

# PacifiCorp - Stakeholder Feedback Form

## 2019 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 2019 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 6/26/2019

\*Name: Kyle Frankiewich

Title: Regulatory Analyst

\*E-mail: kyle.frankiewich@utc.wa.gov

Phone: 360-664-1316

\*Organization: Washington Utilities and Transportation Commission

Address: 621 Woodland Square Loop SE

City: Lacey State: WA Zip: 98503

Public Meeting Date comments address: 6/20/2019  Check here if not related to specific meeting

List additional organization attendees at cited meeting: n/a

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

[Click here to enter text.](#)

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.

I appreciate that the company is cramming as much work as it can into each PIM, but I continue to note that increased lead time with the slides will improve the quality of feedback that stakeholders can provide.

Slide 5: I appreciate that the company is being forthright with this DSM modeling error. The scale of the changes in the PVRR(d)s prompted by correcting this issue is surprising, and highlights just how important DSM can be.

### **PacifiCorp Response:**

The materiality of the modeling issue was directly related to the modeling error where the model was inadvertently forced to select among some of the highest cost demand-side management (DSM) bundles. It is not a direct measure or reflection of the value of DSM in a given portfolio.

Slide 6: I agree that the company should be using its best guess for all costs, including costs for the Energy Gateway projects. However, I am unfamiliar with these cost projections and whether there is a tendency for the estimates to err in one direction or another - like cost overruns for nuclear projects or overstated load forecasts. What is the empirical record for accuracy when it comes to large transmission cost estimates?

### **PacifiCorp Response:**

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PacifiCorp has a strong record delivering large scale transmission projects. Below is a list of the Energy Gateway segments that PacifiCorp has placed in-service:

Project	Original Plan	Actuals	% Variance to plan	In-Service
Sigurd Red Butte Crystal 345kV Line	\$365,807,100	\$356,823,459	2%	May-15
Populus-Terminal: Dbl Ckt 345 kV TransLn	\$884,725,018	\$831,644,032	6%	Nov-10
Mona-Oquirrh Line	\$401,927,000	\$363,926,293	9%	May-14

PacifiCorp uses the best information available at the time project estimates are completed and will update cost estimates based on lessons learned. PacifiCorp also continues to evaluate cost-saving opportunities.

Slide 8: This slide is complicated, but about as simplified as possible given the scale of the company's efforts here. It also illustrates how the company has taken an iterative approach to its portfolio construction informed by earlier portfolio runs. It seems that most of these portfolio cases are put together by the IRP team. This is perhaps unavoidable given that the company's time constraints, and that the modeling tools do not endogenously optimize retirement decisions. But this approach also allows the company's other priorities to guide or at least influence the landscape of options to be considered. One way for the company to offset this appearance of 'stacking the deck' by including only the 'cards' it makes is to fully develop and represent other portfolios suggested by other stakeholders. It's one thing to say "here's the best we can do, and if someone else has an idea, we'll explore it." It's another to say "here's the best we can do, and hopefully there's enough here to allow other folks to guess at what their ideas would yield." It's probably too late for this feedback to be fully embraced, but I hope the company considers this for the IRP supplement and for the next IRP cycle.

**PacifiCorp Response:**

Several of the Integrated Resource Plan (IRP) portfolios and general modeling assumptions are directly influenced by stakeholder feedback. For example, Western Resource Advocates (WRA) requested on August 24, 2018 a portfolio to determine the least cost year for retirement between 2022 and 2030, assuming optimal one-off replacement in the coal studies phase of analysis, and PacifiCorp is developing a portfolio to address this scenario. For example, Sierra Club requested a variant of portfolio P-11 in a May 24, 2019 feedback form, and PacifiCorp ran the additional portfolio as requested, and provided proxy portfolios that met criteria on other requests. These are only a few examples among others.

Slide 9(a): The company's changes to its EGS cost and availability assumptions has the effect of pulling the investment into the near-term action window. This smacks of the EV 2020 plan last IRP cycle, which was also introduced at the 2nd-to-last stakeholder meeting. If the company intends to lean on this IRP to pursue EGS, it must provide much more detail about why the EGS project's availability was across the 20-yr planning horizon prior to this meeting, and why it's more reasonable to assume that 2028 is as far as the company could push this into the future.

**PacifiCorp Response:**

PacifiCorp has discussed its reasoning around Energy Gateway segments studied in the IRP and will provide further discussion at the September 5-6, 2019 public-input meeting. Regarding timing of these discussions, the Energy Gateway South transmission project in particular has been selected by the model in nearly every case discussed to date and is not a new topic. Further analysis and refinement is to be expected in the portfolio development phase of the IRP which naturally lands in the final two to three months prior to finalizing an IRP.

