PACIFIC POWER
A DIVISION OF PACIFICORP

825 NE Multnomah, Suite 2000
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June 15, 2021

VIA ELECTRONIC FILING

Public Utility Commission of Oregon
Attn: Filing Center
201 High Street SE, Suite 100
Salem, OR 97301-3398

RE: UM 2059—PacifiCorp's 2020 All Source Request for Proposal—Request for Acknowledgement of Final Shortlist of Bidders in 2020 All-Source Request for Proposals

PacifiCorp d/b/a Pacific Power hereby submits for filing its Request for Acknowledgement of the Final Shortlist of Bidders in the 2020 All-Source Request for Proposals in the above referenced docket.

Please direct any inquiries about this filing to Cathie Allen, Regulatory Affairs Manager, at (503) 813-5934.

Sincerely,

Shelley McCoy
Director, Regulation

Enclosure

CERTIFICATE OF SERVICE

I certify that I served a true and correct copy of **PacifiCorp's Request for Acknowledgement of Final Shortlist of Bidders in 2020 All-Source Request for Proposals** on the parties listed below via electronic mail and/or or overnight delivery in compliance with OAR 860-001-0180.

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UM 2059

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Dated this 15th day of June, 2021.

Mary Penfield
Adviser, Regulatory Operations

BEFORE THE PUBLIC UTILITY COMMISSION OF OREGON

UM 2059

In the Matter of PACIFICORP d/b/a PACIFIC POWER Application for Approval of 2020 All-Source Request for Proposals.	**REQUEST FOR ACKNOWLEDGEMENT OF FINAL SHORTLIST OF BIDDERS IN 2020 ALL-SOURCE REQUEST FOR PROPOSALS**

I. INTRODUCTION

In accordance with Oregon Administrative Rule (OAR) OAR 89-089-0500, PacifiCorp d/b/a Pacific Power requests the Public Utility Commission of Oregon (Commission) acknowledge the company's final shortlist of bidders in PacifiCorp's 2020 All-Source Request for Proposals (2020AS RFP).

The 2020AS RFP is designed to procure resources to meet a resource need consistent with the preferred portfolio from the 2019 Integrated Resource Plan (IRP), which showed that renewable resources and battery resources eligible for federal tax incentives would be lower cost than other resource alternatives.[1] The Commission approved the 2020AS RFP[2] and PacifiCorp conducted the solicitation process in accordance with the Commission's approval and with the comprehensive oversight of two independent evaluators—one retained by PacifiCorp and appointed by the Commission and one retained by the Public Service Commission of Utah (Utah Commission). The solicitation process complied with the

[1] PacifiCorp 2019 IRP was acknowledged by the Commission at a Public Meeting on May 7, 2020. *See In the Matter of PacifiCorp, dba Pacific Power, 2019 Integrated Resource Plan,* Docket No. LC 70, Order No. 20-186 (June 8, 2020).

[2] *In the Matter of PacifiCorp dba Pacific Power, Application for Approval of 2020 All-Source Request for Proposals.*, Docket No. UM 2059, Order No. 20-228 (July 16, 2020).

Commission's competitive bidding rules (the Rules)[3] and was transparent and fair to all bidders.

The Commission-approved 2020AS RFP elicited a robust market response that produced over 28,000 megawatts (MW) of conforming bids with an additional 12,500 MW of bids that did not conform with minimum requirements set forth in the 2020AS RFP. PacifiCorp has evaluated a range of potential bid portfolios, reflecting the results from bid updates after conclusion of the transition interconnection cluster study process, to select the final shortlist, which includes:

- 1,792 MW of new wind capacity
    - 590 MW as build-transfer agreements (BTAs)
    - 1,202 MW as power purchase agreements (PPAs)
- 1,453 MW of solar capacity (PPAs
- 735 MW of battery storage capacity
    - 535 MW of battery storage is paired with solar bids
    - 200 MW is standalone battery storage offer via battery-storage agreement (BSA)

Using the same models and methodology used to develop the 2019 IRP, PacifiCorp determined the optimum combination of bids to maximize customer benefits while managing risk. Extensive modeling confirms that the final shortlist resources meet both near-term and long-term resource needs and are the least-cost, least-risk path available to serve PacifiCorp's customers. PacifiCorp's risk assessment further demonstrates that the final shortlist

[3] OAR 860-089-0010 through OAR 860-09-0550. The Rules were adopted by the Commission in Order No. 18-324. *See In the Matter of the Rulemaking Regarding Allowances for Diverse Ownership of Renewable Energy Resources*, Docket No. AR 600, Order No. 18-324 (Aug. 30, 2018).

resources provide substantial customer benefits across a range of price-policy scenarios and in other sensitivities requested by Commission Staff. The price-policy scenarios are defined by varying assumptions for natural gas prices, wholesale power prices, and carbon dioxide (CO_2) prices. Sensitivities tested bid selections and system costs under alternative market price assumptions, market sale assumptions, and federal tax incentive assumptions. Indeed, the 2020AS RFP results demonstrate increased customer benefits from the new resources on the final shortlist, in combination with construction of the Gateway South and Gateway West Subsegment D.1 transmission lines and associated infrastructure (transmission projects).[4]

When applying medium natural gas price and medium CO_2 price-policy assumptions, present value customer net benefits from the final shortlist, after accounting for the cost of the transmission projects and all interconnection network upgrades, totals $323 million relative a case where no final shortlist bids are procured. When nominal annual revenue requirement is evaluated against a case without procurement of bids, customer costs are reduced in 12 of 15 years over the period 2024 through 2038.

PacifiCorp's economic analysis, described in more detail below, demonstrates that the final shortlist of resources is reasonable according to the information available today. Thus, the Commission should acknowledge the 2020AS RFP final shortlist.[5]

[4] The Gateway South project is a new 414 mile, high-voltage 500-kilovolt transmission line and associated infrastructure running from the new Aeolus substation near Medicine Bow, Wyoming, to the Clover substation near Mona, Utah. The Gateway West Subsegment D.1 project is a new 59 mile high-voltage 230-kilovolt transmission line from the Shirley Basin substation in southeastern Wyoming to the Windstar substation near Glenrock, Wyoming.

[5] *OAR 860-089-0500(1)* ("acknowledgement is a finding by the Commission an electric company's final shortlist of bid responses appears reasonable at the time of acknowledgment and was determined in a manner consistent with the rules in this division.").

In accordance with OAR 860-089-500(3), the independent evaluator's Closing Report on PacifiCorp's 2020AS RFP is attached as Exhibit 1.[6] PA Consulting Group, Inc.'s (PA Consulting) opinion was the final shortlist reflected a diverse portfolio of competitive resources which achieves the resource adequacy and least cost goals set forth in PacifiCorp's IRP, based on the following conclusions:

- While PacifiCorp's 2020AS RFP process was complex and far from "vanilla", PacifiCorp's procurement process, scoring methodology and results were fair and free of bias across all bids and bidders.
- PacifiCorp applied the rules of the 2020AS RFP in an unbiased manner, communicated transparently with the independent evaluators regarding their modelling processes and with stakeholders regarding their decisions.
- PA Consulting found that PacifiCorp's bid price scores were on average consistent with their independent scoring methodology.
- PacifiCorp's utilization of an outside consultant, WSP Global, to evaluate wind, solar, and battery storage, while not for the purpose of confirming bid economics, benefitted stakeholders.
- The final shortlist was reasonably aligned with the original 2019 IRP preferred portfolio.

PA Consulting provided several recommendations for improving future RFPs which PacifiCorp will review and consider when planning future resource procurement processes. Also, under OAR 860-089-0500(3), the company has included the final shortlist of

[6] The independent evaluator's Final Report has been filed on a non-confidential basis. Concurrent with this filing, PacifiCorp is also filing a Motion for a Modified Protective Order that addresses the protection of the highly commercially sensitive bid information, and related analysis.

responsive bids (Section III.D), and a discussion of the consistency between the final shortlist and PacifiCorp's 2019 IRP Action Plan (Section III).[7] The sensitivity analyses are discussed in Section III.D. and results of the analyses were provided to Staff and the independent evaluators on June 8, 2021 and, the underlying workpapers were provided to Staff and the independent evaluators on June 10, 2021.[8]

II. COMMISSION APPROVAL OF 2020AS RFP

On February 24, 2020, PacifiCorp filed its Application requesting the Commission open a docket for approval of its 2020AS RFP, which is a solicitation process for the acquisition of up to 4,400 MW of new generating resources and 600 MW of battery storage targeting a commercial operation date on or before December 31, 2024 and appointing an independent evaluator to oversee the RFP process. The size of the resource procurement proposed for the 2020AS RFP triggers the Commission's Rules and necessitates engagement of an independent evaluator.[9] The proposed resources are being procured in conjunction with the transmission project, which is necessary to relieve existing congestion and will enable interconnection of the proposed wind resources into PacifiCorp's transmission system. The proposed wind projects, when combined with the transmission project, will meet a near-term and long-term resource need and are expected to provide economic benefits for PacifiCorp's customers. With aligned implementation schedules, the new wind resources and transmission project will achieve commercial operation by the end of 2024, to ensure the new wind resources can qualify for the maximum value of production tax credits (PTCs).

[7] The Commission approved the Company's request for a partial waiver of the filing of an update of the 2019 IRP. *See* Docket No. 70, Order No. 21-141.
[8] The sensitivity analyses are highly confidential. PacifiCorp will provide access to other stakeholders under the Modified Protective Order,once it is issued and executed by stakeholders.
[9] *See* OAR 860-089-0200.

In its Application, PacifiCorp asked the Commission to: (1) open a docket for approval of the 2020AS RFP; and (2) appoint an independent evaluator to oversee the RFP process. On April 7, 2020, the Commission adopted the recommendation to appoint PA Consulting as the independent evaluator to oversee the 2020AS RFP.[10] On April 22, 2020, PacifiCorp filed its draft 2020AS RFP and requested that the Commission solicit comments on and approve the final draft 2020AS RFP.

Following submission of comments by the independent evaluator, Staff, and stakeholders, the Commission approved the 2020AS RFP in Order No. 20-228 on July 16, 2020 finding that the 2020AS RFP is consistent with and is an action item in PacifiCorp's acknowledged 2019 IRP[11], with a modification and a condition:

1. Modification - Remove the "Current or Threatened Litigation" provision that is currently minimum eligibility requirement number 8 in the 2020AS RFP;
2. Condition - Should the Federal Energy Regulatory Commission (FERC) issue an order on rehearing that changes the transition interconnection cluster study cutoff date before August 10, 2020, then PacifiCorp is to change the date that is currently listed in minimum eligibility requirement number 30 so that it aligns with the date in the FERC order.

The Commission also directed PacifiCorp to conduct an additional set of sensitivity analyses including off-system sales and the impact on customer rates as outlined in the 2019 IRP Order 20-186 and report back to the Commission before the end of September 2020. The meeting was held on September 22, 2020 and included an update on the approach to be

[10] Docket No. UM 2059, Order No. 20-114 (April 8, 2020).
[11] Docket No. LC 70, Order No. 20-186
(Jun 8, 2020).

used for the sensitivity analyses described above, an update on the impact of executed large generation interconnection agreements (LGIA) on the locational initial shortlist capacity limits, and the bids eliminated due to not meeting the FERC-approved transition interconnection cluster study cut-off date of January 31, 2021.

The Utah Commission approved the 2020AS RFP on July 17, 2020 which included the agreed-to changes in the Oregon docket.

III. 2020AS RFP SELECTION PROCESS AND RESULTS

The 2020AS RFP delivered a robust response from the market with PacifiCorp receiving bids for over 40,000 MW of resource and storage capacity. At a general level, the 2020AS RFP set forth a three-phase evaluation and selection process, each phase containing multiple steps.[12] In Phase I, PacifiCorp screened all submitted and accepted bids to ensure conformance with the 2020AS RFP minimum requirements and then scored and ranked the bids (including price and non-price considerations, weighted as described in the 2020AS RFP) "based on their location in relationship to the 2019 IRP topology and proxy resource type."[13] In order to ensure a significant number of bids in each location, the capacity limits were set at 150 percent of 2019 IRP topology capacity. The results were reviewed with the IEs and the initial pool of bids by topology area were adjusted to include additional high scoring bids with no LGIA to mitigate a concern about bias toward bids with executed LGIAs. Upon identification of the initial pool of bids, the production cost models from the IRP selected the optimized portfolio of resources by area subject to the same locational capacity limits used to score and rank bids for the initial pool of bids. Phase I resulted in the

[12] The 2020AS RFP process here provides an outline. The RFP documents contains an exhaustive description of the process.
[13] Referred to in the 2020AS RFP as "Locational Capacity Limits" and shown in Appendix H.

selection of an "initial shortlist." In Phase II, PacifiCorp Transmission completed its transition interconnection cluster study, identifying the direct interconnection costs for each initial shortlist project in the transition interconnection cluster study as well as the network upgrades associated with the interconnection for each cluster area. PacifiCorp also engaged a third party engineering firm, WSP Global, to review bid documents to assess the reasonableness of the net capacity factor of the initial shortlisted wind and solar resources and to assist in the evaluation of bids that include battery storage. At completion of the transition interconnection cluster study, initial shortlist bidders updated their bid pricing to include direct assigned and network upgrade costs as discussed in the RFP. In Phase III, PacifiCorp reevaluated the updated bids, reflecting updated bid pricing and interconnection costs, through the IRP models to identify a final shortlist.

A. Exclusion of Non-Conforming Bids from Consideration

As an initial step in the process, PacifiCorp reviewed all bids and excluded from consideration those that failed to conform to the 2020AS RFP's minimum eligibility requirements. Thirty-five (35) bids totaling 12,500 MW (6,500 MW of resource and 6,000 MW of battery storage) were deemed non-conforming. Of that total, 2,700 MW of resource and 2,100 MW of battery storage were disqualified due to missing the transition interconnection cluster study cut-off date of January 31, 2021. The independent evaluator then reviewed those bids that were disqualified as non-conforming and agreed that they did not meet the minimum eligibility criteria.

B. Initial Shortlist Selection Process

On October 29, 2020, PacifiCorp completed its initial shortlist evaluation and scoring of the bids, and after review by the independent evaluator, notified the initial shortlist bidders of the selection results. The initial shortlist included 5,453 MW of renewable resource

capacity: 2,974 MW of solar or solar with storage (1,130 MW of battery storage), 2,479 MW of wind, and 200 MW of standalone battery capacity. Those bids, selected to the initial shortlist, notified PacifiCorp Transmission that they were selected to the initial shortlist. PacifiCorp initiated the capacity factor evaluation process (performed by WSP Global). The initial shortlist contained a mix of PPA, BTA and BSA proposals.

C. Final Shortlist Selection Process

Consistent with the bid evaluation and selection process outlined in the 2020AS RFP, the final shortlist selection process was implemented in two basic phases using the IRP modeling tools: the portfolio-development phase and the scenario-risk phase.

1. Price-Policy Scenario Assumptions

Before initiating the final shortlist selection process, PacifiCorp established a range of price-policy scenarios, plus others recommended by Staff as outlined below:

- LN: low gas/market price, no carbon price
- MM: medium gas/market price, medium carbon price
- HH: high gas/market price, high carbon price
- SL: Staff's low market price sensitivity that assumes high renewable penetration in the WECC, medium gas price, and medium carbon price
- SNS (MM): medium gas/market price, medium carbon price, but no wholesale market sales allowed
- SNST (MM): The same as SNS (MM), plus PTC/ITC assumed extended through 2030.

In addition, portfolios that excluded RFP bids were also prepared—these scenarios are compared to the final shortlist bid portfolio to calculate net customer benefits attributable to adding the final shortlist resources to the existing portfolio.

For the final shortlist selection process, Figure 1 shows the electric price assumptions, Figure 2 shows the natural gas price assumptions, and Figure 3 shows CO_2 price assumptions.

Figure 1 – Electric Price Assumptions

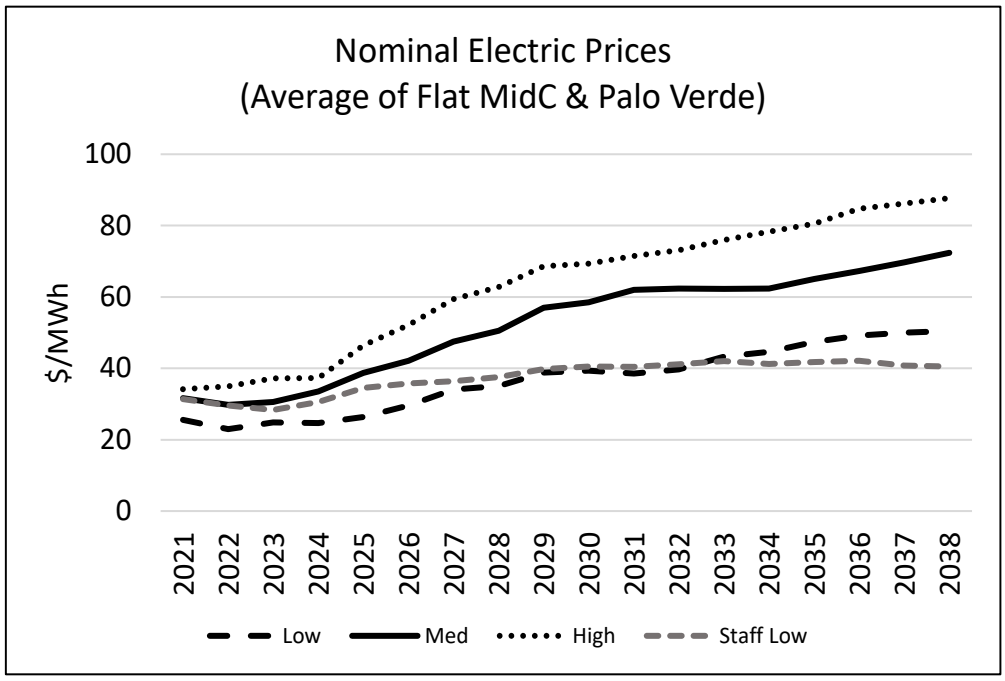


Figure 2 – Natural Gas Price Assumptions

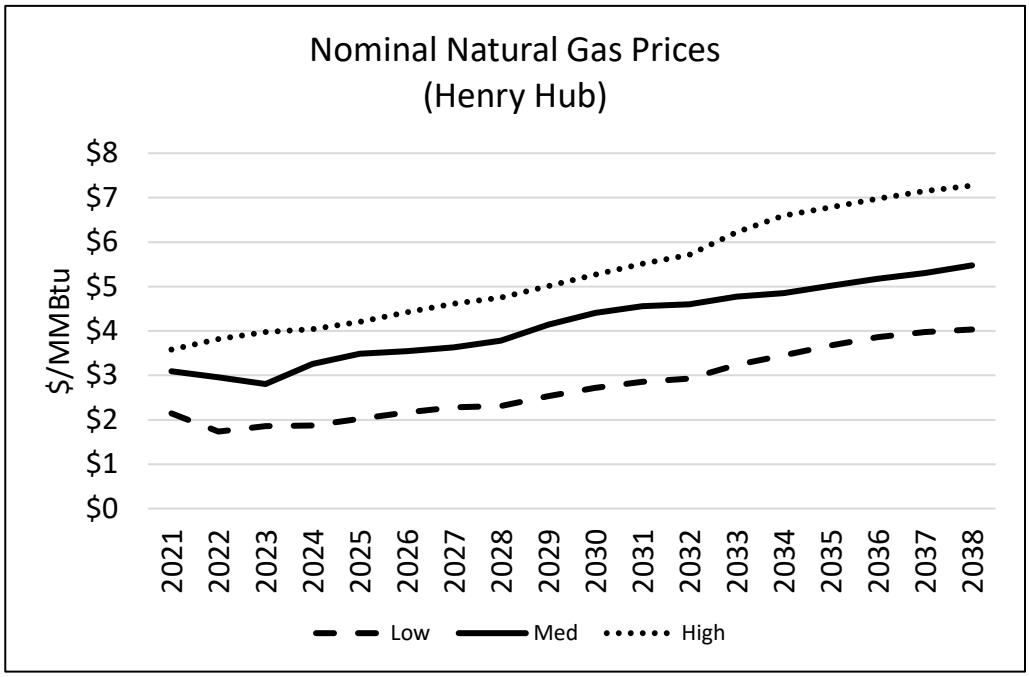
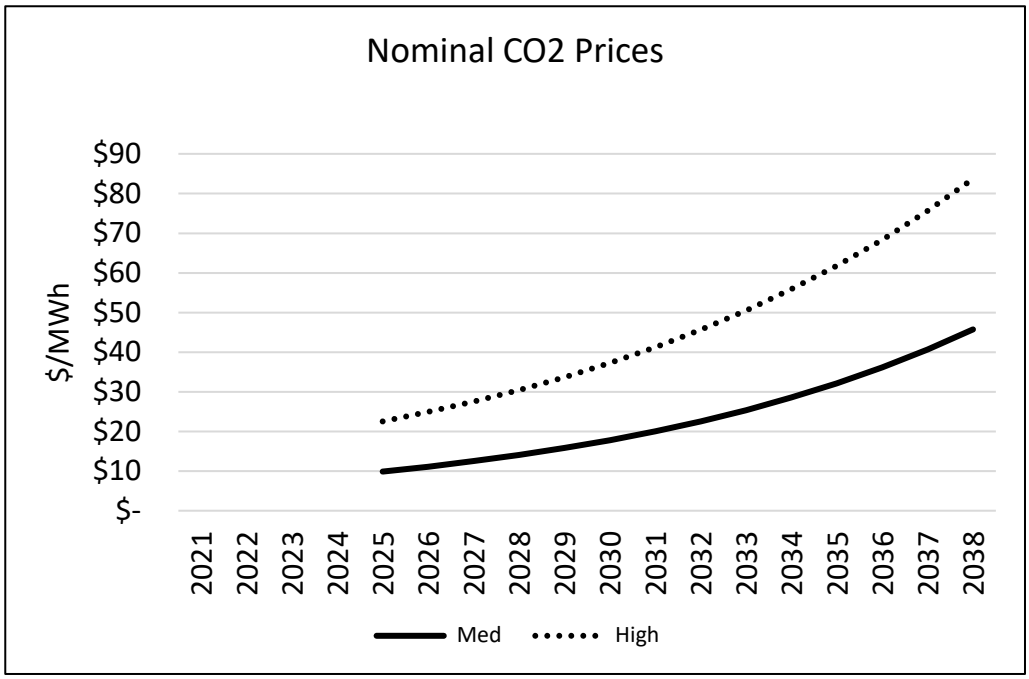


Figure 3 – CO_2 Price Assumptions



2. Portfolio-Development Phase

The portfolio-development phase identified the least-cost combination of bids using a methodology consistent with the approach used to produce resource portfolios in PacifiCorp's 2019 IRP. First, the best-and-final pricing for each bid was processed and incorporated into the System Optimizer (SO) model and Planning and Risk model (PaR) as modeling inputs. Second, the SO model was used to develop bid portfolios containing the least-cost combination of bids over a twenty-year planning horizon (2019 through 2038). The SO model optimized its resource portfolio selections from all of the bids included in the initial shortlist, as well as from all other proxy-resource alternatives used to develop resource portfolios in PacifiCorp's 2019 IRP (*e.g.*, front-office transactions or "FOTs", RFP demand-side management resources, *etc*.). PacifiCorp did not force the SO model to select any bid or any combination of bids. PacifiCorp initially developed bid portfolios for three price-policy scenarios, developed by pairing three natural-gas price forecasts with three CO_2 price forecasts (*i.e.*, an LN, MM, and HH bid portfolio). Three additional resource portfolios were generated, one for each price-policy scenario, that did not allow any bid selections so that PacifiCorp could calculate a present-value revenue-requirement differential (PVRR(d)) between two system simulations—one that included the 2020AS RFP bids and associated transmission projects, and one without.

3. Scenario-Risk Phase

The scenario-risk phase of the bid-evaluation process was implemented by evaluating the different resource portfolios (those produced when LN, MM, and HH price-policy assumptions were applied) under each of the three price-policy scenarios. This step can provide insight as to how each of the three bid portfolios perform under a range of conditions. For example, the MM bid portfolio was evaluated under LN, MM, and HH price-

policy scenarios. The same process was done for the LN and HH bid portfolios (i.e., each run under the LN, MM, and HH price-policy scenarios).

4. Commission Staff Sensitivity Analysis

In addition to the above analysis, PacifiCorp conducted sensitivities at the request of Staff. Specifically, PacifiCorp ran the following sensitivities:

- RFP FSL Portfolio (SL) – low market price with high renewables market (medium gas, medium CO_2)
- RFP FSL Portfolio (SNS) – medium gas, medium CO_2 market price, no market sales
- RFP FSL Portfolio (SNST) – medium gas, medium CO_2 market price, no market sales, extend PTC and ITC benefits to 2030

5. Bid Selections

Table 1 summarizes bid selections in each of the portfolio-development cases.

Confidential Table 1 – Bid Selections by Portfolio-Development Case

Location	Project / Facility Name	Contract Type	Generating Asset (MW)	BESS Capacity (MW)	BESS Duration (Hours)	LN	MM	HH	SL	FSL SNS (MM)	SNST (MM)	Type
East WY	Cedar Springs IV	PPA	350.4	0	0	0	350.4	350.4	350.4	350.4	350.4	Wind
East WY	Boswell Springs	PPA	320	0	0	0	320	320	320	320	320	Wind
East WY	Two Rivers Wind Project	PPA	280	0	0	0	280	280	280	280	280	Wind
East WY	Anticline	PPA	100.5	0	0	0	100.5	100.5	100.5	100.5	100.5	Wind
East WY	Rock Creek I BTA	BTA	190	0	0	0	190	190	190	190	190	Wind
East WY	Rock Creek II 400	BTA	400	0	0	0	400	400	400	400	400	Wind
[redacted]												
Goshen ID	Cedar Creek	PPA	151	0	0	0	151	151	151	151	151	Wind
[redacted]												
UT South	Hornshadow II	PPA	200	50	2	200	200	200	200	200	200	Solar and/or Battery
UT North	Dominguez I	BSA	0	200	4	200	200	200	200	200	200	Solar and/or Battery
UT South	Green River Solar I & II	PPA	400	200	2	400	400	400	400	400	400	Solar and/or Battery
UT North	Steel I 80 + Steel II	PPA	147	37.5	2	147	147	147	147	147	147	Solar and/or Battery
UT South	Rush Lake	PPA	99	49.5	4	99	99	99	99	99	99	Solar and/or Battery
UT South	Fremont	PPA	99	49.5	4	99	99	99	99	99	99	Solar and/or Battery
UT North	Rocket II	PPA	45	12.5	4	0	45	45	45	45	45	Solar and/or Battery
UT South	Hornshadow I	PPA	100	25	2	100	100	100	100	100	100	Solar and/or Battery
UT South	Glen Canyon A	PPA	95	0	0	0	95	95	95	95	95	Solar and/or Battery
UT South	Parowan	PPA	58	58	4	58	58	58	58	58	58	Solar and/or Battery
[redacted]												
South OR	Hayden Mountain 2	PPA	160	40	4	0	160	160	0	160	160	Solar and/or Battery
South OR	Hamaker	PPA	50	12.5	4	0	50	50	0	50	50	Solar and/or Battery
[redacted]												
					Total Maximum Capacity (MW)	1,303	3,722	4,247	3,235	3,445	3,445	
					Total Capacity Contribution (MW)	636	1,113	1,180	955	1,028	1,028	

Among the three price-policy scenarios, RFP bid selections are highest under the HH price-policy scenario and lowest under the LN price-policy scenario. Under the SL portfolio-development case, bid selections are lower than the bid selections in the MM bid portfolio, but not as low as bid selections in the LN bid portfolio. When off-system sales are prohibited, the SNS bid portfolio drops three bids relative to the MM bid portfolio. There is no change in the SNST bid portfolio relative to the SNS bid portfolio—the assumed extension of federal tax credits through 2030 did not affect bid selections.

