‘HIGHLY CONFIDENTIAL - - CONTAINS COMMERCIALLY SENSITIVE INFORMATION --
SUBJECT TO UTAH PUBLIC SERVICE COMMISSION RULES R746-1-602 AND 603”

Redacted

Highly Confidential/Proprietary Information

Shortlist Report of Merrimack Energy Group, Inc.

To

Utah Public Service Commission

PacifiCorp 2020 All Source Request for Proposals

(2020AS RFP)

Docket No 20-035-05

September 2021

Merrimack

M

Energy

Table of Contents

I. Introduction

Merrimack Energy Group, Inc. ("Merrimack Energy") was retained by the Public Service Commission of Utah ("Commission") to serve as Independent Evaluator ("IE") for PacifiCorp's ("PacifiCorp" or "Company") 2020 All Source Request for Proposals ("2020AS RFP"). Task B7 of the IE Scope of Work ("Shortlist Report") requires the IE to file a draft report to the Commission and Utah Division of Public Utilities ("DPU" or "Division") detailing the methods and results of PacifiCorp's initial screening and full evaluation of all bids. The final shortlist report is to be filed with the Commission and the DPU within approximately two weeks of PacifiCorp's selection of the Final Shortlist ("FSL"). The IE is required to include a description of the bids[1] and the selection criteria, including interconnection queue reform, the basis for selection of shortlisted bids, and the rationale for eliminating bids. Within approximately one week of receipt of comments on the shortlist report, the IE shall make the necessary modifications and file the report with the Commission and provide a copy to the DPU.

On June 8, 2021[2] PacifiCorp presented its FSL slide deck presentation on the 2020AS RFP to the Utah and Oregon Independent Evaluators and the Division Staff summarizing the results of its evaluation and proposed selection of the final shortlist. An initial meeting attended by the IEs and representatives from the Division Staff to discuss the final evaluation results and recommended portfolio of projects took place on June 9, 2021. The IEs reviewed the presentation and prepared a list of questions and comments for PacifiCorp. Follow-up meetings were held between PacifiCorp and the IEs after the initial meeting following FSL selection.

The FSL proposed by PacifiCorp in the June 8, 2021 presentation was comprised of nineteen (19) projects, with a total nameplate capacity of 3,445 MW of renewable generation and 534.5 MW of Battery Energy Storage Systems ("BESS").[3] The total capacity contribution of the portfolio was estimated to be 1,029 MW.[4] The FSL was comprised of a portfolio of several resource types (i.e., seven wind projects, one solar only resource, one standalone storage project, and ten solar combined with storage options). In addition, the portfolio selected included several contract structures (i.e., Power Purchase Agreements ("PPA"), Battery Storage Agreement ("BSA"), and Build Transfer Agreements ("BTA")), different project sizes, contract terms (i.e., 20, 25, and 30

[1] In this report, the terms "bid" and "proposal" are used interchangeably.

[2] As will be discussed in this report, PacifiCorp made two additional revisions to evaluation results after the initial FSL provided on June 8, 2021.

[3] PacifiCorp reported Total Maximum Capacity (MW) of 3,445 MW which includes 200 MW of standalone BESS in this total as opposed to including the 200 MW in the storage total along with the battery energy storage capacity selected in combination with solar Photovoltaic ("PV") projects. Since all solar options were solar PV projects, this report refers to solar projects as associated with solar PV projects.

[4] Based on a question raised by Merrimack Energy with regard to potential discrepancies in the generation profiles of the [redacted] proposals, PacifiCorp conducted a review of other shortlisted projects and conducted a review and assessment of the evaluation results. PacifiCorp provided a revised FSL to the IEs on July 20, 2021, which illustrated a reduction in the capacity contribution of selected portfolio of approximately 30 MW to 998 MW.

years), BESS durations (2-hour and 4-hour duration batteries)[5], battery sizes relative to the generation resource size (25% to 100% of the underlying resource size) and Commercial Operation Dates ("COD") for 2023 and 2024. As described above, solar combined with storage was the predominant resource selected in terms of number of proposals and capacity contribution. While there was more wind generation capacity selected, the capacity contribution of the wind was much lower than the combined solar plus storage capacity. Combined solar plus storage and standalone storage combined to provide 70.1% of the capacity contribution provided by the portfolio. Also, as part of the FSL PacifiCorp selected BTAs with Invenergy for the Rock Creek I (190 MW) and Rock Creek II (400 MW) wind projects, the only projects included on the FSL that PacifiCorp would ultimately own.

PacifiCorp relied upon its IRP models (i.e., System Optimizer ("SO" or "SO Model") and Planning and Risk model ("PaR" or "PaR Model") to conduct its analysis of the FSL options. For shortlist evaluation and selection, PacifiCorp started with a list of twenty-seven eligible projects. PacifiCorp initially evaluated six price-policy scenarios including low, medium and high gas/market price scenarios and no, medium and high carbon prices.[6] Under the medium (MM) case, twenty-two projects were selected. PacifiCorp noted that this case generated $323 million in net benefits when compared with a portfolio without any bid resources included.[7] However, PacifiCorp proposed to select the SNS(MM)[8] portfolio as the preferred portfolio, which included three fewer projects than the MM portfolio. PacifiCorp proposed to select the SNS(MM) portfolio for a few reasons. First, PacifiCorp noted that in the MM case, it would select three more projects which would produce additional generation that would have to be sold into the market. Second, the three projects that would be eliminated in the SNS case [redacted] were among the highest Net Delivery cost bids, with low Net Benefits. Relative to other similar projects, these projects were high-cost projects. PacifiCorp's view was that it should be able to easily replace these resources through future solicitations with lower cost bids.

Ten of the projects selected for the FSL are located in Utah, including eight solar combined with storage projects, one solar PV project, and one standalone Storage project. The total capacity of the projects is 1,443 MW of nameplate capacity with an additional 482 MW of storage capacity. In response to a question from Merrimack Energy regarding the requirements for Gateway South relative to the information included in the recently completed transitional cluster studies, PacifiCorp stated that for Transitional Cluster Study Area 2 (including Northern Utah), the Gateway South project was not identified as a Contingent Facility necessary for interconnection of generation facilities in the Cluster

[5] The duration of the battery refers to the number of hours the battery can operate at guaranteed capacity as illustrated in the RFP.

[6] For the revised FSL, PacifiCorp added a seventh portfolio selection scenario which included low market price-policy assumptions. The price-policy scenarios are addressed in more detail later in the report.

[7] Since all scenarios are designed to meet system reliability requirements, the no bid scenario relies on a combination of other resources, including Front Office Transactions ("FOT"), additional Demand Response and Energy Efficiency options, generic renewable and other resources.

[8] The SNS(MM) case is based on medium gas/market price, medium carbon price, but no wholesale market sales.

Study. For Transitional Cluster Area 1 (Wyoming) and Area 4 (central/southern Utah), the Gateway South project is a Contingent Facility, indicating that this project is required prior to interconnecting the generation projects studied through the Cluster Study process. However, only shortlisted projects located in Wyoming are contingent on Gateway South. Shortlist projects in Utah with existing Large Generator Interconnection Agreements ("LGIAs") are not contingent on Gateway South.

In reviewing the FSL evaluation results, Merrimack Energy submitted a question to PacifiCorp regarding the generation profile for the [redacted] option. Based on this, PacifiCorp notified the IEs that it would have to undertake a review of the proposals to correct any errors and would have to re-run the evaluation. PacifiCorp provided a revised slide deck presentation of the FSL ("FSL 2") on July 20, 2021and submitted an Update to Request Acknowledgement of the Final Shortlist of Bidders in the 2020 All-Source RFP in Docket UM 2059 in Oregon. PacifiCorp concluded based on updated modeling using the SO and PaR models that portfolios with resources from the RFP provided system benefits when compared to portfolios without RFP bids. While PacifiCorp concluded that its updated analysis did not result in any changes to the FSL from its June 15 filing in Oregon, assessment of the portfolios under the MM price-policy scenario (medium gas/market price, medium carbon price) illustrated that the LN bids portfolio[9] was the least cost portfolio based on the cases run for the initial FSL. PacifiCorp was concerned that the Present Value Revenue Requirements ("PVRR") advantage associated with the LN portfolio may be attributable to the selection of proxy resources to fill the gap in resources selected. In addition, PacifiCorp assessed the longer-term cost differences in the portfolios and indicated that the FSL portfolio had higher costs in the initial years but lower costs and more stable rates over the longer term.[10] PacifiCorp also noted that the inclusion of Gateway South to support the selected FSL would strengthen the transmission system at Mona/Clover, allowing additional renewable generation in southern Utah with new transmission development.

At the Oregon PUC ("OPUC") workshop held on August 5, 2021 to discuss final shortlist sensitivities requested by the OPUC staff, PacifiCorp informed the participants that in preparing responsive materials for the workshop, PacifiCorp realized it had overstated the combined cost of Gateway South and sub-segment D.1 by 22.7% in its evaluation of proposals. PacifiCorp noted that correcting the cost would only improve the relative economics of the FSL bid portfolio relative to the LN bid portfolio.

On August 12, 2021, PacifiCorp filed PacifiCorp's 2020 All-Source Request for Proposal – Updated Request for Acknowledgement of Final Shortlist of Bidders in 2020 All-Source Request for Proposals (Corrected Updated Request) in Oregon Docket UM 2059.

---

[9] The LN bids portfolio is comprised of 6 solar combined with storage projects and one stand-alone storage project, all located in Utah. The portfolio did not include Wyoming wind projects or Gateway South.

[10] PacifiCorp noted in its Update to Request for Acknowledgement of Final Shortlist of Bidders in Oregon on July 21, 2021 that through 2032, the LM bid portfolio was lowest cost, but relative to other bid portfolios, costs escalate sharply thereafter. In addition, both PacifiCorp and the Oregon IE concluded that the LN portfolio which has fewest bids has the greatest rate risk due to reliance on market purchases and proxy resources. Selecting more bids from the RFP reduces rate risk through more stable and fixed pricing via long-term contracts for these resources.

PacifiCorp stated that this filing corrects the cost of Gateway South and sub-segment D.1 transmission segments. PacifiCorp's results illustrate that the analysis did not result in any changes to the FSL. PacifiCorp's analysis illustrated that when applying medium natural gas price and medium CO2 price-policy assumptions, updated present value customer net benefits from the final shortlist, after accounting for the cost of the transmission projects and all interconnection network upgrades, totals $604 million relative to a case where no final shortlist bids are procured.

Review of PacifiCorp's evaluation results now illustrate that due to the reduction in the cost of the Gateway South project, portfolios associated with the selected FSL of projects overall are the lowest cost portfolios under MM case conditions. In particular, the MM portfolio, FSL SNS (MM) portfolio, and the SNS Bids-LN portfolio are all now lower cost than the LN portfolio, which included only solar combined with storage projects and one standalone storage project located in Utah. The reduction in the cost of Gateway South shifts the economics to prefer portfolios with a diversity of resource options in different locations on the PacifiCorp system. A more detailed discussion on the FSL evaluation and selection process is provided later in this report.

The process leading to evaluation and selection of the FSL marked the results of a lengthy solicitation process which included selection of an initial shortlist in October 2020, followed by an approximately six-month period in which eligible projects were included in the Transition Cluster Study process[11] undertaken by PacifiCorp Transmission, and culminating in best and final offers and evaluation and selection of a FSL. This process involved review and discussions between the Company, IEs[12] and Division pertaining to the evaluation methodology and process as outlined in the RFP. The modeling steps identified above use PacifiCorp's integrated resource planning modeling tools/systems as well as resource portfolio development principles applied for the 2019 and previous Integrated Resource Plans ("IRP"). The portfolios of resource options were assessed based on overall system cost, (on a PVRR basis) associated with each portfolio. In addition, the modeling methodologies used allow the Company to assess risk associated with each portfolio under a number of input assumptions and gas price/market price and carbon price scenarios/cases.

PacifiCorp began conducting its review and evaluation of the proposals shortly after initial proposals were received on August 10, 2020. Initial Shortlist ("ISL") selection occurred on October 25, 2020. The two plus month period from receipt of proposals to

[11] FERC issued its Order on Tariff Revisions in Docket NOS ER-20-924-000 and 001 on May 12, 2020. The Order approved changes to PacifiCorp's interconnection procedures which proposed to replace its "first-come first-served" serial queue interconnection approach with a "first-ready first served" cluster study approach. In its May 12, 2020 Order FERC largely approved PacifiCorp's proposed changes. The approved changes were designed to help clear PacifiCorp's interconnection queue by only allowing viable projects to move forward. Other proposed projects would be allowed to enter the queue after they meet certain commercial readiness criteria or provide appropriate deposits.

[12] Both the Public Service Commission of Utah and the Oregon Public Utilities Commission retained IEs to ensure the solicitation process was undertaken in a fair and equitable manner for all bidders and resulted in the greatest amounts of benefits for customers. The Oregon Public Utilities Commission retained PA Consulting Group as its IE. Both IEs were actively involved in the process.

selection of the ISL involved considerable interaction between PacifiCorp, the IEs, and Oregon Commission and Utah Division staffs associated with review, assessment, evaluation and initial shortlist selection of proposals.

During the months of September - October 2020, PacifiCorp provided the IEs with model output files and presentations containing the evaluation results for ISL review and selection, model runs for each proposal, and the results of the SO model, along with files related to proposals submitted, projects with executed LGIAs, and a list of conforming and non-conforming proposals. The documents provided by PacifiCorp to the IEs served as the basis for review and discussions and as supporting information for the selection of the ISL in October, 2020. Subsequently, after a nearly six-month period after ISL selection for completion of cluster studies for eligible projects, the FSL selection process was initiated, comprising best and final offers from remaining eligible bidders/projects and evaluation and selection of a final proposed shortlist in June, 2021.

PacifiCorp presented the evaluation results to the IEs at each phase of the evaluation process (i.e., Phase 1 – Initial Shortlist, Phase 2 – Interconnection Cluster Study, and Phase 3 – Final Shortlist). Conference calls were held between PacifiCorp, the IEs, and Division staff to discuss the results and address any questions during each Phase. The evaluation results presented by PacifiCorp and reviewed and verified by the IEs will be discussed in this Report. All of these documents submitted by PacifiCorp should be classified and marked as "Highly Confidential".

This report complies with the requirements of Task B7 of the IE Scope of Work. This report will provide an assessment of the evaluation and selection processes for the ISL and FSL, focusing on the evaluation of the proposals received and selection of the preferred proposals or portfolios. The report will describe the methodology used by PacifiCorp to undertake both the ISL and FSL evaluation and selection and will summarize the results of the evaluation by bid. Detailed proposal summaries and evaluation results prepared by Merrimack Energy or by PacifiCorp during the solicitation process and reviewed by the IEs are included in the Appendix to this report.

II. Background

A. Regulatory Process

On January 23, 2020, Rocky Mountain Power ("RMP") submitted a Notice of Intent for approval of a solicitation process under Part 2 of the Energy Resource Procurement Act, Utah Code Ann. Title 54, Chapter 17, to solicit bids for up to 6,000 MW of renewable and non-renewable resources plus approximately 600 MW of battery storage capable of delivering energy and capacity to PacifiCorp's system for service on or before December 31, 2023.

The 2020AS RFP was initiated based on an action item resulting from PacifiCorp's 2019 IRP to conduct an All-Source RFP in 2020.[13] The 2019 IRP's preferred portfolio included 1,823 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 to be in service by the end of 2024.[14]

The RFP was designed to solicit proposals from renewable resources, renewable energy combined with battery energy storage projects, non-renewable, including gas-fired generation, standalone battery storage projects, and pumped storage hydro projects. Allowable bid structures included PPA, BTA, and BSA agreements. The RFP was open to new and existing[15] resources with a minimum size of 20 MW. Resources must be capable of interconnecting with or delivering to PacifiCorp's transmission system in its east or west balancing areas.

The RFP also identified thirty-one minimum eligibility requirements bidders would have to meet to be eligible to proceed in the evaluation process. As noted in the RFP, PacifiCorp reserved the right to deem proposals non-conforming and eliminate the proposal from further consideration if a proposal did not comply with the listed requirements.

Bidders must pay a bid fee to compete in the solicitation process. The base bid fee allowed the bidder to submit a base bid and two alternatives. Alternatives would be limited to different contract terms, in-service dates, and/or pricing structures. Bidders were also allowed to submit additional bid fees for additional alternatives to the base bid.

Throughout the development and implementation of the RFP process, PacifiCorp engaged the bidders and stakeholder on numerous occasions and maintained an open and transparent process which included presentations and workshops with bidders, bidder conferences, a very active Question and Answer ("Q&A") process, and a formal comment process during the development of the RFP. Throughout these presentations, PacifiCorp identified the shortlist evaluation and selection process to the bidders, IEs, and various Regulatory staffs, and other stakeholders. While the description of the evaluation and selection process may not have been refined during the initial presentations, the IE felt that the RFP document contained a clear description of the process after responses by PacifiCorp to comments by stakeholders and the IEs regarding clarification language in the RFP to describe specifically the process to be used for evaluation and shortlist

[13] While the 2020 All Source solicitation process was initiated in January 2020, the final version of the RFP was issued to the market on July 7, 2020.

[14] PacifiCorp noted in the RFP that after the 2019 IRP was filed, federal legislation was passed extending the Production Tax Credits ("PTC") to allow projects that secure safe-harbor equipment such as wind turbine generators or begin construction in 2020 to receive a 60% PTC if placed into service by year-end 2024. As a result, PacifiCorp stated that the RFP will consider bids that can achieve commercial operations before or on December 31, 2024.

[15] PacifiCorp agreed to accept bids from existing operating facilities subject to the following conditions: (1) the Bidder cannot terminate an existing contract to bid into the 2020AS RFP; (2) the existing contract must expire before the required on-line date as proposed in a bidder's proposal but no later than December 31, 2024; (3) the bid must meet all other requirements in the 2020AS RFP.

selection. As a result, the description in this report regarding the requirements listed in the RFP issued to the market on July 7, 2020, in conjunction with the implementation of the evaluation and selection process, will serve as the basis for review in this shortlist report.

On April 9, 2020, RMP filed an application for approval for a 2020AS RFP ("Application"), and included a draft copy of the 2020AS RFP. According to the application, PacifiCorp proposed to add up to 1,823 MW of new proxy solar resources co-located with 595 MW of new BESS capacity and 1,920 MW of new proxy wind resources. The RFP required proposals to demonstrate that projects would achieve commercial operation no later than December 31, 2024. Subsequently, several parties submitted comments and Merrimack Energy filed the Report of the Independent Evaluator on the draft RFP as required on June 3, 2020, providing comments and recommendation for the design of the RFP.

As a result of the comments of parties and the reports submitted by the IEs, PacifiCorp agreed in its Reply Comments on June 15, 2020 to make several revisions to the RFP. On June 18, 2020, RMP filed a Supplemental Reply, with additional revisions which it inadvertently omitted based on Merrimack Energy's comments. Changes made to the RFP included the following:

- Removed nuclear resources from the list of long-lead resources;
- Accepted bids from existing resources subject to specified conditions;
- Revised four Minimum Bid Requirements listed in the RFP;
- Made clarifications to the evaluation methodology to make the process more transparent for bidders;
- Allowed bidders for PPAs and standalone storage resources the option to submit bids with contract terms up to 30 years;
- Made revisions to the non-price evaluation criteria as requested;

After making revisions to the RFP to reflect the comments of the stakeholders in both Utah and Oregon as well as the comments of the Oregon and Utah IEs, on July 6, 2020 PacifiCorp submitted its Notice of Final 2020AS RFP. The 2020AS RFP was issued on July 7, 2020.

The Utah Public Service Commission issued its Order on July 17, 2020 approving the Final Proposed RFP. The Order:

1. Approved the Final RFP as proposed by PacifiCorp;
2. Approved PacifiCorp's request for a waiver of Utah Admin. Code R746-420-3(10)(a) requiring the IE to blind all bids for the evaluation process;
3. Directed the IE to set up and maintain a webpage or database for information exchange between bidders, potential bidders, and PacifiCorp;
4. The Commission found that the commitments made by Rocky Mountain Power in its Supplemental Reply regarding scenarios to assess the competitiveness of the Gateway South transmission line were reasonable and adequately address this issue including the following RMP commitments: (1) if the final shortlist

evaluation includes bids dependent upon Gateway South, RMP will perform, at a minimum, a sensitivity that removes Gateway South and all bids that require Gateway South; and (2) if the final shortlist evaluation includes bids dependent upon Gateway South, RMP will perform a sensitivity that replaces Gateway South with an alternative transmission build-out scenario that is reasonably aligned with options identified in the Northern Tier Transmission Group's 2018-2019 Regional Transmission Plan.

