BEFORE THE WASHINGTON

UTILITIES AND TRANSPORTATION COMMISSION

In the Matter of Avista Corporation d/b/a Avista Utilities' 2025 Electric Draft Integrated Resource Plan	**DOCKET UE-230793**

COMMISSION STAFF COMMENTS REGARDING AVISTA CORPORATION d/b/a AVISTA UTILTIES' 2025 ELECTRIC DRAFT INTEGRATED RESOURCE PLAN WAC 480-100-625(3)

November 15, 2024

TABLE OF CONTENTS

Introduction

Avista Corporation d/b/a Avista Utilities (Avista or Company) filed part of its electric Draft Integrated Resource Plan (Draft IRP) on September 3, 2024. The Company filed the remaining supplemental information on October 2, 2024,[1] in Docket UE-230793. This approach was discussed with Washington Utilities and Transportation Commission (Commission) staff (Staff) and the members of the Technical Advisory Committee (TAC).

In the same docket, Staff posted a Notice of Opportunity to File Written Comments and a Notice of Recessed Open Meeting, noting that written comments are due November 15, 2024, and the recessed open meeting is scheduled for 9:30 a.m. on Tuesday, November 26, 2024. The Company will file its Final 2025 IRP with the Commission by January 1, 2025.[2]

Staff prepared these comments to assess whether Avista's electric Draft IRP satisfies the rules and statutes governing the Company's IRP filings, highlight areas of strength in the Draft IRP, suggest opportunities for improvement in the final IRP and clean energy action plan (CEAP), and make recommendations for the 2027 IRP Update.

Summary of Draft IRP

Avista forecasts annual energy load growth of 0.91 percent on average over the next 20 years. The first seven years are expected to show relatively slow growth due to energy efficiency and a reduction of line losses from exiting Colstrip at the end of 2025. The last 10 years of the plan show quicker growth at 1.4 percent annually with more electrification. Summer and winter peak demand have recently hit all-time highs. Avista anticipates peak demand will grow faster than energy load. Over the next 20 years, the Company forecasts that summer peak demand will grow by 1.14 percent annually and winter peak by 1.12 percent annually.

Avista's existing energy resources can generate 1,569 average megawatts (aMW) in normal weather conditions, which is well above its current load forecast for 2026 of 1,165 aMW. Capacity planning for peak hours is the Company's main constraint. The Company has nearly enough resources to meet demand through 2030, but falls a bit short from 2026-2029 during both summer and winter peaks. Starting in 2030, the Company has a more significant and long-term shortfall in resources available to meet demand. The Company asserts this will drive the need for more resource acquisition.

The Draft IRP details the lowest reasonable cost resources the Company may use to serve load over the next 20 years. Among other things, it addresses how the Company incorporated tax incentives from the Inflation Reduction Act (IRA), how the Company will continue to meet Washington Clean Energy Transformation Act (CETA) obligations, and how Avista continues to evaluate distributed energy resources (DERs).

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[1] Avista, Staff, and the Technical Advisory Committee (TAC) members agreed that this approach was reasonable and on July 22, Avista filed a letter in UE-230793 indicating this intent.
[2] WAC 480-100-625 (1)

Summary of Staff Comments

When reviewing an IRP, Staff acknowledge that the preferred resource strategy (PRS) reflects the most expected future currently, but that actual resource decisions are likely to differ. The scenarios that the Company ran in Chapter 10 of the Draft IRP illustrate many possible futures if actual conditions or modeling inputs change. Additionally, the load forecast is likely to change in each iteration of an IRP. While the IRP is based on generic assumptions about resource cost and performance, Staff expect the Company to make actual procurement decisions based on real-world information from its procurement efforts (e.g., requests for proposals). It will also have the most accurate load forecasting data four-five years out, rather than up to 20 years out.

Staff's comments focus on many aspects of the IRP including load forecasting, resource adequacy, adherence to IRA and CETA, and specific resource technologies. Staff's review does not opine on the specific timing and quantity of each prospective resource in the PRS. Rather, Staff's review attempts to balance a broader perspective while still ensuring Avista is incorporating resources that serve the public interest, such as demand response and other DERs.

In the year preceding this filing, Avista held 13 technical advisory committee (TAC) meetings with interested parties. These TAC meetings covered nearly every aspect of the IRP and gave Staff and other parties the chance to ask questions, voice concerns, and give feedback. Additionally, Staff met with the Company approximately once per month throughout this period. Staff commend Avista for conducting a robust and transparent public participation process.

Through that process, the Company already incorporated many points of feedback from Staff, and other parties. Staff appreciate Avista's commitment to a collaborative and iterative process. Thus, these comments reiterate some prior feedback and introduce salient themes throughout that process.

