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September 4, 2024

MEMORANDUM

TO: **Council Members**

FROM: **Jennifer Light, Director of Power Planning**

SUBJECT: **Update to 2021 Power Plan Mid-Term Assessment Summary**

BACKGROUND:

Presenter: Jennifer Light

Summary: The Council will discuss proposed updates to the 2021 Power Plan Mid-Term Assessment summary. The Council first released the Mid-Term Assessment in February of 2024 and updated the summary in May 2024. This will be the second update to the summary since the release of the Mid-Term Assessment. The update reflect new information from the Council's recently released Adequacy Assessment for 2029 and other information gathered and presented in June through September. Assuming Council support of the language, staff will post the updated summary (including any required changes) and supporting mid-term assessment materials.

Workplan: A.1.6. Maintain Mid-Term Assessment.

Background: In the 2021 Power Plan, the Council committed to monitoring the region's rapidly evolving power system and policies, analyzing the impacts of changes, and reporting to the region through a mid-term assessment of the plan. In order to provide timely and useful information to the region, while also transitioning some time to the preparation of the Council's next power plan, the Power Committee agreed to developing a more dynamic

mid-term assessment. This mid-term assessment is hosted on the Council's website and provides a way of regularly updating the region as new information becomes available. At least quarterly, the Council will review and approve updates to the mid-term assessment summary. This will be the second update since the adoption of the Mid-Term Assessment at the February 2024 Council meeting.

The proposed updates account for new information since February, including:

- Updated load forecast information showing electric vehicle forecasts tracking along the 2021 Power Plan high forecast and large and uncertain data center load forecasts.
- Findings from the Council's Adequacy Assessment for 2029 including paths where the region will remain adequate and risks of significant load growth or too little investment in energy efficiency
- Information around the MLK winter event that caused significant challenges for the region, requiring the region to rely significantly more on market purchases than assumed in Council analysis to date.
- Updates on the progress of the implementation of the Conservation Program in the 2021 Power Plan showing that the region is making good progress towards the multiple goals outlined.

Staff shared the draft updates with members under a separate cover.

