MEMORANDUM

TO: Power Committee
FROM: Chad Madron
SUBJECT: Power Plan Project Timing Check-In

BACKGROUND:
Presenter: Ben Kujala, Chad Madron
Summary: Staff will provide an overview of power plan related presentations and findings to date and discuss the schedule for the coming months of power committee work.
2021 NW Power Plan Status
Topics From Last 3 Months

- **December 15**
  - Power Plan timing [overview](#) - Including new proposed draft release date
  - [State of Electric Utilities 2019](#)
  - [DEI at Advisory Committees](#) - key takeaways
  - [Overview](#) of updates to Regional Portfolio Model
  - [First look](#) at Baseline Conditions RPM Results
  - [Adequacy results](#) from Redeveloped GENESYS

- **January 12**
  - Power Plan Timing [Update](#)
  - Overview of Hydrogen
  - [Exports/Imports in RPM](#)
  - Review of Baseline Conditions Modeling Results

- **January 28**
  - [Update](#) on Power Plan Needs Assessment (Adequacy Reserve Margin)
  - Baseline Conditions Modeling [Results Update](#)
  - [Relative costs](#) of resources and update on Robustness of EE scenario approach

- Other past [Plan Related Presentations to the Power Committee or Full Council...](#)
Plan Related Topics This Month

- Power Plan Timing Update
- Robustness of EE Scenario

Full Council
- Review of Baseline Conditions Modeling Results
- State of Utilities Report and Update on 2020 Loads and Covid Impacts
Proposed Schedule Updates
2021 Power Plan Work Schedule
Revised December 2020

2020
- Finalize Electricity Price Forecast Nov 2020
- Adequacy, RPM and other Modeling Updates

Q4

Model Based Analysis

2021
- Draft Plan Released July 2021
- Updates after Comment Period
- Power Plan Final Oct 2021
- Public Hearings

Q1 | Q2

- First Scenario Results Presentations Jan/Feb 2021
- Develop Plan Written Content, Including Power Comm Review Feb - June
- Final Scenario Related Presentations Power Comm May 2020
- Final Written Sections

Q3 | Q4

- Final Presentations - Baseline Conditions Jan/Feb 2021
- Model Based Scenario Analysis - January - May 2021
<table>
<thead>
<tr>
<th>Month</th>
<th>Event Description</th>
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</table>
| February     | • Robustness of EE Scenario Findings  
              • Baseline Conditions Discussion at Full Council |
| Late February| • Early Coal Retirement  
              • Update on Power Plan Needs Assessment (ASCC) |
| March        | • Extra Regional Markets and Adequacy  
              • Markets for Energy/Capacity |
| Late March   | • Greenhouse Gas Tipping Point |
| April        | • Bonneville Portfolio  
              • Including related load, model runs, other findings |
| Late April   | • Bonneville Portfolio  
              • Including related load, model runs, other findings  
              • Pathways to Decarbonization inputs |

These dates will likely change
<table>
<thead>
<tr>
<th>May</th>
<th>Late May</th>
<th>June</th>
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</table>
| • Bonneville wrap up if needed  
• Pathways to Decarbonization  
• Early written material review | • Pathways to Decarbonization wrap up  
• Written material for plan review | • Written material for plan review |
|              | Late June                                    | July                              |
|              | • Written material for plan review            | August                            |
|              |                                               | • Public Comment  
• Planning for public hearings |
Questions?
Extra Slides for Reference
Plan Related Presentations to the Power Committee or Full Council

• Scenario Analysis
  • **Relative costs** of resources and update on Robustness of EE scenario approach (01/28/2020)
  • BPA scenario **update** (06/2020)
  • **Review** of Plan Scenarios – Part 1 (01/2020) & Part 2 (02/2020)
  • Scenarios proposed for **inclusion** (07/2019)

• Resource Strategy
  • **Update** on Power Plan Needs Assessment (Adequacy Reserve Margin) (01/28/2020)
  • Baseline Conditions Modeling **Results Update** (01/28/2020)
  • Exports/Imports in RPM (01/2021)
  • **Review** of Baseline Conditions Modeling Results (01/2021)
  • **First look** at Baseline Conditions RPM Results (12/15/2020)
  • **Adequacy results** from Redeveloped GENESYS (12/15/2020)
  • **Overview** of updates to Regional Portfolio Model (12/15/2020)
Plan Related Presentations to the Power Committee or Full Council