B. Independent Evaluator Tasks

Phase 2 of the IE assignment Scope of Work focused on the phase of the RFP process that deals with the period from issuance of the RFP through receipt of proposals and to evaluation of proposals and selection of the final shortlist. The IE's tasks in this phase of the solicitation process included monitoring of the solicitation process and review and evaluation of all proposals. These tasks were consistent with the requirements in the Utah Statutes Title 54 Chapter 17 Energy Resource Procurement Act and Utah Administrative Code R746-420 – Requests for Approval of a Solicitation Process. Some of the most important tasks for the IE in the bid evaluation and selection phase included the following:

- Monitor and administer the Q&A process with bidders through the Merrimack Energy website;
- Review and comment on the Input Assumptions to be used in the evaluation of all proposals received;
- Review and assess the bid evaluation methodology and models at each step in the bid evaluation and selection process;
- Access the proposals submitted and prepare a summary of proposals to ensure the Company and IE have received the same proposals;
- Monitor interaction between PacifiCorp and bidders regarding any clarification questions about the proposal, requests by PacifiCorp for additional or clarifying information, and determination of conformance or non-conformance of each proposal with RFP requirements;
- Review and evaluate the results of PacifiCorp's evaluation of each of the eligible proposals, including review of the model results;
- Monitor and audit the evaluation process and validate that the evaluation criteria, methods, models, and other solicitation processes have been applied as approved by the Commission and consistently and appropriately applied to all proposal options. Audit the bid evaluations to verify assumptions, inputs, outputs, and results are appropriate and reasonable. Analyze, operate, and validate all important models, modeling techniques, assumptions and inputs;
- Participate in review of PacifiCorp's shortlist selection results and make recommendations for both the initial and final shortlists;
- Facilitate and monitor communications between the soliciting utility and bidders;
- Participate in meetings with bidders to clarify the components of the proposals submitted;
- Review, summarize, and evaluate the best and final offers submitted by shortlisted bidders;

- Review the final evaluation results and final selection of proposals requested by PacifiCorp.

C. Summary of PacifiCorp's Proposed Evaluation and Selection Process and Procedures

Section 6 of the 2020AS RFP provides a description of the proposed bid evaluation process and methodology designed to reach final shortlist selection. According to page 26 of the RFP, "PacifiCorp's bid evaluation and selection process is designed to identify the combination and amounts of new resources that will maximize customer benefits through the selection of bids that will satisfy projected capacity and energy needs while maintaining reliability. Based on proxy resource cost assumptions used in the 2019 IRP, energy and capacity needs were best satisfied by the resource selections summarized in Appendix H – 2020AS RFP Locational Capacity Limits." The Locational Capacity Limits and solicitation requirements for shortlisting are provided in Table 1 below.[16]

Table 1: RFP Locational Capacity Limits

Locational Area/Bubble	2019 IRP Preferred Portfolio Locational Limits (MW)	Shortlist Capacity Limits (1.5x assumed interconnection limit - MW)	Type of Resources projected in 2019 IRP
Yakima	395	593	395 MW solar co-located with 99 MW battery
Walla	No Resources	0	No Resources
PDX/Coast	No Resources	195	No Resources
W. Valley	No Resources	923	No Resources
S. Oregon	500	750	500 MW Solar co-located with 125 MW battery
Goshen	No Resources	675	No Resources
Northern Utah	343	515	343 MW Solar co-located with 143 MW battery
Southern Utah	231	347	231 MW Solar co-located with 58 MW battery
Bridger	354	531	354 MW Solar co-located with 89 NW battery
W. Wyoming	No Resources	150	No Resources
E. Wyoming	1,920	1,920	Wind

PacifiCorp noted that the models and methods that PacifiCorp would use to evaluate and select the best combinations and amounts of resources were consistent with the models and methods that were used to evaluate proxy resources in PacifiCorp's 2019 IRP. PacifiCorp also included a flow diagram in the RFP document that provided details on the components of the evaluation process at each of the three phases of the process leading to final shortlist selection.

[16] Table 1 replicates the Locational Capacity Limits identified by PacifiCorp in Appendix H of the RFP documents.

PacifiCorp indicated that it intended to utilize a three-phase evaluation process, including reflecting PacifiCorp's Transmission Interconnection Queue Reform process. The three phases included (1) an initial bid stage as the basis for selecting an initial shortlist of bids that would be eligible for the Cluster Study process; (2) Interconnection Cluster Study and contract development process[17]; and (3) Final shortlist selection based on including best and final offers.

Each phase of the process is described in more detail below based on PacifiCorp's 2020AS RFP document.

Phase I - Initial Shortlist Evaluation Methodology and Process

As stated in the RFP, Phase I included the receipt of proposals, due diligence and screening of the proposals to ensure the proposals conformed to the minimum requirements or criteria listed in the RFP, price and non-price evaluation, scoring and ranking of the proposals based on their location in relationship to the 2019 IRP topology and resource type, and advancing the lowest cost/highest scoring bids to the ISL. PacifiCorp noted that it intended to contact bidders to confirm and clarify information presented in each proposal to ensure accuracy in the interpretation of proposal pricing and other information.

A key step in Phase I of the solicitation process was to review each proposal relative to the minimum requirements to assess whether each of the proposals conformed to these requirements. Proposals deemed non-conforming would be reviewed in consultation with the IEs to determine if the proposal should be removed from the solicitation process.

PacifiCorp also intended to screen each project bid and confirm that it conformed with the project's interconnection documentation, which could include: (a) an interconnection request, as long as it was submitted on or before January 31, 2020; (b) serial-queue interconnection study documentation if the bidder had the option to keep that documentation under the parameters of the interconnection queue reform transition process; or (c) an executed LGIA.

Conforming proposals would be evaluated using PacifiCorp's proprietary pricing models and ranked by resource type within each IRP topology location. PacifiCorp proposed to limit the capacity in a given location to 150% of the capacity chosen by the Company's 2019 IRP preferred portfolio. These targets were illustrated in Appendix H to this RFP.[18]

[17] As we will discuss later in this report, PacifiCorp did not initiate the initial contract negotiation and development process as a result of comments from the Oregon Commission staff and stakeholders.

[18] PacifiCorp noted that the eastern Wyoming region of the PACE BAA was treated differently from other topology areas because the interconnection capacity in that area had been studied extensively as part of PacifiCorp Transmission's long term transmission planning resulting in the planned addition of Gateway South, a 500 kV high voltage transmission line. The expansion would enable approximately 1,920 MW of interconnection capability for generation projects in the area and therefore the capacity limit would be specifically tied to 1,920 MW.

PacifiCorp clarified the intent of the above methodology by including an example in the RFP at the suggestion of Merrimack Energy in comments related to RFP design.[19]

Based on a review of Table 1 above, the results as illustrated from the 2019 IRP expected that in all bubbles, except East Wyoming, the resource selected in the IRP Preferred Portfolio would be a combination of solar plus co-located BESS[20], with the BESS capacity generally representing 25% of the solar nameplate capacity.[21] The only difference is in northern Utah where stand-alone storage was expected to be competitive. This portfolio was expected to result in 1,826 MW of solar nameplate capacity combined with approximately 514 MW of BESS capacity.

According to the RFP, PacifiCorp would use the combined price and non-price evaluation results to rank proposals. Based on these rankings, PacifiCorp would identify an initial pool of resources by location and resource types based on the total bid score (maximum of 100%, with a maximum of 75% for price and a maximum of 25% for non-price factors). The initial pool of resources would be made available as resource alternatives for IRP modeling to select an initial shortlist. PacifiCorp noted that in cases where a bidder offered a bid alternative for the same resource type in the same location, only the highest scoring bid alternative for that location and resource type would be included in the initial pool of ISL resources.

From a pricing perspective, all proposals would be evaluated using PacifiCorp's proprietary spreadsheet model to calculate the delivered revenue requirement cost of each proposal, inclusive of any applicable carrying costs and net of tax credit benefits, as applicable. The cost of each proposal would be netted against system-value curves to assess project benefits, which would be developed and locked down with the IE in advance of receiving proposals. The system value curves would be developed from PaR model simulations that would calculate the hourly marginal system energy value of a flat energy profile and the hourly marginal operating reserve value of a flat operating reserve profile, by location.

Bid costs net of the applicable system-value benefits would be used to assign a price score to each bid. This would be achieved by calculating an inflation-adjusted real levelized net cost of capacity expressed in $/kW based on the capacity contribution of each bid.[22] According to the RFP document, this value would be forced ranked, with a

[19] PacifiCorp provided an example using Southern Oregon as the basis. PacifiCorp noted that the 2019 IRP Preferred Portfolio was 500 MW of solar and 125 MW of BESS. PacifiCorp clarified in the RFP that proposals submitted for Southern Oregon would be separated by resource type (i.e., solar, solar with storage, wind, etc.), then evaluated, ranked and selected up to a total of 750 MW for each resource type, meaning up to 750 MW of solar, 750 MW of wind, 750 MW of solar plus storage, etc., if available, would be scored and ranked in Southern Oregon for possible selection to the initial shortlist.

[20] In this report, Merrimack Energy refers to Solar plus co-located BESS projects as solar combined with storage projects. All storage options in this case are battery energy storage projects.

[21] While the 2019 IRP Preferred Portfolio was comprised of certain resources based on generic assumptions regarding project cost and operational characteristics, the results from the RFP could vary based on pricing and operational characteristics of the actual proposals/projects submitted.

[22] During discussions between PacifiCorp and IEs regarding the quantitative or price metric for evaluation purposes, PacifiCorp discussed using two metrics for the quantitative evaluation at this stage of the process:

maximum of 75 points to the evaluated bid with the highest calculated net benefit by location and resource type, a minimum of zero points to the evaluated bid with the lowest calculated net benefit, and the remaining bids scored on a 0 to 75-point scale according to the relationship of their respective calculated net benefits to those of the highest and lowest bids.

As noted above, for the initial price evaluation, PacifiCorp would run its traditional RFP spreadsheet model to calculate both the costs and benefits associated with each proposal. The cost/benefit components and values vary depending on whether a bid is a PPA, BTA or BSA. Table 2 below (from the RFP)[23] provides a summary of the cost and benefit components for each option to set the stage for review of the summary results for each proposal. A value in parentheses (i.e. (X)) reflects a cost component while Z reflects a benefits component for purposes of assessing the net benefits of each option.

Table 2: Summary of Cost/Benefit Components for Each Bid Type

Component	PPA Option	BTA Option	BSA Option
PPA Bid Price ($/MWh)	(X)	-	-
Initial Capital Revenue Requirements (net of ITC, if solar)	-	(X)	-
Ongoing Capital Revenue requirements	-	(X)	-
PTC Benefit (if Wind)	-	Z	
Terminal Value	-	Z	-
O&M, Lease, Insurance	-	(X)	-
Property Taxes	-	(X)	-
State Generation Tax (if Wyoming or Montana)	-	(X)	-
Network Upgrade Revenue Requirements	(X)	(X)	(X)
Transmission	(X)	(X)	(X)

(1) use the traditional Net Benefit/Cost metric calculated as Present Value of Net Benefits divided by the Present Value of Capacity for each proposal; and (2) use an Adjusted Net Benefits/Cost metric based on the sum of annual Net Benefits/Cost divided by annual Capacity Contribution for each proposal. While PacifiCorp calculated both metrics in its RFP Screening model outputs, PacifiCorp stated in its slide deck presentation on ISL selection that the price score raking was based on a proposal's net cost per kW of system capacity contribution, calculated by dividing a proposal's levelized net cost by its estimated contribution to system capacity.

[23] Merrimack Energy suggested that PacifiCorp include this Table in the RFP to increase transparency to bidders so that bidders would understand the cost and benefit components of each bid type and contract structure for evaluation purposes.

Wheeling and Losses (if off-system)			
Storage Costs	(X)	(X)	(X)
Energy Arbitrage and Operating Reserve Storage Value[24]	Z	Z	Z
Generation Energy Value (net of balancing area reserve obligation)	Z	Z	
Integration Cost	*(X)*	*(X)*	

The components included in the cost of energy category vary by bid type. For PPA options, the cost of energy is based on the fixed price or base price and fixed escalation rate submitted by the bidder on its Pricing Input Sheets (Appendix C) times the expected energy generated by the bidder.[25] For BTA options, PacifiCorp calculates Capital Revenue Requirements over the life of the asset. The total in-service capital cost of the project was the primary starting point for this cost component. This would include the capital cost of the project, owner's costs, development costs, contingency, Allowance for Funds Used During Construction ("AFUDC") and capitalized property taxes. PacifiCorp would include the capital cost of the project in rate base and amortize the costs over 30 years based on utility revenue requirements principles.

In developing revenue requirements, PacifiCorp would use cost data for each bid. Any internal assumptions for key financial inputs (i.e., inflation, discount rates, marginal tax rates, asset lives, AFUDC rates, etc.) and PacifiCorp carrying costs (i.e., integration costs, owner's costs, and other costs included in the evaluation below) would be applied consistently to utility-owned bids, as applicable.

Integration costs were applied to all proposals. The basis for the integration costs used in the evaluation was described in Appendix F (Flexible Reserve Study) in Volume II of the 2019 IRP. The integration cost estimates from Figure F.15 of Appendix F were used in the price scoring in Phase I of the evaluation process.

Operation and Maintenance Costs and Administration and General ("OMAG") costs were included for BTA options. The basis for these costs included the O&M costs proposed by the BTA provider for the first 3 years of operations, followed by estimates prepared by PacifiCorp based on its own experience owning and operating wind projects as well as solar OMAG costs based on use of several publicly available studies. The proposed OMAG costs estimated by PacifiCorp were provided to the IEs as input assumptions.

---

[24] PacifiCorp notes in the RFP that Energy Arbitrage and Operating Reserve Storage Value are only required in the cases for a PPA or a BTA bid that includes a storage (i.e., battery) component and are used in the Storage VET model.

[25] For this stage of the evaluation, PacifiCorp generally accepts (subject to discussions with bidders or clarification questions) the generation profile and capacity factor as provided by the bidder and does not conduct due diligence on the generation profile or capacity factor at this stage of the process.

With regard to network upgrade costs, PacifiCorp noted in the RFP that it would receive bids having progressed through various stages of the currently effective serial queue interconnection study process. On one end of the spectrum, some bids would likely have executed LGIAs with PacifiCorp Transmission, while on the other end of the spectrum, other bids were likely to have only submitted an interconnection request that would not yet have been studied. To ensure there was a fair comparison among bids, while the company would review the bidder's interconnection documentation to confirm it aligned with the bidder's proposal, the cost of any direct assigned and transmission network upgrades associated with the interconnection of a proposed project to PacifiCorp's transmission system would not be included in the initial shortlist price evaluation. At the conclusion of the transition cluster study phase, as part of updating bid pricing, proposals selected to the initial shortlist would be required to provide direct assigned and network upgrade costs either from their cluster study results, their interconnection study documentation, or from their executed LGIA. At that time, bidders should include their direct assigned and network upgrade costs in their refreshed prices for final short list evaluation.

Terminal value benefits were included for BTA options. Generally, terminal value for a generation facility at the end of its useful life is equal to its net salvage value. However, the other assets associated with a project site, such as land, site characteristics and generation interconnection and transmission facilities may have value beyond the assumed useful life of energy facilities. PacifiCorp estimated terminal value using an appreciation and depreciation methodology. Under this approach, the terminal value reflects the depreciated value which is then adjusted for inflation to reflect replacement value of assets that have not fully depreciated at the end of the assumed 30-year life for the facility (i.e., transmission assets associated with an energy facility) and the appreciated value of other elements of the project that remain at the end of the assumed 30-year life for the energy facility (i.e., development rights and land, as applicable).

PacifiCorp also provided projections of locational prices for energy and reserves that would be used to value and rank projects that would be included in the initial shortlist bid selection run, to be conducted using IRP optimization modeling. PacifiCorp provided energy projections for the following locations: Bridger, Goshen, Borah, Portland/North Coast, Utah North, Utah South, South-Central Oregon, Walla Walla, Willamette Valley, Wyoming East, Wyoming SW, and Yakima. For reserves, PacifiCorp provided projections for the east and west parts of its system. For the evaluation of each proposal, the bid screening model would receive the hourly energy value by transmission bubble and an hourly reserve cost by balance area (PACE and PACW).

For calculation of locational energy value, PacifiCorp conducted a series of 20-year deterministic PaR model runs to assess the benefits of a 50 MW nameplate flat energy product at no cost in each of 12 relevant locations.[26] Each location model run resulted in

[26] For each location, PacifiCorp conducted two runs – a base run and a locational comparison run over the period 2023-2038. For the base run, the preferred portfolio expansion resources at the location being analyzed had their nameplate reduced by half to avoid extremes which could distort the results. PacifiCorp

an hourly nominal value of energy for all 20 years. The outcome of this analysis would be applied to each proposal to capture the value of each project specific to the PacifiCorp system for use in bid ranking.

As previously noted, PacifiCorp provided the model output results of the evaluation for all the bids submitted to the IEs. Merrimack Energy's project team reviewed the results and prepared a summary of the bids based on the comparison metrics for the price component of the evaluation (i.e., PV$/kW-month and Nominal Levelized $/MWh).

In addition to the price analysis, PacifiCorp would also conduct a non-price evaluation of the proposals received. The primary purpose of the non-price assessment was to help gauge the maturity and readiness of the project, including development experience, site control, permitting, equipment procurement, conformance to PPA or BTA terms and conditions, schedule, operational characteristics, and the associated risks of each bid. Table 3 contains a summary of the non-price criteria used in the evaluation, which was included as Appendix L to the RFP.

Table 3: Non-Price Criteria

Non-Price Factor	Maximum Score
1. Bid Submittal Completeness	5%
Bids provided all required RFP information pursuant to RFP instructions for PPA and BTA, including accuracy of such information including the specific Appendices listed below	Multiple RFP bid submittal documents missing requested information = 1% One or two RFP bid submittal documents missing requested information = 2% All Documents complete = 3%
• Appendix B-2 info required in proposal • Appendix C-2 Bid Summary and Pricing Input Sheet • Appendix C-3 3rd Party Performance Report including site data • Appendix D Bidder's Credit Information	
Bids in compliance with technical operating specifications as outlined in Appendix A as applicable to resource type and bid structure	Major components out of compliance = 0% Some major components in compliance = 1% All major components in compliance = 2%
2. Contracting Progression and Viability	5%
Bidder provided Appendix E-2 PPA document red-line and comments	No written comments or redlines provided, or bid states that redline and comments will be provided upon selection = 0%
Bidder provided Appendix E-3 battery storage document redline and comments	Completed task of providing either written comments or redlines, but not both = 3%
Bidder provided Appendix F-2 BTA term sheet redline and comments	Both written comments and redlines provided = 5%

then added 50 MW of free energy (or reserves in the case for assessing reserve value). The difference in nominal system cost by hour was then calculated to arrive at a locational hourly $/MWh benefit of the 50 MW free product. Energy and reserve components were estimated based on specified formulas.

3. Project Readiness and Deliverability	15%
Bidder's development and construction experience related to large energy and/or storage projects including O&M and financing plan	No operating experience = 0% <300 MW operating projects = 1% >= 300 MW operating projects = 2%
Bid demonstrates site control consistent with PacifiCorp Transmission's Site Control definition	<50% under lease or purchase option = 0% Lease option on full site = 2% Lease or purchase for full site = 3%
Bid provided sufficient detail, including schedules and documentation, to demonstrate the ability of meeting all of the project's environmental compliance, studies, permits such that the Dec 31, 2024 COD is met (or a potential later date in the case of pumped storage hydro resources).	Major studies and permits not started = 0% 50% of major studies and permits complete = 3% 100% of major studies and permits complete = 6%
Bid provided sufficient detail, including schedules and documentation, to demonstrate the ability of meeting equipment procurement needs and managing supply chain risks such that the Dec 31, 2024 COD is met (or a potential later date in the case of pumped storage hydro resources).	No documentation provided = 0% Detail provided without addressing management of supply chain risks = 1% Detail provided including addressing management of supply chain risks = 2%
Bid included documentation that projects qualify for and would receive the full or partial value of the federal tax credit as interpreted by applicable guidelines and rules of the Internal Revenue Service at commercial operation.	No documentation = 0% Qualification through construction = 1% Documentation of safe harbor equipment = 2%

For each non-price factor, proposals would be assigned one of the three discrete scores identified in the Table above. Bidders that have a demonstrated track record and are proposing more mature projects should receive higher scores.

PacifiCorp used the combined price and non-price results to rank bids. Based on these rankings, PacifiCorp would identify an initial pool of resources by location and resource type based on the total bid score (maximum at 100%, with a maximum of 75% for price and a maximum of 25% for non-price factors). This initial pool of resources would be made available as resource alternatives for IRP modeling. The bidders with the highest total scores (price and non-price), with project sizes representing cumulatively up to 150% of the requirements at any given location, would be considered for the initial shortlist.

