

December 11, 2023

The Honorable Jay Inslee, Governor of Washington
The Honorable Brad Hendrickson, Secretary of the Senate
The Honorable Bernard Dean, Chief Clerk of the House
Olympia, WA 98504

Re: Summary of the 2023 Annual Electricity Resource Adequacy Meeting

Dear Governor Inslee and Members of the Washington State Legislature,

It is our pleasure to provide the attached summary of the 2023 annual electricity resource adequacy meeting held on July 24, 2023. We convened this meeting and submit this summary pursuant to [RCW 19.280.065](#). The meeting agenda, a recording of the meeting, and presentation materials are available on the [Department of Commerce webpage](#) and the [Utilities and Transportation Commission webpage](#).

The 2023 presentations indicate a similar situation relative to prior years: The Northwest has adequate resources to meet current demand for electricity and does not face a significant risk of outages in the short term, but much work remains to bolster the electric grid to serve the dual objectives of reducing fossil-fired generation and increasing electric loads for transportation, buildings, and industry.

While resource adequacy solutions typically focus on adding generating capacity to the grid, we highlighted at this meeting two other complementary strategies:

- **Expanded transmission capacity.** Increasing the capacity of the high voltage power transmission system improves reliability of the grid at any level of demand and supply. With greater ability to move electric generation to the places where it is needed most, power system operators can take advantage of the natural diversity of weather, wind, and solar conditions across the West. Resource adequacy risk is higher if transmission constraints limit power transfers.
- **Flexible loads, including virtual power plants.** Power grid operators must maintain a real-time balance of electricity supply and demand, a task that currently requires significant use of fossil-fired generating plants operating on standby. Utilities are increasingly turning to demand-side options, managing data-connected customer loads to help maintain reliable service. These “virtual power plants” provide an opportunity similar to our region’s longstanding use of energy efficiency programs to avoid the need for new power plants.

We also note the ongoing need to prioritize implementation of the Western Resource Adequacy Program. A robust resource adequacy program is necessary to ensure that the entire utility system is contributing to reliable and affordable service. Based on presentations and discussion at this meeting, we remain concerned about the pace at which utility participants are implementing the binding phase of this program and about the fact that some Washington utilities have not yet committed to participation.

Finally, we express our appreciation to the legislative leaders and members who participated in the 2023 meeting. Their thoughtful observations and questions enhanced the discussion and helped participants focus on customer interests in the reliability of our power system.



David Danner
Chair
Washington Utilities and Transportation
Commission



Michael Furze
Assistant Director, Energy Division
Washington Department of Commerce

2023 Resource Adequacy Meeting Summary

Introduction

On July 24, 2023, the Washington Utilities and Transportation Commission (UTC) and the Washington Department of Commerce (Commerce) convened a public meeting to review the adequacy of energy resources to serve the state's electricity needs. This meeting was held, and this summary of the meeting is being submitted to the Governor and the Legislature, pursuant to RCW 19.280.065(1), which says:

At least once every twelve months, the department and the commission shall jointly convene a meeting of representatives of the investor-owned utilities and consumer-owned utilities, regional planning organizations, transmission operators, and other stakeholders to discuss the current, short-term, and long-term adequacy of energy resources to serve the state's electric needs, and address specific steps the utilities can take to coordinate planning in light of the significant changes to the Northwest's power system including, but not limited to, technological developments, retirements of legacy baseload power generation resources, and changes in laws and regulations affecting power supply options. The department and commission shall provide a summary of these meetings, including any specific action items, to the governor and legislature within sixty days of the meeting.

Maintaining an adequate supply of electricity is a core obligation of the utilities that provide electric service to the residents and businesses of Washington. State policy reinforces this obligation as Washington transforms its electric power system and economy, reducing and eventually eliminating emissions from fossil fuels combustion for electricity generation.¹

The state's 100% clean electricity law, the Clean Energy Transformation Act,² includes requirements for utilities to establish specific standards for resource adequacy and incorporate those standards into their planning and compliance.³ As utilities reduce reliance on coal-fired and gas-fired power plants and add renewable resources such as wind and solar, new approaches and resources will be required to maintain resource adequacy to ensure reliable service to customers. It is equally important to incorporate risks associated with fossil generating resources, including fuel supply risk and weather-driven forced outage risk.

While resource adequacy is an obligation of each electric utility serving end use customers in the state, it also is a shared responsibility of the overall electric power system and the entities that operate, plan, regulate, design, and fund the generation, transmission, and delivery of that system.

The following summarizes the presentations and discussion at the 2023 meeting.