Each of the bid portfolios summarized above allowed for the selection of bids submitted into PacifiCorp's 2021 Demand Response RFP. The selected programs in each

case begin in 2022 and grow over the first ten years. Table 2 summarizes demand response bid selections in MM, SNS, and LN bid portfolios. Note, commitment to specific demand response programs as part of ongoing or new demand response procurement processes, and in some instances, regulatory approval processes.

Table 2 – Demand Response Bid Selections

DR Bid Selections (MW)	2022			2030		
	MM	SNS	LN	MM	SNS	LN
Rocky Mountain Power	59	75	75	229	245	245
Pacific Power	2	22	46	43	152	315
Total	61	97	121	272	397	560

6. Cost and Risk Analysis

Table 3 summarizes how the PaR stochastic mean present-value revenue requirement (PVRR) for each bid portfolio compares to the PVRR of the MM bid portfolio when MM price-policy assumptions are applied.

Table 3 – Portfolios Costs under the MM Price-Policy Scenario

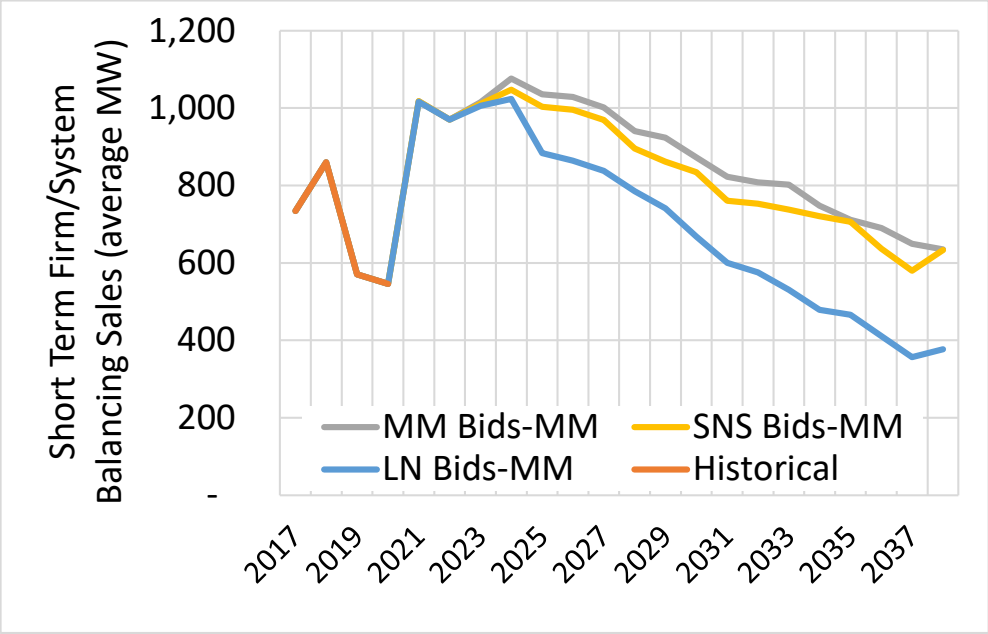
PaR Stochastic Mean PVRR ($ millions)							
	Portfolio						
Price-Policy	LN Bids	MM Bids	HH Bids	No Bid LN	No Bid MM	No Bid HH	SNS Bids
MM	23,903	23,898	24,594	24,306	24,345	24,959	24,022
Change from MM Portfolio	5	0	696	408	447	1,061	124

The MM bid portfolio has the lowest cost under the MM price-policy scenario. The LN and SNS portfolios produce system PVRRs that are higher than the MM bid portfolio, and the no bid portfolios are all significantly higher cost than the MM bid portfolio. The LN bid portfolio does not include the transmission projects or eastern Wyoming wind (the only bid portfolio among all generated). Consequently, the LN bid portfolio would not experience non-quantified benefits associated with this new transmission investment. In particular, the transmission projects will strengthen the transmission system at Mona/Clover, allowing

additional renewable generation in southern Utah with new transmission development. The transmission projects also act as a relief valve during low load and outage conditions, which increases the reliability of the transmission system, especially with incremental renewable resources in southern Utah.

Figure 4 summarizes the volume of market sales in the LN, MM, and SNS bid portfolios relative to history dating back to 2017. Results reflect the application of MM price-policy assumptions. While there is a slight uptick in modeled forecasted sales in 2024, market sales decline over time. Note, that market prices and volumes were low in 2019 due to weather and in 2020 due to COVID-19.

Figure 4 – Market Sales under the MM Price-Policy Scenario



Figures 5 and 6 summarize changes in system energy between portfolios, specifically the SNS and LN bid portfolios (Figure 5) and between the SNS and MM bid portfolio (Figure 6). Results reflect the application of MM price-policy assumptions.

Figure 5 – Changes to System Energy (SNS vs. LN Bid Portfolios) with MM Price-Policy Assumptions

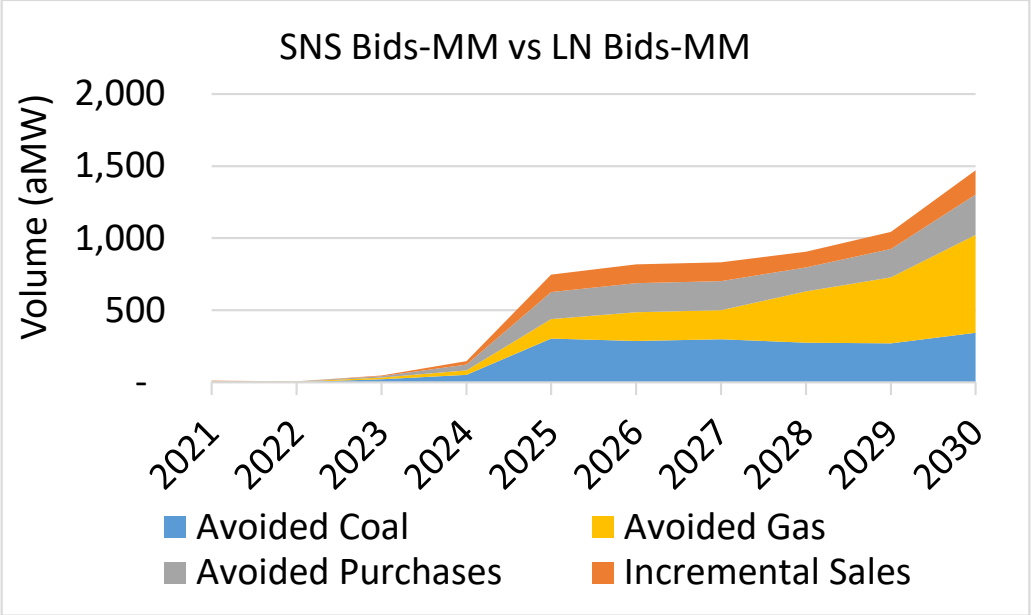
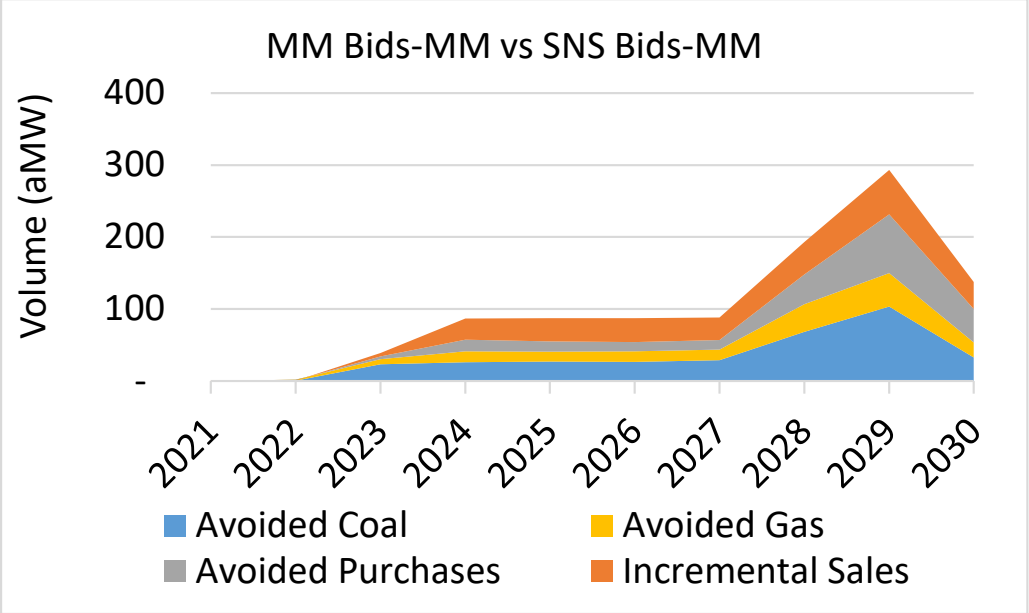


Figure 6 – Changes to System Energy (SNS vs. MM Bid Portfolios) with MM Price-Policy Assumptions



Relative to the LN bid portfolio, the SNS bid portfolios includes the transmission projects and eastern Wyoming wind along with incremental solar and battery resources in Utah and Oregon. The additional bids in the SNS portfolio mainly avoid coal, natural gas,

and market purchases. Incremental sales in the SNS bid portfolio amount roughly 16 percent of the total change in system energy through 2027 and decline thereafter. The MM bid portfolio, which has three additional bids relative to the SNS portfolio, the change in system energy is more heavily weighted toward market sales, which account for 36 percent of the total change in system energy through 2027.

Table 4 summarizes CO_2 emissions and energy not served (ENS) results from MM, LN, and SNS bid portfolios assuming MM price-policy assumptions.

Table 4 – CO_2 Emissions and ENS under the MM Price-Policy Scenario

	CO2 (ktons)	ENS (GWh)
MM	561,244	170
LN-MM	644,970	274
SNS-MM	565,943	349

The CO_2 emissions from the MM and SNS bid portfolios are similar. However, the CO_2 emissions tied to the LN bid portfolio are roughly 14 percent higher. While ENS results vary among the bid portfolios, each bid portfolio meets minimum reliability targets. Further, the majority of ENS events occur in the last ten years of the study period and are therefore not indicative of changes in reliability metrics over the near term.

Table 5 summarizes how the PaR stochastic mean PVRR for each bid portfolio compares to the PVRR of the MM bid portfolio when LN price-policy assumptions are applied.

Table 5 – Portfolios Costs under the LN Price-Policy Scenario

PaR Stochastic Mean PVRR ($ millions)

	Portfolio						
Price-Policy	**LN Bids**	**MM Bids**	**HH Bids**	**No Bid LN**	**No Bid MM**	**No Bid HH**	**SNS Bids**
LN	18,713	20,179	21,287	18,744	20,064	21,099	20,192
Change from MM Portfolio	(1,465)	-	1,109	(1,435)	(114)	920	14

When the bid portfolios are evaluated under LN price-policy conditions, the LN bid portfolio and the LN portfolio without bids are lower cost than the MM, and SNS bid portfolios. The HH bid portfolio and the no bid portfolio developed under HH assumptions are highest cost when evaluated under LN price-policy assumptions.

Table 6 summarizes how the PaR stochastic mean PVRR for each bid portfolio compares to the PVRR of the MM bid portfolio when HH price-policy assumptions are applied.

Table 6 – Portfolios Costs under the HH Price-Policy Scenario

PaR Stochastic Mean PVRR ($ millions)							
	Portfolio						
Price-Policy	LN Bids	MM Bids	HH Bids	No Bid LN	No Bid MM	No Bid HH	SNS Bids
HH	28,675	27,315	27,673	29,419	28,307	28,559	27,493
Change from MM Portfolio	1,361	-	358	2,104	992	1,244	178

The MM bid portfolio is least cost and the SNS bid portfolio performs well relative to the HH bid portfolio when HH price-policy assumptions are applied.

Table 7 summarizes results from the sensitivity cases under MM price-policy assumptions. The PaR stochastic mean PVRR for the SL, SNS, and SNST bid portfolios are shown relative to the PaR stochastic mean of the MM bid portfolio.

Table 7 – Sensitivity Case PVRR Results

PaR Stochastic Mean PVRR ($ millions)			
	Portfolio		
Price-Policy	MM Bids	Sensitivity	Change from MM Portfolio
SL	24,143	24,058	(85)
SNS	25,922	25,857	(65)
SNST	25,812	25,283	(529)

Each sensitivity case yields a lower PVRR than the MM bid portfolio. The SNST bid portfolio has the same bids as the SNS bid portfolio. This portfolio chooses incremental renewables beyond the 2020AS RFP procurement window to take advantage of extended federal tax credits, and consequently, it includes more proxy renewable resources before 2031. The federal tax credit benefits of those renewable resources are reflected in the PVRR of the SNST bid portfolio but are not applied to the proxy resources added to the system before 2031 in the MM bid portfolio. While the PVRR differential for the SNST sensitivity appears significantly larger than the other sensitivities, it is driven by an apples-to-oranges treatment of cost savings associated with the assumed extension of federal tax credits applied only to the SNST bid portfolio.

7. Discussion of Bid Selections

The MM bid portfolio produces the lowest PVRR in the MM price-policy scenario. The bid portfolio also outperforms the SNS bid portfolio in the LN and HH price-policy scenarios. However, PacifiCorp considered other risk factors when choosing its final shortlist. As noted previously, the MM bid portfolio includes three incremental bids when compared to the SNS bid portfolio, which was developed assuming no market sales. These bids include:

- an off-system wind PPA delivering its output via third-party wheel to Wyoming
- a solar with storage PPA in Washington
- a solar PPA in Washington

The off-system wind PPA is the most expensive wind bid in Wyoming. It would interconnect to the Tri-State Generation and Transmission (TSGT) balancing authority area and requires transmission service from a third party to reach PacifiCorp's system. This

arrangement can limit intra-hour dispatch and its potential use of this contract in future resource adequacy programs. Further, parts of TSGT are in the intra-hour market run by the Southwest Power Pool and not in the energy imbalance market run by the California Independent System Operator. A solar with storage PPA and solar PPA are both higher cost relative to other solar with storage and solar bids offered into the 2020AS RFP.

Considering that PacifiCorp can meet is reliability requirements with bids in the SNS bid portfolio, which does not include these three high-cost projects, and considering there could be lower cost project opportunities that could be pursued outside of the 2020AS RFP, there is a reasonable if not likely chance that customers would benefit by removing these bids from consideration for selection to the final shortlist. Moreover, the data showing that the change in system energy between the MM and SNS bid portfolios includes a 36% increase in market sales when these three bids are included suggests that the modeled value of the MM bid portfolio comes with more market risk. For these reasons, PacifiCorp has selected bids in the SNS bid portfolio as the final shortlist.

8. Marginal Bid Analysis

Based on the methodology applied to assign price scores in the initial shortlist phase of the 2020AS RFP, bid costs were compared to system benefit curves to compare indicative net benefits associated with each bid and to then identify bids in the SNS bid portfolio that might be marginal. PacifiCorp further evaluated these bids to ensure their inclusion in the final shortlist is expected to generate customer value. This was done by removing each of the potential marginal bids from the SNS bid portfolio and comparing those results to the SNS bid portfolio. Table 8 shows that removing these bids increased system costs when conservatively analyzed using SNS price-policy assumptions. In a price-policy scenario that

allows market sales, the value of these resources would be greater. These results support keeping these bids in the 2020AS RFP final shortlist.

Table 8 – Marginal Bid PVRR Results under the SNS Price-Policy Scenario

PaR Stochastic Mean PVRR ($ millions) Portfolio					
Price-Policy	SNS	Remove Glen Canyon	Remove Hamaker	Remove Rock Creek 1	Remove Rock Creek 2
SNS	25,857	25,943	25,896	25,986	26,067
Change from SNS Portfolio	0	86	38	129	210

9. Economic Analysis of Final Shortlist

Table 9 summarizes the PVRR(d) of the final shortlist bid portfolio (the SNS bid portfolio) relative to no bid portfolios in each of the three price-policy scenarios (LN, MM, and HH).

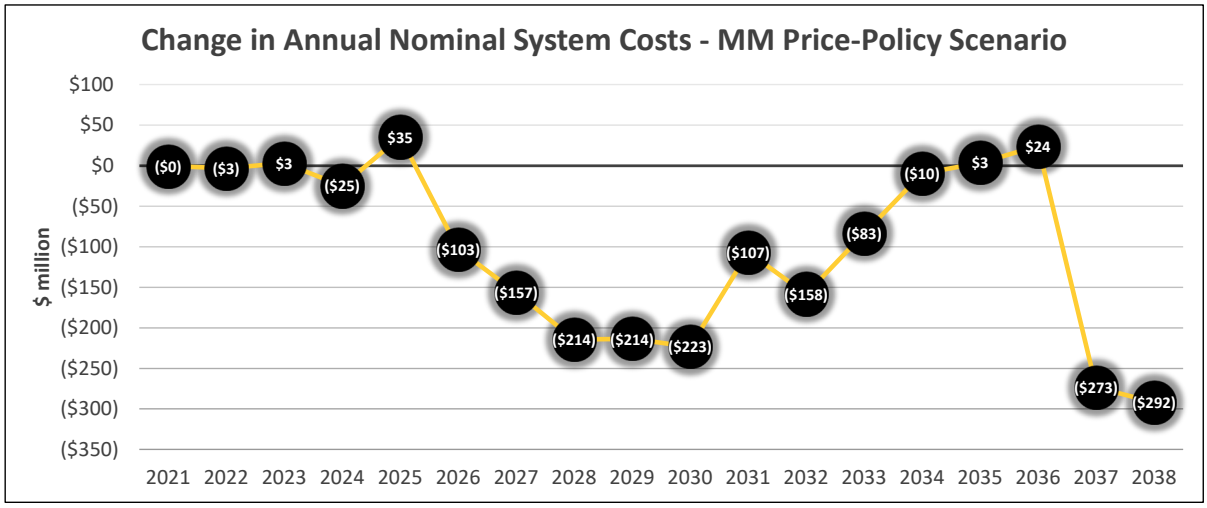
Table 9 – Value of Final Shortlist Bid Portfolio

PaR Stochastic Mean PVRR ($ millions) Portfolio			
Price-Policy	SNS Bids	No Bid	Change from SNS Portfolio
LN	20,192	18,744	(1,449)
MM	24,022	24,345	323
HH	27,493	28,559	1,066

These results show that under the MM price-policy scenario the SNS bid portfolio is expected to generate $323 million in customer net benefits. In the HH price-policy scenario, customer net benefits exceed one billion dollars. While the no bid portfolio developed under LN price-policy assumptions outperforms the SNS bid portfolio, this is driven in part by significant differences in resources throughout the study period, and there would be many opportunities to reoptimize PacifiCorp's resource portfolio over time if it becomes apparent that LN conditions are expected to persist over the long term.

Figure 7 summarizes changes in nominal annual revenue requirement between the SNS bid portfolio and a no bid portfolio under MM price-policy assumptions.

Figure 7 – Change in Nominal Annual Revenue Requirement



When nominal annual revenue requirement is evaluated against a case without procurement of bids, customer costs are reduced in 12 of 15 years over the period 2024 through 2038. In 2025, the first full year shortlisted bids and transmission projects are in service, the system nominal revenue requirement increases by $35 million. Revenue requirement rapidly declines thereafter, largely because the no bid case adds the transmission projects (Gateway South and Gateway West Subsegment D.1) in 2026. Consequently, the associated costs are incurred in 2026 and beyond even if the shortlisted bids dependent upon these transmission projects are not procured via the 2020AS RFP. Year-to-year variability in annual nominal revenue requirement are largely influenced by the change in timing of future proxy resources between the two portfolios:

- Without shortlisted bids, additional gas resources, renewable resources, and battery resources are needed over the 2026-2030 timeframe, which further

reduces revenue requirement relative to the case with shortlisted bids in the SNS bid portfolio.

- In the case with shortlisted bids, a pumped hydro project is added in 2031 (another is added in 2036), which causes annual savings to be lower relative to 2030 (and relative to 2035, respectively).
- PTCs for the two BTAs expire beginning 2034.
- The large increase in annual savings in the 2037-2038 timeframe coincides with the addition of over 1,060 MW of pumped hydro that would be needed in the case without shortlisted bids.

D. Final Shortlist Projects

Based on the foregoing analysis including a range of potential bid portfolios, reflecting results from the transition interconnection cluster study process, PacifiCorp has selected the final shortlist, which includes nineteen projects:

- 1,792 MW of new wind resources (590 MW as BTAs and 1,202 MW as PPAs)
- 1,453 MW of solar capacity (all PPAs)
- 735 MW of battery storage capacity—535 MW paired with solar bids (PPAs) and 200 MW as standalone battery storage (BSA)

The projects included in the final shortlist are summarized in Table 10.

Table 10: 2020AS RFP Final Shortlist Projects

Project Name	Bidder	Type	Location	Resource Capacity (MW)	Battery Capacity (MW)
Anticline	NextEra	Wind	WY	100.5	n/a
Cedar Springs IV	NextEra	Wind	WY	350.4	n/a
Rock Creek I	Invenergy	Wind	WY	190.0	n/a
Rock Creek II	Invenergy	Wind	WY	400.0	n/a
Boswell Springs	Innergex	Wind	WY	320.0	n/a
Two Rivers	Blue Earth Renewables LLC & Clearway Renew LLC	Wind	WY	280.0	n/a
Cedar Creek	rPlus Energies	Wind	ID	151.0	n/a
Steel Solar I & II	DESRI	PVS*	UT	147.0	37.5
Rocket Solar II	DESRI	PVS	UT	45.0	12.5
Fremont	Longroad Energy	PVS	UT	99.0	49.5
Rush Lake	Longroad Energy	PVS	UT	99.0	49.5
Parowan	First Solar	PVS	UT	58.0	58.0
Hornshadow I	enyo energy	PVS	UT	100.0	25.0
Hornshadow II	enyo energy	PVS	UT	200.0	50.0
Green River I & II	rPlus Energies	PVS	UT	400.0	200.0
Hamaker	ecoplexus	PVS	OR	50.0	12.5
Hayden 2	ecoplexus	PVS	OR	160.0	40.0
Dominguez I	Able Grid	BESS**	UT	n/a	200.0
Glen Canyon	sPower (AES)	Solar	UT	95.0	n/a

*PVS: Solar paired with battery storage
**BESS: Standalone battery storage

IV. 2020AS RFP COMPLIANCE WITH RULES

A. Review of Rules

In 2016, the Commission initiated the rule making process to develop competitive bidding rules that allow for diverse ownership of renewable energy sources that generate qualifying electricity, consistent with Section 6 of 2016 Senate Bill 1547[14]. After multiple workshops and rounds of comments, the Commission adopted competitive bidding rules in their Order 18-324.[15] Each RFP must demonstrate that it can satisfy these Rules before

[14] Codified in Oregon Laws 2016, Chapter 28, Section 6.
[15] Docket No. AR 600, Order 18-324, August 30, 2018.

receiving approval and, after the RFP has taken place, must demonstrate compliance with the Rules in order to receive acknowledgment of a final shortlist.[16]

The Commission's Rules provide two tracks for approval of the design of an RFP in OAR 860-089-0250. "Track one" contemplates inclusion of a draft RFP as part of a utility's IRP filing with the Commission; under "track one" the Commission acknowledges a resource need as part of the utility's IRP and simultaneously approve the associated RFP design, scoring methodology, and associated modeling process. "Track two" allows a utility to pursue a RFP outside of the IRP process by seeking approval of the RFP scoring and associated modeling through the independent evaluator docket. This RFP scoring and modeling is then incorporated into the complete RFP that is drafted with input from the independent evaluator and stakeholders.

PacifiCorp elected to pursue a "track two" RFP process due to a time-constrained schedule to take advantage of expiring tax credits and the unknown outcome of PacifiCorp's interconnection queue reform proposal that was before the FERC. Below is a summary indicating how the 2020AS RFP complied with the Commission's Rules.

860-089-0100 Applicability of Competitive Bidding Requirements

OAR 860-089-0100 requires PacifiCorp to issue a RFP for all major resource acquisitions meeting specific thresholds including resource sizes greater than 80 MW or contract term length greater than five years.[17] PacifiCorp established an action item out of PacifiCorp's 2019 IRP to conduct an all-source RFP in 2020 that aligned with the 2019 IRP preferred portfolio including 1,823 MW of new proxy solar resources co-located with 595 MW of new proxy battery storage capacity and 1,920 MW of new proxy wind resources by

[16] OAR 860-089-0500 (1).
[17] OAR 860-086-0100(1)(a).

the end of 2024[18]. PacifiCorp also allowed bids from pumped storage hydro (PSH) resources requiring longer lead time beyond the 2024 deadline to develop and construct. PacifiCorp's issuance of the 2020AS RFP for its all-source resource additions satisfied 860-089-0100.

860-089-0200 Engaging an Independent Evaluator

The Commission's Rules state that the independent evaluator selected will oversee the competitive bidding process to ensure that it is conducted fairly, transparently, and properly.[19] For the 2020AS RFP, the Commission appointed PA Consulting on April 7, 2020 to serve as the independent evaluator for Oregon after PacifiCorp solicited the market for independent evaluators on February 24, 2020 and Staff had recommended PA Consulting based on PA Consulting's experience as an independent evaluator and technical expertise related to production cost modeling.[20]

Over the course of the 2020AS RFP, the independent evaluator has worked closely with PacifiCorp to ensure that the solicitation process was both transparent and fair. In advance of issuing the RFP, the independent evaluator provided detailed feedback on the draft 2020AS RFP in their comments to the Commission on April 20, 2020. During the solicitation, the independent evaluator monitored all bids and bid scoring procedures, conducted independent scoring on a population subset of the bids, evaluated PacifiCorp's initial shortlist selection process including the mix of bid types and capacity selected across locational areas of PacifiCorp's system, reviewed the results and impacts of PacifiCorp's transition interconnection cluster study results, proposed additional sensitivities for the final

[18] At the time the 2019 IRP was filed, PacifiCorp assumed new wind resources would need to achieve commercial operation by the end of 2023 to be eligible for the 40 percent PTC. After the 2019 IRP was filed, federal legislation was passed extending the PTC to receive a 60 percent PTC if placed into service by year-end 2024. Consequently, the 2020AS RFP commercial operation was moved to December 31, 2024.
19 OAR 860-089-450(1).
[20] Docket No. UM 2059, Order 20-114, Appendix A (Apr. 8, 2020).

shortlist analysis, and validated bid updates. The independent evaluator delivered three reports to the Commission over the course of the 2020AS RFP; a status report on September 15, 2020 detailing their review of the bids submitted, an updated status report on November 20, 2020 on the scoring and methodology for selection of the initial shortlist, and a comprehensive evaluation of the RFP in its closing report, which has been filed as Exhibit 1.