As stated in the RFP, upon identification of the initial pool of bids, input information for each proposal would be provided to the IRP team to undertake a modeling of the resources using the production cost models used in the 2019 IRP. The production cost models would then select the optimized portfolio of resources subject to the same total capacity limits used to score and rank bids in the initial pool of resources. PacifiCorp proposed to limit the capacity in a given location to 150% of the capacity included in the company's 2019 IRP preferred portfolio. The IRP modeling tools would select among the least cost resource types by location based on bid cost and performance data. Similar to the 2019 IRP, reliability analysis would be performed on all initial bid selections to ensure that the selected portfolio of resources could meet all hourly load and operating reserve requirements with sufficient cushion to account for system uncertainties. Based on final evaluation results, PacifiCorp would then notify bidders that were selected for the initial shortlist in Phase I.

Phase II - Cluster Study Process

After the ISL was established, Bidders would be required to notify PacifiCorp Transmission of its selection to the ISL to demonstrate they had met the "commercial readiness" criteria and any other PacifiCorp Transmission defined requirements established in PacifiCorp Transmission's interconnection queue reform process. Proposals that met all requirements would be eligible to be included in PacifiCorp Transmission's transition cluster study process, which was the initial primary task in Phase II of the solicitation process. The transition interconnection cluster study process was expected to take approximately six months. At the conclusion of the cluster study process, results would be posted to Oasis and the ISL bidders would be notified of their results. Bidders would then be required to update their bid pricing and to include direct assigned and network upgrade costs associated with interconnection either from their cluster study results, their interconnection study documentation, or from their executed LGIA in their best and final pricing. Best and final pricing must be provided for the same site using the same or similar equipment, and on the same schedule as originally proposed.

Phase II also included the following initiatives: (1) interconnection cluster study process; (2) resource capacity factor verification and storage performance performed by third-party consultants for PacifiCorp: (3) preliminary contract negotiations;[27] and (4) information provided to shortlisted bidders regarding the requirements for final proposals once the cluster study results were made available.

Phase III: Final Shortlist

Phase III of the evaluation process was focused on evaluation and selection of the FSL. In Phase III, the updated pricing for ISL proposals would be analyzed with the same models used to develop PacifiCorp's 2019 IRP preferred portfolio as well as for selection of the ISL in Phase I. The models would be rerun for the ISL resources with updated bid pricing and interconnection cost results from either the cluster study process, serial queue process or LGIA. PacifiCorp would use these same models with the proposal's interconnection cost information, updated bid pricing, verified capacity factor, and storage evaluation, if applicable, to process bid costs for input into the IRP production cost models. PacifiCorp would use the SO model to develop a resource portfolio. As was done in the 2019 IRP and ISL process, PacifiCorp would perform a reliability assessment to ensure that the selected portfolio of resources could meet all hourly load and operating reserve requirements with sufficient cushion to account for other system uncertainties. PacifiCorp would not update the non-price evaluation. Cost and risk analysis, along with any other factors not expressly included in the formal evaluation process, but required by

[27] PacifiCorp did not initiate contract negotiations during this phase of the process based upon Public Utility Commission of Oregon Staff recommendation to reject PacifiCorp's request for waiver of OAR 860-089-0500 to allow PacifiCorp to begin contract review and negotiations with ISL parties.

applicable law or commission order, would be used by PacifiCorp, in consultation with the IEs, to establish the final shortlist.

PacifiCorp would also evaluate each of the resource portfolios developed with the SO model using the PaR model – the same model used in PacifiCorp's 2019 IRP to analyze stochastic resource portfolio risk. The PaR model captures stochastic risk in its production cost estimates, without altering the resource portfolio, by using Monte Carlo sampling of stochastic variables, which include: load, wholesale electricity and natural gas prices, hydro generation, and thermal unit outages. For purposes of the 2020AS RFP, PaR will be used to calculate stochastic mean Present Value Revenue Requirements ("PVRR") and the risk-adjusted PVRR for each policy-price scenario.

PacifiCorp would summarize and evaluate the 2020AS RFP resource portfolios to identify the specific bid resources that were most consistently selected among the policy-price scenarios. PacifiCorp may then select one or more 2020AS RFP resource portfolios for further scenario risk analysis. This step of the evaluation process would help identify whether top performing portfolios exhibit especially poor performance under a range of future policy-price scenarios.

Before establishing a final shortlist, PacifiCorp may take into consideration, in consultation with the IE, other factors that are not expressly or adequately factored into the evaluation process outlined above, particularly any factor required by applicable law or Commission order to be considered.[28]

D. Description of Models Used for the Bid Evaluation Process

PacifiCorp initiated discussions with the IEs associated with the models and inputs to be used for the quantitative evaluation process as early as March 2020. Meetings and discussions regarding the models and methodologies continued through May and June prior to proposal submission. PacifiCorp indicated that it intended to use several models to conduct its quantitative evaluation through the various phases of the solicitation. Merrimack Energy was familiar with the use of the RFP Screening Model used primarily for initial shortlist evaluation and ranking as well as the IRP models (SO and PaR models), through previous assignments as IE on PacifiCorp RFPs. PacifiCorp included two additional models, Locational Correlation and Capacity Model ("LCC" model) and the StorageVet model, that would be used for the evaluation of renewable resources and storage options (either standalone or combined with renewable resources) since these resource types were expected to be bid into the RFP as competitive options.

[28] In section 54-17-302 of the Utah Statutes, on ruling on a request for approval of a significant energy resource decision, the Commission shall determine whether the decision was in the public interest taking into consideration (1) whether it will most likely result in the acquisition, production, and delivery of electricity at the lowest reasonable cost to the retail customers of an affected electric utility located in the state; (2) long-term and short-term impacts; (3) risk; (4) reliability; (5) financial impacts on the affected electrical utility; and other factors determined by the Commission to be relevant.

The [redacted] was used primarily to calculate a bid's capacity contribution[29] adjustment ("CCA") factor of the proposed assets based on the proximity of the proposal to existing generating facilities,[30] Loss of Load Probability ("LOLP"), and capacity contribution to assess the capacity contribution of renewable resources and renewable plus storage projects as well as for assessing the value attributed to operations of the storage options proposed (standalone and combined with renewable resources). PacifiCorp calculated the CCA factors based on the 8760 adjusted generation profile and LOLP study from the 2019 IRP. The CCA values calculated in the [redacted] served as an input to the RFP Screening model. The output from the [redacted] was the seasonal capacity contribution.

Capacity contribution was based on a resource's expected availability during hours when the LOLP is highest. [redacted] As a result, a wind asset without storage could receive a relatively lower capacity contribution value if it's output in July and August was low. For storage, individual storage capacity contributions were based on their ability to cover LOLP.

For storage proposals, PacifiCorp utilized the [redacted], a storage value estimation tool developed by the Electric Power Research Institute (EPRI), along with outputs from the PaR model. For proposals with storage, [redacted] calculated energy and operating reserve value, based on perfect foresight dispatch optimization for energy valuation. [redacted] reflected the requirements of different applications through the use of several constraints – minimum and maximum charge, discharge, and state of charge and can also reflect storage system parameters such as charging and discharging efficiency, ramp rates, and real and reactive power constraints. Projections for energy and operating reserves for various locations on the PacifiCorp system were provided through the PaR model.[31]

For purposes of calculating the quantitative costs and benefits of each proposal, PacifiCorp also designed a Price Input Form which bidders were required to provide with their proposals to reflect the parameters of the proposal including pricing, operational characteristics, nameplate capacity, etc. Appendix C was the key source of project-specific data provided by the bidders to address bid pricing and related information. Appendix C contains ten Tabs: (1) Data Inputs; (2) 8760 First Year Generation; (3) PPA pricing; (4) Battery pricing and operations; (5) Non-renewable price schedule; (6) BTA

---

[29] Capacity contribution is measured by the project's ability to reduce loss of load events across PacifiCorp's system. Hourly loss of load events were from PacifiCorp's LOLP study for the 2019 IRP.

[30] [redacted] The Bidder's 8760 generation profile and degradation rate was provided in Appendix C-2 – Bid Summary and Pricing Input Sheet.

[31] Energy projections were provided for the following locations: Bridger, Goshen, Borah, Portland/North Coast, Utah North, Utah South, South-Central Oregon, Walla Walla, Willamette Valley, Wyoming East, Wyoming SW, and Yakima. Estimates of Reserve values were provided for East and West locations, with east locations generally having a higher reserve value.

pricing schedule; (7) Non-renewable site information; (8) Start-up parameters; (9) Expected performance; and (10) Additional data. For purposes of generating results for the RFP Screening Model, data from Appendix C is included as a tab for the RFP Screening Model. As a result, input errors should be eliminated or minimized since data for each proposal did not have to be keyed in by PacifiCorp team members. Any source of potential error should be associated with bidder input errors, which would still require review and correction to ensure the inputs were properly provided.

The RFP Screening Model is a primary tool for bid evaluation and scoring for PacifiCorp's initial shortlist, in particular. The RFP Screening Model calculates the bid's relative levelized net benefit/cost as well as the levelized net benefit/cost adjusted by a Capacity Contribution Adjustment factor ("CCA") for use in bid scoring by transmission bubble and technology for submission to IRP modeling. For proposals with storage, energy and operating reserve inputs from the [redacted] are required to complete the screening analysis for shortlist scoring and ranking.

The RFP Screening Model is a spreadsheet-based model that is used to assess the price score as part of the initial shortlist selection process and also provided inputs to the IRP models in the Phase 3 process. The model was designed to calculate the costs and customer benefits of each proposal option for purposes of calculating a net benefit/cost value. The model has several modules which allow PacifiCorp to evaluate a range of resource types allowed into the RFP, including both third-party proposals and utility-owned options, such as Build Transfer Agreements ("BTA"). Location-specific energy and operating reserve benefits are calculated within the PaR model and provided as input to the RFP Screening model. As noted, for proposals with storage, energy and operating reserve value were evaluated by applying the [redacted] and PaR model inputs. For shortlisting, price score ranking was based on a proposal's net cost per kW of system capacity contribution, calculated by dividing a proposal's levelized net cost/benefit by its estimated contribution to system capacity.

In addition to the data provided by bidders in Appendix C, the model also relied upon data inputs including: (1) PacifiCorp corporate financial assumptions (i.e., tax rates, inflation, capital structure, weighted average cost of capital); (2) Project costs specific to BTAs (i.e., on-going capital costs, O&M costs, insurance, property taxes, depreciation, state taxes, land/lease and royalty costs and other costs applicable to a revenue requirements analysis); (3) Project-specific locational energy and operating reserve benefits based on PaR model assessment; and (4) Other costs such as integration costs, state specific taxes, etc.

The outputs from the RFP Screening model in addition to the levelized Net Cost/Benefits calculations include: (1) Project PVRR and nominal levelized results; (2) Project inputs for SO IRP modeling: (3) Rate of return and cash flow results for BTA options; (4) Project locational energy and operating reserve benefits; and (5) Project capacity contribution.

The RFP Screening model contains the following Tabs, which incorporate a large amount of data into the model for various applications. The Model Tabs include: (1) Results Summary; (2) Results Overview; (3) Main Tab; (4) Tab 1 Data Inputs; (5) Tab 2 8760 First Year Gen; (6) Tab 3 PPA Pricing; (7) Tab 4 Battery Pricing and Ops; (8) Model Parameters Template; (9) hourly timeseries; (10) timeseries results; (11) Gross Benefit Curves; (12) Wholesale Valuation; (13) Production Costs; (14) Generic; and (15) IRP Data.

One of Merrimack Energy's primary focuses in reviewing and evaluating the RFP Screening model was to ensure the RFP Screening model appropriately accounted for the evaluation of BTA options relative to PPA options to ensure that PPAs and BTAs provisions and modeling constructs were fairly accounted for. While Merrimack Energy reviewed and evaluated the RFP screening model to ensure wind projects were appropriately and fairly accounted for whether the proposal was for a PPA or BTA option, our primary focus was on the evaluation of solar as well as solar plus storage PPAs and BTAs. As we have noted in this report, IRS regulations require that utility-owned solar projects are subject to normalization accounting with regard to the treatment of the Investment Tax Credit. While PPA sellers can take full advantage of the ITC benefits in year 1 of the project, utilities are required to spread the benefit over the life of the solar asset. As a result, utility-owned solar project options have a competitive disadvantage relative to PPAs. Our review was focused on ensuring that PacifiCorp's model construct appropriately reflected the impact of normalization accounting requirements for solar projects. Based on our review, we concluded that the models appropriately reflected normalization accounting construct for comparisons between BTAs and PPAs.[32]

PacifiCorp proposed to use the SO model for two applications. For the ISL, PacifiCorp proposed to use the SO model to select the ISL as a final step in Phase I of the evaluation and selection process. At this stage in the process, the cost and performance attributes of the highest ranked proposals 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 PacifiCorp's customers. The SO model was run with an updated load forecast, wholesale electric and gas price assumptions, and changes to new and existing resources. As noted, the SO model at this step did not include interconnection network costs associated with each proposal. The second application of the SO model was for FSL selection. The eligible ISL bids with updated pricing (i.e., best and final offers) and costs would be provided to the IRP modeling team representing the final shortlist pool from which the IRP models would select the FSL. PacifiCorp would use the SO model to develop resource portfolios, tested for reliability, that contain the selection of updated ISL bids providing the lowest cost, to establish the final shortlist.[33]

---

[32] As described later in the report, solar BTA Net Benefits were generally negative and were not competitive with PPA options for the same projects for which bidders offered both PPA and BTA options.
[33] PacifiCorp stated in the RFP that in processing best and final bid costs, it would convert any calculated revenue requirements associated with capital costs, as applicable (i.e., return on investment, return of investment, and taxes, net of tax credits, as applicable) to first-year-real-levelized costs, consistent with the treatment of capital revenue requirements in PacifiCorp's IRP modeling. All other bid costs would be summarized in nominal dollars and formatted for input into the IRP models, consistent with the treatment

As described in the 2019 IRP documents, the SO model dynamically develops resource portfolios (i.e., operating reserves unit commitment) for both initial and final shortlisting process. The SO model operates by minimizing operating costs for existing and prospective new resources, subject to system load balance, reliability and other constraints. Over the 20-year planning horizon, it optimizes resource additions subject to resource costs and capacity constraints (summer peak load, winter peak load, plus a target planning reserve margin for each load area represented in the model). In the event that an early retirement of an existing generating resource is assumed for a given planning scenario, the SO model would select additional resources as required to meet summer and winter peak loads inclusive of the target planning reserve margin. All SO model cases, therefore, are designed to select resources (e.g., bid resources, existing resources, or proxy resources) that ensures the portfolio meets system reliability requirements.

PacifiCorp also proposed to evaluate each of the resource portfolios developed with the SO model using the PaR model. The PaR model captures stochastic risk in its production cost estimates, without altering the resource portfolio, by using Monte Carlo sampling of stochastic variables, which include: load, wholesale electricity and natural gas prices, hydro generation, and thermal unit outages. For purposes of the 2020AS RFP, PaR would be used to calculate the stochastic mean PVRR and the risk adjusted PVRR for each policy-price scenario. For the 2020AS RFP, PaR was used to (a) develop energy and operating reserve benefits for the ISL and (b) run deterministic reliability assessments to inform additional bid resources in the SO model necessary to achieve reliability in both the initial and final short list runs.

E. Input Assumptions

An important aspect of any RFP bid evaluation process is the development of the input assumptions that would be used as the basis for consistently evaluating proposals received. Ideally, a utility would prepare its input assumptions, share the assumptions with the IE, and lock-down the assumptions prior to submission of proposals. PacifiCorp included its input assumptions for the 2020AS RFP in the RFP Screening Model. Input assumptions were included in several tabs within the RFP Screening Model, including the Main Tab, Gross Benefit Curves, and Generic Tab. In addition, bidders were required to provide key information regarding their project costs and other information in Tab 1 Data Inputs which include data from Appendix C – Pricing Input Sheet. The input assumptions included in the RFP Screening Model include the following key inputs and assumptions:

- Financial Assumptions
    - Discount Rate
    - Inflation forecast
    - AFUDC rate
    - Capital Structure
    - Tax rates (Federal and State)

---

of non-capital revenue requirements in PacifiCorp's IRP modeling. Projected renewable resource performance data (expected hourly capacity factor information) would also be processed for input into the IRP models.

        - Asset Lives
        - Property tax rates
        - Bonus Depreciation
        - ITC/PTC rates (if applicable)
        - Integration Costs (e.g., required purchased reserves)
        - Energy Taxes
    - Inputs from [redacted]
        - Correlated 8760 generation profile (common year 2018)
        - System capacity contribution
    - Inputs from IRP Models
        - Hourly locational system benefit/pricing curves (energy, reserves) derived from the June 2020 PacifiCorp price curve update
            - Energy (Bridger, Goshen, Borah, Portland, Utah North, Utah South, S-C OR, Walla Walla, Willamette, Wyoming East, Wyoming SW, and Yakima)
            - Reserves (East, West)
    - Capital Revenue Requirements (Utility-owned projects)
        - Bidder inputs – initial capital payments
        - PacifiCorp inputs – AFUDC, Construction Work in Progress ("CWIP"), property tax, on-going capital cost
        - Output Components
            - Book depreciation
            - Rate of return
            - Current and deferred income taxes
            - Property taxes
    - Owners Costs (for utility-owned projects)
        - Owner's costs
        - O&M costs (after warranty period)
        - Insurance
        - State generation taxes
    - Terminal Value
        - Land, development rights, transmission
        - Monthly inflation/depreciation methodology

The IEs were provided with a template of the RFP Screening Model several months prior to submission of proposals. The IEs reviewed the input assumptions and had the ability to ask follow-up questions of PacifiCorp about any of the input assumptions. The assumptions (and RFP Screening Model) were locked down prior to the submission of proposals.

III. Bid Submission and Bid Evaluation Process

A. Background

The 2020AS RFP was issued in final form to the market on July 7, 2020, with proposals due on August 10, 2020. PG&E held a Bidder's Workshop on July 9, 2020. The Workshop was conducted in two sessions. The morning session covered the 2020AS RFP structure, deliverables, schedule, requirements, evaluation and selection phases and process, criteria, and overview of the evaluation models. The afternoon session addressed bid preparation, forms required, and instructions for completing the bid forms as well as a separate interconnection and transmission service process including the transition interconnection cluster study process.

This section of the report describes the evaluation and selection process from submission of Notices of Intent to Bid on July 20, 2020 through selection of the FSL. This phase of the solicitation process occurred from early July, 2020 through mid-October for ISL selection, with FSL selection occurring after completion of the Cluster Study process and best and final offers in June 2021.[34] Each of the major activities and milestones are described and discussed in this section of the report.

B. Notices of Intent to Bid

As described in the 2020AS RFP document, bidders who intended to submit bids for consideration in the RFP process were required to submit a Notice of Intent ("NOI") to Bid Form to be accepted as a bidder in the 2020AS RFP.[35] Bidders were required to provide this information by July 20, 2020.[36]

In response to the NOI requirement, PacifiCorp received a substantial number of responses from prospective bidders. PacifiCorp calculated that there were NOIs submitted for 617 proposals, from 190 projects representing over 50,000 MWs. The tables below provide a high-level summary of the Notices of Intent to Bid results as compiled by PacifiCorp.[37] Table 4 provides a summary of the total MWs for the NOI's

[34] The ISL was completed in late-October 2020, followed by an approximately six-month period for completion of the cluster study process in early April, 2021. Best and final offers were submitted in late April, with a FSL selected initially in mid-June, 2021, with a revised and final FSL selection in late-July, 2021.

[35] While the NOI responses were not binding in the sense that PacifiCorp required prospective bidders to submit the specific proposals identified in the NOI responses, PacifiCorp was hopeful that the NOIs would shed light on the number and type of bids it could expect and also provide additional lead time for assessing Bidder's Credit Information.

[36] Documents required to be provided as part of the NOI process included: (1) Appendix B-1 – Notice of Intent to Bid Form; (2) Appendix D – Bidder's Credit Information; and (3) Appendix G-1 – Confidentiality Agreement.

[37] Since the NOIs were non-binding, Merrimack Energy reviewed and compiled a list of responses but did not focus on ensuring that Merrimack Energy had accounted for all the responses that PacifiCorp received. Instead, Merrimack Energy decided to rely on the summary information prepared by PacifiCorp to get an idea of the expected response to the RFP and would focus efforts on ensuring the IE accounted for and summarized all actual proposals submitted by bidders.

submitted by resource type. As illustrated in Table 4, wind PPAs, solar combined with storage PPAs, and standalone BESS options were the predominant resource types by MWs.

