between expected loads and resources;	N/A for PGE	N/A for PGE

	Requirement	Compliance	Chapter
Guideline 4e	Identification and estimated costs of all supply-side and demand-side resource options, considering anticipated advances in technology;	Costs of future resource options are estimated from publicly available documents, including those produced by National Renewable Energy Laboratory (NREL) and Energy Information Administration (EIA). These future costs include anticipated advances in technology and manufacturing. PGE includes multiple future resource cost paths.	**Chapter 8, Resource options** **Chapter 10, Resource economics**
Guideline 4f	Analysis of measures the utility intends to take to provide reliable service, including cost-risk tradeoffs;	PGE aims to have all portfolios meet a 2.4 LOLH (loss of load hours) target on a seasonal level. The portfolio model, ROSE-E, builds a least-cost system to this standard using available resources. We do sensitivities of how this buildout changes due to variations in demand or supply. We do not explore tradeoffs to system reliability at different levels (we do not study the cost/benefits of a less stringent adequacy standard).	**Chapter 6, Resource needs**

	Requirement	Compliance	Chapter
Guideline 4g	Identification of key assumptions about the future (e.g., fuel prices and environmental compliance costs) and alternative scenarios considered;	PGE has considered 351 potential futures across resource capacity needs, market electricity prices, and technology costs of new resources.	**Chapter 4, Futures and uncertainties** **Chapter 6, Resource needs**
Guideline 4h	Construction of a representative set of resource portfolios to test various operating characteristics, resource types, fuels, and sources, technologies, lead times, in-service dates, durations, and general locations – system-wide or delivered to a specific portion of the system;	PGE has constructed 40 portfolios across six categories to test various conditions and their impact on costs, risk, community benefit, decarbonization rate, and balance of short-term and long-term costs and benefits allocation.	**Chapter 11, Portfolio analysis**
Guideline 4i	Evaluation of the performance of the candidate portfolios over the range of identified risks and uncertainties;	PGE conducted portfolio modeling over 1134 future scenarios, capturing a wide range of potential future conditions.	**Chapter 11, Portfolio analysis**

	Requirement	Compliance	Chapter
Guideline 4j	Results of testing and rank ordering of the portfolios by cost and risk metric, and interpretation of those results;	PGE scored portfolios across both traditional scoring metrics designed to evaluate cost and risk and pCBIs which capture a range of community benefits. A Preferred Portfolio was developed that not only provides the best combination of cost and risk, but which also maximizes community benefits as required by the Clean Energy Plan.	**Chapter 11, Portfolio analysis**
Guideline 4k	Analysis of the uncertainties associated with each portfolio evaluated;	Uncertainties are accounted for in the construction of each portfolio, with portfolios designed to test key sources of uncertainty. Uncertainty is quantified in portfolio scoring through the evaluation of cost and risk metrics based on many potential future scenarios.	**Chapter 11, Portfolio analysis**
Guideline 4l	Selection of a portfolio that represents the best combination of cost and risk for the utility and its customers;	PGE has developed a Preferred Portfolio that meets UM 2225 guidance of balancing costs, risks, and community benefits	**Chapter 11, Portfolio analysis**

	Requirement	Compliance	Chapter
Guideline 4m	Identification and explanation of any inconsistencies of the selected portfolio with any state and federal energy policies that may affect a utility's plan and any barriers to implementation;	PGE creates portfolios which comport with all state and federal energy policies, to the best of PGE's knowledge. PGE does not allow for the construction of portfolios that violate said policies. For example, we would not allow a portfolio that emits 2 million megatons (MMT) of GHG in 2030 when our state policy requires 1.62 or fewer MMT of CO2e emissions.	**Chapter 11, Portfolio analysis**
Guideline 4n	An action plan with resource activities the utility intends to undertake over the next two to four years to acquire the identified resources, regardless of whether the activity was acknowledged in a previous IRP, with the key attributes of each resource specified as in portfolio testing.	PGE's Action Plan includes the resource actions PGE intends to take over the next two to four years, as reflected in the Preferred Portfolio. The Action Plan covers Customer Resource Actions, Renewable Actions, Capacity Actions, and Transmission Actions.	**Chapter 11, Portfolio analysis**

Table 82. Guideline 5: Transmission

	Requirement	Compliance	Chapter
Guideline 5	Portfolio analysis should include costs to the utility for the fuel transportation and electric transmission required for each resource being considered. In addition, utilities should consider fuel transportation and electric transmission facilities as resource options, considering their value for making additional purchases and sales, accessing less costly resources in remote locations, acquiring alternative fuel supplies, and improving reliability.	PGE includes costs associated with fuel and electricity transmission, as appropriate, for new supply-side resources considered in portfolio analysis. See discussion in **Chapter 8, Resource options**, **Chapter 9**, **Transmission, Chapter 10, Resource economics**, and **Chapter 11, Portfolio analysis**.	**Chapter 8, Resource options** **Chapter 10, Resource economics**

Table 83. Guideline 6: Conservation

	Requirement	Compliance	Chapter
Guideline 6a	Each utility should ensure that a conservation potential study is conducted periodically for its entire service territory.	PGE has incorporated Energy Trust's most recent long-term conservation potential study from May 2022. PGE coordinated with the Energy Trust to support the development of the EE forecast. Specifically, PGE provided information to the Energy Trust, which included load growth assumptions, cost of capital, and avoided cost inputs. PGE incorporated cost-effective energy efficiency as a given, within the resource Need Futures. PGE also incorporated additional energy efficiency that was deemed non-cost effective as a supply side resource.	**Chapter 6, Resource needs**

	Requirement	Compliance	Chapter
Guideline 6b	To the extent that a utility controls the level of funding for conservation programs in its service territory, the utility should include in its action plan all best cost/risk portfolio conservation resources for meeting projected resource needs, specifying annual savings targets.	Since 2002, Energy Trust has been the independent, non-profit organization in charge of identifying the State's Energy Efficiency (EE) potential. PGE and other utilities fund such programs and work with the Energy Trust to implement EE measures. PGE maintains a long-term, productive relationship with the Energy Trust so that EE remains a top priority resource for PGE and the State.	N/A
Guideline 6c	To the extent that an outside party administers conservation programs in a utility's service territory at a level of funding that is beyond the utility's control, the utility should:		
	Determine the amount of conservation resources in the best cost/risk portfolio without regard to any limits on funding of conservation programs; and	The portfolios incorporate the results of the energy efficiency studies conducted by the Energy Trust which determine the amount of potential cost-effective energy efficiency without regard to any funding limits, except for the SB 838 funding constraints.	**Chapter 11, Portfolio analysis** **Chapter 12, Action Plan**

	Requirement	Compliance	Chapter
		Portfolios also incorporated additional energy efficiency that was deemed non-cost effective as a supply side resource available during portfolio analysis.	
	Identify the preferred portfolio and action plan consistent with the outside party's projection of conservation acquisition.	PGE's Preferred Portfolio and Action Plan include the Energy Trust's EE savings projection. Additionally, PGE has also evaluated additional EE to understand if and how the role of EE will evolve with the changing planning environment. These insights are also incorporated into the Preferred Portfolio and Action Plan. PGE continues to work collaboratively with Energy Trust to achieve sufficient funding for acquisition of all cost-effective and reasonable EE.	**Chapter 11, Portfolio analysis** **Chapter 12, Action Plan**

Table 84. Guideline 7: Demand response

	Requirement	Compliance	Chapter
Guideline 7	Plans should evaluate demand response resources, including voluntary rate programs, on par with other options for meeting energy, capacity, and transmission needs (for electric utilities) or gas supply and transportation needs (for natural gas utilities).	PGE has incorporated the most recent long-term demand response potential study from the Distribution System Plan Part 2[390] from August 2022. PGE incorporated cost-effective demand response as a given, within the resource Need Futures. PGE also incorporated additional demand response that was deemed non-cost effective as a supply side resource.	**Chapter 6, Resource needs** **Chapter 8, Resource options**

[390] PGE's Distribution System Plan Part 2, available at: https://apps.puc.state.or.us/edockets/edocs.asp?FileType=HAD&FileName=um2197had151613.pdf&DocketID=23043&numSequence=21

