PACIFIC POWER
A DIVISION OF PACIFICORP

825 NE Multnomah, Suite 2000
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August 12, 2021

VIA ELECTRONIC FILING

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

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

PacifiCorp d/b/a Pacific Power hereby submits for filing its Corrected Updated Request for Acknowledgement of the Final Shortlist of Bidders in the 2020 All-Source Request for Proposals in the above referenced docket. This filing corrects the cost of Gateway South and sub-segment D.1 transmission segments included in the financial results reported in the July 21, 2021 Updated Request for Acknowledgement of Final Shortlist of Bidders in 2020 All-Source Request for Proposals. The Company notified the Commission and parties of this issue in its presentation at the August 5, 2021 Special Public Meeting and committed to file the correction as soon as possible. Only those portions of the filing impacted by these changes have been updated in the attached filing and changes are shown in redline.

Confidential information is submitted subject to the General Protective Order No. 20-077 in this proceeding. The highly confidential workpapers submitted with this filing are submitted subject to Modified Protective Order No. 21-202 in this proceeding.

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

Sincerely,

Etta Lockey
Vice President, Regulation, Customer, and Community Solutions

Enclosure

BEFORE THE PUBLIC UTILITY COMMISSION OF OREGON

UM 2059

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

I. INTRODUCTION

PacifiCorp d/b/a Pacific Power (PacifiCorp or Company) respectfully submits this update to its request for acknowledgement of the Company's final shortlist of bidders in PacifiCorp's 2020 All-Source Request for Proposals (2020AS RFP) filed on June 15, 2021 (June 15 filing). This filing presents an updated final shortlist analysis to correct certain modeling inputs.[1] When developing responses to questions from the independent evaluators, the Company identified it had applied incorrect capacity factor and generation profile assumptions to certain bids. A full review of all bid assumptions was subsequently performed, and because of that review, the updated final shortlist analysis summarized herein captures the following notable updates:

- Updated capacity factors and generation profiles for certain bids where the generation profiles provided by the bidder had embedded text rather than numerical values.

[1] The Company provided Staff and the Independent Evaluator an update to the Final Shortlist presentation on July 20, 2021 and workpapers supporting the revised analysis will be provided on July 21, 2021.

- Application of bid-specific generation profiles for certain bids where failed data uploads unknowingly resulted in the use of proxy resource profiles.
- Correctly locating a single bid, modeled in northern Utah, to eastern Wyoming.

The 2020AS RFP is designed to procure resources to meet a resource need consistent with the preferred portfolio from the 2019 Integrated Resource Plan (IRP), which showed that renewable resources and battery resources eligible for federal tax incentives would be lower cost than other resource alternatives.[2] The Commission approved the 2020AS RFP[3] and PacifiCorp conducted the solicitation process in accordance with the Commission's approval and with the comprehensive oversight of two independent evaluators—one retained by PacifiCorp and appointed by the Commission and one retained by the Public Service Commission of Utah (Utah Commission). The solicitation process complied with the Commission's competitive bidding rules (the Rules)[4] and was transparent and fair to all bidders.

The Commission-approved 2020AS RFP elicited a robust market response that produced over 28,000 megawatts (MW) of conforming bids with an additional 12,500 MW of bids that did not conform with minimum requirements set forth in the 2020AS RFP. PacifiCorp has updated its analysis of potential bid portfolios incorporating the corrections

[2] PacifiCorp 2019 IRP was acknowledged by the Commission at a Public Meeting on May 7, 2020. *See In the Matter of PacifiCorp, dba Pacific Power, 2019 Integrated Resource Plan,* Docket No. LC 70, Order No. 20-186 (June 8, 2020).
[3] *In the Matter of PacifiCorp dba Pacific Power, Application for Approval of 2020 All-Source Request for Proposals.*, Docket No. UM 2059, Order No. 20-228 (July 16, 2020).
[4] OAR 860-089-0010 through OAR 860-09-0550. The Rules were adopted by the Commission in Order No. 18-324. *See In the Matter of the Rulemaking Regarding Allowances for Diverse Ownership of Renewable Energy Resources*, Docket No. AR 600, Order No. 18-324 (Aug. 30, 2018).

described above. The updated analysis did not result in any changes to the final shortlist in its June 15 filing, which includes:

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

Separately, during the process of updating the analysis of the bid portfolios, one bidder, DESRI, formally notified PacifiCorp on July 2, 2021 that they were withdrawing their Steel Solar I & II 147 MW solar plus 37.5 MW battery storage bid from final shortlist consideration due to site and project development concerns and could not commit to supporting their final shortlist bid through the remainder of the RFP process. PacifiCorp accepted their withdrawal on July 2, 2021. Due to the timing of the withdrawal and status of the update, PacifiCorp chose not to remove Steel Solar I & II from the results of the updated analysis rather than restart the analysis process which would have delayed the updated analysis and this update to the Company's June 15 filing further.

Using the same models and methodology used to develop the 2019 IRP, PacifiCorp reexamined the optimum combination of bids to maximize customer benefits while managing risk. 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 Commission Staff. The price-policy scenarios are defined by varying assumptions for natural gas prices, wholesale power prices, and carbon dioxide (CO_2) prices. Updated sensitivities tested bid selections and system costs under alternative market price assumptions, market sale assumptions, and federal tax incentive assumptions. Indeed, the updated 2020AS RFP results continue to demonstrate increased customer benefits from the new resources on the final shortlist, in combination with construction of the Gateway South and Gateway West Subsegment D.1 transmission lines and associated infrastructure (transmission projects).[5]

When applying medium natural gas price and medium CO_2 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. When nominal annual revenue requirement is evaluated against a case without procurement of bids, customer costs are reduced in all 15 years over the period 2024 through 2038.

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

PacifiCorp's updated economic analysis, described in more detail below, demonstrates that the final shortlist of resources is reasonable according to the information available today. Thus, the Commission should acknowledge the 2020AS RFP final shortlist.[6]

II. 2020AS RFP UPDATED FINAL SHORTLIST ANALYSIS

A. Final Shortlist Selection Process

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

1. Price-Policy Scenario Assumptions

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

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

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

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. It includes the same bid selections that are 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). Having this portfolio enables subsequent analysis to understand whether changes in system costs between the LN bid portfolio and the SNS bid portfolio are driven by changes in bid selections or by changes in proxy resource selections beyond the 2020AS RFP procurement window.

In addition, as was the case in the initial analysis, portfolios that excluded RFP bids are compared to the final shortlist bid portfolio to calculate net customer benefits attributable to adding the final shortlist resources to the existing portfolio.

For the final shortlist selection process, Figure 1 shows the electric price assumptions, Figure 2 shows the natural gas price assumptions, and Figure 3 shows CO_2 price assumptions. These assumptions have not changed.