Table 4: Summary of Notices of Intent to Bid Responses

Resource Type	Total MW
Solar PPA	6,127
Solar BTA	1,068
Solar Combined with Storage PPA	12,921
Solar Combined with Storage BTA	938
Wind PPA	13.402
Wind BTA	1,031
Wind Combined with Storage PPA	1,754
Wind Combined with Storage BTA	0
Other	1,000
Geothermal	85
Pumped Storage Hydro	2,403
Simple Cycle Combustion Turbine	250
Battery Energy Storage System only	9,635
Total MW	50,614

Table 5 identifies the estimated MWs included in the NOI responses submitted by bubble on the PacifiCorp system relative to the estimated interconnection limit by bubble and estimated locational shortlist capacity limits based on PacifiCorp's proposed shortlist capacity for each resource type at 1.5 times the interconnection limit. As shown in this Table, several regions, including Northern Utah, Southern Utah, NE Wyoming and Southern Oregon were expected to see a robust response from the market in terms of MWs received relative to the amount of MWs required.

Table 5: Capacity Limits By Transmission Bubble and NOI Responses

Transmission Bubble	Locational Initial Shortlist Capacity Limits – MW (interconnection limit)	Locational Initial Shortlist Capacity Limits – MW (interconnection limit – 1.5x)	Total Bubble MW Proposed
Northern Utah	343	515	8,873
Southern Utah	231	347	2,970
NE Wyoming	1,920	1,920	14,978
S. Oregon - Prineville	-	-	8,008

Walla Walla	-	-	319
Yakima	395	593	984
Goshen	450	675	692
S. Oregon	500	750	1,883
Hemmingway	-	-	640
W. Wyoming	100	150	400
W. Wyoming Trona	-	-	200
Bridger	354	531	731
Borah	130	195	925
W. Valley	615	923	239
Off-System	N/A	N/A	2,701
No Queue No.	N/A	N/A	6,072
Total	5,039	6,599	50,614

The predominant resource types varied significantly by bubble. For example, in Northern Utah, solar combined with storage and standalone BESS resources comprised nearly 75% of the NOI capacity. For Southern Utah, the dominant resource type was solar only, which comprised approximately 71% of the capacity identified. In Southern Oregon – Prineville, standalone BESS projects comprised the largest portion of the NOI capacity identified, followed by solar combined with storage.

After compilation and review of the NOI responses, PacifiCorp and the IEs met on July 27, 2020 to discuss responses and concerns raised by PacifiCorp regarding the potential challenges that could impact the evaluation process based on several of the proposal project structures expected to be offered. PacifiCorp suggested that it would like to clarify the types of bid structures that would be acceptable for prospective bidders prior to submission of proposals on August 10, 2020. On July 30, 2020, after review and comment by the IEs regarding PacifiCorp's recommendations, PacifiCorp sent a formal letter to all prospective bidders identifying bid submittal clarifications. In terms of bid structure, these included:

- Individual project bids, each with its own generating resource, consolidated into one single project bid ("portfolio bid") would not be accepted if individual projects making up the portfolio bid deliver to different points of interconnection ("POI") into PacifiCorp's transmission system;
- A portfolio bid may be accepted if the individual projects that comprise the portfolio deliver to the same POI into PacifiCorp's transmission system and meet other requirements listed in the letter including: (a) all projects are the same technology; (b) bidders provide documentation from PacifiCorp Transmission stating that the portfolio bid was considered a non-material modification to their interconnection request; (c) PacifiCorp would require a single contract;
- Multiple resource technologies bid as one project would not be accepted whether or not they all deliver to the same point of interconnection on the PacifiCorp Transmission System;

- Bids offered with multiple, contingent contract structures as part of the same project/portfolio proposal would not be accepted. This would include a portfolio offered as a combination of both a BTA and PPA;
- Off-system bids with storage (or batteries) would be evaluated only considering the energy arbitrage value of storage (e.g., cost of power stored less sale price of power sold inclusive of battery losses). No reserve value would be considered because PacifiCorp cannot realize such value for off-system resources.

PacifiCorp also noted that the list of requirements included in the letter clarified PacifiCorp's position on proposed bid structures identified as part of a thorough review of NOI results and reviewed with the IEs. This list was not necessarily all-inclusive or exhaustive, and as a result, PacifiCorp suggested all bidders carefully review the 2020AS RFP document and the RFP Q&As to assure bid compliance and acceptance.

PacifiCorp also addressed interconnection consistency issues in the letter, noting that many of the NOI submissions appeared to be inconsistent with the publicly available information in the Generation Interconnection Queue posted to Oasis particularly with respect to Max MW Output, Point of Interconnection, and Type of Request. PacifiCorp requested bidders to take into consideration the accuracy of the bid information. Bidders would be required to provide documentation from PacifiCorp Transmission stating that the inconsistency is considered a non-material modification to their interconnection request. PacifiCorp also requested all bidders provide each project's latitude and longitude coordinates in their proposal.

C. Proposals Submitted

Proposals were submitted on August 10, 2020 as outlined in the RFP schedule. Based on Merrimack Energy's count, PacifiCorp received a total of 578 bids, including all alternatives, from 141 unique projects submitted by 44 unique counterparties.[38] The total MWs offered was approximately 32,922 MW.[39] The total MWs, number of projects and variants submitted by resource type are provided in Table 6.

Table 6: Summary of Proposals Submitted By Resource Types

Resource Options	Number of Projects	Number of Variants	Total MW	% by Resource Type
Standalone Battery Energy Storage	12	67	3,155.0	9.6%
Pump Storage Hydro	5	12	2,663.5	8.1%

[38] Merrimack Energy's totals for proposals submitted include all proposals and options initially submitted, prior to elimination of any options classified as non-conforming.
[39] The number of MWs calculated is based on the largest proposal submitted for each unique project. Also, in cases where a bidder may have offered a Phase 1, Phase II and combined Phase I & II bids for a specific project, the combined option was eliminated to avoid double counting.

Wind	27	122	9,329.9	28.3%
Solar[40]	93	373	17,113.5	52.0%
Gas	1	1	310.0	0.9%
Other	3	3	350.0	1.1%
Total	141	578	32,921.9	

By bid contract structure, 490 proposals were PPA options, 45 were BTA options, 37 were BSA options, and 6 were Tolling agreement options. A summary of the proposals submitted by Bubble and contract structure is included in Table 7.

Table 7: Summary of Proposals Submitted Including Variants

Bubble	Number of Bidders[41]	Distinct Projects	BSA Variants	BTA Variants	PPA Variants	Tolling Variants
Borah	4	4	2	1	10	
Bridger	1	3	6		24	
East Wyoming	15	25	6	18	117	
Goshen	2	2		1	4	
Northern Utah	18	34	21	7	93	
Southern Oregon	11	21		13	65	6
Southern Utah	13	25	1	1	95	
Walla Walla	3	3			4	
West Wyoming	2	4		3	13	
Yakima	5	5		1	28	
Off-System	10	15	1		37	
Total		141	37	45	490	6

There were also several different resource types submitted including wind, solar PV, stand-alone energy storage, co-located energy storage resources with solar (i.e., solar combined with storage), one gas-fired combined cycle project, pumped storage hydro, and other unique options. Table 8 details the number of variants submitted by technology type in each of the location bubbles. As the data illustrates, solar combined with energy storage projects comprised 51% of all the options submitted. Solar resources, either stand-alone solar or solar combined with energy storage were the predominant resources in all bubbles except for East Wyoming where wind was the predominant resource option. Many of the bidders provided proposals for both solar only and solar combined with storage options. Few solar project sponsors submitted BTA options for either solar only or solar combined with storage. For wind projects, only one bidder proposed wind

[40] Solar includes the amount of generation from solar whether on a standalone basis or in combination with storage. The largest size variant option submitted was included in the total amounts.
[41] The number of Bidders listed in this column reflects the fact that some bidders proposed projects in more than one bubble and were included in this column in each bubble for which that Bidder submitted a proposal.

combined with energy storage. Instead, it was more common for wind project developers to submit proposals for PPAs and BTAs for the same wind projects.[42]

Table 8: Summary of Offers by Technology Type

Bubble	CCGT	Pump Storage	Solar PV	Solar Combined with Storage	Stand-Alone Storage	Wind	Other
Borah				10	3		
Bridger				24	6		
East Wyoming		1	9	35	6	90	
Goshen						5	
Northern Utah			26	67	22	6	
Southern Oregon		7	26	44	1	6	
Southern Utah			31	65	1		
Walla Walla	1					3	
West Wyoming			2	14			
Yakima			3	23		1	2
Off-System		4	7	14	1	11	1
Total	1	12	104	296	40	122	3

In addition, the participants in the RFP included many of the largest renewable energy developers in the country, who are active in many power markets in the US and elsewhere.

Appendix A provides a list of the project developers who submitted proposals, along with the number of specific projects proposed and proposal variants submitted. Since most developers submitted multiple proposals that varied by proposal size or pricing structure, Merrimack Energy has also listed the sizes of the project.

[42] Merrimack Energy has served as IE on several All-Source solicitations and the bidding behavior regarding renewable proposals, renewable combined with storage, and the type of contract structures proposed has been similar in other solicitations as well. In Merrimack Energy’s view, the bidding behavior may be based on how tax credits are applied along with certain regulatory requirements. With regard to contract structures, it is very difficult for utility-owned solar and solar combined with storage projects to compete with PPAs. This is largely driven by IRS requirements that utilities use normalization accounting to spread out the Investment Tax Credits (ITC) benefits for solar projects owned by utilities rather than take advantage of the up-front ITC benefits that third-party PPA developers can utilize. Since the utility has to defer the ITC benefits to the future while PPA bidders can receive the benefits in the first year of the project, utility-owned solar projects are at a distinct disadvantage. The economics of wind projects whether via a PPA or BTA are more consistent since both third-parties and utilities can take advantage of the Production Tax Credits (PTC) and are therefore on a more level playing field in terms of competitiveness. Similarly, with regard to inclusion of storage combined with solar and wind, BESS systems that are charged with a renewable energy resource may be eligible for federal tax incentives. BESS systems that are charged by a renewable energy system more than 75% of the time are eligible for the ITC. As a result, the ITC for solar projects includes investment in BESS while the PTC benefits for wind only apply to the wind generator and not the storage component.

The amount of MWs submitted (based on the largest project by MW) generally exceeded the locational limit for several of the locations in total as well as by resource or technology. In addition, at some locations the locational limit was exceeded by proposals from a single technology (e.g., solar only or solar combined with storage).

D. Assessment of Proposals Received for Conformance with Minimum RFP Requirements

Based on the initial review of the proposals received, a number of bidders still had outstanding data gaps that prevented PacifiCorp from initiating the evaluation. This required the Company to communicate with a number of bidders to clarify information presented in the proposals prior to undertaking the initial price and non-price assessment.

PacifiCorp also began to review the bids submitted to determine whether or not the bids were conforming with the RFP requirements. PacifiCorp prepared an initial list of proposals that were deemed to be non-conforming. PacifiCorp and the IEs held several discussions and reviewed the proposals in question beginning in mid-August 2020 to address potential non-conformance issues, several of which were related to interconnection and transmission considerations. Based on discussions, Merrimack Energy reviewed its bid summary document and identified projects that either had an interconnection queue date after January 31, 2020 (i.e., queue number greater than 1190) or did not have a queue number at all. PacifiCorp and the IEs held several discussions to address non-conformance issues and eventually reached agreement on a final list.

During this phase of the process several bids were initially classified as non-conforming. The primary reasons for non-conformance included the following:

1. Several projects had not submitted an interconnection request application prior to the required deadline of January 31, 2020 as outlined in the RFP.[43] Since FERC did not rule on the reconsideration filing before the bid due date of August 10, 2020, these bids were classified as non-conforming. Projects with a Queue number of 1190 or greater filed their interconnection applications after January 31, 2020. Merrimack Energy was able to flag these

[43] With regard to PacifiCorp Transmission's interconnection queue reform process, the Federal Energy Regulatory Commission (FERC) issued an order on May 12, 2020 allowing PacifiCorp Transmission to reform its interconnection study process set forth in its Open Access Transmission Tariff (OATT). The interconnection queue reform process replaced the serial queue interconnection study process. According to the FERC Order in Docket ER20-924-000, the current transition interconnection cluster study cut-off date was established as January 31, 2020. However, parties filed for reconsideration of the cut-off date. Since FERC had not issued an Order on Reconsideration in Docket ER20-924-000 at the time the RFP was issued, PacifiCorp noted that it would modify the cut-off date in the 2020AS RFP to align with the new cut-off date if FERC ruled on reconsideration before bids were due on August 10, 2020. This meant that bidders who had submitted an interconnection application after January 31, 2020 would not be eligible to bid if FERC did not issue a favorable order prior to August 10, 2020. Since a FERC Order on Reconsideration was not issued by August 10, 2020 all bidders who submitted proposals with an interconnection application date after January 31, 2020 would not be conforming and PacifiCorp would refund their bid fees.

projects in its proposal summary spreadsheet since many did not provide a queue number or did not have an interconnection application request into PacifiCorp by January 31, 2020. There was a total of fourteen projects that were classified as non-conforming for this reason;

2. Several projects were unable to provide adequate documentation to demonstrate site control as required by the RFP eligibility requirements;
3. Other projects were sited outside of the PacifiCorp transmission system and were unable to demonstrate the ability to provide deliveries to the PacifiCorp system. A majority of these non-conforming offers provided busbar pricing, which was not consistent with the RFP requirements;
4. A couple offers were contingent bids based upon the selection of another offer which was not allowed in the RFP. In addition, there were other contingent bids that were non-conforming, including bids that were contingent on the availability of plant transmission capacity for use by the proposal based on the retirement of a PacifiCorp coal plant;
5. There were a few off-system BTA offers submitted, which were not allowed in the RFP, which stated that off-system projects are not eligible for consideration as a BTA bid;
6. There were also a few proposals that were planning to add a battery storage project to a solar facility with an interconnection queue position. PacifiCorp requested that in such cases, the bidder should provide a determination from PacifiCorp Transmission.

During the assessment regarding bidder conformance with RFP requirements, the PacifiCorp team scheduled a meeting with PacifiCorp Transmission to discuss issues associated with proposals that originally submitted interconnection applications for solar only projects, but were now proposing to add battery storage to the solar project. [redacted]

For the majority of the proposals classified as non-conforming, the IEs were both in agreement with PacifiCorp's decisions. However, Merrimack Energy raised questions about a few of the projects that were initially deemed ineligible by PacifiCorp, expressing a view that some projects needed further scrutiny or back-up documentation before the project should be classified as non-compliant or as conforming instead. A few of the projects identified by Merrimack Energy were eventually classified as conforming after review and assessment by PacifiCorp and the IEs.[44]

[44] At least one of these projects, which was initially classified as non-conforming but eventually re-classified after more review and communications with the bidder, was selected for the FSL.

There was a total of thirty-eight projects that were classified as non-conforming, representing over 14,000 MW of capacity, counting both the generation and storage components.

PacifiCorp communicated conformance issues with all relevant bidders during the first two weeks of September and sent letters to bidders on or around September 14, 2020 regarding their status. Some of the bidders that received PacifiCorp's determination of non-compliance contested PacifiCorp's stance and submitted additional documentation to substantiate their position. PacifiCorp, in conjunction with the IEs, evaluated the responses by each bidder and in some cases, reversed its stance on non-conformity based on the additional information provided by the bidder.

A list of the final offers classified as non-conforming by PacifiCorp and agreed to by the IEs is provided in Appendix B.

E. Discussions with PacifiCorp Regarding Projects with Executed Large Generator Interconnection Agreements (LGIAs)

On September 9, 2020, the PacifiCorp RFP team scheduled a call with the IEs to discuss the issue of projects with existing LGIAs that essentially "have a call" on PacifiCorp's transmission capacity. PacifiCorp's view was that the existence of these projects would have a major influence on remaining locational capacity requirements. Because there were more projects with existing LGIAs than the RFP team had expected, there may be limited opportunities for other projects to be selected in several bubbles since projects without LGIAs could be expected to incur high transmission-related costs and longer lead-times to complete network upgrades and therefore to reach commercial operations. Projects with existing LGIAs would also be included as part of the baseline in the cluster study process. Given the presence of the projects with LGIAs in the baseline, PacifiCorp expected, based on IRP analysis, that projects without LGIAs in constrained areas would probably face significant transmission upgrade costs.

An additional call was scheduled with PacifiCorp Transmission on September 14, 2020 to further discuss the implications of projects with LGIAs on the overall project selection process. PacifiCorp Transmission noted that projects with LGIAs would be included in the cluster study process as a baseline project for the analysis. Projects without LGIAs would need to prove they are commercially ready to be included based on Tariff requirements. PacifiCorp Transmission discussed three categories of projects with regard to priority for inclusion in the cluster study process:

1. Highest priority is any project with an LGIA. Since PacifiCorp has an obligation to provide service to projects in this category, these projects would be included in the cluster study baseline;
2. The second category is late-stage interconnection projects that are far along in the process, such as those projects with a facilities study or draft LGIA. These projects would still need to prove commercial readiness;
3. The last stage is those projects with interconnection study requests only.

The discussion then turned to the issue of selecting projects through the RFP process. PacifiCorp noted that in terms of review and evaluation of proposals, serial queue order matters in terms of adding up the LGIAs. PacifiCorp's senior project representative identified three basic outcomes associated with the inclusion of the LGIAs:

1. Aggregate capacity for LGIAs in a bubble is at or exceeds the bubble capacity requirements. In this case, only LGIA projects would be selected;
2. There are no executed LGIAs in a bubble. Every project that bid in the bubble is competing for the available capacity;
3. The situation in a bubble location is a mixed bag, with LGIA capacity reducing the amount of bid capacity that could be selected.

PacifiCorp's representative did note that LGIA projects could make it through the ISL stage but may not survive economically beyond the cluster study process and would have to be competitive to be selected.

The discussion at the meeting raised a number of issues, most of which related to selection of the most economic projects through the RFP process. The IEs raised the point that if only LGIA projects were allowed to compete for capacity in a specific bubble, how would it be possible to know if the least cost mix of projects would ultimately be selected?

An Open Meeting of the Oregon Commission was scheduled for September 22, 2020. The purpose of this meeting was for the Oregon Staff and Oregon IE, PA Consulting, to update the Commission on the status of the RFP. The PacifiCorp RFP team also made a presentation at the meeting.

The PacifiCorp team discussed its initial shortlist evaluation and selection process for selecting proposals eligible for the PacifiCorp Transmission Transitional Cluster Study Process. PacifiCorp discussed the Phase 1 Initial Shortlist process to date and noted that bidder conformance and eligibility were defined into three groups:

1. Group I – bids deemed ineligible as a result of not having an interconnection queue number or their interconnection queue numbers were established after January 31, 2020. PacifiCorp noted there were 42 proposals (interconnection requests) from 14 projects that were disqualified from the 2020 AS RFP due to the cut-off date issue;
2. Group II – bids deemed ineligible, after consultation with the Oregon and Utah IEs regarding RFP minimum bid requirements;
3. Group III – remaining bids would be scored and ranked for each IRP topology location:
    a. Bids would be grouped by resource type (e.g., solar, solar combined with storage, wind, wind combined with storage, stand-alone battery storage, pumped hydro, etc.);
    b. Bids would be scored and ranked using two scoring methods:
        i. Method 1 – Scoring based on Levelized Net Benefit ($/kW);

ii. Method 2 – Scoring based on Levelized Net Benefit adjusted by the Capacity Contribution Adjustor ("CCA") ($/kW).

PacifiCorp noted that while Scoring Method 1 has been provided as requested for reference, PacifiCorp recommends the ultimate use of scoring Method 2 since this method is consistent with the evaluation performed as part of the 2019 IRP results.[45]

PacifiCorp then discussed the impact on the initial shortlist of projects with executed LGIAs. PacifiCorp provided a table that listed the amount of MWs with existing LGIAs by topology bubble, which included those projects with LGIAs that bid and those that did not bid. PacifiCorp stated that the Group III bid list may be further reduced as a result of PacifiCorp Transmission LGIA contractual commitments in each IRP topology location. In accordance with PacifiCorp Transmission's current interconnection process, executed LGIAs with existing PacifiCorp Transmission customers grant those customers interconnection rights that must be fulfilled/honored prior to all other potential customers, whether or not LGIA customers bid into the 2020AS RFP. PacifiCorp further stated that it would forward all Group III bids, adjusting for PacifiCorp Transmission LGIA commitments, to the IRP team for modeling to determine an ISL by IRP topology location for the October 2020 PacifiCorp Transmission transition cluster study process. PacifiCorp also stated that in April 2021 the executed LGIA sub-group would join the other bidders who participated in the transition cluster study and be asked to update bid price including all direct and network upgrade costs.