860-089-0250 Design of Requests for Proposals

OAR 860-089-0250 outlines the steps the utility must undertake when developing and preparing its RFP. The utility must prepare and provide the draft RFP for review and approval by the Commission after consulting with the independent evaluator and considering input through bidder and stakeholder workshops. The draft RFP must reflect the elements, methodology and modeling process as outlined in the IRP. In the event the draft RFP scoring and modeling was not included in the IRP, the utility must provide its proposal for scoring and modeling to the Commission for approval. Pursuant to OAR 860-089-0250, PacifiCorp chose track "two" and provided a proposal for scoring and associated modeling in its independent evaluator selection docket.[21] PacifiCorp completed the following in accordance with this Rule.

- Requested approval of the proposed RFP scoring and modeling as a separate item from approval of the complete draft RFP
- Conducted a workshop on March 18, 2020 with stakeholders to review the RFP scoring and modeling methodology
- Conducted a workshop on April 17, 2020 with stakeholders to review the draft 2020AS RFP

[21] *See* Docket No. UM 2059.

- Conducted a second workshop with the Commission on the proposed RFP scoring and methodology process on April 27, 2020
- Incorporated multiple changes to the draft 2020AS RFP based on comments from the independent evaluator and stakeholders including:
    - Allowable PPA and BSA contract term extended to 30 years
    - PSH bidders can submit a bid with a term greater than 30 years and will be evaluated as a separate resource type in each location.
    - Minimum requirement #8 was modified to exclude from "material litigation" certain matters before the FERC.
    - Included a specific milestone in the PPA for delivery of an executed transmission service agreement for off-system bidders similar to its milestone for delivery of an executed interconnection agreement.
    - Modified the 2020AS RFP to allow bids where the bid interconnection description and capacity is not consistent with what is posted to PacifiCorp Transmission's publicly available queue on OASIS if bidder provides documentation demonstrating the change is not a material modification as defined in the OATT.
    - Revised to use the definition of site control in the current OATT.
    - Changes made in Appendix L – Non-Price Scoring Matrix
    - Added a PSH tolling term sheet in the Appendices
    - "Global epidemic" added to Force Majeure definition.
    - Exhibit F - Performance Guarantee added for PPA Resource Only and PPA with battery storage.

- Allow in-house energy performance report as long as it can be replicated by PacifiCorp.
- BTA technical specifications for battery storage, solar and wind updated. High voltage technical specification added for wind, solar and battery storage.

860-089-0300 Resource Ownership

OAR 860-089-0300 has multiple components governing requirements for the utility or its affiliate to submit bids into the RFP as well as the utility providing utility owned assets for use by third-party bids. PacifiCorp did not submit any self-build or owned assets or allow any affiliate bids into the 2020AS RFP limiting the applicability of this rule. The only applicable item under this Rule was allowing ownership transfers (also known as build-transfer) as a contract structure in the 2020AS RFP.[22]

860-089-0350 Benchmark Resource Score

OAR 860-089-0350 applies to the evaluation process and scoring of any utility submitted self-build assets or benchmark bids. This Rule is inapplicable because no benchmark bids were submitted by PacifiCorp in the 2020AS RFP.

860-089-0400 Bid Scoring and Evaluation by Electric Company

OAR 860-089-0400 provides that the utility must provide all scoring criteria and metrics in its draft and final RFPs filed with the Commission. The initial-shortlist bids must be based on both price and non-price factors, and non-price factors should be converted to price factors where practicable. The non-price score "should be based on resource characteristics identified in the utility's acknowledged IRP Action Plan . . . . and

[22] OAR 860-089-0300(4).

conformance to the standard form contracts attached to the RFP."[23] Final shortlist bids are then to be based, at least in part, on the bid resources' overall system costs and risks, and the independent evaluator must have full access to the production cost and risk models.

The 2020AS RFP initial shortlist was identified using both price and non-price scoring. Non-price scoring involved three weighted factors: (1) bid submittal completeness, (2) contracting progress and viability, and (3) project readiness and deliverability as shown in Appendix L- Non-price Scoring Matrix of the 2020AS RFP where bidders could see the non-price scoring metrics that PacifiCorp would be using and could self-score their bid.[24] First, to assess bid submittal completeness, PacifiCorp evaluated whether bids provided complete and accurate information and were in compliance with technical specifications. Second, to assess contracting progression, PacifiCorp evaluated whether the bidder had provided contract issues list, a mark-up of the pro-forma contract, or both. Third, to assess project deliverability, PacifiCorp considered the extent of previous development-and-construction experience related to large energy and/or battery storage projects, each project's ability to achieve a December 31, 2024, commercial operation date, site control, and documentation of being able to secure federal tax credits (i.e., PTC, ITC).

This non-price scoring was consistent with PacifiCorp's 2019 IRP Action Plan. The Action Plan identified for the addition of at least 1,823 MW of new proxy solar resources co-located with 595 MW of new proxy battery storage capacity and 1,920 MW of new proxy wind resources by the end of 2024, and in conjunction with Wyoming transmission infrastructure upgrades to be implemented on the same timeline. By evaluating each bid's capability of completing the addition of resources to PacifiCorp's transmission system by the

[23] OAR 860-089-0400(2)(b).
[24] 2020AS RFP at 30-31.

end of 2024, the Company's non-price factors are clearly consistent with the 2019 IRP Action Plan.

PacifiCorp's non-price scoring also conformed to its standard contracts, which established pro-forma agreements for resource, resource plus battery storage, and storage only, both as PPA or BTA contract structures. PacifiCorp evaluated bidders on the delivery of a contract issues list and a mark-up of the pro-forma contract in order to provide greater flexibility.

PacifiCorp's price scoring was also consistent with the 2019 IRP analysis because it used the same economic models and methodology to evaluate the system impact and costs associated with each bid, as described above.

Consistent with 860-089-0400(6), the independent evaluator had full access to PacifiCorp's price and non-price scoring, and to production cost and risk models as well as the sensitivity analyses completed.

Upon selection of the initial shortlist, PacifiCorp engaged WSP Global, a third-party engineering firm, to complete an assessment of the wind and solar resources energy performance reports as submitted in their bids as well as providing additional technical review of the battery storage bids for completeness and alignment with technical specifications.

860-089-0450 Independent Evaluator Duties

OAR 860-089-0450 prescribes the role of the utility and the independent evaluator in the RFP process. In accordance with this Rule, the independent evaluator participated in ongoing review meetings, workshops, and access to scoring and models as PacifiCorp

conducted the RFP process, scored the bids, selected the initial and final shortlists, and will begin negotiations with the final shortlist bidders.

As required, the independent evaluator prepared a Closing Report for the Commission, filed as Exhibit 1.

As required, PacifiCorp has made available to Staff, the independent evaluators, and the Commission, the detailed bid scoring and evaluation results including sensitivity analyses, and subject to protective orders limiting the use of the information to acknowledgment of the final shortlist and to cost-recovery proceedings, will provide the same information as part of the final shortlist acknowledgment.

860-089-0500 Final Shortlist Acknowledgement and Result Publication

OAR 860-089-0500 requires utilities to request acknowledgement of a RFP final shortlist, and to explain how the final shortlist is consistent with the utility's last acknowledged IRP Action Plan. Acknowledgement, as defined under the Rules is a finding by the Commission that "an electric company's final shortlist of bid responses appears reasonable at the time of acknowledgment and was determined in a manner consistent with the rules in this division."[25]

Under this Rule, PacifiCorp will begin contract negotiations upon notification to bidders of their selection to the final shortlist and filing of this acknowledgment. This filing includes the independent evaluator's closing report, the final shortlist of bids, the sensitivity analyses performed and a discussion of how the final shortlist is consistent with the 2019 IRP Action Plan.

[25] OAR 860-089-0500(1).

PacifiCorp here seeks acknowledgement of the 2020AS RFP final shortlist, which is consistent with the Company's 2019 IRP Action Plan. The Action Plan identified for the addition of at least 1,823 MW of new proxy solar resources co-located with 595 MW of new proxy battery storage capacity and 1,920 MW of new proxy wind resources by the end of 2024, and in conjunction with Wyoming transmission infrastructure upgrades to be implemented on the same timeline. The 2020AS RFP final shortlist includes 1,792 MW of new wind capacity, 1,453 MW of solar capacity, and 735 MW of battery storage capacity, of which 535 MW of battery storage co-located solar bids and 200 MW of standalone battery storage.

Moreover, all of the final shortlist projects have demonstrated site control, have reasonable permitting timelines, and have provided sufficient data and documentation to support the projects' development timetables. The final shortlist is thus consistent with the 2019 IRP Action Plan.

PacifiCorp requests that the Commission acknowledge the shortlist within 60 days of this filing as provided for in OAR 860-089-0500.

B. Overall Fairness of the Proposed Bidding Process.

In order to provide for a transparent and fair process, the 2020AS RFP was overseen by two independent evaluators—one on behalf of the Commission and the other on behalf of the Utah Commission. These independent evaluators were closely involved in the RFP process, both in its development, by suggesting revisions to the draft solicitation, and during receipt and review of bids, wherein both independent evaluators scored the initial shortlists and suggested additional analysis where deemed necessary. PacifiCorp also maintained open communication with bidders as appropriate—particularly when novel circumstances, such as the introduction of PacifiCorp's interconnection queue reform and transition interconnection

cluster study process, required additional explanation and analysis. Taken together with the approvals provided by the Commission throughout the process, these efforts demonstrate that the 2020AS RFP was conducted both transparently and fairly.

V. CONCLUSION

The results of the 2020AS RFP confirmed that the final shortlist projects are the least-cost, least-risk resources to implement the 2019 IRP Action Plan. The 2020AS RFP was well received by the market and resulted in robust competition among bidders.

Commission acknowledgement of the 2020AS RFP final shortlist will enable PacifiCorp to effectively negotiate with final shortlist bidders for the lowest price and acceptable terms to maximize customer benefits.

For the reasons stated above, PacifiCorp respectfully requests that the Commission acknowledge its final shortlist of bidders to the 2020AS RFP.

Respectfully submitted this 15th day of June 2021.

By: Carla Scarsella

Carla Scarsella
Senior Attorney
PacifiCorp d/b/a Pacific Power

Exhibit 1

OREGON PUBLIC UTILITIES COMMISSION

PacifiCorp's 2020AS RFP
Independent Evaluator's Closing Report

June 15, 2021

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EXECUTIVE SUMMARY

This document is PA Consulting's (PA) Closing Report on its role as Independent Evaluator for PacifiCorp's (PacifiCorp, PAC, or the Company)[1] 2020 All Source RFP (2020AS RFP). As it is the Closing Report, this report includes portions of PA's November 20, 2020 Updated Status Report related to PA's activities from RFP issuance through the Initial Short List (ISL) determination. This report goes on to discuss PA's activities through PAC's selection of the Final Short List (FSL).

PAC conducted the RFP under the oversight of two Independent Evaluators (IE), one each for Oregon and Utah. PA has been retained by PAC on behalf of the Public Utility Commission of Oregon (Oregon Commission or OPUC) as required by Oregon Administrative Rules § 860-89-2008. PA has overseen the RFP process to ensure that it has been conducted in a fair and reasonable manner. PA has monitored and participated in discussions between PAC and bidders throughout the RFP process.

Main IE activities throughout PacifiCorp's RFP

During PA's oversight of the RFP, PA has conducted the following activities, among others:

- Reviewed the draft RFP, evaluation process and bid scoring model templates;
- Conducted independent scoring of bid price and non-price factors from a sample of bids as well as all Build Transfer Agreement (BTA) bids;
- Reviewed PAC's list of ISL-eligible bids and compared PAC's price and non-price scores against PA's independent scoring;
- Reviewed and provided input to PAC regarding the circumstances related to bids with executed Large Generator Interconnection Agreements (LGIA);
- Identified and agreed the inclusion of additional bids which otherwise would have been excluded from the ISL and from PacifiCorp Transmission's (PacTrans) Transition Cluster Study;
- Reviewed the post-cluster study updated bidder price inputs including review and confirmation of interconnection costs;
- Provided input on the Commission's requests for and reviewing results from PAC's sensitivity analysis related to various future state scenarios and portfolio and rate payer implications;
- Evaluated PAC's decision to rule certain offers ineligible for the FSL following interconnection results and monitored PAC's related communications with bidders;

[1] In discussions of RFP conduct, scoring and bid selection, references in this report to PacifiCorp or PAC are to PacifiCorp's merchant function which operates independently of PacifiCorp Transmission under FERC's Standards of Conduct for Transmission Providers.

- Analyzed the high-level Integrated Resource planning model results and FSL bid selection and requested appropriate clarifications from PSC; and
- Evaluated the reasonableness of PAC's preliminary selection of bids for the FSL and subsequent decisions to eliminate certain bids.

Primary observations

The purpose of PA's bid review and independent scoring effort was to evaluate whether PAC's bid scoring methodology and results were fair and free of bias across all bids and bidders. Through PA's assessment and auditing of PAC's models and scoring process as well as its own independent scoring of approximately 25% of the total eligible bids, PA has not observed evidence of bias.

While PA did not conduct an independent review of PAC's 2019 Integrated Resource Plan (IRP) or the IRP planning models, PA did evaluate the impact of interconnection costs on updated bid pricing, compared the risks and value considerations between owned and contracted resources, and assess whether the bids selected and eliminated were done so in a reasonable manner in line with the goal of achieving a least cost, most reliable portfolio of resources.

PAC applied the rules of the RFP in an unbiased manner and communicated transparently with the IE's regarding their modelling processes and with stakeholders regarding their decisions. Some issues arose during the bid evaluation that increased its complexity and limited the pool of potential resources, and PA has identified them to be addressed in future procurements. It is PA's opinion that the FSL reflects a diverse portfolio of competitive resources which achieves the resource adequacy and least cost goals.

This RFP process will not fulfil all of PAC's resource needs, nor does it need to; a single procurement is not the same as a broad planning process. What is important is for PAC's resource selections, and the amount of residual need left over, to represent reasonable decisions reasonably arrived at. PAC's approach and expectation that forgoing high cost resources now although additional resources may be needed to meet demand over the next five years was a reasonable and defensible position. It is this position that determines how a procurement can differ from a plan and whether that divergence represents substantial risk to ratepayers or is a reasonable approach to manage costs and needs.

Table ES-1 shows the progressive reductions of the sets of bids and bidders from ISL to FSL.

Table ES-1: Count of Bids by RFP Phase

	Bids	Bidders
ISL Selected	37	21
Less: Cluster Study Eliminations	(10)	(10)
FSL Eligible	27	16
Less: Non-Selected Bids	(8)	(8)
FSL Selected	**19**	**12**

Figure ES-1 provides an overview of the LGIA and cluster study bids which were selected and eliminated.

Figure ES-1: Comparison of ISL and FSL Bid Values

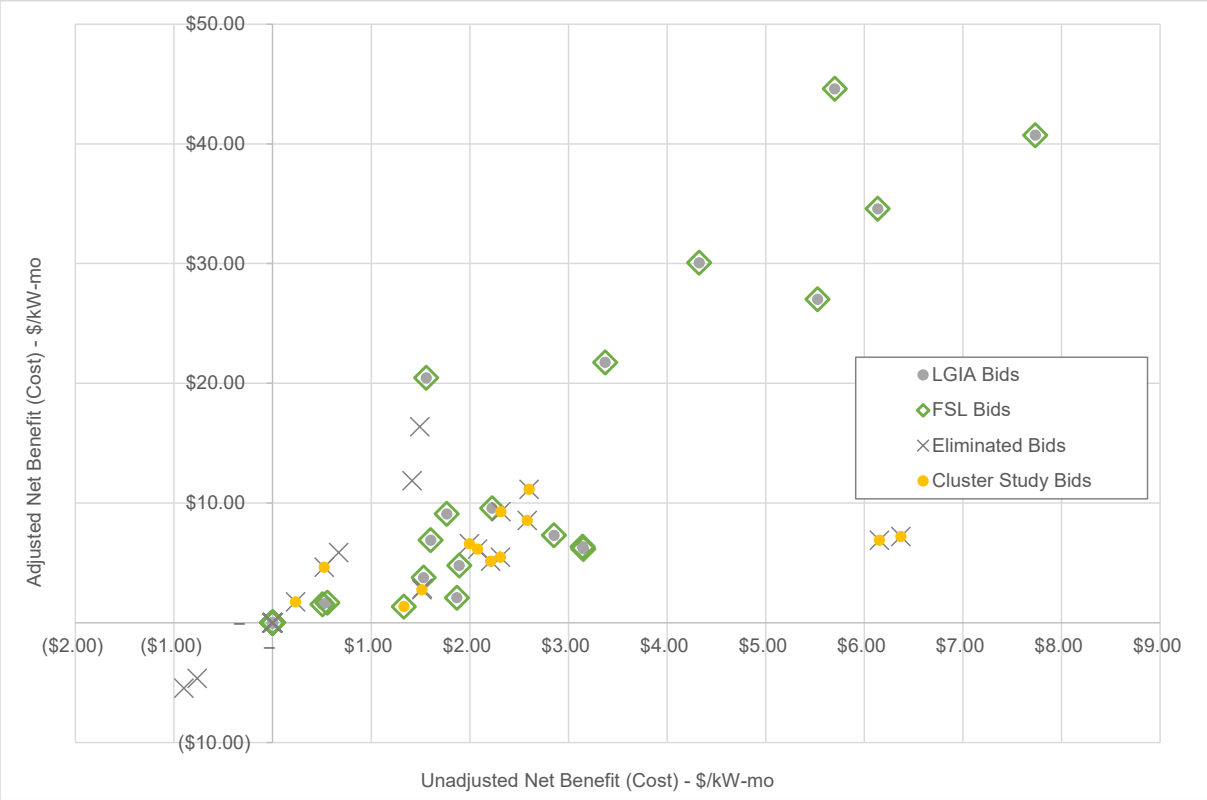
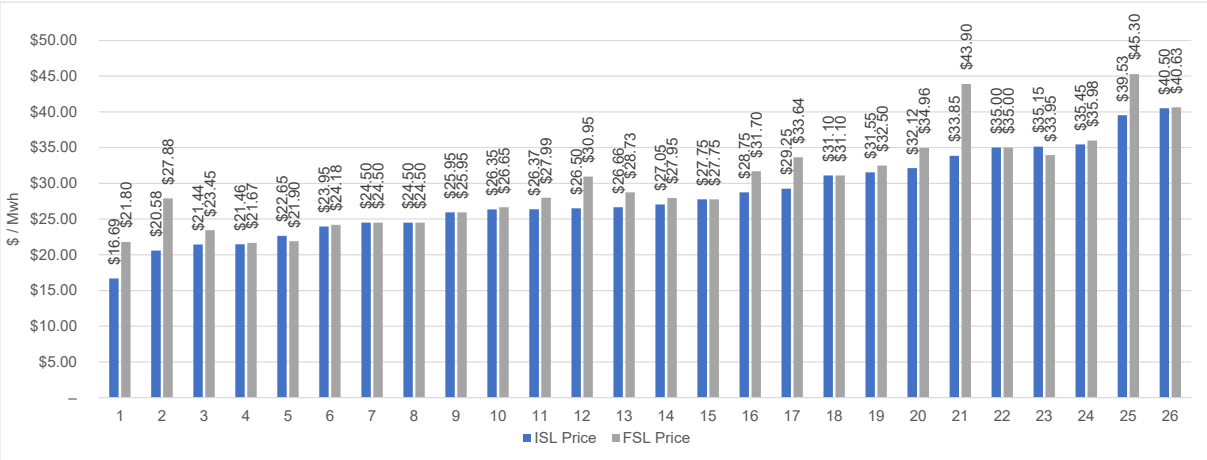


Figure ES-2 provides a comparison of bid pricing between the ISL price and FSL price. It shows that, while most bidders' best and final bids including interconnection costs represented small increases over their initial offers, a few offers significantly drove up the average increase

Figure ES-2: ISL vs. FSL bid prices[2]



[2] Note that this figure represents only PPA prices; and that the rank order of bids and associated bid number do not reconcile to bid numbers in subsequent figures in this report.

As selected by PAC's IRP models, the FSL represents 19 projects from 13 bidders. All technologies (wind, solar, and storage), all contract types (PPA, BTA, and tolling), and five of the eight regions are represented in the FSL. The projects are summarized in Table ES-2 below:

Table ES-2: Selected FSL Bids

Bidder	Project	Technology	Generating Capacity (MW)	Storage Capacity (MW)	Storage Duration (Hours)
NextEra	Anticline	Wind	101	–	–
Innergex Renewable	Boswell Springs	Wind	320	–	–
rPlus	Cedar Creek	Wind	151	–	–
NextEra	Cedar Springs IV	Wind	350	–	–
Invenergy	Rock Creek I	Wind	190	–	–
Invenergy	Rock Creek II	Wind	400	–	–
Clearway	Two Rivers Wind Project	Wind	280	–	–
Long Road Energy	Fremont	Solar + BESS	99	50	4
rPlus	Green River Solar I & II	Solar + BESS	400	200	2
ecoplexus	Hamaker	Solar + BESS	50	13	4
ecoplexus	Hayden Mountain 2	Solar + BESS	160	40	4
Enyo Renewable Energy	Hornshadow I	Solar + BESS	100	25	2
Enyo Renewable Energy	Hornshadow II	Solar + BESS	200	50	2
Leeward Energy	Parowan	Solar + BESS	58	58	4
DESRI	Rocket II	Solar + BESS	45	13	4
Long Road Energy	Rush Lake	Solar + BESS	99	50	4
DESRI	Steel I 80 + Steel II	Solar + BESS	147	38	2
AES Clean Power (sPower)	Glen Canyon A	Solar	95	–	–
Able Grid Energy Solutions	Dominguez I	BESS	–	200	4
Total			3,245	735	

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1 INTRODUCTION

This document is PA Consulting's (PA) Final Closing Report on PacifiCorp's (PacifiCorp, PAC, or the Company)[3] 2020 All Source Request for Proposals (2020AS RFP). PA served as the Independent Evaluator (IE) for the RFP, beginning with reviewing the RFP design and continuing through the entire RFP process, including the selection of the Final Short List (FSL) of bids which PAC submitted to the Oregon Public Utilities Commission (OPUC) for approval. The purpose of this document is to provide PA's review of the solicitation process from RFP issuance through resource selection, PA's analysis of specific factors which affected the composition of the Initial Short List (ISL) and FSL, and PA's findings related to the reasonableness of PAC's selections as a whole.

1.1 Scope of work and timing

"PacifiCorp established an action item out of PacifiCorp's 2019 Integrated Resource Plan (IRP) to conduct an all-source RFP. The 2019 IRP preferred portfolio includes 1,823 megawatts (MW) of new proxy solar resources co-located with 595 MW of new proxy battery energy storage system (BESS) capacity and 1,920 MW of new proxy wind resources by the end of 2023. The 2020AS RFP sought to secure least-cost, least-risk resources consistent with the intent of the company's IRP."[4]

At the time the IRP was filed PAC's intent had been to require selected resources to be online by December 31, 2023 in order to capture Production Tax Credits (PTC) available to proposed resources. The eligibility cut off for PTCs was subsequently extended to 2024, so the RFP allowed offers from projects that could achieve a Commercial Operation Date (COD) by December 31, 2024. Offers had to provide at least 20 MW of production capacity unless they were Qualifying Facilities, which were subject to various state-approved capacity requirements. PA's role as IE is specified by the Oregon competitive bidding rules.[5] Those rules require that an IE must be engaged to "oversee the competitive bidding process to ensure that it is conducted fairly, transparently, and properly."[6]

From its engagement as IE through late 2020, PA's role as IE was focused on:

- RFP design
- Bid analysis and independent scoring of bids leading up to the determination of the ISL
- Advising OPUC staff and Commissioners on bid evaluation and sensitivity cases.

This part of PA's engagement culminated in its Updated Status Report.[7] Eligible bids were passed into PacifiCorp Transmission's (PacTrans') Transition Cluster Study, and PA's IE work was largely on hiatus until the conclusion of the cluster study. The Transition Cluster Study provided bidders with interconnection costs and high-level estimates of interconnection dates. PacifiCorp requested bidders provide revised pricing, accounting for those interconnection costs and any intervening market events.

[3] In discussions of RFP conduct, scoring and bid selection, references in this report to PacifiCorp or PAC are to PacifiCorp's merchant function which operates independently of PacifiCorp Transmission (PacTrans) under FERC's Standards of Conduct for Transmission Providers.

[4] PacifiCorp, "2020 All-Source Request for Proposals Resources (2020AS RFP)", July 7, 2020, p.1.

[5] Oregon Administrative Rules Division 089 as per Oregon Public Utilities Commission Order 18-324 in docket AR 600, August 30, 2018.

[6] *Ibid.*, section 860-089-450(1).

[7] PA Consulting Group, *Updated Status Report on PacifiCorp's 2020AS RFP*, filed in OPUC Docket UM 2059, November 20, 2020.

New material in this report (not previously described in the Updated Status Report) describes the second major phase of PA's IE engagement, following the conclusion of the Transition Cluster Study. This phase entailed monitoring the progression of bid pricing following interconnection cost updates and portfolio sensitivity analysis leading to the FSL being identified in June 2021 and ensuring that the FSL was selected fairly and reasonably. Following the submission of this report, PA will engage in a more detailed analysis of the sensitivity cases that time has yet allowed (PAC only concluded and reported its work on June 8) to support the Commission's decision on FSL acknowledgement.

In the period since the determination of the ISL bids and PAC's communication of ISL selection to bidders, PA was involved in the following components of the RFP process:

- Reviewing and providing feedback on PAC's instructions and forms provided to bidders selected to the ISL
- Reviewing and evaluating the resulting impact of the interconnection cluster study results pertinent to the ISL bids
- Reviewing and reconciling PAC's revised opinions on the eligibility of specific ISL bids for the FSL
- Reviewing the confirming bidder updated price inputs including review and confirmation of interconnection costs
- Providing input on the Commission's requests for and reviewing summary results from PAC's sensitivity analysis related to various future state scenarios and portfolio and rate payer implications
- Monitoring PAC's conversations with bidders determined ineligible for the FSL following interconnection results
- Analysis of and discussion with PAC regarding IRP model results and FSL bid selection
- Evaluation of reasonableness for PAC's decisions to select or eliminate bids to the FSL.

Key events following PA's presentation of RFP progress at the November 20, 2020 special public meeting include:

- March 24-25, 2021: PAC provided notice of selection (or notice of not selected) to the ISL to bidders along with instructions to update bid input data and pricing within 10 business days of transition cluster studying results being available
- April 2, 2021: PacifiCorp Transmission posted results of the interconnection cluster studies to OASIS
- April 4, 2021: PAC notifies ISL bidders that pricing updates are due by April 12, 2021
- April 7, 2021: PAC notifies ISL bidders that additional time is needed to review results and implications related to the cluster study, delaying the price update deadline to April 22, 2021
- April 13, 2021: PAC notifies bidders who received cluster study results with interconnection completion times beyond the RFP's allowed commercial operation date that they would not be considered eligible for the FSL
- April 22, 2021: PAC and the IE confirm receipt of price updates for all ISL bids
- June 8, 2021: PAC delivers FSL bids and sensitivity analysis to IEs for review
- June 15, 2021: PAC to submit the FSL and IE closing report to OPUC for acknowledgement.