Table 85. Guideline 8: Environmental costs (order 08-339)

	Requirement	Compliance	Chapter
Guideline 8a	Base case and other compliance scenarios: The utility should construct a base-case scenario to reflect what it considers to be the most likely regulatory compliance future for carbon dioxide (CO_2), nitrogen oxides, sulfur oxides, and mercury emissions. The utility also should develop several compliance scenarios ranging from the present CO_2 regulatory level to the upper reaches of credible proposals by governing entities. Each compliance scenario should include a time profile of CO_2 compliance requirements. The utility should identify whether the basis of those requirements, or "costs," would be CO_2 taxes, a ban on certain types of resources, or CO_2 caps (with or without flexibility mechanisms such as allowance, credit trading, or a safety valve). The analysis should recognize significant and important upstream emissions that would likely	Portfolio analysis incorporates the requirements of House Bill 2021 and assumes full regulatory compliance for emissions for all resources. Specifically, we constructed a base-case scenario that includes carbon prices to dispatch for carbon emitting resources located in California, Washington, Alberta, and British Columbia to reflect the existing carbon emission legislation. In the base-case scenario, California and Washington carbon prices reference the California Energy Commission's (CEC) outlook of cap-and-trade legislation in California. The carbon prices for Alberta and British Columbia are equivalent to the locations' existing tax legislation. PGE also developed a high-carbon-case scenario in which the CEC's view of social cost is added as carbon prices for dispatchable carbon-emitting resources in California, Washington, and Oregon.	**Chapter 4, Futures and uncertainties**

	Requirement	Compliance	Chapter
	have a significant impact on its resource decisions. Each compliance scenario should maintain logical consistency, to the extent practicable, between the CO_2 regulatory requirements and other key inputs.	In this scenario, carbon emitting resources in the rest of the Western Electricity Coordinating Council (WECC) locations also have carbon prices forecasted by Wood Mackenzie's reference case. Finally, a low-case scenario is constructed with a low CEC carbon price outlook for California and Washington. The carbon prices for carbon emitting resources in British Columbia and Alberta are equivalent to their tax legislation. There are no carbon prices added to the rest of WECC carbon emitting resources in the low-case scenario.	
Guideline 8b	Testing alternative portfolios against the compliance scenarios: The utility should estimate, under each of the compliance scenarios, the present value of revenue requirement (PVRR) costs and risk measures, over at least 20 years, for a set of reasonable alternative portfolios from which the preferred portfolio is selected. The utility should incorporate end-effect	PGE tested a wide variety of portfolios across a large range of potential future conditions, including several alternative GHG emissions reductions glidepaths for complying with HB 2021 GHG emissions targets. Cost and risk metrics based on NPVRR are calculated on a 20-year analysis	**Chapter 11, Portfolio analysis**

	Requirement	Compliance	Chapter
	considerations in the analyses to allow for comparisons of portfolios containing resources with economic or physical lives that extend beyond the planning period. The utility should also modify projected lifetimes as necessary to be consistent with the compliance scenario under analysis. In addition, the utility should include, if material, sensitivity analyses on a range of reasonably possible regulatory futures for nitrogen oxides, sulfur oxides, and mercury to further inform the preferred portfolio selection.	time-horizon and compared across portfolios.	

	Requirement	Compliance	Chapter
Guideline 8c	Trigger point analysis: The utility should identify at least one CO_2 compliance "turning point" scenario which, if anticipated now, would lead to, or "trigger" the selection of a portfolio of resources that is substantially different from the preferred portfolio. The utility should develop a substitute portfolio appropriate for this trigger-point scenario and compare the substitute portfolio's expected cost and risk performance to that of the preferred portfolio – under the base case and each of the above CO_2 compliance scenarios. The utility should provide its assessment of whether a CO_2 regulatory future that is equally or more stringent than the identified trigger point will be mandated.	Since the Preferred Portfolio does not contain new resources that would emit GHG emissions, we do not anticipate more stringent CO_2 compliance requirements. We did, however, create three cases of carbon policy scenarios, described in Guideline 8a to anticipate a "trigger-point" scenario. For each of these carbon policy cases, base, high, and low case scenarios, they are paired with various permutation of WECC resource outlook, natural gas prices, and hydropower generation conditions. As a result, 27 price futures were created with base carbon policy case, 9 price futures were created with high carbon policy case, and 9 price futures were created with low carbon policy case. The inclusion of these price futures results in an increased variety of portfolio results. We also test the Preferred Portfolio under decarbonization scenarios, glidepaths, and other sensitivities.	N/A

	Requirement	Compliance	Chapter
Guideline 8d	Oregon compliance portfolio: If none of the above portfolios is consistent with Oregon energy policies (including the state goals for reducing greenhouse gas emissions) as those policies are applied to the utility, the utility should construct the best cost/risk portfolio that achieves that consistency, present its cost and risk parameters, and compare it to those of the preferred and alternative portfolios.	The portfolio analysis in the 2023 IRP is intended to be consistent with Oregon energy policies.	**Chapter 3, Planning environment**

Table 86. Guideline 9: Direct access loads

	Requirement	Compliance	Chapter
Guideline 9	An electric utility's load-resource balance should exclude customer loads that are effectively committed to service by an alternative electricity supplier.	Currently, PGE excludes estimated Direct Access load based on current customer elections and does not plan long-term resources to meet the potential demand from long-term opt-out customers. Nonetheless, PGE acts as the reliability provider for these customer loads.	**Chapter 4, Futures and uncertainties**

Table 87. Guideline 10: Multi-state utilities

	Requirement	Compliance	Chapter
Guideline 10	Multi-state utilities should plan their generation and transmission systems, or gas supply and delivery, on an integrated-system basis that achieves the best cost/risk portfolio for all their retail customers.	N/A for PGE	N/A for PGE

Table 88. Guideline 11: Reliability

	Requirement	Compliance	Chapter
Guideline 11	Electric utilities should analyze reliability within the risk modeling of the actual portfolios being considered. Loss of load probability expected, planning reserve margin, and expected and worst-case unserved energy should be determined by year for top-performing portfolios. Natural gas utilities should analyze, on an integrated basis, gas supply, transportation, and storage, along with demand-side resources, to reliably meet peak, swing, and base-load system requirements. Electric and natural gas utility plans should demonstrate that the utility's chosen portfolio achieves its stated reliability, cost, and risk objectives.	The 2023 IRP uses a stochastic modeling approach to resource adequacy. The model assembles 50,000 synthetic test weeks to evaluate capacity need under a range of conditions. For example, it may pair an extreme weather event, like the June 2021 heatwave, with different hydroelectric conditions, wind conditions, solar conditions, and forced outage rates. This allows for an examination of worst-case scenarios in the IRP. The IRP does not create portfolios that fail to meet the 2.4 LOLH reliability target. It does create numerous other portfolios that examine the cost and risk trade-offs between different resources.	**Chapter 6, Resource needs**

Table 89. Guideline 12: Distributed Generation

	Requirement	Compliance	Chapter
Guideline 12	Electric utilities should evaluate distributed generation technologies on par with other supply-side resources and should consider, and quantify where possible, the additional benefits of distributed generation.	PGE has incorporated the most recent long-term distributed solar and storage market adoption analysis from the Distribution System Plan Part 2[391] from August 2022.	**Chapter 8, Resource options** **Chapter 10, Resource economics** **Chapter 11, Portfolio analysis**

[391] PGE's Distribution System Plan Part 2, available at: https://downloads.ctfassets.net/416ywc1laqmd/2Fr2nVc4FKONetiVZ8aLWM/b209013acfedf1125ceb7ba2940bac71/DSP_Part_2_-_Full_report.pdf

