

# PacifiCorp - Stakeholder Feedback Form

## 2021 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 2021 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 12/18/2020

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\*Organization: Sierra Club

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

City: Oakland

State: CA

Zip: 94062

Public Meeting Date comments address: **12/3/2020**

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.

Coal Plant Operating Variants and Operating Limits, Minimum Take & Must Run Requirements, Business As Usual Case, Customer Preference, Transmission, Power Prices, RFP Results, Follow up to previous Feedback Request

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.

1. Refer to slides 5-13 from the December 3, 2020 Public Input Meeting presentation.
  - a. Please provide the costs (in total \$ or \$/kW) assumed for each of the coal units associated with the \u001Cmajor overhauls\u001D in each year shown on the slides.

### **PacifiCorp Response:**

For owned/operated coal units, potential retirement dates are based upon avoiding major overhauls, assuming a unit operates for five years after its last overhaul prior to an early retirement assumption. Cost information will be available once the 2021 IRP is filed and PacifiCorp provides work papers to support the filing.

b. Do any of the major overhauls include SCR or other pollution control technology? Do they include any Coal Combustion Residual Rule compliance costs?

### **PacifiCorp Response:**

Any major maintenance required on currently installed SCRs would occur during a major overhaul. Compliance costs associated with the Coal Combustion Residual Rule are included in the model but are not necessarily correlated to major overhauls.

c. Are there other capital investments being made in each unit in addition to the major overhauls? If so please provide these costs.

\* Required fields

**PacifiCorp Response:**

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Effluent Limitation Guidelines and Coal Combustion Residual compliance costs are included in the model where appropriate; however, these costs are not necessarily correlated to major overhauls. Cost information will be available once the 2021 IRP is filed and PacifiCorp provides work papers to support the filing.

d. Please explain the rationale for selecting specific years for each Operating Variant and why these differ between units (e.g. Coal-Ret 2028 for Jim Bridger 1 versus Coal-Ret 2027 for Jim Bridger 2)

**PacifiCorp Response:**

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For owned/operated coal units, potential retirement dates are based upon avoiding major overhauls, assuming a unit would be able to operate five years beyond its last overhaul. Potential anticipated Regional Haze compliance also drives selection of the coal retirement timeframe.

e. Sierra Club requests that PacifiCorp consider a uniform 3 year interval for economic coal plant retirement options.

**PacifiCorp Response:**

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Thank you for the feedback. PacifiCorp will consider this recommendation. The coal plant retirement options PacifiCorp has developed for the model are founded on unit-specific timing based on major overhaul work, regional haze compliance requirements and other considerations.

f. Sierra Club requests that PacifiCorp include a 2028 retirement date for the Hayden plant due to the recent Colorado Air Quality Control Commission ruling on Regional Haze. (Please refer to Chase Woodruff, Coal plant closures accelerated with air commission approval of Regional Haze plan (Nov. 20, 2020), <https://coloradonewsline.com/briefs/coal-plant-closures-accelerated-with-air-commission-approval-of-regional-haze-plan/>.)

**PacifiCorp Response:**

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Thank you for the suggestion and information. PacifiCorp will consider this recommendation.

g. Please explain whether the operating limits to comply with the Regional Haze second and third planning periods are assumed to impose any changes to plant performance characteristics (e.g. heat rate, ramp rates, minimum/maximum output levels) due to installation of pollution control technologies or other operational changes to the plants.

**PacifiCorp Response:**

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The states in which PacifiCorp operates have not yet determined Regional Haze compliance requirements for second and third planning periods. PacifiCorp reasonably assumed that each state would implement more stringent operating limits for each pollutant. As seen in Slides 5-12 from the December 3, 2020 public- input meeting, PacifiCorp assumed a 25 percent limit reduction for third planning period.

h. Do any of the Operating Variants for Jim Bridger 3 & 4 factor in additional changes in the post-2030 timeframe due to Idaho Power's planned exit from units 3 & 4 in 2028 and 2030, respectively? (Refer to IPC's Second Amended 2019 IRP, available at <https://docs.idahopower.com/pdfs/AboutUs/PlanningForFuture/irp/2019/SecondAmended2019IRP.pdf>.) If so, which additional changes are considered? For example, would PacifiCorp assume ownership of Idaho Power's share of the plant (and associated costs of that ownership)?