Figure 1 – Electric Price Assumptions

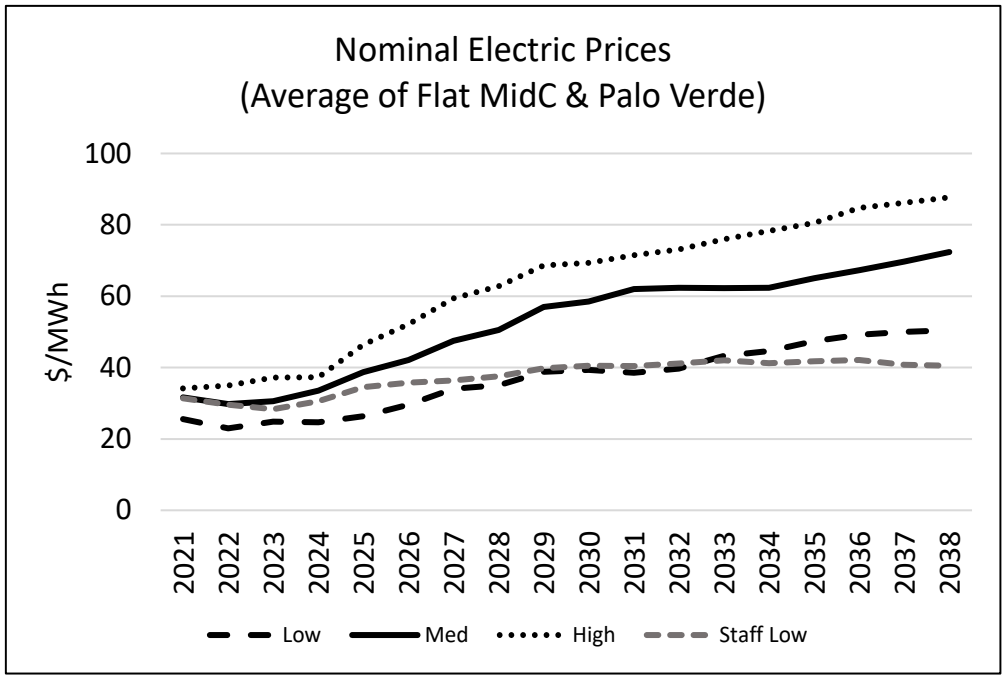


Figure 2 – Natural Gas Price Assumptions

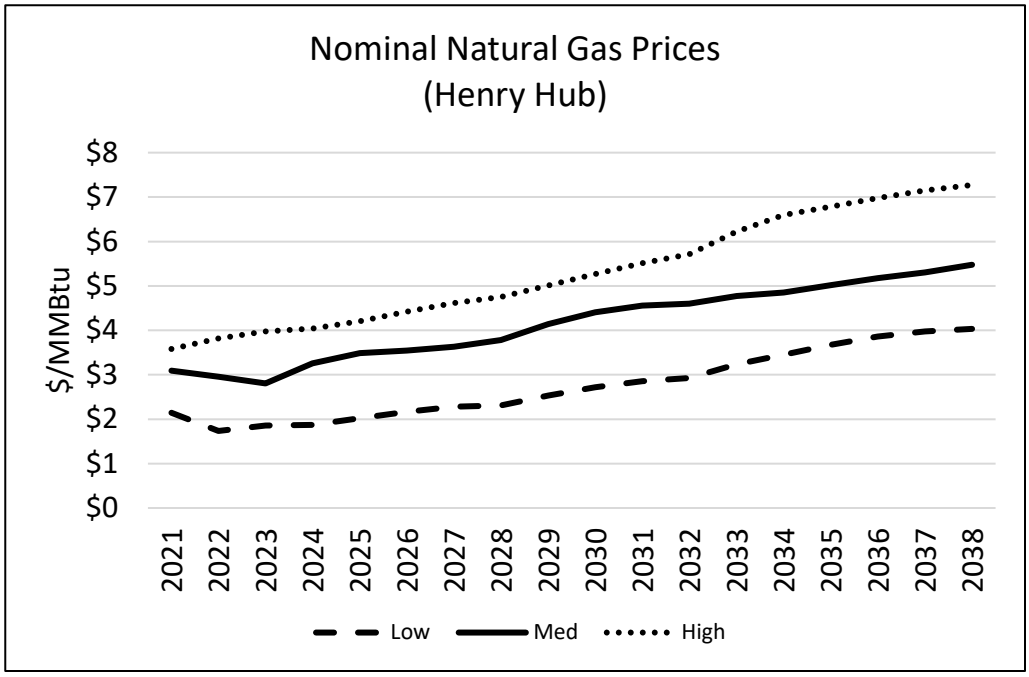
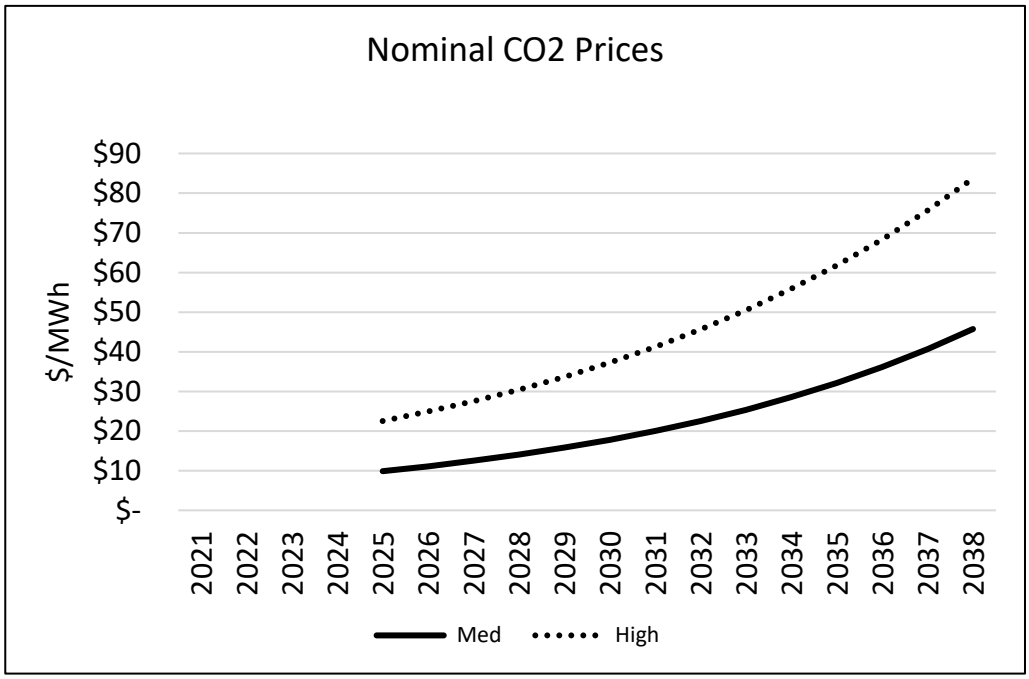


