



UM 2225 Analytical Improvements Straw Proposal Workshop Agenda

Wednesday, Sept. 7, 2022

1:00 p.m.-4:00 p.m.

Zoom Meeting

[Link to Meeting](#)

Dial-in: 1-877- 853-5247

Meeting ID: 959 3113 2478

Passcode: 830221#

Goals

- Review and discuss Staff's Straw Proposals on Analytical Improvements, including planning for decarbonization, treatment of fossil fuel resources, and additional data transparency topics. **See attached straw proposal details.**
- Review UM 2225 to date to build a common understanding of what has been developed throughout the docket and next steps.

Welcome & Check In (1:00 – 1:15pm)

- Welcome, agreements for participatory meetings, agenda, and goals
- Check in

Staff's Straw Proposal on Planning for Decarbonization Targets (1:15 – 2:00pm)

- Share Staff's Straw Proposal on planning for decarbonization including:
 - Clean technology scenarios
 - Demand scenarios
 - Regional development scenarios
 - GHG Emissions Constraints in IRP Modeling
 - Key Long Term Decarbonization Planning Questions
- Answer participant clarifying questions
- Test stakeholder alignment with Staff's Straw Proposal on Decarbonization Planning in UM 2225

Staff's Straw Proposal on Treatment of Fossil Fuel Resources in UM 2225 (2:00 – 2:40pm)

- Share Staff's Straw Proposal on Treatment of Fossil Fuel Resources, including
 - Fossil fuel retirements & conversions
 - Fossil fuel resource operational changes
- Answer participant clarifying questions
- Test stakeholder alignment with Staff's Straw Proposal on Treatment of Fossil Fuel Resources in UM 2225

Break (2:40 – 2:50pm)

Staff's Straw Proposal on Additional Data Transparency in UM 2225 (2:50 – 3:25pm)

- Review Staff's Straw Proposal on Additional Data Transparency topics, including
 - GHG emissions
 - Renewable Energy Credits (RECs)
 - Fossil fuel resource operations
 - Data standardization
- Answer participant clarifying questions
- Test stakeholder alignment with Staff's Straw Proposal on Additional Data Transparency topics in UM 2225

Docket Review & Next Steps (3:25 – 4:00pm)

- Review Staff's workstreams and recap progress and activities to date
- Review next steps for this docket and stakeholder workshops
- Answer participant questions about next steps
- Understand remaining stakeholder topics of interest related to Clean Energy Plans

Questions

If you have questions on the process or content of this workshop, contact: Caroline Moore at caroline.f.moore@puc.oregon.gov or 503-480-9427.

Chapter 1 – Planning for Decarbonization Targets Straw Proposal

HB 2021 and the Clean Energy Plan (CEP) requirements pose challenging planning questions for utilities, one of which is how to achieve a 100% clean electricity system by 2040. Staff recognizes that this will be a new undertaking for the utilities and it may require some shifts in how we think about long term planning. From Staff's perspective, the Integrated Resource Planning (IRP) framework in Oregon is well suited to this undertaking, with its focus on long term risk and uncertainties. However, Staff also notes that the manners in which risk and uncertainty have been addressed in recent IRPs may not be adequate in the context of the clean energy targets in HB 2021. Specifically, achieving a 100% clean electricity system will likely require the utilities to rely on new technologies that may not be commercially available today and regional developments that may be out of the utility's control. Staff also appreciates that the likelihood of these developments cannot be predicted with any degree of precision. To address these uncertainties, Staff recommends that the utilities examine specific scenarios and use those scenarios to inform a discussion of key long term planning questions. This straw proposal describes a minimum set of long term planning scenarios for the first IRP/CEP that should be addressed quantitatively and identifies a set of key long term decarbonization planning questions that should be addressed qualitatively within the first CEP based on those scenarios.