Staff recommend the following changes, each with corresponding timelines:

Topic	No.	Recommendation
Preferred Resource Strategy	1	Within 120 days of filing the Final 2025 IRP, issue the required all-source request for proposals to evaluate the cost-effectiveness of all resources to cover the capacity shortfall within the next four years.
Load Forecast	2	For the 2027 IRP Update, continue to use end-use modeling techniques and test its accuracy for use in the long-term load forecast. Check the assumptions built into the end-use model with real-world trends as they manifest and discuss in a future TAC meeting.
	3	Ahead of the 2027 IRP Update, propose to the TAC a workplan for how Avista will incorporate sub-hourly modeling for DERs, particularly demand response.
	4	For the 2027 IRP Update, show detailed analysis that the representative concentration pathway Avista uses is its best estimation of the most accurate global prediction, while mitigating both resource adequacy

		risks and the risk of inflated costs due to overbuilding. Analysis should incorporate a range of modeling approaches, including but not limited to predictions from the Northwest Power and Conservation Council, and the International Panel on Climate Change, as well as Avista's independent climate research.
Resource Adequacy	5	Continue to participate with Western Resource Adequacy Program to aid in Avista and the region's resource adequacy, while presumably lessening the burden on any one utility.
Distributed Energy Resources	6	For the 2027 IRP Update, hold a DER-targeted TAC Meeting. Pursue the recommendations that came from the DER Potential Study. Demonstrate through TAC meetings and include in the 2027 IRP Update, how recommendations were included, and if any are not, discuss why.
	7	For the 2027 IRP Update, provide clear analysis for Avista's methodology for reducing Qualifying Capacity Credit values for demand response over time, as demand response penetration increases.
	8	For the 2027 IRP Update, incorporate time-of-use opt-out assessments in the Demand Response Potential Assessment.
Supply-side Resources	9	For the 2027 IRP Update, model that the costs of power-to-gas include conversion costs necessary to repurpose existing plants. Additionally, Avista should monitor regional hydrogen storage options.
	10	Ongoing: Use the NARUC Advanced Nuclear Tracker to follow regional nuclear projects around the country, as well as work in conjunction with the Pacific Northwest National Laboratory for more technical questions about the technology. Clearly document and demonstrate that Avista is incorporating the tenants of energy justice particularly as it relates to the impacts of nuclear energy technology on affected tribes.
	11	Conduct the planned study on distribution-scale energy storage and incorporate results into the 2027 IRP update.
Inflation Reduction Act	12	For the 2027 IRP Update, remain up to date on available IRA incentives and incorporate them into the planning and modeling process.
Clean Energy Transformation Act	13	For the 2027 IRP Update, continue to model the PRS to pursue the interim targets, and the 2030 and 2045 CETA targets at the lowest reasonable cost, while considering the impact of rate shock in a short period.

	14	For the 2027 IRP Update, demonstrate the specific actions Avista plans to take to mitigate energy burden in Named Communities.
	15	For the Final CEAP filed within the 2025 Final IRP, define specific actions for how Avista will address identified challenges to implementing energy equity principles.
State Allocation	16	Bring stakeholders together for an in-depth discussion and analysis of the issue of diverging state resource needs prior to Avista formally filing anything to the Commission.

Preferred Resource Strategy

Avista's PRS is a mix of new generation, storage, demand response, market purchases, and energy efficiency options to meet load growth at the lowest reasonable cost,[3] shown in Tables 1 and 2.

Table 1: Preferred Resource Strategy in MW of Capability (2026 to 2035)

Resource	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2026-2035
Market	39	4	10	-	-	-	-	-	-	-	n/a
Regional Transmission Expansion	-	-	-	-	-	-	-	300	-	-	300
Natural Gas CT	-	-	-	-	90	-	-	-	-	-	90
NW Wind	-	-	-	200	200	100	-	157	-	-	657
Montana Wind	-	-	-	-	-	100	100	-	-	-	200
Distributed Solar	-	0.5	0.6	0.6	0.7	0.8	0.8	1.0	0.5	0.5	6
Demand Response (Pricing)	14	-	-	3	-	-	-	-	-	6	23
Demand Response (DLC)	10	-	-	-	-	-	-	-	-	3	13
Annual Total (Excludes Market)	**25**	**1**	**1**	**203**	**291**	**201**	**101**	**458**	**1**	**9**	**1,290**

Table 2: Preferred Resource Strategy in MW of Capability (2036 to 2045)