PA is further scheduled to provide detailed comments on July 1, 2021 regarding the sensitivity analysis PAC conducted to evaluate the impact of different market variables and constraints on the value, reliability, and selection of resources. PA will deliver presentation materials to the OPUC and stakeholders on this report and the sensitivities at public workshops on June 17 and July 8, 2021, respectively.

Chapters 2 and 3 below provide details of PA's process and analysis related to the RFP from issuance through ISL determination (largely taken from the Updated Status Report). Chapters 4 through 6 provide the same related PA's activity and findings from ISL determination through FSL determination. Chapter 7 provides PA's summary recommendations related to the entirety of the RFP process.

1.2 Conflicts disclosure

As a leading advisor to the clean energy transition, PA works with many clients spanning the broad energy sector. PA operates a process under which new assignments and pre-sales are submitted to a client conflicts check. This is carried out to ensure that, in undertaking the work, the firm would not risk acting against the interests of an existing (or in some cases prospective) client. The primary responsibility for this conflict lies with the responsible Member of PA's Management, and the Client Conflicts Checking Process Sponsor is PA Consulting's Chief Executive Officer.

PA's conflicts checking has thus been continuously executed throughout our engagement as the IE to PAC's 2020AS RFP. At the time of this report, we have determined that PA has not been engaged to support any bid into the 2020AS RFP and did not assist any bidder in any way with the preparation of their bid.

2 IE BID SCORE REVIEW PROCESS

The following section provides a review of the initial bid scoring, which was also used to generate numerical inputs for the IRP models that supported portfolio design for the ISL and FSL. PA previously reported this information, in this form, in its Bid Scoring Status Report. It is reproduced here for completeness and for archival purposes, although some of the material related to comparison of BTA and PPA bids has been moved to Section 6.3.

The primary purpose of PA's bid scoring review was to assess the quality of the rankings produced by PAC's model and the fairness of offer valuation and scoring. While certain issues were identified in this review, none of the issues were determined to be material to the resulting ISL selection, nor were any issues evidence of bias for or against any bid or class of bid.

2.1 Process overview

The ISL is the output of two stages of analysis by PAC and review by the IEs. First, each bid's projected net benefits produced a price-based score which was combined with the qualitative assessment of each bid's non-price score to determine an overall score and rank. The second step was to run the highest-ranking bids by technology and transmission constraint "bubble" through PAC's IRP model (System Optimizer, or SO) to determine an optimal combination of resources on the basis of system reliability and cost.

PA conducted an independent scoring analysis of a subset of bids to validate PAC's use of its scoring model and identify any scoring anomalies. PA applied the scoring methodology that PAC presented in the RFP and in subsequent presentations to bidders. In doing so PA observed the drivers of bid valuation and any assumptions that may have caused certain bids to be over or under valued. Further, PA reviewed the input and output files for the SO model to seek clarity on how this model interacted with the bid scoring models.

During the bid scoring review, PA independently modelled nearly 100 bids representing a sample of the total population of compliant bids diversified across bid geography, technology, contract type, and bidder. When identified, PA logged divergences of model inputs, assumptions, methodology, and outputs and worked with PAC to resolve or reconcile differences. Of the issues identified, PA generally characterizes them as resulting from the large variety of bids which required PAC to implement minor adjustments to model mechanics to allow for certain bid models to function accurately.

PA did not identify significant positive or negative bias in the scoring model or in the use of data submitted by bidders in the scoring model, nor did PA identify material impacts from resolving the identified scoring model divergences.

As discussed in Section 2.5 below, in comparing PA's modelling results with PAC's a few issues were highlighted that PAC subsequently addressed after which PAC provided revised models to the IEs. Additionally, PA determined that the SO model was potentially not fully accounting for the storage capacity represented by a particular, and atypical, combination of bid characteristics, and that the third-party StorageVet valuation tool was not properly constraining the joint production of generation and storage facilities sharing an interconnection. These circumstances are discussed in more detail in Section 2.5.

The following section discusses the process that PA followed in its own independent scoring of bids.

2.2 Price-based score review

As presented by PAC during the Special Public Meeting on September 22, 2020, the ISL is the result of a series of modelling steps. The first step is to create for each resource a proxy capacity contribution and production profile, which is then used to value the capacity and energy production of each bid. The highest-ranking bids were then evaluated by the IRP models, which assessed and selected bids based upon regional capacity constraints, economics, and reliability. As part of PA's effort to evaluate the bid scoring, PA conducted its own price and non-price scoring of a sample of bids, as well as all of the BTA bids,[8] and compared the resulting scores to PAC's. The purpose of this effort was to ensure PAC's consistent application of its valuation methods across bids, check for bias for or against bid characteristics such as technology or structure, and to identify and evaluate any potential material variations between PAC's results and PA's.

As part of this effort, PA conducted multiple working sessions with the PAC team responsible for modelling the bids to better understand and assess the underlying mechanics of PAC's models. Throughout the process of modelling the sample bids, PA queried PAC on bid specific items which were identified as either deviations from bidder provided input or potential issues with a given bid model's mechanics which needed clarification or resolution. Through PA's scoring process, PA found that on average, PAC's bid scores and PA's were within an acceptable range and where greater variation occurred, PA notified PAC and worked toward reconciling our respective scores.

The specific steps that PA took in assessing the price-based scoring are as follows:

1. Review and assess the core models used by PAC for scoring. This process entailed the review of two categories of models: the Location Capacity Contribution (LCC) models and the bid valuation models[9]
    - In reviewing these models, PA assessed the core mechanics of how each model worked and the underlying inputs and drivers which remained constant across all bids (such as the calculation of terminal value for BTA bids)
2. Identify differences between the template models (models provided by PAC to PA in July 2020) and the models used by PAC to value individual bids
    - This process required a step by step identification of differences between the models and discussion with PAC to ensure that such differences both were appropriate and were consistently applied across all bid models
    - In conducting this comparison, PA identified a small number of differences between the template models and the individual bid models used for valuation purposes. Many of the changes reflected more efficient means to model the same result, while other changes were due to changes in the spreadsheet mechanics in order to incorporate the nuances of particular bids
3. Model each bid within the sample set of bids
    - In conducting this independent scoring of bids, PA made use of the template models, updated those models according to the universal changes identified in step 2, gathered the relevant qualitative and quantitative inputs as transmitted by bidders, and populated and executed the models necessary to calculate both the adjusted and unadjusted net benefit of each bid
    - This effort required the following steps to be conducted in order:

[8] The OPUC had a particular concern with potential bias toward BTA bids, as a successful BTA project would become a utility investment yielding returns to PacifiCorp's shareholders. See OAR 860-089-0450.

[9] The LCC and bid evaluation (or bid scoring) models are discussed in detail in PA's initial Status Update report, filed in OPUC Docket No. UM 2059 on September 15, 2020.

i. Gather the most current bidder data provided in each bidder's submittal, primarily via the RFP's Appendix C-2 spreadsheet file

ii. Review email correspondence to determine whether a given bidder's original C-2 file as delivered with each bid was revised or alternatively if there was correspondence which indicated a necessary revision to the C-2 files without the bidder actually providing an updated file

iii. Use the C-2 data to populate the LCC model with each bid's 8760-hour generation profile, project location, degradation profile, and technology capacities

iv. Based upon these inputs, determine each bid's annual capacity contribution through the life of the project and correlated hourly capacity based upon PAC's 2018 proxy profiles

v. Use the results of the LCC model to populate the capacity contribution inputs of the valuation model

vi. Use the bid C-2 file to populate the bid valuation model with other relevant bid data

vii. Make manual updates to each bid model according to the technology type, contract type, and location of each bid

viii. For bids including storage, generate the inputs for, execute, and populate outputs from the StorageVet program for storage related charge and discharge profiles, costs, and revenues

ix. Compare the resulting individual categories of cost and value for each bid as relevant, such as the value and cost of generation and of storage, integration, tax, and O&M expenses, as well as revenue requirement and terminal values to PAC's model

x. Compare the net benefit, the capacity factor adjustment, and the capacity contribution adjusted net benefit on a $/kW-mo basis to PAC's model

xi. Log any adjustments made to the LCC model, the bid model, or any variations identified between the bidder C-2 supplied documentation and the comparable data as represented in PAC's versions of the respective bid model and LCC model

xii. Address such identified adjustments to PAC, review responses, receive and review updated models from PAC (if necessary) and restart from step iii. In many cases PA identified adjustments required by PAC in its bid models; in other cases, PAC clarified adjustments to PA, who then adjusted its models accordingly

4. Comparison of PAC's price base score and PA's score
    - Across the sampled bids, the average difference and standard deviation of that difference in adjusted net benefit between PA's models to PAC's models was 2.3% and 12.4% respectively

As part of the scoring analysis, PA conducted independent modelling of all submitted BTA bids. In due course of this evaluation, in addition to the modelling steps discussed above, PA took the following steps as it pertains to BTA bids specifically in order to test for fair treatment:

- Conduct cross comparison of otherwise identical BTA and PPA bids and identify the drivers of value differentiation
- Conduct a thorough review of the components and mechanics within PAC's models driving the calculation of terminal value, the revenue requirement, and operating costs

PA was able to confirm that the application of the model mechanics and inputs which determined the primary differences of value between a BTA and an equivalent PPA were consistent. Further, throughout this evaluation process, PA worked to establish an independent perspective on the validity of these calculations. This effort was critical to PA's overall view that PAC has treated all bids, regardless of technology, geography, or bid contract type in an equal and fair manner.

2.3 Non-price based score review

PAC provided a non-price scoring matrix for which a bid can earn up to 25 percentage points. The scoring matrix is broken into three non-price factors: 1) Conformity to RFP Requirements, 2) Contract Conformance, and 3) Project Readiness and Deliverability. Each of the non-price factors has subcategories for which the bid can earn points. The subcategories are summarized as follows:

1. Conformity to RFP Requirements (up to 5 points available):
    - The bid provided all required RFP information accurately, as set forth in the RFP instructions
    - The bid is compliant with technical and operating specifications
2. Contract Conformance (up to 10 points available):
    - The bidder provides relevant appendices with redline and comments for the bid
3. Project Readiness and Deliverability (up to 10 points available):
    - The bidder's previous development and construction experience
    - The bidder demonstrates site control, consistent with PacifiCorp Transmission's Site Control definition, for the bid being scored
    - Bid is able to demonstrate ability to meet the project's environmental compliance, studies, permits, and equipment procurement needs (represented by progression through required permits and studies)
    - Documentation included to show whether the bid qualifies for a full or partial federal tax credit.

PA followed PAC's scoring matrix for completing the non-price scoring sampling and BTA non-price scoring. In doing so, PA used PAC's definitions and maximum points per subcategory to complete the non-price scoring sampling. However, in using this process, PA found some areas of ambiguity where a judgement call would be needed in order to assign points for a subcategory. These areas of ambiguity include:

- How to assign points for Category 2, Contract Conformance: Per PAC's definition, partial points can be awarded if comments were provided but no redline was provided. However, no definition was provided for instances where redlines were provided but no comments were made. Additionally, in some instances, redlines were provided but the bidder also stated they would provide comments upon selection. In each of these cases, PAC's definition left ambiguity on whether 0 percentage points or 5 percentage points were to be awarded to the bid
- How to evaluate the points related to environmental compliance, studies, permits, and equipment procurement needs (Category 3 above): The definition for point breakdown is based upon how many major studies and permits have been completed. However, a prescriptive checklist of major studies and permits or other typical project development stage-gate definitions was not employed. Moreover, zero points are to be awarded if major studies and permits are not started and two points are to be awarded if 50% of the major studies and permits are complete. It is not apparently clear if one point could be awarded if some, but not all, major studies and permits are started but not yet complete. Additionally, it is not clear if all necessary permits and studies are considered major permits and studies
- How to evaluate the appropriate documentation to receive federal tax credit: Up to 2 percentage points could be awarded for this category. In some instances, bidders were relatively clear in stating their eligibility for federal tax credits
- How to assess a bidder's development and construction experience when they did not provide clear information on the amount of MW currently under operation: Some bidders did not provide information on how many MW are under their operation. Furthermore, there were instances in which a bidder would describe how many MW are under construction now but not how many MW is already operating. As the non-price scoring matrix definition for this category is dependent on the amount of MW in operation, it leaves some ambiguity as to how many points these bidders should be awarded in these situations

- How to assess site control when part of the site is under a lease or purchase option and the other part of the site is already owned or fully leased by the bidder: The non-price scoring matrix assigns 1 percentage point if there is a lease option on the full site and assigns 2 percentage points if there is a lease or purchase agreement for the full site. However, in some bids, part of the site would be under lease option while the rest of the site would be under a purchase or lease agreement. In these instances, it is unclear if the full 2 points should be awarded as the bidder has site control but does not have a lease or purchase agreement for the full site.

In areas of ambiguity PA assumed the lower point value would be awarded given PacifiCorp's definitions.

2.4 IE independent scoring

In conducting the independent scoring analysis, PA modelled two separate sets of bids: a diversified sample of bids out of the total population of compliant bids and separately all compliant BTA bids. Both sets of bids were evaluated by PA using the same price and non-price scoring methodology. The following section pertains to how the sample set of bids was identified.

2.4.1 Bid Sample Development

As with the compliance sampling, PA undertook a multi-step approach to select a sample from the total bid population. The sampling entailed:

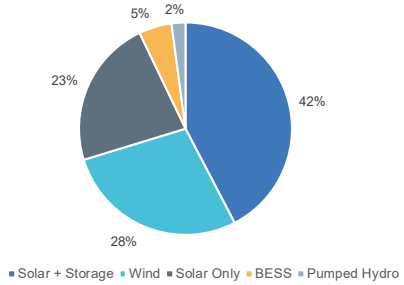
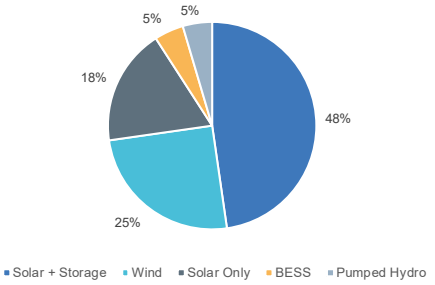
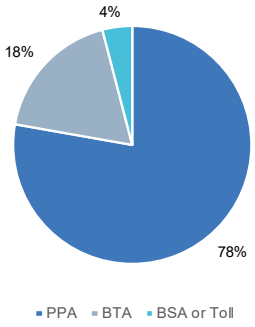
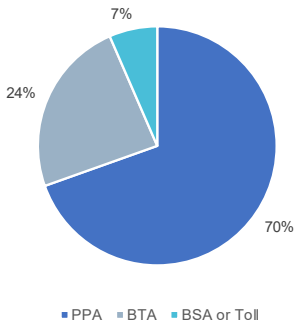
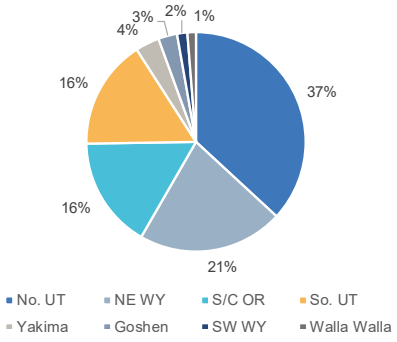
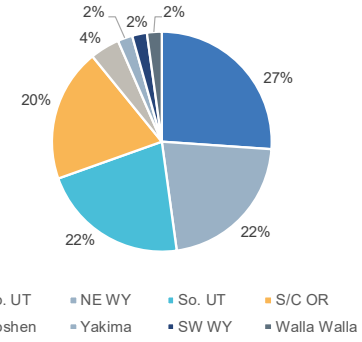
- Defining the population according to those compliant with the RFP's minimum eligibility criteria as agreed upon by PAC following the 8/31/2020 non-compliance discussion between the IE's and PAC
- Ensuring the proportional ratio of the number of bids was determined according to each transmission region, contract type, and resource type. For example, it was determined that 23% of all compliant bids were solar only, so 23% of PA's sample includes solar only bids. This method was applied for each technology, transmission region, and contract type. By identifying a mutually exclusive combination of attributes (such as a solar only PPA in NE Wyoming), PA's aim was to select a sample representative of the overall bid population
- Ensuring that at least one bid from each bidder was sampled
- Determining which bids satisfied the population samples and using a random number generator to select individual bids if multiple matched the attribute criteria, as to ensure there was no bias in PA's bid sample selection process for or against certain bids.

The sample was composed of 44 bids, including both base and alternate bids, from the nearly 400 total eligible bids. PA modelled these to ensure the bid scoring by PAC was consistent and didn't present any bias. In doing this modelling, PA identified any models that needed updating from PAC, none of which ultimately changed the ranking of the bid. Certain changes that PA identified, and PAC agreed with, resulted in changes to more bids than just those sampled by PA. A summary of bid model issues identified and resolved is provided in Section 2.5.

PA also modelled and completed non-price scoring of all the BTA bids which were not in the sample, totalling nearly 85 bids which were independently scored by PA.

Figure 2-1 below provides a comparison of the total compliant bid population to the sample bids on which PA conducted its independent scoring (the sample does include some BTAs but does not include the all of the additional BTAs modelled by PA). Note also that certain proportions between the compliant bid population and the sample differ due to the constraint on the sample that all geographies and all bidders are represented.

Figure 2-1: Comparison of compliant bids and sample bids

	Compliant Bid Composition (% of total bid count)	Sample Bid Composition (% of total bid count)
Bids by Technology		
Bids by Contract Type		
Bids by Geography		

2.4.2 BTA Bids Scored

In accordance with OAR 860-089-0450, in addition to conducting independent scoring of a sample of the total compliant bids, PA also conducted price and non-price scoring of all compliant BTA bids resulting in PA's independent scoring of an additional 54 BTA bids.

PA's review of the BTA bids relates to much of the valuation differences between BTAs and PPAs discussed in Section 6.3; however, in developing scores for each BTA, PA was in turn able to identify additional model related issues that otherwise may not have been resolved by only reviewing the smaller number of BTAs contained in the sample set.

2.5 Sample model review

As discussed previously, the purpose of PA's independent scoring was not to challenge the ranking and selection of bids to the ISL, but rather to ensure that there was no bias inherent in PAC's models which could skew the ultimate scoring and selection of bids to both the ISL and FSL. This differentiation is important in that while PA did compare its independent scores to PAC's, the purpose of comparison was not to determine if the result was correct, but instead serve as an indicator of whether an interim step in the model or an input may be causing a materially different result, and further, to determine if such indicators were single instance errors or more problematic and persistent flaws. Based upon PA's scoring and review of nearly 100 bids, as well its own internal QC process, PA did not find evidence of the latter case. Where PA found potential instances of error or differences of assumptions, PA took steps to raise these to the PAC RFP team, determine in conjunction with PAC whether a correction was needed, and if so, whether the correction caused a material change of the result or required a similar change to other models. In no instance did PA find an error which caused a material change in valuation and from PA's review of the ranking, nor did the nominal changes in valuation cause a change in a bid's candidacy to be considered for the ISL.

The following section discusses the model issues identified during PA's scoring and review of PAC's models and internal QC process. The models reviewed included the Locational Capacity Contribution model, different forms of the bid scoring models for wind or solar PPAs (with or without storage), wind or solar BTAs (with or without storage), battery storage BSAs, and pumped hydro storage tolling bids. Further, PA also assessed certain complications related to the use of EPRI's StorageVet storage valuation software which is used in conjunction with the valuation of bids which include a storage resource. Certain components of these models did draw upon databases and programs maintained by PAC, such as the computation of gross benefit curves for each region, which were not reviewed by PA.

Below is a summary of issues identified during PA's review:

Table 2-1: Model review issue summary

Model	Issue	Determination
LCC	A bidder could report a nameplate (installed) capacity greater than could actually be delivered resulting in overvaluing of their capacity contribution	In instances where this issue was identified, it was determined not to have caused a material change to valuation. However, nameplate and interconnection capacity reconciliation should be undertaken between ISL and FSL **Resolution**: PA does not know whether any such reconciliation was conducted. PAC"s Independent engineer did check the energy production for the FSL wind bids, and identified one bid as having an overstated capacity. The capacity factor was reduced in the FSL model, but not the nameplate capacity or capacity contribution. The capacity contribution from the LCC model was used only to determine adjusted and unadjusted value as part of the initial screening and was not reflected in PAC's IRP models
LCC	The loss of load probability inputs are populated from an external source by PAC and remain fixed across bids	These inputs were determined to be held constant across all bids. PA did not audit the determination of these values

Model	Issue	Determination
LCC	The 8760-hour profile used in certain solar plus storage models incorrectly included both generation and storage capacity	The capacity contribution calculations were corrected by PAC and new models were published
Valuation models	Gross benefit curves are populated from an external source by PAC and PA copied the curve over from PACs models respective to each region	These inputs were hardcoded dependent upon the region. PA was unable to model variations of the benefit curves due to differences in bid start dates, however this was determined not to be a material impact on value
Valuation models	Compared with the template bid scoring models which PA used for independent scoring and the models PAC employed for each bid, there were minor variations in inflation rate inputs	While PA used what appears to be an outdated inflation rate, the difference of roughly 7bps was not material to value
Valuation models	Certain bid model inputs were incorrectly used from alternative forms of the bids, such as the degradation profile of an un-augmented bid being switched for an augmented bid	This issue was identified in one bid model and corrected by PAC
Valuation models	Formula errors triggered by non-uniform commercial operation dates (e.g. mid-month dates)	PAC revised the formulas in the models to account for bids which did not have operation dates at month end
Valuation models	PAC revised certain bid start dates to be the first day of a year instead of the last day of a preceding year due to formulaic issues in the model dealing with partial periods	The difference of one day was not material and the only instance in which it would have proven problematic was as it relates to valuing the Production Tax Credit for wind bids; PA did not identify any instances where this took place but flagged the potential issue to PAC
Valuation models	Discrepancies between bidder inputs for pumped storage bids and the pumping and discharging capacities modelled by StorageVet	PA and PAC had a number of discussions regarding the valuation of pumped hydro bids. PAC's hydro engineering team questioned whether certain capacity values as bid were realistic. PAC re-ran the models using only bidder inputs and the projects remained uneconomic and did not alter the ISL decision. Further discussion of pumped hydro bids was provided in the Updated Status Report.[10]
StorageVet	StorageVet does not have the capability to limit the number of battery cycles per year as such a bid with 4 cycles per day maximum may be interpreted differently than 365 cycles per year	Limiting the number of daily cycles to correspond to the maximum annual number of cycles was used as a proxy to differentiate between the 365 annual cycle limit and the 200 annual cycle limit bids

[10] *Op. cit.* (see note 7), Section 6.2.

Model	Issue	Determination
StorageVet	StorageVet does not clip battery output, as such the attributed value for storage resources above 50% of the generation resource are likely to exceed the inverter capacity and overstate value	There was one bid which was added to the ISL due to its capacity factor being under-represented. While StorageVet was overstating value the data transfer to the SO model applied the “clipping” in such a way as to convert that to an understatement of value; PAC’s SO model partially counteracted this with the granularity adjustment. This matter with StorageVet is to be resolved in advance of the FSL determination. **Resolution**: To the best of our knowledge the problem with StorageVet was not resolved; however, the subject bid was not modelled for the FSL because PacTrans would not guarantee its interconnection would be complete by December 31, 2024.

As can be seen from these examples, as well as others encountered during PA’s scoring process, the breadth of issues related to modelling generally related to nuances of specific bids where the template models required customization or from inconsistent or inaccurate bidder inputs. On the former, PAC made clear to PA that adjustments to models were being done over time and as such models that were done earlier in the process needed to be re-run in tandem with the addressing the issues identified by PA. On the latter, inconsistencies of input highlight the weakness of allowing bidders to populate spreadsheets and risk potential misinterpretation or differences of technical definitions between PAC and bidders. While the latter point did apply to a number of bids, PA did observe that PAC took effort to seek clarity and input revisions from bidders and was also responsive in addressing the additional discrepancies identified by PA.

3 REVIEW OF RFP PROCESS AND ISL RESULTS

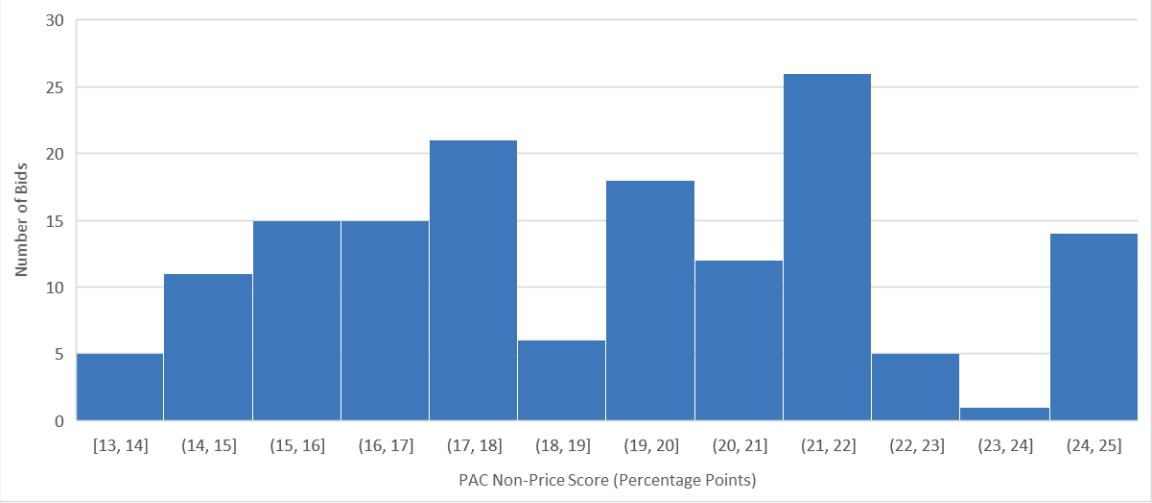
The following section provides a review of the initial bid scoring results and analysis, which produced the ISL and served as input for the FSL. PA previously reported this information, in this form, in its Updated Status Report.[11] It is included here for completeness and for archival purposes; although some of the material related to comparison of BTA and PPA bids has been moved to Section 6.3.

3.1 PacifiCorp's scoring results

3.1.1 PAC's Non-Price Score Results

Non-price scores awarded a maximum of 25 points with each point awarded in whole point intervals. PAC's non-price scores are summarized below. Figure 3-1 provides a histogram of the non-price scores of base bids (it does not include scores for alternate bids, which should reflect those of the corresponding base bids). The median score was 20 and there is a sizeable group of bids which PAC scored near perfect or perfect for non-price scores.