Table 90. Guideline 13: Resource Acquisition

	Requirement	Compliance	Chapter
Guideline 13a	An electric utility should, in its IRP:		
	Identify its proposed acquisition strategy for each resource in its action plan.	PGE describes the proposed Action Plan, which includes discussion of strategies to acquire customer resources, renewable resources, and capacity resources.	**Chapter 12, Action Plan**
	Assess the advantages and disadvantages of owning a resource instead of purchasing power from another party.	PGE discusses the benefits and risks of owning a resource and power purchase agreements.	**Chapter 8, Resource options**
	Identify any Benchmark Resources it plans to consider in competitive bidding.	PGE is considering whether to submit a benchmark for inclusion in the renewable and/or capacity resource RFP proposed in the Action Plan. PGE will provide updated information about benchmark resources prior to issuing an RFP to market.	**Chapter 9, Transmission**
Guideline 13b	Natural gas utilities should either describe in the IRP their bidding practices for gas supply and transportation or provide a description of those practices following IRP acknowledgment.	N/A for PGE	N/A for PGE

Table 91. Flexible capacity resources (order no. 12-013)

	Requirement	Compliance	Chapter
1	Forecast the Demand for Flexible Capacity: The electric utilities shall forecast the balancing reserves needed at different time intervals (e.g., ramping needed within 5 minutes) to respond to variation in load and intermittent renewable generation over the 20-year planning period;	PGE contracted with Blue Marble Analytics to conduct a flexibility assessment using the GridPath model to determine the flexibility needs such as balancing reserves among others, to assess the system responsiveness to short time-scale variability of load and renewables as well as forecast errors.	**Chapter 6, Resource needs** **Chapter 10, Resource economics** **Ext. Study-IV, Flexibility study**
2	Forecast the Supply of Flexible Capacity: The electric utilities shall forecast the balancing reserves available at different time intervals (e.g., ramping available within 5 minutes) from existing generating resources over the 20-year planning period; and	The Blue Marble flexibility study described in requirement 1 for Order No. 12-013 includes the balancing reserve capability of existing generating resources.	**Chapter 6, Resource needs** **Ext. Study-IV, Flexibility study**

	Requirement	Compliance	Chapter
3	Evaluate Flexible Resources on a Consistent and Comparable Basis: In planning to fill any gap between the demand and supply of flexible capacity, the electric utilities shall evaluate all resource options, including the use of EVs, on a consistent and comparable basis.	The Blue Marble Analytics study included a valuation of the integration costs, and flexibility value of new resource additions.	**Chapter 6, Resource needs**

B.2 Clean Energy Plan guidance

Table 92, **Table 93**, and **Table 94** provide PGE's compliance report for the expectations adopted by the Commission in Orders 22-390 and 22-446. "RMA", "CLA" and "AI" refer to Roadmap Acknowledgement, Community Lens, and Analytical Improvements expectation areas, respectively. These tables cross-reference to the numbering rubric provided by Staff on February 24th ("OPUC No." column).

Table 92. Roadmap Acknowledgement

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
RMA1.1.a[392]	C.1, B.2	The first CEP should include analysis and annual goals over at least 20 years and CEP acknowledgment should focus on the annual goals in the first 2-4 years to align with the IRP analysis and acknowledgment horizons. Utilities may identify, and the Commission may use its discretion to acknowledge, resource actions outside of the Action Plan window.	The Clean Energy Plan (CEP) analysis covers the specified 20-year period and fully aligns with the IRP for the 2–4-year Action Plan. PGE has not proposed incremental actions specific to the CEP or outside of the Action Plan window.	**Chapter 1, Clean energy plan** **Chapter 11, Portfolio analysis** **Chapter 12, Action Plan**

[392] PGE has assigned numbers to the CEP expectations adopted by the Commission in Orders 22-390 and 22-446. "RMA", "CLA" and "AI" refer to Roadmap Acknowledgement, Community Lens, and Analytical Improvements expectations, respectively.

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
RMA1.2.a	C.2, C.2.a – C.2.i	For the first CEP, annual goals should be provided for all resource actions in each portfolio evaluated in the IRP. Resource actions include, at a minimum: clean energy resources, energy storage, energy efficiency, demand response, resource retirements, changes in system operations, transmission and other supporting infrastructure, and community-based renewable energy projects.	Annual goals for actions associated with all portfolios are provided for the full 20-year period.	**Chapter 11, Portfolio analysis** **Addendum: PGE CEP Data Template**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
RMA1.2.b	C.3	For the first CEP, annual goals for clean energy resources and storage should differentiate between system resources and resources that the utility expects to acquire through voluntary customer or community programs.	PGE's annual goals for clean energy and storage resources consider forecasts for voluntary program activity. Forecasts for voluntary supply-side programs (Green Future Initiative and Community Solar Program) are specifically differentiated from system clean energy resources in the 'Annual Goals for Actions' chart of PGE's supplemental data sheet. Forecasts for customer adoption of clean energy and storage are forecasted through AdopDER and are described in detail in PGE's Distribution System Plan.	**Chapter 11, Portfolio analysis** **Addendum: PGE CEP Data Template**
RMA1.3	C.4	The utility should report the following information on an annual basis in the first CEP for the Preferred Portfolio and a set of alternative IRP portfolios that test different paces of GHG reductions and different levels of community impacts:	--	--

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
RMA1.3.a	C.4.a	• Total greenhouse gas emissions associated with the portfolio based on the DEQ methodology, and broken out by individual fossil fuel resources, market purchases, and market sales.	PGE designed the Decarbonization Glidepath portfolios to compare outcomes associated with different paces of GHG reductions. Emissions data was provided for all portfolios, including several that tested the pace of GHG reductions through 2030.	**Section 11.4.1, Decarbonization glidepath portfolios** **Addendum: PGE CEP Data Template**
RMA1.3.b	N/A	• Normalized annual revenue requirement, calculated as the total revenue requirement for Oregon customers divided by the total retail sales in Oregon.	Expectation was removed by Order No. 22-390. See No. AI3.f-AI3.g.	--
RMA1.3.c	C.4.b	• A set of interim community impacts and benefits metrics that are developed in coordination with communities impacted by the plan, including environmental justice communities.	PGE designed the CBRE portfolios to compare outcomes associated with different levels of CBRE adoption, and associated community benefits. Informational CBIs developed in coordination with communities impacted by the plan, including environmental justice communities, were not used for portfolio evaluation consistent with definitions Order No. 22-390.	**Section 7.1, Community benefits indicators (CBIs)** **Section 11.4.3, Community-based renewable energy (CBRE) portfolios** **Addendum: PGE CEP Data Template**
RMA1.4.a	N/A	No near-term guidance.	--	--

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
RMA1.5.a	Not listed	PacifiCorp and PGE are directed to consider Staff's planning guidance for the first IRP/CEP.[393]	PGE has selected the Preferred Portfolio in consideration of the factors described below.	**Section 11.5, Preferred Portfolio**
RMA1.5.b	B.1	• The primary goal must be the selection of a portfolio of resources with the best combination of expected costs and associated risks and uncertainties for the utility and its customers, the pace of greenhouse gas emissions reductions, and community impacts and benefits.	Metrics for costs, risks, emissions, and community benefits are evaluated in **Chapter 11, Portfolio analysis**. The answers to the most pressing questions in portfolio analysis helped inform the creation of the Preferred Portfolio, which best balances cost, risk, GHG reductions, and community impacts.	**Chapter 11, Portfolio analysis**
RMA1.5.c	Not listed	• The planning horizon…(see Guideline 1c, Order No. 07-002)	The planning horizon guidance was not modified by Order 23-060. Our compliance approach is described in **Appendix B.1**; see IRP Guideline 1c.	--
RMA1.5.d	Not listed	• Utilities should…(see Guideline 1c, Order No. 07-002)	Cost evaluation requirements was not modified by Order 23-060. Our compliance approach is described in **Appendix B.1**; See IRP Guideline 1c.	--
RMA1.5.e	Not listed	• To address risk…(see Guideline 1c, Order No. 07-002)	Risk evaluation requirements were not modified by Order 23-060. Our	--

[393] RMA 1.5a through 1.5h reflect revised language adopted via OPUC Order 23-060.