Slide 9(b): The point made by Jeremy with Sierra Club regarding the company's treatment of risk was a good one. He pointed out that there appears to be a mismatch in the company's tolerance of risk for the EGS project (might not be available in 2032, so should limit model's access to 2028 or sooner; also that EGS can be built in time for ITC credits for solar) as compared to its tolerance for SCR conversion costs and obligations (the risk of cost overruns or early shutdown after SCR investment does not necessitate modeling constraints). To the extent the company is asserting its managerial expertise to support a modeling constraint, it should be consistent. Also, the company assumes that if EGS in 2032 is no

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longer reasonably expected to be available, then EGS must be done sooner. I would be more convinced if making EGS available after 2034 or so was explored and shown to be definitively higher-cost than building sooner.

**PacifiCorp Response:**

PacifiCorp has discussed its reasoning around Energy Gateway segments studied in the IRP and will provide further discussion at the September 5-6, 2019 public input meeting.

Slide 13: This slide is where I wrote down the idea of a tipping point analysis for specific decisions as either an alternative to the current presentation of action items, or a way of framing the company's decision-making process as acquisition moves from IRP to RFP to construction. Just something to consider.

**PacifiCorp Response:**

It is unclear what is meant by a tipping point analysis for specific resource decisions, and additional discussion on this concept is welcomed. PacifiCorp does include an acquisition path analysis in the IRP that is based on general findings (resource timing, type, etc.) from the broad range of portfolios developed for any given planning cycle. For instance, please refer to the acquisition path analysis beginning at page 276 in Chapter 9, Volume I of the 2017 IRP.

Slide 49: A back-of-the-envelope comparison of cost differentials and CO2 differentials provides something like a CO2 abatement cost curve. For example, the PVRR(d) between P31 and P35 is \$178mil, and P35 projects to emit 32.5 thousand tons of CO2 less than P31. So, cutting 32.5 thousand tons of CO2 would likely drive costs up by about \$6/ton (remembering that both of these portfolios include the company's base carbon cost assumptions). Isolating which decisions cause which cost and emissions changes would result in a good start to a carbon emissions cost curve.

**PacifiCorp Response:**

It is unclear how specific “decisions” between two portfolios can be isolated to establish the specific cause of emission reductions considering that many factors within a portfolio can drive both costs and changes in the emission profile (*i.e.*, resource timing and costs, dispatch, market interactions, etc.).

No specific slide:

- I would like to see more exploration and modeling of DSM types 3 and 4. Perhaps that's a homework assignment for myself rather than for the company, but looking to other utilities and regions, it seems that time-of-use rates and other programs seem to be effective in managing peak load. Perhaps it could work for PAC.

**PacifiCorp Response:**

Thank you for the feedback and we welcome further discussion on this topic.

- Similarly, subsidized DERs - solar and/or storage, or integration of DR capabilities into efficiency measures - may be a good idea. I'm not convinced that the private generation study adequately represents the variety of possibilities available to PAC in perhaps leveraging customers' investments to meet system needs.

**PacifiCorp Response:**

PacifiCorp appreciates the comment and feedback.

- CO2 intensity for FOTs: It is unreasonable to present PAC CO2 emissions with a baked-in assumption that CO2 emissions related to an FOT purchase do not travel with the MWh purchased. This has the effect of counting all FOTs, which can be a sizeable portion of MWhs used to meet load, as carbon-free. I agree that contracts could be structured such that any CO2 cost obligations stay with the seller, but this assumption is less valid when reflecting CO2 emissions generated to meet PAC load. For WA's energy and emissions intensity reports, PAC applies a system fuel mix emissions intensity factor to all purchases. I encourage the company to explore this option, and to be more clear in its communications when reporting CO2 emissions estimates - for example, to add a footnote saying, "X% of MWhs in this

\* Required fields

portfolio were served by FOTs. The company assumes that all FOT purchases are zero-carbon resources, and that any carbon cost obligations are held by the seller and included in the modeled purchase price."

**PacifiCorp Response:**

PacifiCorp appreciates the comment and feedback. Emissions data are based on the emissions from PacifiCorp's resources. If every load-serving entity applied an emissions factor to purchases, the aggregate amount of emissions for all entities would exceed actual emissions as they would be counted by the source and the market buyer.

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**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.

[Click here to enter text.](#)

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

[Click here to enter text.](#)

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Please submit your completed Stakeholder Feedback Form via email to [IRP@PacifiCorp.com](mailto:IRP@PacifiCorp.com)

Thank you for participating.