

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

Docket No. UM 2193

In the Matter of

PACIFICORP, dba PACIFIC POWER,

Application for Approval of 2022 All-
Source Request for Proposals.

Staff's Comments on Bid
Scoring and Associated
Modeling Methodology

Introduction

On September 1, 2021, PacifiCorp (the Company) filed its 2021 Integrated Resource Plan (IRP). A day later, on September 2, PacifiCorp filed an application (Application) to request that the Commission open a docket for its All-Source request for proposal (RFP). The Application contained two related action items: a request for approval of an independent evaluator (IE) to oversee the RFP process, and a request for approval of the bid scoring and associated methodology for the RFP.

The Commission approved the IE, PA Consulting, on October 21, 2021.¹ However, the scoring and modeling methodology was not approved because parties had determined that more time was needed to evaluate PacifiCorp's bid scoring and associated modeling methodologies as it was outside of an IRP. On October 1, 2021, PacifiCorp submitted a new RFP schedule that separated the IE approval and the scoring methodologies into different Public Meetings. Since the October 21 Public Meeting, the Company has provided additional details on its bid scoring and associated modeling methodology. In particular, the Company provided a presentation slide deck² and hosted a workshop on bid scoring in conjunction with a storage workshop on November 15, 2021, in accordance with Staff's Recommendation and subsequent Commission Order.

¹ Order No. 21-351.

² See Attachment A.

These Comments address the Company's proposed scoring and modeling methodology, in addition to storage in the RFP as proposed in the Company's Application and presented at the November 15 workshop.

The Commission approved the IE, PA Consulting, on October 21, 2021.³ However, the scoring and modeling methodology was not approved because parties had determined that more time was needed to evaluate PacifiCorp's bid scoring and associated modeling methodologies as it was filed outside of an IRP. As a result, PacifiCorp filed an extension to these requests that split the dates each issue would come before the Commission. Since the October 21 Public Meeting, the Company has provided additional details on its bid scoring and associated modeling methodology. In particular, the Company provided a presentation⁴ and hosted a workshop on bid scoring in conjunction with a storage workshop on November 15, 2021, in accordance with Staff's Recommendation and subsequent Commission Order.

These Comments address the Company's proposed scoring and modeling methodology, including storage valuation methodology in the RFP as proposed in the Company's Application and presented at the November 15 workshop.

Summary of Proposed Methodology

PacifiCorp's initial RFP filing included a proposed scoring and modeling methodology.⁵ The Company later submitted a presentation on bid scoring and storage on Friday, November 12. The workshop itself was November 15, and comments on the methodology were due November 22.

The 2022 RFP, as initially submitted to stakeholders, had three main steps:

1. Initial shortlist,
2. Interconnection cluster study, and
3. Final shortlist.

The Company's original bid scoring and associated methodology in its initial Application, and in subsequent discovery responses sent to Staff, referenced the same proprietary models used previously in the 2020 RFP (UM 2059). The initially-proposed 2022 RFP methodology did not include language suggesting that bids would be limited to geographically-based MW limits as with the 2020 RFP. Rather, the initial shortlist would have required: 1) bid eligibility screening to ensure conformance with minimum requirements; 2) price and non-price scoring to rank bids for inclusion in IRP portfolio optimization models; and 3) IRP modeling used to select the lowest cost bids for inclusion on the initial shortlist. As with the 2020 RFP, PacifiCorp intended to use its proprietary models for price scoring. Points available via the price score are limited to a maximum of 75 points.

³ Order No. 21-351.

⁴ See Attachment A.

⁵ See UM 2193, Application for Approval of 2022 All-Source Request for Proposals, September 2, 2021, Attachment C, pg. 46

The Company's non-price scoring methodology included new, more detailed, tables providing the ability for bidders to score themselves. The non-price bid scoring is based on submittal completeness, contracting progress, and viability, based on project readiness and deliverability. The Company also included an additional equity questionnaire that contributes to non-price scoring. The equity questionnaire is intended to help indicate specific equity-related project preferences associated with policies in California and Washington, and it may help demonstrate how Oregon-located projects meet similar equity requirements of HB 2021. Total points available for the non-price score are limited to a maximum of 25 points, and the total sum of achievable points, including price and non-price scores, is 100 points.

At the November 15 workshop, PacifiCorp presented that it is now changing a series of steps in the RFP scoring and ranking process compared to the recently completed RFP in UM 2059, and its Initial Filing in this docket. Some of the major changes include elimination of the step that would require outright selection of an initial shortlist, which subsequently eliminates a series of requirements related to initial shortlist bidders, and the process of filtering out bids to create an initial shortlist.

The Company has changed this requirement such that PacifiCorp will now accept bids from any location in its service territory, so long as they can show they have an interconnection study or a signed generation interconnection agreement. Bids must also be able to demonstrate an ability to interconnect and deliver firm energy to PacifiCorp's system (PACE or PACW), they must include interconnection cost estimates (both direct-assigned and network upgrades), and they must be able to demonstrate commercial operation by the proposed commercial operation date.

The RFP bid deadline for both benchmark and market bids will occur *after* PacifiCorp's transmission interconnection cluster study is completed in November 2022. All eligible resources that meet the requirements above will be analyzed (and ranked) through Plexos, though it is Staff's understanding that participation in the November 2022 cluster is not a requirement. Bids analyzed by Plexos will also be assigned a non-price score according to the matrices in the Initial Application. The changes to the initial proposed methodology akin to that used in UM 2059, and the one proposed as of November 15, are highlighted below.⁶

⁶ See Attachment A, page 9.

Table 1: Evaluation changes between initial filing and currently proposed process

	Original Process – Initial Filing	Proposed Process
RFP Bid Deadline	Prior to PacifiCorp Transmission interconnection cluster study.	Prior to <u>After</u> PacifiCorp Transmission interconnection cluster study.
Interconnection Study	Study not required at bid deadline but required by initial shortlist (ISL) resources after cluster study.	Study not required at bid deadline but required <u>by initial shortlist (ISL) for all proposed</u> resources after cluster study.
RFP Bid Pricing	Interconnection costs not included in price at bid deadline, but ISL resources required to include in price updates after cluster study.	Interconnection costs not included in price at bid deadline, but ISL resources required to include in price updates after cluster study.
Price Score	Determined by proprietary Excel models prior to ISL.	Determined by proprietary Excel <u>portfolio optimization</u> models (<u>Plexos</u>) prior to ISL <u>final shortlist (FSL)</u> . <u>Total score validates portfolio selection.</u>
Non-price score	Used to rank bids and determine ISL.	Used to rank bids and determine ISL <u>FSL</u> .
Bid Ranking	Sum of price and non-price score determines ISL.	Sum of price and non-price score determines ISL <u>FSL</u> .
Initial Shortlist	Used to prioritize bids going into cluster study and portfolio optimization models.	Used to prioritize bids going into cluster study and portfolio optimization models. <u>All eligible bids are analyzed by Plexos.</u>
Storage Valuation	StorageVet (EPRI model)	StorageVet (EPRI model). <u>Endogenous to Plexos</u>

Among the changes explained at the November 15 workshop, the primary underlying change is that PacifiCorp will no longer be using its proprietary models for price scoring. Rather, it will now rely entirely on Plexos for this task, as well as to rank all bids. As Staff understands it, the lowest cost bids will be force ranked from first to last from 1 to 75.

For storage, the Company informed stakeholders that it would abandon its use of StorageVet in favor of Plexos to model storage in the RFP.

Positive Changes—with Limited Time for Review

There are positives and negatives to what the Company has presented. The positives are encouraging in that PacifiCorp’s updates to RFP evaluation and selection seem to simplify the RFP process. By eliminating the originally proposed initial shortlist filtering process filed in September, associated pre-screening requirements, and locational limits, and by streamlining the requirements for bidders, this should theoretically allow for more, and more diverse, projects to bid into the RFP. The requirement to include interconnection costs as part of the bid will also allow for more comparable price ranking when analyzed by Plexos. From this standpoint, the price scoring and selection process of the RFP is more straightforward, less constraining for bidders, and allows for projects to be scored on a more even footing.

The switch to the use of Plexos itself is also consistent with the use of Plexos for IRP modeling, and it is a software with which the IE is familiar. Further, Staff generally

believes that it is good that the Company, at an initial review, seems to be relying less on proprietary models that lack transparency.

Despite these positives, Staff has lingering concerns with how the Company has approached this process and has questions that the Company should clarify in its Reply Comments. While Plexos may be an improvement as compared to proprietary scoring models, it is still a complex software whose utilization comes at a monetary cost, and it is a software in which Staff has relatively limited familiarity and lacks a license to use.

In addition, PacifiCorp only provided details on these significant changes six business days before comments on the proposal were due. Staff remains concerned about the procedural precedents the Company has been setting with respect to timing and review, especially given this RFP is occurring concurrent with the Company's IRP. Staff expressed these concerns in more detail in its Public Meeting Memo for the October 21 meeting. PacifiCorp has failed to update its approach to price bid scoring in a timely fashion, giving stakeholders a limited window to work with. The timelines the Company has imposed onto stakeholders, with major updates on methodology not revealed until late in the process, limits time for review and input.

In its Reply Comments, the Company should clarify, using elements from the presentation on November 12, the main changes to its bid scoring and associated methodology as compared to what was filed on September 2.

Lingering Questions

Among the issues that the Company should clarify are the details behind the interconnection study criterion. One of the main requirements for a bid to be accepted by PacifiCorp is that it must have an interconnection study, but the standards for these interconnection studies and cost upgrades required for bid proposals are not outlined in the Initial Application or November 15 presentation. Rather, PacifiCorp has indicated that it will accept "any" bid with an interconnection study or a large generator interconnection agreement (LGIA) indicating ability to deliver firm energy by the end of 2026.⁷ This seems to imply that PacifiCorp will accept older interconnection studies from the previous cluster, in addition to LGIAs signed prior to the 2022 cluster. Staff has not had sufficient time to analyze the implications of this requirement, so it is unclear how the required study, cost, and upgrade assumptions will interact with the upcoming 2022 cluster study (e.g., the question of whether older findings will be automatically assumed into the upcoming cluster) and subsequent price scoring. It is unclear from the presentation whether costs from an interconnection study outside the cluster could differ significantly from the interconnection cost assigned if it were part of the cluster. If there is a difference, how would those costs be handled and ranked in price scoring? Further, if the cluster study generally lowers assumed interconnection costs by sharing those costs more broadly, would bidders using non-cluster, or older cluster, bids be penalized?