Figure 3 – CO_2 Price Assumptions



2. Portfolio-Development Phase

The updated portfolio-development phase identified the least-cost combination of bids using a methodology consistent with the approach used to produce resource portfolios in PacifiCorp's 2019 IRP. First, the best-and-final pricing for each bid was processed and incorporated into the System Optimizer (SO) model and Planning and Risk model (PaR) as modeling inputs. Second, the SO model was used to develop bid portfolios, reflecting corrected model inputs, containing the least-cost combination of bids over a 20-year planning horizon (2019 through 2038). The SO model optimized its resource portfolio selections from all of the bids included in the initial shortlist, as well as from all other proxy-resource alternatives used to develop resource portfolios in PacifiCorp's 2019 IRP (*e.g.*, front-office transactions or "FOTs", RFP demand-side management resources, *etc.*). PacifiCorp did not force the SO model to select any bid or any combination of bids, with one exception. As

described above, the Company developed a new bid portfolio where SNS bid selections were locked down to test drivers to differences in system costs between the LN and SNS bid portfolios. PacifiCorp initially developed bid portfolios for three price-policy scenarios, which reflect different pairings among three natural-gas price forecasts and three CO_2 price forecasts (*i.e.*, an LN, MM, and HH bid portfolio). Three additional resource portfolios, one for each price-policy scenario, that do not allow any bid selections are used to calculate a present-value revenue-requirement differential (PVRR(d)) between two system simulations—one that included the 2020AS RFP bids and associated transmission projects, and one without.

3. Scenario-Risk Phase

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

4. Commission Staff Sensitivity Analysis

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

- RFP FSL Portfolio (SL) – low market price with high renewables market (medium gas, medium CO_2)
- RFP FSL Portfolio (SNS) – medium gas, medium CO_2 market price, no market sales

- RFP FSL Portfolio (SNST) – medium gas, medium CO_2 market price, no market sales, extend PTC and ITC benefits to 2030

5. Bid Selections

Confidential Table 1 summarizes bid selections in each of the portfolio-development cases. Bid selections for the development cases produced in the Company's initial analysis remain identical to the bid selections in the updated analysis, with one exception. In the LN portfolio-development case, the SO model did not select the Steel solar bid (highlighted orange). This is not driven by the bidder's withdrawal from the 2020AS RFP.

Confidential Table 1 – Bid Selections by Portfolio-Development Case

Project / Facility Name	Resource type	Contract Type	Generating Asset (MW)	BESS Capacity (MW)	BESS Duration (Hours)	LN	MM	HH	SL	FSL SNS (MM)	SNST (MM)	Type
Cedar Springs IV	Wind	PPA	350.4	0	0	0	350.4	350.4	350.4	350.4	350.4	Wind
Boswell Springs	Wind	PPA	320	0	0	0	320	320	320	320	320	Wind
Two Rivers Wind Project	Wind	PPA	280	0	0	0	280	280	280	280	280	Wind
Anticline	Wind	PPA	100.5	0	0	0	100.5	100.5	100.5	100.5	100.5	Wind
Rock Creek I BTA	Wind	BTA	190	0	0	0	190	190	190	190	190	Wind
Rock Creek II 400	Wind	BTA	400	0	0	0	400	400	400	400	400	Wind
[redacted]												
Cedar Creek	Wind	PPA	151	0	0	0	151	151	151	151	151	Wind
[redacted]												
Hornshadow II	Solar + BESS	PPA	200	50	2	200	200	200	200	200	200	Solar and/or Battery
Dominguez I	BESS	BSA	0	200	4	200	200	200	200	200	200	Solar and/or Battery
Green River Solar I & II	Solar + BESS	PPA	400	200	2	400	400	400	400	400	400	Solar and/or Battery
Steel I 80 + Steel II	Solar + BESS	PPA	147	37.5	2	0	147	147	147	147	147	Solar and/or Battery
Rush Lake	Solar + BESS	PPA	99	49.5	4	99	99	99	99	99	99	Solar and/or Battery
Fremont	Solar + BESS	PPA	99	49.5	4	99	99	99	99	99	99	Solar and/or Battery
Rocket II	Solar + BESS	PPA	45	12.5	4	0	45	45	45	45	45	Solar and/or Battery
Hornshadow I	Solar + BESS	PPA	100	25	2	100	100	100	100	100	100	Solar and/or Battery
Glen Canyon A	Solar	PPA	95	0	0	0	95	95	95	95	95	Solar and/or Battery
Parowan	Solar + BESS	PPA	58	58	4	58	58	58	58	58	58	Solar and/or Battery
[redacted]												
Hayden Mountain 2	Solar + BESS	PPA	160	40	4	0	160	160	0	160	160	Solar and/or Battery
Hamaker	Solar + BESS	PPA	50	12.5	4	0	50	50	0	50	50	Solar and/or Battery
[redacted]												
					Total Maximum Capacity (MW)	1,156	3,722	4,247	3,235	3,445	3,445	
					Total Capacity Contribution (MW)	575	1,081	1,148	924	998	998	

Among the three price-policy scenarios, RFP bid selections are highest under the HH price-policy scenario and lowest under the LN price-policy scenario. Under the SL portfolio-development case, bid selections are lower than the bid selections in the MM bid portfolio,

but not as low as bid selections in the LN bid portfolio. When off-system sales are prohibited, the SNS bid portfolio drops three bids relative to the MM bid portfolio. There is no change in the SNST bid portfolio relative to the SNS bid portfolio—the assumed extension of federal tax credits through 2030 did not affect bid selections.

Each of the bid portfolios summarized above allowed for the selection of bids submitted into PacifiCorp's 2021 Demand Response RFP. The selected programs in each case begin in 2022 and grow over the first 10 years. Table 2 summarizes demand response bid selections in MM, SNS, LN, and SNS Bid-LN bid portfolios. Note, commitment to specific demand response programs as part of ongoing or new demand response procurement processes, and in some instances, regulatory approval processes.

Table 2 – Demand Response Bid Selections

DR Bid Selections (MW)	2022				2030			
	MM	SNS	LN	SNS Bid-LN	MM	SNS	LN	SNS Bid-LN
Rocky Mountain Power	59	75	75	43	229	245	245	198
Pacific Power	12	46	46	45	91	316	316	260
Total	71	121	121	88	320	561	561	458

6. Cost and Risk Analysis

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

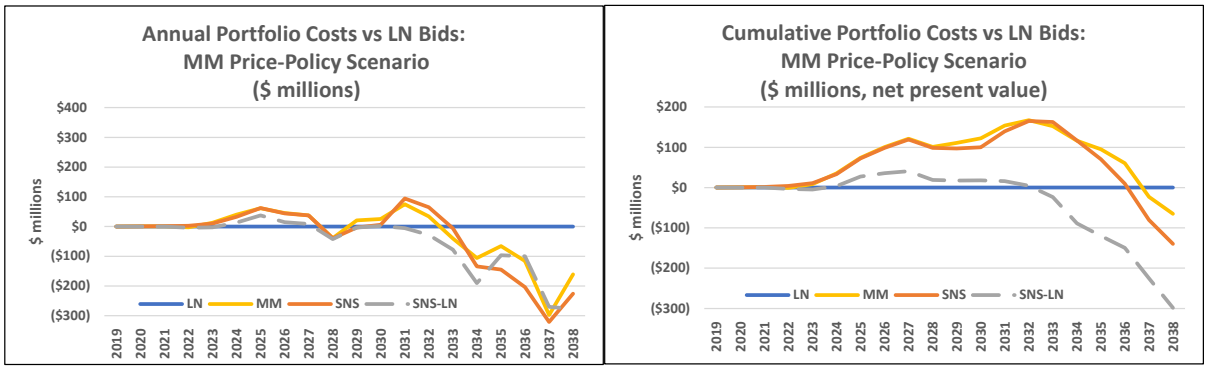
Table 3 – Portfolios Costs under the MM Price-Policy Scenario

