March 7, 2023

MEMORANDUM

TO: Council Members

FROM: Jennifer Light, Director of Power Planning

SUBJECT: Work Plan and Objectives for Mid-Term Assessment

BACKGROUND:

Presenter: Jennifer Light

Summary: The Power Committee will discuss the proposed 2023-2024 work plan and the goals for the 2021 Power Plan Mid-Term Assessment. The scope of the mid-term assessment has implications for the near-term work of the division, as well as the timing of delivery of the assessment. The overall objective of this meeting is to get preliminary agreement on the scope and timing of the mid-term assessment to ensure that the work planned in the coming year or two is sufficient to meet the Council’s and region’s needs.

Relevance: The 2021 Power Plan called for the Council to monitor and evaluate the region’s evolving power system and policies and develop a mid-term assessment that highlights those changes and reflects on the impacts relative to power plan’s strategy. The division’s work since completion of the Plan has focused on tracking these changes and working on analytical enhancements in preparation for the mid-term and next plan. This discussion is an opportunity to ensure the committee and staff are aligned in the overall objectives for near-term priorities and the mid-term assessment.
Power Division Work Plan and Mid-Term Assessment Goals

Jennifer Light
March 14, 2023

Objectives

- Outline division work activity over the next couple of years as we feed into the Mid-Term Assessment for the 2021 Power Plan

- Get some initial agreement on the scope of the Mid-Term Assessment to ensure that the activities planned and related timeline are sufficient
Need for Mid-Term Assessment

The promise from the 2021 Power Plan:

“The Council’s work to monitor and evaluate the region’s evolving system and policies will keep pace with new data and analysis in this rapidly changing industry. Any changes or unexpected developments will be reported as available and reflected in the 2021 Power Plan’s mid-term assessment.”

Questions to Ask for Mid-Term Assessment

- Does the resource strategy in 2021 Power Plan continue to ensure an adequate, efficient, economical, and reliable power supply?
- Do we know more about our existing system and its ability to support adequacy?
- Are new resources being developed consistent with the plan?
- How are loads changing, and is the pace of electrification faster than assumed in the plan?
- What new policies are being set and how do those provide either more certainty or uncertainty for the future system?
- What is the status of emerging technology development?
- What is happening outside the region and how might it impact our ability to leverage the market?
2023-2024 WORK PLAN

Work Generally Fits in Two Categories

Tracking

Building
Tracking: Implementation of 2021 Power Plan and Development of Mid-Term Assessment

- 2021 Plan was developed during a time of high uncertainty
- Tracking resources and policies, and testing adequacy, informs:
  - Whether and how the plan is being implemented
  - Potential gaps or key risk areas that might benefit from more focus in next plan

Tracking and Reporting on Plan Implementation

- Tracking of resources builds with annual updates on regional progress relative to the plan strategy

<table>
<thead>
<tr>
<th>Resource Type</th>
<th>Timing</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Generating Resources</td>
<td>Q1*</td>
<td>Three years of updates to inform mid-term</td>
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<tr>
<td>Energy Efficiency</td>
<td>Q3</td>
<td>Savings for 2022-2023, plus projections</td>
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<tr>
<td>Demand Response</td>
<td>Q4</td>
<td>One round of updates of utility activities/plans</td>
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* Generating resources will be reported on in early Q2 of 2023

- Tracking and reporting on other power plan recommendations
- Convening and/or participating in regional discussions related to power plan recommended work areas

Mid-term timing is tied (in part) to getting at least 2 years of reporting
Adequacy Assessment and Related Studies

Staff plans to prepare one more adequacy assessment in advance of the Mid-Term Assessment

Fuels Price Forecast (Q4 2023) → Update to Hourly Load Forecast (Q1 2024) → Wholesale Electricity Price Forecast (Q2 2024) → Adequacy Assessment (Q3 2024)

New resource tracking is scheduled to align with this.

Timing of completed mid-term is tied to this deliverable.