Resource	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2036-2045
Natural Gas CT	-	-	-	-	90	-	95	-	-	-	185
NW Wind	-	-	-	-	-	140	-	120	108	200	568
Distributed Solar	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	5
Utility-Scale Solar	-	-	-	-	-	-	-	180	120	-	300
4-hr Batteries	-	-	-	-	-	-	-	90	60	-	150
Long Duration Energy Storage	-	-	-	-	-	-	-	-	26	85	111
Power to Gas CT (Ammonia)	-	-	-	-	90	-	210	-	-	-	300
Hydrogen co-fire at Coyote Springs 2	-	-	-	-	-	-	-	-	-	94	94
Biomass	-	-	-	-	-	-	-	-	-	68	68
Geothermal	-	-	-	-	-	-	-	-	-	20	20
Nuclear	-	-	-	-	-	-	-	-	-	100	100
Demand Response (Pricing)	-	-	3	-	4	-	-	-	-	-	7
Demand Response (DLC)	-	-	2	20	-	6	-	11	7	-	45
Annual Total	**1**	**1**	**5**	**21**	**185**	**146**	**305**	**402**	**322**	**568**	**1,954**

[3] WAC 480-100-620 (7)

Table 1 shows that the Company plans to meet a near-term capacity need in the next three years with market purchases. Otherwise, the first major resource acquisition occurs in 2029 with wind. Avista plans to acquire wind earlier than required according to capacity needs, to take advantage of IRA tax incentives. The PRS also includes natural gas acquisition as early as 2030.

Notably, resource acquisition picks up significantly in the last five years of the planning horizon, with the Company acquiring 568 megawatts (MW) in 2045, which is the final year for CETA compliance. This is a significant amount of resource acquisition over a relatively short period of time, much of which is to comply with CETA goals in the later years of the plan. Staff emphasize the Company must closely track the competitiveness for renewable resources across the region to avoid issues with acquiring them in 2045. Staff believe Avista must consider the cost implications of a sharp increase in rates in 2045. Avista should consider if it can gradually acquire more resources earlier to mitigate both rate shock and the risk of resources being unavailable. Staff elaborate on this point more later in these comments.

Next, Avista plans to issue an all-source request for proposals (RFP), which could include significant wind acquisition, in early 2025, to address future resource needs. However, Staff emphasize that since Avista has also identified resource need[4] within the next three years, the RFP must also pertain to that period.

Recommendation: Within 120 days of filing the Final 2025 IRP,[5] Avista must issue the required all-source RFP to evaluate the cost-effectiveness of all resources to cover the capacity shortfall within the next four years.

Load Forecast

The Draft IRP outlines a new approach Avista is taking to load forecasting. The initial phase of load forecasting covers the first five years of the forecast and uses econometric forecasting similar to prior plans. The second phase calibrates with the first five years and uses an end-use forecast model for the remaining years to forecast specific customer uses of electricity. The final phase adjusts the long-term forecast for weather normalization, line loss adjustments, and large industrial loads.

End-Use Modeling

This is the first time Avista has used end-use modeling for its long-term load forecast. Staff evaluated whether this methodology is reasonable. Staff believe that building and transportation electrification are likely to have significant impacts on load forecasting. Avista's previous

[4] WAC 480-100-605 defines "resource need" as any current or projected deficit to reliably meet electricity demands created by changes in demand, changes to system resources, or their operation to comply with state or federal requirements. Such demands or requirements may include, but are not limited to, capacity and associated energy, capacity needed to meet peak demand in any season, fossil-fuel generation retirements, equitable distribution of benefits or reduction of burdens, cost-effective conservation and efficiency resources, demand response, and renewable and non-emitting resources.
[5] WAC 480-107-017 (1)

method used regression modeling techniques to forecast future load for the entire forecast period. However, this relied on historical data, which did not include significant electric vehicle (EV) penetration, DER penetration, energy efficiency measures, or building electrification.

Avista's approach to end-use modeling attempts to address this problem by evaluating actual customer energy usage by various appliances.[6] Avista's method includes three model inputs: customer growth forecasts, equipment purchase shares, and utilization model parameters such as price elasticity. Market profiles are then developed for each customer sector (residential, commercial, and industrial) using information including the number of customers in each sector, the amount of energy consumed by a specific technology per household, peak demand for each technology, and more.

These components make up the baseline projection, which covers the years 2021-2023. The baseline projection includes known impacts of future codes and standards over the study timeframe as of May 2024. Avista notes that it modeled new customers with new codes and standards favoring electric over natural gas heat, which reflects the provisions of Washington's state energy code. In addition, Avista modeled existing customers with the option to replace existing gas space or water heating equipment with electric alternatives using purchase decision logic taken from the US Department Of Energy's National Energy Modeling System. Gas-to-electric conversion costs include the possibility of a panel upgrade and associated labor along with the tax benefits from the IRA, but do not include any state incentives (as these are not known).[7]

Staff understand that there are limitations to all models and forecasting techniques and that load forecasting is a moving target. Given that electrification along with presumably higher penetration of DERs are likely to be significant sources of uncertainty within load forecasting, Staff believe that end-use modeling appears to be a reasonable approach within long-term load forecasting. However, since this methodology is new to Avista, Staff emphasize the importance of continuing to test its accuracy over time.

