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UM 2225 Clean Energy Plans

Analytical Improvements

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Overview and Context

- HB 2021 overview
- Investigation overview
- Analytical Improvements work stream

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House Bill (HB) 2021

Emissions reductions

- 80% reduction – 2030
- 90% reduction – 2035
- 100% GHG free – 2040
- Natural gas plant prohibition

Planning and protections

- Clean Energy Plans (CEP)
- Reliability pause
- Affordability off ramp
- Non-bypassability

Environmental justice

- Advisory groups
- Labor standards
- Community benefits analysis

Community renewables

- 10% small-scale by 2030
- ODOE Grants
- ODOE Study

Consumer choice

- Community renewables
- Code of conduct (maintaining competition)

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UM 2225 Investigation

- **Purpose:** Clarify key expectations prior to first CEP
  - Start with new elements, HB 2021 requirements
  - Identify other planning improvements, time permitting
- **Goal:** Facilitate a collaborative, efficient, and responsive process that results in clarity of key issues in Q3 2022

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UM 2225 Work Streams

CEP purpose, format, process

- Planning Framework
- Roadmap acknowledgment
- Engagement Strategies
- Procedural issues

CEP analytical requirements

- Community Lens Analysis
- Resiliency Standards and Practices
- Analytical Improvements

"Help develop a baseline of understanding of planning to decarbonization targets and to capture the most important near-term analytical recommendations that could be identified within the time available."

Issues covered by future recommendations:

- Procedural rules
- Broader discussion of resiliency planning

Issues we were not able to get deeper into (examples):

- Procurement
- IRP Streamlining
- Other important analytical issues e.g. demand-side modeling, social cost of GHGs

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Analytical Improvements Work Stream

Planning for Decarbonization Targets

- Key Planning Questions
- Clean Energy Technology Scenarios
- Demand Scenarios
- Regional Development Scenarios
- GHG Emissions Constraints in IRP

Treatment of Fossil Fuel Resources

- Fossil Fuel Retirements and Conversions
- Fossil Fuel Operational Changes

Additional Data Transparency (and Attribution)

- Accessibility
- Emissions Data
- Cost Data
- Fossil Resource Data
- REC Data
- Standard Reporting

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Work Stream Summary:

Process: Three workshops with expert presentations, Staff concepts, large and small group idea capturing

Outcomes:

- Shared learnings
- Analytical priorities
- Areas of HB 2021 interpretation for continued discussion*

- Staff focus:
  - Narrow analytical focus
  - Accessibility and transparency
  - Set near-term expectations

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Planning to Decarbonization Targets – Key Questions

1. Low Regrets Near-term Actions?

- What low regrets near term actions does the utility expect to perform relatively well regardless of future uncertainties in technology, demand, and regional developments?

2. Long-term Consequences of Near-term Actions?

- What near term actions that the utility considered might have large negative long-term consequences (in terms of cost, risk, GHG emissions, or community impacts or benefits) under one or more future technology, demand, or regional development scenarios?

3. Critical Junctures in Long-term Plan?

- What are the critical junctures at which the utility's plan would materially change and what indicators will the utility use to identify whether those junctures are approaching?

4. Critical Dependencies in Long-term Plan ?

- What are the critical dependencies for the utility to successfully execute its long-term plan?
- What are the critical dependencies for the utility's plan to achieve the desired outcomes in terms of cost, risk, GHG emissions, and community impacts or benefits?
- What might be the implications of one or more of those critical dependencies failing?

5. Critical Barriers and Solutions for Long-term Plan?

- What critical barriers need to be addressed to implement the utility's long-term plan?
- Which of these barriers can be addressed by the utility or the Commission and which of these barriers are out of the utility's or the Commission's control?
- Which of these barriers would need to be addressed in the next 5-10 years? The utility should include a plan for addressing those barriers identified in the 5-10 year time frame, including direct actions that can be taken by the utility and opportunities to coordinate with other involved entities.