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
			compliance approach is described in **Appendix B.1**; See IRP Guideline 1c.	
RMA1.5.f	Not listed	• The pace of greenhouse gas emissions reductions should be evaluated, at a minimum, in a manner consistent with the methodology approved by the Oregon Department of Environmental Quality. In testing different paces of GHG emissions reductions, all portfolios should, at minimum, demonstrate year-over-year emissions reductions on an expected basis.	For this IRP, PGE updated the modeling approach used to forecast greenhouse gas emissions in order to align with the Department of Environmental Quality (DEQ) reporting methodology. The decarbonization glidepath portfolios were designed to compare outcomes associated with different paces of GHG reductions and ensured that each portfolio demonstrated year-over-year emissions.	**Chapter 5, GHG emissions forecasting** **Chapter 11, Portfolio analysis** **Addendum: PGE CEP Data Template**
RMA1.5.g	Not listed	• Community impacts and benefits of different portfolios of actions should be evaluated using available interim CBIs developed by the utilities using reasonable best efforts for use in the first CEP.	PGE evaluated community impacts and benefits with community partners within our Community Learning Labs. This work included developing community benefits indicators (CBIs) to be utilized within our IRP resource and portfolio analysis. Additionally, PGE also utilized the Oregon Public Utility Commission's (OPUC) Attachment A from Order 22-390, submitted by	**Section 7.1, Community benefits indicators (CBIs)** **Chapter 11, Portfolio analysis**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
			community as a starting point to prioritize future CBIs.	
RMA1.5.h	Not listed	• The utility should explain in its plan how its resource choices appropriately balance cost, risk, and the pace of greenhouse gas emissions reductions, and community impacts and benefits.	PGE included narrative to describe how the plan balances cost, risk, emissions, and community benefits in **Chapter 1, Chapter 12, and Chapter 13**.	**Chapter 1, Clean energy plan** **Chapter 11, Portfolio analysis** **Chapter 12, Action Plan**
RMA1.6.a	Not listed	To inform the Commission's acknowledgment decision, utilities should address the following in the first CEP:	--	--
RMA1.6.b	Not listed	• Whether the plan achieves the clean energy targets set forth in HB 2021:	All portfolios are expected on a planning basis to meet the HB 2021 emissions targets.	**Chapter 1, Clean energy plan** **Chapter 2 - Chapter 12**
RMA1.6.c	D.1	• The CEP should demonstrate how the IRP Preferred Portfolio achieves the emissions reductions targets set forth in HB 2021, with DEQ verification.	All portfolios are expected on a planning basis to meet the HB 2021 emissions targets.	**Chapter 5, GHG emissions forecasting** **Chapter 11, Portfolio analysis**
RMA1.6.d	A.2	• Consistency with the IRP:	CEP maintains all IRP assumptions and analysis to ensure full consistency.	--

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
RMA1.6.e	A.2	• The CEP should explain how it is consistent with the concurrently filed IRP in terms of assumptions, analysis, and planned actions.	All CEP and IRP analysis and Action Plan is interwoven, as described in **Chapter 1**. Analysis of emissions glidepaths to make continual progress toward 2030, 2035 and 2040 emissions targets for the CEP is an output of IRP modeling.	**Chapter 1, Clean energy plan**
RMA1.6.f	A.2	• To the extent that an analysis supporting the CEP was conducted in another docket (e.g., the IRP or DSP), the CEP should clearly reference that analysis. The utility should explain any updates or methodological changes to the referenced analysis and identify if the referenced analysis was or was not from a plan acknowledged by the Commission.	PGE has identified several sources of supporting analysis and information regarding the OPUC's CEP Community-Lens Topics such as equity analysis, resiliency, DER forecasting conducted within our DSP, tribal engagement, and reliability data within our Annual Report.	**Chapter 14, Community equity lens and engagement** **Chapter 13, Resilience**
RMA1.6.g	Not listed	• Effectiveness of community engagement:	As part of PGE's Community Learning Labs, we conducted surveys after each Learning Lab to gather feedback on the effectiveness of our community engagement.	**Section 14.2, Community engagement**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
RMA1.6.h	E.1, E.1.a – E.1.f	• The utility should report the following information regarding community engagement in developing the plan: what opportunities were provided for input and how was accessibility prioritized across those channels; which communities, including environmental justice communities and Tribal communities, did the utility consult with and how were those communities and their representatives identified; what input was received through each channel; how was input incorporated into the IRP/CEP; what input was not incorporated into the IRP/CEP and why was that input not incorporated; and what plans does the utility have for modifying the engagement strategy in future planning cycles.	PGE created multiple channels for community engagement. Our engagement strategies include virtual meetings for both technical and non-technical audiences, surveys, creating an accessible website and content, developing a CEP-specific email and individual one-on-one meetings with community. Community representation varied from individuals to community organizations. We collected feedback from community within our Community Learning Labs, which are iterative in nature. And, in the Looking Ahead section, we articulate how feedback will be incorporated into planning activities.	**Section 14.2, Community engagement** **Section 14.3, Continuing community engagement** **Appendix L, Clean Energy Plan: Learning Labs community feedback**
RMA1.6.i	E.2	• The utility should also survey participants who provided input on their experiences participating in the utility's process and their perspectives on how their input influenced the plan. Survey	As part of PGE's Community Learning Labs, we conducted surveys after each Learning Lab to gather feedback on the effectiveness of our community engagement.	**Appendix L, Clean Energy Plan: Learning Labs community feedback, Section L.2, Community input and feedback**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
		responses must be included with the plan.		**Chapter 14, Community equity lens and engagement, Section 14.1.1, Importance of equity and a human-centered approach**
RMA1.7.a	N/A	No near-term guidance at this time.	--	--
RMA1.8.a	L.2	The utility shall provide the following additional information in IRP Updates that follow CEP filings:	--	--
RMA1.8.b	L.2.a	• Progress to date relative to each annual goal for resource actions presented in the CEP. If resources have been secured, the utility should quantify the amount of each resource using the same units presented in the CEP.	N/A for this filing	N/A for this filing
RMA1.8.c	L.2.b, L.2.c	• Measured impacts across the same metrics that were presented in the CEP, including, at a minimum: greenhouse gas emissions intensity; total greenhouse gas emissions broken out by individual fossil fuel resources, market purchases, and market sales; average	N/A for this filing	N/A for this filing

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
		electric rates for Oregon customers; and the community impacts and benefits metrics.		
RMA1.8.d	L.2.d	• Any DEQ emissions reports filed since the CEP.	N/A for this filing	N/A for this filing