⁷ See Attachment A.

PacifiCorp should clarify the interactions of older studies and signed LGIAs with the new cluster in its Reply Comments, in addition to what cost and upgrade assumptions PacifiCorp intends to use when it inputs bids into Plexos. PacifiCorp should also indicate MW of existing LGIA by state, generation type, and estimated interconnection and transmission costs are already available, in addition to how transmission costs will be treated in the RFP.⁸

Proposed Methodologies are Acceptable

PacifiCorp’s non-price scoring matrices can be found on page 51 of the Initial Application. Developers will need to grade themselves as part of their bid packages, but PacifiCorp will first audit the submissions before determining a finalized non-price score for each bid. The elements of each non-price factor are highlighted below. Each sum of points (5, 5, and 15) represents a weighted number based on an accumulation of points derived from the non-price scoring matrices.

Table 2: Non-Price Factor Weighting

Non-Price Factor	Maximum Non-Price Factor Points
1. Bid Submittal Completeness	5 points
2. Contracting Progress and Viability	5 points
3. Project Readiness and Deliverability	15 points

PacifiCorp has included a series of additional elements in its non-price scoring for a more comprehensive evaluation (as compared to the 2020 RFP) of completeness, viability, and commercial readiness. In addition, the Company has included an Equity Questionnaire⁹ to apply to the final shortlist to evaluate regulatory compliance across its six-state service territory. For Oregon projects, PacifiCorp has also included a requirement for bidders to answer whether their facilities meet HB 2021 requirements, including but not limited to apprenticeship and workforce requirements. It is Staff’s understanding that projects meeting HB 2021 labor requirements will receive a point, but will lose a point if they do not meet HB 2021 requirements. Projects located outside of Oregon will not need to satisfy this requirement and will still receive a point. Similarly, Oregon projects will not need to meet requirements under California and Washington and will receive those points in non-price scoring. The idea is that situs projects that do not meet their state’s requirements will receive a penalty, but they will not lose points for failing to meet out-of-state requirements.

Staff believes that the proposed non-price scoring methodology is more transparent, more easily intuitive for self-scoring and is a good-faith attempt at incorporating requirements across different states.

⁸ See Attachment A, page 13.

⁹ See Attachment A, page 38.

For price scoring, as mentioned above, the use of Plexos itself is consistent with IRP modeling and may make the price scoring process more straightforward. Further, as PacifiCorp will also use Plexos to model storage in the IRP, this eliminates any concerns raised with the StorageVet software previously raised by Staff. However, Staff reiterates that the timing of these major changes has not given stakeholders an opportunity to understand all of their implications. In general, while Staff believes this to be an improvement to price scoring, this will be the first RFP that uses Plexos to rank bids and model storage, so any problems that arise should inform future RFPs such that lessons learned continue to inform future processes.

The one question the Company should clarify in its Reply Comments is the subject of how storage is considered in the RFP. The Company should clarify whether storage will be considered a load after the first five years of commercial operation, and whether the cluster, or transmission studies, will include potential upgrades needed with respect to battery charging. The Company's proposal for storage bids requires that collocated batteries be designed with the ability to grid charge after the recapture period. It is thus unclear whether this grid charging design requirement would trigger additional load service upgrades.

Other Party Comments

Only one party has submitted comments in the RFP thus far. On November 4, 2021, the Oregon and Southern Idaho District Council of Laborers (OSIDCL) filed comments in this docket and made recommendations on how PacifiCorp should score bids. In particular, OSIDCL stated that PacifiCorp should consider 1) the Economic Impact of Projects on Host Communities through local hiring, and 2) Efforts to create a diverse workforce from host communities through the utilization of local apprenticeship programs.¹⁰

Staff appreciates the comments provided by OSIDCL. With respect to labor requirements, Staff notes that PacifiCorp is requiring an HB 2021 attestation from Oregon bidders. Further, the Company has indicated that, after bids have been price-ranked by Plexos, the Company will conduct a state compliance analysis, though details of how this will work have yet to be fleshed out. Presumably, if an Oregon project does not comply with Oregon state requirements, it may not be selected as part of the final shortlist. Staff would support this approach. While Staff believes it might be useful to include information on economic impacts from various projects, at this point, Staff does not believe these are a necessary component for the 2022 RFP.

In its Reply Comments, the Company should elaborate upon how it intends to conduct its state compliance analysis.

Conclusion

¹⁰ See OSIDCL Comments submitted on November 4.

In conclusion, despite the short timeline stakeholders have had to review the revised methodology, Staff believes the PacifiCorp's methodology is an improvement over the past, and Staff looks forward to the Company's Reply Comments.

In its Reply Comments:

- PacifiCorp should clarify, using information from the presentation sent on November 12, the main changes to its bid scoring and associated methodology as compared to what was filed on September 2.
- PacifiCorp should clarify the interactions of older studies and signed LGIAs with the new cluster, in addition to what cost and upgrade assumptions PacifiCorp intends to use when it inputs bids into Plexos. PacifiCorp should also indicate MW of existing LGIA by state, generation type, and estimated interconnection and transmission costs are already available, in addition to how transmission costs will be treated in the RFP.
- The Company should clarify how storage is being considered in the RFP, and whether storage will be considered a load after the first five years of commercial operation. The Company should also clarify and whether interconnection studies, including the cluster, and transmission studies, will include potential upgrades needed with respect to battery charging in the RFP.
- PacifiCorp should elaborate upon how it intends to conduct its state compliance analysis.

This concludes Staff's comments.

Dated at Salem, Oregon, this 22 of November, 2021



Nadine Hanhan
Senior Utility Analyst
Energy Resources and Planning Division

PacifiCorp's 2022 All-Source RFP Bid Evaluation, Bid Selection, Models and Assumptions

Scoring and Modeling Workshop (12:00-1:30)
Storage Valuation Workshop (1:30-2:00)

Workshop
November 15, 2021



Logistics

Microsoft Teams meeting

Join on your computer or mobile app

[Click here to join the meeting](#)

https://teams.microsoft.com/l/meetup-join/19%3ameeting_YmVmY2ExZjktNzY5NS00MmEzLTk2ZmYtYTdiNWNkOTIkMDE4%40thread.v2/0?context=%7b%22Tid%22%3a%227c1f6b10-192b-4a83-9d32-81ef58325c37%22%2c%22Oid%22%3a%226897349a-8fc4-4bdc-a42e-cd0222dd2cc6%22%7d

Or call in (audio only)

[+1 563-275-5003,,450492543#](tel:+15632755003450492543)

Phone Conference ID:

450 492 543#

[Find a local number](#)

Workshop Purpose: Review PacifiCorp's evaluation and selection process demonstrating it is consistent with PacifiCorp's 2021 IRP modeling to assist the Public Utility Commission of Oregon in its approval of the RFP scoring methodology and associated modeling process per OAR 860-089-0250 (2)(a). Discuss storage valuation.

Agenda

Scoring and Modeling Methodology:

- RFP Overview
 - Purpose and Scope
 - Locations
 - Process Timeline
 - Evaluation and Selection Criteria
- Evaluation and Selection Process
 - Proposed Process Steps
 - Due Diligence and Non-Price Scoring
 - Bidder Inputs and Bid Preparation for Plexos Price Scoring
 - Plexos Price Scoring and Final Shortlist Determination
 - Plexos Portfolio Optimization Model Overview
- Questions
- Next Steps

Storage Workshop:

- Energy Storage Valuation
- Storage Eligibility and Bid Input Requirements
- Plexos Dispatch Example
 - Standalone Storage
- Plexos Dispatch Example
 - Collocated Solar with Storage
- Additional Information
 - Storage Overview

Supporting Materials:

- Regulatory and RFP Schedules
- Minimum Eligible Criteria
- Non-Price Scorecard
- Equity Questionnaire

Purpose and Scope of 2022AS RFP

- Action item out of PacifiCorp's 2021 Integrated Resource Plan (IRP) established an all-source RFP in 2022 (2022AS RFP), targeting 1,345 megawatts (MW) of new wind and solar resources collocated with 600 MW of new battery energy storage system (BESS) capacity by the end of 2026.
- Bids requiring longer lead time to develop and construct, placing completion beyond the December 31, 2026 deadline, will be accepted for long-lead resources such as pumped storage hydro and nuclear resources.
- Bids must have completed interconnection studies demonstrating Bidder's ability to interconnect and deliver firm energy to PacifiCorp's transmission system in its east or west balancing authority areas (PACE and PACW, respectively).
- PacifiCorp intends to submit several "benchmark resources" (bid proposals by PacifiCorp or affiliate).
- An independent evaluator (IE), PA Consulting, has been selected on behalf of the Public Utility Commission of Oregon. Two additional IEs will be selected by the Washington Utilities and Transportation Commission and the Utah Public Service Commission.

