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Glenn Blackmon  
Director, Energy Policy Office  
Department of Commerce  
1011 Plum Street SE  
Olympia, WA 98504

Jeff Killip  
Executive Director/Secretary  
Utilities & Transportation Commission  
612 Woodland Square Loop SE  
Lacey, WA 98503

**RE: September 6, 2024, Utilities and Transportation Commission and Washington Department of Commerce Joint Meeting on Resource Adequacy (Docket UE-210096)**

The Joint Utilities (Public Generating Pool, Avista, PacifiCorp, and Puget Sound Energy) respectfully provide the following comments to the Utilities and Transportation Commission (UTC) and the Washington Department of Commerce (Commerce) following the fourth annual resource adequacy meeting held on September 6, 2024. Overall, the Joint Utilities appreciated the workshop and the robust discussions and presentations regarding regional assessments of electricity demand and supply, progress on the Western Resource Adequacy Program (WRAP), and other actions and topics related to resource adequacy. However, as articulated below, the Joint Utilities are concerned that there may be several gaps within the information discussed and presented, resulting in a less than fully complete picture of the region's current and future resource adequacy status.

The critical importance of regional resource adequacy for the Joint Utilities cannot be overstated. For reasons ranging from human health, security, economic stability, and equity, maintaining resource adequacy and reliability is critically vital for the communities served by the Joint Utilities. In addition, safeguarding reliability and affordability is a critical component of successfully achieving the energy transition and Washington's ambitious climate policies. Failure to clearly identify and confront the key challenges associated with planning, financing, building, and operating a system that primarily relies on renewable resources could result in unacceptable and consequential reliability failures and/or cost increases. It is within this context that the Joint Utilities recommend further examination of the following resource adequacy topics, which the Joint Utilities believe could provide the UTC and Commerce a more comprehensive picture of the current, short-term, and long-term state of resource adequacy in the Pacific Northwest.

The Joint Utilities recommend further discussion on the below topics, ultimately including the identification of policies that may be needed to ensure that reliability and resource adequacy is maintained as Washington's energy supply is transformed.

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## 1. An Assessment of the Achievable Pace of Renewable Resource Build-Out as Compared to the Pace Required to Also Meet Resource Adequacy and State Policy Requirements

As part of the Sept. 6 workshop, several presenters addressed recent assessments of resource adequacy. In each of these assessments, as well as utility integrated resource plans (IRPs) and the Northwest Regional Forecast (NRF) prepared by the Pacific Northwest Utilities Conference Committee (PNUCC), resource adequacy is maintained through the addition of unprecedented amounts of resource build in the near- and long-term. The Western Electricity Coordinating Council’s Western Assessment shows the need for 172 GW of capacity in the next ten years in the Western Interconnection—more than double the capacity added in the last decade. The Northwest Power and Conservation Council’s Adequacy Assessments, looking at the Pacific Northwest region, calls for adherence to its 2021 Power Plan, which identifies the need for at least 3,500 MW of renewables by 2027, 720 MW of demand response, as well as 6,000 MW of balancing reserves. PNUCC’s 2024 update to the NRF – an aggregation of Northwest utility plans – identifies utilities are planning on an additional 29 GW nameplate capacity of new resources in the Northwest in the next ten years.<sup>1</sup> Furthermore, the NRF is informed by regional utility IRPs which may not account for all expected and currently unknown demand from new large loads whose forecasting process does not align with traditional utility planning processes. While technically feasible within the parameters of utility resource planning requirements, the Joint Utilities are concerned that a key takeaway from the information provided and available for the region is that resource adequacy depends upon the success of a “moon shot” effort that is unprecedented. In many cases, the assessments rely on capacity additions that are at risk of not being deployed due to transmission or siting limitations, supply chain issues, prioritization of projects needed to build wildfire resilience, workforce needs, or may depend on the viability of new technology and/or new transmission builds.

The Joint Utilities understand the urgency of climate change and are making unprecedented efforts to ensure that the energy transition is accomplished as quickly as is possible. The recommendation to more holistically understand the pace required to meet growing capacity needs and state policy requirements is not intended to suggest that utilities slow down or conclude that the historical pace of renewable buildout cannot be accelerated. However, it is critically important to recognize that the failure to maintain resource adequacy and reliability *also threatens* the utilities’ ability to achieve the energy transition as quickly as possible. If reliability failures do occur, these have the potential to result in high costs to consumers stemming from high market prices and the acquisition of emergency or unplanned capacity, and potentially slowing progress in investment in long-term resources that advance the energy transition.

The Joint Utilities therefore recommend that the UTC and Commerce: a) coordinate an objective discussion assessing the pace at which the capacity additions identified may be realistically acquired and the pace at which necessary transmission may be available; b) develop a better and more comprehensive picture of the elements that are likely to drive and impact that pace.

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<sup>1</sup> <https://www.pnucc.org/system-planning/northwest-regional-forecast/>



## 2. Consideration of Potential Barriers to Executing on Regional and Utility System Plans

In conjunction with a better understanding of the realistic pace of capacity acquisitions, the Joint Utilities recommend the identification of key barriers and risks associated with reaching and maintaining the pace needed to achieve the planning assessments. Identifying the key risks and barriers could include the examination of specific topics such as: supply chain delays, interconnection queue reform processes, transmission expansion needed to support the needed procurement, siting limitations, wildfire risks, and viability of new technologies.

