MEMORANDUM

TO: Power Committee
FROM: Gillian Charles
SUBJECT: Update on WECC-wide clean policy analysis

BACKGROUND:

Presenter: Gillian Charles
Summary: The existing system parameters, including known future retirements and the state policies that govern current resource operation and future resource selection/development, are an essential first building block to determining future resource strategies.

At the July 2019 Power Committee, staff discussed the proposed approach for interpreting existing clean policies, including the strategy of accounting for goals beyond the mandated state policies, in the baseline conditions of the draft 2021 Power Plan. In the absence of state level policies, or sometimes in addition to them, several states, cities, communities, and many major utilities set clean goals with targets to meet a percent of their electricity supply with renewable or clean resources. While these goals are not legally binding, they do come with their own financial and societal incentives (and disincentives for non-compliance).

At the May 2020 Power Committee, staff introduced the concept of aggregating clean policies to account for clean goals, in lieu of or in addition to, state policies. This results in the development of a state “pseudo” clean policy that is representative of actual policies, goals, and planned resource procurement to meet these targets.
At this month’s Power Committee meeting (August), staff will present the culmination of this analysis – the aggregation of the state pseudo clean policies at the regional and WECC-wide level. Staff will describe the process as well as the magnitude of difference had we strictly accounted for state-level mandated policies.

This analysis has been presented step-by-step at multiple GRAC, SAAC, and RAAC advisory committee meetings to a lot of positive feedback about the strategy and preliminary results. In addition, staff has reached out to advisory committee members and state staff from Washington, Oregon, Idaho, and Montana several times throughout the process to ensure as accurate interpretation as possible. Staff will be presenting again at the August 5 SAAC meeting and will update the Power Committee slides accordingly, as well as report any feedback, concerns and discussion.

Workplan: A.4.2 Develop environmental methodology, existing system, transmission availability, renewable portfolio standards, emissions and other datasets for the 2021 Plan

Update on WECC-wide Clean Policy Analysis
August 11, 2020 – Power Committee
Gillian Charles

Focus of today’s discussion

• Staff will be presenting the results of WECC-wide clean energy policy analysis
  • Aggregating state policies with utility and city/muni goals to create pseudo state clean policy
  • Aggregating the state clean and pseudo clean policies to a region-wide and WECC-wide clean target
• Focus on the steps taken in the analysis and the overall magnitude between the clean and pseudo clean strategies
• Review advisory committee feedback and discussion
Power Committee Meetings: Existing Clean Policies

- **July 2019**
  - Process Review: Establish existing system parameters and interpret state policies

- **October 2019**
  - Review: State clean energy policies and impact on 2021 Plan analysis

- **May 2020**
  - Review: Update on existing system, coal retirements, and policies

Note: The work products that staff presents to the Power Committee have all been vetted with the Generating Resources Advisory Committee (GRAC) and when applicable the System Analysis Advisory Committee (SAAC).

Advisory Committee Meetings

- Staff has presented to the GRAC, SAAC, and RAAC on this topic at multiple meetings
  - Aug 20, 2019 – GRAC/SAAC - “Tour de WECC” update on state clean energy policies
  - May 6, 2020 – SAAC/RAAC* – Discussed strategy for aggregating policies to a region and WECC-wide level
  - June 2, 2020 – SAAC* - Staff presented aggregated state analysis that led to development of state pseudo clean policies
  - August 5, 2020 – SAAC* - Staff to present region and WECC-wide aggregation of the state pseudo clean policies

Staff will update w/ feedback from Aug 5 SAAC meeting
Policies and Regulations – in PNW Region

- Existing **state** regulations governing the operation of existing system resources and development of future resources
- To the extent possible, existing **utility** and county/city-wide goals
- Proposed state regulations
- **Federal regulations** (catalogued and interpreted in environmental methodology process)
- Company/Corporation goals and pledges

Policies and Regulations – in WECC-wide Region

- Lots of activity within the WECC over the past several years – state clean policies/goals and utility clean goals
- The scope for WECC-wide analysis of policies to follow the guidelines set forth for the region to the extent possible
Aggregating Clean Policies

- Multi-layered approach
  - Track policies at the state level (RPS, WA CETA), city/county goals*, and utility goals (PGE, IPC, Avista, etc.)