Resource Types

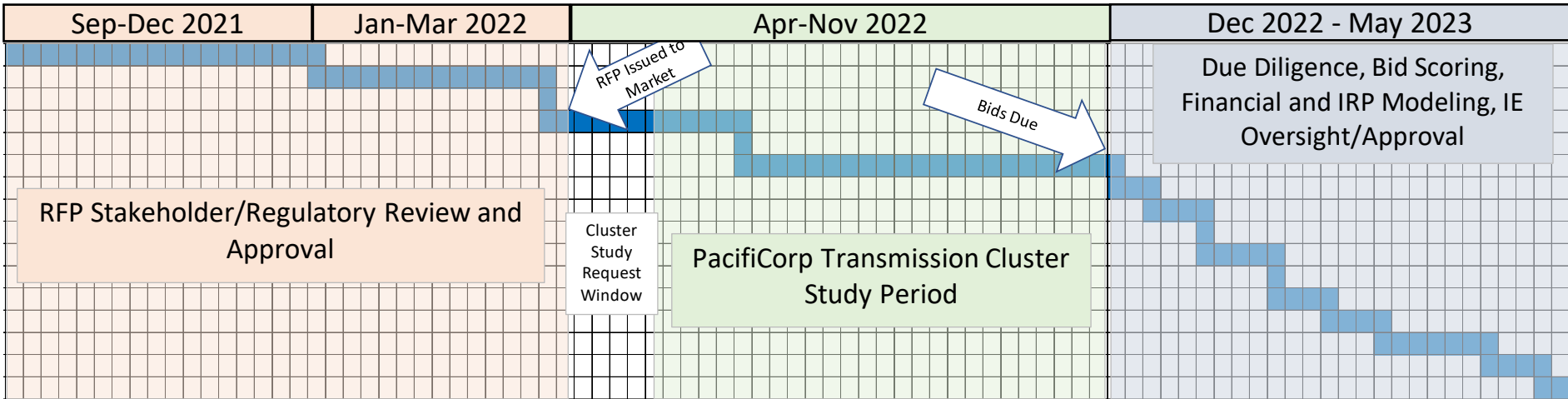
Resource Type	Bid Structure Accepted				
	PPA	BTA	Toll	Benchmark	Service Agreement
Renewable	X	X		X	
Renewable plus battery storage	X	X	X	X	
Non-renewable	X	X			
Standalone battery storage	X	X	X	X	
Pumped hydro storage / nuclear	X	X		X	
Other (demand-side resources)	X	X	X	X	X

- PacifiCorp will accept and evaluate bids from across its six-state service territory; however, all bids are required to have completed an interconnection study or signed a generation interconnection agreement:
 - Demonstrating ability to interconnect and deliver ***firm*** energy to PACW or PACE
 - Including interconnection cost estimates (direct assigned and network upgrades)
 - Supporting the proposed commercial operation date.

- The following areas were identified in the 2021 IRP preferred portfolio as potentially advantageous locations to interconnect with PacifiCorp’s transmission system due to the expected availability of potential transmission upgrades; however, the 2022 AS RFP is not restricted to these areas. PacifiCorp will accept any bid with an interconnection study or agreement indicating ability to deliver firm energy by the end of 2026:

2021 IRP Proxy Resource	Location	Resource Size (MW)	Expected Online
Portland/N. Coast	NW Oregon	130	Year End 2025
Willamette	NW Oregon	615	Year End 2025
Borah Hemingway	Idaho	600	Year End 2025

2022AS RFP Process Timeline



- A second RFP targeting demand-side resources is planned to be released by the end of Q3 2022. Demand-side bids will be evaluated and selected as part of same portfolio optimization (Plexos) modeling effort used to determine the 2022AS RFP final shortlist.
- Detailed RFP Schedules are included in the Slides 32-33.

Evaluation and Selection Criteria

- Conformance with minimum criteria
- Conformance with 2022AS RFP requirements related to interconnection and transmission
- Compliance with and verification of major equipment availability defined in the RFP specifications
- Ability to provide acceptable credit security as determined by Bidder's credit information

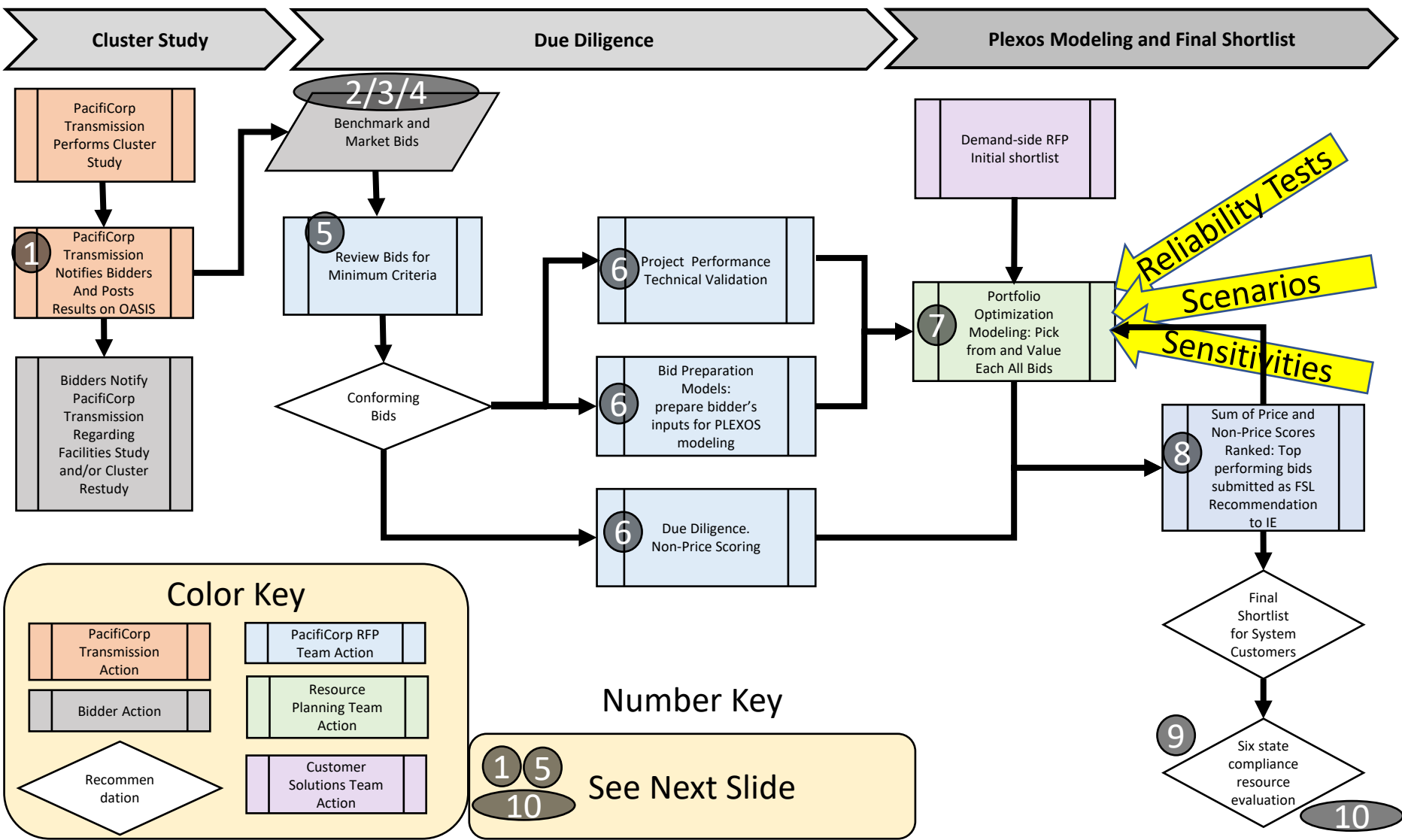
- Technical design, feasibility and compliance with technical specifications
- Cost and benefits to customers

- Ability to reach a mutually agreeable contract generally in conformance with the terms of the pro forma contracts as applicable to the individual proposal bid
- Deliverability (or viability) of the proposal including site control, site studies, permitting, supply chain commitments, construction experience, etc.

Proposed Evaluation and Selection Process

	Original Process – Initial Filing	Proposed Process
RFP Bid Deadline	Prior to PacifiCorp Transmission interconnection cluster study.	Prior to <u>After</u> PacifiCorp Transmission interconnection cluster study.
Interconnection Study	Study not required at bid deadline but required by initial shortlist (ISL) resources after cluster study.	Study not required at bid deadline but required by initial shortlist (ISL) <u>for all proposed</u> resources after cluster study.
RFP Bid Pricing	Interconnection costs not included in price at bid deadline, but ISL resources required to include in price updates after cluster study.	Interconnection costs not included in price at bid deadline, but ISL resources required to include in price updates after cluster study.
Price Score	Determined by proprietary Excel models prior to ISL.	Determined by proprietary Excel <u>portfolio optimization</u> models (<u>Plexos</u>) prior to ISL <u>final shortlist (FSL)</u> . <u>Total score validates portfolio selection.</u>
Non-price score	Used to rank bids and determine ISL.	Used to rank bids and determine ISL <u>FSL</u> .
Bid Ranking	Sum of price and non-price score determines ISL.	Sum of price and non-price score determines ISL <u>FSL</u> .
Initial Shortlist	Used to prioritize bids going into cluster study and portfolio optimization models.	Used to prioritize bids going into cluster study and portfolio optimization models. <u>All eligible bids are analyzed by Plexos.</u>
Storage Valuation	StorageVet (EPRI model)	StorageVet (EPRI model). <u>Endogenous to Plexos</u>

2022AS Evaluation and Selection Process - Proposed



Evaluation and Selection Process Steps - Proposed

1. PacifiCorp Transmission posts interconnection cluster study results
2. Benchmark bid deadline for PacifiCorp and affiliate bids
3. Evaluation and scoring of Benchmark bids with IE review
4. Deadline for Market bids: PPA, BTA, Tolls, professional service agreements
5. Eligibility determination: Conformance to minimum requirements in RFP
6. Input review:
 - Bid Preparation excel file prepares modeling inputs for Plexos and aligns bidder production estimates with modeled renewable output and load
 - Due diligence to determine non-price score (up to 25 points).
 - Third-party engineer review of resource production estimates
7. Portfolio Modeling: Plexos selects portfolio of resources and provides price score inputs (up to 75 points), which are combined with non-price scores (up to 25 points)
8. Compare bid ranking to Plexos preferred resources and run additional Plexos iterations as needed to determine the final shortlist
9. State compliance analysis
10. Final shortlist notification by PacifiCorp

Non-Price Scoring

Non-Price Score Attribute	Points
Bid Submittal Completeness	5
Contracting Progress and Viability	5
Project Readiness and Deliverability	15
Total Score	25

Consistent with OR 860-089-0400(2):

- Non-price factors converted to price factors where practicable.
- Non-price scores primarily relate to resource characteristics identified in 2021 IRP Action Plan and reflect standard form contracts.
- Criteria is objective and reasonably subject to self-scoring.
- Criteria which seek to identify minimum thresholds bid have been converted into minimum bidder requirements.