Based on PacifiCorp's proposal, given the number of projects with existing LGIAs, only a few bubbles would have capacity available for competition among the 2020AS RFP non-LGIA bids. Other regions, including Northern Utah, Southern Utah, and Southern Oregon had more LGIA capacity than projected requirements, meaning there was not an opportunity or at best a limited opportunity for any RFP bids to compete. The PacifiCorp RFP team stated that it did not fully grasp the magnitude of this issue until the bids were submitted since a number of the LGIAs were executed in 2020 prior to submission of proposals.

The issue was raised whether this could eliminate projects with better economics relative to projects with LGIAs.

In its presentation, the Oregon IE noted that there were many bids in the RFP process that have executed LGIAs that entail committed capacity and pricing and these will be consequential to the selection process. The IE noted that there were many newly signed LGIAs and that PacifiCorp must assume those agreements will be treated as operational projects and will utilize transmission capacity prior to completion of the RFP options. This may limit selection of projects or the types of projects via the RFP in regions of the system.

---

[45] Merrimack Energy raised questions regarding the use of Method 2 based on intuitive and mathematical considerations. Merrimack Energy prepared summaries of the evaluation results of the proposals for initial shortlist considerations using both metrics. The issue of the use of Method 1 or Method 2 is discussed in more detail in the Conclusions section of this report.

The results of the IE's assessment indicated that there were three potential future scenarios at any given transmission bubble:

1. Zero non-LGIA capacity – there are LGIAs of sufficient volume that there is not room for additional resources to be awarded. As noted, both Southern and Northern Utah fit into this category;
2. Zero LGIA Capacity – there are no signed LGIAs in a bubble, which in turn allows PacifiCorp to select unconstrained from the entire pool of bids at the bubble;
3. Mixed Capacity – Some capacity in a bubble is taken up with LGIAs and non-LGIAs take up the left-over share of the capacity.

The Oregon IE stated that when evaluating, scoring and selecting bids for the ISL, LGIAs will have no impact, but for purposes of IRP modeling, capacity committed through LGIAs will take top priority regardless of the bid score, even though proposals with LGIAs may be reflective of an outdated bid cost structure compared to bids currently seeking to enter the cluster study.

Shortly after the meeting, the IEs received a call from Avangrid Renewables, one of the bidders, addressing their concern about the "LGIA issue" and taking exception to the statements made by PacifiCorp during the OPUC Open Meeting. The bidder also identified perceived inconsistencies in the Q&A responses, RFP, and PacifiCorp's Open Access Transmission Tariff ("OATT"). The bidder also sent a letter to PacifiCorp on October 2, 2020 outlining their comments made verbally to the IEs.[46] In the letter, the bidder noted that "the approach described by PacifiCorp during the Special OPUC meeting represents a departure from the terms of the OPUC-approved RFP regarding how projects with and without LGIAs would be treated in the RFP". The bidder also noted that if capacity was reserved for projects with signed LGIAs that did not bid into the RFP, did PacifiCorp communicate this limitation to bidders? If not, why not?

PacifiCorp prepared and submitted a response to the bidder on October 9, 2020. In its response, PacifiCorp noted that "as between qualified bidders, their relative status within the interconnection process (i.e., whether they submitted an interconnection application as late as January 31, 2020, or whether they had progressed all the way through the interconnection process) was given no weight in the RFP". PacifiCorp also concluded that "there would be no bias between a bid with an executed LGIA or one without. Both will have their interconnection costs determined at the end of the cluster study process, either those contained in their retained executed LGIA or those assigned via the transition cluster study. As discussed above, having (or not having) an executed LGIA was simply not a factor that would be given weight when PacifiCorp compares the economics of various bidders".

[46] The bidder, in particular, took exception to PacifiCorp's position, particularly the outcome that for any bubble in which locational initial shortlist capacity limit was consumed by projects with executed LGIAs that all additional projects without executed LGIAs that are bid into the same bubble would not be considered in the economic modeling process to determine the Initial Shortlist.

On October 12, 2020, Renewable Northwest sent a letter to PacifiCorp expressing its concern that PacifiCorp's proposal regarding projects with LGIAs and the associated elimination or exclusion of bids which do not have LGIAs in hand would not result in a least cost least risk portfolio. The concern raised was that the least cost portfolio may not be selected if a large number of bids, which potentially include the most cost-effective bids, may be disregarded as ineligible for the ISL due to overstated current transmission constraints or inappropriate premature elimination of bids, contrary to representations made by PacifiCorp when the RFP was approved. As a result, several interconnection nodes were considered to be fully subscribed with regard to interconnection capacity (Eastern Wyoming, Southwestern Wyoming, and Southern Utah) and several were partially subscribed, and PacifiCorp appears to have eliminated 10-15 GW of bids without any modeling or further review.

The comments of all three parties mentioned above were included on PacifiCorp's website for the 2020AS RFP.

PacifiCorp provided a list of the projects with executed LGIAs to the IE. [redacted] Appendix C contains the list of projects identified by PacifiCorp with executed LGIAs.

E. Evaluation of Eligible Proposals – Phase I Process

1. Initial Price and Non-Price Scoring and Ranking Process

PacifiCorp provided the economic models with the evaluation results for each conforming proposal to the IEs beginning in mid-September, 2020 followed by updated model results for a few proposals later in September and early October. Merrimack Energy reviewed and scrutinized the models in detail for a number of the proposals, notably those proposals located in Northern and Southern Utah as a reasonable sample on which to assess the results from the evaluation methodology used by PacifiCorp. Merrimack Energy focused on solar proposals and solar combined with storage proposals in Northern and Southern Utah to assess the reasonableness of the evaluation results and determine which options offered the most value in these regions.

As background, Merrimack Energy's experience with other similar solicitations is that there are a number of factors which influence evaluation results, particularly for solar combined with storage proposals. These include:

- Duration of the storage option (i.e., 4-hour duration versus 2-hour duration);
- Amount of storage capacity relative to the amount of solar nameplate capacity (while PacifiCorp requested a minimum installed capacity of storage at 25% of the size of the renewable resource, bidders offered installed storage capacity at 25%, 50%, and up to 100%of the nameplate solar capacity proposed);
- Number of cycles per day or year at which the storage project could be charged and discharged. While it is typical that many proposals offer 270-365 cycles per year there can be other options that the utility may request;

- PPA options versus BTA for solar and solar combined with storage resources.

Bidders offered multiple options, frequently for the same resources. For example, some bidders offered a solar only option as well as solar combined with storage for the same resource. In some cases, bidders also submitted proposals for both 2-hour and 4-hour duration batteries for these resources. In a few cases, bidders also offered PPA and BTA options for the same resource, which provided the opportunity to assess the value of each combination of factors. Additionally, projects offered more charge and discharge cycles per day or year than the levels listed above.

Based on Merrimack Energy's experience in other solicitations, it has been generally the case that 4-hour duration batteries offer more capacity benefits than 2-hour duration batteries, but are more costly on a $/kW installed basis. Likewise, projects which offer battery storage capacity of 25% of the renewable project nameplate, were less costly but offer lower benefits than projects which have higher levels of storage capacity relative to solar capacity. Additionally, proposals which offer more charge and discharge cycles would generally require a higher O&M cost to allow for such flexibility.

Lastly, it has been our experience that BTA options for solar or solar combined with storage are not competitive with PPA options due to IRS normalization accounting requirements for utilities and the ability of third-parties to also receive ITC benefits for solar combined with storage projects that are charged by the renewable resource.

Merrimack Energy prepared a summary of the results by benefit and cost component for each solar and solar combined with storage proposal evaluated in Southern and Northern Utah. Merrimack Energy also independently scored each of the proposals from a non-price or qualitative perspective using PacifiCorp's evaluation criteria as listed in Table 3 of this report. The detailed evaluation results are provided in Appendix D for each solar PV project located in Southern and Northern Utah, while Appendix E contains the evaluation results for each solar combined with storage resource. The Tables in Appendix D and E contain information on the cost and benefit components for each proposal, the evaluation results based on the two metrics identified by PacifiCorp (i.e., Levelized Net Benefit and Levelized Net Benefit adjusted by the Capacity Contribution Adjustor), project size, pricing, capacity contribution, non-price scores prepared by PacifiCorp and Merrimack Energy, and project structure and operational issues in the case of solar combined with storage projects. The IE also ranked each of the proposals by Net Benefits calculations for purposes of assessing the most economic and viable options. Merrimack Energy used this information to inform the IE's recommendations for including additional projects on the ISL, as described in the next section of this report.

With regard to the quantitative evaluation results, Merrimack Energy felt that the results made intuitive sense, reflecting the lower capacity contribution for solar only projects relative to solar combined with storage options. In addition, solar combined with storage projects had lower capacity contribution values for 2-hour duration options relative to 4-hour duration storage as well as for projects which had a smaller percentage of storage capacity relative to solar capacity (e.g., 25% versus 50% or more). Additionally, solar combined with storage projects in Southern and Northern Utah had a higher Net Benefit compared to solar only options for the same project. A review of the results of the evaluation components also indicated that the costs for 2-hour duration storage options were lower than projects with 4-hour duration storage, while 4-hour duration storage generally had a higher storage benefit on a unit basis.

As noted, Merrimack Energy also conducted an independent evaluation of the non-price or qualitative scores for a sample of the projects evaluated as a "check" against PacifiCorp's scoring of the proposals from a qualitative perspective. [redacted] We are interested in assessing if all 19 selected projects are successful in negotiating contracts or fail during the contract negotiation process and whether the reasons for success or failure coincide with the non-price/viability assessment completed by PacifiCorp and the IEs.[47]

The comparison results of solar and solar combined with storage projects by contract structure also were consistent with our expectation. [redacted] Table 9 illustrates the results for the bidders that offered both a PPA and BTA for the same project. As noted previously in this report, the benefits enjoyed by PPAs relative to BTAs is based on the ability of third-party PPA providers to monetize the ITC benefits quickly while utility-owned options are required to normalize the benefits over the life of the asset.

Table 9: Comparison of Solar and Solar Plus Storage PPA and BTA Valuation

Project Name	Resource Type	PPA – Net Benefits PV $/kW-month	BTA – Net Benefits PV $/kW-month
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

47 [redacted]

F. PacifiCorp Initial Selection of Proposals Eligible for the ISL

PacifiCorp submitted a slide deck presentation to the IEs on September 30, 2020 providing PacifiCorp's proposed list of bids eligible for ISL selection. PacifiCorp noted in its presentation that an assessment of projects with LGIAs was done to determine whether bids should be considered for selection. PacifiCorp identified four factors it considered in ISL evaluation and proposed selection:

- Consider total volume of executed LGIA capacity in relation to the RFP limits established by location;
- If the total capacity with signed LGIAs that participated in the RFP and met minimum eligibility requirements exceeded the RFP limit for a given location, all bids with signed LGIAs in that location would be considered ISL eligible (i.e., available for selection by the SO model) regardless of the RFP limit. Bids without LGIAs in these locations would not be considered ISL eligible;
- If total capacity with signed LGIAs that participated in the RFP and met minimum bid eligibility requirements was less than the RFP limit for a given location, all bids with signed LGIAs in that location would be considered ISL eligible. Bids without signed LGIAs that did not exceed remaining capacity (i.e., the RFP limit less the cumulative capacity with signed LGIAs) would be considered ISL eligible, and all remaining projects in that location would not be considered for the ISL;
- If a location had no executed LGIAs, all bids meeting minimum bid eligibility requirements that did not exceed the RFP limit would be considered ISL eligible.

While a number of proposals included multiple variants, PacifiCorp considered the highest scoring variant to be ISL eligible.[48] PacifiCorp completed scoring for all proposals classified as conforming and meeting minimum eligibility requirements and provided the final results to the IEs. In its presentation, PacifiCorp noted that 43 projects were deemed eligible for the ISL, representing a total of 110 variants[49] and 7,398 MWs, of which 4,415 MWs had executed LGIAs.

Table 10 contains a summary of the projects considered eligible for selection to the shortlist in each bubble by resource type. Confidential Appendix F contains more detailed scoring by component.

Table 10: Bids Eligible for Initial Shortlist Proposed by PacifiCorp

Project Name	Queue Number	Structure	Project Size (MW)	PacifiCorp Score	Rank	Interconnection Status
Eastern Wyoming Wind						
[redacted]	[redacted]	PPA	332	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	PPA	350	[redacted]	[redacted]	[redacted]

[48] However, if a bidder offered both PPAs and BTAs for the same project, PacifiCorp at times considered both offer structures.

[49] At this point in the process, PacifiCorp noted that there was a total of 351 variants from 84 projects.

[redacted]	[redacted]	BTA	190	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	PPA	280	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	PPA	101	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	PPA	190	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	BTA	400	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	BTA	400	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	PPA	103	[redacted]	[redacted]	[redacted]	
Eastern Wyoming Solar							
[redacted]	[redacted]	PPA	80	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	PPA	160	[redacted]	[redacted]	[redacted]	
Eastern Wyoming Solar combined with BESS							
[redacted]	[redacted]	PPA	160	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	PPA	80	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	PPA	75	[redacted]	[redacted]	[redacted]	
Northern Utah Solar combined with BESS							
[redacted]	[redacted]	PPA	80	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	PPA	80	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	PPA	147	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	PPA	67	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	PPA	80	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	PPA	130	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	PPA	45	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	PPA	80	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	BTA	45	[redacted]	[redacted]	[redacted]	
Northern Utah Solar							
[redacted]	[redacted]	PPA	41.5	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	PPA	130	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	PPA	80	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	PPA	32.75	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	PPA	80	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	PPA	200	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	PPA	80	[redacted]	[redacted]	[redacted]	
Northern Utah BESS							
[redacted]	[redacted]	PPA	200	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	PPA	200	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	PPA	200	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	BTA	200	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	BTA	200	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	BTA	200	[redacted]	[redacted]	[redacted]	

[50] OS means off-system.

Southern Utah Solar combined with Storage						
[redacted]	[redacted]	PPA	200	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	PPA	99	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	PPA	99	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	PPA	100	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	PPA	300	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	PPA	400	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	PPA	200	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	PPA	58	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	BTA	200	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	BTA	100	[redacted]	[redacted]	[redacted]
Southern Utah Solar						
[redacted]	[redacted]	PPA	99	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	PPA	99	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	PPA	95	[redacted]	[redacted]	[redacted]
Southern Oregon Solar + BESS						
[redacted]	[redacted]	PPA	60	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	PPA	50	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	PPA	160	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	PPA	50	[redacted]	[redacted]	[redacted]
Southern Oregon Solar						
[redacted]	[redacted]	PPA	50	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	PPA	40	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	BTA	40	[redacted]	[redacted]	[redacted]
Southern Oregon Pumped Storage						
[redacted]	[redacted]	Toll	720	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	Toll	393.3	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	Toll	294.5	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	Toll	196.5	[redacted]	[redacted]	[redacted]
Central Oregon Solar combined with BESS						
[redacted]	[redacted]	PPA	103	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	PPA	55	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	BTA	120	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	BTA	103	[redacted]	[redacted]	[redacted]
Central Oregon Solar						
[redacted]	[redacted]	PPA	103	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	PPA	63	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	PPA	55	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	BTA	120	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	BTA	103	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	BTA	63	[redacted]	[redacted]	[redacted]
Central Oregon BESS						

[redacted]	[redacted]	BTA	200	[redacted]	[redacted]	[redacted]
Yakima Wind						
[redacted]	[redacted]	PPA	153.6	[redacted]	[redacted]	[redacted]
Yakima Wind combined with BESS						
[redacted]	[redacted]	PPA	153.6	[redacted]	[redacted]	[redacted]
Yakima Solar						
[redacted]	[redacted]	PPA	80	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	PPA	260	[redacted]	[redacted]	[redacted]
Yakima Solar combined with BESS						
[redacted]	[redacted]	PPA	94	[redacted]	[redacted]	[redacted]
SW Wyoming Wind						
[redacted]	[redacted]	BTA	122	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	PPA	122	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	PPA	100	[redacted]	[redacted]	[redacted]
Goshen Idaho Wind						
[redacted]	[redacted]	PPA	151	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	PPA	450	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	BTA	450	[redacted]	[redacted]	[redacted]
Goshen Idaho Solar combined with BESS						
[redacted]	[redacted]	PPA	200	[redacted]	[redacted]	[redacted]
Borah BESS						
[redacted]	[redacted]	BTA	515	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	Toll	515	[redacted]	[redacted]	[redacted]
Total						

PacifiCorp asked the IEs to review the selection of proposals considered ISL eligible and provide any comments regarding the ISL eligible list. Both IEs provided responses to PacifiCorp shortly after the meeting on October 1, 2020 to discuss the ISL eligible list.

Merrimack Energy's team reviewed the slide deck and back-up information provided by PacifiCorp and prepared clarifying questions and comments. Merrimack Energy's focus was on the projects located in Southern and Northern Utah and Eastern Wyoming. PacifiCorp confirmed that the eligible initial bid list (by region) would be included in the SO modeling for initial shortlist selection and for inclusion in the Cluster Study process.[51]

[51] As noted on page 31 of the RFP, upon identification of the initial pool of bids, bid inputs will be submitted to the IRP team for modeling of the resources using the production cost models used in the 2019

Merrimack Energy focused on the rankings of the proposals and variants based on compilation of the results of the evaluation, which are included in Appendix D and E to this report. Both Merrimack Energy and PA Consulting, the Oregon IE, identified other projects based on evaluation results and bid ranking based on net benefits or adjusted net benefits regardless of whether the project had an LGIA that should be considered for inclusion in the list of eligible projects at this time. Following below is a summary of the comments prepared by Merrimack Energy and submitted to PacifiCorp in response to PacifiCorp's request for comments from the IEs regarding the list of shortlist eligible proposals. Merrimack Energy's comments are based on review of evaluation results by region and technology.

Southern Utah Solar projects

Merrimack Energy noted that the following solar projects were included as bids eligible for ISL selection for southern Utah by PacifiCorp. These projects would be eligible for selection by the SO model for inclusion on the ISL, which would be considered for inclusion in the Cluster Study process. [redacted]

Project Name	Queue No.	Size (MW)	Status
[redacted]	[redacted]	99	[redacted]
[redacted]	[redacted]	99	[redacted]
[redacted]	[redacted]	95	[redacted]

There are two other solar projects in Southern Utah that in Merrimack Energy's view should be considered, [redacted] Our analysis confirms these results. Only the project with queue [redacted], with an existing LGIA, ranks toward the bottom of the list of projects in this region.

While Merrimack Energy agreed with the selection of the three projects identified above, the IE also suggested considering the project with queue No. [redacted] as an alternative project to also include on the list of bids eligible for ISL selection since this project was the highest ranked project on the list and is a relatively smaller project at [redacted] MW.

IRP. The production cost models would select the optimized portfolio of resources subject to the same total capacity limits used to score and rank bids in the initial pool of resources. PacifiCorp would limit the capacity in a given location to 150% of the capacity included in the company's 2019 IRP preferred portfolio.

Southern Utah Solar plus Storage Projects

The following solar combined with storage projects were included as bids eligible for ISL selection by PacifiCorp. The selected projects are summarized below. [redacted]

Project Name	Queue No.	Solar Size MW	Storage Size MW	Status
[redacted]	[redacted]	99	49.5	[redacted]
[redacted]	[redacted]	99	49.5	[redacted]
[redacted]	[redacted]	300	75	[redacted]
[redacted]	[redacted]	400	200	[redacted]
[redacted]	[redacted]	58	58	[redacted]

[redacted]

Merrimack Energy noted that we agreed with the selection of the projects above. In particular, projects with queue Nos. [redacted] would add value to the PacifiCorp system that other proposals may not provide. Merrimack Energy noted that there are other projects with LGIAs that are also competitive from a pricing standpoint.

Northern Utah Solar Projects

The following solar projects have been included by PacifiCorp as bids eligible for ISL selection for northern Utah. In the status column, it should be noted that there are several projects listed that are in the early stages of the interconnection process (application or at most a feasibility study).

Project Name	Queue No.	Size (MW)	Status
[redacted]	[redacted]	41.5	[redacted]
[redacted]	[redacted]	130	[redacted]
[redacted]	[redacted]	32.75	[redacted]
[redacted]	[redacted]	80	[redacted]
[redacted]	[redacted]	80	[redacted]
[redacted]	[redacted]	200	[redacted]
[redacted]	[redacted]	80	[redacted]

[redacted]

[redacted]

Similar to most other solar projects in the Northern Utah bubble, this project also did not have an executed LGIA.

<u>Northern Utah Solar Plus BESS Projects</u>

The following is the list of ISL eligible bids selected by PacifiCorp for the solar combined with storage options for Northern Utah.

