WUTC Data Request 55

In the testimony of Ghosh, she states, "PacifiCorp's IRP represents the company's least-cost, least-risk plan to reliably meet customer demand over a 20-year planning period" and then goes on to state, "The primary objective of the IRP is to identify the least-cost, least-risk portfolio of resources that can serve customers in the future with manageable risks."[1]

(a) How does the Company model risk?

(b) Does the company's definition of risk involve shortfalls to CETA mandated targets?

(c) Does each portfolio have a different risk factor? If the answer is yes, please explain why.

(d) How does the Company define least-risk?

(e) How does the Company define least-cost?

(f) Is the Company assuming that there will be no risk?

(g) Please identify in the 2023 IRP progress report work papers, where the company assumes least-risk.

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(a) In PacifiCorp's 2023 Integrated Resource Plan (IRP), PacifiCorp used the PLEXOS medium-term (MT) model runs to model and evaluate stochastic risk. A discussion of how the MT model is leveraged is provided in Chapter 8, Appendix H and Appendix J. Resource portfolios developed by the long-term (LT) model, that are adjusted for reliability, compliance and cost-effectiveness by the short-term (ST) model, are then simulated in the MT model to produce metrics that support comparative cost and risk analysis among the different resource portfolio alternatives. Stochastic risk modeling of resource portfolio alternatives is performed using Monte Carlo sampling of stochastic variables across the 20-year study horizon. The stochastic variables include load, natural gas and wholesale electricity prices, hydro generation, and unplanned thermal outages. PacifiCorp also considers scenario risk by developing resource portfolios under a range of different deterministic input assumptions. All of these risks are considered by the Company when it selects a preferred portfolio.

[1] Ghosh, Exh. RG-1T, at 2:11-12 and at 2:13-16.

(b) Yes. To the extent that there are shortfalls associated with meeting the clean energy targets defined by Clean Energy Transformation Act (CETA) in runs with the Monte Carlo stochastics, the reported price is included in the risk adjustment cost. Renewable resource shapes (outside of hydro) are static in both the Monte Carlo simulation and in the deterministic dispatch runs.

(c) Yes. Each portfolio results in its own specific risk-adjustment determined by its unique combination of resources.

(d) The term "least-risk" refers to a combination of the calculated financial risk adjustment related to the Monte Carlo simulation, and historically in some instances, the use of judgement about the practicality of a portfolio as informed by scenario risks. In cases where a higher-cost portfolio has been selected as the preferred portfolio, the cost difference has been small which is explained in the relevant IRP portfolio analysis in the IRP.

(e) The term "least-cost" is defined as the lowest risk-adjusted present value of revenue requirements (PVRR) of a portfolio over the 20-year period.

(f) No.

(g) In work papers supporting the 2023 IRP, the measurement of risk is included in all MT reports on tab "Costs by Sample". The risk-adjustment PVRR is added to the non-risk-adjusted PVRR to calculate a final risk-adjusted PVRR. If the non-risk-adjusted portfolio PVRR is sufficiently low, it may overcome a higher risk-adjustments when compared to other portfolios on a final risk-adjusted basis.

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