Tracking Regional Efforts and Policies

Tracking policies and plans is important to implementation and understanding whether the 2021 Plan continues to provide for an adequate system:

- **Resources:** What have utilities already built since the plan, and what are they planning to build to meet resource needs in the coming years?
- **Emerging Technologies:** What is the status of new emerging technologies that might fit a critical need in the power system?
- **Policies:** How might new policies enacted since the adoption of the 2021 Power Plan impact our plan assumptions?
- **Markets:** What is the status of markets in the region and across the west, and how will that impact future needs and resources?
- **Transmission:** How much transmission capacity is available to integrate new resources into the system, and what are the limitations?
Building: Preparation of Tools and Data for the Ninth Power Plan

- Power system is becoming increasingly complex
- This pre-plan period is a good time to reconsider our tools and methods
  - Revamping most modeling tools
  - Considering where new data or methods are required

Tool Enhancement: Load Forecasting

Goal for 2023 is to update our load forecasting capability

- **Building New Models**
  - Long-Term Load Forecast (20-year forecast)
  - Short-Term Hourly Forecast

- **Updating Data and Assumptions**
  - Electric vehicles
  - Behind the meter solar
  - Hydrogen production

Long-Term Load Forecast:
- Selection – April
- Build Out – End of year, Q1 2024
- Initial Forecast – Q1-Q2 of 2024

Short-Term Load Forecast:
- Approach – Q2 of this year
- Forecast – Q1 of 2024

Timing of mid-term is tied to this deliverable

Again, this feeds into the adequacy assessment.
Tool Enhancement: Regional Capital Expansion Model

- Exploring a new approach to optimizing NW resources
  - Tool built to recognize today’s power system challenges
  - Data and analysis to better model relevant resource attributes
- Scoping out options with a goal of recommending path forward in Q3 of 2023

Data and Modeling Enhancements

- Continued management of the RTF
- Multi-metric approach to adequacy
- Commercial and Industrial EE
- Valuing flexibility of resources
- Valuing resilience impacts of resources
- Upstream methane analysis
- Maintaining climate change datasets
- Improving modeling of emerging technologies

And so much more…
Resource Considerations

Our ambition is limitless, but our resources are not!

- Priority: Enhancing our ability to model the loads and resources in the context of the current system
- Reality: There are a lot areas to understand and enhance, and we are limited in how deep we can go

SIZING THE MID-TERM ASSESSMENT
Reminder of the Big Questions

Does the resource strategy in 2021 Power Plan continue to ensure an adequate, efficient, economical, and reliable power supply?

- Do we know more about our existing system and its ability to support adequacy?
- Are new resources being developed consistent with the plan?
- How are loads changing, and is the pace of electrification faster than assumed in the plan?
- What new policies are being set and how do those provide either more certainty or uncertainty for the future system?
- What is the status of emerging technology development?
- What is happening outside the region and how might it impact our ability to leverage the market?

Answering the Big Questions

- Do we know more about our existing system and its ability to support adequacy?
  - One more adequacy assessment
- Are new resources being developed consistent with the plan?
  - Updated generating resources (inside and outside the region), plus a summary of utility plans
  - Two years of conservation achievements, plus a forecast out two years
  - Updates on demand response activities across the region
- How are loads changing, and is the pace of electrification faster than assumed in the plan?
  - New long-term load forecast with an initial forecast incorporating recent policies
Gaining More Certainty in Potential Futures

- What new policies are being set and how do these provide either more certainty or uncertainty for the future system?
  - Summarized updates of new policies across and anticipated impacts on direction of plan resource strategy
- What is the status of emerging technology development?
  - Updates to emerging technology, highlighting new changes to costs or availability
- What is happening outside the region and how might it impact our ability to leverage the market?
  - Clarity around the WRAP and its role to support adequacy
  - More insight about markets, updated transmission plans, etc.

Timeline

- Today!
- Resource Updates
- Load Forecast Buildout & Initial Forecast
- Capital Expansion Scoping & Selection
- Adequacy Assessment
- Updates on Policies, Emerging Tech, Markets, Transmission, etc.
Proposed Out of Scope

- Staff is not proposing to:
  - Develop a final “baseline” load forecast that captures all elements of existing policies (e.g. new loads to support decarbonization)
  - Update potential for all resources (i.e. no EE supply curve, no full suite of reference plants)
  - Re-run the regional capital expansion model to test an updated baseline or other scenarios as a comparison to the plan strategy
- These are all going to take more time than currently proposed, and ultimately are all needed for the 9th Plan

Discussion

- Scope:
  - Is the scope appropriate for the mid-term?
  - Are there important elements we are missing?
  - Is there any piece that feels less critical?

- Timing: Is targeting late summer 2024 reasonable?