• Resource Strategy Continued
  • First look at redeveloped GENESYS result (12/03/2020)
  • Wholesale Electricity Price Forecast Update (11/2020)
  • Electricity Price Forecast Updates (10/2020)
  • Wholesale Electricity Forecast Results Part 2 (09/2020)
  • Challenges with RPM Methodology (09/2020)
  • Adequacy Update (ASCC/ARM) for 2021 Power Plan Part 2
  • Electricity Price Forecast Part 1 (08/2020)
  • Adequacy Update (ASCC/ARM) for 2021 Power Plan Part 1 (08/2020)
  • Briefings on Power Plan Analytical Process (02 - 04/2020)
  • Updates to RPM Methodologies (01/2020)
  • Overview of Plan and how the proposed resource strategy is developed (05/2019)
Plan Related Presentations to the Power Committee or Full Council

- Conservation and Energy Efficiency
  - [Comments](#) on Draft Framework for Conservation Program (10/2020)
  - Initial Conservation Target Framework (08/2020)
  - EE Supply Curves for Baseline and for Scenario Analysis (05/2020)
  - EE Typical Meteorological Year Adjustment (04/2020)
  - Draft EE Supply Curves (03/2020)
  - Briefing on Lighting Standards and Considerations for the 2021 Power Plan (02/2020)
  - Update on planning parameters for EE supply curves (08/2019)

- Generation Resources
  - Update on WECC-Wide Clean Policy Wrap Up (08/2020)
  - Summary of primary generating resource reference plants and emerging tech reference plant for draft 2021 Power Plan (06/2020)
  - Update on Existing System, Coal Retirements, and Policies (05/2020)
  - Update on historical regional greenhouse gas emissions (04/2020)
  - Draft natural gas reference plants & Draft conventional geothermal reference plant (02/2020)
  - Draft Pumped storage reference plant (12/2019)
  - Onshore Wind Generation Reference Plant (11/2019)
  - Solar, Battery Storage, and Solar + Battery Storage Reference Plants (10/2019)
  - Review of Existing System and WECC-Wide Coal Retirements (09/2019)
Plan Related Presentations to the Power Committee or Full Council

• Load and Price Forecasts
  • Load Forecast Updates (08/2020)
  • Briefing on upstream methane in Power Plan (06/2020)
  • BPA Load forecast (04/2020)
  • Out-of-region load forecast and California climate-inclusive load forecast (04/2020)
  • Updates to load and other forecasts based on GCM Selection (02/2020)
  • Further Detail on Load Forecast (10/2019)
  • Forecast of Draft Loads w/Frozen Efficiency for 2021 Power Plan/Related GCMs, (09/2019)
  • Economic drivers for the plan (04/2019)
  • Upstream Methane (01/2020)
  • Update on Wholesale Electricity Price Forecast and Avoided Emissions Rate (11/2019)
  • Natural Gas Price Forecast for 2021 Power Plan (11/2019)

• Climate Change
  • Update on Climate Scenario Selection (04/2020)
  • General Circulation Model Scenario Selection (11/2019)
  • Intro to Climate change and the 2021 power plan (04/2019)
Plan Related Presentations to the Power Committee or Full Council

PLUS:
- **Overview of Hydrogen** (01/2021)
- **State of Electric Utilities 2019** (12/2020)
- **DEI at Advisory Committees** - key takeaways (12/2020)
- **Results** from stakeholder survey on use of previous power plan content (08/2020)
- **Development** of technical written material for the Power Plan (07/2020)
- **Stakeholder survey** regarding use of previous plan's written content and supporting materials (07/2020)
- **Update** on New Version of GENESYS (05/2020)
- Draft DR Supply Curves (03/2020)
- Review State Clean Energy Policies and Impact on 2021 Plan Analysis
- **Briefing** on methodology for quantifying the environmental costs and benefits of new resources for the 2021 Power Plan (09/2019)
- **Environmental Methodology Development Primer** (8/2019)
- Establishing global financial and economic assumptions for the 2021 Power Plan (07/2019)
- Establish existing system parameters and interpret state policies (07/2019)
- **Consistent Treatment** of Quantifiable Resource Costs (03/2019)
- **Proposed discount rate** for the 2021 Power Plan (02/2019)
### Power Division Work Plan