Reference: 2021 Power Plan Mid-Term Assessment on Council Website

Update to 2021 Power Plan Mid-Term Assessment

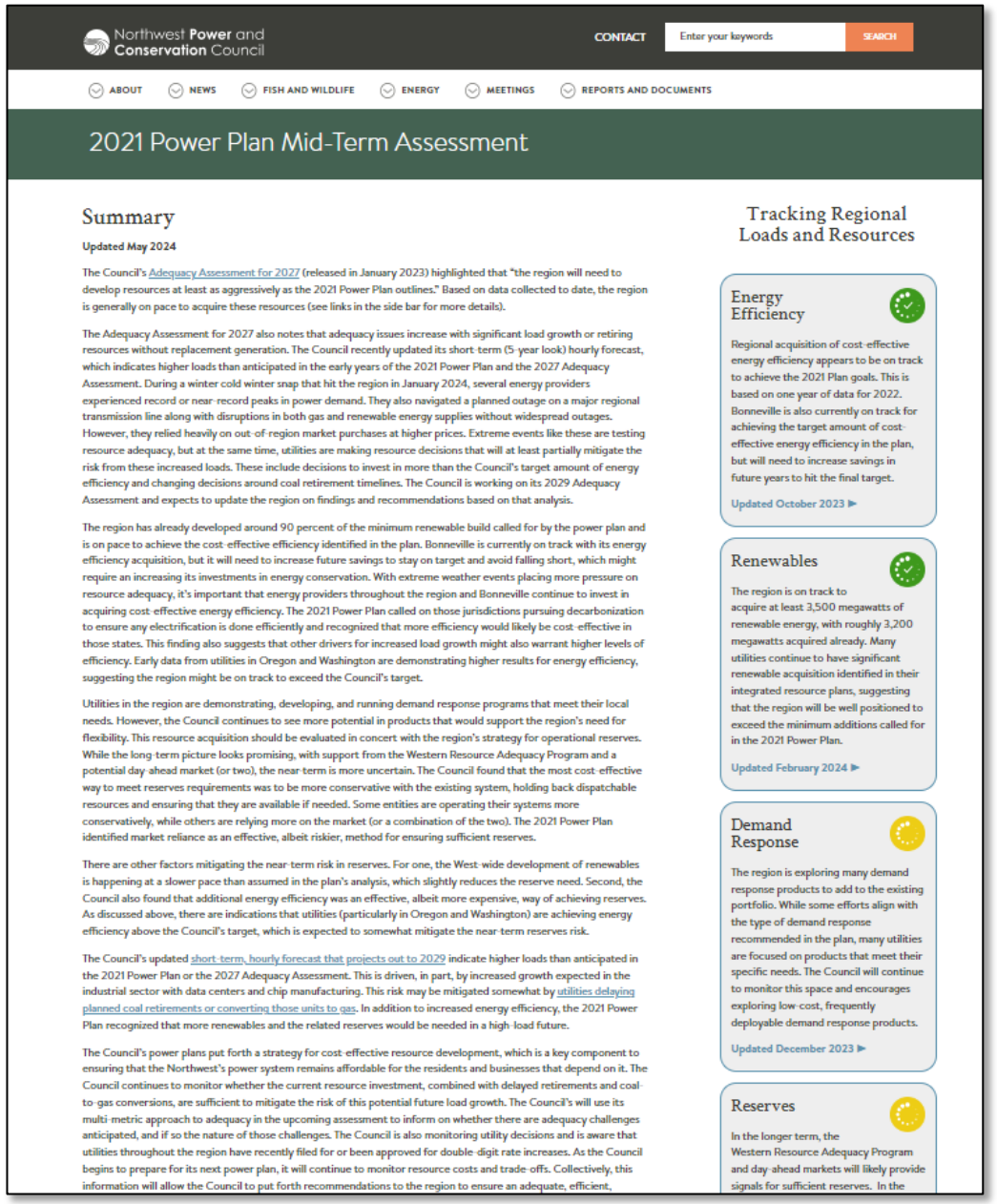
Jennifer Light

September 10, 2024

Northwest **Power** and **Conservation** Council

Purpose

- Seek a head nod from the Council on an updated summary for the Council's Mid-Term Assessment
- Update primarily focuses on new information from the Adequacy Assessment for 2029



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2021 Power Plan Mid-Term Assessment

Summary

Updated May 2024

The Council's Adequacy Assessment for 2027 (released in January 2023) highlighted that "the region will need to develop resources at least as aggressively as the 2021 Power Plan outlines." Based on data collected to date, the region is generally on pace to acquire these resources (see links in the side bar for more details).

The Adequacy Assessment for 2027 also notes that adequacy issues increase with significant load growth or retiring resources without replacement generation. The Council recently updated its short-term (5-year look) hourly forecast, which indicates higher loads than anticipated in the early years of the 2021 Power Plan and the 2027 Adequacy Assessment. During a winter cold winter snap that hit the region in January 2024, several energy providers experienced record or near-record peaks in power demand. They also navigated a planned outage on a major regional transmission line along with disruptions in both gas and renewable energy supplies without widespread outages. However, they relied heavily on out-of-region market purchases at higher prices. Extreme events like these are testing resource adequacy, but at the same time, utilities are making resource decisions that will at least partially mitigate the risk from these increased loads. These include decisions to invest in more than the Council's target amount of energy efficiency and changing decisions around coal retirement timelines. The Council is working on its 2029 Adequacy Assessment and expects to update the region on findings and recommendations based on that analysis.

The region has already developed around 90 percent of the minimum renewable build called for by the power plan and is on pace to achieve the cost-effective efficiency identified in the plan. Bonneville is currently on track with its energy efficiency acquisition, but it will need to increase future savings to stay on target and avoid falling short, which might require an increasing its investments in energy conservation. With extreme weather events placing more pressure on resource adequacy, it's important that energy providers throughout the region and Bonneville continue to invest in acquiring cost-effective energy efficiency. The 2021 Power Plan called on those jurisdictions pursuing decarbonization to ensure any electrification is done efficiently and recognized that more efficiency would likely be cost-effective in those states. This finding also suggests that other drivers for increased load growth might also warrant higher levels of efficiency. Early data from utilities in Oregon and Washington are demonstrating higher results for energy efficiency, suggesting the region might be on track to exceed the Council's target.