Recommendation: Avista should continue to use end-use modeling techniques in its 2027 IRP Update and continue to test its accuracy for use in its long-term load forecast. Staff also recommend Avista check the assumptions built into its end-use model with real-world trends as they manifest. In fulfilling this recommendation, Avista should dedicate time in a future TAC meeting(s) to this discussion.

Sub-hourly modeling

In the 2021 IRP, Staff recommended Avista expand its sub-hourly modeling capabilities to capture the full benefits of DERs.[8] In this IRP, Avista conducted a variable energy resource (VER) integration study which studied the sub-hourly costs and benefits of VERs such as wind and solar, but it did not study DERs. Staff understand that Avista can estimate benefits for some

[6] Avista contracted AEG to assist with this work.
[7] UE-230793 Draft Electric IRP at 82.
[8] UE-200301 Commission Staff Comments at 14-15.

DERs and apply this to its preferred resource strategy model (PRiSM).[9] Staff believe that to estimate these benefits the Company would be guessing at values rather than studying them.

To fully reflect the benefit of DERs, particularly demand response, Avista should be able to capture sub-hourly variables. Sub-hourly analysis can capture the additional value provided by fast-responding resources such as demand response or distributed storage, creating a more representative resource forecast.[10] Staff hope that this could materially affect how demand response is selected in the PRS in future IRPs. Lastly, Staff seek to better understand how studying sub-hourly benefits for DERs would influence actual decisions on the day-ahead market and encourages the Company to work with the TAC to discuss this.

Recommendation: Ahead of the 2027 IRP Update, Staff recommend that Avista propose to the TAC a workplan for how it will incorporate sub-hourly modeling for DERs, particularly demand response.

Weather Modeling

In the 2021 IRP, Avista chose to use representative concentration pathway[11] (RCP) 4.5 for modeling weather. RCP 4.5 projects relatively lower greenhouse gas (GHG) emissions in the future as compared to RCP 8.5, which projects some of the highest GHG emissions. In the 2023 IRP Update, Staff recommended that Avista use RCP 8.5 year-round.[12] In the Draft IRP, Avista chose to use RCP 8.5 for June, July, August, and September, and RCP 4.5 for the remaining months.

Avista determined that in the four years that both modeled and actual data are available, both RCP 4.5 and 8.5 underestimated winter temperatures in its service territory, except in January, and overestimated summer temperatures.[13] Yet, the Company states that it still believes its current choice is most prudent since it believes RCP 8.5 projects hotter summers and that RCP 4.5 projects cooler winters.

Staff emphasize that a four-year period is a very limited data set to base this decision on. Further, RCP scenarios estimate global GHG emission impacts on climate, which have then been downscaled for a smaller area like the Company's service territory. Staff believe the Company should first determine which RCP appears more accurate globally and choose that scenario, recognizing that there may be local variances, especially given a short period of four years. This determination might include an assessment of global consensus of climate scientists and organizations.

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[9] The Company's PRiSM model is its in-house model used to estimate assumptions and constraints to develop the PRS.
[10] CRA. "Capturing Sub-hourly Value for Fast-response Resources: An Assessment of Ancillary Service and Real-time Energy Value With CRA's ASOP Model," October 2023 at page 2.
[11] Representative concentration pathways attempt to project possible scenarios related to concentration of greenhouse gases. The Intergovernmental Panel on Climate Change and Northwest Power and Conservation Council use RCPs for planning and educational purposes.
[12] UE-200301 Staff Comments on 2023 IRP Update at page 7.
[13] Draft IRP at page 119-120.

Lastly, Staff question Avista's approach of using two different RCPs to forecast one year. Staff believe there cannot be two diverging emission pathways co-occurring in one year. While neither Staff nor the Company may know with certainty which is most likely, Staff believe the Company should select one RCP. Its current approach predicts both hotter summers and colder winters. This could mitigate resource adequacy risks, but it also maximizes resource acquisition and thus introduces the risk of overbuilding resources and thus inflated costs for customers. The Company must balance these two risks.

At Staff's request, the Company included a modeling scenario using only RCP 8.5 year-round. This scenario results in relatively lower winter loads, reducing the need for both natural gas and wind and lowering costs due to less energy sales, though accordingly the cost per kilowatt hour (kWh) becomes higher.

Staff does not recommend any particular RCP at this time.

Recommendation: For the 2027 IRP Update, the Company must show detailed analysis that the RCP it uses is its best estimation of the most accurate global prediction, while mitigating both resource adequacy risks and the risk of inflated costs due to overbuilding. Analysis should incorporate a range of modeling approaches including, but not limited to, predictions from the Northwest Power and Conservation Council, and the International Panel on Climate Change, as well as Avista's independent climate research.

