

# 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 10/8/2018

\*Name: Hunter Holman

Title: [Click here to enter text.](#)

\*E-mail: hunter@utahcleanenergy.org

Phone: [Click here to enter text.](#)

\*Organization: Utah Clean Energy

Address: [Click here to enter text.](#)

City: [Click here to enter text.](#)

State: [Click here to enter text.](#)

Zip: [Click here to enter text.](#)

Public Meeting Date comments address: [Click here to enter date.](#)

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.

Supply Side Resource vender reports and CAES Modeling Assumptions

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.

### Request for Vendor Reports Related to Supply Side Resources:

- Please provide the consultant reports from Burns & McDonnell and Black & Veatch used to develop the supply side resource and gas resource input assumptions.

### PacifiCorp Response:

Consultant reports will be made available on the PacifiCorp website at <http://www.pacificorp.com/es/irp/irpsupport.html>. PacifiCorp also discussed the supply-side resource table and cost assumptions to inform the 2019 Integrated Resource Plan (IRP) at the September 2018, October 2018, and November 2018 public input meetings. Analysis will proceed to support the 2019 IRP timeline.

- Please delay the start of any analysis utilizing these assumptions until parties are allowed the opportunity to review, understand, and provide feedback on the supply side resources.

### Data Request Specific to Solar O&M Costs and Assumptions:

- Based on industry feedback we received, the solar O&M costs on slide 8 of the September 27-28 stakeholder meeting deck are high. Please explain and quantify all costs that factor in to the solar, solar plus storage, and conventional generation O&M costs.

\* Required fields

**PacifiCorp Response:**

PacifiCorp retains consultants to provide inclusive screening level operations and maintenance (O&M) costs. Renewable O&M costs include the following:

- Maintenance expense for the 25 year commercial life of the project
- Current market terms for performance guarantee agreements
- Land Costs (assume project land is leased) for the commercial life of the project
- Cost to extend warranties or replace major components (i.e. inverters) for the commercial life of the project.

Gas Turbine resource O&M costs include the following:

- Variable O&M costs include long-term contracts with the original equipment manufacturers for parts and labor to inspect and overhaul the combustion turbines and steam turbine. Owner will provide the long-term contract prices.
- Fixed O&M costs include the personnel needed to operate and maintain the new generation resource. Owner will provide fully loaded labor rates and work with Consultant to identify personnel costs.
- Fixed O&M costs may include long-term contracts with equipment manufacturers for parts and labor to inspect and overhaul the combustion turbines, steam turbine and heat recovery steam generators.

Costs provided by consultants are reviewed and compared to bids received and company experience. In the case of solar, PacifiCorp adjusted project capital costs to align levelized costs with the pricing of power-purchase agreement (PPA) bids submitted into the 2017S request for proposal (RFP). This calibration was carried over to capital costs for solar plus storage resources. If O&M costs were reduced, PacifiCorp would need to recalibrate levelized costs ensure that they continue to align with market bids submitted into the 2017S RFP (i.e., adjusting other cost elements, like capital costs, to arrive at the targeted levelized cost).

- We appreciate that there will be a call on October 9 to discuss the levelized cost of energy for all supplyside resources. Please provide the levelized cost of energy for each supplyside resource in table format.

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- Please explain how third party Power Purchase Agreement costs are considered as a supply side resource in the IRP. If they are not considered, please explain why and how these costs will be incorporated into resource modeling.

**PacifiCorp Response:**

They are not modeled as supply side resources, please see October 2018 public input meeting materials for further detail.

As noted in a previous response, PacifiCorp's levelized costs are reasonably consistent with PPA pricing, and consequently, modeling a PPA at a levelized price of \$32/megawatt hour (MWh) is the same as modeling a resource that yields a levelized price of \$32/MWh. Selection of a proxy resource in the IRP does not establish the type of commercial structure (i.e., owned vs. contracted), which would be evaluated during a competitive solicitation process based on then-current market offerings.

**Data Request Specific to CAES Modeling Assumptions:**

- For the 320 MW CAES resource, identified on slide 11 of the September 27-28 stakeholder meeting deck, please provide the various components of cost underlying the basis for the reported capex cost of \$1,992/kW:
- i. Breakdown of direct cost;
  - ii. Breakdown of owner's costs;
  - iii. Breakdown of owner's financial costs.

**PacifiCorp Response:**

The base capital costs listed in the Supply Side Resource Table of PacifiCorp's 2019 IRP include owner's costs, allowance for funds during construction (AFUDC), owner's contingency and escalation (discounted back to mid-2018 dollars) above the base engineering-procurement-construction (EPC) costs. EPC costs and owner's costs will be broken out in the consultant's final report.

\*General comment related to CAES values: Based on industry feedback we received, the base capital in slide 11 (\$1,992/kW) appears to be high and the variable and fixed O&M costs (\$7.01/KW-yr) may be low.

\* Required fields

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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.

\* Required fields