Planning to Decarbonization Targets - Modeling

To inform responses to key planning questions with portfolio analysis:

- Quantitatively evaluate opportunities and risks of emerging technologies, including, at a minimum: clean hydrogen, long duration storage, and offshore wind;
- Quantitatively evaluate potential impacts associated with building and transportation electrification, informed by current policy initiatives, and climate change and extreme weather;
- Quantitatively evaluate the impacts of transmission constraints and future transmission expansion; and
- Evaluate the sensitivity of the plans to other opportunities for enhanced regional coordination, including RA programs and improvements in transmission utilization.

To ensure that utility plans align with the clean energy targets in HB 2021, PAC and PGE's IRPs should:

- Achieve the 2030 and 2035 clean energy targets under typical or expected weather and hydro conditions in those years. This should be demonstrated for the Preferred Portfolio and a set of alternative portfolios that test different paces of GHG reductions and different levels of community impacts; and
- Achieve resource adequacy in 2040 with no associated greenhouse gas emissions across the tested system conditions. This should be demonstrated for the Preferred Portfolio and a set of alternative portfolios that test different paces of GHG reductions and different levels of community impact.

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Feedback: Planning for Decarb Targets

Changes Made √

- Flexibility for answering key questions through portfolio analysis
- Include plans to address uncertainty (tech) and barriers
- Deprioritized quantitative analysis of RTO and RA program

Changes Not Made X

- Standard baseline scenario
- Specifying clean hydrogen sources and other technology specifics (OSW, storage)*
- Specifying additional electrification scenarios
- Straight line emissions reduction scenario

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Questions/Thoughts?

- Key Questions
- Scenarios
  - Technology
  - Demand
  - Regional Developments
- GHG Constraints

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Treatment of Fossil Fuel Resources

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Treatment of Fossil Fuel Resources

If the Preferred Portfolio relies on fossil fuel resource retirements or conversions to reduce GHG emissions, the utility should:

- Provide a rationale for and describe the risks associated with the retirement or conversion; and
- Identify whether each planned retirement reflects plans to decommission the plant or plans to exclude the plant from Oregon rates.

If the Preferred Portfolio relies on operational changes relative to expected economic dispatch to reduce GHG emissions:

- Quantify the impacts of those operational changes relative to expected economic dispatch in terms of generation (curtailed, reduced, or sold) and GHG emissions (avoided); and
- Describe how the utility intends to implement those operational changes (e.g. through the development of operating or emissions limits, application of GHG emissions penalties, or execution of contracts with out-of-state entities), to the extent that they impact forecasted GHG emissions in the Action Plan window.

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Feedback: Treatment Fossil Fuel Resources

Changes Made √

- No changes to recommendation, but consideration for geography reflected in Additional Data Transparency

Changes Not Made X

- Remove focus on operational changes*
- Further expectations for retirement analysis
- Further expectations for out of state sales

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Questions/Thoughts?

- Retirements and Conversions
- Operational Changes

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Additional Data Transparency

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Additional Data Transparency

Accessibility

- The first CEP, or a designated section of the IRP that contains all information required by HB 2021, should be written for an introductory audience and include definitions of all key terms and acronyms
- PAC should, moving forward, post any recordings made of IRP public input meetings on its website, and if a recording is not available, provide a general summary of comments received at the meeting

Reporting GHG, Fossil Resource, and Cost Data – in CEP or designated section of IRP for all HB 2021 info

- Tables that show modeling assumptions and total cumulative emissions forecasts for each existing and proxy resource – includes locational data for fossil emissions
- Graphs that show annual GHGs for preferred portfolio and alternative emissions/CBI portfolios
- Graphs that show forecasted annual revenue requirement and cost normalized by sales for preferred portfolio and alternative emissions/CBI portfolios
- Graphs that show total annual emissions by fuel type, total annual emissions to serve Oregon customers, total annual generation by fuel type, total annual generation serving Oregon in preferred portfolio
- Graphs that show annual weighted average heat rate by fuel type for resources in the preferred portfolio