	Portfolio							
Price-Policy	LN Bids	MM Bids	HH Bids	No Bid LN	No Bid MM	No Bid HH	SNS Bids	SNS Bids-LN
MM	23,828	~~23,968~~ 23,763	~~24,408~~ 24,204	24,306	~~24,345~~ 24,160	~~24,959~~ 24,774	~~23,893~~ 23,689	~~23,735~~ 23,530
Delta	0	~~139~~ (65)	~~580~~ 376	477	~~517~~ 332	~~1,131~~ 946	~~65~~ (140)	~~94~~ (298)

Of the scenarios considered in the Company's original analysis, the LN bid portfolio is higher cost than the MM and SNS bid portfolios. However, 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 bid portfolio, the SNS Bids-LN portfolio is least cost. This demonstrates that PVRR in the LN bid portfolio is not driven by bid selections but by changes in proxy resource selections. In fact, when SNS bid selections are assumed, those bids provide more value for customers relative to bid selections in the LN portfolio. Further, the SNS bid portfolio is lower cost than the MM bid portfolio, and the no bid portfolios are all significantly higher cost than the MM bid portfolio. As in the initial analysis, the LN bid portfolio does not include the transmission projects or eastern Wyoming wind (the only bid portfolio among all generated). Consequently, the LN bid portfolio would not experience non-quantified benefits associated with this new transmission investment. In particular, the transmission projects will strengthen the transmission system at Mona/Clover, allowing additional renewable generation in southern Utah with new transmission development. The transmission projects also act as a relief valve during low load and outage conditions, which increases the reliability of the transmission system, especially with incremental renewable resources in southern Utah.

Figure 4 summarizes annual portfolio costs relative to the LN bid portfolio when applying MM price-policy assumptions. Note, a positive value indicates an increase in cost and a negative value indicates a decrease in cost relative to the LN bid portfolio. Through 2032, the LN bid portfolio is lowest cost, but relative to the other bid portfolios, costs escalate sharply thereafter. If the study period were extended, it is likely that the relatively higher costs shown toward the end of the study period for the LN bid portfolio would persist.

Figure 4 – Annual Portfolio Costs under the MM Price-Policy Scenario



Figures 5 shows changes in the cumulative resource mix between the SNS bid portfolio and the LN bid portfolio (a positive value indicates an increase in capacity relative to the LN bid portfolio and a negative value represents a decrease in capacity). A key differentiator between the SNS and LN bid portfolios is that the SNS bid portfolio has less natural gas resources and a reduced open market position (shown as reduced FOTs). The SNS bid portfolio also has more wind and more solar with battery storage. Annual system cost results indicate that in the time between the RFP procurement window (i.e., beyond 2024) and through about 2032, the resource mix for proxy resources in the LN bid portfolio might have more value than those in the SNS bid portfolio.

Figure 5 – Portfolio Comparisons: SNS vs. LN

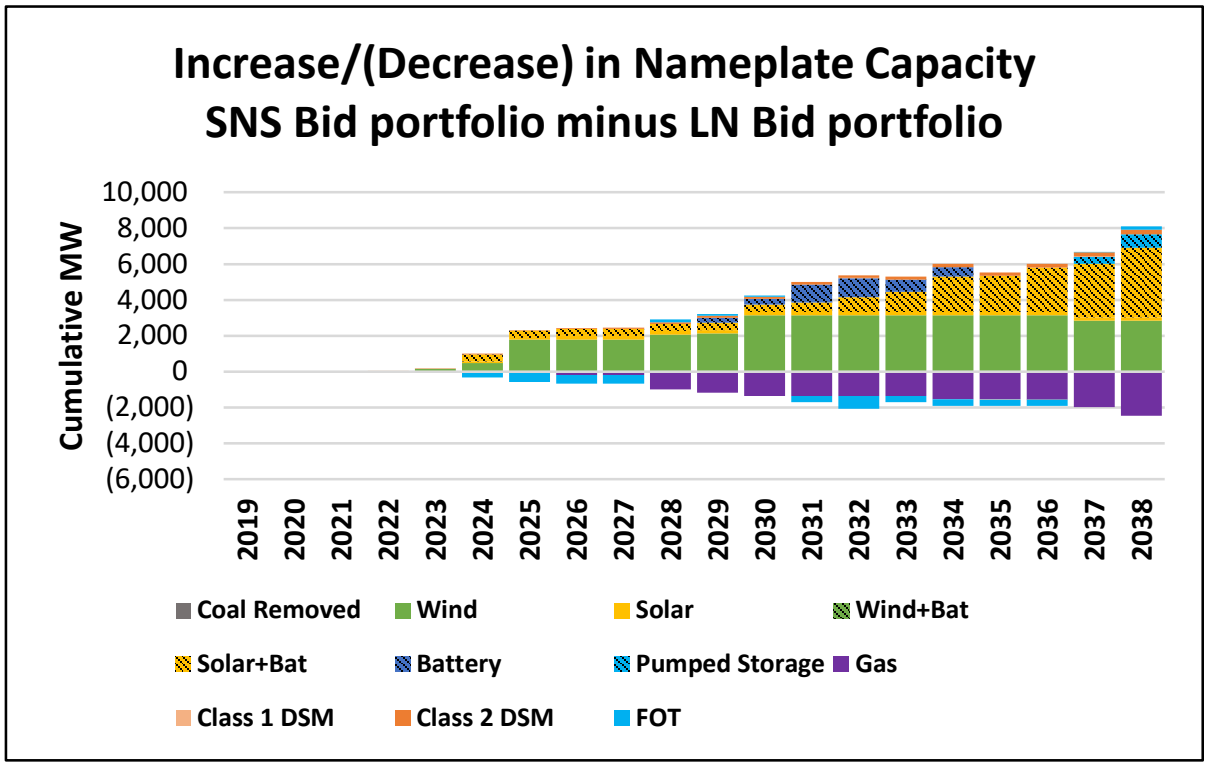


Figure 6 shows changes in the cumulative resource mix between the SNS Bid-LN portfolio and the SNS bid portfolio (a positive value indicates an increase in capacity relative to the SNS bid portfolio and a negative value represents a decrease in capacity). When proxy resource selections are made in an LN price-policy environment, the resource mix of the SNS Bid-LN portfolio shifts to include more gas and an increased open market position in the intermediate timeframe—much more consistent with the mix that shows value in the LN bid portfolio.