**PacifiCorp Response:**

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The operating variants for Jim Bridger Units 3 and 4 reflect PacifiCorp's ownership share and is consistent throughout all years and retirement scenarios.

\* Required fields

### **Minimum Take & Must Run Requirements**

1. Refer to PacifiCorp's response to Sierra Club request submitted on October 19, 2020, Coal Operations Question 1, which states, "The Company intends to apply ramp rates, minimum and maximum capacity, heat rates, planned maintenance, forced outages, minimum fuel requirements, minimum up and down times, economic dispatch, CO2 price, and plant wide emission caps."

a. Please provide the specific values of these input assumptions for each coal unit, indicating which dates these assumptions apply to.

#### **PacifiCorp Response:**

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Please refer to PacifiCorp's supply-side resource table, available at:

<https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-plan/2021-1-11%20Supply-Side%20Resource%20Table.pdf>

b. Please indicate which units are assumed to operate with "must run" unit commitments and over which time period these must run designations apply. If any of the above information is deemed confidential, Sierra Club would be willing to sign a protective agreement.

#### **PacifiCorp Response:**

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Please refer to PacifiCorp's supply-side resource table, available at:

<https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-plan/2021-1-11%20Supply-Side%20Resource%20Table.pdf>

Additional unit data will be provided on a confidential basis after the IRP is filed and workpapers are provided to support the filing.

### **Business As Usual Case**

1. Refer to slide 14 from the December 3, 2020 Public Input Meeting presentation, Business As Usual Case Requests ("BAU"). Sierra Club supports use of the 2019 IRP preferred portfolio as a BAU Case. 2. Sierra Club additionally requests that the BAU scenario not include any of the following coal unit constraints: a) Must Run, b) Minimum Fuel Burn, c) Take or Pay Obligations.

a. In the alternative, Sierra Club requests that these constraints be removed as a sensitivity analysis.

#### **PacifiCorp Response:**

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The coal unit constraints within the Plexos model do not enforce must run or minimum fuel burn. The take or pay obligations are to ensure proper costing for fuel based on the model's generation of a specific unit.

### **Customer Preference**

1. Please describe the sequence for modeling customer preference. Does the model select resources absent any customer preference and then make subsequent adjustments if necessary? Or are customer preferences built into the initial modeling constraints?

#### **PacifiCorp Response:**

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Customer preference is accounted for within the initial modeling constraints. The customer preference requirement (percentage of load) are identified within the model, and the model optimizes its selection of renewable resources to meet these requirements. There is no post-model adjustment that occurs.

2.How are incremental costs and/or savings from customer preference resources being tracked relative to system-wide resources?

**PacifiCorp Response:**

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As the IRP is forward-looking and proxy-based, any realized incremental costs and/or savings that may be a result of customer preference resources are not tracked as part of the IRP. Rather, the IRP selects the lowest cost, risk-adjusted portfolio of resources to meet load requirements including customer preference.

3.Please provide a comprehensive list of the types of customer actions or requirements that this captures (e.g. corporate purchases, municipal energy goals, etc.). Does this include any of PacifiCorp's voluntary clean energy tariffs or programs?

**PacifiCorp Response:**

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Customer preference requirements reflect a forecast of anticipated customer actions from corporate purchases, municipal purchases, and purchases in support of community-wide energy goals. It is anticipated that these purchases will be made under voluntary renewable energy programs.

4.In the forecast for customer preference depicted on slide 36 from the December 3, 2020 Public Input Meeting presentation, does the base case reflect only existing customer preference decisions? Or does it also include incremental decisions that have not yet been made?

**PacifiCorp Response:**

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The base case reflects a forecast that includes publicly-available renewable energy commitments currently in place in a variety of plans from customers and communities; the high case includes assumptions for incremental decisions.