- Bid Completeness:
 - Bid submittals are thorough, comprehensive and consistent.
- Contracting Progress and Viability:
 - Ability to contract with the resource on terms and conditions consistent with the bid and the proforma agreements included in the RFP.
- Project Readiness and Deliverability:
 - Development status and maturity.
 - Viability with respect to site control, studies and entitlements (permits etc.), equipment and construction sourcing strategy, and other development and operational characteristics.
 - Likelihood of achieving commercial operation by December 31, 2026 (or 2028 for long lead resources).

Each Proposal is required to include a completed Appendix C-2, which provides PacifiCorp a “numbers based” overview of the bid offering:

Appendix C-2 Inputs – Required for Bid Submittal	Location
A forecasted p50 first year 8760 generation profile (not including any storage/battery charging or discharging) including annual generation degradation	Tab 2
PPA pricing ¹ for each year	Tab 3
Storage/battery pricing and operational requirements: <ul style="list-style-type: none"> ▪ Rated Storage Capacity (augmented) ▪ Storage Duration ▪ Full Cycle Charges per Day ▪ Calendar Year Degradation ▪ Calendar Year Efficiency Degradation ▪ Storage Ramp Rate 	Tab 4
BTA or benchmark pricing	Tab 6
Other bidder supplied information	Tab 10
<i>Not in use</i>	Tabs 5, 7-9

¹Bid prices are inclusive of direct interconnection costs. PacifiCorp separately includes the network upgrades from the interconnection studies in bid preparation model and price scoring.

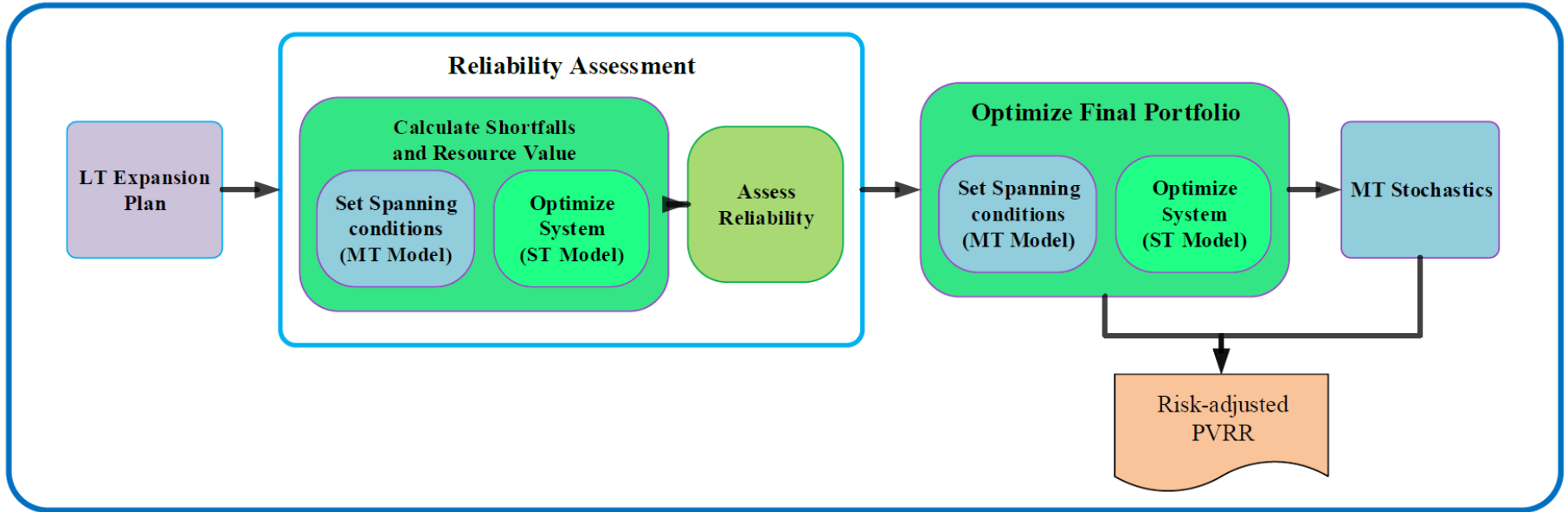
Bid Preparation

- Excel based
- Determines proposal's cost and Plexos model inputs
- Aligns bidder's resource profile with the modeled profiles for wind, solar, and load. Total annual net output (8760) does not change.
- Inputs:
 - Bidder's RFP Appendix C-2 spreadsheet tabs
 - PacifiCorp's standard corporate financial assumptions, such as tax rates, inflation, capital structure, weighted average cost of capital, etc.
 - Project costs specific to BTA's and benchmarks only, such as capital, on-going capital, fixed and variable O&M, insurance, state, land lease/royalty costs, etc.
 - Network upgrade costs from PacifiCorp Transmission group's interconnection cluster study (direct costs are included in bidder's pricing)
 - Other inputs, such as integration operating reserve requirements, etc.
- Outputs:
 - Nominal levelized results and real levelized costs
 - Input file for Plexos modeling

Price Scoring and Final Shortlist Determination

- Plexos Upload of Bid Preparation Excel File Inputs
- Plexos Modeling
 - Recommends a least-cost, least-risk portfolio of new resources.
 - Provides a numeric net system benefit (value in dollars) for each bid evaluated, which will be used to establish a price score.
 - Runs sensitivities related to portfolio reliability, cost/risk, state-specific compliance.
- Total Scoring and Ranking
 - Plexos-based Price Scores (0-75 points) are added to Non-Price score for each bid (0-25 points) to yield a Total Score (0-100 points) for each bid. Total scores are then used to rank bids.
- Final Shortlist Determination
 - Should the top ranked bids conform with the Plexos portfolio of preferred new resources, then the final shortlist will be established.
 - If the bid ranking (inclusive of non-price scores) is inconsistent with the Plexos portfolio of preferred new resources, then PacifiCorp in coordination with the IEs may identify bid resources to add or subtract Plexos's recommended portfolio. PacifiCorp's Resource Planning team may test different iterations for system stability and reliability until it determines a final recommended portfolio of new resources consistent with both non-price scores and the Plexos portfolio optimization model.
 - Following the determination of the final shortlist, in coordination with the IEs, PacifiCorp will check for compliance with state regulations and may run state-specific sensitivities

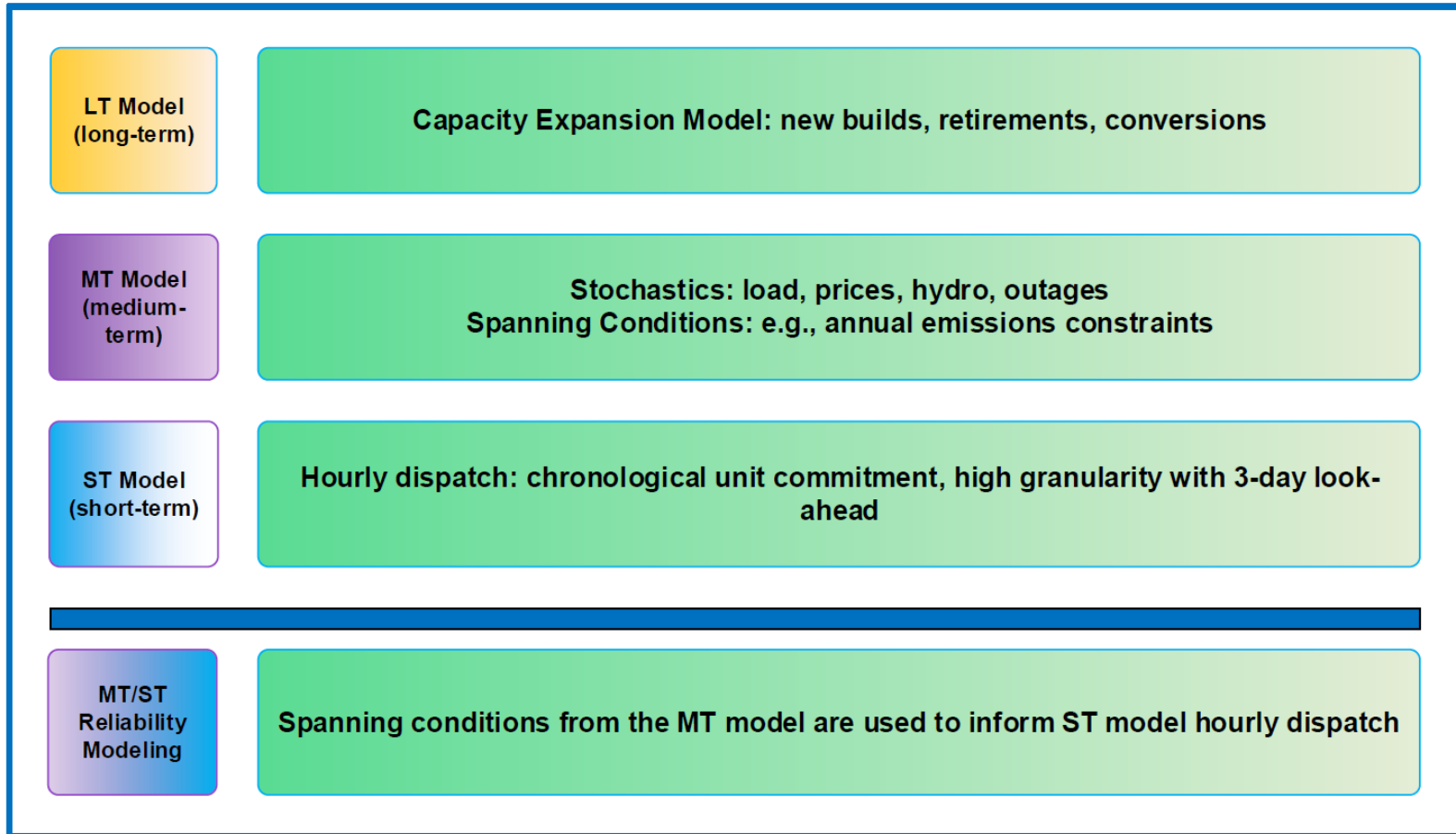
Plexos Model



Plexos inputs:

- Bid cost and performance (based on internal Bid Preparation Model)
- System load (based on 2021 IRP)
- Existing transmission system topology (based on 2021 IRP)
- Transmission options outside the bids/cluster study for proxy resources
- General financial inputs (*i.e.*, inflation, discount rate, etc. based on 2021 IRP)
- Market prices (to be updated prior to receipt of bids)
- Environmental policy (based on 2021 IRP and updated for any applicable price-policy scenario or renewable energy tax law changes prior to receipt of bids)
- Stochastic parameters (based on the 2021 IRP)
- Other inputs based on best available data

Plexos Model - continued



Plexos analysis:

- Stochastic-risk modeling – 50 iterations of stochastic variables (i.e., load, hydro, market, and thermal outages)
- Calculate the risk-adjusted PVRR (stochastic mean plus 5% of the 95th percentile forecast of system costs)

Plexos outputs:

- Bid selection
- Net benefit for each bid

Questions

Next Steps

Oregon Regulatory Schedule	Date
Staff, IE and other Stakeholder Comments Due on RFP scoring and Associated Modeling methodology	November 22, 2021
PacifiCorp Reply Comments	November 29, 2021
Commission Public Meeting on Approval of Scoring and Associated Modeling Methodology	December 14, 2021

2022AS_RFP@PacifiCorp.com

- Responses will be posted on PacifiCorp’s 2022S RFP website by November 19.

www.pacificorp.com, as information is developed. From PacifiCorp’s website main page, go to Suppliers, then RFPs, then 2022AS RFP.

Storage Workshop

1:30-2:00

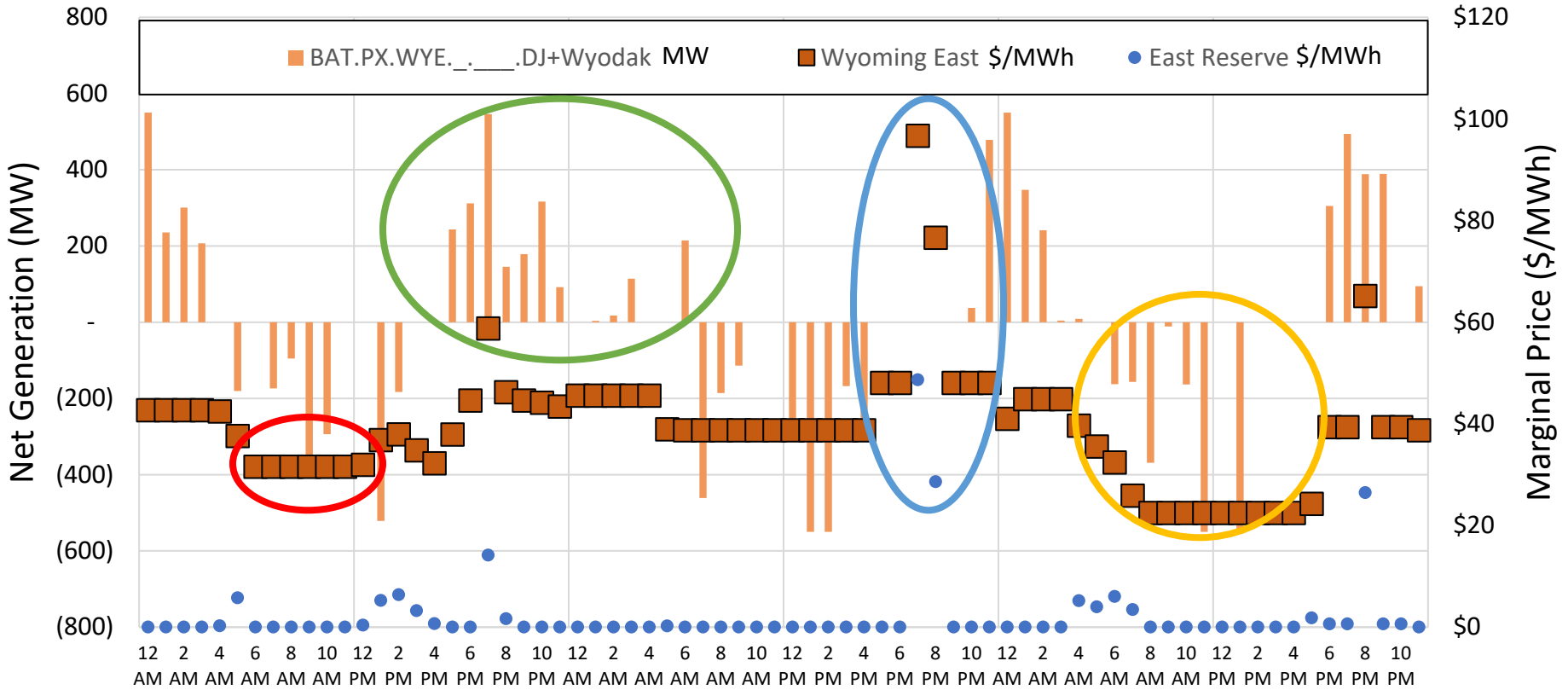
Energy Storage Valuation

- Energy storage evaluated as to “toll” or “call option” to PacifiCorp
 - Pricing: \$/kW-month for right to charge and discharge (dispatch) the storage facility
 - Bidders may not charge or discharge the storage facility without PacifiCorp’s approval
 - Bidder must be able to follow four section Automated Generator Control (AGC) signal
- Economic Valuation Model
 - The 2020AS RFP used Electric Power Research Institute (EPRI)’s storage evaluation tool, “StorageVet” to calculate a storage value and prioritize resources prior to the Plexos (portfolio optimization) analysis.
 - StorageVet will no longer be used because storage valuation is endogenous to Plexos.
 - Instead, Plexos will consider, select from and value each of the eligible storage proposals bid into the 2022AS RFP.
 - The new portfolio optimization modeling tool, Plexos, has more functionality than the prior portfolio modeling tool used for the 2020AS RFP.
 - Plexos will evaluate all bids including batteries/storage
 - Plexos will consider the same parameters modeled by StorageVet
 - Plexos’s additional functionality allows it to analyze the stochastic relationship and value of storage resources within PacifiCorp’s existing portfolio of generating resources and associated load.
 - Using Plexos to analyze, select and value storage resources directly will reduce the time from bid submission to FSL to approximately [4] months.

Eligibility and Bid Input Requirements for Energy Storage Proposals

Battery Characteristic	PacifiCorp Specification
Collocated BESS	Collocated battery energy storage systems (BESS) must be AC coupled. PacifiCorp understands most bidders will specify that battery is charged during first five years from collocated renewable generation due to federal tax incentive recapture risk. PacifiCorp requests collocated batteries are designed with ability to grid charge after recapture period.
Rated Capacity	Must be consistent with interconnection study, or else have documentation from PacifiCorp Transmission that no material modification is required. Collocated bids must be 50% or greater than generating resource with same term as generating resource. 50%, 75%, 100% bids accepted.
Power Capacity Rating (instantaneous capacity)	Lithium-based battery bids must assume and price augmentation to maintain capacity and duration throughout contract life. Other technologies must maintain original capability of proposed storage resource.
Duration	Minimum of four (4) hours duration accepted.
Number of Full Charges	Bidder to specify number of allowable full charges per day and per year
Calendar Year Storage Degradation	Bidder to specify percentage of charge lost annually over the term of the contract, to be consistent with bid augmentation strategy.
Round Trip Efficiency	Bidder to specify the ratio of energy into the storage facility (charge) versus energy out of the storage facility (discharge), which must be maintained over the term of the contract.
Storage Ramp Rate	Bidder to specify minimum and maximum time (in milliseconds) from charge or discharge notice to maximum power capacity rating of charge or discharge. Storage facility must be capable of following a four (4) second signal and ramping at a rate no less than, nor greater than, a specified ramp rate provided by PacifiCorp Energy Supply Management (ESM) group.

Storage Dispatch Example: Stand-alone Storage



Stand-alone Storage Dispatch Characteristics

- Plexos portfolio optimization tools have robust functionality which allow for stochastic valuation of storage bids.



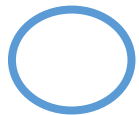
- **Discharge constraints:**

- Power Capacity Rating – maximum hourly discharge (550 MW at 7PM)
- Storage Duration – four hours at maximum output, or the equivalent spread over more hours.



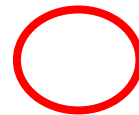
- **Charge constraints:**

- Power Capacity Rating – maximum hourly charge (550 MW at 11AM)
- Storage Duration and Efficiency Losses – Filling to four hours of available discharge takes additional time, due to efficiency losses. At an efficiency of 85%, the minimum time to fill the battery is:
 - 4 hours of discharge / 85% roundtrip efficiency = 4.7 hours of charging