Resource Adequacy

In the Draft IRP, Avista meets two resource adequacy metrics. First, it meets its own standard of a loss of load probability (LOLP) of 5 percent. It also meets a loss of load expectation (LOLE) of 0.1 as recommended by the Western Resource Adequacy Program (WRAP). This results in a winter planning reserve margin (PRM) of 24 percent and a summer PRM of 17 percent. In its 2023 IRP Update, the Company assumed a winter PRM of 22 percent and a summer PRM of 13 percent, but found that those assumptions did not hold up to the reliability metrics in this cycle. Thus, an additional 50 megawatts (MW) would be needed by 2030 to maintain these reliability metrics.

The intent of WRAP is to improve resource adequacy for participants and, for those participants to benefit from the load and resource diversity of a wider region by sharing information and resources. WRAP participation, as it stands now, will become binding in the summer of 2027.[14] The Company is concerned about its winter peak capacity during extreme cold events with low hydro generation, which has been the case in the last two winters. Staff believe Avista should continue to participate in the WRAP and enter a binding agreement when possible.

Recommendation: Avista should continue to participate with WRAP to aid in its own and the region's resource adequacy, while presumably lessening the burden on any one utility.

[14] WPP (westernpowerpool.org)

Distributed Energy Resources

DER Potential Study

Staff understand that in this Draft IRP, Avista models DERs with the same economic selection model as any other resources, which is an improvement from the 2021 IRP. The Company is also participating in the Commission's docket on a cost-effectiveness test for DERs.[15] Additionally, as a part of the CEIP approval process, Avista conducted a distribution-level analysis of DER opportunities. This included a distribution feeder-level analysis of future availability and likely adoption of resources and resulting load changes.

The study identified several key recommendations for Avista to pursue. In particular, Avista would benefit from addressing EV fleet data gaps to improve upon its accuracy of transportation electrification forecasting, which will likely have uncertain yet significant impacts on load. Additionally, the Company would benefit from adding building electrification to future DER potential studies, which could align with the end-use modeling the Company is otherwise conducting. Coupled together, Avista could better understand both future load and DER potential, including building electrification assumptions if it adopts the recommendations from this study.

Avista is making steady progress with studying and incorporating DERs into its system. As DER penetration continues to increase, the distribution system will need to be able to support them. Staff believe that the DER Potential Study along with Avista's continued 10-year System Assessments[16] will be crucial to mitigating grid constraints. Further, Staff emphasize the importance of evaluating non-wire alternatives (NWA) as mitigation options. Avista should proactively plan for a distribution system that uses NWA when feasible, to avoid excessive delivery system investments as there is more DER penetration. Customers directly benefit from this when the Company can reduce capital expenditures associated with mitigating grid deficiencies.

Recommendation: Staff recommend that for the 2027 IRP Update Avista hold a DER-targeted TAC meeting. Additionally, Avista should pursue the recommendations that came from the DER Potential Study. Avista should demonstrate through TAC meetings and the 2027 IRP Update how recommendations were included and if any are not, discuss why.

Demand Response

Avista has made improvements in its adoption of DR programing, but Staff believe there is still a ways to go to increase DR adoption. Avista increased the Qualifying Capacity Credit[17] (QCC) of several types of demand response programs in this IRP as compared to the 2023 IRP Update, which among other factors resulted in DR being selected in higher quantities. The Company

[15] UE-210804.
[16] Every two years, Avista conducts a 10-year System Assessment to assess transmission and distribution system needs.
[17] A Qualifying Capacity Credit refers to the percent of installed capacity of a resource that can be relied upon in a peak period.

estimates a 5 to 6 percent shaving of peak load by DR by 2045 in Washington. Staff believe the Company should strive to achieve this amount or more even sooner.

There are many assumptions that go into valuing DR programs that have already changed over time, resulting in DR being favored more in resource selection. Staff believe that DR programs are essential for balancing demand, providing flexibility, and preventing power shortages during peak times while reducing capital costs.

Next, there is uncertainty about the QCC value of DR programs.[18] Staff acknowledge that the approach of adjusting the QCC values of DR based on DR penetration is standard, but the exact percentage reduction and timeline might vary by utility and depend on their unique forecasted assumptions. QCC values directly impact how cost-effective and reliable different resources appear in long-term planning. Without accurate QCC and levelized costs, less efficient or more expensive options could be selected, impacting both the cost-effectiveness of the resource portfolio and the reliability of the grid. The Company did not provide clear analysis showing its methodology for how it reduced QCC values for DR over time.

Recommendation: For the 2027 IRP Update, Avista should provide clear analysis for its methodology for reducing QCC values for DR over time, as DR penetration increases.

