Received
Records Management
Aug 1, 2023

August 1, 2023

Amanda Maxwell
Executive Director and Secretary
Washington Utilities and Transportation Commission
621 Woodland Square Loop SE
Lacey, WA 98503

Re: **Renewable Northwest's comments regarding Avista's 2023 Electric Integrated Resource Plan Progress Report, Docket UE-200301**

Dear Director Maxwell:

Renewable Northwest ("RNW") thanks the Washington Utilities and Transportation Commission ("the Commission") for this opportunity to comment in response to the Commission's June 27, 2023, Notice of Opportunity to File Written Comments on Avista Corporation d/b/a Avista Utilities ("Avista" or "the Company") 2023 Electric Integrated Resource Plan ("IRP") Progress Report Docket UE-200301, which Avista filed June 1, 2023.

COMMENTS

A. Resource Adequacy

Regional reliability and the ability of individual utilities to achieve resource adequacy are increasingly challenging and dynamic questions in the West, as the region transitions from heavy reliance on thermal resources as a complement to hydroelectric generation to increasing reliance on variable renewable resources and storage. Aggressive clean energy standards across the region have led to new approaches for both analyzing and achieving resource adequacy, from increasing reliance on complex probabilistic modeling efforts to the development of the Western Resource Adequacy Program ("WRAP"). Against this backdrop, we offer some thoughts on elements of Avista's IRP that relate to resource adequacy.

We appreciate the Company's use of WRAP program metrics to guide capacity planning and new resource selection, specifically Avista's use of the WRAP's Qualifying Capacity Credit ("QCC") values. Assessing the capacity of renewable resources over the geographic footprint of WRAP participants—as opposed to using metrics based on Avista's footprint alone—will result in more efficient, cost-effective resource selection. Different parts of the region will vary in their energy usage patterns, meaning a low solar QCC on Avista's system might not predict a low solar QCC for the entirety of the WRAP footprint.

RNW also observed with some initial skepticism Avista's 22% winter planning reserve margin ("PRM"). In our June comments on Puget Sound Energy's 2023 Electric Progress Report, we noted that an elevated PRM may drive a utility's investment in new thermal resources, and that we expect participation in the WRAP ultimately to lower the PRMs of participating utilities due to the resource-sharing available through the program. To Avista's credit, it shares at least the latter observation, noting that "[w]ith development of the Western Power Pool's WRAP program and once operational with binding requirements, Avista will likely increase its market reliance threshold by adopting lower PRM values compared to those used today." (4-17) In the interim, however, we briefly reiterate the central point we made in June regarding Puget's PRM:

> Given that the North American Electric Reliability Corporation has identified a norm for PRMs of "15 percent … for predominately thermal systems and 10 percent for predominately hydro systems"—while admittedly not directly addressing PRMs for systems with high concentrations of renewable resources—the Company's PRM seems high. To the extent this analysis is driving a plan to invest in new thermal resources at a time when those resources rely on speculative future fuel plans and may well become stranded in the future, the analysis deserves close scrutiny.

B. Resource Selection

RNW applauds the increased use of battery storage in Avista's preferred electric portfolio, particularly 24-hour (and greater) battery technology, which is becoming increasingly commercially viable.[1] However, alongside battery storage, Avista additionally selects ammonia as a long-duration storage solution. The Company's Preferred Resource Strategy cites the need

[1] Xcel Energy recently entered into a pilot project with Form Energy to develop a 10 MW 100-hour battery project, https://formenergy.com/form-energy-partners-with-xcel-energy-on-two-multi-day-energy-storage-projects/, and Georgia Power has contracted with Form for a 15 MW 100-hour project, https://formenergy.com/form-energy-georgia-power-continue-forward-with-15-megawatt-iron-air-battery-system-agreement/.

for ammonia-based combustion turbine buildout in 2036, 2041, 2042, and 2045 (Table 9.5). In their IRP, Avista cites the round-trip efficiency of an ammonia combustion-turbine at 13% with the extra caveat that ammonia is a clean fuel that still emits NOx during combustion (6-15). The Company elaborates:

> The renewable fuel will require substantial clean electrical energy production to meet the demand. For example, current ammonia round trip efficiency with a CT is approximately 13.4%, meaning for each MWh of ammonia power will require 7.5 MWh of a renewable resource to be created earlier in the process. Avista anticipates additional renewable resources beyond those identified in the PRS will need to be developed by the fuel supplier or will be buying power from either the wholesale market or a utility. (9-14)

Given the unclear commercial viability, poor round-trip efficiency, and NOx emissions associated with ammonia, RNW questions the prudency of Avista relying heavily on its buildout after 2035. RNW understands the need to address winter peaks when solar or wind resources may not be sufficient; however, we fear that incomplete assumptions surrounding the price and availability of renewable fuels will lead to imprudent investments in combustion turbines after 2035. RNW questions what could be driving investment in an inefficient, electricity-intensive resource option, and we encourage the Commission to investigate these modeling cost assumptions in future resource plans.

Additionally, it appears that Avista's solar costs may be overstated, perhaps as a result of a too-low assumed capacity factor. A review of Tables 6.3 through 6.5 suggests that the capital costs and fixed operations and maintenance costs of solar resources are comparable to the figures assumed by peer utilities in the region, but the resulting levelized cost of energy is significantly higher. By way of comparison, Avista's levelized cost of utility-scale solar ranges from 34.75 to 49.13 $/MWh, while Portland General Electric's levelized cost ranges from 16.50 to 19.51 $/MWh[2] and PacifiCorp's from 30.35 to 41.45 $/MWh.[3] Given the comparable cost inputs, it seems likely that the higher levelized cost of energy is the product of an overly pessimistic capacity factor assumption for utility-scale solar. RNW was unable to find an identified capacity factor for utility-scale solar in Avista's Plan to confirm. What does seem likely, however, is that some assumption regarding utility-scale solar on Avista's part is undervaluing solar resources, since all other peer utilities select significant amounts of utility-scale solar to their preferred portfolios in the near term, while Avista selects none.

[2] Portland General Electric 2023 Integrated Resource Plan and Clean Energy Plan at Table 49.
[3] PacifiCorp 2023 Integrated Resource Plan at Table 7.2.

CONCLUSION

RNW thanks the Commission for their consideration of this feedback in upcoming resource planning dockets. We are optimistic that the changes and additional analysis we have recommended above will help Avista identify a least-cost portfolio in the future that also puts the Company on a path to achieving CETA's clean energy standards and the Company's own emission reduction goals. We look forward to continued engagement as a stakeholder in future IRP processes.

Respectfully submitted,

/s/ Kate Brouns
Kate Brouns
Washington Policy Manager
Renewable Northwest
kate@renewablenw.org

/s/ Max Greene
Max Greene
Deputy Director
Renewable Northwest
max@renewablenw.org