Keynote: Insights on Resource Adequacy from Advanced Analytical Techniques

Elaine Hart, PhD, founding principal of Moment Energy Insights LLC, provided a review and overview of advanced analytical techniques that power system operators and planners can employ to assess the

¹ Washington 2021 State Energy Strategy, page 119-120. <https://commerce.wa.gov/energystrategy>

² [Chapter 19.405 RCW](#).

³ [RCW 19.280.030](#). This resource planning statute was amended by the CETA legislation to add explicit resource adequacy provisions.

adequacy of system resources in an environment with multiple sources of uncertainty. She illustrated the need to rely on the best available weather and climate information and the multiple ways in which conditions can affect both demand and resources.

Key takeaways from Dr. Hart's presentation include:

- Very large scale heat events – affecting substantial portions of the West – are a primary driver of resource adequacy risk in the near term.
- Transparent and detailed West region weather datasets are critical in understanding resource adequacy risks.
- Resource adequacy risks are highly interdependent across sub-regions of the West because operators rely on transfers between sub-regions. Formal coordination is necessary to achieve confidence in assessments.
- Fuel supply risks, transportation risks, and weather-driven forced outage risks must be better incorporated in the analysis of resource adequacy.

Resource Adequacy Assessment – Western Electricity Coordinating Council

Western Electricity Coordinating Council (WECC) is a regional entity with authority delegated under the Federal Power Act to ensure a reliability and secure bulk power system throughout the Western Interconnection. As the only independent, interconnection-wide organization in the west, WECC creates and enforces reliability standards. WECC's resource adequacy assessment examines every hour over the next ten years using data collected from balancing authorities throughout the Western Interconnection. It identifies periods when the bulk power system may not have enough electricity to serve customers.

WECC presented the results of its 2022 Western Assessment of Resource Adequacy (WARA). The WARA provides assessments for the entire Western Interconnection and for five subregions. Washington is part of the Northwest Power Pool subregion. The assessment shows some near-term reduction in resource adequacy risk, but WECC foresees an increasing risk over the next 10 years. Variability drives resource adequacy risk, and WECC expects greater variability both in electricity demand and in the generation of electricity.

In addition to the standard resource adequacy assessment, WECC is developing long-term assessment that reflect a range of potential conditions over the next 20 years. These assessment consider extreme heat and extreme cold events, the impact of greater load growth such as electrification, and trends in transmission capacity.

Resource Adequacy Assessment – Northwest Power and Conservation Council

Every five years, the Northwest Power and Conservation Council (NWPCC) produces a power plan for the Pacific Northwest, which includes Washington, Oregon, Idaho, and the part of Montana west of the Rocky Mountains. Since 1999, NWPCC has also conducted probabilistic resource adequacy assessments and published annual reports on resource adequacy. The Council published its assessment for 2027 in January 2023.

The NWPCC assessment concludes that, to maintain resource adequacy, it is necessary for the region's utilities and power suppliers to follow the resource strategy identified in the council's most recent

(2021) regional power plan. An important element of this resource strategy is to add 3,100 MW of additional reserves. These are resources that stand ready to supply power on short notice if needed. Additional resources will be required if demand increases faster than expected.

Western Resource Adequacy Program

The Western Power Pool (WPP) provided an update on the Western Resource Adequacy Program (WRAP). WRAP will transition the region away from individual utility resource adequacy approaches and put in place a single regional resource adequacy standard, which will increase transparency into regional resource adequacy needs and help the region capitalize on its diverse resources and loads. This will reduce overall costs and improve reliability across the region.

The WRAP is currently in an initial non-binding phase. This phase allows utilities to submit data and view what their resource obligations would be under the program, but it does not require utilities to make any changes to their operations. The program transitions to its binding phase in the summer of 2025. Utilities that opt into the binding phase of the program will be required to meet their resource obligations under WRAP starting in the summer of 2028—the year the industry most recently agreed to start the binding phase of the program. The utilities serving almost all Washington customers are participating in development of the program, the exceptions being Douglas, Okanogan, and Pend Oreille public utility districts. Douglas PUD was the only utility of the three that participated in this workshop. Douglas PUD said its resource contracts prevent it from participating in the program.

WRAP governance is an important feature of the program that ensures industry and state interests are represented in the program. WRAP has an independent board free of financial interests and other biases. There is a committee of state representatives, which enables state regulators of participating utilities to have influence and oversight over the direction of WRAP. Participating utilities have their own committee. A program review committee will engage the public and review and administer suggested changes to the program. Together these committees provide checks and balances on one another and have the potential to enhance resource adequacy governance across the West.