Next, Avista engaged Applied Energy Group (AEG) to conduct a Demand Response Potential Assessment (DRPA) alongside the Conservation Potential Assessment (CPA) to ensure compliance with CETA and identify all cost-effective DR options.[19]

The DRPA did not include Time-of-Use (TOU) opt-out demand side management as recommended by Staff in the 2021 IRP. AEG provided anticipated participation rates for TOU rates under both opt-in and opt-out scenarios, with residential TOU rates showing the highest potential for demand response. The opt-in option had a 13 percent participation rate, compared to 20 percent for opt-out. However, winter load reductions were 1.5 percent for opt-in versus 0.2 percent for opt-out, and summer reductions were 4 percent and 1.5 percent, respectively. The DPRA's load reductions are considered at the full maturity of the adoption rates. Staff believe that TOU opt-out rates were not fully addressed in the DRPA.

Recommendation: For the 2027 IRP Update, Avista should incorporate TOU opt-out assessments in the DRPA.

Supply-Side Resource Options

Power to Gas

Power-to-Gas (P2G) technology uses a renewable resource to produce hydrogen or ammonia through electrolysis. Those fuels are then used to power a natural gas plant to produce power. This could primarily serve as a peaking resource. Avista could source the hydrogen or ammonia

[18] UE-230793 Draft Electric IRP at 146.
[19] WAC 480-100-610 (4)(a)

from outside sources or build its own capability to convert a renewable resource into either of these gases.

Staff note a few considerations about this technology. Currently, P2G technology is relatively inefficient compared to other storage options, such as batteries. This lower efficiency increases the cost per unit of stored energy, making P2G more expensive as a storage solution in many applications.[20] While technology might improve in the future, the current costs are still high. Avista also notes that there isn't yet a clear path for storing hydrogen on a large scale in the region.[21] Further, burning these ammonia fuels creates NOx emissions, which might make it harder to meet environmental regulations and could raise health concerns for nearby residents. While P2G could help with peaking capacity and add flexibility to the power grid, the issue of hydrogen storage and sourcing of ammonia introduce uncertainties into its feasibility and cost-effectiveness.

It is unclear to Staff if Avista includes conversion costs[22] necessary to repurpose existing natural gas firing plants to be able to fire hydrogen or ammonia.

Recommendation: For the 2027 IRP Update, Avista should model that the costs of P2G include conversion costs necessary to repurpose existing plants. Additionally, Avista should monitor regional hydrogen storage options.

Nuclear Energy

For the first time since the 1980s, Avista's IRP model has selected nuclear energy, by modeling small modular reactors (SMRs). The PRS selects 100 MW of nuclear capacity in 2045. There are several scenarios the Company ran in which various conditions necessitate significantly more nuclear energy selection, and earlier in the study period. Thus, Staff believe Avista should be closely monitoring this technology and its costs.

Staff agree with Avista's assessment that there are long lead times for procuring nuclear energy projects. This may be the result of rising costs during the project implementation as well as the long wait times for U.S. Nuclear Regulatory Commission approval. However, Staff note that with economies of scale for upcoming SMRs/Advanced Reactors, as well as the drive for non-emitting energy resources across the nation, there may eventually be lower costs and a shorter implementation timeline for nuclear energy in the coming decades. Avista must also consider the various concerns that arise with this technology such as the equity and availability of fuel sourcing and nuclear waste handling.

Recommendation: Staff recommend that on an ongoing basis, Avista use the NARUC Advanced Nuclear Tracker[23] to follow regional nuclear projects around the country, as well as work in conjunction with the Pacific Northwest National Laboratory (PNNL) for more technical questions about the technology. The Company should also clearly document and demonstrate

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[20] UE-230793 Draft Electric IRP at 172.
[21] Draft IRP at page 38.
[22] *See in* Zhang, Z., Liu, G., & Lu, X. (2024). Supply scale, carbon footprint, and levelized cost assessment of hydrogen production technologies during carbon neutrality transition in China. Energy Strategy Reviews, 54, 101429. https://doi.org/10.1016/j.esr.2024.101429
[23] NARUC-NASEO Advanced Nuclear State Action Tracker - NARUC

that it is incorporating the tenants of energy justice[24] particularly as it relates to the impacts of nuclear energy technology on affected tribes.

Battery Storage

The PRS selects battery storage beginning in 2043 which corresponds with more pronounced winter peak load capacity deficiencies starting in 2042.[25] Staff were initially surprised to see this late adoption, given that Avista's main constraint is capacity planning.[26] Later in the planning horizon, long-duration batteries are likely selected to be deployed as peaking resources, alongside P2G. Short-duration lithium-ion batteries are selected as well, likely as a peaking resource. While the IRA provides tax incentives for these options, Staff understand that Avista owns significant hydro generation resources, which can behave similar to a battery, and has only minor capacity needs until the mid-2030s.