Figure 6 – Portfolio Comparisons: SNS Bid-LN vs. SNS

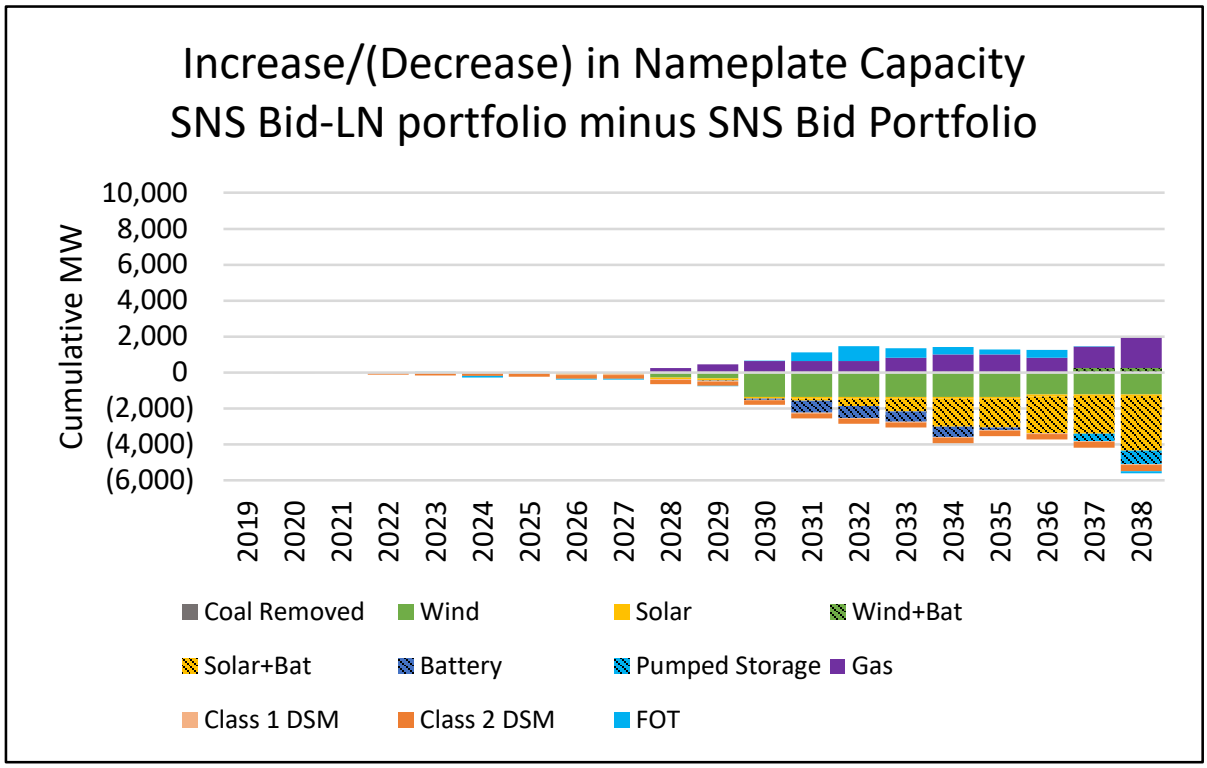
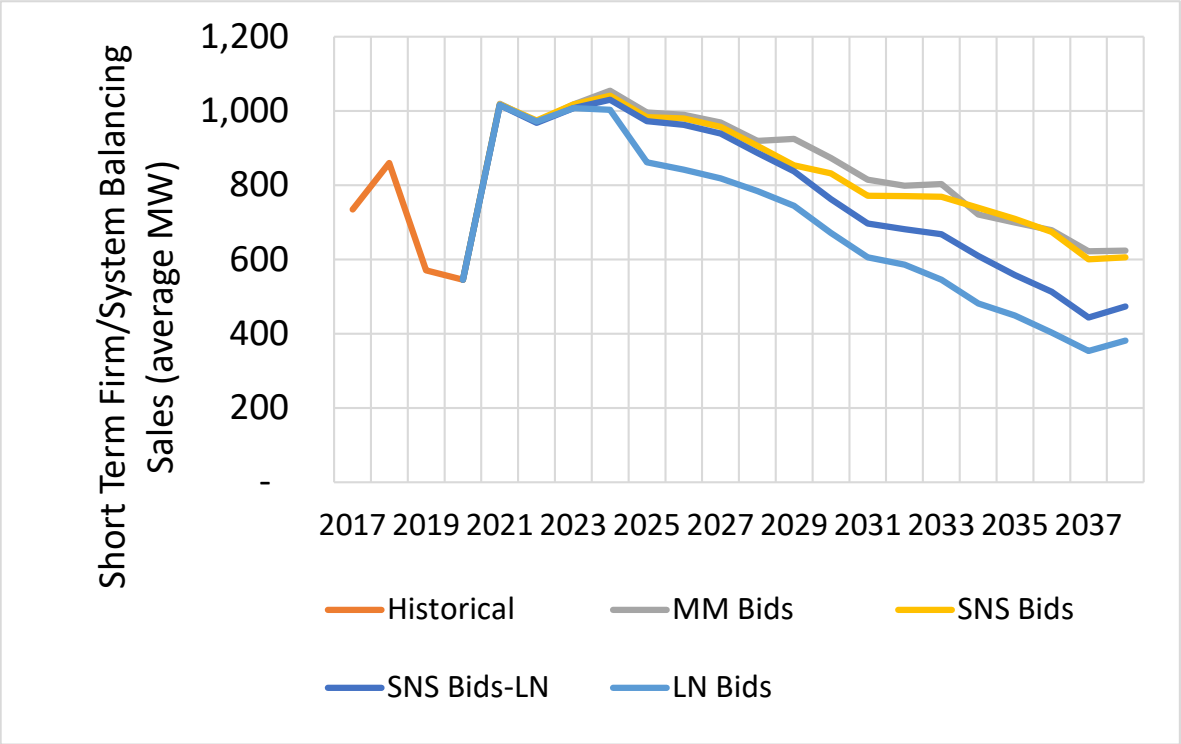


Figure 7 summarizes the volume of market sales in the LN, MM, SNS, and SNS Bid-LN portfolios relative to history dating back to 2017. Results reflect the application of MM price-policy assumptions. While there is a slight uptick in modeled forecasted sales in 2024, market sales decline over time. Note, that market prices and volumes were low in 2019 due to weather and in 2020 due to COVID-19.

Figure 7 – Market Sales under the MM Price-Policy Scenario



Figures 8 and 9 summarize changes in system energy between portfolios, specifically the SNS Bid-LN and LN bid portfolios (Figure 8) and between the SNS Bid-LN and MM bid portfolio (Figure 9). Results reflect the application of MM price-policy assumptions.