- Aggregate % of sales within the region/WECC that is obligated to meet clean and renewable targets throughout the planning period

* To the extent possible!

RPS = Weighted average sales obligated to comply & weighted average target for each year of the plan

Clean energy = Weighted average sales obligated to comply & weighted average target for each year of the plan (incl. RPS)
**Washington: ex. of state-wide policy “absorbing” other policies (for modeling purposes)**

<table>
<thead>
<tr>
<th>City/County</th>
<th>Avista</th>
<th>Puget Sound Energy</th>
<th>RPS</th>
<th>CETA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spokane</td>
<td>100% carbon neutral by 2027; 100% carbon-free by 2045</td>
<td>100% carbon neutral by 2030; 50% reduction in carbon footprint by 2040</td>
<td>15% RPS by 2020</td>
<td>100% carbon neutral by 2030 (80%/20%); 100% clean by 2045</td>
</tr>
<tr>
<td>Whatcom County</td>
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</tbody>
</table>

Note: Example not comprehensive of all policies and goals within the state

**Idaho: ex. of utility goals creating a “pseudo” state policy**

<table>
<thead>
<tr>
<th>City/County</th>
<th>Avista</th>
<th>Idaho Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boise</td>
<td>100% carbon neutral by 2027; 100% carbon-free by 2045</td>
<td>100% clean by 2045</td>
</tr>
<tr>
<td>Pocatello</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Example not comprehensive of all policies and goals within the state
The analysis...

... reflects the renewable and clean resource **obligations** or **targets** – it does not reflect the existing resource mix that is being used to comply with the targets (which in some cases may already be at or near the targets)

... treats state, utility, and city goals the same as state policies in terms of 100% achievement/compliance
  
  - Added incentives for compliance with a state policy, or rather, disincentives for non-compliance (e.g. financial penalties)

... includes policies and goals framed as % sales obligated to meet % targets (i.e. does not include policies and goals framed as GHG reductions below XX levels)

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For presentation purposes, PNW = All of WA, OR, ID, MT and US WECC = All of WA, OR, ID, MT, CA, NV, WY, UT, CO, AZ, NM

(in actuality, the models and the power plan reflect the PNW Power Act region* and all of WECC, which includes Alberta and BC)
Let’s dive into the analysis!

**Renewable Portfolio Standards: PNW**

**PNW* Aggregate RPS Target**

- **PNW RPS Targets** - Assuming 100% state sales for WA, OR, ID, and MT

- **PNW 17% renewable in 2040+**
- **OR 37% renewable in 2040+**
- **ID - No RPS**
- **MT 9% renewable in 2020+**
- **WA 13% renewable in 2020+**

* For presentation purposes, assuming 100% of the state of Montana
  * Based on 2018 utility bundled retail sales, EIA-861
**Clean Policy + RPS:**

**PNW**

**PNW* Aggregate Clean Target**

- **PNW Clean + RPS Targets - Assuming 100% state sales for WA, OR, ID, and MT**
  - WA 100% clean in 2030+
  - OR 37% renewable in 2040+
  - MT 9% renewable in 2020+
  - ID - No RPS

- **PNW Pseudo Clean - Assuming 100% state sales for WA, OR, ID, and MT**
  - WA 100% clean in 2030+
  - OR 63% pseudo clean in 2040+
  - MT 11% pseudo clean in 2030+
  - ID 71% pseudo clean in 2045+

* For presentation purposes, assuming 100% of the state of Montana
* Based on 2018 utility bundled retail sales, EIA-861

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**Clean Policy + RPS + Utility/Community Goals:**

**PNW* Aggregate Pseudo Clean Target**

- **PNW Pseudo Clean Agg Target**
  - 2020 11%
  - 2025 13%
  - 2030 60%
  - 2035 61%
  - 2040 62%

- **PNW Pseudo Clean**
  - 2020 11%
  - 2025 13%
  - 2030 60%
  - 2035 71%
  - 2045 80%

* For presentation purposes, assuming 100% of the state of Montana
* Based on 2018 utility bundled retail sales, EIA-861
Deviation between clean and pseudo clean doesn't happen until 2035, when there is a 10% increase in the pseudo over the clean target.