However, some of the high load scenarios, such as those connected to data centers or high electrification, in Chapter 10 of the Draft IRP show storage selected sooner and in larger quantities. These scenarios include high electrification, the addition of a data center (at the time of these comments, Avista does not know of data centers requesting to interconnect in its service territory), a future where a 300 MW regional transmission line is not selected, or a future where P2G is not available.

Further, distribution-scale energy storage was not selected in this PRS. Avista notes it intends to further study it using this IRP's avoided cost calculations to evaluate potential feeder upgrades that could support its incorporation, against traditional methods of energy delivery.[27]

Recommendation: Avista should conduct the planned study on distribution-scale energy storage and incorporate results into the 2027 IRP update.

Inflation Reduction Act

This is the second IRP developed since the passage of the IRA. The IRA includes tax incentives, production tax credits, and the Title 17 Clean Energy Financing program. RMI analyzed the potential state-by-state investment impact of the IRA. This analysis considered the scenario in which consumers and businesses adopt clean technologies swiftly and on a large scale to meet national climate goals. If this widespread adoption occurs, it could unlock between $1,500 and $12,000 per capita in each state by 2030.[28]

At this time, Staff believe that Avista complies with the Commission's policy statement on the IRA, as demonstrated by the compliance matrix at the beginning of the IRP.[29] Staff

[24] Docket A-230217, Notice of Opportunity to File Written Comments filed on September 29, 2023, at page 3.
[25] Draft IRP Figure 3 at page 5.
[26] Draft IRP at page 4.
[27] Draft IRP at 32.
[28] Rocky Mountain Institute. (2023, October 12). The economic tides just turned for states. https://rmi.org/economic-tides-just-turned-for-states/
[29] UE-230793 Draft Electric IRP at 12.

recommended Avista account for the impacts of IRA/IIJA in the 2025 Electric IRP.[30] The Company evaluates the IRA/IIJA's impact on the 2025 IRP through a comparison of the PRS and portfolio #24, which excludes IRA tax incentives. The IRA incentives are a driver of building electrification. Additionally, scenario #24 shows that without IRA incentives, wind development would be postponed and driven solely by Washington's CETA requirements.

Recommendation: For the 2027 IRP Update, Avista should remain up to date on available IRA incentives and incorporate them into the planning process and modeling, where appropriate.

Clean Energy Transformation Act

Incremental Cost of Compliance

The PRS does not limit the cost of the portfolio to the 2 percent incremental cost of compliance consideration of CETA.[31] Rather, it demonstrates the costs and portfolio selection needed to comply with the CETA targets, unconstrained by this incremental cost.[32] While Avista refers to this 2 percent as a "cost cap" in the IRP, Staff refers to it as an incremental cost of compliance as stated in rule, so as not to imply an interpretation that IOUs may not spend more than that.

Avista's current analysis shows that the only year in which the incremental cost of compliance may pose a constraint is in 2045.[33] When going from 2044 to 2045, IOUs must then serve 100 percent of retail load with renewable energy, which includes line losses. This could significantly increase costs. Staff believe that Avista should first and foremost continue to plan to meet all CETA targets. If in the future the Company finds that it might exceed the 2 percent incremental spend, it would need to demonstrate that it has maximized investments in renewable resources and non-emitting electric generation prior to using alternative compliance options.[34]

Staff also believe that throughout the CETA compliance horizon, the Company should seek to comply with the law while keeping customer costs to a gradual and incremental increase, avoiding drastic increases in any given period. As such, as 2045 planning gets closer in time, Avista should ensure that it sets a reasonable glide path to meet the 2045 standard without sharply increasing costs in the last year.

Recommendation: In the 2027 IRP Update, Avista should continue to model its PRS to pursue its interim targets, and the 2030 and 2045 CETA targets at the lowest reasonable cost, while considering the impact of rate shock in a short period.

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[30] *In the Matter of the Proceeding to Develop a Policy Statement Addressing the Impacts of the Federal Inflation Reduction Act and the Infrastructure Investment and Jobs Act,* Docket U-240013, Policy Statement on Addressing the Federal Inflation Reduction Act and the Infrastructure Investment and Jobs Act in Utility Planning, 05, ¶ 16 (May 3, 2024) (IRA/IIJA Policy Statement).
[31] RCW 19.405.060 (3)(a)(b).
[32] Draft IRP at 53.
[33] Draft IRP at 53.
[34] RCW 19.405.060 (3)(a)(b).

Clean Energy Action Plan

Staff commend the strides Avista has made since its last CEAP,[35] filed within the 2021 IRP. This 2025 Draft CEAP demonstrates improved alignment with statutory requirements in areas of cost-effectiveness, resource adequacy, and renewable energy acquisition. The CEAP could further benefit from additional detail in a few keyways.