Topic #1. Clean technology scenarios

The commercial availability of non-emitting capacity resources in the future could have a significant bearing on the composition of the resource portfolio in 2040. For example, a system that has access to clean hydrogen to burn in peaking plants to ensure resource adequacy on challenging days may look quite different from a system that has access to significant offshore wind or a system that has access to long duration storage. The types of resources that complement each technology may vary and the near-term steps that the utility may take to prepare the system for each technology may differ. There may also be near-term steps that make sense regardless of whether each of these technologies materialize. To investigate the implications of long-term uncertainty in clean technology availability, Staff recommends that the utilities develop scenarios that address the following:

- ***Clean hydrogen.* Staff recommends that the utilities test at least one scenario where clean hydrogen becomes available for selection before 2040.**
- ***Long duration storage.* Staff recommends that the utilities test at least one scenario where long duration storage (e.g. storage with several days of duration or seasonal storage) becomes available for selection before 2040.**
- ***Offshore wind.* Staff recommends that the utilities test at least one scenario where offshore wind becomes available for selection before 2040.**

The primary purpose of testing these scenarios is to identify how the long-term availability of each of these options might influence near term actions. Staff understands that the cost uncertainty for some of these technologies is high, and that technologies are likely to be commercially available earlier than 2040. Utilities should develop a reasonable estimate of when a new technology is likely to be available. Given cost uncertainty, the goal of testing these technologies in long term planning is not necessarily to choose the best technology based on cost and performance assumptions, but to understand what implications these technologies might have on how the system is operated, and how the availability of these technologies might change the utility's strategy.

Staff also notes that two of the technology scenarios (clean hydrogen and long duration storage) offer balancing capabilities to the system while one of the technology scenarios (offshore wind) provides clean energy to the system. It may make sense to test portfolios that combine the technologies (for example, testing clean hydrogen with and without offshore wind). In combining highly uncertain future technologies, Staff suggests that the utilities thoughtfully design tests to explore the trade-offs between various combinations, rather than rely on cost-sensitive portfolio optimization modeling to select a single “optimal” combination. Utilities should explain the objective of combined scenarios in the CEP/IRP.

Question for workshop:

Is the phrase “Clean Hydrogen” clear enough about which types of hydrogen may be included while providing flexibility for utility implementation in consultation with DEQ’s determinations of emissions of forecasted resources?

Topic #2. Demand scenarios

Market trends and decarbonization policies, such as Transportation Electrification and the Climate Protection Program, may result in accelerated adoption of electric technologies that could significantly impact electricity demand over time. In particular, electrification of buildings and vehicles may affect the timing and magnitude of resource adequacy needs and the renewable energy requirements for achieving the clean energy targets in HB 2021. In addition, climate change and extreme weather could bring new resource adequacy risks over the planning horizon. To investigate how sensitive the utilities’ plans are to demand uncertainties, Staff recommends that the utilities develop scenarios that address the following:

- ***Electrification.*** Staff recommends that the utilities adopt realistic electrification assumptions in the IRP Reference Case and test at least one High Electrification scenario in which electric demand aligns with the electric technology adoption assumptions that the Company clearly articulates in their IRP
- ***Climate change and extreme weather.*** Staff recommends that the utilities test at least one scenario that accounts for the potential for more frequent extreme weather events, based on a publicly available forecast of climate change related weather impacts. (Utilities should also work toward including climate change in reference case long-term IRP forecasts. This scenario should look at a more extreme climate scenario than the reference case.) If a utility does not quantitatively evaluate such a scenario, Staff recommends that the utility describe the key weather events that drive resource adequacy challenges on their system and quantify how frequently those events have occurred across the historical record.

Questions for workshop:

- Is requiring “realistic electrification assumptions” clear enough language? Staff’s goal is to recognize the uncertainty surrounding policies to decarbonize other sectors while also highlighting the need to begin testing the policies’ impact on the electric system to the extent feasible?
- Are electrification scenarios most useful for examining the preferred portfolio over time or comparing portfolios?

