

# 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 9/21/2018

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Address: 201 High Street Suite 100

City: Salem

State: Oregon

Zip: 97301

Public Meeting Date comments address: 8/30/2018

Check here if not related to specific meeting

List additional organization attendees at cited meeting:

[Click here to enter text.](#)

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

Private Generation Study

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.

Public Utility Commission of Oregon Staff (Staff) appreciates PacifiCorp's and Navigant's presentation and information relating to the Private Generation Study provided at the 2019 IRP Public Meeting held on Aug. 30-31, 2018. Staff offers the following comments requesting further clarity and additional information so as to more meaningfully participate in this process.

1. On pg. 10 of their Private Generation Study, Navigant produces estimates of adoption curves based on payback times, claiming that a 'free' renewable cost with an immediate payback would only be adopted by ~80% of all customers. The remaining ~20% would not adopt due to a number of factors, such as building roof characteristics, shade from nearby trees, etc. Oregon Staff is concerned that this 80% is a significant overestimate given the principal-agent problem: renters and rental-owners generally have little incentive and/or ability to install solar on their homes. This is important as homeownership rates are ~70% in PacifiCorp's service territory: in Navigant's study, the remaining ~30% of the population is assumed to adopt private generation at the same rate. Navigant said that addressing renters/landlords is a possible next step in their analysis: Oregon Staff hopes that both PacifiCorp and Navigant will commit to incorporate this problem into the 2021 IRP analysis.

### **PacifiCorp Response:**

The Private Generation Study assumes that 80% of the technical potential, not the entire population, would adopt a private generation technology in the upper bound case were the technology payback is zero. The study does not

\* Required fields

assume this is 80% of all customers. For example, residential solar photovoltaic (PV) customers who are eligible in Oregon are around 35% of the total, or around 1,100MW. The 80% factor would apply to that subset of customers.

2. Navigant estimated that in general State and local incentive policies such as net metering explain ~50% of private generation adoption. However its Private Generation Study assumes that existing policies will continue until their specified sunset dates, and that no new policies at any level will be enacted. While forecasting political movements is nearly impossible, Oregon Staff is concerned that such a significant driver is absent from Navigant's forecast. At a minimum, Oregon Staff believes that both PacifiCorp and Navigant should commit to include potential policy changes in their next study as sensitivities. We would be happy to collaborate on reasonable estimates both in this IRP and going forward.

**PacifiCorp Response:**

The Private Generation Study assumes policy drivers do not change in the future as policy is a highly uncertain factor. In response to a question at the stakeholder meeting the company used 50% as an illustrative example only. The impact of incentives on each technology and customer class for each state is different. PacifiCorp agrees that policy has an impact on adoption and could be considered in future studies.

3. "Maximum Market Penetration" is shown at 80% for a simple payback of zero years.
  - a. How does this correspond to the "Technical potential is the amount of a technology that can physically be installed without taking economics into account" definition on slide 11?
  - b. NREL's 2016 national potential study\* found that, "Although 26% of the total rooftop area on small buildings (those with a footprint smaller than 5,000 ft<sup>2</sup>) is suitable for PV deployment, the sheer number of buildings in this class gives small buildings the greatest technical potential." While the assumptions between these studies likely are not comparable, Staff seeks more explanation of the Navigant assumptions regarding technical potential of private solar generation.

*\*Rooftop Solar Photovoltaic Technical Potential in the United States: A Detailed Assessment,*  
<https://www.nrel.gov/docs/fy16osti/65298.pdf>

**PacifiCorp Response:**

- a. The technical potential value is calculated separately and the maximum market penetration is applied later to that value.
- b. The technical potential for solar photovoltaic (PV) in Oregon was calculated in the following way: number of customers \* PV access factor \* system size. For Oregon the system size for residential was assumed to be 6 kW, for large commercial 25 kW, for small industrial 100 kW, and for irrigation around 32 kW. The PV access factors were assumed to be 42% for the non-residential market segments and 35% for residential market segment. The total value in 2019 for the residential segment was around 1,300 MW and 1,100 MW for the non-residential segment.

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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)

\* Required fields

Thank you for participating.

\* Required fields