Utilities in the region are demonstrating, developing, and running demand response programs that meet their local needs. However, the Council continues to see more potential in products that would support the region's need for flexibility. This resource acquisition should be evaluated in concert with the region's strategy for operational reserves. While the long-term picture looks promising, with support from the Western Resource Adequacy Program and a potential day-ahead market (or two), the near-term is more uncertain. The Council found that the most cost-effective way to meet reserves requirements was to be more conservative with the existing system, holding back dispatchable resources and ensuring that they are available if needed. Some entities are operating their systems more conservatively, while others are relying more on the market (or a combination of the two). The 2021 Power Plan identified market reliance as an effective, albeit riskier, method for ensuring sufficient reserves.

There are other factors mitigating the near-term risk in reserves. For one, the West-wide development of renewables is happening at a slower pace than assumed in the plan's analysis, which slightly reduces the reserve need. Second, the Council also found that additional energy efficiency was an effective, albeit more expensive, way of achieving reserves. As discussed above, there are indications that utilities (particularly in Oregon and Washington) are achieving energy efficiency above the Council's target, which is expected to somewhat mitigate the near-term reserves risk.

The Council's updated short-term, hourly forecast that projects out to 2029 indicate higher loads than anticipated in the 2021 Power Plan or the 2027 Adequacy Assessment. This is driven, in part, by increased growth expected in the industrial sector with data centers and chip manufacturing. This risk may be mitigated somewhat by utilities delaying planned coal retirements or converting those units to gas. In addition to increased energy efficiency, the 2021 Power Plan recognized that more renewables and the related reserves would be needed in a high-load future.

The Council's power plans put forth a strategy for cost-effective resource development, which is a key component to ensuring that the Northwest's power system remains affordable for the residents and businesses that depend on it. The Council continues to monitor whether the current resource investment, combined with delayed retirements and coal-to-gas conversions, are sufficient to mitigate the risk of this potential future load growth. The Council's will use its multi-metric approach to adequacy in the upcoming assessment to inform on whether there are adequacy challenges anticipated, and if so the nature of those challenges. The Council is also monitoring utility decisions and is aware that utilities throughout the region have recently filed for or been approved for double-digit rate increases. As the Council begins to prepare for its next power plan, it will continue to monitor resource costs and trade-offs. Collectively, this information will allow the Council to put forth recommendations to the region to ensure an adequate, efficient,

Tracking Regional Loads and Resources

Energy Efficiency

Regional acquisition of cost-effective energy efficiency appears to be on track to achieve the 2021 Plan goals. This is based on one year of data for 2022. Bonneville is also currently on track for achieving the target amount of cost-effective energy efficiency in the plan, but will need to increase savings in future years to hit the final target.

Updated October 2023 ▶

Renewables

The region is on track to acquire at least 3,500 megawatts of renewable energy, with roughly 3,200 megawatts acquired already. Many utilities continue to have significant renewable acquisition identified in their integrated resource plans, suggesting that the region will be well positioned to exceed the minimum additions called for in the 2021 Power Plan.

Updated February 2024 ▶

Demand Response

The region is exploring many demand response products to add to the existing portfolio. While some efforts align with the type of demand response recommended in the plan, many utilities are focused on products that meet their specific needs. The Council will continue to monitor this space and encourages exploring low-cost, frequently deployable demand response products.