Project Name	Queue No.	Solar Size MW	Storage Size MW	Status
[redacted]	[redacted]	80	20	[redacted]
[redacted]	[redacted]	80	20	[redacted]
[redacted]	[redacted]	147	37.5	[redacted]
[redacted]	[redacted]	80	20	[redacted]
[redacted]	[redacted]	45	12.5	[redacted]
[redacted]	[redacted]	130	32.5	[redacted]
[redacted]	[redacted]	80	20	[redacted]

[redacted]

[52] While 515 MW has been generally identified as the RFP upper limit for Northern Utah, PacifiCorp’s September 22, 2020 presentation to the Special Public Meeting of the Public Utility Commission of Oregon identified a locational shortlist capacity limit of 860 MWs for Northern Utah.

<u>Northern Utah BESS</u>

[redacted] The options to be considered include both BSA and BTA options. All project options are early-stage development projects. None of the projects have an executed LGIA. A list of the projects is included in the table below.

Project Name	Queue No.	Project Size - MW	Status
[redacted]	[redacted]	200	[redacted]
[redacted]	[redacted]	200	[redacted]
[redacted]	[redacted]	200	[redacted]

<u>Northern Utah Wind Projects</u>

[redacted] The first project was also submitted with a capacity of 150 MW, but it did not possess an executed LGIA for this project. These projects were not included in the slide deck for northern Utah but were included in the Southwest Wyoming region by PacifiCorp.

<u>Eastern Wyoming ISL Eligible Projects</u>

Merrimack Energy also asked PacifiCorp to confirm that the projects with executed LGIAs in eastern Wyoming that will trigger Gateway South include both the wind and solar combined with storage projects listed below, [redacted]

<u>Project Name</u>	<u>Queue No.</u>	<u>Project Type</u>	<u>Project Size (MW)</u>
[redacted]	[redacted]	wind	331.8
[redacted]	[redacted]	wind	350.4
[redacted]	[redacted]	wind	280
[redacted]	[redacted]	wind	100.5
[redacted]	[redacted]	wind	190
[redacted]	[redacted]	wind	400
[redacted]	[redacted]	solar and solar combined with storage	160
[redacted]	[redacted]	solar and solar	80

		combined with storage	
[redacted]	[redacted]	solar combined with storage	75
			1,967.7

The Oregon IE also made recommendations to PacifiCorp to include additional projects on the list of bids eligible for the ISL. The additional 14 total bids proposed by the Oregon IE included the following projects: [redacted]

PacifiCorp generally accepted the recommendations by the IEs, with a few exceptions. PacifiCorp recommended that [redacted] Merrimack Energy should not be included in the list of eligible projects for ISL evaluation and determination. PacifiCorp's rationale for not including the [redacted] project was that the off-system project had been re-reviewed and re-modeled. The result was that net benefits were negative, which would result in the project not being chosen to establish the ISL. The [redacted] was not rated highly in the evaluation results and was not representative of the best assets in the particular bubble and technology class. PacifiCorp did include the [redacted] project among the eligible projects for the initial shortlist.

Merrimack Energy agreed with PacifiCorp's decision to include the additional projects on the ISL eligible list as well as the LGIA projects as a reasonable approach given the challenge of initial shortlist selection. In addition, PacifiCorp recommended that the [redacted] should also be included on the list. The IEs agreed with PacifiCorp's suggestion. It should be noted that most of the projects in northern and southern Utah with [redacted] were priced competitively and were ranked highly based on economic valuation and non-price factors. Merrimack Energy recognized the issues raised associated with a decision to select the highest-ranking projects [redacted] given that the SO model at this stage in the process would not select "least cost options" based on total cost (bid price plus transmission costs) but on the basis of bid price alone.

G. Rationale for Expansion of ISL

One of PacifiCorp's rationales for selection of projects for consideration for the ISL was based on the analysis included in the 2019 IRP that illustrated in several bubbles that the cost of network upgrades for incremental projects without LGIAs would be so high that there would be no way possible for these projects to compete. However, Merrimack Energy's (and PA Consulting's) concern was that without including the lower priced bids in the Cluster Study process there will be no way of determining if the least cost portfolio

[53] PA Consulting identified 14 bids that would have been selected if bids had competed with no consideration of [redacted]

is selected. Merrimack Energy's issue was that if some of the newly proposed projects had lower bid prices than LGIA projects, it may be possible for the total cost of the lower priced proposals to offset their higher network upgrade costs. If these projects were in fact part of the least cost portfolio, they should be included. Otherwise, it is not possible to conclude that projects with LGIAs would automatically be selected in a lowest cost portfolio. This assessment can only take place if projects without LGIAs were included in the cluster study to assess how they affect transmission costs. PacifiCorp agreed with this rationale after considerable discussions between the IEs and PacifiCorp.

H. Evaluation and Selection of the ISL

In mid-October, PacifiCorp provided a response to the IEs regarding its treatment and basis for conducting its overall evaluation of proposals for determining the ISL for the 2020AS RFP. PacifiCorp requested confirmation from the IEs of the adjusted list of projects, including the additional projects recommended by the IEs and accepted by PacifiCorp. In addition, PacifiCorp provided a description regarding how the additional projects would be treated as part of the overall evaluation in determining the ISL for the 2020AS RFP.

PacifiCorp noted that once the candidate project list was selected for evaluation by the SO and PaR models (the "IRP Models"), the IRP models would be permitted to select from each location no more capacity (nameplate) than its limit from RFP Appendix H, approximately 150% of the preferred portfolio capacity in each location. The exception to this capacity limit would be those transmission locations where the aggregate MWs of bids from projects with executed LGIAs exceeded the capacity set forth in Appendix H, which included eastern Wyoming, southwest Wyoming, and southern Utah.[54] The IRP models were intended to maximize customer value while selecting enough capacity to meet the planning reserve margin in all years.

PacifiCorp also clarified that the additional projects would not be included in the ISL derived by IRP modeling, but would be included in the ISL along with bids selected from the IRP modeling and deemed to have met the "commercial readiness" criteria for PacifiCorp Transmission's transition cluster study consideration. PacifiCorp raised a concern that including additional projects which did not have signed LGIAs as selectable bids in the IRP models would likely displace other projects on the bid candidate list that did have signed LGIAs during the IRP modeling process. As a result, the ISL would include projects without signed LGIAs and exclude projects that have signed LGIAs. PacifiCorp also reiterated that based on IRP planning assumptions, these projects were expected to trigger significant transmission interconnection upgrades.

PacifiCorp and the IEs met on October 24, 2020 to review the ISL summary results prepared by PacifiCorp. PacifiCorp noted that the ISL was established based on a number of criteria once the RFP team provided the list of eligible bids to the IRP team to conduct

[54] PacifiCorp later informed the IEs that for Utah South and Western Wyoming, the bubble limit was increased beyond 150% to allow the SO model to select from among all of the signed LGIAs in those locations.

the analysis of the proposals based on SO modeling.[55] PacifiCorp noted that price and non-price scores were used to identify the highest-ranking bids and bid variants by technology and location while considering the total volume of capacity with signed LGIAs in relation to 2020AS RFP regional capacity limits. 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 PacifiCorp's retail customers.[56] The ISL also included high-ranking bids added to the initial list based on discussions with the IEs. Six projects were added to the list eligible for Initial Shortlist selection. These projects could trigger significant interconnection costs (based on planning assumptions used to develop the 2019 IRP). These bids were included so that the Final Short List analysis could be used to determine whether such costs would eliminate them from the least-cost portfolio of bids after the transition cluster study process was completed.

For purposes of conducting the SO analysis, outputs from the RFP Screening Model were input into the SO model. The inputs listed below from the RFP Screening model were converted to real levelized results for incorporation into the SO model. These included the following:

- Capital Revenue Requirement
    - BTA Pricing
- Fixed O&M
    - Capitalized (run-rate capital)
    - Expenses
- Terminal Value (development rights, land, transmission network upgrades)
- PPA Pricing
- PacifiCorp Transmission Network Upgrade Amortization (final shortlist only)
- Storage/Battery costs
- Storage/Battery capital (augmentation only)
- [redacted]: annual reserve value and energy arbitrage value

Table 11 provides a list of the ISL projects as proposed by PacifiCorp based on the results of the SO modeling. A total of 37 projects were selected for the ISL, totaling approximately 5,852.90 unique MW,[57] which included projects selected through the SO modeling process and 792 MW of additional projects. [redacted] These projects would be eligible for the Cluster study process or could accept their estimated transmission costs if they had executed an LGIA.

[55] The SO modeling was designed to evaluate and select the highest ranked proposals by technology and area bubble to determine an optimal portfolio or combination of resources that meets system reliability requirements at lowest reasonable cost.

[56] The SO model selection did not reflect costs for interconnection network upgrades. These costs will be assessed after the transition cluster study process is completed and will be evaluated when determining the FSL.

[57] There were a few proposals that were included in both the solar and solar combined with storage categories. These proposals were only counted once in total generator capacity.

Table 11: Initial Shortlist Proposed by PacifiCorp

Project Name	Technology	Contract Structure	Generator Capacity (MW)	Storage Capacity (MW)	Storage Duration (hours)	Contract Term (years)	COD
Eastern Wyoming Wind							
[redacted]	Wind	PPA	[redacted]	N/A	N/A	30	10/1/2024
[redacted]	Wind	PPA	[redacted]	N/A	N/A	30	12/1/2024
[redacted]	Wind	BTA	[redacted]	N/A	N/A	N/A	12/31/2024
[redacted]	Wind	PPA	[redacted]	N/A	N/A	25	12/31/2023
[redacted]	Wind	PPA	[redacted]	N/A	N/A	30	12/1/2024
[redacted]	Wind	BTA	[redacted]	N/A	N/A	N/A	12/31/2024
[redacted]	Wind	PPA	[redacted]	N/A	N/A	25	12/31/2022
Northern Utah Solar + BESS							
[redacted]	Solar + BESS	PPA	[redacted]	[redacted]	2	25	12/31/2023
[redacted]	Solar + BESS	PPA	[redacted]	[redacted]	4	25	12/31/2023
[redacted]	Solar + BESS	PPA	[redacted]	[redacted]	4	20	12/31/2023
[redacted]	Solar + BESS	PPA	[redacted]	[redacted]	2	25	12/31/2023
Northern Utah Solar							
[redacted]	Solar	PPA	[redacted]	[redacted]	N/A	20	12/31/2023
Northern Utah BESS							
[redacted]	BESS	BSA	[redacted]	[redacted]	4	15	6/30/2024
Southern Utah Solar + Storage							
[redacted]	Solar + BESS	PPA	[redacted]	[redacted]	2	30	12/31/2023
[redacted]	Solar + BESS	PPA	[redacted]	[redacted]	4	20	11/30/2023
[redacted]	Solar + BESS	PPA	[redacted]	[redacted]	4	20	11/30/2023
[redacted]	Solar + BESS	PPA	[redacted]	[redacted]	2	30	12/31/2022
[redacted]	Solar + BESS	PPA	[redacted]	[redacted]	2	20	12/31/2024

[58] Projects in bold italics reflect the additional projects agreed to by the IEs and PacifiCorp.

Project Name	Technology	Contract Structure	Generator Capacity (MW)	Storage Capacity (MW)	Storage Duration (hours)	Contract Term (years)	COD
[redacted]	Solar + BESS	PPA	[redacted]	[redacted]	4	25	12/31/2023
[redacted]	Solar + Storage	PPA	[redacted]	[redacted]	2	15	12/31/2024
[redacted]	Solar + BESS	PPA	[redacted]	[redacted]	4	30	12/1/2023
[redacted]	Solar + BESS	PPA	[redacted]	[redacted]	4	30	12/1/2023
Southern Utah Solar							
[redacted]	Solar	PPA	[redacted]	[redacted]	N/A	30	12/31/2023
[redacted]	Solar	PPA	[redacted]	[redacted]	N/A	20	12/31/2024
[redacted]	Solar	PPA	[redacted]	[redacted]	N/A	30	12/1/2023
Southern Oregon Solar + BESS							
[redacted]	Solar + BESS	PPA	[redacted]	[redacted]	4	20	12/29/2023
[redacted]	Solar + BESS	PPA	[redacted]	[redacted]	4	30	12/31/2023
[redacted]	Solar + BESS	PPA	[redacted]	[redacted]	4	30	12/31/2023
Southern Oregon Solar							
[redacted]	Solar	PPA	[redacted]	[redacted]	N/A	15	12/31/2024
[redacted]	Solar	PPA	[redacted]	[redacted]	N/A	25	12/31/2023
Central Oregon Solar							
[redacted]	Solar	PPA	[redacted]	[redacted]	N/A	25	12/31/2023
Yakima Solar							
[redacted]	Solar	PPA	[redacted]	[redacted]	N/A	25	12/15/2023
[redacted]	Solar	PPA	[redacted]	[redacted]	N/A	25	12/31/2023
Yakima Solar + BESS							
[redacted]	Solar + Storage	PPA	[redacted]	[redacted]	4	25	10/1/2023
SW Wyoming Wind							
[redacted]	Wind	BTA	[redacted]	[redacted]	N/A	N/A	12/31/2024
SW Wyoming Solar plus Storage							

Project Name	Technology	Contract Structure	Generator Capacity (MW)	Storage Capacity (MW)	Storage Duration (hours)	Contract Term (years)	COD
[redacted]	Solar plus Storage	PPA	[redacted]	[redacted]	4	20	12/31/2023
[redacted]	Solar plus Storage	PPA	[redacted]	[redacted]	4	20	12/31/2022
Goshen Idaho Wind							
[redacted]	Wind	PPA	[redacted]	[redacted]	N/A	25	11/15/2022
[redacted]	Wind	PPA	[redacted]	[redacted]	N/A	25	9/30/2023
Goshen Idaho Solar + BESS							
[redacted]	Solar + BESS	PPA	[redacted]				12/29/2023
Total[59]			5852.9				

The IEs were generally in agreement with the selection of the ISL, although both IEs had some additional clarification questions for PacifiCorp prior to ISL notification to bidders.

On October 30, 2020, PacifiCorp notified the bidders selected for the ISL regarding the specific projects, proposal variants, contract type, project size, and COD date for the variants selected. PacifiCorp notified selected bidders that bidders relying on the 2020AS RFP ISL selection to demonstrate that their project(s) satisfied the PacifiCorp OATT "commercial readiness" criteria necessary for inclusion in the upcoming interconnection Transition Cluster study were required to notify PacifiCorp Transmission of their ISL selection by October 31, 2020. In the Notice of Selection letter, PacifiCorp also provided an update of the schedule going forward along with bidder requirements once the cluster study process was completed. PacifiCorp also reminded bidders that ISL bidders were required to provide a commitment letter within 20 days after the date of this notice. The notice also provided additional information about the requirements for the commitment letter.

I. Cluster Study Process

There was limited activity during the period from notification to bidders of ISL selection to completion of the cluster studies in early April, 2021. There was communication between PacifiCorp and ISL selected bidders about credit requirements and updates to project status during the six-month timeframe.

In early April, PacifiCorp notified the IEs that the cluster studies had been completed and were posted on the PacifiCorp Transmission Oasis webpage on April 2, 2021 along with a link to the studies. Merrimack Energy reviewed the files and focused on reviewing sample studies for each Area identified. The Cluster Studies were similarly organized by

[59] Total includes all primary generation including the 200 MWs associated with the standalone storage project.

consistent sections within each study, which aided in review of the studies. The studies noted that each interconnection Transition Cluster Study evaluated the impact of the proposed interconnection on the reliability of the transmission system. The Cluster Study considered the Base Case as well as all generating facilities (including any identified Network Upgrades associated with such higher queued interconnection) that, on the date the Cluster Request Window closed:

- Are existing and directly interconnected to the Transmission System:
- Are existing and interconnected to Affected Systems and may have an impact on the Interconnection Request;
- Have a pending higher queued or higher clustered interconnection request to interconnect to the transmission system; and
- Have executed an LGIA or requested that an unexecuted LGIA be filed with FERC.

With regard to Cluster Study assumptions, it was assumed that all active higher priority transmission service and/or generator interconnection requests were considered in the study. If any of these requests were withdrawn, the Transmission Provider reserved the right to restudy this request, and the results and conclusions could change. For study purposes, there were two separate queues considered:

- Transmission Service Queue: to the extent practical, all network upgrades that were required to accommodate active transmission service requests were modeled in this study;
- Generation Interconnection Queue: Interconnection facilities and network upgrades associated with higher queue or higher clustered interconnection requests were modeled in this study.

Table 12 below provides a summary of the cluster study results by area of the PacifiCorp system. The objective of the Transition Cluster Study was to provide bidders interconnection cost estimates and expected dates for interconnecting their projects. The table includes information from the studies that identified projects that were bid into the RFP, including those projects that were selected for the ISL. In addition, given the importance of the timing for interconnection in each Area relative to the schedule identified to reach in-service dates by the end of 2024, the Table also identified the timing included in the studies for completion of the interconnection facilities as well as key study assumptions. It is important to note that the interconnection cost estimates and timing were based on completion of upgrades associated with all projects as well as other facilities identified.

Table 12: Summary of Cluster Study Results

Cluster Area	Description	RFP Projects in Cluster Area	In-service Date for Completion of Interconnection	Study Assumptions/Comments
Area 1	East Wyoming area	[redacted]	2027	Energy Gateway South (Aeolus-Clover) 500 kV

				transmission project assumed in service (Q4 2024)
Area 2	Trona area; Naughton area (SW Wyoming, Northeast Utah, SE Idaho; Park City area; Ogden area; and Northern Utah	[redacted]	72 months to design, procure, and construct facilities	Energy Gateway South which includes the new Aeolus-Clover 500 kV transmission line and other associated upgrades assumed in service (Q4 2024)
Area 3	Salt Lake Valley	[redacted]	24 months to construct facilities	
Area 4	Southern Utah Area	[redacted]	72 months to design, procure, and construct facilities	Energy Gateway South assumed in service (Q4 2024)
Area 5	Eastern Idaho	[redacted]	72 months to design, procure, and construct facilities	
Area 6	Sunnyside/Yakima Washington	[redacted]	18-20 months	
Area 7	Dalreed/Arlington, Oregon	[redacted]	120 months	
Area 8	Prineville Load Pocket	[redacted]	36 months	
Area 9	S. Oregon and N. California	[redacted]	60 months	
Area 10	Willamette Valley load pocket in west-central Oregon	[redacted]	15-18 months	

On April 12, 2021, PacifiCorp and the IEs met to discuss the Cluster Study impacts on the ISL projects. PacifiCorp presented a summary of the ISL subsequent to the review of the interconnection cluster studies. The following are the major conclusions presented by PacifiCorp at that time:

[redacted]

PacifiCorp suggested at the meeting that projects with estimated interconnection construction schedules that would result in a commercial operation date beyond December 31, 2024 should be eliminated based on the requirements listed in the RFP that the 2020AS RFP would consider bids that could achieve commercial operations before or on December 31, 2024 to meet PacifiCorp stated resource requirements. The projects that were eliminated were attributed to the information contained in the Cluster Studies that identified how many months it would take to design, procure and construct the interconnection facilities. All affected projects were located in Areas 2, 4, 5 and 9, of which Areas 2, 4 and 5 had an expected 72 months for completion of the necessary interconnection facilities and Area 9 studies identified 60 months. In all cases, the timelines were 2-3 years after the required in-service date for projects under this RFP of 12/31/2024 at the latest.

[redacted]

PacifiCorp suggested that it would notify bidders whose cluster study results indicate that their projects would not meet the December 31, 2024 commercial operation date and such projects would not be considered for the FSL. PacifiCorp sent out notification via email to all affected bidders.

---

[60] PacifiCorp flagged this project because it was the second phase of a project that was selected with the anticipated ability to interconnect by 12/31/2023.

[61] [redacted]

After receiving notification, a few bidders responded that they felt they would be able to interconnect sooner than anticipated and in time to meet the 12/31/2024 COD based on the expectation that projects ahead of their project would withdraw from the process. One bidder indicated that a large nuclear unit was ahead of it in the queue but expected the nuclear project would withdraw from the queue which would open up interconnection capacity. PacifiCorp asked bidders who made such claims to provide documentation from PacifiCorp Transmission regarding their contention about their ability to interconnect sooner. However, PacifiCorp Transmission did not provide such a response or documentation to the bidders to support the bidder's claims. As a result, PacifiCorp decided to eliminate such projects from consideration for this RFP due to the uncertainty associated with the ability of the projects to interconnect on time.

PacifiCorp indicated the remaining bidders would be required to provide bid pricing updates by 5:00 pm on April 22, 2021.

J. Best and Final Offers

Best and final proposals were submitted by eligible bidders on April 22, 2021 as required. A total of [redacted] From a resource type perspective, there were 9 wind projects, 6 solar projects, 11 solar combined with storage projects, and 1 stand-alone BESS option.

[redacted] Merrimack Energy downloaded the best and final offers and prepared a summary of the offers along with a comparison of the initial proposal prices submitted to best and final pricing. Appendix G contains information on the original pricing for each applicable proposal and revised or best and final pricing to get a perspective of the magnitude of the price increases proposed. Merrimack Energy also included in Appendix G metrics from the updated spreadsheet models prepared by the PacifiCorp team relative to the original bid evaluation results.