Pseudo clean forecast is 18% higher in 2045 than if we were to strictly represent only clean state-level mandates (Clean + RPS).

Of the pseudo clean forecast, eligible renewable resources must account for about 20% of the clean resources (PNW RPS is 16-17% of total state sales between 2035-2054).

Renewable Portfolio Standards:

**US WECC**

US WECC* Aggregate RPS Target

* For presentation purposes, assuming 100% of the state of Montana; includes state RPS policy and goal (UT)

* Based on 2018 utility bundled retail sales, EIA-861
Clean Policy + RPS: US WECC* Aggregate Clean Target

US WECC Clean + RPS Targets - Assuming 100% state sales

<table>
<thead>
<tr>
<th>Compliance Year</th>
<th>WECC Clean + RPS Agg Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>19%</td>
</tr>
<tr>
<td>2025</td>
<td>27%</td>
</tr>
<tr>
<td>2030</td>
<td>46%</td>
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<tr>
<td>2040</td>
<td>48%</td>
</tr>
<tr>
<td>2045</td>
<td>62%</td>
</tr>
<tr>
<td>2050</td>
<td>68%</td>
</tr>
</tbody>
</table>

* For presentation purposes, assuming 100% of the state of Montana; includes state RPS policy and goal (UT), and state clean policy

* Based on 2018 utility bundled retail sales, EIA-861

Clean Policy + RPS + Utility/Community Goals: US WECC* Aggregate Pseudo Clean Target

US WECC Pseudo Clean - Assuming 100% state sales

<table>
<thead>
<tr>
<th>Compliance Year</th>
<th>WECC Pseudo Clean Agg Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>20%</td>
</tr>
<tr>
<td>2025</td>
<td>27%</td>
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<tr>
<td>2030</td>
<td>52%</td>
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<tr>
<td>2040</td>
<td>53%</td>
</tr>
<tr>
<td>2045</td>
<td>71%</td>
</tr>
<tr>
<td>2050</td>
<td>80%</td>
</tr>
</tbody>
</table>

* For presentation purposes, assuming 100% of the state of Montana; includes state RPS policy and goal (UT), state clean policy, and pseudo clean policy

* Based on 2018 utility bundled retail sales, EIA-861
Magnitude between aggregate clean and pseudo clean targets in the US WECC

US WECC Clean Targets - Assuming 100% state sales

- Largest gap between the pseudo clean forecast and strictly clean is 12%, starting in 2050
- Compliance years 2030 to 2044 are fairly stable, before the 2045 target increase
- Of the pseudo clean forecast, eligible renewable resources must account for about half of the clean resources by 2045 (WECC RPS is 34-36% of total sales between 2030-2054)

Overall observations

- For the draft 2021 Power Plan period (2021-2041),
  - PNW*: Pseudo clean target starts at 20% and increases to 71% of all sales in the PNW
  - Pseudo clean target starts at 20% and increases to 55% of all sales in the US WECC (subsequent increases in 2045 and 2050 raise it to 80% - but this is outside of the planning period)
- Including clean goals at the utility and city level with the mandated clean state policy, leads to an aggregated pseudo clean target that is more representative of reality
- Pseudo clean captures important market forces such as IRP procurement drivers (for example the clean energy goals from Idaho Power and Avista in the state of Idaho)
Questions?

<table>
<thead>
<tr>
<th>State</th>
<th>RPS</th>
<th>Clean/Carbon</th>
<th>No Coal</th>
</tr>
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<tbody>
<tr>
<td>Washington</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Oregon</td>
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<tr>
<td>Idaho</td>
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<td>Alberta</td>
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</table>

- ✓ Regulation, binding
- ✗ goal, non-binding