Figure 3-1: Summary of PAC's non-price scores



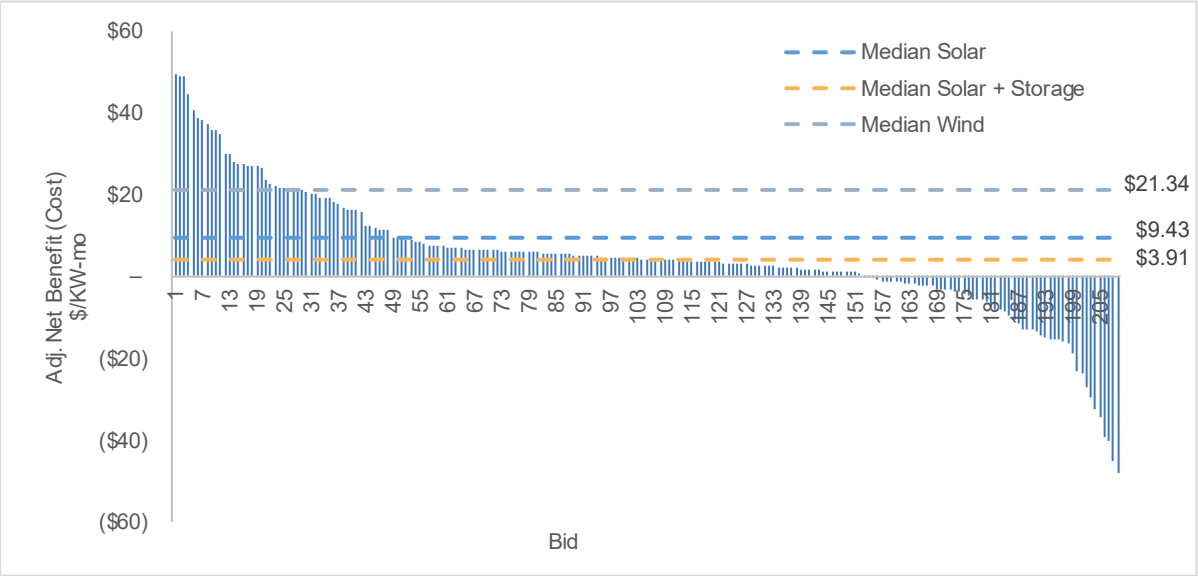
3.1.2 PAC's Price Score Results

Price based results are produced from PAC's bid scoring models. These models, which are specific to the technology and contract type combination, incorporated bidder input data and produced bid valuations on a levelized dollars per kW-mo basis. Values are calculated on both an unadjusted and capacity contribution adjusted basis, with the latter informing the ultimate score of each bid. The representations of the bid scores throughout this report reflect the dollar value outputs. The corresponding scores for each bid on a 0 to 75 point scale within each region and technology are not shown here for the reason that beyond confirming that the force ranking calculation was uniform across all bids, the core of testing for fair treatment resides in the calculation of bid valuation.

Figure 3-2 provides a graphical representation of the set of bid valuations across the bids eligible for the ISL.

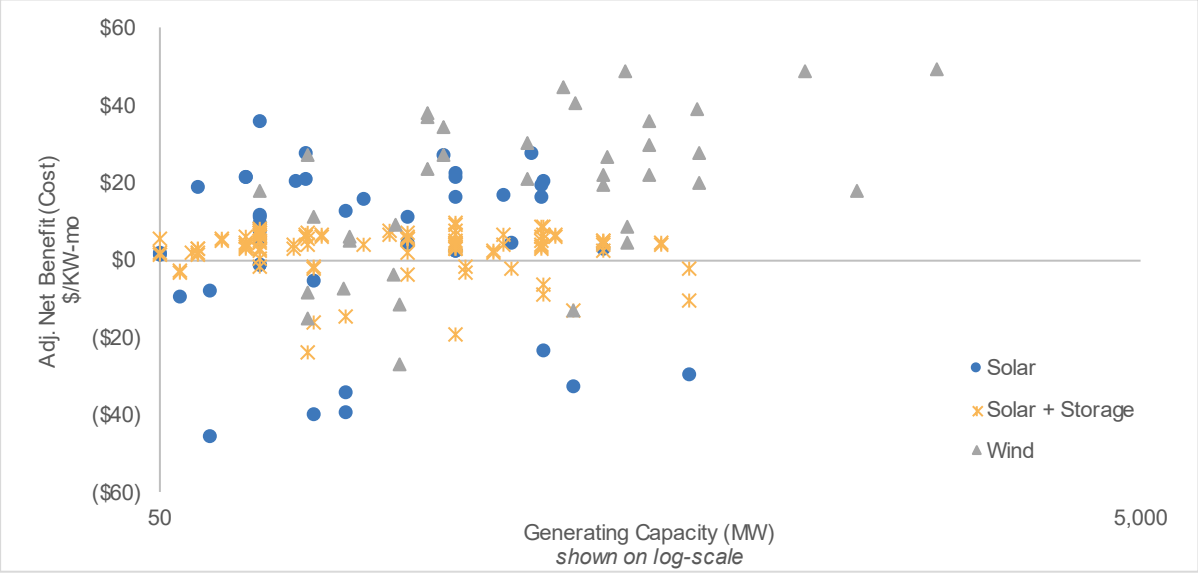
[11] *Op. cit.* (see note 7).

Figure 3-2: Summary of PAC's bid valuation



When evaluating the scoring process and results, PA also analysed the scores to evaluate the cost / benefit trends across technology types. Figure 3-3. below provides a graphical representation of the adjusted net value of each compliant generating bid (including base and alternate bids but excluding standalone storage for purposes of comparison) sorted by nameplate capacity and segmented by technology.

Figure 3-3: Distribution of PAC's bid values by technology



PA made the following observations from these results:

1. With median adjusted net benefit of $3.91/kWh and a standard deviation of ~$6/kWh, solar + storage bids represent the least valuable resource on average but exhibit the smallest variation of value across the range of bid capacity. Further, solar + storage resources in certain regions (such as Utah South and Oregon) are materially more valuable than standalone solar alternatives.
2. Standalone solar bids exhibit substantially more variation of value; however, the six out of the eight outliers (in terms of economics) are located in Oregon whereas standalone solar outside of the Oregon region is generally shown to be more valuable than solar + storage (on a capacity

contribution adjusted basis). This suggests that the increase in capital cost for the added storage is not overcome by the increased capacity contribution, at least for storage capacity which is 25% of the solar capacity (the most common ratio among bids).

3. Wind bids produce the most consistent net benefits according to PAC's scoring while there appears to be little benefit to scale (note that this excludes interconnection costs).

3.2 IE's sampling of non-price and price results

3.2.1 Non-price-based scores for IE's sampling

PA completed non-price scoring for the group of sample bids and also all other BTA bids. The IE non-price score for each bid can be seen compared to PAC's non-price score for the same bids on the chart below. From this, the trend is observed that PAC's non-price scores tend to be higher than the IE non-price score. This is confirmed in a comparison of the median IE and PAC non-price score for the sample + BTA bid group. PAC's median non-price score is 20 whereas the IE median non-price score is 18. In very few instances did the IE give a non-price score higher than PAC had assigned.

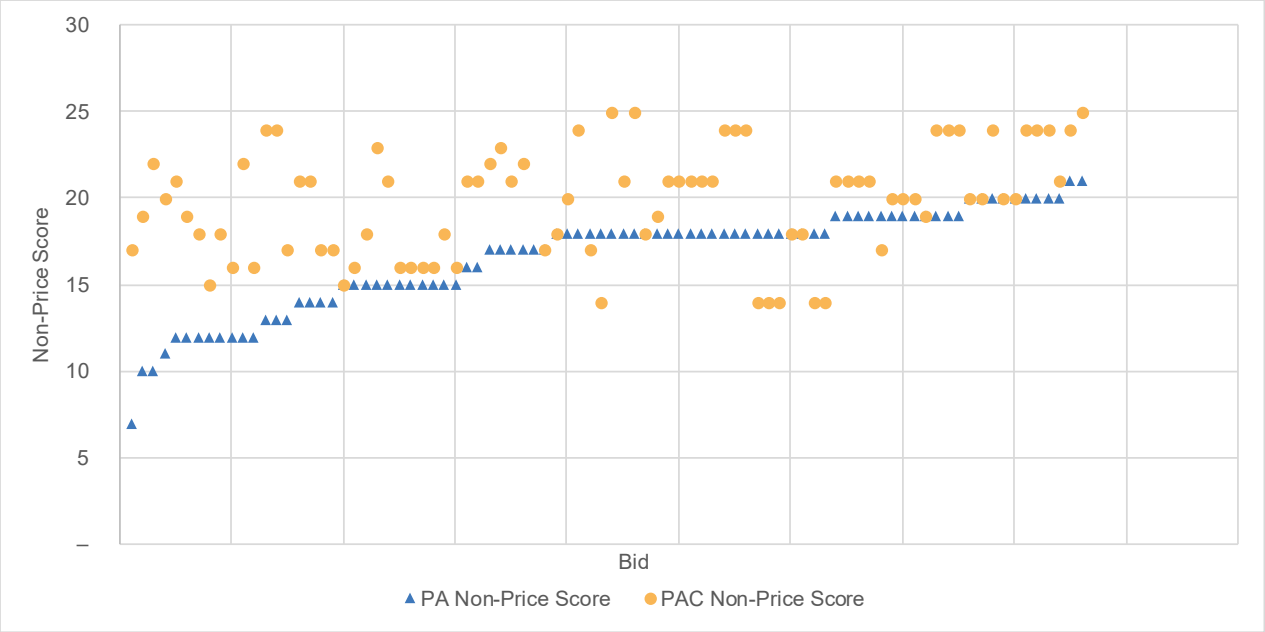
There were a few sizable differences between PAC's and the IE's non-price scoring. These differences are likely due to the ambiguities discussed in Section 2.3. Specifically, the observed main variations in scores appeared to occur for the following reasons:

- Contract conformance
- Completion of major studies and permits
- Site control

Regardless of contract or technology type, PAC's non-price scores were consistently higher than the IE's non-price scores. This is an understandable difference as PAC was probably able to devote more resources to reviewing bidder documents to assign non-price scores whereas PA took a more conservative view based on the definitions provided in the non-price scoring matrix. The IE's lower non-price sample scores are also consistent with the approach PA took of defaulting to the lower possible score per category in areas where ambiguities existed due to the non-price scoring matrix definitions.

For example, a 9-point difference between the IE non-price score and PAC's non-price score is plausible. A 9-point spread would likely occur when assigning 5 points for contract conformance and 0 points for major studies and permits not being complete. This score would be assigned for contract conformance when no redlines are provided and when at least 50% of all major studies and permits are not complete. If full redlines and comments were provided then 10 points would have been awarded and if all major permits and studies were complete an additional 4 points would be awarded, for a total of 14 points between these two categories. In this example, a 9-point difference between the IE's non-price score and PAC's non-price score could be due to the IE scoring the contract conformance and studies and permits sections conservatively due to the ambiguity of the definitions outlined prior. Figure 3-4 below provides a comparison of PAC's and PA's non-price scores.

Figure 3-4: Comparison of PAC's non-price scores vs. PA's independently scored non-price scores

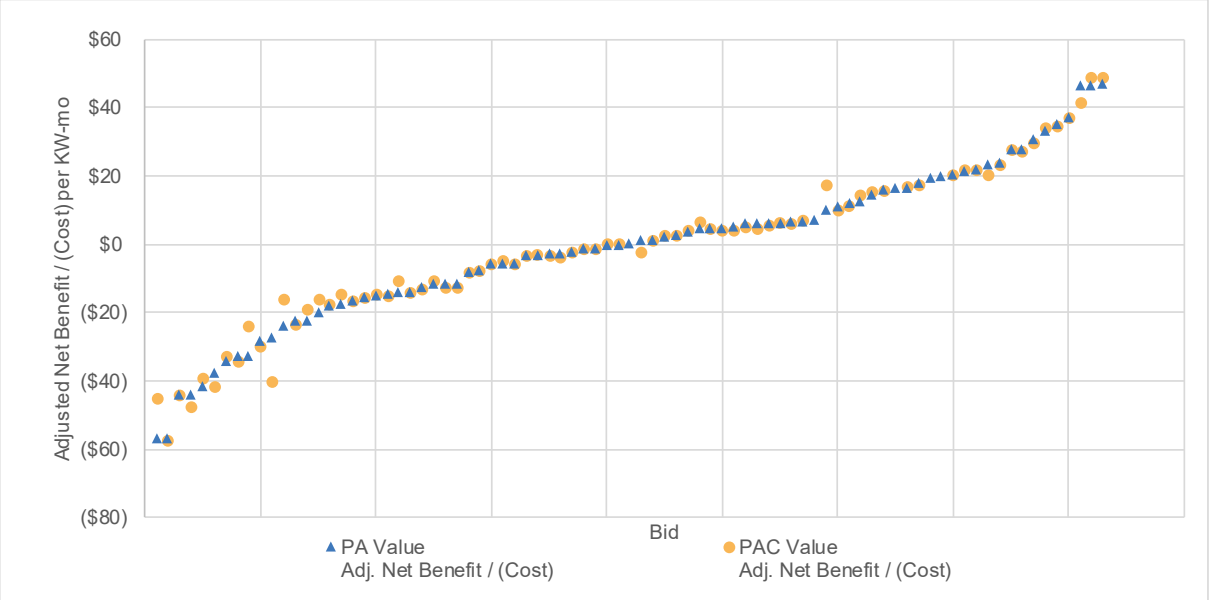


3.2.2 Price based valuation from IE's sampling

As discussed in Chapter 2, PA conducted independent scoring of a sample of the total eligible bid population as well as all BTA bids. Overall, PA's resulting valuations were in line with PACs.

Figure 3-5 below illustrates the comparison of PAC's scores and PA's (representing only those bids which PA modelled):

Figure 3-5: Comparison of PAC's bid values vs. PA's independently scored values



As shown above, PA's resulting price-based scores were on average +/-5% (equivalent to ~$1.41/kW-mo in absolute terms) of PAC's scores with a standard deviation of ~12%. A number of PACs bid models were revised after multiple discussions and reviews between PAC's and PA's modelling teams. However, such deviations between PA and PAC models were generally categorized as being 1) the result of different interpretations of bidder supplied information; 2) incorrect translation of data

from bidder documentation into the models; or 3) related to additional clarifying communications between PAC and bidders to which PA was not party. After scrutiny of these deviations as well as PA's internal QC process, variances were resolved, and revised models were published by PAC to the IE's when necessary.

3.3 ISL bid ranking process

The process that PAC took to determine the ISL mirrors that as detailed in the 2020AS RFP and then subsequently discussed during the September 22, 2020 Special Public Meeting. The overall process entailed conducting quantitative and qualitative assessment of all compliant bids received to determine the highest ranked bids limited to the highest scoring variant of each project (for example, the highest scoring variant between a 2 hour storage bid and 4 hour storage bid was selected, not both). This list of candidates in turn were modelled by PAC's SO model to produce the ISL. The specific steps that PAC took are as follows:

- Price and non-price scores were used to identify the highest-ranking bids and bid variants by technology and location while considering the effective reduction of capacity 2020AS RFP regional capacity limits to accommodate the interconnection priority of project with signed LGIAs.
- The cost and performance attributes of these highest-ranking bids by technology and location were loaded into the SO model, which was used to establish the least-cost combination of bids needed to reliably serve PAC's retail customers. The SO model was also configured with updated:
    i. Load forecast assumptions
    ii. Wholesale electric and natural gas price assumptions
    iii. Changes to new and existing resources (i.e., new contracts and contract terminations)

The output from PAC's SO model resulted in a binary, yes/no, decision whether any specific bid should be included on the ISL. While the SO model itself does produce additional outputs, there was no further ranking or scoring of bids subsequent to determining the ISL. The SO model selections do not reflect costs for interconnection network upgrades or completion status of either a system impact study or feasibility study.

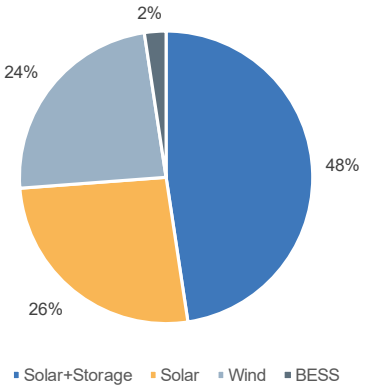
The apparent bias in favor of projects with signed LGIAs attributable to their interconnection priority was somewhat controversial. PA provided a detailed analysis of the impact of LGIAs, and whether it should be mitigated in case the interconnection costs produced by the cluster study were lower than expected. This lengthy analysis, which was part of the body of the Updated Status Report, has been reproduced here as Appendix B. In coordination with both IEs, and as discussed previously, PAC included additional bids that did not have executed LGIAs, but ranked highly on price and non-price factors, in the cluster study and in the set of FSL-eligible projects.

3.4 ISL overview

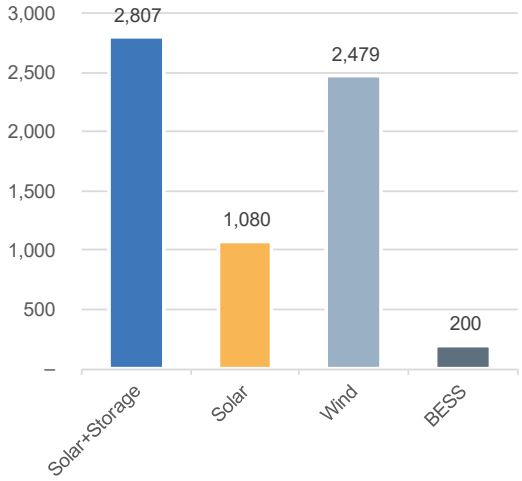
The ISL is made up of 42 total bids from 21 bidders representing 6,365MW of resources across eight transmission regions, including the additional bids identified as a result of the LGIA impact analysis. Figure 3-6 below summarizes the bid composition of the ISL:

Figure 3-6: ISL Composition Table

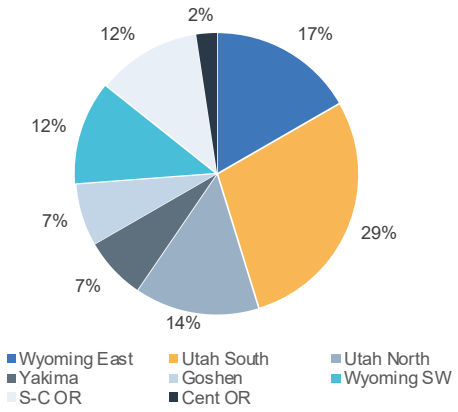
ISL by Technology (Count)



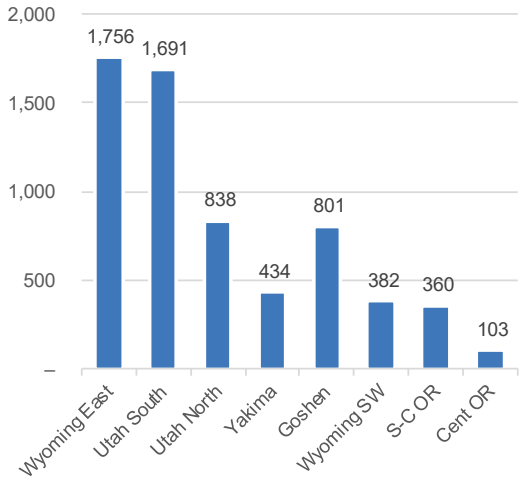
ISL bids by Technology (Nameplate Capacity, MW)



ISL Bids by Region (% of Total Bid Count)



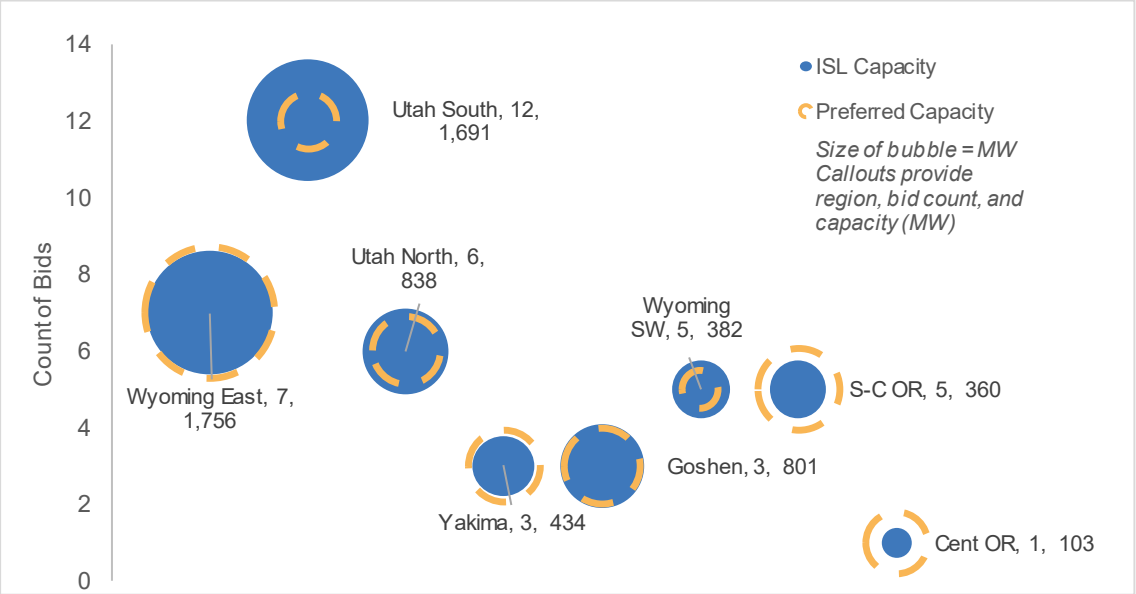
ISL bids by Region (Nameplate Capacity, MW)



3.5 ISL by transmission bubble

The ISL achieves or exceeds the interconnection capacity soft cap in half of the regional transmission bubbles. As discussed previously, the ISL has not been significantly impacted to the detriment of ratepayers by bids with LGIAs supplanting more competitive bids without LGIAs. However, as illustrated in the following chart, by adding certain high scoring non-LGIA bids certain regions do have a greater amount of bid capacity on the ISL than was targeted in PAC's IRP. PA anticipates that through the transitional cluster study that some non-LGIA holding projects may be faced with substantial upgrade costs which cause the project developer to no longer participate. The evolution and impact of these costs on the overall resource needs and bid compositions will be a focal point for the IEs over the coming months.

Figure 3-7: ISL capacity vs. IRP target capacity Table



4 OVERVIEW OF THE FSL ELIGIBLE BIDS

PA's assessment of the FSL bids primarily comprised these steps:

- Review and provide input to PAC regarding the types of data being sought from FSL eligible bidders, the format of such updates, and the purpose for the same
- Evaluate and track the FSL eligible bids
- Review and reconcile interconnection upgrade costs (provided by bidders) to PAC's updated bid scoring models
- Evaluate differences in value across key attributes of bids, such as technology, given that FSL bids are selected on a system wide basis as opposed to the ISL bid being selected within technology and transmission cluster

Further discussion and findings from each of the above points is provided below. PA will be providing a separate report on the sensitivity analysis which Staff has directed PAC to conduct as part of the FSL selection process. PA's collaboration with Staff and subsequent report on the sensitivity analysis is intended to supplement the risk and economic evaluation of the IRP model selections.

On March 24, 2021, when PAC notified bidders how to provide updated pricing based on the Transition Cluster Study, the ISL pool of bids represented 37 projects from 21 bidders. After reviewing the transition cluster study reports, PAC determined that bids which were part of the cluster study, but had received projected interconnection dates later than December 21, 2024, were no longer compliant with the RFP's eligibility requirement. PAC in turn issued notices of ineligibility to this subset of bidders on April 13, 2021. One bidder which received this notification of elimination did provide an updated system impact study which provided sufficient detail confirming a compliant COD. This system impact study was unrelated to the cluster interconnection process and not been presented to PAC earlier in the process.

Following the elimination of these bids, the FSL eligible pool represented 27 projects from 16 bidders. With the exception of Walla Walla, the FSL eligible bids represented all transmission regions with at least one project. Table 4-1 below provides a summary of the progression of bid and bidder counts from the ISL to the FSL.

Table 4-1: Count of Bids by RFP Phase

	Bids	Bidders
ISL Selected	37	21
Less: Cluster Study Eliminations	(10)	(10)
FSL Eligible	27	16
Less: Non-Selected Bids	(8)	(8)
FSL Selected	**19**	**12**

The following section provides a summary of FSL eligible bids following interconnection related eliminations and the ultimate FSL bids.

4.1 FSL bid ranking process

PAC requested that all FSL-eligible bidders provide updated pricing and confirmation of other operational and technical project attributes in advance of FSL selection Both PAC and PA reviewed the original and updated pricing and the resulting updated adjusted net benefits. The final stage to select the FSL bids is portfolio analysis and selection by PAC's IRP models. The bid score models were used to calculate economic and production forecasts which were used as inputs for the IRP

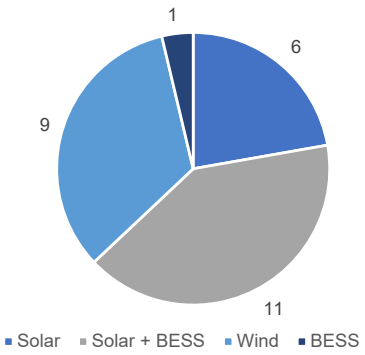
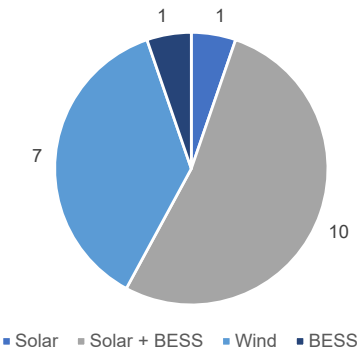
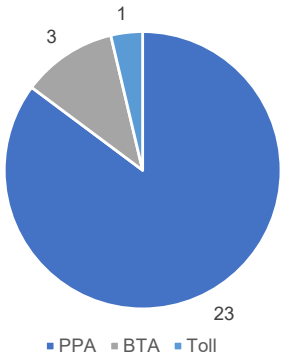
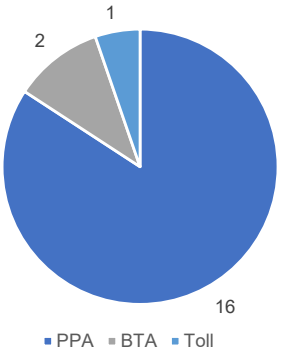
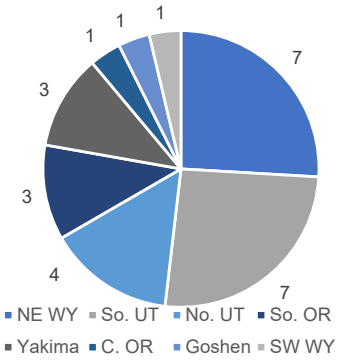
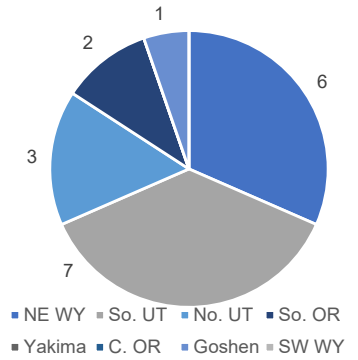
models; however, the outputs of the scoring models however were not used directly to rank and select FSL bids. Chapter 5 provides additional detail regarding the bid price changes after the cluster study and the resulting change of adjusted net benefit scores.