Figure 8 – Changes to System Energy (SNS Bid-LN vs. LN Bid Portfolios) with MM Price-Policy Assumptions

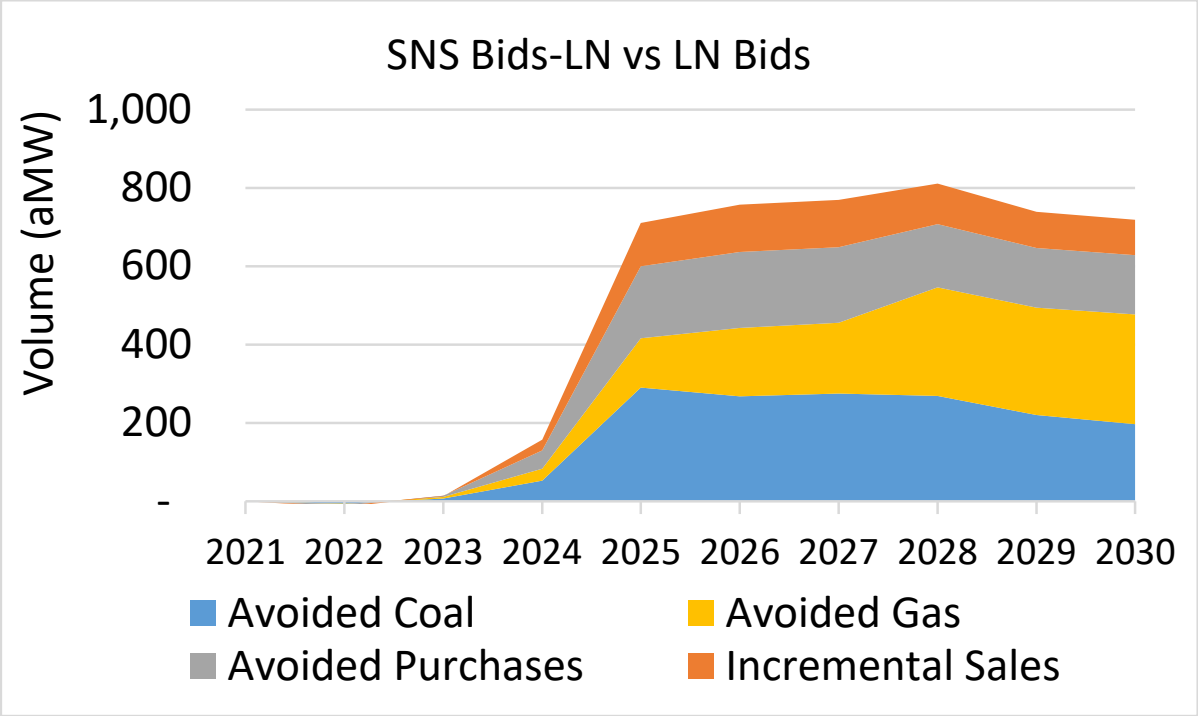
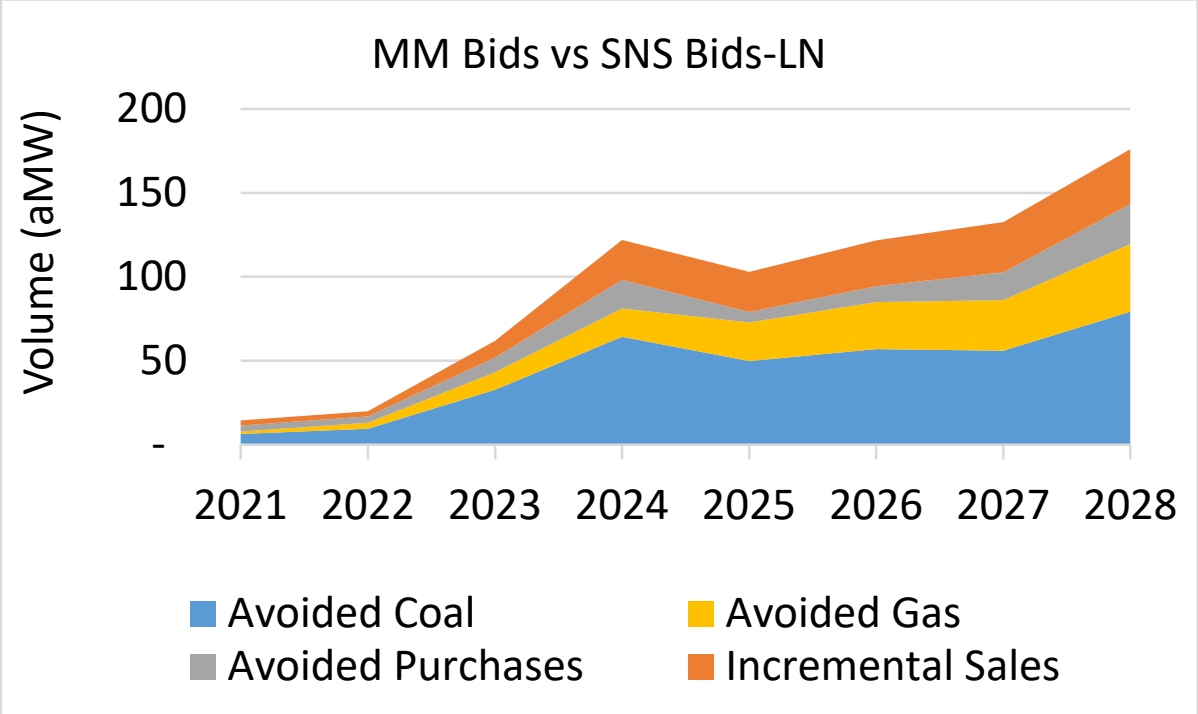


Figure 9 – Changes to System Energy (SNS Bid-LN vs. MM Bid Portfolios) with MM Price-Policy Assumptions



Relative to the LN bid portfolio, the SNS Bid-LN portfolio includes the transmission projects and eastern Wyoming wind along with incremental solar and battery resources in Utah and Oregon. The additional bids in the SNS Bid-LN portfolio mainly avoid coal, natural gas, and market purchases. Incremental sales in the SNS bid portfolio amount to roughly 16 percent of the total change in system energy through 2027 and decline thereafter. In the MM bid portfolio, which has three additional bids relative to the SNS Bid-LN portfolio, the change in system energy is more heavily weighted toward market sales, which account for 23 percent of the total change in system energy in 2025-2027.

Table 4 summarizes CO_2 emissions and energy not served (ENS) results from MM, LN, SNS, and SNS Bids-LN portfolios assuming MM price-policy assumptions. Figure 10 shows annual CO_2 emissions for the different bid portfolios.

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

Revised	CO2 (ktons)	ENS (GWh)
MM Bids	557,013	361
LN Bids	647,710	242
SNS Bids	562,984	183
SNS Bids-LN	599,584	183

CO_2 emissions from the MM and SNS bid portfolios are similar. However, the CO_2 emissions tied to the LN bid portfolio are roughly 16 percent higher. The SNS Bids-LN portfolio falls between the LN bid portfolio and the MM/SNS bid portfolios. While ENS results vary among the bid portfolios, each bid portfolio meets minimum reliability targets. Further, the majority of ENS events occur in the last 10 years of the study period and are therefore not indicative of changes in reliability metrics over the near term.