Topic #3. Regional development scenarios

It is broadly understood that achieving a highly decarbonized electricity sector will likely require enhanced coordination across the Western United States to leverage load and resource diversity. Specifically, the development of regional resource adequacy programs has the potential to reduce resource adequacy needs for participating utilities and the development of organized markets has the potential to provide for more efficient utilization of generation and, perhaps more importantly, transmission. In addition to these institutional solutions, expansion of transmission infrastructure in the West could also enable development of new renewable resources and unlock additional resource diversity benefits. These types of developments may have significant implications for resource portfolios in 2040. For example, the ability to leverage load diversity across a large footprint extending into the Desert Southwest during challenging winter periods could materially impact the need for dispatchable clean solutions, like clean hydrogen or long duration storage, to achieve resource adequacy in the Pacific Northwest. To provide some understanding of these types of sensitivities, Staff recommends that the utilities develop scenarios that address the following:

- ***Participation in a regional Resource Adequacy (RA) program.*** Staff recommends that the utilities test a scenario that demonstrates the portfolio impacts of participation in a regional RA program. In this scenario, the utility should demonstrate how the load and resource diversity benefits of a regional RA program would affect their resource needs and resource decisions.
- ***Transmission utilization.*** Staff recommends that the utilities test a scenario where access to transmission is not limited by current transmission rights. This scenario could, for example, explore the implications of the establishment of a regional transmission operator, participation in a regional organized market, and/or other measures that could result in improved efficiency of transmission operations or contracts.
- ***Regional transmission expansion.*** Staff recommends that the utilities test a scenario where regional transmission expansion enables access to more diverse renewable resources.

Staff notes that there may be value in testing combinations of these regional development scenarios and combinations of these scenarios with the technology scenarios to understand various interactions and tradeoffs. In particular, regional coordination may materially reduce the requirements for achieving resource adequacy and this could have implications for the amount of long duration storage or clean hydrogen that is needed to achieve resource adequacy in those scenarios.

- **Staff recommends that the utility test at least one of the technology scenarios with and without participation in an organized market with liberalized transmission or in a regional transmission expansion scenario.**

Questions for workshop:

- Is it more meaningful to model participation in a regional RA program as a scenario or reference case assumption?
- Are there specific assumptions required to make the RA program scenario meaningful e.g., constrain capacity need to the level assigned by the WRAP program?
- Would it be meaningful to discuss the difference between a forward showing RA program and an operational/reserve sharing program?
- Are there other high priority transmission scenarios or combinations of transmission and technologies?

Topic #4. GHG emissions constraints in IRP modeling

Staff has received questions regarding the application of GHG constraints in IRP modeling to achieve the clean energy targets in HB 2021. Specifically, PGE has raised the question of how certain the plans should be that they will be able to achieve a GHG target in a given year, as weather and hydro conditions in that year may be unpredictable. Staff appreciates the complexity of this question and provides the following recommendation for the first IRP/CEP. Staff proposes that this question be raised again for future planning cycles and that modifications to the analysis be considered based on lessons learned.

- **The IRP should achieve the 2030 and 2035 clean energy targets under typical or expected weather and hydro conditions in those years. The utility should demonstrate this for the Preferred Portfolio, any alternative portfolios that were considered for selection or in designing the Action Plan, and in all of the technology, demand, and regional development scenarios tested by the utility.**
- **The IRP should achieve the 2040 clean energy target across the same weather and hydro conditions that are considered within the utility’s resource adequacy analysis. More specifically, the utility must show that in 2040, the portfolio can achieve resource adequacy with no GHG emissions. The utility should demonstrate this for the Preferred Portfolio, any alternative portfolios that were considered for selection or in designing the Action Plan, and in all of the technology, demand, and regional development scenarios tested by the utility.**

Staff acknowledges that achieving resource adequacy with no emissions in 2040 may require unrealistic resource buildout if the analysis is limited to current market structures and technology that is commercially mature today. The scenario analysis recommended by Staff is intended to address this market and technological uncertainty while providing critical information to the Commission regarding the suitability of near-term actions, the viability of the utility’s long-term strategy, and the key barriers or forks in the road that utilities may face in complying with HB 2021 over time.

