20-Year (2042) Long Term Study

- Identify Transmission for Future Resources
- Long-term Public Policy Assumptions
- Prepare for Future NorthernGrid Studies
## Study Participants

- Avista
- Bonneville Power Administration
- Chelan PUD
- Idaho Power
- NorthWestern Energy
- NV Energy
- PacifiCorp
- Portland General Electric
- Puget Sound Energy
- Seattle City Light
- Snohomish PUD
- Tacoma Power
Scoping Timeline

- **Scope Workshop #1**
  - September 23

- **Initial Scope Recommendations**
  - September 30

- **Draft Study Scope Document**
  - October 7

- **Scope Workshop #2**
  - October 21 (TBD)

- **Finalize Study Scope Document**
  - Targeting November 4
Goals for Study

- Identify **Data** Needs for 20-Year Horizon
- Consolidate Long-term L&R Assumptions
- Develop Extended Planning Horizon Cases
- **One Utility** Look at Regional System
- Identify **New Transmission Constraints**
- Identify **New Resource Needs**
- Develop **New Transmission Plans and Projects**
- Provide insights for future regulatory requirements (e.g. FERC NOPR)
Identify Data Needs

• Collect and consolidate utility IRPs, load forecasts and resource forecasts for 20-year horizon.
• Utilize existing data sources including WECC, PNNL, WIRED, CAISO 20-year study, etc.
• Identify data gaps
• Develop path for consistent assumptions
Developing 20-Year Models

• Coordinate with WECC 2040 PCM and Power Flow case development
  • October 6 – WECC Meeting
• System Topology Changes
• Load and Resource Forecasts
• Expectations of area interchange
Primary Data Sources

- Utility planned projects and retirements
- Utility IRPs
- State and National Lab Studies and Reports
- WIEB/WIRED
- River Flow Models
Production Cost Elements

- Storage charging profiles
- Fuel Pricing
- Emissions Pricing
- Hurdle Rates
- Resource availability changes
<table>
<thead>
<tr>
<th>Identify</th>
<th>New transmission constraints, resource needs, flowgates and interfaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan</td>
<td>Transmission reinforcement and expansion</td>
</tr>
<tr>
<td>Test</td>
<td>Data and process changes needed for expected Regional Planning requirements</td>
</tr>
</tbody>
</table>
Load Forecast Questions

- What other data sources may be available?
- Public Policy Assumptions
- Climate Change Assumptions
- Electrification (transportation, heating, etc.)
- Energy Efficiency, DER and DSM
Resource Forecast Questions

- Utility Submitted L&R Resource Locations and Sizes
- Developing PCM Dispatch Assumptions
- Future Generation Additions and Locations
- Hydroelectric System Model Availability
- Fuel, Emissions and Hurdle Rate Pricing
Modeling Questions

How would we address unserved load?

Identifying new interfaces and flowgates

Evaluating alternative solutions (e.g. non-wires)

How do identified transmission projects proceed?

Treatment of regional vs. local transmission constraints
Stakeholder Engagement

Engage interested stakeholders during scoping, initial study results, solution identification, final results and reporting

Test run of future NorthernGrid 20-Year Planning Process

Western Power Pool Website – TPC Special Studies

• https://www.westernpowerpool.org/about/programs/tpc-studies
Scoping Timeline (Recap)

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Open Discussion, Initial Questions and Comments

Send Additional Scope Recommendations, Questions and Comments:

Scott.Beyer@westernpowerpool.org