4.2 FSL eligible bids vs. FSL selections

Figure 4-1 below provides a comparison of the total FSL eligible bid population after the effect of bid eliminations due to the transition cluster study (such eliminations are discussed in detail below). Key observations from this graphic include:

- Stand-alone solar was the least successful technology in proceeding from FSL eligibility to the FSL itself; the additional capacity contribution appears to have well justified its higher cost
- Several regions – Yakima, Central Oregon, and SW Wyoming – had no FSL eligible placed on the FSL. Yakima in particular had three eligible bids rejected. These bids all had comparatively high cost, and the Yakima region also had the highest net benefit curves used for scoring.

Figure 4-1: Summary of FSL eligible bids after eliminations from cluster study and FSL bids

	FSL Eligible Bid Composition	FSL Bid Composition
Bids by Technology		
Bids by Contract Type		
Bids by Geography		

4.3 Review of Independent Engineer Reports

Following the selection of ISL bids, PAC engaged WSP USA Inc. (WSP) to provide an independent engineering review of all eligible wind, solar, and battery storage bids. The purpose of the engineering review was to assess the reasonableness of the bidder's production, performance, and other technical assumptions underlying the financial forecast of each bid.

Engaging an independent engineer in this capacity is not atypical and is a prudent step in assessing the basic technical merits of key performance expectations. Given the breadth of technological and geographic variables at play across the ISL bids, conducting this assessment, even while not for the primary purpose of confirming bid economics, is in the best interest of stakeholders.

WSP issued three separate reports specific to each technology type focusing on the expected technical performance of the photovoltaic panels, the battery energy storage systems (both collocated

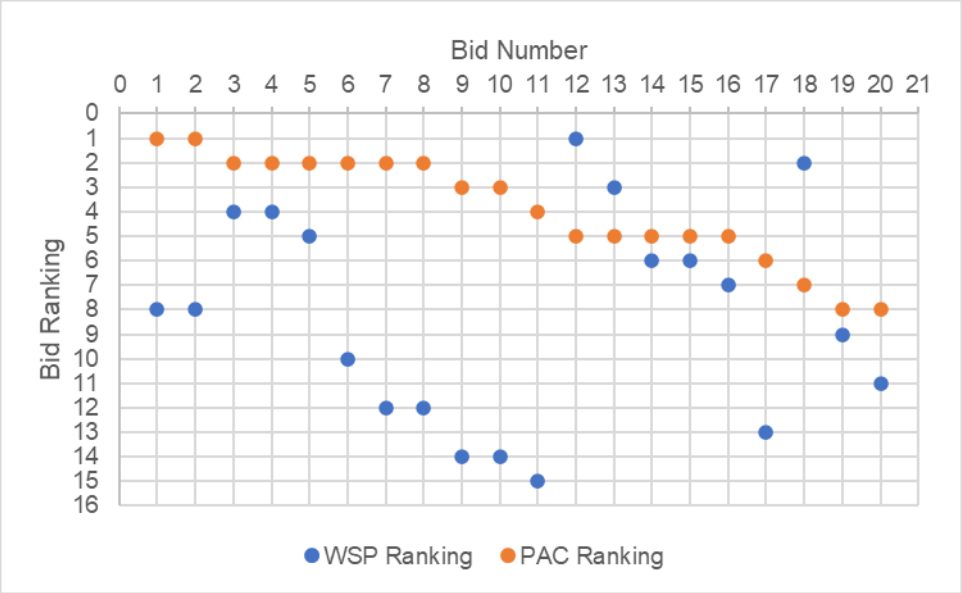
with solar and standalone), and wind turbines. Overall, while the reports did identify a set of "red flags", particularly around the design, specifications, and operating plans for battery systems, these red flags were not reflected in PAC's bid selection process with the exception of one bid.

WSP's assessment of one Wyoming wind project flagged that the projected energy yield and losses were over and understated respectively. As a result of this observation, PAC revised the forecast of this resource's net capacity factor as part of its modelling process. We do not know whether the capacity contribution, used by the IRP model against a capacity requirement, was similarly downgraded. While this change did result in a lower net benefit value of the resource, the bid was selected to the FSL.

PAC's approach on this matter is not unreasonable and ultimately was not detrimental to the bid which was revised, nor did it change the decision of other bids not being selected.

Perhaps the most important finding from WSP's review was an overarching theme of uncertainty around the battery storage resources. Granted WSP's review was done without the benefit of correspondence with the bidder, however the variety of concerns raised by WSP about nearly all of the battery resources are consistent with the immaturity of this technology type. As bids proceed through contracting and then initiate with construction, it will become increasingly important that PAC make effort to continue this technical diligence and take steps to de-risk project delivery to the extent possible.

Figure 4-2: WSP Technical ranking vs. PAC Non-Price ranking of Solar + Storage bids



In Figure 4-2 above, the technical evaluation (WSP Ranking) of a project was compared to its qualitative non-price attributes (PAC Ranking). A ranking with a lower numerical score indicates that the bid ranks higher for that attribute. For example, a bid with a PAC ranking of one indicates that it was awarded the highest amount of non-price based points among this group of bids. Figure 4-1 shows some bids that scored poorly on the basis of non-price technical criteria are valued highly for other non-price qualitative attributes, such as project readiness and deliverability. The two different review and ranking processes are best used in combination as complementary perspectives on project risk, but do indicate that incorporation of some form of technical engineering review as part of the ISL selection process or scoring would be useful if could feasibly be done for a procurement of this size.

WSP conducted their analysis based only upon documentation provided by bidders as part of their bid packages and it is reasonable to expect that many of the red flags WSP identified could be addressed via a collaborative diligence process – which should take place over the development and construction period.

5 IMPACT OF INTERCONNECTION TIMING ON THE FSL

The RFP process saw a number of ISL bids which were subsequently deemed ineligible, prior to delivery of best and final pricing, because their estimated transmission interconnection dates were beyond the RFP's required COD of December 31, 2024. The following section provides a summary of the publicly available cluster study results as well as the impact of the bid eliminations on the total pool of FSL eligible bids and the impact of interconnection costs on bid pricing and value.

5.1 Cluster study results

As shown below in Table 5-1, ten ISL bids which participated in the transition cluster study received interconnection timelines of 72 months. The IE's and PAC's RFP team discussed these results with PacifiCorp Transmission, during which PA questioned the level of certainty that could be assigned to both the schedule and costs for interconnection. These values are estimates which are representative of the full extent of transmission related work required to interconnect all participating resources within each cluster. Just as the interconnection cost estimates are based on interconnection of all participating resources, so are the time estimates based on the completion of the infrastructure upgrades associated with all bids in the cluster – regardless of the amount of work required to interconnect any individual resource.

Table 5-1: Summary of ISL bids' cluster study results

Bid	Time to Interconnect	Facilities	Station Equipment	Network Upgrades	Total	Note
1	72 Months	$1,306	$1,578	$65,412	$68,296	
2-3	72 Months	$800	–	$11,703	$12,503	Two projects
4	72 Months	$2,580	$1,360	$8,998	$12,938	
5	72 Months	$2,140	$5,380	$8,998	$16,518	
6	72 Months	$2,580	$1,360	$8,998	$12,938	
7	72 Months	$843	$1,374	$40,882	$43,099	
8	72 Months	$800	–	$11,703	$12,503	
9-10	72 Months	$1,850	$11,870	$34,831	$48,551	Two projects

Following the publication of the cluster study reports and PAC's determination that the assigned interconnection dates would eliminate these ten bids, PAC facilitated discussions with several of the bidders. PA monitored all such conversations. During these conversations, the structure of the cluster study process was raised as a potential challenge to the ability to achieve RFP target dates.

The original RFP COD deadline was intended to coincide with the planned sunsetting of the production tax credit and investment tax credit programs; however, with the extension of those programs, their expiration no longer supports the deadline. On the other hand, allowing an after-the-fact relaxation of the COD requirement for these projects would be unfair to other projects that could get interconnected sooner (perhaps through an LGIA) but could not reach COD by 2024 due to construction lead times.

The primary area at issue is the lack of scheduling granularity provided to cluster study participants and the observation that all resource interconnection timelines were generally assigned the same interconnection date as the longest-lead time resource in each Transmission Cluster Area (TCA). As a result, and as some bidders raised to PAC and the IE, there was a concern that otherwise viable and economic projects are deemed ineligible due to long interconnections related to resources outside of the RFP process.

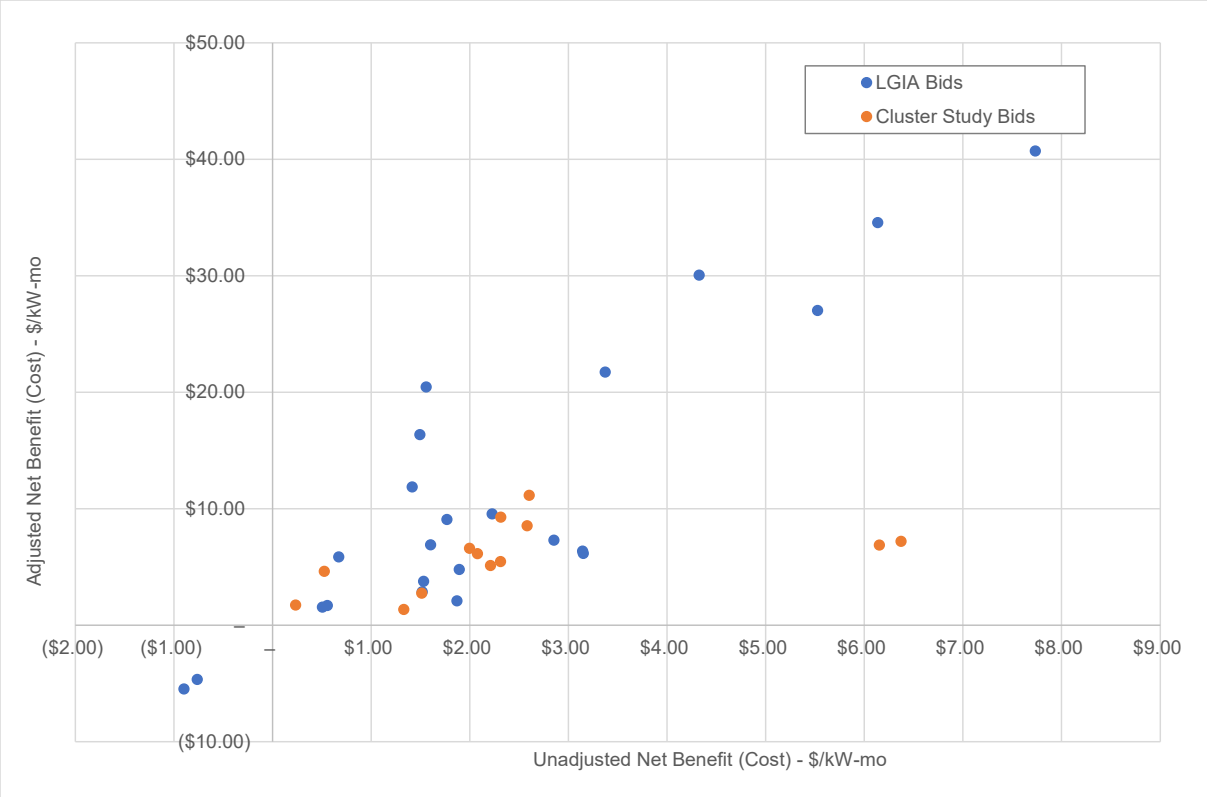
Offerors argued that PacTrans' timing estimates, based on the latest or longest upgrade in each TCA, were not realistic for their specific estimate. Yet, PacTrans has not committed to guarantee anything sooner. If PAC needs capacity constructed sooner, and accepts an offer based on the expectation that the project will actually be able to interconnect sooner, it is taking on the risk that PacTran's estimate was not overly cautious. This is a risk that could instead be contractually assigned to the bidder, if PAC were to provide an appropriate model contract with a non-modifiable term assigning the risk to the generator and specifying damages.

At least one offeror mentioned a particular high-profile long-lead-time project as being responsible for the length of the interconnection time estimate. In future RFPs PAC may be able to gather information on prominent resources and communicate the risk that interconnection timing in certain TCAs will prevent achievement of the RFP's operation deadline.

5.2 Impact of cluster studies and results

All but one of the bids that went through the Transition Cluster Study were eliminated from FSL consideration because the estimated interconnection timelines would prevent them from achieving COD by December 31, 2024. This was an unanticipated result. In order to evaluate the effect of eliminating those bids, PA compared the LGIA bids vs. cluster study participants and also layered on top of this which bids were ultimately selected for the FSL. Figures 5-1 through 5-3 below provide the progression of analysis.[12] While it is not possible for PA to determine whether a resulting FSL portfolio of resources may have better achieved the least-cost, most-reliable goals, the below comparisons indicate that on average, the elimination of cluster study bids was not detrimental to those goals.

Figure 5-1: Scatterplot of LGIA and Cluster Study Bid Values



[12] Note: values in Figures 5-1 through 5-3 reflect the net benefit value exclusive of interconnection costs for the purpose of presenting a cleaner comparison between LGIA bids and cluster study bids.

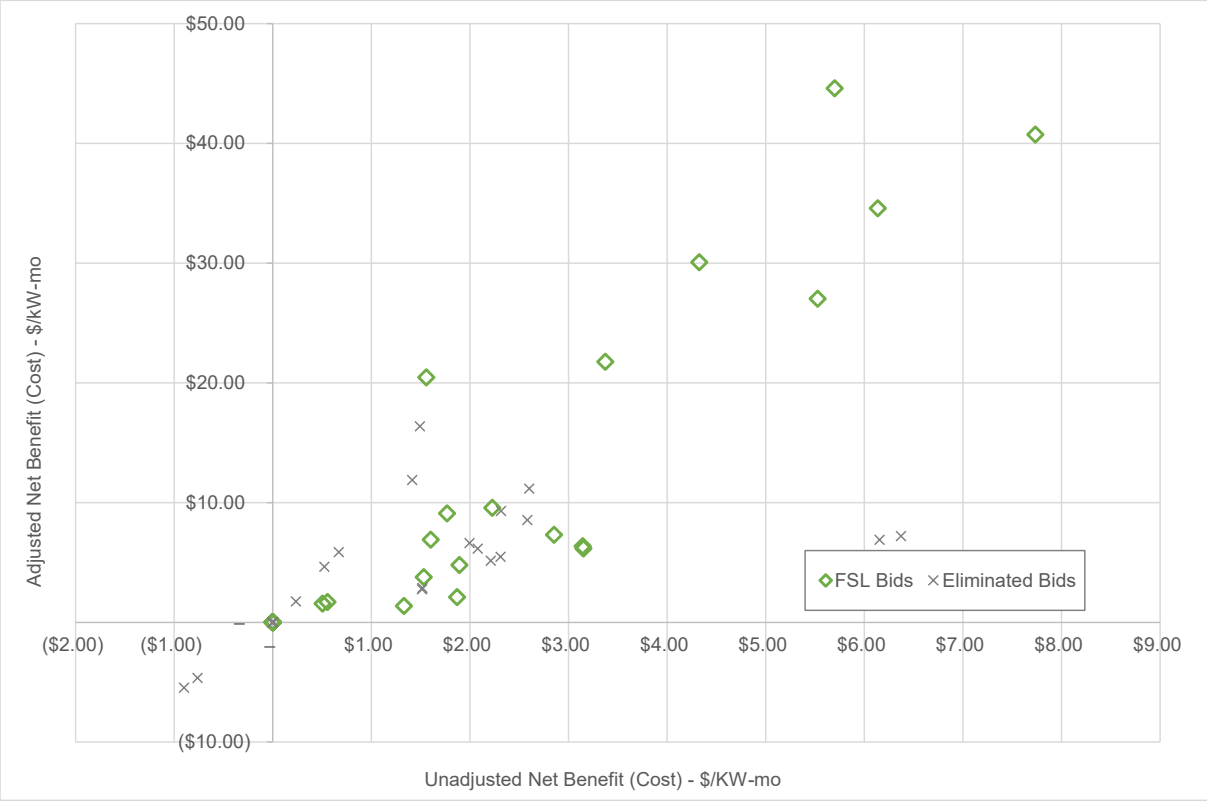
From the figure above, all but two bids across both categories of LGIA and cluster study bids represent positive economic value.

The average unadjusted and adjusted net benefit of the LGIA bids was $2.58/kW-mo and $12.35/kW-mo respectively. The average unadjusted and adjusted net benefit of the cluster study bids was $2.48/kW-mo and $5.92/kW-mo respectively. The most significant factor in the more attractive economics of the LGIA bids were related to a larger number of high value LGIA wind resources, which according to PAC's scoring models delivered in the range of $21-$45/kW-mo of adjusted net benefit compared to the highest value transition cluster bid calculated to deliver roughly $11/kW-mo of adjusted net benefit.

While on average the cluster study bids were less attractive than the LGIA bids, additional competition within the pool of bids provides for more options for the optimization and risk models to evaluate under various potential market scenarios. PA does not view the cluster study bid eliminations as representing any form of bias or unreasonableness on behalf of the PAC RFP team as it was the application of the RFP requirements, but does represent an undesirable outcome which is due in part to the transitory and competing timeline of the interconnection cluster study.

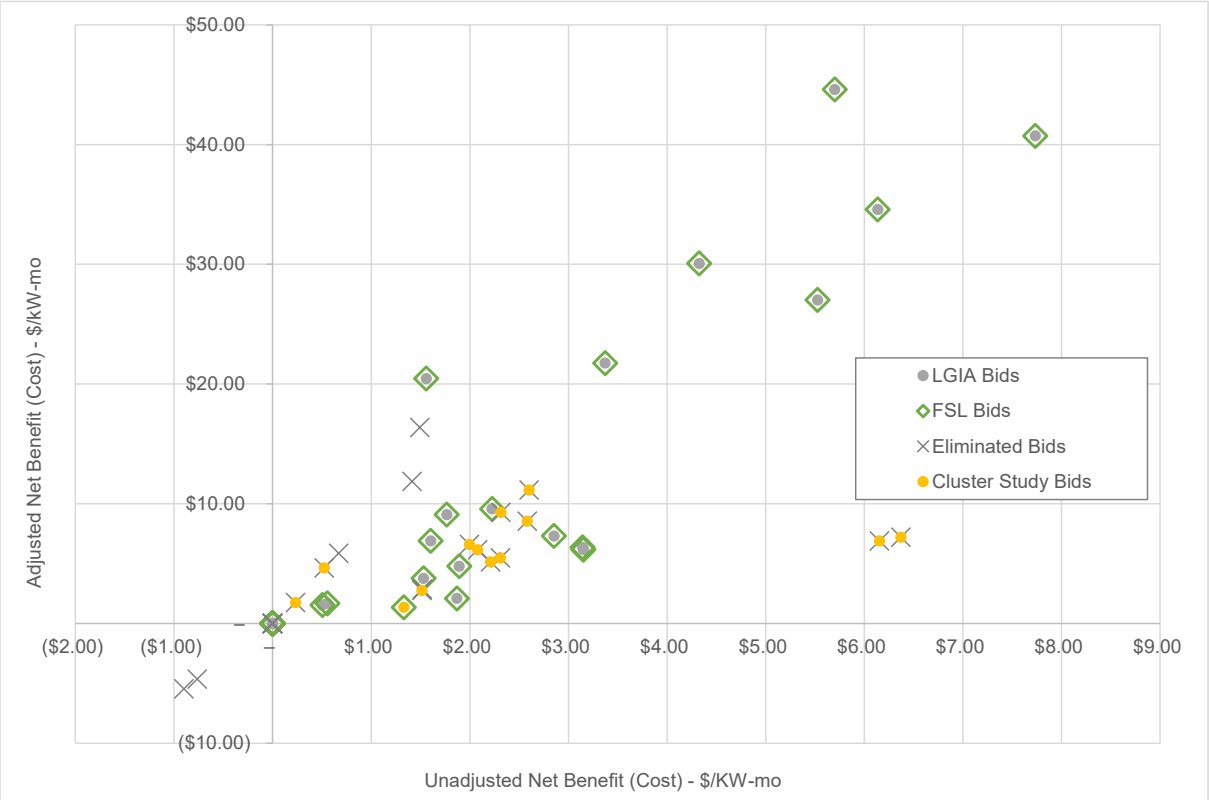
Figure 5-2 below applies a different view on the same data by comparing all ISL bids against the bids selected for the FSL with eliminations representing the bids eliminated both due to the cluster study results as well as bids eliminated by PAC's selection models.

Figure 5-2: Scatterplot of Eliminated and FSL Bid Values



Finally, when overlaying both of the above, it is possible to determine how the value of the pool of bids changes across each filter. For example, the average adjusted net benefit of all ISL bids (prior to elimination due to cluster study results) was $10.20 / kW-mo. Following the elimination of cluster study bids, the average improved to $12.35 / kW-mo (excluding interconnection costs). Finally, the average value of the FSL bids increased to $14.73 / kW-mo while the bids which were FSL eligible but eliminated by PAC's modelling averaged $5.32 / kW-mo. Figure 5-3 below provides this final overlay.

Figure 5-3: Comparison of ISL and FSL Bid Values Table



In summary, while the bid eliminations due to COD were not anticipated, the eliminations were 1) in accordance with the RFP criteria, 2) a function of the competing timelines of the cluster study process and the RFP, and 3) did not materially change the economic profile of the FSL eligible bids. PA recognizes the conflict between planning and procurement when it comes to development a portfolio of resources which can be placed into service in the near future being comingled with resources which may have substantially longer lead times. This same conflict was earlier identified with regard to the time required to properly diligence unique pumped hydro bids versus the comparatively routine technical and operational considerations of wind and solar resources.

PA recommends that during the development of PAC's next solicitation, that it work with PacTrans and OPUC Staff towards a goal of delivering more actionable and detailed results from future cluster studies or alternatively allow for additional time between the cluster study conclusion and FSL determination so as to give flexibility to bidders to seek additional bid specific detail from PacTrans.

5.3 Review and confirmation of interconnection costs on bid value

Following the publishing of results from the transition cluster study in April 2021, all bidders were instructed by PAC to provide "best and final" pricing reflective of interconnection costs. The interconnection costs fell into two primary categories which bidders reflected in revised pricing:

- Network upgrade costs: these costs are reimbursable to the bidder by PAC and therefore should not directly affect bidder pricing. However, to the extent that the bidder assumes a timing difference and financing cost related to the bidder's capital outlay and PAC's reimbursement, such assumption may reflect a burden on the bid price.
- Direct access costs: such costs are specific to the resource and therefore borne by the bidder and are reflected in the bid price.

One important difference is that for the serial process, PacifiCorp Transmission studies the impact of and upgrades needed for each project one at a time and assigns the full network upgrade cost to the first project in the queue that triggered the need for it. Transmission projects are "lumpy" – an upgrade can generally accommodate more capacity than there is in the project assigned its cost. A cluster process attempts to resolve this inequity by taking a group of projects, studying them all at once, and allocating the total cost among the projects in the group.

In addition to confirming that the published interconnection costs were appropriately reflected in PAC's updated bid models, PA investigated the above issues as part of our review of PAC's updated scoring models and updated bidder pricing.

5.4 Review of updated bid pricing

Following receipt of best and final bid pricing which reflected interconnection costs, the majority of bidders increased bid prices. The average price increase was 7.3%; however, the median bid price increase was only 2.3%, indicating that a small number of bids increased price substantially. Such increases certainly reflect the incremental costs associated with interconnection which were not incorporated in the ISL bids – however such substantial increases may also reflect aggressive initial pricing. The charts below provide a summary of the bid prices provided by bidders upon initial bid submission and upon repricing for FSL consideration.

Figure 5-4: ISL vs. FSL bid prices[13]

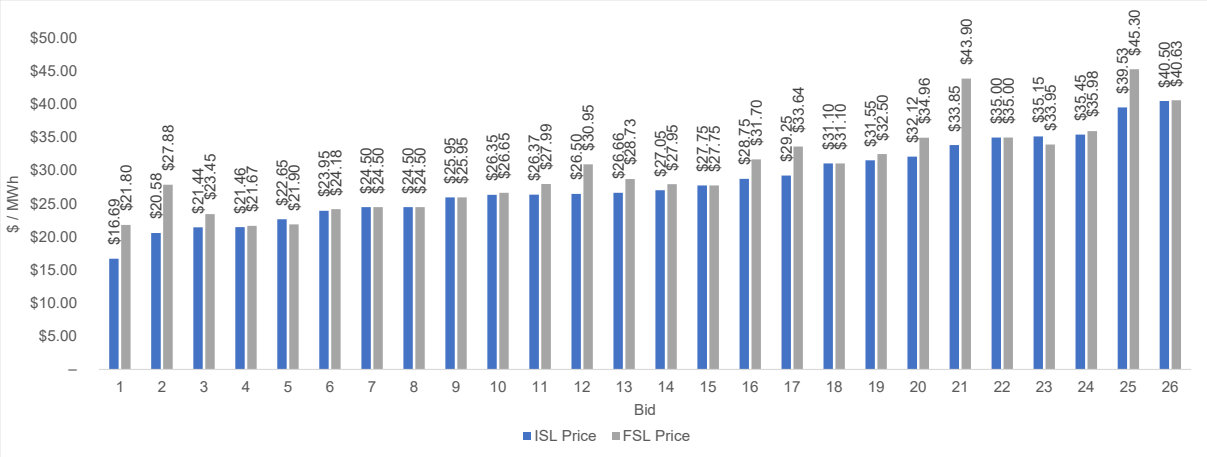
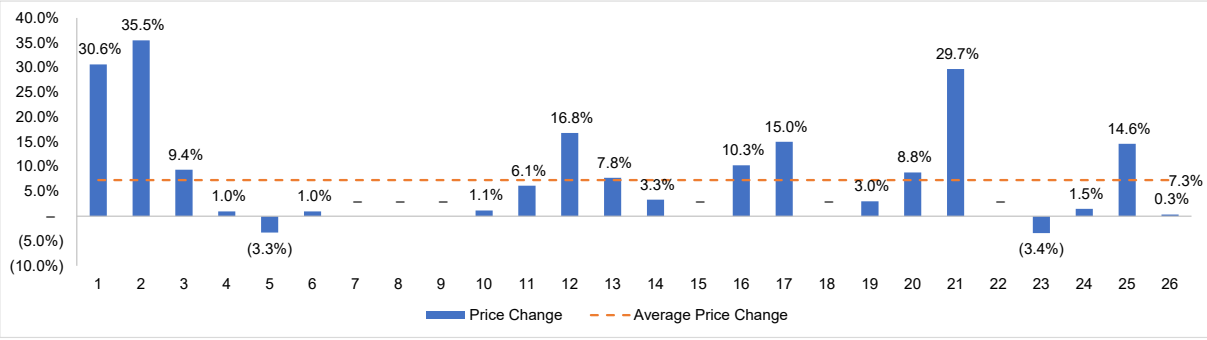


Figure 5-5: Percent change in price from ISL to FSL bid price

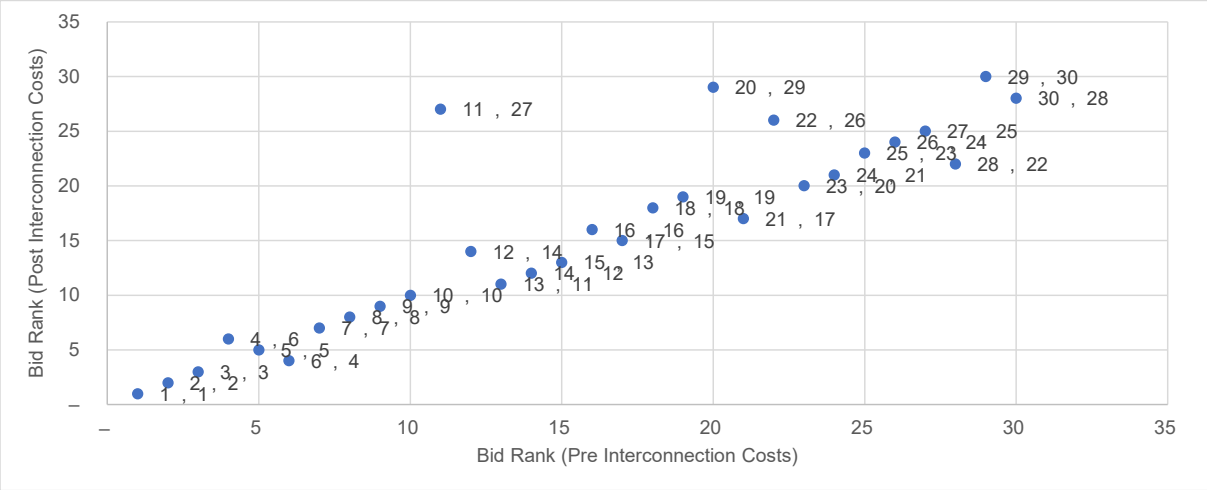


Given the general trend of increased pricing, it was important to evaluate how and to what degree the change in prices resulted in a change in bid rank according to adjusted net benefit value. From the figure below, it can be seen that the majority of bids saw little change in rank with the largest changes

[13] Note that this figure represents only PPA prices and that the rank order of bids and associated bid number do not reconcile to bid numbers in subsequent figures in this report.

reflecting negative movement in ranking. It is worth noting that PAC did not re-rank the FSL eligible bids, this is purely a tool to aid in understanding the nature of the bid pool.