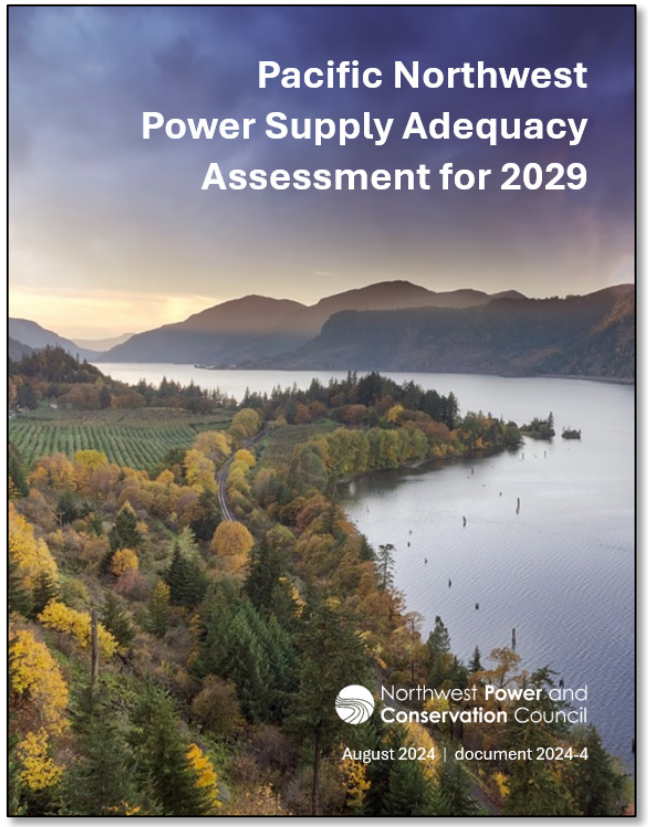
Updated December 2023 ▶

Reserves

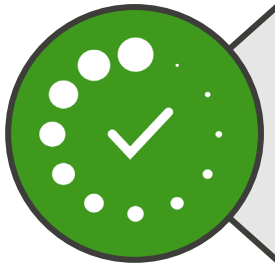
In the longer term, the Western Resource Adequacy Program and day-ahead markets will likely provide signals for sufficient reserves. In the

Adequacy Assessment for 2029

- **Question:** Given the known changes in the system since the completion of the 2021 Power Plan, does the plan resource strategy continue to provide for an adequate system?
- **Short Answer:** It depends on how much load growth the region experiences and how much of the power plan strategy is pursued.
- **Longer Answer:**
  - Implementing the 2021 Power Plan resource strategy will provide for an adequate system, assuming loads and resource acquisition consistent with the reference scenario
  - Changes to the existing system appear to alleviate some challenges with load growth
  - Achieving only the low end of the energy efficiency target presents adequacy risk to the region
  - Load growth presents a more significant risk

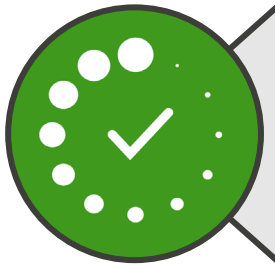


Dashboard Highlights



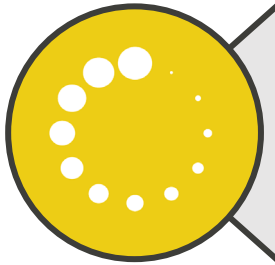
Renewable Development:

Region has acquired over 3,200 MW of renewables, on track to surpass the minimum called for in the plan



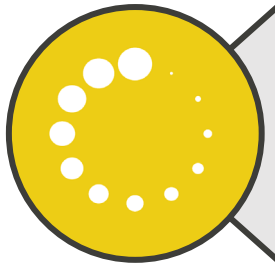
Energy Efficiency:

Regional acquisition of energy efficiency appears to be on track with the power plan target



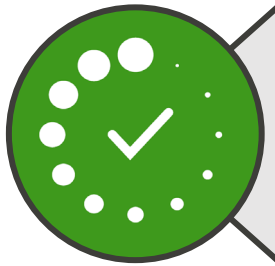
Demand Response:

Regional utilities are exploring demand response products, however more potential remains



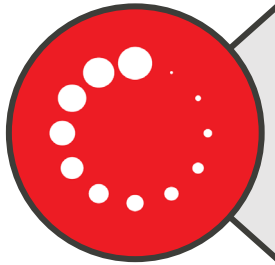
Reserves:

A successful WRAP and day ahead market(s) will likely provide needed signals, but near-term risk remains



Existing System Changes:

Changing decisions around coal plants (~1480 MW of conversions) alleviate near-term challenges



Load Growth:

Future load growth is a significant risk area, particularly near-term uncertainty around data centers

Proposed Updates to the Mid-Term Assessment Summary

1. Reiteration of the plan strategy and explaining the purpose of the mid-term assessment
2. Key findings from the adequacy assessment (pulled from the executive summary)
3. Report on progress of resource development relative to plan goals
4. Highlighting near-term reserves risk and importance of programs like the WRAP
5. Discussion of significant adequacy risk from high load growth, akin to the recent winter event, and pointing to the importance of the ninth plan