REC Data – in IRP

- Table that describes the utility's annual plans for the use of RECs in the Preferred Portfolio under the Reference Case over the entire analysis horizon (at least 20 years)
- The table should clearly delineate between RECs retired for OR RPS, OR voluntary, other customers compliance or voluntary, banked for OR RPS, banked for other states, sold in Oregon, sold outside of Oregon, or banked and then sold either in-state or out-of-state

Standard Reporting

- Staff, utilities, and all interested stakeholders should collaboratively develop by February 1, 2023, an agreed upon approach to capturing additional standardized information and data related to their CEP and how they will make it publicly available in a similar fashion on their websites

Feedback: Additional Data Transparency

Changes Made √

- Focused emissions, costs, on specific tables and graphs
  - Removed WECC-wide emissions
  - Aggregated fossil resources over time, rather than by fuel type
  - Added revised cost data reporting, but flexibility to include consistent costs
- Added location data for emitting resources
- Added REC reporting specificity
- PAC to post IRP meeting recordings

Changes Not Made X

- Remove fossil unit data
- Further expectations for RECs*
- Expectations for discovery during IRP development

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Questions/Thoughts?

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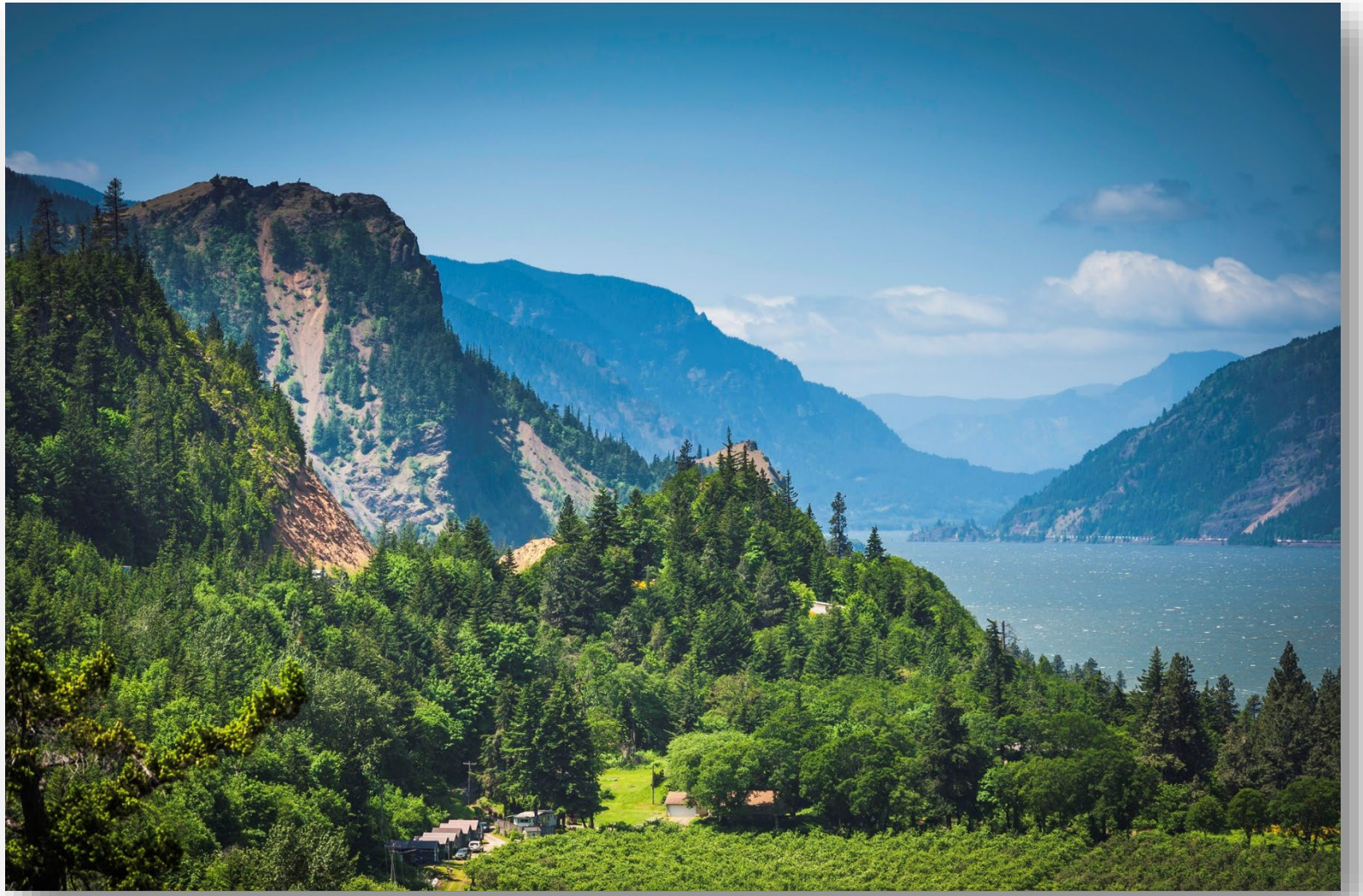
Thank you!