Topic #5. Key long-term decarbonization planning questions

In addition to the quantitative analysis, there are high priority questions that the post-HB 2021 IRP should seek to answer that may not be as easy to reflect with specific scenarios or analyses.

- **Staff recommends that the utilities use the scenarios described in Topics #1-3 to explore the following long term planning questions and to include narrative (and quantitative where possible) answers to these questions within the CEP:**
 1. **What low regrets near term actions perform relatively well across all of the scenarios?**
 2. **What near term actions might have large negative consequences (in terms of cost, risk, GHG emissions, or community impacts or benefits) under one or more of the scenarios?**
 3. **Are there any critical junctures in relation to the scenarios at which the utility’s strategy would materially change and what indicators will the utility use to identify whether those junctures are approaching?**
 4. **Does the utility’s long-term plan or the expected performance of the long-term plan have any critical dependencies related to the uncertainties explored through scenarios (e.g. availability of a technology or transmission infrastructure, or the expansion of regional coordination)? What would the implications be for the long-term plan if one or more of these scenarios were to occur?**

5. **What barriers to implementation would need to be addressed to implement the utility's long-term plan under each scenario? 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?**

Chapter 2 – Treatment of Fossil Fuel Resources Straw Proposal

At the August 10th workshop, Staff discussed several potential options for reducing the emissions associated with fossil fuel resources, including retirements, operational changes, and conversions. For each of these options, Staff and stakeholders raised several questions, which are summarized below.

Topic #1. Fossil fuel retirements and conversions

Retirements in IRP analysis could include physical retirements or removal of a resource from the utility's portfolio and rates. Both utilities described retirement analyses in prior IRPs. PacifiCorp described an endogenous approach to retirements, in which the portfolio optimization model selects retirements to minimize cost. PGE described an approach in which specific candidate retirement decisions are tested through portfolio design and scoring. Some stakeholders expressed a preference for the endogenous approach because it allows the utility to explore many more retirement options than can be individually tested in portfolio analysis. However, Staff also raised a question around the optimization of retirement decisions based solely on cost and whether endogenous modeling can also account for risks, GHG reductions, and community impacts. Staff considers endogenous retirement modeling the gold standard and finds that testing individual options through portfolio design and scoring is a meaningful alternative approach, as well. Scenario analysis will require a different type of stakeholder negotiation that may be more challenging in some ways than endogenous retirement modeling.

Conversions might allow the utility to combust lower or zero emissions fuels, such as biogas, synthetic methane, or hydrogen to provide dispatchable generation. Staff raised questions regarding the amount of investment required for such conversions and the risks associated with uncertain fuel availability and cost. Staff encourages the utilities to consider conversions as part of, or in addition to, the scenarios described in Chapter 1 - Topic #1. Staff suggests that uncertainties in fuel availability and cost can be explored within the key decarbonization planning questions outlined in Chapter 1 - Topic #4.

However, Staff understand that utilities may not have this capability. These analyses will become increasingly important in subsequent planning cycles as the targets become closer and the last legs of reliable decarbonization actions move into the nearer term. Further sophistication does in this regard does not need to be prioritized for the first IRP/CEP if other important information about the use of fossil resources can be captured.

- **Staff proposes that specific requirements for modeling retirements or conversions does not need to be prioritized for the first IRP/CEP but expects that this capability be adopted for future planning cycles.**
- **Staff also encourages the utilities to be clear about their rationale for including or not including conversions in this first IRP/CEP.**

Topic #2. Fossil fuel resource operational changes

Operational changes at a facility could include physical operational changes, such as emissions constraints or run-time limits, or changes in the off-taker for a facility, such as selling generation from a fossil fuel resource to a counterparty in another state. Staff believes that these are core modeling capabilities already present in IRP analysis for a range of least cost, least risk considerations. For physical operational changes, Staff raised questions regarding the implications for cost, GHG emissions, resource adequacy, community impacts, and the operational performance of other resources in the portfolio. In addition, Staff posed a question regarding implementation in the event that the utility's strategy requires active changes to how fossil fuel resources are operated. Stakeholders raised questions regarding the emissions implications of operational changes that could affect a resource's average heat rate.

