

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 10/17/2018

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Address: 14 N. Sierra Madre

City: Colorado Springs

State: CO

Zip: 80903

Public Meeting Date comments address: 10/9/2018

Check here if not related to specific meeting

List additional organization attendees at cited meeting:

Lisa Tormoen Hickey, Tormoen Hickey LLC

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

Intrahour dispatch credit #2

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

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

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.

INTRAHOUR DISPATCH CREDIT

Interwest appreciates that the PacifiCorp IRP team has heard and responded to questions and concerns raised about the intrahour dispatch credit. It is important that this untested methodology not be used to develop resource plan portfolios. However, Interwest remains concerned about the intrahour dispatch credit being used to assess the economic impact of various portfolios as described on the October 9 conference call meeting for several primary reasons:

First, the credit does not reflect the value of flexibility of the resource, but rather it appears to reflect the value of the difference in the cost of the resources versus the EIM price. If this methodology is purported to represent the value of flexibility, the results will be misleading to Commissions and staff, contrary to the purposes and guidelines governing the IRP process. Also, the EIM is rapidly growing and changing so the 2017 baseline will very soon be stale.

PacifiCorp Response:

* Required fields

Intra-Hour Flexible Resource Credits are intended to reflect the value of intra-hour dispatches in the intra-hour Energy Imbalance Market (EIM) – value that is not presently accounted for in the models, which have hourly granularity. If a resource is dispatched up in EIM from its base schedule, it generates more and is compensated at the EIM settlement price. Similarly, if a resource is dispatched down in EIM from its base schedule, it generates less but pays for the difference at the EIM settlement price. In both cases, the difference between the EIM price and a resource’s cost (its bid) determines the margin earned and the benefit relative to the resource’s hourly schedule. This benefit is specific and limited because other aspects of flexibility, including economic dispatch and operating reserves, are already captured in the Integrated Resource Plan (IRP) model results, which also includes stochastic shocks to various inputs that can identify value from resources with flexible dispatch.

Second, the dispatch credit is likely to be discriminatory since it seems to apply a credit only to higher priced resources, without reflecting the overall benefits to consumers of lower cost resources. In fact, the methodology would reflect a debit to zero marginal cost resources because they are lower priced than resources bid into the EIM market. This result is illogical and ignores the obvious economic benefits of zero marginal cost resources due to the focus on the operation and pricing derived from the EIM. The methodology still appears to double count intrahour services since various renewable energy resources are already charged an integration cost.

PacifiCorp Response:

PacifiCorp notes that there are benefits from flexibility even for low cost resources. For instance, on slide 12 from the October 9, 2018 public input meeting presentation, PacifiCorp identified values associated with curtailment of wind and solar resources. These resources can be zero cost, or even lower for wind resources that qualify for production tax credits. Because there are many other higher cost resources that are more economic to dispatched down first, these resources are called upon for curtailment relatively infrequently. Low-cost resources that are called upon for energy already deliver that generation within the IRP models, so the IRP models capture most of the associated benefits.

Third, Interwest suggests it is time to consider PacifiCorp adopting a newer modeling program to accommodate intrahour modeling and better reflect the value of flexibility for all resources, including energy storage. A more accurate reflection of the value of flexibility would be attributed through using a production cost modeling program which reflects the intrahour (5 minute or 15 minute) dispatch capabilities of generation and storage resources. As indicated by KCE Energy Storage in its August 20, 2018 comments (“KCE Comments”), and as noted in this June 2018 Update to the Energy Storage Association IRP primer, http://energystorage.org/system/files/attachments/esa_irp_primer_2018_final.pdf, several of these models are available to PacifiCorp to properly reflect the intrahour dispatch of its resources. Interwest is uncertain of what products are available but KCE noted that “there are several validated commercial models are available that can calculate economic resources including intrahourly dynamics, such as PLEXOS, PSO and FESTIV; however, the 2017 IRP states energy storage is modeled hourly (pg. 168).” KCE Comments, p. 2 “Energy Storage Benefits”. Intrahour modeling will be critical to accurately account for the value of flexibility and storage in the future, as PacifiCorp has stated it is committed to do. In addition, it will accurately account for the value of its other resources, including thermal resources, as the intrahour dispatch credit is apparently intended to do but is inadequate to accomplish.

In sum, while the EIM-based credit reflects a laudable effort at valuing flexibility on an intrahour basis, it does not provide a sound basis for reflecting that value as currently proposed.

PacifiCorp Response:

PacifiCorp provided further description of the Intra-hour Flexible Resource Credit calculation and values by resource type at the September and October 2018 public input meetings. PacifiCorp plans to calculate and present the impact on overall portfolio costs attributed to the Intra-hour Flexible Resource Credit as part of its portfolio development.

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

Thank you for participating.