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Appendix

Full text of Data Reporting Recommendations

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The first CEP, or a designated section of the IRP that contains all information required by HB 2021, should also include:

- A table that lists the GHG emissions assumptions for each existing and proxy resource modeled in the IRP, developed in partnership with DEQ.
- A table that lists the cumulative forecasted GHG emissions from each existing and proxy resource in the Preferred Portfolio under the Reference Case over the entire analysis horizon (at least 20 years) and the location of each emitting resource.
- The following graphs, which should include forecasted data under the Reference Case over the entire analysis horizon (at least 20 years) and at least three years of historical data:
    - Total annual portfolio GHG emissions, calculated in a manner consistent with the DEQ methodology, for the Preferred Portfolio and a set of alternative portfolios that test different paces of GHG reductions and different levels of community impacts.
    - The total forecasted annual revenue requirement to serve Oregon customers for the Preferred Portfolio and a set of alternative portfolios that test different paces of GHG reductions and different levels of community impacts. This graph may exclude historical data if the forecasted revenue requirement does not approximate all costs borne by Oregon customers.
    - The total forecasted annual revenue requirement to serve Oregon customers, divided by the total forecasted retail sales in Oregon, for the Preferred Portfolio and a set of alternative portfolios that test different paces of GHG reductions and different levels of community impacts. This graph may exclude historical data if the forecasted revenue requirement does not approximate all costs borne by Oregon customers.
    - Total annual GHG emissions by fuel type for resources in the Preferred Portfolio.
    - Annual GHG emissions to serve Oregon customers by fuel type for the Preferred Portfolio.
    - Total annual generation by fuel type for resources in the Preferred Portfolio.
    - Annual generation serving Oregon customers by fuel type for the Preferred Portfolio.
    - Annual weighted average heat rate by fuel type for resources in the Preferred Portfolio.

In the 2023 IRP, PGE and PAC should provide a table that describes the utility's annual plans for the use of RECs associated with renewable energy generated by or contracted to the utility in the Preferred Portfolio under the Reference Case over the entire analysis horizon (at least 20 years). The table should clearly delineate between RECs that are expected to be:

- Retired on behalf of Oregon customer load for RPS compliance in Oregon;
- Retired on behalf of Oregon customer load for voluntary sales;
- Retired on behalf of customer load in a different state (for either compliance or voluntary sales);
- Banked for future Oregon compliance;
- Banked for compliance in a different state;
- Sold to a different Oregon provider;
- Sold to an entity outside of Oregon; and
- Banked and then sold either in-state or out-of-state.