Regarding potential changes in the off-taker for a fossil fuel resource, Staff raised questions regarding the implications for resource adequacy, West-wide GHG emissions, community impacts, and inclusion in customer rates. Stakeholders also raised concerns regarding potential sales of fossil fuel-based generation to out-of-state counterparties or, for multi-state utilities, to serve out-of-state customers. Staff finds that understanding these considerations is a high priority for many stakeholders as well as Staff. Due to the novelty of this analysis, Staff finds that transparency may be the most important focus for the first IRP/CEP and has included straw proposal recommendations regarding data transparency in Chapter 3. In addition, Staff recommends the following for utility analysis:

- **If the Preferred Portfolio relies on operational constraints or other non-market-based reductions to the dispatch of fossil fuel resources within the Action Plan window, the utility should describe how it intends to implement those operational changes within the Action Plan. Will operational constraints be placed on individual units, or on the system as a whole?**
- **If the Preferred Portfolio relies on sales of fossil fuel-based generation to out-of-state counterparties to achieve the clean energy targets set forth in HB 2021, the utility should quantify those sales and the associated GHG emissions.**
- **If the Preferred Portfolio relies on sales of fossil fuel-based generation to out-of-state counterparties within the Action Plan window, the utility should describe how it intends to make those sales within the Action Plan.**

Chapter 3 – Additional Data Transparency Straw Proposal

The IRP and CEP will include new and complex considerations for long-term resource planning and emissions reduction efforts. HB 2021 also emphasizes transparency and accessibility in planning through the CEP requirements and other elements. At various workshops, stakeholders communicated the following data and transparency priorities:

- The overall emissions impact of specific actions and resources, including various proposals for additional granularity including:
 - The geographic/distributional impact of emissions on communities
 - Whether the emissions reduction and other benefits of energy efficiency and demand response was being sufficiently captured (includes understanding of hourly emissions to maximize the emissions impact of energy efficiency and demand response programs in dockets outside of the IRP/CEP)
 - The emissions value of transmission and market access

- The impact of electrification on emissions
- The impact on the regional emissions
- Whether emissions reductions are linear or not
- Affordability and rate impacts of utility actions
- Benefits and impacts on EJ communities
- The treatment of RECs generated through utility actions and resources, including the voluntary actions and programs
- Comparisons to actuals, past plans, and industry standard assumptions about cost.

Participants also emphasized the importance of accessibility, which includes elements like readability and the simplification and standardization of data presented. Finally, participants noted the importance of maximizing transparency to the extent feasible and sought clarification of the expectations for information deemed commercially sensitive or otherwise marked confidential by the utility.

At the August 26, 2022 workshop, Staff indicated where it believes these elements are already addressed in previous proposals or in the recommendations captured in previous sections of this document. The proposals below reflect Staff’s priority recommendations for the issues not covered by other proposal or sections of this document. Staff also highlights questions for participants in the upcoming September 7, 2022 workshop.

Topic #1. GHG emissions

Staff believes that we have captured most of the high priority information about the impact of specific actions and resources on emissions between the requirements for reporting annual actions in Roadmap Analysis and Community Lens straw proposals, and the scenarios requested above. A few additional high priority areas for Staff include:

- **Utilities should report the total estimated annual GHG emissions across the Western Interconnect under various portfolios, including the Preferred Portfolio.**
- **Utilities should include a table that lists the emissions assumptions for each existing and proxy resource modeled in the IRP, developed in partnership with DEQ.**
- **Utilities should include in the CEP a graph of portfolio GHG emissions by year for the preferred portfolio, important sensitivities, and each scenario in Chapter 1 of this straw proposal.**

Questions for workshop:

- Is it more useful to see how the regional emissions change over time or compare regional emissions between different portfolios?
- Is there a simplified way to convey the impacts on regional emissions that is still useful to stakeholders?
- Particularly for PacifiCorp, is there a way to reduce the number of portfolios that need to report emissions or other key portfolio metrics to reflect those most relevant to Oregon PUC and stakeholders? (Note: PacifiCorp develops portfolios, scenarios, and sensitivities at the request of regulators and other stakeholders across its six states.)