2021

Updated February 2021

<table>
<thead>
<tr>
<th>Action</th>
<th>Work Area</th>
<th>Timeframe (Calendar Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Develop the 2021 Power Plan</strong></td>
<td></td>
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</tr>
<tr>
<td><strong>A.1. Power Planning - All Teams</strong></td>
<td></td>
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<tr>
<td>1. Develop and analyze scenarios for the Power Plan</td>
<td>2021</td>
<td></td>
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<tr>
<td>2. Draft written material for the Power Plan</td>
<td>2021</td>
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</tr>
<tr>
<td>3. Start Implementation of 2021 Plan Actions and Recommendation</td>
<td>Late 2021</td>
<td></td>
</tr>
<tr>
<td><strong>A.2. Conservation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Finalize EE targets and related findings for the power plan</td>
<td>2021</td>
<td></td>
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<tr>
<td>2. Develop MCS and surcharge methodology</td>
<td>2021</td>
<td></td>
</tr>
<tr>
<td>3. Develop methodology for identifying cost-effective EE measures</td>
<td>2021</td>
<td></td>
</tr>
<tr>
<td><strong>A.3. Demand Response</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Finalize recommended DR and related findings for the power plan</td>
<td>2021</td>
<td></td>
</tr>
<tr>
<td><strong>A.4. Forecasting and Economic Analysis</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Provide final energy and economic forecasts for plan</td>
<td>2021</td>
<td></td>
</tr>
<tr>
<td>2. Provide final natural gas and other fuels forecasts for the plan</td>
<td>2021</td>
<td></td>
</tr>
<tr>
<td><strong>A.5. Generation Resources</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Finalize GR related sections of supporting material and main plan document for draft/final plan</td>
<td>2021</td>
<td></td>
</tr>
<tr>
<td>2. Develop environmental methodology, existing system, transmission availability, RPS, emissions and other data sets for the 2021 Plan.</td>
<td>2021</td>
<td></td>
</tr>
<tr>
<td><strong>A.6. System Analysis</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Complete scenario analysis for the plan</td>
<td>2021</td>
<td></td>
</tr>
<tr>
<td>2. Finalize System Adequacy Requirements (ARM/ASCC) for the draft/final plan</td>
<td>2021</td>
<td></td>
</tr>
<tr>
<td>3. Develop cost effective methods for providing reserves</td>
<td>2021</td>
<td></td>
</tr>
</tbody>
</table>

1. Guide affordable, adequate, clean energy future, develop the 2021 Northwest Power Plan and maintain analytical capability
## Power Division Work Plan

### B. Ongoing work separate from Power Plan

<table>
<thead>
<tr>
<th><strong>B.1. Conservation</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Coordinate with regional entities (e.g. NEEA, BPA, utilities, regulators) to ensure the regional goal for cost-effective conservation is achieved. Cuts across a number of Action Items, ongoing priority</td>
<td>RCP Results reported annually.</td>
</tr>
<tr>
<td>2. Work with regional entities to ensure the model conservation standards are implemented, Cuts across MCS Action Items, ongoing priority</td>
<td></td>
</tr>
<tr>
<td>3. Continue to lead the Regional Technical Forum and engage in the development and approval of measure savings estimates and protocols</td>
<td>Budget/Workplan Approval in October of each year, RCP results annually, Annual Report in June of each year</td>
</tr>
<tr>
<td>4. Enhance the understanding and use of capacity impacts from conservation. Cuts across a number of Action Items, includes tracking Utility IRPs, BPA EE Planning, is an ongoing priority</td>
<td>Part of RCP Results reported annually and ongoing tracking of IRPs</td>
</tr>
<tr>
<td>5. Ongoing priorities like tracking emerging technology, working with end use load projects, etc..</td>
<td></td>
</tr>
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<table>
<thead>
<tr>
<th><strong>B.2. Demand Response</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Convene advisory committee to explore barriers and strategies to demand response development</td>
<td>DRAC meetings held quarterly</td>
</tr>
<tr>
<td>2. Coordinate with regional utilities and Bonneville to ensure demand response costs, capabilities, and potential are included in planning documents.</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>B.3. Forecasting and Economic Analysis</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Continued monitoring of regional sales, loads and temperatures</td>
<td>Ongoing</td>
</tr>
<tr>
<td>2. Continued monitoring of economic picture of the region</td>
<td>Ongoing</td>
</tr>
<tr>
<td>3. Continued enhancement of Council’s economic and forecasting models for loads, sales and fuel prices.</td>
<td>Ongoing</td>
</tr>
<tr>
<td>4. Continued monitoring of natural gas and oil situation in the region, national and international markets.</td>
<td>Ongoing</td>
</tr>
<tr>
<td>5. Fuel-cycle emission modeling for natural gas and coal</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>
## Power Division Work Plan

### 2021

#### B.4. Generation Resources

<table>
<thead>
<tr>
<th>Task</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Track/update generating resource datasets - new/existing projects, generation, environmental legislation, transmission, emissions, etc.</td>
<td>Ongoing</td>
</tr>
<tr>
<td>2. Track regional and WECC-wide renewable portfolio standards and clean policies</td>
<td>Ongoing</td>
</tr>
<tr>
<td>3. Track and summarize regional and WECC-wide integrated resource plans</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

#### B.5. System Analysis

<table>
<thead>
<tr>
<th>Task</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Complete Annual Adequacy Assessments - Ongoing, Implementation</td>
<td>Annually</td>
</tr>
<tr>
<td>2. Complete Wholesale Electricity Price and Avoided Emissions Rate study</td>
<td>Annually</td>
</tr>
<tr>
<td>3. Update and tune models as needed to keep them current and relevant</td>
<td>Annually</td>
</tr>
</tbody>
</table>

*Updated February 2021*