Figure 10 – Annual CO_2 Emissions

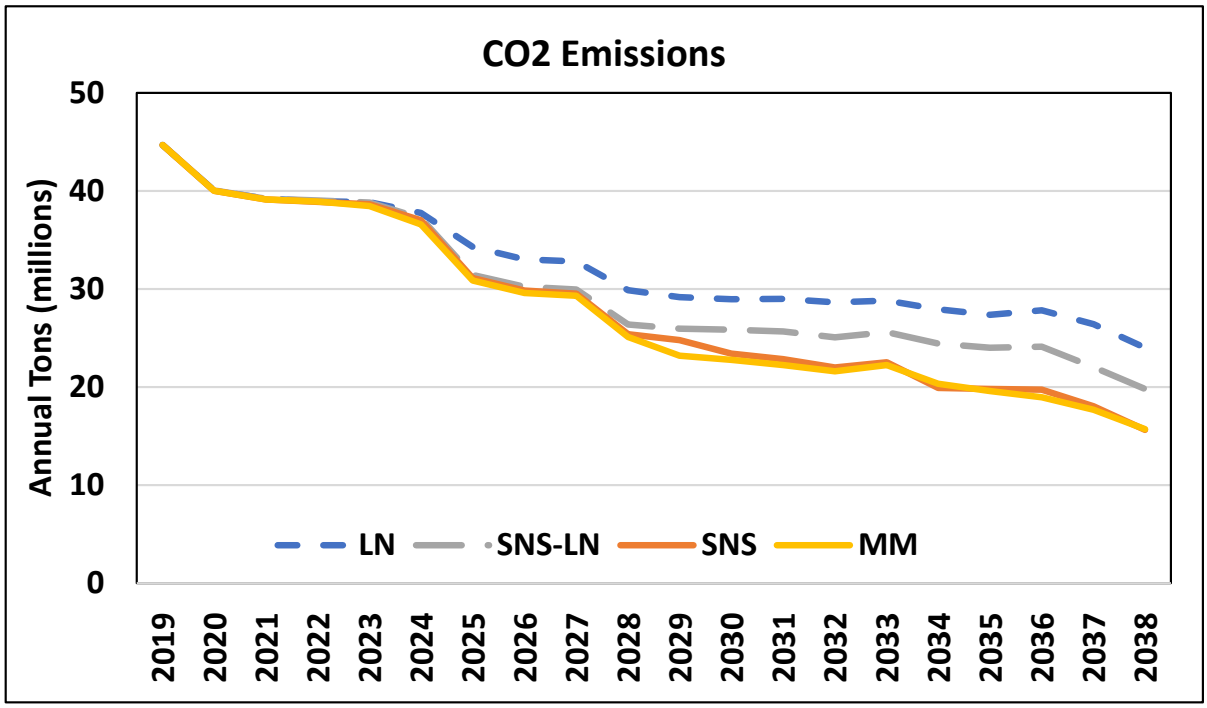


Table 5 summarizes how the PaR stochastic mean PVRR for each bid portfolio compares to the PVRR of the LN bid portfolio when LN price-policy assumptions are applied.

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

PaR Stochastic Mean PVRR and Change From LN Bids Portfolio ($ millions)

Price-Policy	Portfolio LN Bids	MM Bids	HH Bids	No Bid LN	No Bid MM	No Bid HH	SNS Bids	SNS Bids-LN
LN	18,578	~~20,106~~	~~21,124~~	18,744	~~20,064~~	~~21,099~~	~~20,096~~	~~19,299~~
		19,902	20,919		19,879	20,914	19,892	19,095
Delta	-	~~1,528~~	~~2,546~~	166	~~1,486~~	~~2,521~~	~~1,518~~	~~721~~
		1,324	2,342		1,301	2,336	1,314	517

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

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

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

PaR Stochastic Mean PVRR and Change From MM Bids Portfolio ($ millions)								
	Portfolio							
Price-Policy	LN Bids	MM Bids	HH Bids	No Bid LN	No Bid MM	No Bid HH	SNS Bids	SNS Bids-LN
HH	28,653	~~27,351~~ 27,147	~~27,455~~ 27,251	29,419	~~28,307~~ 28,122	~~28,559~~ 28,374	~~27,367~~ 27,163	~~27,799~~ 27,594
Delta	~~1,302~~ 1,506	-	104	~~2,068~~ 2,272	~~956~~ 976	~~1,208~~ 1,227	16	448

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

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

Table 7 – Sensitivity Case PVRR Results

PaR Stochastic Mean PVRR ($ millions)			
	Portfolio		
Price-Policy	MM Bids	Sensitivity	Change from MM Portfolio
SL	~~24,003~~ 23,798	~~23,981~~ 23,776	(22)
SNS	~~25,987~~ 25,783	~~25,834~~ 25,630	(153)
SNST	~~25,665~~ 25,460	~~25,183~~ 24,979	(482)

Each sensitivity case yields a lower PVRR than the MM bid portfolio. The SNST bid portfolio has the same bids as the SNS bid portfolio. This portfolio chooses incremental renewables beyond the 2020AS RFP procurement window to take advantage of extended

federal tax credits, and consequently, it includes more proxy renewable resources before 2031. The federal tax credit benefits of those renewable resources are reflected in the PVRR of the SNST bid portfolio but are not applied to the proxy resources added to the system before 2031 in the MM bid portfolio. While the PVRR differential for the SNST sensitivity appears significantly larger than the other sensitivities, it is driven by an apples-to-oranges treatment of cost savings associated with the assumed extension of federal tax credits applied only to the SNST bid portfolio.

Since its initial filing, the Company performed an additional sensitivity to evaluate how FOT limits influence PVRR results among the LN, MM, and SNS bid portfolios. For this sensitivity, FOTs (representing an unmet capacity position) are limited to 500 MW in the summer and 1,000 MW in the winter (down from 1,425 MW in the summer and winter). The assumptions applied in this sensitivity align with those adopted for development of the 2021 IRP. Table 8 shows how the PVRR of LN, MM, and SNS bid portfolios are impacted by this assumption. The MM and SNS bid portfolios, which have more bids and are less reliant on market, are not as impacted by a reduced FOT limit. The LN bid portfolio, which has a larger open position, is more impacted if it is not "allowed" to rely on the market up to the levels assumed in the 2019 IRP.