Topic #2. Renewable Energy Credits (RECs)

Staff finds there should be some level of clarity within the CEP – as a supplement to current RPS reporting – that articulates utility use of RECs paid for by ratepayers. This includes some specificity

regarding sales, retirements on behalf of Oregon cost of service customers, and generated from owned, contracted, and planned resources.

- **In the IRP, utilities should report the expected number of RECs to be generated that will be generated or acquired by the utility for all existing and projected resources in the preferred portfolio. Utilities should specify the RECs that will be retired on behalf of the utility/all customers, retired on behalf of voluntary customers, banked, or sold or otherwise transferred to customers in another state or an entity that is not captured by the previous list.**
- **Utilities should report this for each year for the Preferred Portfolio (for Oregon-allocated RECs).**

Questions for workshop:

- Does this capture the transparency needed from PacifiCorp as a multi-state utility?
- Is there any information related to the impact of participation in CAISO's EDAM or EIM on the attribution of emissions to Oregon customers under HB 2021 that can or should be reported in the first IRP/CEP?

Topic #3. Fossil fuel resource operations

Staff and stakeholders share a desire to fully understand how fossil resource operations are changing over time in as a part of the utilities' least cost, least risk decarbonization strategy. Staff's understanding is that historical data on operations is generally not commercially sensitive and already available in several places (e.g., FERC Form 1, utility Production Cost Modeling, WECC-wide data sets, etc.).

However, there may be concerns sharing projections of fossil operational data. Staff believes that the information proposed below, at minimum, should be easily accessible to those seeking to review a utility's IRP/CEP:

- **Utilities should report total annual generation and average heat rate for each fossil resource, explaining any impacts on generation and heat rate of operational changes and/or emissions constraints.**
- **Utilities should provide graphs in the CEP with 3 years of historical generation and average heat rate data for its fossil fuel resources.**

Questions for workshop:

- If there are confidentiality issues with this level of detail, please explain. And, would it be meaningful enough to stakeholders if the utility reports this projected data on an aggregate level by fuel type?

Topic #4. Data Standardization and Accessibility

To facilitate transparency and efficient data sharing, Staff recommends that utilities provide the annual data requested in this straw proposal and the prior straw proposals within a standardized workbook. Staff plans to develop more specific direction for the standardized data to be shared and the form by which the utilities should make it available. This information should include data used in developing and/or driving key assumptions in the CEP so they can be tested.

Further, the utilities' IRP meetings and websites currently do a good job of sharing IRP meeting presentations, capturing stakeholder feedback, and posting recorded webinar videos. Staff and

stakeholders insist this practice be extended to the CEP development process, either with or independent of the IRP communication infrastructure.

Finally, staff and stakeholders noted that the accessibility of the CEP extends beyond access to data and into how CEP information is communicated. The CEP has drawn in a diverse set of stakeholders with various degrees of experience in utility planning and jargon. The CEP must include, at the least, an introduction, overview, and definitions, that will make it accessible to as wide an audience as possible.

- **Staff, utilities, and all interested stakeholders should collaboratively develop by February 1, 2023 an agreed upon approach to capturing standardized information and data related to their CEP and how they will make it publicly available in a similar fashion on their websites.**
- **The IRP/CEP, or a designated section that contains all of the information required by HB 2021, should be written for an introductory audience and include definitions of all key terms.**

Questions for workshop:

- Who can facilitate this process? Does it need to be done separately for each utility?
- What are parties' preferred processes for addressing issues related to the designation of confidential information?