Figure 5-6: Pre vs. post interconnection cost update ranks by bid (pre, post rank) on adjusted net benefit



6 FINAL SHORTLIST REVIEW

As selected by PAC's IRP models, the FSL represents 19 projects from 13 bidders. All technologies (wind, solar, and storage), all contract types (PPA, BTA, and tolling), and five of the eight regions are represented in the FSL. The projects are summarized in Table 6-1 below:

Table 6-1: Selected FSL Bids

Bidder	Project	Technology	Generating Capacity (MW)	Storage Capacity (MW)	Storage Duration (Hours)
NextEra	Anticline	Wind	101	–	–
Innergex Renewable	Boswell Springs	Wind	320	–	–
rPlus	Cedar Creek	Wind	151	–	–
NextEra	Cedar Springs IV	Wind	350	–	–
Invenergy	Rock Creek I	Wind	190	–	–
Invenergy	Rock Creek II	Wind	400	–	–
Clearway	Two Rivers Wind Project	Wind	280	–	–
Long Road Energy	Fremont	Solar + BESS	99	50	4
rPlus	Green River Solar I & II	Solar + BESS	400	200	2
ecoplexus	Hamaker	Solar + BESS	50	13	4
ecoplexus	Hayden Mountain 2	Solar + BESS	160	40	4
Enyo Renewable Energy	Hornshadow I	Solar + BESS	100	25	2
Enyo Renewable Energy	Hornshadow II	Solar + BESS	200	50	2
Leeward Energy	Parowan	Solar + BESS	58	58	4
DESRI	Rocket II	Solar + BESS	45	13	4
Long Road Energy	Rush Lake	Solar + BESS	99	50	4
DESRI	Steel I 80 + Steel II	Solar + BESS	147	38	2
AES Clean Power (sPower)	Glen Canyon A	Solar	95	–	–
Able Grid Energy Solutions	Dominguez I	BESS	–	200	4
Total			3,245	735	

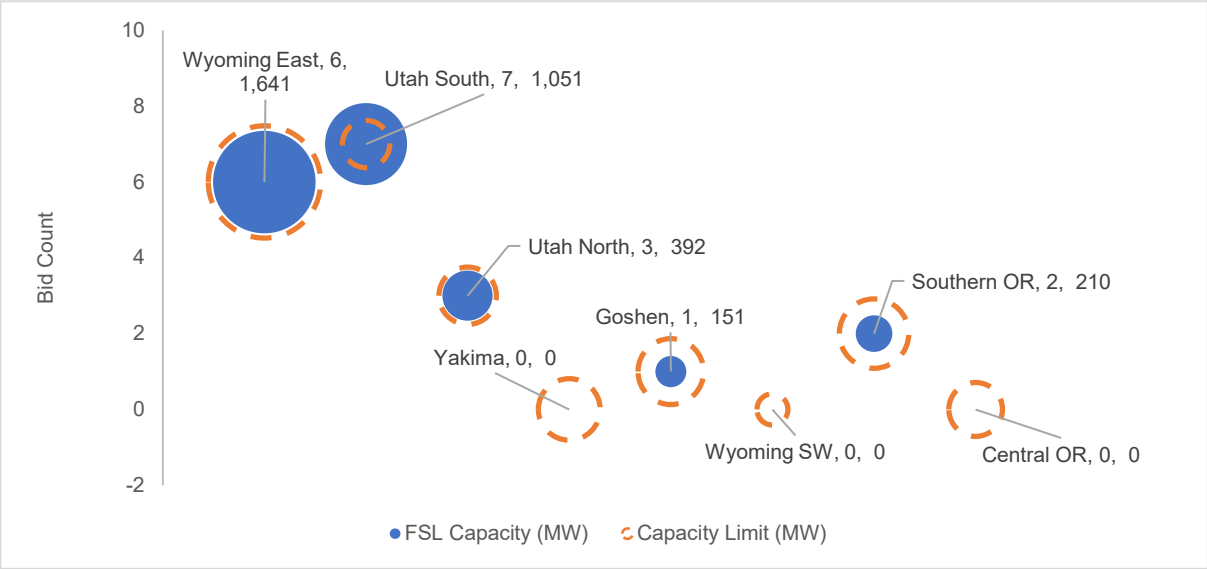
6.1 Review of the FSL

A variety of factors that have introduced unanticipated complexity into PAC's RFP process. Matters such as LGIAs, diligence of pumped hydro bids, the impact of the cluster study reports, and the sheer volume of bids received, among others, collectively resulted in a complex procurement. However, PA's opinion is that throughout the process, PAC applied the rules of the RFP in an unbiased manner,

communicated transparently with the IEs regarding their modelling processes and with stakeholders regarding their decisions. While PA believes that there are particular issues which took place which increased complexity and limited the pool of potential resources, these issues were ultimately not detrimental to the resulting FSL and can also be addressed in future procurements. It is PA's opinion that the FSL reflects a diverse portfolio of competitive resources which achieves the resource adequacy and least cost goals.

PA's analysis of the FSL began by evaluating the overall composition of the bids as compared to the regional capacity limits. As portrayed in Figure 6-1 below, unlike at the ISL stage which saw much more bid capacity than transmission capacity would allow, the FSL list of bids meets or exceeds the target capacity only in Utah South. Further, it is notable that there is no FSL capacity in three transmission regions, which is discussed below.

Figure 6-1: Comparison of FSL bid capacity (MW) vs. transmission region capacity limits



The above comparison of bid to transmission capacity highlighted two questions:

1. What caused no bids to be selected in Yakima, Wyoming South, and Central Oregon?

   These three regions respectively had three, one, and one FSL eligible bid. In all cases, and as is discussed in more detail below, these bids were all higher cost (higher PPA price) than competing resources and did not provide for sufficient incremental system adequacy to offset the high prices.

2. Given the narrow band of incremental transmission capacity in Wyoming East, how much risk is represented by transmission capacity on the planned Energy Gateway South transmission line?

   PAC and the IEs discussed the risk of curtailment of excess energy or possible damages owed to the seller for energy not purchased. PAC's position on the matter is that in the unlikely circumstance that wind production exceeded the planned capacity of Energy Gateway South, the Company would first look to curtail the lowed cost resources. The substantial value generated by wind resources via the production tax credit would push these further down the list of potential curtailment options, falling behind existing higher cost fossil resources. The combination of circumstances which could cause severe, extended curtailment of new wind resources appears to be low. As fossil production is phased out over the coming decade and replaced with additional renewable resources in Wyoming, this relationship and risk profile is likely to change.

In addition to the above region specific considerations, in order to evaluate reasonableness of the FSL, PA compared the FSL bid ranking as indicated by PAC's individual bid scoring models (inclusive

of interconnection costs), the bid pricing levels, the results of PAC's IRP models, and PAC's rationale for eliminating certain bids from the FSL. Figure 6-2 provides a ranking of the bids by adjusted net benefit value highlighting those which were not selected to the FSL. Figure 6-3 provides the rank of bids according to PPA price as a means to compare overall economic value to the bid price. Without any grouping of bids by attribute or category, it is apparent that overall, the portfolio of selected bids presents economically beneficial and cost competitive resources.

Figure 6-2: Ranking of FSL Selected vs. FSL Eliminated bids (Adj. Net Benefit[14])

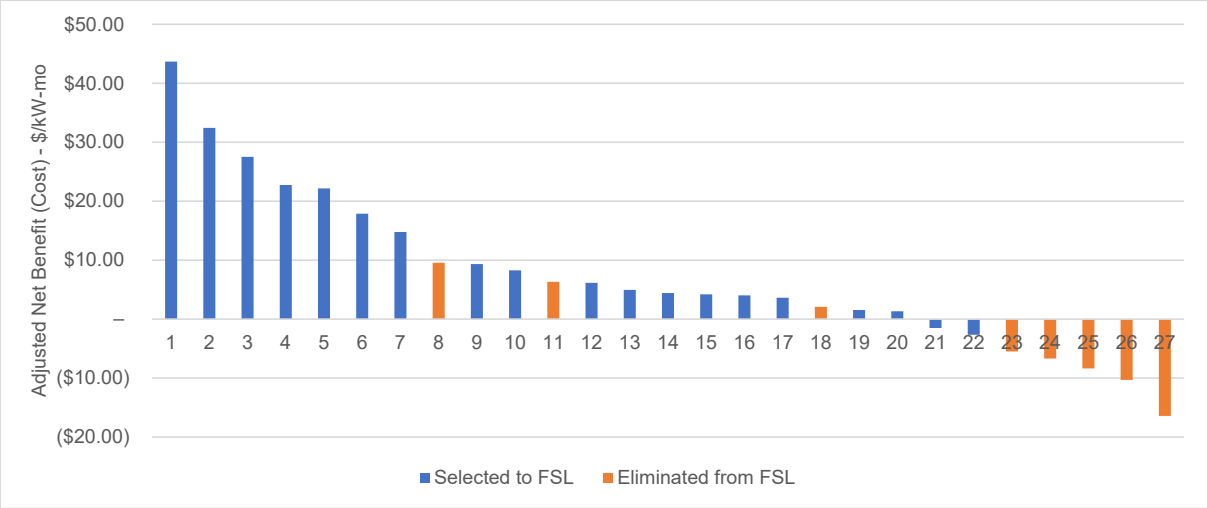
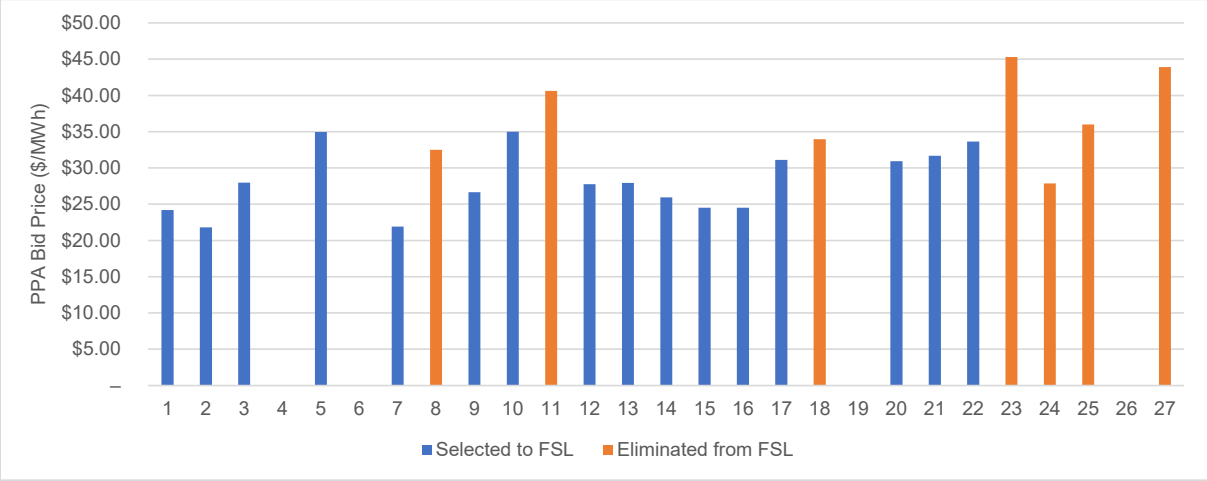


Figure 6-3: FSL Selected vs. FSL Eliminated bid price[15]



Following discussions with PAC's RFP team, Table 6-2 provides a summary of the causes for bid elimination.

[14] Note: Values are reflective of net benefit values inclusive of interconnection costs.

[15] Note: BTA and tolling bids (bids 4, 6, 19, and 26) not shown. Values reflect first year PPA price.

Table 6-2: Summary of FSL eligible bid eliminations

Bid #	Cause
8	Selected by IRP model reference case[16], eliminated in reference case with restricted market sales[17]; average net benefit[18], above average PPA price (and highest in its region) combined with uncertainty of dispatch and resource contribution due to off system location led to elimination
11	Selected by IRP model reference case, eliminated in reference case with restricted market sales; below average net benefit, but high PPA price caused elimination
18	Selected by IRP model reference case, eliminated in reference case with restricted market sales; low net benefit combined with high PPA price caused elimination
23	Eliminated by IRP models in all but the high gas price and high market price sensitivity scenarios; adjusted net cost from scoring model
24	Eliminated by IRP models in all scenarios; adjusted net cost from scoring models
25	Eliminated by IRP models in all but the high gas price and high market price sensitivity scenarios; adjusted net cost from scoring model
26	Eliminated by IRP models in all but the high gas price and high market price sensitivity scenarios; adjusted net cost from scoring model
27	Eliminated by IRP models in all but the high gas price and high market price sensitivity scenarios ; adjusted net cost from scoring model

As can be seen above, there was a multi-step decision making process PAC undertook in determining which bids to select and which to eliminate. The first step was the modelling process of running each bid through PAC's IRP models, which make resource selections which optimize around the goals of resource adequacy (or in other words, greatest reliability) and least cost. The IRP models were executed for several different resource scenarios, one of which was identified as a base case.

The second step PAC undertook was to evaluate the highest-price offers selected by the base-case IRP model run. These bids had not been selected in a low-liquidity case (similar load and market price assumptions but without enough depth in the spot market to absorb excess energy), suggesting that those offers were reliant on market sales to support their economics and system contribution benefit. That dependence on the spot market would add risk to PAC's supply portfolio. On the other hand, these offers' out of market cost relative to other locations in PacifiCorp's system increased the chance that more reasonable alternative would appear on the market, and that until that point the residual need could be met by market purchases.

A resource plan can represent a complete strategy for meeting a utility's energy and capacity needs. A single procurement, even an all-source procurement, is a single step along that path. In this case PAC is creating a shortlist that may not fully meet the RFP's stated resource need because it judges that procuring new resources in the relatively near future at materially lower cost is a low risk and economically rationale strategy – another reasonable step toward the resource plan.

PA's perspective on this strategy is twofold:

[16] Note: Described as medium gas price, medium market price, medium carbon price forecasts.

[17] Note: Reflective of medium gas price, medium market price, medium carbon price, and no wholesale market sales permitted.

[18] Compared to the average FSL bid adjusted net benefit of $11.83 / kW-mo.

1. Renewable resources broadly are continuing to see declining costs and the tax incentives for new builds continues to be renewed – beyond what PAC expected when it set this RFP. The pipeline should be well enough supplied with future cost competitive resources to risk a slight under procurement as of several years in advance
2. The bids that were removed from the base-case portfolio do in fact represent adjusted net benefit, but this value reflects the net present value of revenues over a 25- or 30-year production life. With a fixed or escalated offtake price well above competing resources (as in the case bid #11 above) that revenue stream may be backloaded and a small net benefit may not sufficiently compensate for the project performance risk and the known and constant cost of that resource.

6.2 Comparison of standalone solar to solar plus storage bids

One of the focal points of this solicitation has been how different technologies will compare and compete– in particular, the comparison of economic value of standalone solar vs. solar plus storage bids in a market where storage is become much more economical and operationally flexible.

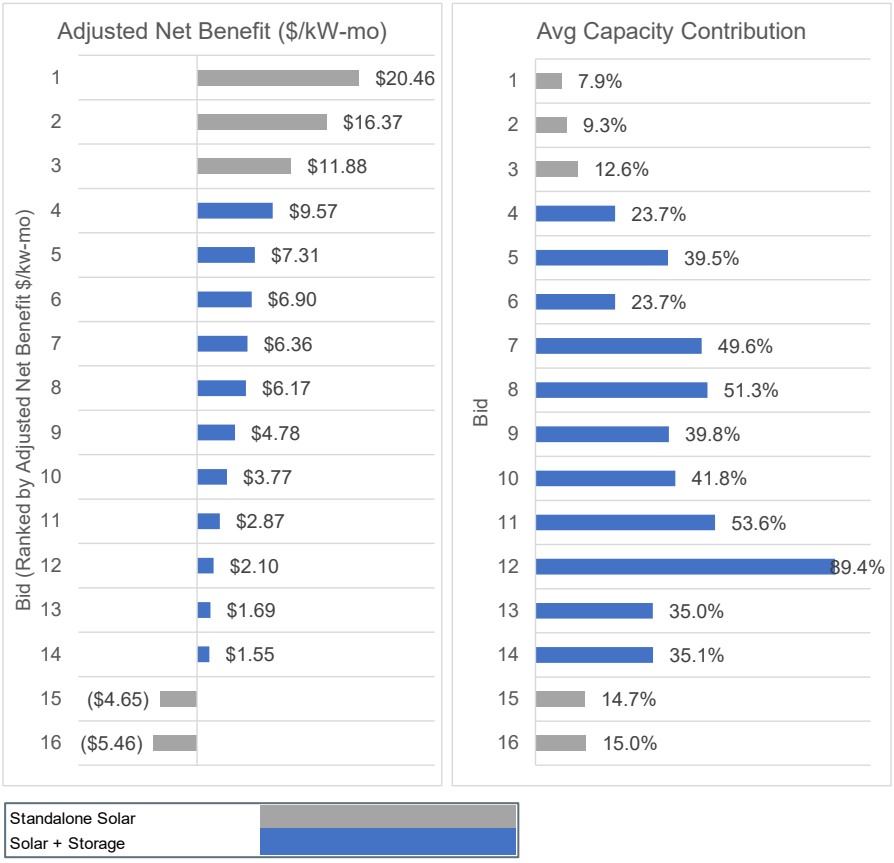
The list of FSL eligible bids included five standalone solar bids and 11 solar plus storage bids located across Utah, Washington, and Oregon. Excluding interconnection costs, the three highest and two lowest valued bids out of the group of 16 total bids were standalone solar projects while the solar plus storage bid values were more tightly clustered from rank 4 to 14.

The charts below in Figure 6-4 provide a ranking of all solar and solar plus storage FSL eligible bids. From this comparison, one observation is that the PPA offer price is a reasonable indicator of net benefit rank (with an average differential between the net benefit rank and PPA price rank of zero). However, there are some clear outliers to this relationship, specifically the 2nd and 3rd ranked standalone solar bids being ranked 7th and 15th in terms of PPA price.

Figure 6-4: Benchmarking Solar and Solar + Storage Bids vs PPA Price

Another way to benchmark the bids is in accordance to the bid's average capacity contribution shown below in Figure 6-5.

Figure 6-5: Benchmarking Solar and Solar + Storage Bids vs Capacity Contribution



While the top ranked bid (according to adjusted net benefit value) was also the lowest priced, the second and third ranked bids were ranked 7th and 15th respectively in terms of PPA price. A second observation and case study in the dynamic between capacity contribution and locational benefit is portrayed by two similar bids with significantly different outcomes:

- The 1st ranked bid was determined to generate $1.56 / kW-mo of unadjusted net benefit (that is, benefit per nameplate kilowatt) and $20.46 / kW-mo of adjusted net benefit (benefit per kilowatt of capacity contribution). That mean that the value of this resource comes largely from its energy production when valued at projected market prices, and not from its capacity to system reliability (capacity). It is a 95MW (nameplate) standalone solar bid in Utah South. For reference, these values were revised to $1.09 / kW-mo and $14.77 / kW-mo respectively after bidders incorporated interconnection costs.
- The 6th ranked bid was determined to generate $1.60 / kW-mo of unadjusted net benefit and $6.90 / kW-mo of adjusted net benefit. This bid is a 100MW solar plus storage bid in Utah South with 25MW of storage and a 2 hour cycle time. For reference, these values were revised to $1.39 / kW-mo and $6.12 / kW-mo respectively after bidders incorporated interconnection costs.

While the economic difference between the two bids narrowed substantially after interconnection costs were incorporated, it is worth evaluating and understanding the drivers of how a standalone solar project can seem to achieve over twice as much economic value as a very similar project with storage. That value is an artifact of the design of the scoring models, which are useful for distinguishing among similar resources of the same type but not as useful for comparisons of different types of resources.

A standalone solar bid is by nature is a variable resource, only a portion of its production may match up with peak demand and other times of need it may have no ability to meet demand. Such a "energy

only, non-dispatchable" resource may contribute only 10% of its nameplate capacity to meet demand when the need is greatest. Such resources can be considered as expensive sources of capacity contribution MW because their value comes from other products

At the other end of the spectrum would be a battery storage only project which has no energy production but over 90% capacity contribution. Because the bid scoring models do not directly account for the economic value associated with reliability (this is handled in PAC's IRP models) they do not properly recognize this resource's value, which is only revealed by portfolio modelling

The solar plus storage resources are intermediate; their value depends in part on their energy production but also in part on their ability to save some of that production to capture demand at higher-value hours.

Ultimately, the FSL was selected by PAC's IRP models which are determined to optimize resources across the system according to certain constraints, such as a 13% reserve margin (an explicit demand for capacity contribution). The IRP models reflect the economic and performance forecasts including PPA pricing and capacity contribution, but the IRP models are agnostic to the bid models calculation of adjusted net benefit values. The FSL-eligible standalone solar bids would have been chosen from the highest-scoring solar offers in the RFP. Yet as shown in Figure 4-1: Summary of FSL eligible bids after eliminations from cluster study and FSL bids, they were not nearly as successful and solar + storage bids in achieving selection to the FSL.

From PA's perspective, the important observation is that as storage becomes more prevalent, that in future solicitations PAC evaluate how or whether feasible to communicate not only the capacity targets, but capacity contribution targets as well as clearly laying out the expected solar penetration (or variable resource penetration) to bidders. With this data in hand, bidders would have additional context with which to decide whether to pursue a higher cost, but potentially higher value, resource including storage or standalone PV.

6.3 Evaluating BTA and PPA bids

In its Updated Status Report on PacifiCorp's 2020AS RFP, PA provided a detailed review of the way that the Scoring Models represent BTA bids and considered whether the treatment of BTA bids was fair or created a bias in the scoring towards them. PA's opinion was that the scoring did not favor BTAs.

Most of the BTA bids into the 2020AS RFP were solar projects, many of which had corresponding PPA bids. The scoring model produced consistently better scores and higher net benefit estimates for the PPA versions. This supported PA's fairness opinion. There were fewer paired PPA and BTA wind bids available for review, and the results were more mixed – in some cases the estimated net benefit of the wind version was the greater of the pair. The BTA-specific processing of wind and solar projects in the scoring models appears to have been identical, so on balance PA sees the full set of BTA-PPA direct comparisons as supporting a conclusion of no bias in favor of BTAs.

Following the initial scoring the ISM was selected by PacifiCorp based on the outputs of its IRP models. PA did not have access to the IRP models or the detailed results of individual runs, but we understand the software. The inputs to IRP models were generated by the scoring models in what we have characterized as an unbiased fashion -- most of the contents of the file generated by the scoring model are purely numerical. There may be an indicator as to whether the bid structure was PPA or BTA, but we do not believe that the IRP models would make any use of it. PA's opinion remains that PacifiCorp's evaluation methodology was indifferent between PPA and BTA structures, and as far as we can tell the implementation of that methodology was also unbiased.

Three BTA bids were eligible for the FSL. No associated PPA bids were eligible; they had been eliminated in the selection of the ISL. Two of those bids qualified for the FSL.

The following four subsections replicate the discussion in the *Updated Status Report on PacifiCorp's 2020AS RFP* of the treatment of BTA and PPA bids in PacifiCorp's scoring models. The next (fifth) subsection addresses the treatment of the two BTA bids that were accepted for the FSL.

6.3.1 Differences between the key components of the valuation of PPA and BTA bids

For purposes of illustration, this section provides an illustrative comparison of a solar PPA with an otherwise identical BTA bid. Based on multiple conversations with the team at PacifiCorp responsible for modelling each bid as well as individuals who are responsible for PacifiCorp's financial reporting, PA has developed the following assessment of the primary causes of valuation differences between BTAs and PPAs.

As shown in Table 6-3 below, 100% of the value attribution of a PPA is via the value of generation as compared to a BTA bid, which also has terminal value (in this instance 6.5% the total). Given that the generation profiles and all other attributes of this comparison are identical, the terminal value inherent to a BTA provides for a greater present value than a PPA (potentially offset by greater costs of utility ownership). The differences related to storage value are discussed further below.

Table 6-3: Comparison of PPA and BTA valuation composition

% Contribution	PPA	BTA
Value of Generation	100.0%	93.5%
Value of Storage	–	–
CapEx Terminal Value	–	6.5%
Total Value	**100.0%**	**100.0%**
Cost of PPA	97.0%	–
Cost of Storage	–	–
Revenue Requirement	–	77.5%
O&M Costs	–	16.7%
Integration Costs	3.0%	1.5%
Other Costs	–	4.3%
Total Cost	**100.0%**	**100.0%**

6.3.2 Terminal value

The calculation of terminal value is based on three primary components: the initial asset investment amount, the associated non-transmission infrastructure, and the development rights. Given that at this stage of the RFP, real development value and non-transmission asset value are subject to determination, PAC made use of operating projects to inform the allocation across these categories.

The terminal value of the initial investment is representative of the fully depreciated asset value adjusted for inflation and decommissioning expenses. As PAC models all owned resources as being sold or salvaged at the end of their useful life and therefore fully depreciated with only the remaining decommissioning cost, this first component of terminal value is negative.