- **Discharge optimization:**

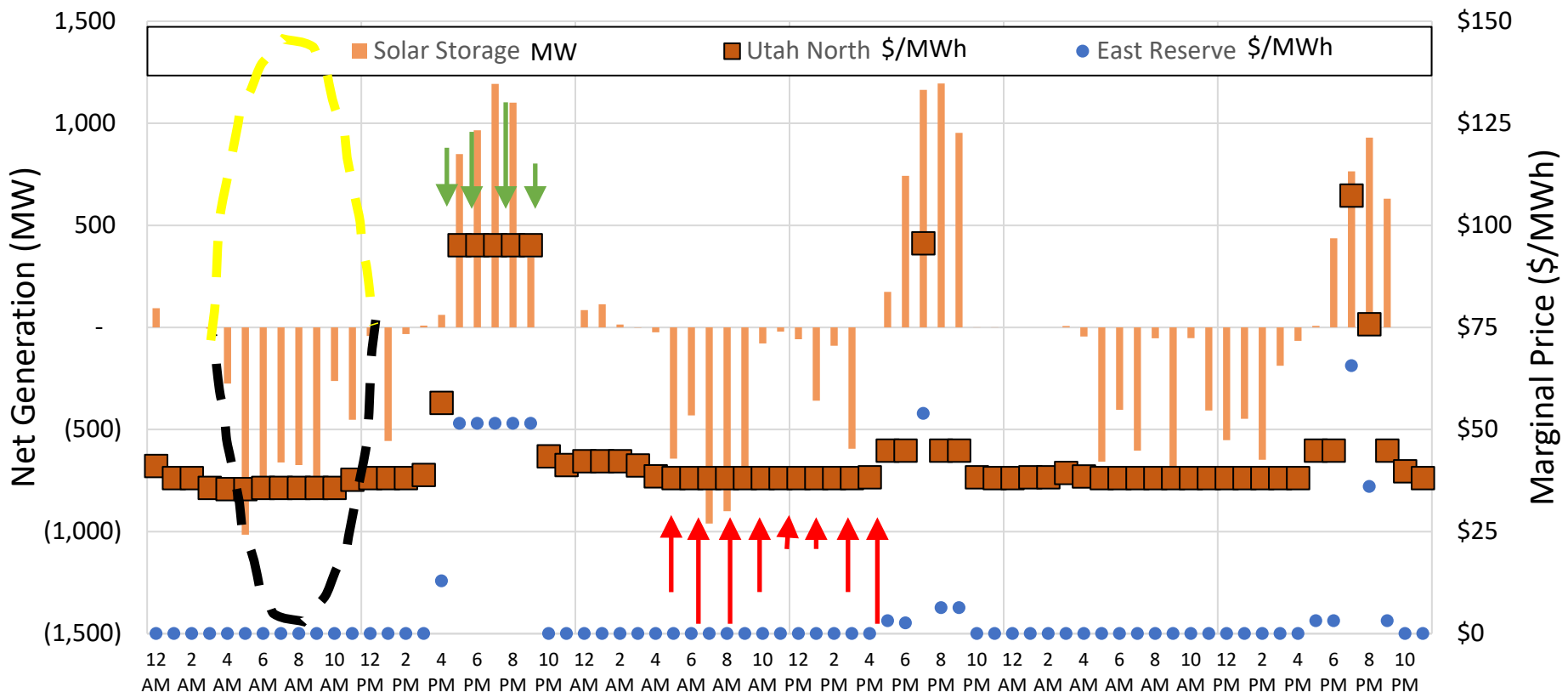
- Plexos identifies the highest value opportunities for discharging. Supply from discharging decreases reliance on high cost resources, and thus decreases marginal costs.
- The optimized charging schedule (in MW) results in flat marginal costs across the charge period unless:
 - Discharging capacity is maxed out.
 - Co-optimization of energy and reserves can result in storage capacity designated as reserves, and higher marginal energy prices.
- Generically, if marginal costs were not flat, it would be more cost-effective to move charging from a high cost period to a low-cost period



- **Charge optimization:**

- Plexos identifies the lowest cost opportunities for charging. Demand from charging increases reliance on the next higher resource in the stack, and thus increases marginal costs
- The optimized charging schedule (in MW) results in flat marginal costs across the charge period unless:
 - Charging capacity is maxed out.
 - Reserve costs impact charging: Charging capacity counts as additional reserves supply up to 2x the power capacity (stopping charging plus starting discharging).

Storage Dispatch Example: Combined Solar and Storage



Key Combined Solar and Storage Dispatch Characteristics

- Plexos portfolio optimization tools have robust functionality which allow for stochastic valuation of storage bids.

- **Discharge constraints:**

- Maximum hourly discharge of combined solar and storage output is capped:
 - The sum of Storage discharge and reserves cannot exceed the maximum minus collocated solar output.

- **Charge constraints:**

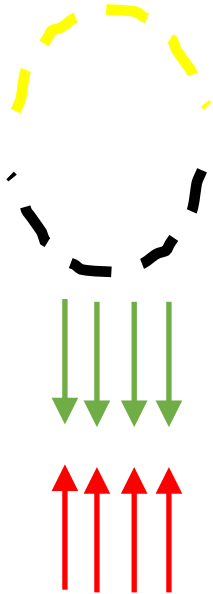
- To ensure investment tax credit requirements are met, charging is restricted to the available solar output

- **Discharge optimization:**

- Plexos identifies the highest value opportunities for discharging. Supply from discharging decreases reliance on high cost resources, and thus decreases marginal costs.

- **Charge optimization:**

- Plexos identifies the lowest cost opportunities for charging. Demand from charging increases reliance on the next higher resource in the stack, and thus increases marginal costs



Additional Information: Storage Technology Overview

Lithium Batteries

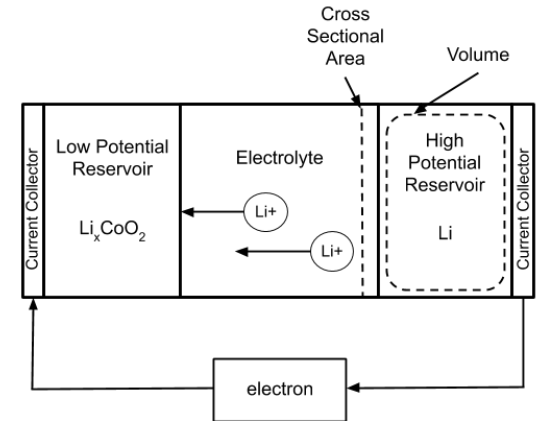
A lithium-chemistry battery (Li) is a type of rechargeable battery in which lithium ions move from the negative electrode through an electrolyte to the positive electrode during discharge, and back when charging.

- **Pros/Benefits:**

- High Energy Density. This battery technology can store more electrical energy in a smaller footprint than other battery types
- Quicker Charging Times.
- Relatively Long Life. Operated within design parameters, Li batteries can have a 10 -12 year life expectancy.
- Slower Capacity Loss (minimal self discharge).

- **Cons/Disadvantages:**

- Protection Required. Protection from “overcharging” and over “discharging” required.
- Controlled Environment Required. The quest for Li batteries with higher capacity and high discharge rates has further enhanced the ventilation/HVAC requirements given heat generated and the potential for fire.
- Ageing. Charge hold duration is affected by age and how the battery has been cycled.
- Maturing Technology. Industry battery chemistries are in flux and with not current industry standard.



Flow Batteries

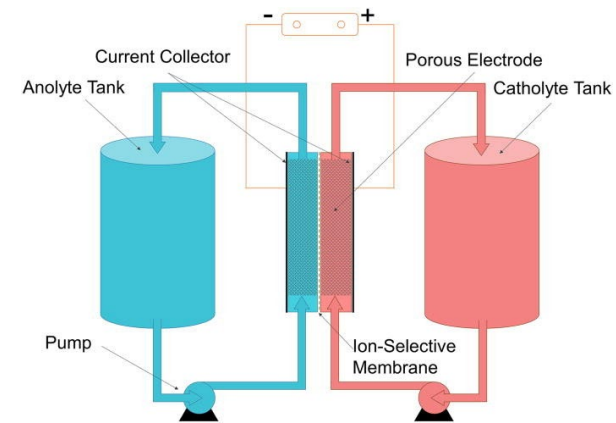
A flow battery is a type of electrochemical cell where chemical energy is provided by two chemical components dissolved in liquids that are pumped through the system on separate sides of a membrane. Ion exchange (accompanied by flow of electric current) occurs through the membrane while both liquids circulate in their own respective space.

- **Pros/Benefits:**

- Longer Cost-Effective Duration. Durations of up to 12 hours.
- Increase Safety. No controlled environments for the battery facilities required.
- Quicker Response Times. No battery cell equalization required.
- Long Life. Flow batteries can operate forever because the electrolyte either does not wear out or can be replenished as part of general operations and maintenance.

- **Cons/Disadvantages:**

- Less Efficient. Li battery are +85% efficient; flow batteries ~75% efficient (e.g. round-trip efficiency losses between charge and discharge).
- Less Dense/Requires Larger Footprint than Li.
- Very Immature Technology. Limited vendors in flow battery space; field testing underway (including NV Energy)



Pumped Storage Hydro

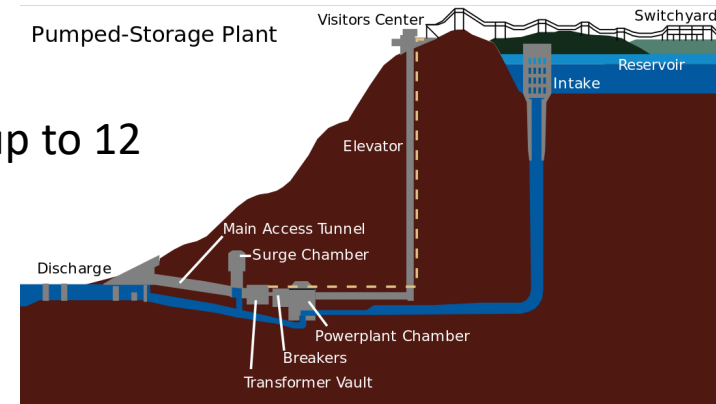
Pumped-storage hydroelectricity (PSH) is a type of hydroelectric energy storage used by electric power systems for load balancing. The method stores energy in the form of gravitational potential energy of water, pumped from a lower elevation reservoir to a higher elevation.

- Pros/Benefits:

- Longer Cost-Effective Duration. Durations of up to 12 hours.
- Mature Technology.
- Long Life.

- Cons/Disadvantages:

- Longer Cost-Effective Duration. Durations of up to 12
- Rarely Located Near Load. Often in remote locations, required new electric transmission can further dampen economics
- Expensive.
- Environmental Considerations.
- Less Efficiency the Li Technology.