Table 93. Community lens analysis

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
CLA2.1.a	G.1	The first CEP should include a potential study (or studies) that identifies opportunities for community-based renewable energy projects (CBREs) developed in coordination with communities that are served by the utility, including environmental justice communities, and with input from stakeholders and Staff.	PGE utilized its DER Potential and Flexible Load Study and its associated AdopDER model to develop forecast analysis needed to inform CBRE targets for the Initial CEP. There will be three forecasts considered: community-scale solar, solar+battery, and small in-conduit hydropower.	**Section 7.2, Community-based renewable energy (CBRE)** **Section 8.3, Community-based renewable energy resources**
CLA2.1.b	G.4	The potential study should inform or directly identify annual acquisition targets (e.g., MW, MWh) for CBREs.	PGE utilized its DER Potential and Flexible Load Study and its associated AdopDER model to develop forecast analysis needed to inform our CBRE targets for the CEP Action Plan.	**Section 7.2, Community-based renewable energy (CBRE)** **Section 8.3, Community-based renewable energy resources**
CLA2.1.c	G.4	The potential study should inform or identify the acquisition targets that appropriately balance cost, risk, the pace of greenhouse gas emissions reductions, and community impacts and benefits.	Portfolio analysis is used to determine the acquisition targets that are reflected in the Preferred Portfolio.	**Section 7.2, Community-based renewable energy (CBRE)** **Chapter 11, Portfolio analysis**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
CLA2.1.d	Not listed	The potential study should measure community impacts and benefits based on interim community benefits indicators (CBI) established by the utility.	As part of PGE's DSP Part 2, we conducted a Community Targeting Assessment that developed a set of indices that assisted PGE understand the geospatial distribution of these parameters in our service area and identify affected and most vulnerable populations. Additionally, PGE utilized our DER Potential and Flexible Load Study to develop CBRE forecasts that already account for these parameters.	**Section 14.2, Community engagement** **Section 7.2, Community-based renewable energy (CBRE)**
CLA2.1.e	G.6	The first CEP should include a discussion of acquisition targets and actions that the utility will take in the action plan window to reach those targets e.g., utility procurements, utility run programs (existing and/or new), utility partnerships with other entities' programs, and projections for other customer and community-driven actions.	As part of PGE's Action Plan, we propose a potential Community RFP that will help us meet our CBRE targets. As part of this work, PGE will work with community and regional partners to further develop the RFP parameters such as scoring metrics.	**Section 7.2.3, Near-term approach within PGE's IRP** **Section 13.5, Programs and opportunities** **Chapter 12, Action Plan**, see **Sections 12.1.2, 12.2.2, 12.3**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
CLA2.1.f	G.7	If a specific project is proposed to meet some or all of the acquisition target, the utility should describe the timing, project status, status of any partnerships, and any other known critical path items involved.	PGE is not proposing a specific project needed to meet our CBRE targets. PGE has proposed conducting a potential Community RFP to meet our CBRE targets.	--
CLA2.1.g	G.8	The first CEP should include a narrative description of how the utility plans to further develop their CBRE potential study for the next CEP.	PGE intends to refine our CBRE approach through continued community engagement. We describe our plans in **Chapter 14, Community Equity Lens**.	**Section 7.2.9, New resources, programs and strategies** **Section 13.6, Looking ahead**
CLA2.1.h	G.9	The first CEP should report on the utility's plan to comply with the state's goal for community-based renewable energy projects provided in ORS 469A.210 and explain how the CBRE targets align with this strategy.	PGE's Action Plan includes steps PGE will take to acquire resources, including CBRE, that will advance our compliance toward the state's small-scale renewable target.	**Section 7.2, Community-based renewable energy**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
CLA2.2.a	G.2.b	Opportunities for CBRE actions, including distributed resources and their resiliency benefits, should be developed in coordination with communities that are served by the utility, including environmental justice communities, and with input from stakeholders and Staff.	PGE provided education and outreach on CBREs through its IRP Roundtables and CEP Learning Labs. The DER forecast, which our CBRE forecast was based on, was developed in partnership with communities, Staff, and stakeholders over the last two years through our IRP Roundtables and DSP Partnership Workshops. Additionally, PGE is not proposing a specific action needed to meet our CBRE targets. Rather, we proposed conducting a potential Community Request for Proposal (RFP) to meet our CBRE targets as well as the development of a future resiliency potential study needed to advance CBREs.	**Chapter 14, Community equity lens and engagement**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
CLA2.2.b	G.2.d	Plans for actions should reference DSP processes and engagement where appropriate.	PGE provided education and outreach on CBREs through its IRP Roundtables and CEP Learning Labs. The DER forecast, which our CBRE forecast was based on, was developed in partnership with communities, Staff, and stakeholders over the last two years through our IRP Roundtables and DSP Partnership Workshops.	**Section 14.2, Community engagement** **Section 13.5, Programs and opportunities**
CLA2.2.c	G.2.a	Opportunities that are considered for their community and/or resiliency benefits should also help facilitate greenhouse gas emissions reductions.	PGE evaluated four CBRE forecasts and as a result biogas was removed from our analysis due to the emitting nature of that resource. Our CBRE actions only will include opportunities that reduce GHG. PGE identified 155 MWs of CBRE potential by 2030.	**Sections 7.2, Community-based renewable energy (CBRE)** **Section 11.4.3, Community-based renewable energy (CBRE) portfolios**
CLA2.3.a	F.1	For the first CEP, the utility should develop interim community benefits indicators in coordination with communities served by the utility and with input from stakeholders and Staff.	PGE's CBI approach was based on suggestions provided by the Energy Advocates coalition. PGE worked with community advocates via our Learning Lab process to identify additional indicators and prioritize our approach.	**Chapter 14, Community equity lens and engagement** **Sections 7.1, Community benefits indicators (CBIs)**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
				Appendix L, Clean Energy Plan: Learning Labs community feedback
CLA2.3.b	F.2	At a minimum, the utilities should use quantifiable and measurable interim CBIs in development of the first CEP/IRP that together address the following CBI topic areas:	PGE's CBIs together address each topic area identified. The approach to CBIs within our IRP is to utilize a 10% adder for our Resource CBI pathway and a scoring methodology for our Portfolio CBI pathway.	**Section 7.1, Community benefits indicators (CBIs)**
CLA2.3.c	F.2.a	• Resilience (system and community)	PGE's iCBI-3 addresses improved grid resilience via two metrics that track customer outages and customer access to backup power in EJ communities.	**Section 7.1.6, Informational community benefits indicators**
CLA2.3.d	F.2.b	• Health and community well-being	PGE's Informational CBI-1 (iCBI) and iCBI-6 address health and community well-being via four metrics that track participation in clean energy programs and energy efficiency achievement in environmental justice (EJ) communities.	**Section 7.1.6, Informational community benefits indicators**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
CLA2.3.e	F.2.c	• Environmental impacts	PGE's iCBI-5 addresses environmental impacts with a metric that tracks reduction in GHG emissions.	**Section 7.1.6, Informational community benefits indicators**
CLA2.3.f	F.2.d	• Energy Equity (distributional and intergenerational equity), and	PGE's iCBI-1 and iCBI-6 address energy equity via four metrics that track participation in clean energy programs and energy efficiency achievement in EJ communities.	**Section 7.1.6, Informational community benefits indicators**
CLA2.3.g	F.2.e	• Economic impacts	PGE's iCBI-2 and iCBI-4 address economic impacts via five metrics that track energy affordability and increased access to jobs by members of EJ communities.	**Section 7.1.6, Informational community benefits indicators**
CLA2.3.h	F.3	At a minimum, the interim CBIs should include at least one metric of each of the following categories:	PGE's CBI approach addresses each of the three CBI categories.	**Section 7.1, Community benefits indicators (CBIs)**
CLA2.3.i	F.3.a	• Informational CBIs, which may or may not directly inform portfolio scoring in the IRP;	PGE developed Informational CBIs or iCBIs, providing transparency into important topics for communities.	**Section 7.1.6, Informational community benefits indicators**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
				Section 11.6, Informational community benefits indicators
CLA2.3.j	F.3.b	• CBRE-focused CBIs, which are used to inform and track progress on CBRE actions and should be reflected in the CBRE potential study and in IRP portfolio scoring; and	PGE developed a Resource CBI (rCBI) to inform and track progress on CBRE actions. Our rCBI methodology applies a credit of 10% to the CBRE fixed cost for all three of the CBREs we evaluated, making them relatively more competitive compared to other supply side options. This methodology allows an approximation of the value of community benefits to be reflected in the CBRE potential study and in IRP portfolio scoring.	**Section 7.1.3, Resource community benefits indicators** **Section 10.9, Resource community benefits indicators**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
CLA2.3.k	F.3.c	• Portfolio CBIs, which address the impacts of the utility's portfolio on communities, may or may not be tied to CBREs, and should be reflected in IRP portfolio scoring.	PGE developed a Portfolio CBI or pCBI to address the impacts of the utility's portfolio on communities. Portfolio CBIs are meant to adjust portfolio analysis scoring and are calculated for all portfolios evaluated. PGE introduces pCBI as a catch-all for all supplemental benefits that may come from the addition of CBREs. This metric (1 MW of CBRE =1 unit of Community Benefits) reflects the unquantifiable portfolio benefits associated with the CBRE additions.	**Section 7.1.4, Portfolio community benefits indicators** **Section 11.2, Portfolio scoring**
CLA2.3.l	F.4	The utility should explain how their interim CBIs address each of the five topic areas and note which of the three listed CBI categories each metric falls within. The utility should also explain their plans for further developing CBIs for the next CEP.	We developed three pathways for CBIs within our IRP. PGE will continue to work with community to identify CBIs that are of the highest priority for our communities. We will then work to identify which of those CBIs can be quantified and are measurable.	**Chapter 14, Community equity lens and engagement** **Section 7.1, Community benefits indicators (CBIs)** **Section 7.2.10, Further actions and considerations**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
CLA2.4.a	G.5	For the first CEP, the utility should incorporate the CBRE acquisition targets into IRP portfolio modeling in a manner that accounts for their expected costs and their expected impacts on the IRP resource portfolio performance, including impacts to resource dispatch and fuel burn, portfolio emissions, resource adequacy needs, and resource additions.	Three CBRE proxy resources were developed for IRP portfolio modeling with specific cost and performance attributes. For portfolio modeling, a 10% cost reduction was applied via our rCBI methodology to account for unquantified community benefits. Portfolio analysis incorporated the costs and system benefits associated with the proxy CBRE resources.	**Chapter 11, Portfolio analysis**
CLA2.4.b	G.3	If system-wide benefits exist for a potential CBRE, the utility should quantify those benefits in a manner consistent with the IRP when evaluating the opportunity for inclusion in the first CEP. System-wide benefits are not limited to, but may include: resource adequacy contributions, energy value, avoided GHG emissions, and avoided transmission.	Since the three CBRE proxy resources were included in IRP portfolio modeling, treatment of all system-wide benefits are consistent with the IRP.	**Chapter 11, Portfolio analysis**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
CLA2.5.a	K.1	The first CEP must include narrative which describes its resiliency-related analysis, including at minimum:	PGE developed a resilience-specific chapter for this initial CEP. This chapter provides PGE's approach to resilience-related analysis as outlined by the OPUC's UM 2225 resiliency-specific guidelines. Additionally, it includes a discussion of how PGE coordinated with our partners, identifies resilience risks and opportunities, as well as key resilience-related programs and opportunities we will prioritize to support CBRE.	**Chapter 13, Resilience**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
CLA2.5.b	K.1.a	How it was developed in coordination communities that are served by the utility, including environmental justice communities, and with input from stakeholders and Staff;	PGE created multiple channels for community engagement. Our engagement strategies included virtual meetings for both technical and non-technical audiences, surveys, creating an accessible website and content, developing a CEP-specific email and individual one-on-one meetings with community. Community representation varied from individuals to community organizations. We collected feedback from community within our Community Learning Labs, which are iterative in nature.	**Section 14.2, Community engagement, Chapter 13, Resilience**
CLA2.5.c	K.1.b	How resiliency risks were considered examined and weighted;	PGE has taken multiple steps toward evaluating risks related to climate change and natural disasters. We utilized existing risk assessment analysis regarding system and customer resilience; including energy equity work conducted through our Distribution System Plan (DSP) and Wildfire Mitigation Plan (WMP).	**Section 13.2, Evaluating resilience risks**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
CLA2.5.d	K.1.c	How resiliency opportunities were identified, measured, and weighted; and	During PGE's community engagement process we discussed potential resilience analysis, approaches, programs, and opportunities. PGE provided education on several planned and active initiatives that serve to create or enable a more resilient grid and to empower customer resilience.	**Section 13.5, Programs and opportunities**
CLA2.5.e	K.1.d	The key resiliency-related actions the utility will prioritize in the action plan window to support its CBRE acquisition targets.	As part of PGE's Action Plan, we propose a potential Community RFP that will help us meet our CBRE targets including solar+storage microgrid projects that advance community resilience. Additionally, we will work with community to develop a future resiliency potential study needed to advance CBREs.	**Chapter 12, Action Plan** **Section 12.1.2, Community-based renewable energy additions** **Section 12.2.2, CBRE action**
CLA2.5.f	Not listed	When evaluating resiliency risks for the first CEP and associated IRP, the utility should at minimum:	--	--