Role of Transmission in Maintaining Resource Adequacy – Pacific Northwest National Laboratory

The Pacific Northwest National Laboratory (PNNL) is one of 17 national laboratories within the U.S. Department of Energy. PNNL's work covers a wide range of technologies relevant to the electric power sector and to Washington state's energy and climate policies. PNNL current work on electric power transmission requirements is as the lead national lab on the National Transmission Planning Study. PNNL also conducts relevant research on the effective use of hydroelectric generating resources and the role of water resources in relation to energy systems.

The National Transmission Planning Study concludes that, for the Western Interconnection, the region can reduce greenhouse gas emissions by 2030 to 27% of baseline (2005) emission through investments in additional transmission capacity and clean generating resources, along with retirement of fossil-fired generating resources.

Transmission Upgrades and Generator Interconnection Process – Bonneville Power Administration

The Bonneville Power Administration (BPA) is not a load serving entity; however, it has obligations to meet the full power needs of its load following utilities. Those obligations are satisfied through 20-year contracts that are up for renewal in 2028. Utilities that elect slice or block contracts retain responsibility

for their own resource adequacy. BPA owns and operates roughly 75% of transmission in the region, making its investments in transmission capacity crucial for meeting the region's climate goals and ensuring resource adequacy.

BPA reported that it is making large investments in transmission in anticipation of increased loads in the Portland and Seattle load centers to help meet the region's resource adequacy needs. It is also investing in additional transmission capacity to move wind and solar resources across the cascades. BPA projects it will have enough transmission and generation capacity to meet Washington and Oregon's 2030 clean energy laws.

BPA provided an update on its efforts to reform its processes for interconnecting new resources, such as wind and solar projects, to transmission services. The proposed interconnection process will prioritize projects for interconnection based on project readiness. In addition, BPA proposed mechanisms, including cluster studies and batched application processes, for speeding up the interconnection process for projects midway through the interconnection process and those already in the queue. BPA believes this work will significantly streamline the interconnection process, vastly accelerating the deployment of clean energy resources in the region.

Role of Demand Response and Energy Efficiency in Maintaining Resource Adequacy – Brattle Group

The Brattle Group (Brattle) is a private consulting firm that works with grid operators, generation owners, utilities, renewable energy investors, transmission companies and RTOs, governments, and trade associations to understand, prepare for, and guide the development of markets to accommodate and facilitate the increasing use of renewable energy resources.

Brattle provided insights on the value of virtual power plants (VPPs) for resource adequacy. A VPP is portfolio of distributed energy resources (DERs) that are actively controlled to provide benefits to the power system, consumers, and the environment. VPPs have experienced rapid technological advancement, and declining costs of production in recent years. Federal policy, including the Inflation Reduction Act and Federal Energy Regulatory Commission Order 2222, have provided additional financial and regulatory incentives for utilities to deploy VPPs.

Brattle found a modeled VPP can fully provide 400 MW of resource adequacy for a moderately-sized utility, and could reduce load in the summer and winter for seven months, 63 hours of the year, for up to seven consecutive hours. In addition, Brattle referenced a study by RMI that estimated 60 GW of VPPs could be deployed nationally by 2030. At that scale, VPPs would save \$15 to \$35 billion in resource costs relative to the alternatives over 10 years, plus \$20 billion in societal benefits. These benefits may vary depending on energy and greenhouse gas markets and community willingness to participate in VPP programs.

Brattle provided three low-risk actions utilities and regulators can take to promote VPPs:

1. Conduct a jurisdiction-specific VPP market potential study. Then establish VPP procurement targets.
2. Establish VPP pilot. Test innovative utility financial incentive mechanisms.
3. Review and update existing policies to comprehensively account for VPP value.

Legislative Discussion Panel – Sen. Joe Nguyen, Sen. Matt Boehnke, Rep. Alex Ybarra, Rep. Beth Doglio, Rep. Mary Dye

The Resource Adequacy Meeting concluded with an open-ended discussion by members of the Legislature who were attending the meeting. Members expressed their appreciation for the efforts of multiple entities in industry and government to analyze electric system requirements and implement solutions that will maintain reliable and affordable electricity supplies.

Members identified a number of questions and concerns, including the need for granular and timely data, the complexity of modeling energy and hydro systems, the time required to develop large transmission and offshore wind projects, the effect of variable renewable resource operations on other resources within the electric power system, the opportunities to develop VPP resources, the challenges of siting or expanding large transmission projects, potentially conflicting land uses, the potential role of nuclear energy, and the benefits of encouraging innovation and maintaining technological neutrality.