

# 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 10/15/2018

\*Name: Matthew Shapiro

Title: CEO

\*E-mail: mshapiro@gridflexenergy.com

Phone: 208-246-9925

\*Organization: Gridflex Energy, LLC

Address: 1210 W Franklin St

City: Boise

State: ID

Zip: 83702

Public Meeting Date comments address: 10/11/2018

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.

Response to Pacificorp response to Gridflex feedback on base capital cost assumptions for pumped storage projects.

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.

In response to Pacificorp's response, Gridflex is pleased to provide clarification. The figures originally provided by Gridflex to Burns & McDonnell were not only base EPC costs. While they did not include AFUDC, they did include a 30% civil contingency and a 20% owner's cost.

Pacificorp response to original comment:

"The base capital costs quoted above from the Supply Side Resource Table of Pacificorp's 2019 IRP include owner's costs, allowance for funds used during construction (AFUDC), owner's contingency and escalation (discounted back to mid-2018 dollars) above the base engineering-procurement-construction (EPC) costs. The base EPC costs are in line with the costs suggested above. Cost calculations were not made purely on project size. Base EPC costs were provided by Gridflex to Pacificorp's consultant Burns and McDonnell."

Gridflex original comment:

"Gridflex is the proponent of three of the pumped storage projects profiled in the supply options matrix associated with the October 11 meeting. The base \$/kW costs of these three projects are given as \$3708 for Seminole, \$3622 for Flat Canyon, and \$3190 for Idaho PS1. We don't know where these cost estimates come from, but they are not accurate and do not reflect prior cost estimates (such as the Seminole cost estimate from the 2016 IRP cycle). The figure for Seminole -- a project that would use an existing reservoir and with a very short conduit - should be closer to \$2,200/kW. The figure for Flat Canyon, a closed-loop project featuring topography that minimizes reservoir construction costs, should be

\*Required fields

similar to Seminoe. The Idaho PS1 site has an extremely high head and also minimizes reservoir construction costs; the figure should be closer to \$2,000/kW. It should certainly be lower than the Swan Lake cost estimate, because the latter site, of similar MW size, has significantly lower head and requires more expensive reservoirs. We suspect that some cost calculations may have been made purely based on project size, but this would not be accurate if ignoring actual features that make these sites specifically attractive. We appreciate your careful review of these figures."

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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.