Supporting Materials

Proposed RFP Regulatory Schedule

OR workshop with IE stakeholders on RFP modeling and scoring	OR Docket	11/15/2021
Staff, IE and other Stakeholder Comments Due on RFP scoring and Associated Modeling methodology	OR Docket	11/22/2021
PacifiCorp reply comments on RFP scoring and Associated Modeling methodology	OR Docket	11/29/2021
Pre-issuance RFP bidder's conference Utah	UT Docket	12/13/2021
Oregon Commission approval of evaluation and scoring methodology	OR Docket	12/14/2021
Circulate draft RFP in Oregon prior to workshop	OR Docket	12/28/2021
File <u>final</u> draft RFP with WA Commission	WA Docket	12/30/2021
Oregon workshop with IE stakeholders on RFP draft	OR Docket	01/07/2022
File <u>final</u> RFP Application for UT	UT Docket	01/12/2022
File <u>final</u> draft RFP with OR Commission	OR Docket	01/14/2022
Oregon party comments on final draft RFP	OR Docket	02/11/2022
RFP Comments due from WA interested persons	WA Docket	02/13/2022
PacifiCorp reply comments on final draft RFP	OR Docket	02/25/2022
UT stakeholder party comments on RFP draft	UT Docket	02/28/2022
Oregon IE files report on final draft RFP	OR Docket	03/04/2022
UT IE comments on RFP due	UT Docket	03/08/2022
PacifiCorp comments on RFP due	UT Docket	03/08/2022
WA Commission approval of RFP	WA Docket	03/17/2022
All party / PacifiCorp's reply comments due for UT	UT Docket	03/18/2022
Oregon Commission Staff files memo on RFP	OR Docket	03/29/2022
PacifiCorp OATT - Cluster Request Window opens	OATT	04/01/2022
UT Commission decision on RFP	UT Docket	04/01/2022
OR Commission Special Public Meeting approving RFP	OR Docket	04/04/2022
RFP Issued to market	2022 AS RFP	04/12/2022
WA Procurement Rules - Deadline for issuing RFP	WA Docket	04/16/2022

Subject to Change

Milestone	Date
2022AS RFP Issued to market	04/12/2022
Bidder Workshop	04/22/2022
PacifiCorp OATT - Cluster Study Request Window closes (deadline)	05/16/2022
Notice of Intent to Bid due	06/16/2022
Demand-side targeted RFP Issued to Market	Q3 2022
Cluster study results posted to OASIS / bidders notified by PacifiCorp Transmission	11/12/2022
Benchmark bids due	11/21/2022
RFP bids due from market	01/16/2023
PacifiCorp and IE review of bid eligibility screening complete	02/22/2023
PacifiCorp completes bid preparation and provides supply-side and demand-side bid inputs to Plexos portfolio optimization modeling team	02/23/2023
Capacity factor and BESS evaluation of bids completed	02/23/2023
PacifiCorp completes due diligence and non-price scoring	03/15/2023
Plexos generates price score and list of preferred new resources	04/14/2023
PacifiCorp and IE review of FSL recommendation complete	05/05/2023
Execute Agreements	11/21/2023
Bid validity date	11/21/2023
Winning Bid Guaranteed COD	12/31/2026

Minimum Eligibility Criteria

1. Receipt of bid by deadline.
2. Bid Fee by deadlines
3. Complete Appendix C-2 Pricing Input Sheet
4. Ability to achieve COD deadline
5. Execute Confidentiality Agreement and allow appropriate disclosures to agents, contractors, regulators, etc
6. No attempts to influence PacifiCorp
7. Firm bid through bid validity date.
8. No commitments of all or part of bid to another entity
9. Must disclose real parties of interest
10. All pricing terms clearly specified
11. Firm capacity and energy delivered to PACE or PACW
12. Off-system, third-party transmission bids must provide interconnection study, evidence of firm transmission and wheeling costs (B2H question)
13. BTA compliance with Appendix A Technical Specifications
14. Process and ability to procure major equipment and long-lead items
15. Compliance with Prohibited Vendors list
16. Ability to meet credit security requirements
17. Information required to evaluate price- and non-price factors
18. Ability to meet and compliance with safety standards
19. Acceptable contract structure
20. No collusive bidding or anticompetitive behavior
21. Bidder not in bankruptcy proceedings
22. Proposal cover letter signed by authorized officer
23. Compliance with Federal Trade Commission Green guidelines for renewable projects
24. Bid conformance to any change in law or regulatory requirements
25. No impairment of bidder or resource, power generation or environmental attributes for any reason
26. Resource performance estimate information in RFP Section 5.B
27. Performance report and model output including hourly output values in Appendix C-3 – Energy Performance Report.

Non-Price Factor

I. Bid Submittal Completeness - Bidder completed each of following items accurately and in a manner consistent with the RFP requirements.	Response	Bid Score
· Bid meets all minimum criteria and is eligible bid.	Yes	Minimum criteria met
· Appendix A-2 Interconnection study, agreements and any required confirmation of material modification, as applicable. Off-system bids have provided a system impact or facilities study with 3rd party transmission provider and demonstrated transmission availability to a POD on PacifiCorp's transmission system.	Yes	Minimum criteria met
· Appendix A-3 Permit Matrix	Yes	Minimum criteria met
· Appendix A-5 Project One-Line Drawing and Layout	Yes	Minimum criteria met
· Appendix A-6 Division of Responsibility (BTA)	Yes	Minimum criteria met
· Appendix A-7 Conformance with Owners Standards and Specifications (BTA)	Yes	Minimum criteria met
· Appendix A-9 Product Data-Equipment Supply Matrix	Yes	Minimum criteria met
· Appendix A-10 Plant Performance Guarantee/Warranties (BTA)	Yes	Minimum criteria met
· Appendix B-1 Notice of Intent to Bid	Yes	1
· Appendix B-2 Signed Cover Letter without modification	Yes	Minimum criteria met
· Appendix B-2 Bid Proposal in compliance with the proposal format and requirements outlined in Appendix B-2	Yes	1
· Appendix C-2 Bid Summary and Pricing Input Sheet provided without modification, including milestone payment schedule for BTAs	Yes	Minimum criteria met
· Appendix C-3 3rd Party Energy Performance Report. For wind submittals, one (1) an independent third-party or in-house wind assessment analysis/report supported by a minimum of (a) two years of wind data for BTA proposals from the proposed site or (b) one year of wind data for PPA proposals from the proposed site. Wind data shall support the capacity factor. For solar proposals, one (1) a PVSyst report, including the complete set of modeling input files in Microsoft Excel format that PacifiCorp can use to replicate the performance using PVSyst, PacifiCorp's preferred solar performance model, and two years of solar irradiance satellite data provided by Solargis, SolarAnywhere or on-site met data.	Yes	Minimum criteria met
· Appendix D Bidder's Credit Information including a clear description of ownership and/or corporate structure, a letter from the entity providing financial assurances stating that it will provide financial assurances on behalf of the bidder	Yes	Minimum criteria met
· Appendix G-1 Confidentiality Agreement	Yes	Minimum criteria met
· Appendix J PacifiCorp Transmission Waiver	Yes	Minimum criteria met
· Appendix K General Services Contract-O&M Services (BTA)	Yes	Minimum criteria met
· Appendix P - Equity Questionnaire	Yes	1
· Site Control Documentation	Yes	Minimum criteria met
· Completed Critical Issues Analysis Report completed by 3rd party	Yes	1
· Completed permits (or applications) including Conditional Use Permit and Conditional Use Permit, evidence of appropriate zoning, or other material permits as required (BTA)	Yes	Minimum criteria met
· Geotechnical report (BTA)	Yes	Minimum criteria met
· Environmental studies (endangered species, wetlands, Phase I ESA) (BTA)	Yes	Minimum criteria met
· Cultural studies (BTA)	Yes	Minimum criteria met
· Evidence of wire transfer provided prior to bid deadline in the correct amount for the correct number of bids	Yes	Minimum criteria met

II. Contracting Progress and Viability	Response	Bid Score
· A contract redline was provided including redline of Appendices.	Yes	1
· A contract issues list was provided identifying bidder's top priority commercial terms.	Yes	1
· Bidder redlines and issues lists are based on a lawyer's review of the proforma contract documents.	Yes	1
· Bidder has the legal authority to enter into a contract for the output of the facility.	Yes	Minimum criteria met
· Bidder provided fixed and firm pricing for a contract term length between 5 and 30 years.	Yes	1
· Bidder has offered a dispatchable product.	Yes	1
· Bidder agrees to PacifiCorp's ability to issue dispatch notices as defined in contract proforma. Bidder will follow Automated Generation Control (AGC) signal and follow a four (4) second signal.	Yes	Minimum criteria met
· Bidder has demonstrated it can meet the credit security requirements for the resource proposed.	Yes	Minimum criteria met
· Binding and exclusive site control documentation matches legal site description included in contract redline. Seller will have site control and site access site by contract execution date.	Yes	1
· Contract redlines are consistent with Appendix C-2 inputs (product, price, term, 8760, capacity factor, depreciation, degradation, storage specifications, BTA milestone payments, etc).	Yes	1
· BTA bids include list of assets to be transferred to PacifiCorp. Project documents with same legal entity as bidder. Studies, critical issues analysis and material assets may be assigned and relied upon by PacifiCorp.	Yes	1
· Wind bidder will agree to proforma contract requirement to apply for Eagle Take Permit.	Yes	Minimum criteria met
· Oregon-sited resources will agree to proforma contract term which requires bidder to provide attestation required in HB2021.	Yes	Minimum criteria met
· Seller will agree to pro forma contract term to comply with Prohibited Vendors provisions.	Yes	Minimum criteria met
· Seller will agree to pro forma contract term to comply with OFAC Sanctions Lists and Government-Owned Enterprises provisions.	Yes	1
· Seller will agree to pro forma contract term which requires contractor diversity tracking and reporting.	Yes	1