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
CLA2.5.g	K.2	Account for system and community resilience.	We utilized existing risk assessment analysis regarding system and customer resilience; including an enterprise-wide risk assessment, transmission and distribution asset assessment, and a community assessment.	**Section 13.2, Evaluating resilience risks** **Section 13.3, Zone of tolerance**
CLA2.5.h	K.3	Identify risks that have been identified in other planning processes already as well as gaps in system and community resilience not filled by other planning activities, such as DSP and WPP.	We utilized existing risk assessment analysis regarding system and customer resilience; including an enterprise-wide risk assessment, transmission and distribution asset assessment, and a community assessment.	**Section 13.3, Zone of tolerance** **Section 13.4, Historical reliability data**
CLA2.5.i	K.4	Consider the zone of tolerance for communities/populations within the service area.	PGE discussed "zone of tolerance" within its **Resilience Chapter**. This section speaks to existing work such as our DSP, Biden's Justice40 Initiative, Medical Certification Programs and Critical Customer Program.	**Section 13.3, Zone of tolerance**
CLA2.5.j	K.5, K.5.a	Rely on measurable historical reliability performance measures that reflect: all outages (planned, major event, or underlying);		**Section 13.4, Historical reliability data**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
CLA2.5.k	K.5.b	The primary initiating event for each major event the utility analyzed;	PGE utilizes historical reliability performance data as an input to evaluating reliability and resiliency risk on the system. The data informs the failure probability assumptions in the economic risk models for asset-caused and geographic-caused failures and is used to develop potential mitigation solutions.	
CLA2.5.l	K.5.c	The top causes for each day during which a major event occurred;		
CLA2.5.m	K.5.d	The numbers of customers out and the restoration performance for their supply;		
CLA2.5.n	K.5.e	The estimated costs to the utility to recover from the major event;		
CLA2.5.o	K.5.f	The estimated unserved energy during the period of a major event;		
CLA2.5.p	K.5.g	The estimated impacts to the customers;		
CLA2.5.q	k.5.h	The demographics of the community, including classification of energy equity or other social or environmental justice measures.	PGE utilized socioeconomics and demographic data within our DSP Part 2 as part of our CEP.	**Section 13.4, Historical reliability data**
CLA2.5.r	G.2	While evaluating opportunities and developing actions to achieve CBRE acquisition targets, the utilities should reflect a few minimum expectations:	--	--

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
CLA2.5.s	G.2.a	Focus on actions that help facilitate emissions reductions (e.g., generation, storage, demand-side actions). However:	PGE's Action Plan includes a potential Community RFP that will help us meet our CBRE targets, which will target resource actions that provide both emissions reductions and community benefits.	**Section 7.2, Community-based renewable energy (CBRE)** **Section 12.2.2, CBRE action**
CLA2.5.t	Not listed	The utility may include, for general understanding, if there are other actions, such as undergrounding lines connected to a microgrid that need to be included in the costs and benefits of a CBRE.	During PGE's community engagement process we discussed potential resiliency analysis, approaches, programs, and opportunities. PGE provided education on several planned and active initiatives that serve to create or enable a more resilient grid and to empower customer resilience. This work is included for general understanding only and is not directly included in the Action Plan.	**Section 13.5, Programs and opportunities**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
CLA2.5.u	Not listed	The utility may include supplemental discussion of other actions the company is taking to further enhance the resiliency of its system and communities (such as situational awareness investments or helping customers access portable back up generation). This discussion would be for context only and if the actions are not facilitating emissions reductions, they should not be considered actions for the CEP.	During PGE's community engagement process we discussed potential resiliency analysis, approaches, programs, and opportunities. PGE provided education on several planned and active initiatives that serve to create or enable a more resilient grid and to empower customer resilience. This work is included for general understanding only and is not directly included in the Action Plan.	**Section 13.5, Programs and opportunities**
CLA2.5.v	G.2.c	Consider opportunities to work with local communities on local resiliency planning.	PGE has several planned and active initiatives that serve to create or enable a more resilient grid and to empower customer resilience. Additionally, we are exploring ideas to partner with local community and local resiliency planners such as Community Resiliency Hubs.	**Section 7.2.10, Further actions and considerations** **Section 13.5, Programs and opportunities**
CLA2.5.w	G.2.d	Consider and clearly differentiate actions that are related to other plans, such as DSP and WPP analysis, and those that are newly identified.	PGE provided an update on its resilience efforts within its Resilience chapter. This includes actions proposed within the DSP such as updating our Value of Service Study.	**Section 13.5, Programs and opportunities**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
CLA2.5.x	G.7	If proposing a specific action, describe the cost, timing for delivery and implementation into utility operations.	PGE is not proposing a specific action within our CEP; however, PGE will work with community on a future resilience-specific potential study needed to advance CBREs.	**Section 13.5, Resilience opportunities**