The CEAP addresses equity, including customer benefit indicators[36] (CBIs), the tenets of energy justice, the Named Community Investment Fund[37] (NCIF), and demand-side measures. However, the CEAP is unclear on how these efforts will reduce the energy burden for Named Communities[38] over the next decade. Staff are concerned with the trajectory of the energy burden CBI, which reflects stagnant to increased energy burden over the 20-year IRP planning horizon.

Recommendation: Staff recommend that in the 2027 IRP Update, Avista demonstrate the specific actions it plans to take to mitigate energy burden in Named Communities.

Next, Staff appreciate Avista's identification of challenges in advancing energy equity goals.[39] Providing greater detail on how Avista plans to overcome these challenges and outlining its vision for energy equity outcomes over the next ten years would strengthen the plan.

Recommendation: Staff recommend that for the Final CEAP within the final IRP due on January 1, 2025, Avista should define specific actions for how Avista will address identified challenges to implementing energy equity principles.

Washington Maximum Customer Benefit Scenario

Avista presents the required Maximum Customer Benefit scenario, which estimates a future scenario in which relevant CBIs are maximized.[40] The Company chose CBIs relevant to IRP planning,[41] and entered corresponding assumptions into the model. Some assumptions include prohibiting the model from selecting air pollution emitting resources and out-of-state resource selection, including more distributed solar and storage, and increasing the 10 percent Power Act conservation adder[42] to 20 percent to incent more EE. It also includes more solar and EV load from the DER potential study with higher penetrations in Named Communities.

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[35] Within each IRP, companies are required to submit a CEAP, which is a 10-year plan for implementing CETA requirements per WAC 480-100-620 (12).
[36] WAC 480-100-640 (4)(c)
[37] The Company's NCIF funds projects to directly benefit Named Communities, that otherwise may not be cost-effective.
[38] "Named Communities" refers collectively to highly impacted communities and vulnerable populations as defined in WAC 480-100-605.
[39] Draft IRP at 303-304.
[40] WAC 480-100-620(11)(a).
[41] Clean Energy Action Plan at 318-319.
[42] Washington's Energy Independence Act requires a 10 percent cost advantage adder for EE to give this resource preference as required in the Northwest Power Act.

Staff believe that the CBIs the Company selected to modify as relevant to the IRP appear to span the statutory categories that this scenario is required to address.[43] The Company discussed this scenario with the TAC and has made improvements to this scenario since the 2023 IRP Update. While Staff do not have a specific recommendation on this scenario, we encourage the Company to continue refining this scenario with the TAC through each IRP cycle.

State Allocation of Resource Need

Avista continues to face the difficult position of balancing Washington and Idaho regulatory requirements. Historically, Avista's allocation of planned electric system resources between states has been determined using the Production-Transportation ratio (P/T), which is approximately 65 percent Washington and 35 percent Idaho.[44] As the Company's PRS increasingly includes renewable resources to comply with CETA, it also includes new natural gas combustion turbines (CTs) to serve Idaho's needs. Currently, the Company does not acquire resources solely for either state. Rather, it acquires system resources and allocates them according to the P/T ratio.[45]

Presumably, Idaho customers will not want to pay increased rates that may result from CETA, and Washington customers will not want to pay for new gas resources. Staff understand that the Company has acknowledged this potential issue and would like to initiate the first steps to address this.

Recommendation: Staff reiterate its recommendation in its comments on the Company's 2021 IRP[46] and encourages the Company to bring stakeholders together for an in-depth discussion and analysis of the issue of diverging state resource needs prior to Avista formally filing anything to the Commission.

Conclusion

Avista put forth a commendable Draft IRP. Staff appreciated Avista's advisory group process in this IRP cycle, highlighting the Company's commitment to engaging with Staff and other parties' feedback throughout the process.

Staff appreciate the new analysis the Company has performed to incorporate end-use modeling into its long-term load forecast, and the focus on balancing resource adequacy with rate impacts to customers, incorporating IRA incentives, adhering to CETA, and making progress on increased DER penetration. There are several areas the Company can improve upon, and Staff presented several recommendations throughout these comments to address these areas.

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[43] RCW 19.405.040(8) In complying with this section, an electric utility must, consistent with the requirements of RCW **19.280.030** and **19.405.140**, ensure that all customers are benefiting from the transition to clean energy: Through the equitable distribution of energy and nonenergy benefits and reduction of burdens to vulnerable populations and highly impacted communities; long-term and short-term public health and environmental benefits and reduction of costs and risks; and energy security and resiliency.

[44] Draft IRP at 33.

[45] Draft IRP, CEAP at page 298.

[46] UE-200301 Staff Comments on 2021 IRP at 23.