PacifiCorp provided the IEs a slide deck on May 3, 2021 with the results of the best and final offers. [redacted]

[redacted]

[redacted]

K. Final Offer Selection – Initial Assessment (FSL 1)[63]

PacifiCorp initially submitted the proposed FSL presentation to the IEs on June 8, 2021.[64] PacifiCorp noted that the proposed FSL included:

- 1,792 MW of new wind resources (590 MW as Build-Transfer Agreements and 1,202 MW as Power Purchase Agreements);
- 1,453 MW of solar capacity (all Power Purchase Agreements);
- 735 MW of battery energy storage system capacity – 535 MW paired with solar bids and 200 MW as standalone battery storage (BSA).

PacifiCorp also noted that based on the base case (MM case – Medium Gas/Market Price; Medium Carbon Price) market price and CO2 price assumptions, the present-value net benefits of this portfolio were $323 million relative to a portfolio without RFP bids.[65]

PacifiCorp noted that the FSL selection process was implemented in two basic phases using the IRP modeling tools: the portfolio-development phase and the scenario-risk phase. PacifiCorp noted that portfolios were selected by the SO model under a range of price-policy scenarios,[66] plus others recommended by staff of the Public Utility Commission of Oregon. These scenarios included:

- LN: low gas/market price; no carbon price
- MM: medium gas/market price; medium carbon price
- HH: high gas/market price; high carbon price

---

[63] Merrimack Energy is referring to the June 8, 2021 presentation of FSL results by PacifiCorp as the Initial Assessment or FSL 1 because, as will be discussed in the report, PacifiCorp discovered errors in its analysis that required revisions to the FSL modeling and changes in evaluation results on two different occasions.

[64] PacifiCorp's 2020 All Source Request for Proposals - Request for Acknowledgement of Final Short List of Bidders in the 2020 All Source Request for Proposal which included PacifiCorp's filing of the FSL as well as the IE Closing Report was posted to the Oregon PUC website in Docket No. UM2059 on June 15, 2021.

[65] PacifiCorp noted that 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.). In response to a question submitted by Merrimack Energy, PacifiCorp stated that the $323 million in benefits was associated with the analysis which shows the present-value revenue requirement differential (PVRR(d)) between a portfolio without bids relative to the SNS portfolios with final RFP shortlisted bids when analyzed using MM price-policy assumptions. In the no RFP bids case, system requirements are met by Front Office Transactions, additional Demand Response and Energy Efficiency resources, and proxy resources from the IRP. PacifiCorp indicated that there was no change in its resource retirement schedule for coal plants as part of this case.

[66] In response to a question from Merrimack Energy regarding the basis for the gas price forecast, PacifiCorp noted that PacifiCorp applies a similar methodology for its gas price forecast as it has used for previous RFPs. This includes the use of market forward prices for three years, followed by a blend of forwards and fundamental forecasts as a one-year transition, then reliance on fundamental forecasts prepared by a third-party vendor. PacifiCorp indicated it conducts a review of the gas price forecast every quarter.

- SL: Oregon Staff 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.

PacifiCorp noted that portfolios with no RFP bids were also prepared and evaluated. These scenarios were compared to the FSL bid portfolio to calculate net customer benefits. PacifiCorp also noted that in all scenarios, the company had adequate capacity to meet reliability requirements, although the amount of capacity selected from the RFP bids varied by scenario. PacifiCorp also noted that the starting point for conducting the final analysis was the 27 projects that submitted best and final pricing and were classified as eligible projects. As noted above, this included 22 proposals with executed LGIAs and five projects without LGIAs. The projects also included a mix of resource options including solar only, wind, solar combined with storage, and one stand-alone storage project. Eight projects, seven of which are solar combined with storage projects and one standalone BESS project, all located in Utah, were selected in every SO model portfolio.

Table 13 summarizes the number of projects, amount of MWs and portfolio costs for each of the scenarios noted above under a medium gas/market and medium CO2 case.

Table 13: Summary of Portfolios

Scenario	Number of Bids	Number of MWs	Total MWs – Capacity Contribution	PaR Stochastic Mean PVRR ($ millions) – MM Scenario	Change from MM Portfolio
LN	8	1,303	636	$23,903	$5
MM	22	3,722	1,113	$23,898	$0
HH	26	4,247	1,180	$24, 594	$696
SL	17	3,235	955	Not provided	Not provided
SNS (MM)	19	3,445	1,028	$24,022	$124
SNST (MM)	19	3,445	1,028	Not provided	Not provided

The MM case above has the lowest cost, followed by the LN portfolio which is slightly higher. In addition, the MM portfolio includes a large number of RFP bids, which should provide cost certainty relative to market purchases or proxy resources. However, the results of PacifiCorp's PaR model analysis vary based on the gas/market price and CO2 cases. Under the low gas/market price case and no carbon case, for example, the LN Bids and LN and MM portfolios without bids outperform the MM portfolio in terms of meeting system requirements at a lower overall system cost. In the HH price-policy scenario, the MM portfolio is the top performing portfolio, followed by the SNS portfolio. Gateway South is not included in the LN portfolio but is included in the MM and SNS portfolios.[67]

While the number of proposals selected varied by scenario, as noted there were eight projects with a total of 1,303 MWs that were selected in all portfolios. These included Dominguez, Hornshadow I and II, Green River I and II, Steel Solar I and II, Rush Lake, Fremont, and Parowan. Seven wind projects were selected in all portfolios except the low gas/market price and no carbon case as well as one solar project and one solar combined with storage project. [redacted]

While the MM portfolio overall provides the lowest overall system cost option for the initial assessment under medium gas/market and medium CO2 cases, PacifiCorp proposed to select the SNS (MM) portfolio as the preferred portfolio for a few reasons. First, PacifiCorp noted that in the MM case, it would select three more projects which would produce additional generation that would have to be sold into the market. Second, the three projects that would be eliminated in the SNS case [redacted] were among the highest Net Delivery cost bids, with low Net Benefits. Relative to other similar projects, these projects were high-cost projects. PacifiCorp's view was that it should be able to easily replace these resources through future solicitations with lower cost bids. As a result, based on the increased generation and high cost for the MM portfolio, even though there was value with these resources, PacifiCorp selected the SNS portfolio as the final shortlist to minimize risk and cost exposure.

Table 14 below provides a summary of the FSL proposals selected for the Initial Assessment.

---

[67] During a Workshop in Oregon after FSL selection, PacifiCorp representatives noted that Gateway South affects only the 6 wind projects located in Eastern Wyoming. Gateway South does not affect projects proposed for Southern or Northern Utah, since these projects do not require Gateway South. However, the Cluster Studies for Areas 1, 2, and 4 state that Gateway South is assumed in service in Q4, 2024 in each of the area cluster studies. In response to a question from Merrimack Energy, PacifiCorp clarified that the Gateway South project was not identified as a Contingent Facility for interconnection of generation facilities for Area 2. However, for Area 1 and Area 4, the Gateway South project is a Contingent Facility, indicating that the project was required prior to interconnecting the generation projects studied in the Cluster Study. PacifiCorp noted that if a transmission project is listed as Contingent, the project has to come on-line before other projects depending on this project can come on-line. PacifiCorp further clarified based on follow-up questions from Merrimack Energy that the only projects contingent on Gateway South are the projects located in Wyoming. Projects selected in the FSL located in Utah are not be contingent on Gateway South and therefore do not require Gateway South to be completed to achieve commercial operation, since these projects have executed LGIAs.

Table 14: Final Shortlist (Initial Assessment) Proposed by PacifiCorp

Project Name	Technology	Contract Structure	Generator Capacity (MW)	Storage Capacity (MW)	Storage Duration (hours)	Contract Term (years)	COD	Capacity Contribution (MW)
Eastern Wyoming Wind								
Boswell Springs Wind Project	Wind	PPA	320	N/A	N/A	30	10/1/2024	41.0
NextEra Cedar Springs	Wind	PPA	350.4	N/A	N/A	30	12/1/2024	66.6
Invenergy Rock Creek I	Wind	BTA	190	N/A	N/A	N/A	12/31/2024	33.6
Blue Earth Two Rivers Wind	Wind	PPA	280	N/A	N/A	25	12/31/2023	40.3
NextEra Anticline	Wind	PPA	100.5	N/A	N/A	30	12/1/2024	20.5
Invenergy Rock Creek II Wind	Wind	BTA	400	N/A	N/A	N/A	12/31/2024	62.0
Goshen Idaho Wind								
RPlus Energies – Cedar Creek	Wind	PPA	151	N/A	N/A	25	11/15/2022	29.3
Northern Utah Solar + BESS								
DESRI – Steel Solar I & II	Solar + BESS	PPA	147	37.5	2	25	12/31/2023	58.1
DESRI – Rocket Solar II	Solar + BESS	PPA	45	12.5	4	25	12/31/2023	18.8
Northern Utah BESS								
Able Grid - Dominguez	BESS	BSA	N/A	200	4	15	6/30/2024	196
Southern Utah Solar + Storage								
Enyo – Hornshadow Solar II	Solar + BESS	PPA	200	50	2	30	12/31/2023	47.4
Longroad Energy – Rush Lake	Solar + BESS	PPA	99	49.5	4	20	11/30/2023	49.1

Project Name	Technology	Contract Structure	Generator Capacity (MW)	Storage Capacity (MW)	Storage Duration (hours)	Contract Term (years)	COD	Capacity Contribution (MW)
Longroad Energy – Fremont Solar	Solar + BESS	PPA	99	49.5	4	20	11/30/2023	50.8
Enyo – Hornshadow Solar I	Solar + BESS	PPA	100	25	2	30	12/31/2022	23,7
rPlus Energies – Green River I&II	Solar + BESS	PPA	400	200	2	20	12/31/2024	158.8
First Solar – Panowan	Solar + BESS	PPA	58	58	4	25	12/31/2023	51.9
Southern Utah Solar								
sPower – Glen Canyon	Solar	PPA	95	N/A	N/A	30	12/31/2023	7.5
Southern Oregon Solar + BESS								
Ecoplexus – Hayden 2	Solar + BESS	PPA	160	40	4	30	12/31/2023	56.0
Ecoplexus – Hamaker	Solar + BESS	PPA	50	12.5	4	30	12/31/2023	17.6
Total			3,445	734.5				1,029

As the above table illustrates, the FSL was comprised of a portfolio of several resource types (i.e., wind, solar combined with storage, solar only and BESS), contract structures (PPA and BTA), project sizes, contract terms (15 to 30 year), BESS durations (2-hour and 4-hour duration batteries), battery sizes (25% to 100% of the underlying resource size), and COD dates (2023 and 2024).

Table 15 provides a high-level summary of the final shortlist portfolio for the initial assessment.

Table 15: Summary of FSL – Initial Assessment

Resource Type	Number of Bids	Nameplate Capacity of Resource (MW)	Storage Capacity (MW)	Capacity Contribution (MW)
Wind	7	1,792	-	293.3
Solar	1	95	-	7.5
Storage (BESS)	1	200		196
Solar Plus Storage	10	1,358	534.5	532.2
Total	19	3,445	534.5	1,029

As the above data illustrates, solar combined with storage projects were the predominant resources selected in terms of number of proposals and capacity contribution. While there was more wind nameplate capacity selected, the capacity contribution of the wind was much lower than the solar combined with storage capacity. Solar combined with storage and stand-alone storage combined to provide 70.1% of the capacity provided by the portfolio.

Merrimack Energy viewed the selection of the FSL of nineteen projects to be a reasonable selection. Merrimack Energy also felt that the decision to bypass three projects selected in the MM portfolio was reasonable. PacifiCorp should be able to replace such proposals with lower cost options either in a future RFP or through bilateral contracts, if applicable. The final portfolio, as all portfolios selected by the SO model, was designed to meet system reliability requirements. The majority of the capacity contribution provided by the portfolio was met by stand-alone storage and solar combined with storage, illustrating the importance of battery storage resources to the overall portfolio value.

L. Due Diligence on Rock Creek Wind Projects – Implications on FSL 1

While conducting due diligence on the economic evaluation of the Rock Creek Wind projects, Merrimack Energy noticed that there were different generation estimates reported in different documents associated with the evaluation of the Rock Creek projects. Merrimack Energy submitted a question to PacifiCorp about the differences in generation estimates and the basis for the differences. PacifiCorp eventually responded that in preparing a response to the question PacifiCorp had discovered data input errors in its evaluation model that affected a few projects. PacifiCorp informed the IEs that it would have to undertake a review of the proposals to correct any errors and would have to re-run the evaluations.

PacifiCorp provided a revised slide deck on the FSL on July 20, 2021 and submitted an Update to Request for Acknowledgement of the Final Shortlist of Bidders in the 2020 All-Source Request for Proposals in Docket UM2059 in Oregon.[68] PacifiCorp noted that the updated filing presents updated final shortlist analysis to correct certain modeling inputs resulting from the company's application of incorrect capacity factor and generation profile assumptions to certain bids. This led PacifiCorp to undertake a full review of all bid assumptions. The updated FSL, described in the Request for Acknowledgement filed on July 21, 2021, captures the following updates to the evaluation:

- PacifiCorp updated capacity factors and generation profiles for certain bids where the generation profiles provided by the bidder had embedded text rather than numerical values;
- Application of bid-specific generation profiles for certain bids where failed data uploads unknowingly resulted in the use of proxy resource profiles;

[68] PacifiCorp's Update to Request for Acknowledgement of Shortlist of Bidders in the All-Source RFP and slide deck were included on the Oregon PUC website under Docket UM2059.

- Correctly locating a single bid, modeled in northern Utah to eastern Wyoming.

In addition, after selection of the initial FSL, one bidder (i.e., DESRI Steel Solar I & II projects) notified PacifiCorp that they were withdrawing their bid from the shortlist. Due to the timing of completing the revised shortlist evaluation, PacifiCorp did not remove this bid from revised FSL consideration.

M. Updated Final Shortlist (FSL 2)

PacifiCorp's Update to Request for Acknowledgement, filed on July 21, 2021 stated that PacifiCorp "used the same models and methodology to reexamine the optimum combination of bids to maximize customer benefits while managing risk.[69] Extensive modeling confirms that the final shortlist resources, when accounting for corrected model inputs, will 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 updated risk assessment further demonstrates that the final shortlist resources provide substantial customer benefits across a range of price-policy scenarios and in other sensitivities requested by Oregon Commission staff."

PacifiCorp also noted that upon correcting certain inputs and updating its analysis, the Company included an additional bid portfolio to further analyze drivers to system cost differences between the SNS and LN bid portfolios. The additional portfolio is referred to as the "SNS Bid-LN" portfolio.[70] It includes the same bid selections as identified in the SNS bid portfolio with all proxy resource selections chosen assuming LN price-policy assumptions with market sales enabled (i.e., the proxy resource selections are made under market conditions that are identical to those assumed when producing the LN bid portfolio). The use of this portfolio enables subsequent analysis to understand whether changes in system costs between the LN bid portfolio and SNS bid portfolio are driven by changes in bid selections or by changes in proxy resource selections beyond the 2020AS RFP procurement window.

PacifiCorp also noted that the scenario-risk phase of the bid evaluation process using the PaR model was also updated. This phase was implemented by evaluating the different portfolios (those produced when LN, MM, and HH price-policy assumptions were applied) under each of the three price-policy scenarios. This process provides insight as to how each of three bid portfolios perform under a range of conditions. In this step of the process, PacifiCorp also conducted sensitivities at the request of Oregon PUC staff.

PacifiCorp concluded that when applying MM case assumptions, updated present value customer net benefits from the final shortlist, after accounting for the cost of the

[69] PacifiCorp noted that the final shortlist selection process was implemented in two basic phases using the IRP modeling tools: (1) the portfolio-development phase; and (2) the scenario-risk phase, which are consistent with the bid evaluation and selection process outlined in the 2020AS RFP using the SO and PaR models respectively.

[70] This portfolio was not included in the Initial FSL which identified the following six price/policy scenarios: LN, MM, HH, SL, SNS (MM), SNST (MM).

transmission projects and all interconnection network upgrades, totals $571 million relative to a case where no final shortlist bids are procured. Any no-bid portfolio would also result in increased market reliance which results in higher reliability risk and potential price volatility.

Table 16 summarizes the number of projects, amount of MWs and portfolio costs for each of the scenarios noted above under a medium gas/market and medium CO2 case based on the updated FSL assessment.

Table 16: Updated Summary of Portfolios (FSL 2)

Scenario	Number of Bids	Number of MWs	Total MWs – Capacity Contribution	PaR Stochastic Mean PVRR ($ millions) – MM Scenario	Change
LN	7	1,156	575	$23,828	$0
MM	22	3,722	1,081	$23,968	$139
HH	26	4,247	1,148	$24, 408	$580
SL	17	3,235	924	Not provided	Not provided
SNS (MM)	19	3,445	998	$23,893	$65
SNST (MM)	19	3,445	998	Not provided	Not provided
SNS Bids-LN	19	3,445	998	23,735	-$94

Review of Table 16 above compared with Table 13 illustrates that while the same projects and total MWs were generally selected for the initial and updated portfolios, the primary change is that the total capacity contribution of the portfolios are generally about 30 MW lower in the updated portfolios due to the revisions associated with bidder inputs regarding generation profiles and estimated output.

Similar to the analysis performed for the initial FSL (FSL 1), evaluation of the portfolios under MM or reference cases illustrates the relative results of each portfolio. Of the scenarios considered previously and, in this case, the LN Bid portfolio now has the lowest PaR model stochastic mean PVRR relative to the cases considered for other portfolios, with a portfolio cost advantage over SNS bids of $65 million and $130 million over the MM bids portfolio. One interpretation of this analysis is that the case with LN bids (no wind or Gateway South) is a least cost portfolio to consider.

However, the results of PacifiCorp's Par model analysis vary based on the gas/market price and CO2 cases. Under the LN price-policy conditions (low gas/market price case and no carbon case), for example, the LN Bid portfolio, SNS Bid portfolio, SNS Bids-LN portfolio, and the LN and MM portfolios without bids outperform the MM portfolio. in terms of meeting system requirements at a lower overall system cost. In this case, the LN Bids portfolio is by far the lowest cost option. In the HH price-policy scenario, the MM portfolio is the top performing portfolio.

While the LN portfolio overall provides the lowest overall system cost option for the revised FSL assessment under medium gas/market and medium CO2 cases, PacifiCorp still proposed to select the SNS portfolio as the preferred portfolio for a few reasons. Based on additional sensitivities proposed by the Oregon PUC staff and as described by PacifiCorp in its Updated Request for Acknowledgment, when the SNS bids are locked down and proxy resources beyond the 2020AS RFP procurement window are optimized under the same conditions applied to the LN portfolio, the SNS Bids-LN portfolio is least cost by $94 million relative to the LN portfolio. PacifiCorp concludes that this demonstrates that PVRR cost savings in the LN bid portfolio are not driven by bid selections but by changes in proxy resource selections. Furthermore, PacifiCorp also stated that on an annual portfolio cost basis, through 2032 the LN portfolio is lowest cost but relative to other portfolios costs escalate sharply thereafter. PacifiCorp concluded that if the study period were extended beyond 20 years it is likely that the relatively higher costs shown toward the end of the study period for the LN bid portfolio would persist.

Finally, PacifiCorp also concludes that selection of the LN bid portfolio would not generate benefits associated with the new transmission investment as is associated with the construction of the Gateway South project. The transmission projects associated with Gateway South would strengthen the transmission system at Mona/Clover, allowing additional renewable generation in southern Utah. In response to a question from Merrimack Energy about whether the construction of Gateway South in a timely manner would be required to affect the ability of FSL proposals in Utah to interconnect to the PacifiCorp system, the Company responded that the 2020AS RFP bids in Utah South have executed LGIAs that do not require Gateway South, so they would not be impacted by the timing associated with development and construction of Gateway South. However, in order to enable significant additional interconnection capacity in Utah South, Gateway South would be required.

While the FSL proposals selected for the Initial Assessment as listed in Table 14 would remain the same, the major change in the FSL was the reduction in capacity contribution of the portfolio from 1,029 MW to 998 MW, or a reduction of 31 MW. In addition, while PacifiCorp still selected the DESRI Steel Solar I and II projects to the shortlist, as noted these projects were withdrawn from the shortlist by DESRI, resulting in final additional generator capacity of 3,290 MW.

Based on the revised generation profile and lower capacity contribution of the DESRI Steel Solar I and II projects, the projects were not selected in the LN portfolio.