Table 94. Analytical Improvements

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
AI1.a	H.5	Staff recommends that PAC and PGE include narrative, supported by quantitative analysis where possible, answers to the following long-term decarbonization questions within the first CEP:	--	--

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
AI1.b	H.5.a	1. What low regrets near term actions does the utility expect to perform relatively well, if implemented, regardless of future uncertainties in technology, demand, and regional developments?	PGE's Action Plan describes the low regrets actions which are appropriate to take in the next 2-4 years. All paths that achieve an 80% emissions reduction on PGE's system involve a significant buildout of non-emitting energy storage and renewables. In terms of transmission, we also consider South of Alston congestion relief and upgrades to the Bethel-Round Butte line as "no-regrets." We anticipate negotiating contract renewals to maintain contracted non-emitting resources in our portfolio. Additional details are available in **Chapter 1, Clean energy plan**.	**Section 1.6, High-level opportunities, potential barriers, critical dependencies** **Chapter 12, Action Plan**
AI1.c	H.5.b	2. What near term actions that the utility considered might have large negative long-term consequences (in terms of cost, risk, GHG emissions, or community impacts or benefits) under one or more future technology, demand, or regional development scenarios?	In the near term, the risks of large negative long-term consequences for our compliance path relate to anything that delays or prevents our ability to execute on the Action Plan. Additional details are available in **Chapter 1, Clean energy plan**.	**Section 1.6, High-level opportunities, potential barriers, critical dependencies**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
AI1.d	H.5.c	3. What are the critical junctures at which the utility's plan would materially change and what indicators will the utility use to identify whether those junctures are approaching?	PGE will be tracking closely the pace of acquisition of non-emitting energy and capacity. If we cannot maintain reliability or the pace of constant yearly acquisition of resources and capacity, we will need to adjust our approach to overcome delays or adjust timelines accordingly, if the variables causing the delay are beyond our control. At the same time, if new transmission options on- and off-system do not materialize, we will likely not be able to access the resources our system needs to decarbonize and maintain reliability. Additional details are available in **Chapter 1, Clean energy plan**.	**Section 1.6, High-level opportunities, potential barriers, critical dependencies**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
AI1.e	H.5.d	4. What are the critical dependencies for the utility to successfully execute its long-term plan? What are the critical dependencies for the utility's plan to achieve the desired outcomes in terms of cost, risk, GHG emissions, and community impacts or benefits? What might be the implications of one or more of those critical dependencies failing?	Large quantities of non-emitting resources must be available on the market, and at the lower price points we forecasted for them. New transmission is needed to gain access to off-system resources, or we risk the reliability of the system. As we near the 2040 target and a zero emissions requirement, new technologies that can replicate thermal generation capacity, such as advanced nuclear, hydrogen, or carbon capture and storage will be needed across the region to support decarbonization and resource adequacy. Additional details are available in **Chapter 1, Clean energy plan**.	**Section 1.6, High-level opportunities, potential barriers, critical dependencies**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
AI1.f	H.5.e	5. What critical barriers need to be addressed to implement the utility's long-term plan? Which of these barriers can be addressed by the utility or the Commission and which of these barriers are out of the utilities or the Commission's control? Which of these barriers would need to be addressed in the next 5-10 years? The utility should include a plan for addressing those barriers identified in the 5–10-year time frame, including direct actions that can be taken by the utility and opportunities to coordinate with other involved entities.	The critical barriers that need to be addressed to implement PGE's long-term plan are likely similar to those of other utilities across the West who are rapidly decarbonizing. The major barriers are transmission and the need to rapidly develop and scale new non-emitting technologies. Solutions will depend on regional cooperation, coordination, and federal policy and financial support; PGE's actions to expand partnerships regionally and continuously innovate new technologies are key near-term strategies toward successful, long-term pathways. Additional details are available in **Chapter 1, Clean Energy Plan**.	**Section 1.6, High-level opportunities, potential barriers, critical dependencies**
AI1.g	Not listed	To inform their responses to Staff's decarbonization planning questions, PGE and PAC should, within portfolio analysis:	--	--

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
AI1.h	H.1, H.1.a – H.1.c	Quantitatively evaluate opportunities and risks of emerging technologies, including, at a minimum: clean hydrogen, long duration storage, and offshore wind;	PGE developed and evaluated six emerging technology portfolios to specifically examine the implications of potential emerging technologies on portfolio costs and transmission needs. The emerging technology portfolio group included two hydrogen portfolios, an offshore wind portfolio, and a long duration storage portfolio.	**Chapter 11, Portfolio analysis**
AI1.i	H.2	Quantitatively evaluate potential impacts associated with building and transportation electrification, informed by current policy initiatives, and climate change and extreme weather;	PGE incorporated forecasts of building and transportation electrification from the DSP Part 2. PGE utilized a third-party study to inform how climate change was incorporated into the IRP via sensitivities.	**Chapter 6, Resource needs**
AI1.j	H.3	Quantitatively evaluate the impacts of transmission constraints and future transmission expansion; and	PGE developed three proxy transmission expansion options and evaluated 11 transmission portfolios to examine the implications of transmission opportunities and constraints on portfolio costs and resource actions.	**Chapter 9, Transmission** **Chapter 11, Portfolio analysis**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
AI1.k	H.4	Evaluate the sensitivity of the plans to other opportunities for enhanced regional coordination, including RA programs and improvements in transmission utilization.	PGE developed a Regional Transmission Organization (RTO) portfolio to examine the potential benefits PGE could realize from joining an RTO.	**Chapter 11, Portfolio analysis**
AI1.l	Not listed	To ensure that utility plans align with the clean energy targets in HB 2021, PAC and PGE's IRPs should:	--	--
AI1.m	D.2	Achieve the 2030 and 2035 clean energy targets under typical or expected weather and hydro conditions in those years. This should be demonstrated for the Preferred Portfolio and a set of alternative portfolios that test different paces of GHG reductions and different levels of community impacts; and	This methodology is applied to all portfolio analysis. All portfolios achieve the 2030 and 2035 emissions targets. Additional analysis on meeting resource adequacy needs under different weather and hydro conditions is also presented.	**Chapter 11, Portfolio analysis** **Appendix I, C-level analysis**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
AI1.n	D.3	Achieve resource adequacy in 2040 with no associated greenhouse gas emissions across the tested system conditions. This should be demonstrated for the Preferred Portfolio and a set of alternative portfolios that test different paces of GHG reductions and different levels of community impact.	All portfolios achieve the 2040 emissions target.	**Chapter 11, Portfolio analysis**
AI2.a	Not listed	For the first CEP and associated IRP, if the Preferred Portfolio relies on fossil fuel resource retirements or conversions to reduce GHG emissions, the utility should:	--	--
AI2.b	I.1	• Provide a rationale for and describe the risks and benefits associated with the retirement or conversion; and	PGE did not evaluate early retirements of existing thermal resources. One hydrogen portfolio did evaluate the impact of blending hydrogen at existing facilities but given the uncertainty of cost and performance characteristics the option is not included in the Preferred Portfolio.	**Chapter 11, Portfolio analysis**
AI2.c	I.2	• Identify whether each planned retirement reflects plans to	See above	--