III. Project Readiness and Deliverability	Response	Bid Score
· Schedule and supporting documentation include development and construction milestones (major equipment procurement and delivery on site, EPC execution and notice to proceed, interconnection backfeed, mechanical completion) which support the commercial operations date.	Yes	Minimum criteria met
· Bidder has demonstrated conformance with Appendix A-7 Owners Standards and Specifications	Yes	1
· BTA assets (permits, leases, interconnection agreements, other contracts, resource assessments etc) support commercial operation date, 8760 resource estimates and net capacity factor through operating life.	Yes	1
· Bidder has experience with (developing, constructing and/or operating) the same technology as being proposed.	Yes	1
· Bidder has sufficient development experience (prior to construction) for size of project proposed (has completed at least one project 50% of proposed size).	Yes	1
· Bidder's Financing Plan demonstrates ability to finance project construction and ongoing operations.	Yes	1
· Bidder has executed and recorded lease or warranty deed of ownership.	Yes	1
· Required easements have been identified including project site, site access and any gentie line up to point of interconnection.	Yes	1
· Required easements have been secured including project site, site access and any gentie line up to point of interconnection.	Yes	1
· Bidder has signed LGIA which demonstrates ability to interconnect before proposed commercial operations date.	Yes	1
· Met stations have been installed - and are functioning - on site.	Yes	1
· 50% Engineering designs are complete.	Yes	1
· Proposed equipment is consistent with bid narrative, Appendix C-3 (8760), Appendix A-7 Technical Specifications and Appendix A-9.	Yes	1
· Bidder's Supply chain and contracting plans demonstrate ability to secure materials and complete construction, including securing safe harbor equipment, if applicable. Bidder has demonstrated a process to adequately acquire or purchase major equipment (i.e., wind turbines, solar photovoltaic panels, inverters, tracking system, generator step-up transformers, batteries) and other critical long lead time equipment.	Yes	1
· 1) Major equipment has been procured and 2) Engineering Procurement and Construction (EPC) and/or other balance-of-plant construction contracts agreement have been signed.	Yes	1
· Critical Issues Analysis has not identified any fatal flaw that would prevent resource from reaching commercial operations by the deadline.	Yes	1
· Wetlands are not present, or mitigation plans are in place.	Yes	1
· Endangered species are not present on site or mitigations plans are in place.	Yes	1
· One or more year of avian studies are available for proposed wind resources.	Yes	1
· Cultural resources are not present, or mitigation plans are in place.	Yes	1
· Site is zoned for proposed use.	Yes	1
· Permitting is complete (i.e. project is shovel ready).	Yes	1
· Proposal meets PacifiCorp's supplier diversity goals: https://www.pacificorp.com/suppliers/supplier-diversity.html	Yes	1
· If located in California, proposal is a renewable generating facility located in a community afflicted with poverty or high unemployment or that suffers from high emission levels according to California Office of Environmental Health Hazard Assessment (OEHHA)'s California Communities Environmental Health Screening Tool: CalEnviroScreen 4.0. (https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40)	Yes	1
· If located in Washington state, facility is located in a highly impacted community or in proximity to a vulnerable population according to Washington State Department of Health's Environmental Public Health Data website and Environmental Health Disparities V 1.1 tool (https://fortress.wa.gov/doh/wtn/WTNIBL/)	Yes	1
· If located in Oregon state, facility meets HB2021 requirements including but not limited to apprenticeship and workforce requirements	Yes	1
· Proposal is a renewable generating facility or non-emitting resource.	Yes	1

Proposed Equity Questionnaire

- Used after determination of final shortlist to evaluate regulatory compliance across six-states (Washington CETA).

Population characteristics of community where facility is proposed		
To be completed based on census track in which facility is located		
Race and ethnicity		
White (%)		% of population white alone
Black or African American (%)		% of population Black or African American alone
American Indian and Alaska Native (%)		% of population American Indian and Alaska Native alone
Asian (%)		% of population Asian alone
Native Hawaiian and Other Pacific Islander (%)		% of population Native Hawaiian and Other Pacific Islander alone
Two or More Races (%)		% of population two or more races
Hispanic or Latino (%)		% of population Hispanic or Latino
Population 25 years and over with no high school diploma		% of population 25 years and older
Unaffordable housing		% of households (with and without mortgages and rentals) spending greater than 30% of income on housing
Population five years and older that speak English less than "very well" and "not at all"		% of people that speak English at home (5 years old or older)
Population with income 185% below poverty		% of total population with income 185% below poverty
Population 16 years and older unemployed		% of population 16 years or older

Facility Job Creation	Construction	Ongoing Operations	
Total hires (number of jobs)			
Will there be an apprenticeship or training program?			
Projected local hires from nearby communities (number of jobs)			
Duration of work (months of construction / years of operation)			Specify unit (hours, days, or months)
Estimate projected economic benefits to the local economy (direct and indirect) (annual \$ from payroll taxes, property taxes, other taxes, services)			
Minority-owned businesses (percentage of contractors and subcontractors)			
Woman-owned businesses (percentage of contractors and subcontractors)			
Service-disabled veteran-owned businesses (percentage of contractors and subcontractors)			
LGBT firms (percentage of contractors and subcontractors)			

Local Impacts		
Is Facility a distributed energy resource?		yes/no
Duration of construction		months
Source of water used during construction		
Source of water used during operations		
Is water a permitted or public source		public/private
Site disturbance - amount of disturbed soil during construction		acres
Tree and pollinator seed re-planting after construction		acres

Pollution Burden	Estimated Amount During	
	Construction	Ongoing Operations
Environmental Exposures		
Annual amount of greenhouse gas emissions		
Diesel Emission Levels of NOx (tons per year)		
Particulate Matter 2.5 (PM2.5) (tons per year)		
Will the facility be required by the EPA to have a Risk Management Plan (Y/N)		
Estimated number of vehicles on site (daily average)		
Environmental Effects		
Will the facility have a transportation plan? (Y/N)		
Will the facility require a hazardous waste permit (Y/N)		
Will the facility have a dust mitigation plan (Y/N)		
Will the facility require a wastewater discharge permit (Y/N)		
Water use (gallons per year)		
Will the facility request an incidental take permit (Y/N)		

Proposed Equity Questionnaire – Washington Supplement

Community Benefit Indicator Questions	Yes/No	Comment:
Will this resource include an apprenticeship or job training?		
Will this resource increase the amount of renewable energy on PacifiCorp's system?		
Will this resource result in CO2 emissions?		
Will this resource enable grid investments or other infrastructure which result in energy resiliency or energy security?		
Will this resource provide energy benefits to vulnerable populations and highly impacted communities?		
Will this resource provide non-energy benefits to vulnerable populations and highly impacted communities?		
Will this resource reduce the energy burden of vulnerable populations and highly impacted communities?		

- Requested of Washington -located resources

Washington State Department of Health - Environmental Public Health Data

Facilities located in Washington-state must provide scores for each of the following criteria for the proposed location using WA Department of Health website	Rank	
Environmental Health Disparities V 1.1		https://fortress.wa.gov/doh/wtn/WTNIBL/
Environmental Exposures		https://fortress.wa.gov/doh/wtn/WTNIBL/
NOx-Diesel Emissions (Annual Tons/Km2)		https://fortress.wa.gov/doh/wtn/WTNIBL/
Ozone Concentration		https://fortress.wa.gov/doh/wtn/WTNIBL/
PM2.5 Concentration		https://fortress.wa.gov/doh/wtn/WTNIBL/
Populations near Heavy Traffic Roadways		https://fortress.wa.gov/doh/wtn/WTNIBL/
Toxic Releases from Facilities (RSEI Model)		https://fortress.wa.gov/doh/wtn/WTNIBL/
Environmental Effects		https://fortress.wa.gov/doh/wtn/WTNIBL/
Lead Risk From Housing (%)		https://fortress.wa.gov/doh/wtn/WTNIBL/
Proximity to Hazardous Waste Treatment Storage and Disposal Facilities (TSDFs)		https://fortress.wa.gov/doh/wtn/WTNIBL/
Proximity to National Priorities List Facilities (Superfund Sites)		https://fortress.wa.gov/doh/wtn/WTNIBL/
Proximity to Risk Management Plan (RMP) Facilities		https://fortress.wa.gov/doh/wtn/WTNIBL/
Wastewater Discharge		https://fortress.wa.gov/doh/wtn/WTNIBL/
Socioeconomic Factors		https://fortress.wa.gov/doh/wtn/WTNIBL/
ACS:Limited English (LEP) (%)		https://fortress.wa.gov/doh/wtn/WTNIBL/
No High School Diploma (%)		https://fortress.wa.gov/doh/wtn/WTNIBL/
People of Color (Race/Ethnicity)		https://fortress.wa.gov/doh/wtn/WTNIBL/
Population Living in Poverty <=185% of Federal Poverty Level (%)		https://fortress.wa.gov/doh/wtn/WTNIBL/
Transportation Expense		https://fortress.wa.gov/doh/wtn/WTNIBL/
Unaffordable Housing (>30% of Income)		https://fortress.wa.gov/doh/wtn/WTNIBL/
Unemployed (%)		https://fortress.wa.gov/doh/wtn/WTNIBL/
Sensitive Populations		https://fortress.wa.gov/doh/wtn/WTNIBL/
Death from Cardiovascular Disease		https://fortress.wa.gov/doh/wtn/WTNIBL/
Low Birth Weight - Combined (%)		https://fortress.wa.gov/doh/wtn/WTNIBL/

Proposed Equity Questionnaire – California Supplement

Clean Energy Bill Questions	Yes/No	Comment:
Is your facility located in a community afflicted with poverty or high unemployment or that suffers from high emission levels?		
California		
Facilities located in California must provide the CalEnviroScreen 3.0 Results score for the proposed location using the California Office of Environmental Health Hazard Assessment website	Rank	
Overall Percentiles		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
CalEnviroScreen 4.0 Percentile		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Pollution Burden Percentile		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Population Characteristics Percentile		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Exposures		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Ozone		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Particulate Matter 2.5		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Diesel Particulate Matter		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Toxic Releases		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Traffic		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Pesticides		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Drinking Water		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Lead from Housing		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Environmental Effects		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Cleanup Sites		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Groundwater Threats		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Hazardous Waste		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Impaired Waters		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Solid Waste		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Sensitive Populations		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Asthma		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Low Birth Weight		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Cardiovascular Disease		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Socioeconomic Factors		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Education		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Linguistic Isolation		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Poverty		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Unemployment		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40
Housing Burden		https://oehha.ca.gov/calenviroscreen/report/draft-calenviroscreen-40

- Requested of California-located resources

Question & Comments