N. Second Supplemental Filing of PacifiCorp

At the OPUC Workshop on Final Shortlist Sensitivities held on August 5, 2021, PacifiCorp informed the Participants that in preparing responsive materials for the workshop, PacifiCorp realized it had overstated the combined cost of Gateway South and sub-segment D.1 by 22.7% in its modeling analysis. PacifiCorp indicated that correcting the cost would have no impact on bid or proxy resource selections in any portfolio that includes Gateway South and sub-segment D.1, which occurred in all but the LN bid portfolio. PacifiCorp stated that correcting the cost will only improve the relative economics of the FSL bid portfolio relative to the LN bid portfolio. Finally, PacifiCorp noted that it will expeditiously prepare a second supplemental filing to correct reported financial results.

On August 12, 2021, PacifiCorp filed PacifiCorp's 2020 All-Source Request for Proposal – Updated Request for Acknowledgement of Final Shortlist of Bidders in 2020 All-Source Request for Proposals (Corrected Updated Request) in Oregon Docket UM 2059. PacifiCorp stated that this filing corrected the cost of Gateway South and sub-segment D.1 transmission segments. PacifiCorp's results illustrated that the analysis did not result in any changes to the FSL. The FSL would still include the following resources:

- 1,792 MW of new wind capacity
  - 590 MW as BTAs
  - 1,202 MW as PPAs
- 1,453 MW of solar capacity via PPAs
- 735 MW of battery energy storage capacity
  - 535 MW of battery storage paired with solar bids
  - 200 MW of standalone battery storage offer via a BSA

PacifiCorp's analysis illustrated that when applying medium natural gas price and medium CO2 price-policy assumptions, updated present value customer net benefits from the final shortlist, after accounting for the cost of the transmission projects and all interconnection network upgrades, totals $604 million relative to a case where no final shortlist bids are procured.

Table 17 summarizes the number of projects, amount of MWs and portfolio costs for each of the scenarios noted above under a medium gas/market and medium CO2 case (MM case) based on the updated FSL assessment.

Table 17: Updated Summary of Portfolios (FSL 3[71])

Scenario	Number of Bids	Number of MWs	Total MWs – Capacity Contribution	PaR Stochastic Mean PVRR ($ millions) – MM Scenario	Change ($million)
LN	7	1,156	575	$23,828	$0
MM	22	3,722	1,081	$23,763	-$65
HH	26	4,247	1,148	$24, 204	$376
SL	17	3,235	924	Not provided	Not provided
FSL SNS (MM)	19	3,445	998	$23,689	-$140

[71] As noted in this report, PacifiCorp has submitted three filings in Oregon regarding its Request for Acknowledgement of Final Shortlist of Bidders in the 2020 All-Source Request for Proposals. All were filed in Oregon PUC Docket UM 2059.

SNST (MM)	19	3,445	998	Not provided	Not provided
SNS Bids-LN	19	3,445	998	23,530	-$298

Review of Table 17 above compared with Table 16 illustrates that due to the reduction in the cost of the Gateway South project, portfolios associated with the selected FSL of projects overall demonstrate the lowest cost portfolios under MM case conditions. In particular, the MM portfolio, FSL SNS (MM) portfolio, and the SNS Bids-LN portfolio are all now lower cost than the LN portfolio which included only solar combined with storage projects and one standalone storage project located in Utah. The reduction in the cost of Gateway South shifts the economics toward portfolios with a diversity of resource options in different locations on the PacifiCorp system.

O. Other Considerations Associated with the 2020AS RFP Process

1. Fair Evaluation of PPAs and BTAs

The Public Utility Commission of Utah Order Approving the 2020 All Source RFP (July 17, 2020) raised concerns identified by several parties and the IE regarding the ability of third-party PPAs and BTAs to compete on a "level playing field" since both options were eligible to bid. The Order noted that "other points of disagreement remained with respect to how RMP would fairly compare PPAs and BTAs, including but not necessarily limited to (1) any terminal value assigned to BTAs; and (2) the costs, benefits and risks which ratepayers, as opposed to counterparties, bear with respect to federal or state tax credits or changes in tax rates; and (3) any other costs, benefits, and risks ratepayers, rather than counterparties, bear under each contract structure. As IE, Merrimack Energy recognizes the importance of ensuring that RMP evaluates PPAs and BTAs in a fair and reliable manner that fully accounts for any unique risks, benefits, and other distinct attributes associated with each contract structure.[72] However, it is not reasonable to expect, nor does the Act require, procurements to resolve every potential comparative variable that may arise among many competing kinds of projects in advance and prior to approval of the solicitation process."

In the 2020 All Source RFP, bidders proposed several BTA options, and in many cases proposed both PPA and BTA options for the same project. The types of resources submitted under both structures for the same project included wind, solar, and solar combined with storage options. Appendix A to this report lists the projects submitted by counterparty and identifies cases where bidders offered both a PPA and BTA for the same project since comparison of the final results for a PPA and BTA from the same project offer a reasonable basis for comparison.

[72] It is important to note that one of the typical benefits of a BTA option versus a PPA option is that a BTA is generally assessed over a 30-year period while a PPA, in many cases, may be limited to a 20-year contract term. However, during the RFP development phase for this process, Merrimack Energy and several stakeholders suggested that PacifiCorp allow PPA bidders to propose a 30-year term. PacifiCorp agreed with this recommendation and several bidders did submit 30-year PPA options, including several projects selected to the FSL as listed in Table 14.

Review of PacifiCorp's evaluation process and methodology illustrated that BTA's for solar proposals or solar combined with storage were higher cost (lower Net Benefits) than for PPAs for the same projects. As discussed in other sections of this report, because of normalization accounting requirements which require a utility to spread out the benefits of the ITC over the life of the asset instead of amortizing the ITC benefits in year 1 of the project as PPA providers generally do, the utility is at a distinct disadvantage regarding ownership of a solar project via a BTA.[73] As a result, no solar BTAs were anywhere near competitive with a PPA offer for the same project. In many cases, the Net Benefits associated with a solar or solar combined with storage BTA proposal were negative, while the Net Benefits for a PPA for the same project were positive, illustrating the significant advantage afforded solar PPA options over utility-owned solar projects via a BTA. As noted, Merrimack Energy reviewed PacifiCorp's models in detail to ensure that the models appropriately accounted for normalization accounting requirements and concluded that the models did appropriately address this issue.

However, the same results were not true for wind PPAs and BTAs. While some wind PPAs were more economic than BTAs, the reverse was also true. PacifiCorp did select three wind BTA options as part of the final 27 projects considered for the FSL and two projects in the FSL of 19 proposals, the Rock Creek 1 and 2 projects. The counterparty for these projects offered the project under both a PPA and BTA option. For these projects, bidders intended to utilize the Production Tax Credits (PTC) afforded the project. As a result, Merrimack Energy was able to review the economic benefit results for each project under both a PPA and BTA proposal by the same counterparty. The results of this assessment are included in Appendix H to this report. As illustrated, the terminal value benefit is small and on its own would not change the rankings of the PPA vs BTA option.

[redacted]

From a risk perspective, the use of a BTA as the contractual structure serves to shift some of the development and cost risk to the third-party developer. Although there would normally be change orders, the utility can still place pressure on the BTA provider to maintain its price and performance requirements for the facility since the BTA provider is required to develop, procure and construct the facility and then turn the facility over to

[73] Third-party PPA providers are generally able to monetize the benefits of the ITC by partnering with a tax equity investor who can utilize the tax benefits generated. This approach serves to lower the PPA providers cost of capital, reducing costs. ITC benefits can have a significant impact (along with accelerated depreciation) in reducing the capital cost of a project.

the utility when complete, subject to meeting all contractual requirements. In addition, from a PTC perspective, the utility, as owner of the facility would presumably flow through the PTC benefits to customers. We reviewed the cost components between the PPA and BTA and one possible reason for the difference in Net Benefits may be that perhaps the counterparty essentially maintained a portion of the PTC benefits as part of its return on investment or as a hedge against cost increases while for the BTA the PTC benefits belong to the utility who can be required or decide to flow the benefits back to customers.

2. Conformance to Utah PSC Order Approving the 2020 All Source RFP

The PSC Oder approving the 2020 All Source RFP addressed issues raised by parties regarding the consideration of transmission scenarios that did not include the Gateway South Transmission line. The Commission indicated it found concerns raised by parties compelling as it did not appear the transmission costs associated with scenarios that did not entail construction of Gateway South would be accurately and fairly compared with those that assumed and relied upon its construction. Also, in its 2019 IRP Order, the Commission noted that the Company did not produce any analysis without Gateway South and that the Company did not evaluate an alternative transmission case. Utah Association of Energy Users (UAE) also recommended in its reply comments that the Commission require the Company to provide more information about how it plans to model the costs of transmission upgrades in its IRP and asserts that PacifiCorp has not explained how it will assess the economic impact of bids that require Gateway South relative to bids that do not.

In response to UAE's reply comments and the Commissions IRP order, PacifiCorp confirmed in its Supplemental Reply Comments in Docket No. 20-035-05 that it planned to perform additional modeling studies to inform selection of the final shortlist in the 2020 All Source RFP in the following manner:

(1) Inasmuch as the final shortlist evaluation included bids dependent upon Gateway South, the Company would perform, at a minimum, a sensitivity that removed Gateway South and all bids that require Gateway South to achieve an interconnection with PacifiCorp Transmission;

(2) Inasmuch as the final shortlist evaluation included bids dependent upon Gateway South, the Company would perform a sensitivity that replaced Gateway South with an alternative transmission build-out scenario that was reasonably aligned with options identified in the Northern Tier Transmission Group in its 2018-2019 Regional Transmission Plan.

In its Supplemental Reply Comments, PacifiCorp stated that during the initial shortlist phase of the 2020 All Source RFP, the Company's capacity expansion modeling tool, the SO model, will be configured to treat Gateway South as an option that can be selected as an element of a least-cost portfolio. The Company did not intend to "force" the model to include Gateway South as a baseline assumption. If the SO model found that bids without project specific interconnection network upgrade costs that were dependent upon Gateway South are cost competitive relative to other alternatives, it would choose

Gateway South, in full recognition of its cost, and those dependent bids as part of its least cost portfolio. If Gateway South and the associated dependent bids were not cost competitive relative to other alternatives, which would include bids without project-specific interconnection network upgrade costs that are not dependent on Gateway South, then Gateway South and associated bids dependent on Gateway South would not be included in the model's selection of the least-cost portfolio. The Company planned to implement the same basic approach during the final shortlist phase of the 2020 All Source RFP.

PacifiCorp addressed the inclusion of Gateway South in portfolios in its June 8, 2021 presentation on Final Shortlist selection as well as in follow-up responses to questions from Merrimack Energy. PacifiCorp noted that Gateway South was selected in all portfolios but the LN portfolio (low gas/market price, no carbon price).[74] The LN case selected capacity of 1,303 MW representing 636 MW of Capacity Contribution. No wind proposals in Wyoming were selected. The only projects selected were solar combined with storage projects in Utah and one standalone storage option located in Utah. The remaining capacity required would be provided by Front Office transactions, demand response options, and proxy resources. Under a medium gas/market price medium carbon price case, the MM portfolio had the lowest cost. However, the LN portfolio had a cost that was $5 million higher on a PVRR basis. In conclusion, PacifiCorp's analysis illustrated that under low gas and market price conditions, Gateway South would not be selected but Gateway South and its associated wind bids would be selected in both medium and high gas/market/carbon price cases, although there is not a large difference in value between the MM portfolio relative to the LN portfolio under medium case conditions.

As noted in the discussion in this report of the updated FSL (FSL 2), the least cost portfolio based on SO modeling was the LN bids case which did not include Gateway South or the wind proposals in Wyoming but instead only selected solar combined with storage projects and a standalone battery energy storage project, all of which were located in Utah. PacifiCorp in conjunction with evaluation of sensitivity analysis requested by the Oregon PUC staff provided analysis which supported its FSL selection as presented in June 2021.

PacifiCorp also noted in its presentation that Gateway South would provide additional value that is not fully captured in the modeling. PacifiCorp noted that Gateway South strengthens transmission at Mona/Clover allowing additional renewable generation in southern Utah with new transmission development. Also, Gateway South acts as a relief valve during low load and outage conditions increasing the reliability of the transmission system especially with the addition of renewable resources in southern Utah.

In its presentation at the August 5, 2021 Workshop held in Oregon to review the sensitivity cases conducted by PacifiCorp in conjunction with Oregon Commission Staff, PacifiCorp noted that it had discovered an error in the cost of Gateway South in its modeling of portfolio options. PacifiCorp noted that it had overstated the cost of Gateway

[74] Refer to section in this report which discusses the Final Shortlist selection.

South and related transmission by 22.7%. PacifiCorp indicated that it would submit a second supplemental filing in Oregon to address the implication of the higher cost.

In its Corrected Updated Request Acknowledgement for the Final Shortlist submitted to the Oregon Commission in UM 2059 on August 12, 2021, PacifiCorp illustrated that customer net benefits would be higher with bids from the RFP than cases without bids. Also, the reduction in Gateway South costs resulted in portfolios with Gateway South and associated wind projects being lower cost than the LN case without Gateway South under MM price-policy conditions due to the reduction in Gateway South costs.

Finally, in response to a question posed by Merrimack Energy, PacifiCorp noted that RMP will make its application for approval of a significant energy resource decision before the Utah Commission in the September-October 2021 timeframe, at which time the alternative build-out scenario analysis requested by the Commission will be filed in support of RMP's application. We would expect that the application would also include an assessment of alternative transmission build-out scenarios relative to Gateway South.

3. Use of the Net Benefits and Adjusted Net Benefits Metric for Bid Evaluation and Ranking

Merrimack Energy raised questions about the use of the Adjusted Net Benefit metric for shortlist ranking and selection as opposed to the tradition Net Benefits metric as has been used in prior solicitations since early in the solicitation process. The selection of shortlist eligible projects may have been similar or the same for this solicitation since PacifiCorp, in conjunction with the recommendations of the IEs, selected a robust shortlist of proposals eligible for ISL selection. However, Merrimack Energy compared the evaluation results for both metrics and had some questions about the value of the Adjusted Net Benefit metric.

As background, the difference between the calculation of Net Benefits and Adjusted Net Benefits is that Adjusted Net Benefits is essentially the calculation of annual Net Benefits based on PacifiCorp's benefit and cost components calculated by the RFP Screening Model for each proposal divided by the calculated annual capacity contribution percentage value of a proposal. As a result, a proposal with a very low capacity contribution value (e.g., a solar project with a 10% capacity contribution value), could have a higher Adjusted Net Benefits value than a solar combined with storage option from the same project that has a 50% capacity contribution value.

[redacted]

[redacted]

[redacted]

As a note, while Merrimack Energy found that the rankings of solar projects were similar whether the evaluation was based on a Net Benefit or Adjusted Net Benefit basis, the results are not generally the same for solar combined with storage projects since there are a number of factors that could affect project value such as duration of the battery, cost of the battery by duration, and size of the battery relative to the solar project.

If PacifiCorp intends to use the Adjusted Net Benefits methodology for future RFPs, Merrimack Energy would suggest that more documentation is needed to explain the value of this methodology over Net Benefits, which has been used in previous RFPs.

IV. Conclusions

Merrimack Energy has identified a number of conclusions associated with the implementation of the 2020AS RFP process, including receipt and assessment of proposals, bid evaluation results and initial and final shortlist selection. Merrimack Energy's conclusions include the following:

- The response to the 2020AS RFP was very robust with a total of 141 projects submitted by 44 unique counterparties who submitted an estimated 578 proposal variants representing nearly 33,000 MW of capacity from a variety of resource types including wind, solar, solar combined with storage, pumped storage hydro, standalone Battery Energy Storage, gas combined cycle and other resources As a result, the amount of capacity submitted significantly exceeded the amount of capacity requested (up to 6,000) by a factor of nearly 5.5 to 1;

- Bidders submitted a mix of Power Purchase Agreements ("PPA"), Build Transfer Agreements ("BTA"), and Battery Energy Storage ("BSA") Agreements. In addition, bidders offered other creative product solutions as part of the proposals submitted, such as different project structures for the same project (i.e., solar only as well as solar combined with storage options), PPA and BTAs for the same resource, different pricing options for the same PPA projects such as fixed pricing and a base price times escalation and different contract terms, COD dates and project structures for solar combined with storage projects;

- Based on the unbelievable response from the market it is safe to say that the solicitation process resulted in a very competitive process with many more proposals generally submitted than the expected requirements by bubble identified by PacifiCorp. [redacted]

- PacifiCorp implemented a three-phase evaluation and selection process for bidders and followed its proposed evaluation and selection process as outlined in the RFP in a structured and consistent manner designed to result in the selection of a portfolio of projects that would result in a least cost solution. PacifiCorp effectively executed on its identified work and task flow to keep the overall project on schedule despite the large market response and complicated process;

- Due to the large number of proposals submitted, PacifiCorp engaged the bidders throughout the process in a timely manner to ensure that all bidders were treated fairly. In our view, the solicitation process overall was fair, reasonable, and in the public interest, taking into consideration specific constraints. All bidders were treated the same, had access to the same information at the same time, and had an equal opportunity to compete;

- One of the most challenging issues which could have potentially affected the competitiveness of the process was the large number of projects with Large Generator Interconnection (LGIA) Agreements in place which created issues for achieving a least cost solution. PacifiCorp was amendable to the IE's proposal to include additional lower cost and higher scoring projects into the list of projects eligible for the Cluster Study process. At the same time, many of the lowest cost or highest valued projects did have an LGIA in place. Nevertheless, this issue will need to be addressed in future RFPs;

- PacifiCorp required all bidders to be subject to the same information requirements and conducted a consistent evaluation process with all proposals treated equally in terms of the evaluation methodology and information required of each bidder;

- With regard to the issue regarding the creation of a level playing field for PPA and BTA resources, the IE found no indication of bias in the process. For wind projects there were cases where bidders submitted PPA and BTA options for the same project. Merrimack Energy found that in some cases BTAs had higher Net Benefits and in other cases PPAs had higher Net Benefits. Also, Merrimack

Energy had recommended that PPAs should be allowed the option of offering a 30-year contract, consistent with the life of a BTA option. PacifiCorp actually selected three wind PPAs with a 30-year term and five solar PPA options with a 30-year term;

- PacifiCorp ultimately selected a Final Short List comprised of nineteen projects with a total of 3,445 MW and an additional 534.5 MW of energy storage projects combined with a solar project. The final portfolio included 998 MW of capacity contribution from the FSL resources. The portfolio selected represented a diverse portfolio of resources with a range of different characteristics, contract structures, and contract terms. While the portfolio was not the least cost portfolio, PacifiCorp's decision to eliminate three projects from the final portfolio due to high delivery cost and generation of excess energy was reasonable. The three projects eliminated were ranked in the lower half of eligible bids in terms of cost and net benefits, but did provide positive net benefits;

- Ten of the nineteen projects selected are located in Utah, with a total of 1,443 MW, plus an additional 482 MW of energy storage resources. All Utah projects are solar PV projects, with eight of the ten comprised of solar combined with storage. One project selected was a standalone battery energy storage project. While all but one of the projects (standalone storage) have an executed LGIA in place, our review indicated that these projects were among the lowest cost resources proposed in the Utah market;

- PacifiCorp's final shortlist assessment and selection process was implemented in two basic phases using the IRP modeling tools (e.g., SO and PaR models): the portfolios development phase and the scenario risk phase;

- PacifiCorp submitted three applications to the Oregon Commission regarding its Request for Acknowledgement of Final Shortlist of Bidders in the 2020 All-Source Request for Proposals. The second Acknowledgement submitted reflected the correction of modeling input errors identified by Merrimack Energy which resulted in a reduction in the capacity contribution of a few shortlisted resources. The third acknowledgement corrected the cost of the Gateway South and sub-segment D.1 transmission segments included in the evaluation results which resulted in a 22.7% reduction in Gateway South costs. In both applications, PacifiCorp demonstrated that portfolios which included proposals selected via the RFP resulted in lower system cost than a case where no bids were selected. PacifiCorp also concluded that the FSL selection of 19 proposals was the portfolio which maximized customer benefits while managing risk. PacifiCorp stated that the FSL would meet both near-term and long-term resource needs and was the least cost, least risk path available to serve PacifiCorp's customers;

- Prior to the submission of the Corrected Updated Request for Acknowledgement submitted on August 12, 2021, two very different portfolios were performing similarly in terms of system cost. The FSL selected by PacifiCorp had performed consistently well in terms of cost and risk since the large number of new projects selected are for the most part acquired at fixed costs. The other portfolio which performed well under the case with a higher cost for the Gateway South project was the LN portfolio which included only seven bid proposals, with market purchases, Demand-Side management resources, and proxy resources making up the difference in resource requirements. This portfolio did not include any wind projects in Wyoming and did not include Gateway South. It would appear based on the Commission's Order approving the 2020AS RFP that these options would be reviewed in more detail to confirm the least cost least risk portfolio.