**Transmission**

1.During the November 16, 2020 Public Input Meeting, PacifiCorp indicated that if a coal unit retires it is assumed that transmission would become available for new resources but that any delay could risk that the transmission capacity is taken up by a competing resource that may not be used to serve PacifiCorp load. Please provide, or otherwise describe the following:

a.Current requests for transmission access from external resources,

**PacifiCorp Response:**

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Please refer to PacifiCorp's publicly available transmission service request queue on its Open Access Same-Time Information System (OASIS):

[https://www.oasis.oati.com/woa/docs/PPW/PPWdocs/TSR\\_Queue.xlsx](https://www.oasis.oati.com/woa/docs/PPW/PPWdocs/TSR_Queue.xlsx)

b.Available transmission capacity on existing lines,

**PacifiCorp Response:**

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Available transmission capacity for PacifiCorp's transmission scheduling paths are publicly available on OASIS.

c.Expectations for the magnitude and location of additional transmission access requests may be likely to occur (including on new lines),

**PacifiCorp Response:**

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The Company is not speculating on the magnitude and location of any future requests for transmission service.

d. What is the assumed time delay for transmission capacity to become fully subscribed by external transmission access requests after a coal plant is retired?

**PacifiCorp Response:**

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The Company is unable to speculate on the timing of any future requests for transmission service.

2. Please explain why the Boardman-Hemingway line is being proposed for endogenous selection but the Gateway options require additional testing for this to occur. Sierra Club recommends that the Gateway line also be endogenously selected by the model in the same manner as Boardman-Hemingway.

**PacifiCorp Response:**

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The transmission options for the 2021 IRP are being modeled endogenously. This includes the Gateway South and Boardman-Hemingway lines. Based on successful implementation after the December 3, 2020 public-input meeting, Gateway segments D.1, D.3, and segment E are also included in the endogenous modeling.

3. Is the 20% OATT credit anticipating new transmission requests or reflective of the current status? Is this reflective of PacifiCorp's entire system or are there locations where the share is significantly more or less than 20%?

**PacifiCorp Response:**

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The Company's current transmission formula rate (included in PacifiCorp's Open Access Transmission Tariff (OATT)) was approved by the Federal Energy Regulatory Commission (FERC) in Docket ER11-3643. The Company's transmission formula rate is updated annually with the annual transmission revenue requirement (ATRR) which represents the annual total cost of providing firm transmission service over the test year. The ATRR calculation incorporates all transmission system investments by the Company over the entire system in all 6 states in which PacifiCorp operates.

The 20 percent OATT credit represents an estimate of transmission revenues collected which is credited against retail rates as calculated in the transmission formula rate. This represents the entire transmission system and there are not different percentages applied to specific investments. To view the annual transmission formula filings, please visit PacifiCorp OASIS Tariff/Company Information folder on PacifiCorp's [OASIS](#).

**Power Prices**

1. Please refer to slide 15 from the November 16, 2020 Public Input Meeting presentation.

a. Please provide the underlying 8760 data for the power price forecasts.

**PacifiCorp Response:**

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The electric power prices on slide 15 are developed from monthly prices then converted into annual. When the IRP is filed, the confidential hourly prices will be included with workpapers in support of the filing.

b. Sierra Club recommends that PacifiCorp illustrate the temporal variation in its power price forecasts through a month-hour graphic similar to that included in Arizona Public Service's 2020 IRP: (Please refer to APS 2020 IRP at 131, available at <https://www.aps.com/-/media/APS/APSCOM-PDFs/About/Our-Company/Doing-business-with-us/Resource-Planning-and-Management/2020IntegratedResourcePlan062620.ashx?la=en&hash=24B8E082028B6DD7338D1E8DA41A1563>.)

**PacifiCorp Response:**

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Thank you for this recommendation. PacifiCorp will consider incorporating illustrations such as the APS illustration referenced in the question in the 2021 IRP and/or in future IRPs.

**RFP Results**

1. Please refer to slide 24 from the November 16, 2020 Public Input Meeting presentation, which indicates that PacifiCorp's Initial Short List for its All-Source RFP included 3,173 MW of solar or solar + storage projects (includes 1,330 MW of collocated storage capacity); 2,479 MW of wind projects; 200 MW of stand alone storage.

a. Sierra Club requests that PacifiCorp provide anonymized median bid price information from its Initial Shortlist (or full list of bids) in a similar format to Xcel Energy. (Please refer to Robert Walton, Xcel solicitation returns incredible renewable energy, storage bids (Jan. 8, 2020), <https://www.utilitydive.com/news/xcel-solicitation-returns-incredible-renewable-energy-storage-bids/514287/>).

b. If PacifiCorp is unable to provide this information, please provide a detailed explanation as to why this information cannot be provided.