The calculation of the terminal value of non-transmission infrastructure follows the same calculation, however in this case, carries a useful life of 30 years. However, these assets (such as roads) retain terminal value as such costs would not be duplicated by the subsequent owner. As a result, for a generation resource with a useful life of 25 years for example, the asset basis of the non-transmission

infrastructure will not be fully depreciated and will hold positive value upon sale. Based upon operational history, this component of the terminal value represents roughly 6% of the total.

The final component of terminal value are the development rights. Based upon multiple conversations with PAC on this subject, the development rights represent an estimated value that a future developer would be expected to pay for the rights to develop a similar project in the future. To be certain, this does not represent any form of future cashflow in perpetuity but is simply an estimate of the how valuable the access to the land right, the permitting, and the insolation or wind is, among other considerations of value. In present value terms, the development rights of a BTA are nominal and they are highly subjective. PA does observe that the same assumptions are used regardless of state or other qualitative characteristics of the resource which in reality will certainly affect the valuation of such rights. This component of value is actually immaterial in present value terms and represents an estimate based upon actual operations. PA does not believe the estimation indicates a form of bias, but simply a representation of uncertainty. PAC provided an explanation of this same.[19]

PAC also did not attribute any operational value to fully depreciated BTA resources. They did not assume a "run-to-failure", life extension or other operational strategy, instead assuming the plant would be decommissioned at the end of its useful life, realizing "brownfield" terminal value. In recent years PA have observed utilities and owners of Qualifying Facilities following life extension and recontracting strategies in favor of decommissioning. This may mean that PAC underestimated the value of the extension option. Such a change of assumption may cause differences in rankings between BTA bids; however, due to the time value of money and the lifespan of such assets, such a change would not be expected to meaningfully make BTAs more valuable than comparable PPAs.

6.3.3 Revenue requirement

The most substantial points of differentiation between PPAs and BTAs lie on the cost side of the equation. In lieu of the contracted price offered by a bidder under a PPA, which is reflective of the resource's construction, financing, taxes, and production costs, as well as on-going maintenance among other ancillary expenses as well as the inherent required return on investment, a resource under a BTA bid entails a number of different cost considerations.

First, a resource owned by PAC will be entered into PAC's revenue requirement calculation, which, for the purpose of evaluating the net benefit of a resource for ratepayers, is counted here as a cost of the project.

The annual capital revenue requirement is composed of the following inputs:

- Annual depreciation
- Allowed rate of return
- Current and deferred taxes
- Gain or loss on sale
- Amortization of any investment tax credit

Depreciation, for the purposes of the revenue requirement, is based upon the straight-line depreciation schedule reflective of the resource's useful life adjusted for an annual allocation of residual value. For example, a 25 year life resource with an in-service capital cost of $100 million and a residual value of $5 million (or 5% of total in service capital), will result in an annual depreciation expense of $100mm*(1/25)*(1+0.05%) or ~$4.2 million. Further adjustments are made depending on the actual payment schedule and the timing of capital expenses being put into service.

The allowed rate of return is simplistically calculated as PAC's allowed rate of return multiplied by an average monthly value[20] of the rate base, which in turn is determined as the period beginning plant-in-

[19] *PacifiCorp's Comments in Response to Staff Report*, filed in Docket UM 2069, June 26, 2020.

[20] The calculation of the average differs based upon the geographic state of the resource.

service amount less accumulated depreciation and deferred taxes. Given that the calculation of the rate base is done on a book basis, the monthly rate of return remains constant over the life of the asset with minor variations to account for differences in the number of days per month.

The gain or loss on the residual sale in present value terms accounts for a nominal component of the overall revenue requirement value, given that this cashflow takes place at the end of the resource's useful life. This value is calculated as the residual value of the asset net of the book basis of the asset[21]. In sample models evaluated, the result was a net gain on the residual sale resulting in a reduction of the total revenue requirement expense.

The final component of the revenue requirement is the investment tax amortization. In the case of the Investment Tax Credit (ITC), PAC is required to return the ITC ratably – an equal amount of the original credit each year – even though the company receives the ITC in a front-loaded fashion. That means that the present value of the ITC received by ratepayers is less than the present value of the ITC received by the utility. One assumes that a PPA bidder would compute its bid assuming that its costs are reduced by the ITC when received. Therefore, because the bid scoring model evaluates resources based on the discounted cost to ratepayers, the ITC has less beneficial impact on the score of a BTA bid that it would on the score of a PPA bid. Note, that for wind BTAs, PAC is able to monetize Production Tax Credits in the same way an independent developer, which may account for the greater competitiveness of BTA and PPA alternatives for wind resources.

PA reviewed the logic and the formulaic calculations for revenue requirements and observed that all BTA bids were consistently modelled by PAC. PA also requested that OPUC similarly review PAC's methodology as Commission staff should have greater specific understanding of PAC's revenue requirement computation. After conducting this assessment of each BTA bid and comparing the bids to equivalent PPAs, there was no evidence of bias for or against either type of bid structure. The result of the combination of PAC's revenue requirement on top of a bidder's own return hurdles, compounded by PAC's inability to account for ITC benefit at a resource level resulted in greater total costs for BTAs against only slightly greater total benefits. Wind resources which can make use of the PTC in some cases had more projected value than comparable PPAs.

6.3.4 O&M expenses

The final major area of differentiation between BTAs and PPAs is with regard to the calculation of O&M expenses. Under a PPA, the bid price is reflective of the bidder's anticipated O&M costs and as such, while it is likely that further revision of such expenses will take place through the contract negotiation phase of the RFP, the method by which O&M costs are estimated differs between the contract types and therefore deserved further review.

Per PAC's methodology, O&M costs are defined as the costs incurred directly to operate and maintain the generating plant itself and exclude payments such as property taxes, insurance, land royalties, performance bonds, various administrative and other fees, and overhead. O&M costs include supervision and engineering, maintenance, rents, and training.[22] O&M costs are further separated into storage operating costs (if applicable) and generation operating costs with further differentiation depending on the type of resource technology. If the resource employs storage, such costs are adjusted per operational data and scaled proportionally to the size of the storage capacity, which is then converted to a $/kwh basis and escalated monthly through the term of the project. Generation operating costs use a combination of bidder inputs (such as the land lease rent expense, royalties,

[21] Book basis is equivalent to the capital value less accumulated depreciation.

[22] As described in the footnotes contained in PacifiCorp's template bid models dated July 28, 2020.

and auxiliary costs) and benchmark inputs of representative solar[23] and wind resources[24] for the fixed cost (the fixed cost generally accounting for ~70% of total O&M costs). The benchmark fixed operating costs were applied uniformly as baseline expense to all solar BTA bids, and this baseline was then adjusted according to geographic and technological considerations (such as tracker maintenance and vegetation management). Finally, these costs were then allocated according to the production profile and adjusted for inflation.[25]

PAC's methodology for determining costs for resources with storage entails the use of StorageVet, a publicly available, open source storage valuation tool developed by the Electric Power Research Institute[26] as well as the use of the fixed O&M cost data as presented in PAC's 2019 IRP.[27]

PA recognizes there is likely a difference in the level of confidence between the costs presented by a bidder and PAC's estimation of operating costs based upon resource characteristics and third-party inputs. Given the fact that at the time of the ISL, bidders were requested to provide redlines and issue lists to the template O&M agreements which would then be followed with a period of negotiation to reach executable agreements, there would be natural and expected divergences between quoted prices and the value of generation net of all O&M costs under a BTA. Further, since the cost of the PPA reflects the bidder's required return on investment and potentially a margin on O&M fees, comparison of PPA O&M costs against BTA O&M costs is imperfect. As a result, PA's assessment of the O&M costs relied on review of PAC's inputs and methodology for determining BTA O&M costs, which PA views as a commercially reasonable and defensible approach to estimating such expenses.

6.3.5 BTA bids accepted for the FSL

Two wind BTA bids were accepted for the FSL, one with a 190 MW capacity and the other with a 400 MW capacity. We were unable to directly compare these with PPA bids as there were no updates to the original corresponding PPA bids (the original bids for 25-year PPAs from each of the BTA offers); instead we assumed the original corresponding PPA prices had increased, from FSL to ISL, at the median observed rate of increase. These represent the "corresponding FSL PPA prices" for the accepted FSL BTA bids. It must be borne in mind that the original corresponding PPA bids scored less well that the bidders' original BTA bids. A PPA bid of equivalent value to those bids would have been lower-priced.

We compared the corresponding FSL PPA prices for the BTA bids to the prices for FSL-eligible PPA bids, converting escalated bid prices to levelized prices where needed. The accepted BTA bids' corresponding FSL PPA prices were higher that the prices of the wind PPA offers accepted onto the FSL, and lower than the price of one of the wind offers not accepted. The second offer had a slightly lower PPA price, but not lower than our estimate of the PPA price that would have produced equivalent value in the case of one of the BTA bids, and close in the other – and the levelized generation value of the other bid, at a different location, was significantly less than that of either of the accepted BTA bids. Therefore, we believe that these BTA bids reasonably belong on the FSL and were not included out of any favoritism or model bias.

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[23] Benchmark costs per: *Utility Scale Solar, Empirical Trends in Project Technology, Cost, Performance, and PPA Pricing in the United States* –2019 Edition, Lawrence Berkeley National Laboratory.

[24] Benchmark wind fixed operating costs per operational data scaled up or down based upon the size and number of wind turbines in the project.

[25] See Docket UM 2059, Order 20-228, pages 5-6 regarding the rationale for applying this assumption.

[26] For more information about StorageVet, see: https://www.storagevet.com/

[27] 2019 IRP Volume I, Table 6.2, page 137.

6.4 FSL Resources in Comparison to IRP Goals

PAC developed the 2020AS RFP based on an action item in its 2019 Integrated Resource Plan to conduct an all-source RFP in 2020. PA reviewed the FSL in the context of the IRP goals to evaluate whether the FSL is broadly aligned with the IRP's preferred portfolio and to identify any material differences.

PAC has told PA that, by design, the FSL selection process did not explicitly reference the IRP goals. While the RFP cited the IRP and its preferred portfolio, the capacities specified in the preferred portfolio were considered by PAC to be broad guidelines, rather than specific targets. This is consistent with industry best practices related to planning goals vs. procurement targets. IRPs are best viewed as conceptual and strategic roadmaps, providing the broad contours of future resource types and sizes which were determined via the IRP planning models to be optimum for the PacifiCorp system. This is in contrast to specific procurement targets, if any; the 2020AS RFP did not identify a specific target MW of any resource type or location.

PAC's IRP planning models are comprehensive and contain assumptions related to the current and future operation of PAC's generation and transmission systems. However, as the assumptions related to PAC's 2019 IRP were necessarily dated by the spring of 2020 when the models were being used to select the FSL, PAC updated these assumptions prior to conduction the FSL selection analysis. In addition to typical assumptions such as market and fuel prices, projected load and demand growth, etc., the IRP planning models also include assumptions related to the cost of future new resources. As the prices bid into the RFP for proposed resources were different than the previous, nearly 18-month old assumptions used to develop the 2019 IRP, it is appropriate that PAC focused on selecting the FSL based on current market information and that the Final Shortlist does not replicate the IRP preferred portfolio in total MW or by resource type.

However, the FSL is reasonably aligned with the original 2019 IRP preferred portfolio. Table 6-4 below provides a comparison by resource type.

Table 6-4: IRP Preferred Portfolio vs. FSL

Resource Type	IRP Preferred Portfolio (MW)	FSL (MW)
Wind	1,920	1,792
Standalone Solar	NA	95
Standalone BESS	NA	200
Solar + Storage	1,823 + 595	1,358 + 537
Total MW	**4,338**	**3,982**

7 RECOMMENDATIONS

Throughout this report, references were made to certain observations and recommendations PA has which should be considered prior to the development of PAC's next resource solicitation process. These recommendations are categorized into process-related topics and analysis-related topics. These recommendations do not cover the model focused issues identified in PA's ISL report.

Process Related Observations and Recommendations:

- The size of the overall procurement represented a substantial hurdle to all parties involved. The diversity of technologies, geographies, variants, and counterparties represented a clear burden and stress on the RFP process. The number of bids which needed to be evaluated, reconciled, sampled, and run through various forms of modelling tools caused process delays and introduced a highly likelihood of error. PA believes that PAC did a commendable job managing this volume, however it was clear that steps such as notifying bidders of being selected or not selected became substantially more complicated
- The transition from the interconnection queuing process to the cluster process and the resulting conflict and lack of clarity regarding bids which held LGIA's and those that did not should have been anticipated and potential bidders should have received explicit guidance as part of the pre-bid RFP process. PA expects that LGIA holding resources are likely to be in the queue during PAC's next solicitation. It is in the best interest of all stakeholders if PAC takes steps to reassure potential bidders in the subsequent solicitation that the results of the 2020AS RFP (meaning that few non-LGIA bids were selected to the ISL and that all cluster study participants were subsequently deemed ineligible) was a combination of the contractual obligations of the LGIA's and the outcomes of the economic models and interconnection timelines. It is important that future bidders without LGIA's are remain incentivized to participate in subsequent solicitations. Failure to address and alleviate this concern runs the risk of dampening the competitiveness and diversity of future resource selection
- Nearly all participants in the Transition Cluster Study were issued a simple 72-month timeline for interconnection. While PA recognizes that there is a required separation between the merchant and transmission sides of the business, the result of all such bids to be deemed ineligible against the required commercial operation date should have been managed differently. PA expects that there should be a means to develop a plan with PAC Transmission regarding the level of detail on interconnection cost and schedule that is project-specific or otherwise detailed enough to be actionable for bidders as it related to cluster level schedule
- When PAC determined that the cluster study timelines meant that bidders would be unable to meet the RFP's deadline for operation several offerors objected that in reality (in their opinion) interconnection would be achieved much earlier. Future RFPs can be designed with contracts so that if PAC moves to rule a bidder ineligible due to a similar forecast, which the bidder believes unrealistically pessimistic, the bidder could be allowed to remain in the RFP subject to acceptance of the schedule risk (i.e., no force majeure or excused delay if interconnection is later than hoped but still within PacTrans' timeline)
- All but one bidder increased price between the bid submission and bid repricing dates. A number of factors could go into this, however the length of time that bids are held open before being contracted increases the likelihood of price escalation. If such consequences cannot be mitigated through the schedule, PAC may investigate whether a limit can be placed on the amount of price escalation with respect or that price escalation needs to be justified as part of the re-pricing process.

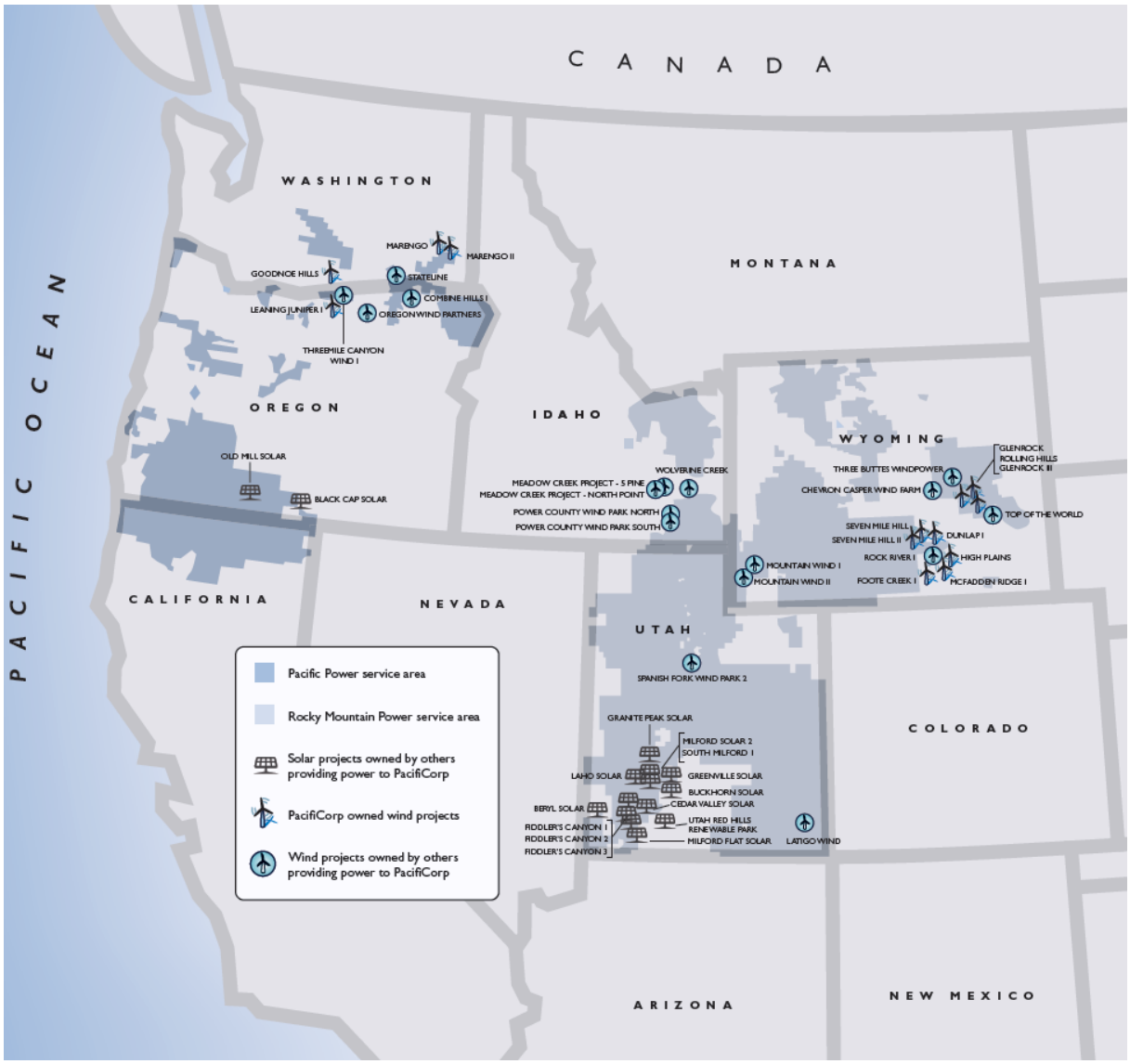
Analysis Related Recommendations:

- During the RFP process it became clear that the StorageVet tool used to determine the value of storage was not consistently providing reasonable results. This pertained to certain resource types (such as pumped storage), certain resource attributes (such as resources with a high ratio of storage to generating capacity), and certain market conditions (such as the expectation of perfect energy arbitrage). PA understands that a new version of the tool is under development. PA recommends that, in the absence of another tool being adopted and approved for use by PAC, that PAC provide feedback to the authors and facilitate in user group discussions.

APPENDIX A PROXY RESOURCE MAP

The map below was provided by PacifiCorp as of November 16, 2020 and provides a view of the proxy resources used to adjust a bidder's identified hourly generation profile to better align with PacifiCorp's 2018 profile.

Note: the map does not include PacifiCorp owned, contracted or QF 2020 resources that may have recently been commissioned or will be commissioned by the end of 12/31/20.



APPENDIX B IMPACT OF LGIAS AND ADDITIONAL PROJECTS

The following appendix provides a review of the analysis which was done regarding the impact of LGIA's on the ISL. PA previously reported this information, in this form, in its Bid Scoring Status Report.[28] It is reproduced here for completeness and for archival purposes.

During the process of receiving bids, modelling each bid, and evaluating the ISL process, PA and PacifiCorp had several discussions regarding the modification of the evaluation or sequence of evaluations, described in the 2020AS RFP, to account for the presence of bids from many projects with executed Large Generator Interconnection Agreements. During these discussions, PAC and the IEs developed a range of potential solutions and ultimately on the following approach regarding LGIAs, the effect of those LGIAs, and the impact on the overall RFP process. PA recognized that a number of bidders and rate payer advocates, as well as the OPUC, expressed concern that specifically limiting capacity from bids without LGIAs may result in a sub-optimal portfolio and that otherwise competitive bids would be excluded from the process. From PA's review and following PAC's agreement with this approach regarding the inclusion of additional projects, PA believes that the ISL addresses both concerns of optimization and cost competitiveness.

B.1 Overview

It is PA's understanding that an executed LGIA may be considered as a license or option to interconnect to the PacifiCorp Transmission system with an identified cost. For projects that executed LGIAs through PacifiCorp Transmission's prior serial queue process, the assumed cost for system reliability upgrades, as well as any timing estimate in the LGIA, was based on the assumption that projects with LGIAs earlier in the queue would already be present. Existing LGIAs all came from the queue process.

PacifiCorp Transmission is transitioning to a cluster process for interconnection, in which multiple interconnection requests will be considered simultaneously, and each studied request will be assigned a share of the costs of the system reliability upgrades for which it is partly responsible. Note that the determination of required upgrades assumes that all projects that obtained LGIAs from the queue projects, including those whose LGIAs have been (temporarily) suspended, are already online, and that the associated upgrades had already been constructed.

A simplifying assumption is that the per-MW cost of reliability upgrades in a transmission zone increases with the amount of interconnected capacity. In other words, the upgrades whose costs had been allocated to projects with LGIAs were the "low-hanging fruit". Bids submitted to the cluster study from TCAs where a significant amount of interconnection had already been effectively promised through LGIAs could have significantly higher upgrade costs.

The ISL was selected without regard to transmission costs. PAC was concerned that selecting an ISL dominated by bids without LGIAs in those zones where there was a significant amount of capacity with executed LGIAs could have undesirable consequences for the eventual FSL portfolio. Bids that lacked LGIAs and were assigned high interconnection costs could withdraw, or even if their interconnection costs were reasonable, PacifiCorp Transmission might not guarantee interconnection soon enough for a 2023 or 2024 online date. PAC would then be left with a set of bids that did not achieve the capacity goal and would likely need to add back some of the projects with LGIAs, but without any guidance

[28] PA Consulting Group, *Updated Status Report on PacifiCorp's 2020AS RFP*, filed in OPUC Docket UM 2059, November 20, 2020.

from the IRP models as to which projects (and bids) to add. While this sequence of events may be unlikely, PA agreed that it cannot be ignored and that such result may make it impossible to achieve a high level of certainty that the resulting portfolio represents the least cost option.

A variety of potential solutions were evaluated by PAC and the IEs. The following is PA's summary of those discussions, which PA feels are fundamental to the subsequent steps that were taken to ensure that the best available resources were not excluded as a result of LGIA status.

B.2 Approach and alternatives

On September 30, 2020, PAC presented its approach to the initial scoring and ranking of projects to the IEs. PAC stated that in each geographical bubble the cumulative nameplate capacity of bids for each technology type passed to the IRP models (SO) from bids without LGIAs would be at most the bubble limit defined in the 2020AS RFP Appendix H (generally 150% of the preferred portfolio capacity) less the total interconnection capacity of projects in that bubble that held executed LGIAs and had submitted a bid for any technology. Accordingly, bids would be passed to the IRP models from approximately 25 projects with signed LGIAs plus approximately 30 projects without LGIAs, collectively termed for the purpose of this report as the "Original ISL Candidate List".

The IRP models would then select bids from among the Original ISL Candidate List with a constraint to select from each bubble no more nameplate capacity than the bubble limit. The IRP models would be required to maximize bid value while selecting enough capacity to meet the planning reserve margin in 2030 ("capacity" here means capacity contribution, not nameplate). Further, the IRP models would select at most one bid from each project. While the Original ISL Candidate List was essentially a list of projects (including all bids from each project), the output from the IRP models represented a list of bids, termed here as the "Original ISL Bid List".

Further discussion was held regarding how to treat bids that had high initial scores but no executed LGIA and were not passed to the IRP models. PA identified those bids with the four-step methodology described in B.3. PA and the Utah IE suggested that PAC add these bids to the Original Candidate List (creating a "Revised Candidate List) and run that list of bids through the IRP models resulting in a "Revised ISL Bid List". In PA's view, this approach would be most faithful to the process described in the RFP. PAC's concern, as noted in B.1, was that the added bids would be on the revised ISL list in place of some of the bids with LGIAs and, if they later withdrew, insufficient capacity would be available for selection to the FSL.

A "combined" approach discussed by PAC and PA would be to run both the original and revised candidate lists through the IRP models, creating both the original ISL and revised ISL bid lists, and then combine those lists to get a consolidated ISL. PAC agreed that this approach would address concerns with the first alternative and would include enough bids from projects with LGIAs to ensure the capacity target is met. The limiting factor of this approach was related to time – PAC determined that running both lists through the IRP models and conducting the cross analysis as suggested could not be achieved within the timeframe by which bidders needed to give notice to PacifiCorp Transmission of ISL selection and entry to the cluster study.

Ultimately, a simplification of the combined approach was taken in which PAC placed all the bids on the Original ISO Bid List, plus certain high ranked bids, on the ISL and allowed for the RFP to remain on schedule. The following explains this process and the results.

B.3 Impact Assessment

Both IEs reviewed the Original ISL Candidate List to assess the impact of LGIAs on PAC's determination of the ISL. PA identified 14 bids that would have been selected if bids had competed with no consideration of LGIA status. However, based on PA's discussions with PAC and the language in the OATT and FERC's May 12 order, it appears that any bids in the Eastern Wyoming region would be highly likely to be allocated prohibitively high interconnection costs in the transition

cluster study and would not be competitive with bids having executed LGIAs. Therefore, PA understood PAC's decision to exclude these projects from the Original ISL Candidate List.

The IEs suggested that to be consistent with the RFP and to ensure that bids with prices attractive enough to potentially overcome their transmission upgrade costs could be recognized, 11 additional bids be included in the original candidate list. With the exception of two bids that PAC determined to be too large and uneconomical, PAC agreed to the inclusion of these bids on the ISL.

In order to determine which, if any, bids would have been included absent other bid's restriction on interconnection capacity due to LGIA status, PA undertook the following steps to analyse the impact:

4. Segment all bids by technology type and by region
4. Create rank orders of bids by type, by region, and by price score
5. Identify bids up to the interconnection limit by region for each technology type
6. Compare resulting list of bids that would have been eligible for SO modelling to the list of bids after interconnection capacity is reduced by LGIA capacity

Table B-1 below provides a summary of the additional bids added to the ISL.

Table B-1: Additional bids added to the ISL

Bid	Technology	Transmission Bubble	Generator Capacity (MW)	Storage Capacity (MW)	Storage Duration (Hrs.)
Bid 1-A	Solar + BESS	Utah North	302.4	75.6	4
Bid 1-B	Solar + BESS	Utah North	302.4	75.6	2
Bid 2-A	Solar	Utah South	80.0	0.0	0
Bid 2-B	Solar + BESS	Utah South	80.0	80.0	4
Bid 3-A	Solar	Utah South	200.0	0.0	0
Bid 3-B	Solar + BESS	Utah South	200.0	50.0	2
Bid 4	Solar + BESS	Utah South	80.0	80.0	4
Bid 5-A	Solar	Wyoming SW	80.0	0.0	0
Bid 5-B	Solar + BESS	Wyoming SW	80.0	20.0	4
Bid 6-A	Solar	Wyoming SW	50.0	0.0	0
Bid 6-B	Solar + BESS	Wyoming SW	50.0	12.5	4

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