

PacifiCorp - Stakeholder Feedback Form

2021 Integrated Resource Plan

PacifiCorp (the Company) requests that stakeholders provide feedback to the Company upon the conclusion of each public input meeting and/or stakeholder conference calls, as scheduled. PacifiCorp values the input of its active and engaged stakeholder group, and stakeholder feedback is critical to the IRP public input process. PacifiCorp requests that stakeholders provide comments using this form, which will allow the Company to more easily review and summarize comments by topic and to readily identify specific recommendations, if any, being provided. Information collected will be used to better inform issues included in the 2021 IRP, including, but not limited to the process, assumptions, and analysis. In order to maintain open communication and provide the broader Stakeholder community with useful information, the Company will generally post all appropriate feedback on the IRP website unless you request otherwise, below.

Date of Submittal 2020-09-29

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Address: 2515 Warren Ave Suite 300

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State: WY

Zip: 82001

Public Meeting Date comments address: 09-17-2020

Check here if not related to specific meeting

List additional organization attendees at cited meeting:

Kaeci Daniels, Pam Temte, James Branscomb

***IRP Topic(s) and/or Agenda Items:** List the specific topics that are being addressed in your comments.

Supply-Side Resources and the Plexos Model.

Check here if any of the following information being submitted is copyrighted or confidential.

Check here if you do **not** want your Stakeholder feedback and accompanying materials posted to the IRP website.

***Respondent Comment:** Please provide your feedback for each IRP topic listed above.

Supply-Side Resources:

- 1) In the final 2021 IRP please include the Supply-Side Resource table from the 2019 IRP in the 2021 IRP for comparison.

PacifiCorp Response:

The supply-side resource table for the 2019 Integrated Resource Plan (IRP) is located in Vol 1, Chapter 6, pages 115-118 and is available on PacifiCorp's website here <https://www.pacificorp.com/energy/integrated-resource-plan.html>. In addition, PacifiCorp's public input meeting presentations discussing updates and changes to supply-side resources for the 2021 IRP relative to the 2019 IRP (and the 2019 renewable resource assessment used in the 2019 IRP) are available on its IRP webpage. The supply-side resource table is expected to also be located in Chapter 6 of the 2021 IRP however, PacifiCorp does not plan to include the prior 2019 IRP supply-side resource table in its 2021 IRP.

- 2) Please provide what type of costs are included in the capital costs, variable O&M, and demolition costs for each type of resource (wind, solar, battery, nuclear, gas, and CCUS) or provide the Burns and McDonald study which might have these costs laid out.

* Required fields

PacifiCorp Response:

The 2020 Renewable Resources Assessment which provides details of the costs for wind, solar, and energy storage is available at PacifiCorp's IRP website: <https://www.pacificorp.com/energy/integrated-resource-plan/support.html>. The costs for other resources will be based on a similar analysis where available.

- 3) Please incorporate CCUS technology in the Supply Side Resource table, and please provide the benefits CCUS technology provides for RMP/PacifiCorp, shareholders, and customers.

PacifiCorp Response:

Carbon Capture, Use and Sequestration (CCUS) is included in the Supply-Side Resource table for the 2021 Integrated Resource Plan and these costs and assumptions will be discussed at the November 16, 2020 public input meeting.

If a CCUS resource were selected by the model, the benefits of the CCUS resource for customers would be the lowest risk adjusted cost of electric power.

If the CCUS resource were owned by PacifiCorp then PacifiCorp and the shareholders would benefit from recovering the regulated return on the portion of the capital investment each of the public utility regulatory authorities determine are prudent and reasonable.

If the CCUS resource is owned by a third party then PacifiCorp and the shareholders would not benefit from the return on investment. Customers might or might not benefit from the financial arrangements associated with the transfer of carbon dioxide containing flue gas from PacifiCorp to the third party.

- 4) Please explain why there is such a drastic difference of capital, variable O&M, and demolition costs for standalone batteries versus batteries that are paired with renewables (solar or wind)?

PacifiCorp Response:

There was an error in the formula for the solar plus batteries resource options. The error has been corrected. Any difference in the wind plus solar option is due to benefits of combining the projects.

- 5) Do cost curves shown on Slide 11 of the presentation show phasing out of PTCs and ITCs?

PacifiCorp Response:

No. Tax credits such as the production tax credit (PTC) and investment tax credit (ITC) are not factored into the cost or operations and maintenance (O&M) estimates in the 2020 Renewable Resources Assessment. Those credits will be factored in during the modeling of scenarios.

Plexos Model:

- 1) Please provide a flow chart showing the modeling process:
- a) both a high-level and detailed flow chart,

PacifiCorp Response:

Please refer to the slide deck for the 2021 IRP October 22nd, 2020 Public Input meeting, slide 47, publicly available at:

https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-plan/PacifiCorp_2021_IRP_PIM_October_22_2020.pdf

- b) provide all assumptions and inputs that are being fed into the model, including, but not limited to:
- i. CO² pricing and Natural Gas assumptions

- ii. Federal and State regulations
- iii. coal retirement dates
- iv. intermediary steps and inputs
- v. etc.

PacifiCorp Response:

The Company is currently engaged in determining model inputs for the 2021 IRP. Coal retirement dates as a component of portfolio development will be an output of 2021 IRP modeling. The development of inputs is part of ongoing discussion in the 2021 IRP Public Input Meeting process.

- c) is the model stochastic, deterministic, or both? Which iterations at what points in the model are stochastic or deterministic?

PacifiCorp Response:

Please refer to refer to the response to 1a, above. Plexos models can be run in both stochastic and deterministic configurations.

- 2) What entity or organization developed the Plexos model?

PacifiCorp Response:

Energy Exemplar.

- 3) Please provide an explanation as to why the Company switched models.

PacifiCorp Response:

The Planning and Risk (PaR) and the System Optimizer (SO) models were no longer able to meet the complex analysis needs of PacifiCorp's multistate system. In addition, the Plexos model has improved functionality that addresses concerns around granularity, reliability, endogenous transmission and plant retirement analysis. The new model simplifies issue around prior model alignment between SO and PaR and aggregation sampling, and allows for reserves and loss of load probability to be incorporated into expansion planning.

- 4) How did PacifiCorp acquire the funding for the Plexos model?

PacifiCorp Response:

PacifiCorp did not acquire funding for the model. The costs to license the model reflect standard operating costs.

- 5) Please describe the transparency of the calculations within the Plexos model in relation to the previous model, and will the general public or utility commissions be able to review the inner workings of the Plexos model?

PacifiCorp Response:

Similar to other third-party optimization models, the Plexos model is subject to third-party proprietary licensing conditions. That being said, PacifiCorp will continue to make available the inputs/outputs and reporting functions that support its modeling efforts.

Data Support: If applicable, provide any documents, hyper-links, etc. in support of comments. (i.e. gas forecast is too high - this forecast from EIA is more appropriate). If electronic attachments are provided with your comments, please list those attachment names here.

Recommendations: Provide any additional recommendations if not included above - specificity is greatly appreciated.

Please submit your completed Stakeholder Feedback Form via email to IRP@PacifiCorp.com

Thank you for participating.

* Required fields