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
		decommission the plant or plans to exclude the plant from Oregon rates.		
AI2.d	I.3	For the first CEP and associated IRP, if the Preferred Portfolio relies on operational changes relative to expected economic dispatch to reduce GHG emissions, including, but not limited to, application of operating or emissions constraints, inclusion of a GHG emissions cost in dispatch decisions, or out-of-state sales of fossil fuel generation, the utility should:	--	--
AI2.e	I.3	Quantify the impacts of those operational changes relative to expected economic dispatch in terms of generation (curtailed, reduced, or sold) and GHG emissions (avoided); and	Based on input from OPUC Staff PGE retained the use of economic dispatch in determining the output of existing thermal plants.	**Chapter 5, GHG emissions forecasting** **Chapter 11, Portfolio analysis**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
			From a modeling perspective, thermal generation (and the associated emissions) are allocated either to serve retail load or to market sales. The quantity of generation allocated to serve retail load contributes to the calculation of energy need, and the quantity for market sales affects system costs. Both inform portfolio analysis.	
AI2.f	I.4	Describe how the utility intends to implement those operational changes (e.g., through the development of operating or emissions limits, application of GHG emissions penalties, or execution of contracts with out-of-state entities), to the extent that they impact forecasted GHG emissions in the Action Plan window.	Actual operations depend on the actual weather, load, and market conditions, whereas the IRP forecasts depict simulated conditions based on averages conditions. Accordingly, IRP projections about the use of existing resources should not serve as constraints and/or direction to PGE's system operations. PGE operates its system to maintain reliability and minimize costs for PGE's customers.	--

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
			HB 2021 introduces emissions targets for PGE that are anticipated to be achieved by adding a significant increase in non-emitting generation and capacity resources to our portfolio. The IRP/CEP calculates that energy and capacity need by assuming reduced operation of thermal generation to serve retail load. In actual operations between now and 2030, non-emitting resources are anticipated to be added to our system and offset the need for thermal output that will otherwise serve retail load. Thermal generation will still be available to meet capacity needs.	

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
			Rather than model changes to thermal dispatch as an optional action, operations results are embedded in IRP/CEP modeling as an assumption and hence not quantifiable as a direct comparison to status quo operations. As we advance toward 2030, we intend to prepare for and coordinate changes in both resource procurement and operations that will affect how we schedule resources and manage net variable power costs. As PGE anticipates incorporating operational changes to meet our Western Resource Adequacy Program (WRAP) obligations in 2025 and our 2030 GHG target, we plan to highlight necessary changes to regulatory policy adapt to the change dynamics.	

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
AI3.a	J.1	The first CEP, or a designated section of the IRP that contains all information required by HB 2021, should be written for an introductory audience and include definitions of all key terms and acronyms.	PGE has developed **Chapter 1** as an accessible and free-standing summary of all information required by HB 2021, including our approach to portfolio analysis and a description of our Action Plan and analysis of emissions reductions.	**Chapter 1, Clean energy plan** **Appendix P, Acronyms**
AI3.b	J.3	The first CEP, or a designated section of the IRP that contains all information required by HB 2021, should also include:	--	--
AI3.c	J.3.a, J.3.b	A table that lists the GHG emissions assumptions for each existing and proxy resource modeled in the IRP, developed in partnership with DEQ. A table that lists the cumulative forecasted GHG emissions from each existing and proxy resource in the Preferred Portfolio under the Reference Case over the entire analysis horizon (at least 20 years) and the location of each emitting resource.	PGE developed GHG emissions assumptions and methodologies in coordination with DEQ. Emissions have been modeled for all resources consistent with these methodologies for use in portfolio analysis.	**Addendum: PGE CEP Data Template**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
AI3.d	J.3.c	The following graphs, which should include forecasted data under the Reference Case over the entire analysis horizon (at least 20 years) and at least three years of historical data:	--	--
AI3.e	J.3.c	Total annual portfolio GHG emissions, calculated in a manner consistent with the DEQ methodology, for the Preferred Portfolio and a set of alternative portfolios that test different paces of GHG reductions and different levels of community impacts.	Consistent with DEQ methodology, this analysis considers emissions for retail load service. PGE provides the resulting data each portfolio evaluated.	**Addendum: PGE CEP Data Template**
AI3.f	J.5.a	The total forecasted annual revenue requirement to serve Oregon customers for the Preferred Portfolio and a set of alternative portfolios that test different paces of GHG reductions and different levels of community impacts. This graph may exclude historical data if the forecasted revenue requirement does not approximate all costs borne by Oregon customers.	This data is provided for each portfolio.	**Addendum: PGE CEP Data Template**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
AI3.g	J.5.b	The total forecasted annual revenue requirement to serve Oregon customers, divided by the total forecasted retail sales in Oregon, for the Preferred Portfolio and a set of alternative portfolios that test different paces of GHG reductions and different levels of community impacts. This graph may exclude historical data if the forecasted revenue requirement does not approximate all costs borne by Oregon customers.	This data is provided for each portfolio.	**Addendum: PGE CEP Data Template**
AI3.h	J.4.a	Total annual GHG emissions by fuel type for resources in the Preferred Portfolio.	This data is provided for each portfolio.	**Addendum: PGE CEP Data Template**
AI3.i	J.4.b	Annual GHG emissions to serve Oregon customers by fuel type for the Preferred Portfolio.	This data is provided for each portfolio.	**Addendum: PGE CEP Data Template**
AI3.j	J.4.c	Total annual generation by fuel type for resources in the Preferred Portfolio.	Consistent with the emissions reporting above, PGE has included emitting sources only in this graph. All non-emitting sources would have emissions of zero.	**Addendum: PGE CEP Data Template**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
AI3.k	J.4.d	Annual generation serving Oregon customers by fuel type for the Preferred Portfolio.	Consistent with the emissions reporting above, PGE has included emitting sources only in this graph. All non-emitting sources would have emissions of zero.	**Addendum: PGE CEP Data Template**
AI3.l	J.4.e	Annual weighted average heat rate by fuel type for resources in the Preferred Portfolio.	PGE has included emitting sources only in this graph. Heat rate is not applicable to non-emitting sources.	**Addendum: PGE CEP Data Template**
AI3.m	J.6	In the 2023 IRP, PGE and PAC should provide a table that describes the utility's annual plans for the use of RECs associated with renewable energy generated by or contracted to the utility in the Preferred Portfolio under the Reference Case over the entire analysis horizon (at least 20 years). The table should clearly delineate between RECs that are expected to be:	--	--
AI3.n	J.6.a	Retired on behalf of Oregon customer load for RPS compliance in Oregon;	This data is provided for the Preferred Portfolio.	**Addendum: PGE CEP Data Template**
AI3.o	J.6.a	Retired on behalf of Oregon customer load for voluntary sales;	Included in CEP Data template	**Addendum: PGE CEP Data Template**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
AI3.p	J.6.a	Retired on behalf of customer load in a different state where the utility serves customers (for either compliance or voluntary sales);	Not applicable to PGE	--
AI3.q	J.6.a	Banked for future Oregon compliance;	Included in CEP Data template	**Addendum: PGE CEP Data Template**
AI3.r	J.6.a	Banked for compliance in a different state where the utility serves customers;	Not applicable to PGE	--
AI3.s	J.6.b	Utilities must report the approximate number of MWhs not associated with RECs reported in the referenced table that are generated from renewable energy technologies.	Included in CEP Data template	**Addendum: PGE CEP Data Template**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
AI3.t	Not listed	Staff, utilities, and all interested stakeholders should collaboratively develop by February 1, 2023, an agreed upon approach to capturing additional standardized information and data related to their CEP and how they will make it publicly available in a similar fashion on their websites.	PGE established a dedicated website for all our resource plans (e.g., IRP, CEP, and DSP) and provides access to information in new ways. We currently publish our IRP roundtable materials on our IRP website as well as associated Q&A responses and video recordings. Our website also provides additional materials and other relevant information regarding the CEP. Based on participant feedback, we updated our indexing system to allow easier navigation to specific topics of interest within the many hours of meeting recordings and slides presented. PGE has also provided all required quantitative data in the format of the template provided by Staff to PGE on February 24, 2023, which is publicly available as part of our CEP/IRP filing.	Web materials are available at https://portlandgeneral.com/about/who-we-are/resource-planning **Addendum: PGE CEP Data Template**

No.	OPUC No.	Guidance	Pathway to compliance	Chapter
AI3.u	J.2	Utilities should, moving forward, post any recordings made of IRP public input meetings on its website, and if a recording is not available, provide a general summary of comments received at the meeting.	All recordings are posted on our website, see https://portlandgeneral.com/about/who-we-are/resource-planning/integrated-resource-planning/irp-public-meetings	**Section 14.2.8, Transparency and accessibility** **Appendix C, 2023 IRP public meeting agendas**