## 3. Identification of Risks Associated with an Energy System that is Primarily Renewable and Available Technologies to Address Those Risks

As we progress through the clean energy transition, the electricity grid will need to operate in ways very different from how it operates today—this also means that the character and nature of the reliability risks and associated resource adequacy needs will be new and different. The prevalence of non-dispatchable, variable resources coupled with battery and other storage technologies will fundamentally change how utilities manage system planning, reliability, and system operations. Increased volatility driven by more extreme summer and winter weather events will also create new and different types of risks for which utilities will need to plan and maintain reliability.

As an example, in a recent white paper on long-duration energy storage (LDES)<sup>2</sup>, the U.S. Department of Energy begins to identify statistics characterizing a phenomenon referred to as “energy droughts” or “dunkelflaute” (dark and windless) conditions, which involve extended periods of renewable energy unavailability. The Pacific Northwest will be particularly at risk for “energy droughts” because of the reliance on climate-impacted hydropower as an energy and capacity resource. In our transitioned future, ensuring reliability will require that incentives and technologies are created to ensure *energy* adequacy during periods of renewable energy unavailability. Our current planning metrics and bilateral market framework established to ensure resource adequacy are largely constructed around ensuring sufficient *capacity* to meet demand during peak hours. However, traditional forms of capacity planning may not ensure that sufficient energy is available, particularly during weather events which have been demonstrated to coincide with reduced wind availability. New business models and planning methodologies may be needed to fully address and understand the challenges and opportunities associated with future periodic energy droughts. In the Pacific Northwest specifically, the abundance of flexible and reliable storage capacity in the form of hydroelectric resources has the potential to “mask” a growing need to specifically understand and address energy shortages and the potential prevalence and frequency of “dunkelflaute” conditions.

The Joint Utilities recommend increased focus on these key adequacy and reliability risks and the means by which utilities will need to address these risks while maintaining reliability and affordability.

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<sup>2</sup> Somani A., E.L. Barrett, Z. Zhou, G. Chan, L. Middleton, G. Tarel, and A.M. Campbell, et al. 2023. An Assessment of Resource Drought Events as Indicators for Long-Duration Energy Storage Needs. Richland, WA: Pacific Northwest National Laboratory. Retrieved from: <https://www.pnnl.gov/publications/assessment-resource-drought-events-indicators-long-duration-energy-storage-needs>.



**4. More Comprehensive Discussion of New Available Technologies to Meet the Region’s “Clean Firm” Capacity Requirements**

In 2019, PGP, Puget Sound Energy, and Avista sponsored a study conducted by E3 to assess the resource adequacy of the Pacific Northwest.<sup>3</sup> Among other things, this study identified a near-term need for new capacity and a specific need for firm capacity in a deeply decarbonized Northwest electricity grid during periods of low wind, solar, and hydro production. The study also indicated that natural gas was the most economic source of firm capacity but identified several potential low-carbon firm capacity solutions such as: 1) new nuclear; 2) gas or coal generation with carbon capture and sequestration; 3) ultra-long duration electricity storage; and 4) replacing conventional natural gas with carbon-neutral gas. Although that study is now five years old, the Joint Utilities believe this study points to a continued critical, and growing need for “clean firm” capacity in the region. A comprehensive understanding of the resource adequacy picture necessitates an assessment of the timing of the availability of these options and whether that timing aligns with the needs being driven by resource retirements, load growth (especially with the proliferation of data centers looking to site in the Northwest), and weather volatility.

The Joint Utilities recommend a much more detailed discussion and assessment of the status of these and other emerging technologies and the timing of their availability. Consideration of emerging “clean firm” technologies should also include discussion of the risk of technological obsolescence and the potential for stranded or under-performing assets.

**Conclusion**

The Joint Utilities appreciate the UTC and Commerce’s commitment to issues of resource adequacy and ensuring that the energy transition and the intent of the Washington Clean Energy Transformation Act can be met on a reliable and affordable basis. As noted throughout this letter, the Joint Utilities strongly believe that a regional understanding of the resource adequacy picture requires a framework for more frequent and structured discussion of the complex challenges of maintaining resource adequacy while achieving Washington’s clean energy goals. The Joint Utilities look forward to discussing these issues in future dialogues with the UTC and Commerce. We appreciate your consideration of these important matters.

Sincerely,

*/s/ Scott Kinney*  
 Scott Kinney  
 Vice President, Energy  
 Resources  
 Avista

*/s/ Mike Wilding*  
 Mike Wilding  
 Vice President, Energy  
 Supply Management  
 PacifiCorp

*/s/ Mary Wiencke*  
 Mary Wiencke  
 Executive Director  
 Public Generating Pool

*/s/ Josh Jacobs*  
 Josh Jacobs  
 Vice President, Clean  
 Energy Strategy &  
 Planning  
 Puget Sound Energy

<sup>3</sup> [https://www.publicgeneratingpool.com/s/E3\\_NW\\_RA\\_Presentation-2018-01-05.pdf](https://www.publicgeneratingpool.com/s/E3_NW_RA_Presentation-2018-01-05.pdf)