**PacifiCorp Response:**

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**PacifiCorp 2020AS RFP Summary Results by Technology\***

Generation Technology	# of Bids	# of Projects	Project MW	Median Nominal Levelized Price	Units
Stand-alone Battery Storage	17	6	1,830	\$79	\$ / MWh
Pumped Storage Hydro	7	2	**	**	\$ / MWh
Wind	78	27	11,038	\$35	\$ / MWh
Wind with Battery	1	1	**	**	\$ / MWh
Solar (PV)	92	41	6,523	\$28	\$ / MWh
Solar (PV) with Battery Storage	167	60	10,692	\$38	\$ / MWh
<b>TOTAL</b>	<b>354</b>	<b>134</b>	<b>30,083</b>		

\* Summary of 2020AS RFP compliant bids only; other bids provided but were deemed non-compliant due to PacifiCorp electric transmission or 2020AS IRP compliance issues.

\*\* Population of bids too small for reporting purposes due to confidentiality concerns.

\* Required fields

## **Follow up to previous Feedback Request**

1. Refer to PacifiCorp's response to Sierra Club request submitted on October 19, 2020, Load Forecast and DSM Question 2, which states "PacifiCorp has not performed the requested analysis."

a. Please explain how the impact of these rollbacks on PacifiCorp's load forecast was determined if this analysis was not performed.

### **PacifiCorp Response:**

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The impacts of the federal rollback of the 2007 Energy Independence and Security Act (EISA) is an embedded assumption within the source data, which relies on data produced by EIA. The exemption of specialty bulbs from EISA standards resulted in the relative flattening of the lighting efficiency curve developed by EIA and is subsequently informing the load forecast.

b. In light of the recent presidential election that may alter the fate of these rollbacks, Sierra Club requests that PacifiCorp model a sensitivity that does not include them and restores federal codes and standards for Phase 2 of the Energy Independence and Security Act.

### **PacifiCorp Response:**

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A separate lighting efficiency curve that does not exempt specialty bulbs from EISA standards does not exist.

2. Refer to PacifiCorp's response to Sierra Club request submitted on October 19, 2020, Resource Assumptions Question 1(b).

a. Sierra Club requests that PacifiCorp include 1 additional smaller sized battery configuration (e.g. 2 hours or 3 hours) as a resource option. This would be consistent with other IRP modeling exercises in the Western U.S. such as those recently performed in California and Arizona which include 1-hour and 3-hour duration batteries. While longer duration batteries provide greater value to the system, this must be balanced with overall cost which is primarily driven by duration. Sierra Club's expert consultant, Strategen Consulting, has extensive experience with the battery storage industry and has advised that shorter duration batteries can still capture significant value and are worth considering. While we recognize that short duration batteries have diminishing returns as additional storage resources are added, it is still worthwhile to consider these additions in the early years. Moreover, shorter duration batteries can be effective at addressing initial peak demand needs, while longer duration can be used subsequently as the peak is diminished. (See, e.g., Ray Hohenstein, Solving "range anxiety": Meeting peak electricity demand with the most cost-effective duration portfolio (Oct. 17, 2018) <https://blog.fluenceenergy.com/meeting-peak-electricity-demand-with-energy-storage-duration-portfolio>.)

### **PacifiCorp Response:**

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PacifiCorp appreciates this feedback and will consider Sierra Club's recommendation in future IRP's. For the 1 MW batteries included in the Renewable Resource Study conducted for the 2021 IRP, the \$/duration slope is almost linear with it being nearly the same from 1 hour to 4 hours (\$369.5/hour of duration) and from 4 hours to 8 hours (\$360.2/hour of duration). One way to approximate a 2 or 3 hour utility scale battery would be to apply this linear slope to the 50 MW x 4 hour option, resulting in \$1,088.67/MW for a 2 hour option and \$1,458/MW for a 3 hour option.

**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.

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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