Table 8 – FOT Sensitivity PVRR Results

PaR Stochastic Mean PVRR and Impact of Reduced FOT Limit ($ millions)				
Price Policy	RFP Bids (MW)	2019 IRP FOT Limits	2021 IRP FOT Limits	Delta
LN Bids	1,156	23,828	25,078	1,249
MM Bids	3,722	~~23,968~~ 23,763	~~24,076~~ 23,872	109
SNS Bids	3,445	~~23,893~~ 23,689	~~24,079~~ 23,875	186

7. Discussion of Bid Selections

The MM bid portfolio includes three incremental bids when compared to the SNS or SNS Bids-LN portfolios. These incremental bids include:

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

The off-system wind PPA is the most expensive wind bid in Wyoming. It would interconnect to the Tri-State Generation and Transmission (TSGT) balancing authority area and requires transmission service from a third party to reach PacifiCorp's system. This arrangement can limit intra-hour dispatch and its potential use of this contract in future resource adequacy programs. Further, parts of TSGT are in the intra-hour market run by the Southwest Power Pool and not in the energy imbalance market run by the California Independent System Operator. A solar with storage PPA and solar PPA are both higher cost relative to other solar with storage and solar bids offered into the 2020AS RFP.

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

8. Marginal Bid Analysis

Consistent with the Company's initial final shortlist analysis, the updated marginal bid analysis was performed to confirm that potentially marginal bids provide customer benefits and should be included in the final shortlist. When considering the changes made to the model inputs (relocating a bid from northern Utah to eastern Wyoming and changes to capacity factor and generation profile inputs for eastern Wyoming bids), the updated marginal bid analysis focuses on potentially marginal wind bids located in eastern Wyoming. This was done by removing each of the potential marginal bids from the SNS Bids-LN portfolio and comparing those results to the SNS Bids-LN portfolio. As was the case in the Company's original analysis, Table 9 shows that removing these bids increased system costs. These results continue to support keeping these bids in the 2020AS RFP final shortlist.

Table 9 – Marginal Bid PVRR Results under the MM Price-Policy Scenario

PaR Stochastic Mean PVRR vs SNS Bids-LN Portfolio ($ millions)	Portfolio		
	SNS Bids-LN	Remove Rock Creek 1	Remove Rock Creek 2
Price-Policy			
MM	~~23,735~~ 23,530	~~23,760~~ 23,556	~~23,893~~ 23,689
Delta	0	26	159

9. Economic Analysis of Final Shortlist

Table 10 summarizes the PVRR(d) of the final shortlist bid portfolio (the SNS bid portfolio and the SNS Bids-LN portfolio) relative to the top performing no-bid portfolio in each of the three price-policy scenarios (LN, MM, and HH).

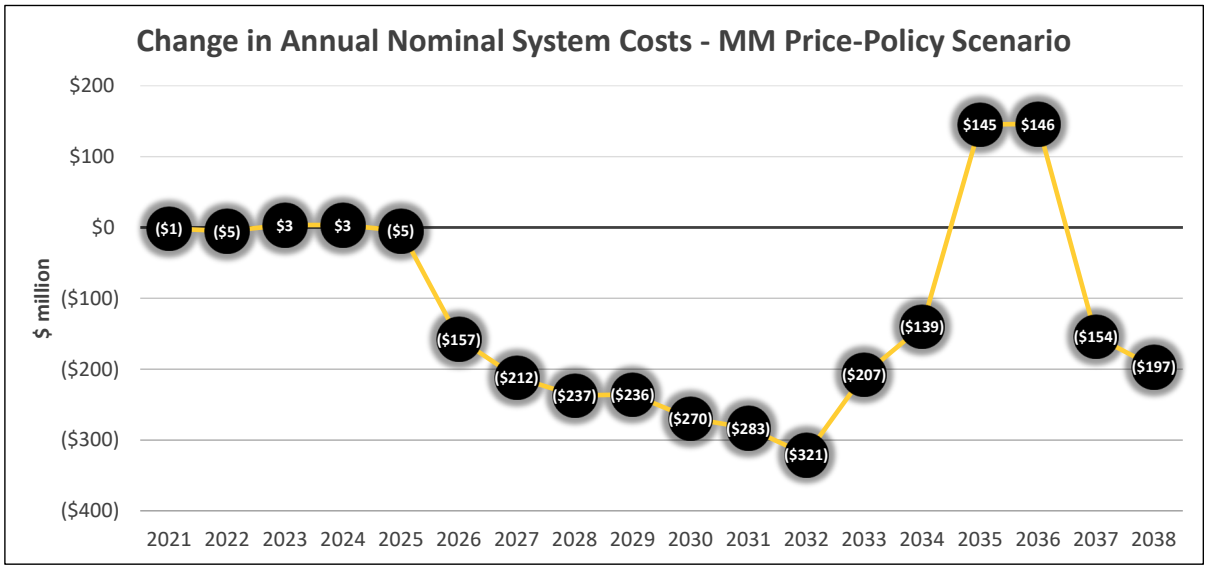
Table 10 – Value of Final Shortlist Bid Portfolio

PaR Stochastic Mean PVRR ($ millions) Portfolio			
Price-Policy	SNS Bids	Best No Bid	Change with no bids
LN	~~20,096~~ 19,892	18,744	~~(1,352)~~ (1,148)
MM	~~23,893~~ 23,689	~~24,345~~ 24,160	~~452~~ 472
HH	~~27,367~~ 27,163	~~28,307~~ 28,122	~~940~~ 960
Price-Policy	SNS Bids-LN	Best No Bid	Change with no bids
LN	~~19,299~~ 19,095	18,744	~~(555)~~ (351)
MM	~~23,735~~ 23,530	~~24,345~~ 24,160	~~611~~ 630
HH	~~27,799~~ 27,594	~~28,307~~ 28,122	~~508~~ 528

These results show that under the MM price-policy scenario, the SNS bid portfolio is expected to generate $472 million in customer net benefits. The SNS Bids-LN portfolio is expected to generate $630 million in customer benefits. In the HH price-policy scenario, customer net benefits range between $528 million and $960 million. While the best performing no-bid portfolio developed under LN price-policy assumptions outperforms the SNS and the SNS Bids-LN portfolios, this is driven in part by significant differences in resources throughout the study period, and there would be many opportunities to reoptimize PacifiCorp's resource portfolio over time if it becomes apparent that LN conditions are expected to persist over the long term. Moreover, any no-bid portfolio would increase market reliance, which comes with significant reliability risks.

Figure 11 summarizes changes in nominal annual revenue requirement between the SNS bid portfolio and a no bid portfolio under MM price-policy assumptions.

Figure 11 – Change in Nominal Annual Revenue Requirement



When nominal annual revenue requirement from the SNS Bids-LN portfolio is evaluated against a case without procurement of bids (assuming MM price-policy assumptions), customer costs are reduced in 12 of 15 years from 2024 through 2038. In 2025, the first full year shortlisted bids and transmission projects are in service, the system nominal revenue requirement decreases by $5 million. Revenue requirement benefits persist (and generally increase) thereafter due to changes in resource selections between the two scenarios.

- Without the shortlisted bids, additional battery resources are needed in 2024 and 2025, gas peaking plants are accelerated into 2026 and 2028, and wind and solar capacity added in the RFP is delayed until 2027-2030.
- PTCs for the two BTAs expire at the end of 2034, resulting in an uptick in costs for the SNS Bids-LN portfolio in 2035.
- The uptick of costs for the SNS Bids-LN portfolio in 2035 is also partly due to an increase in battery resources in 2035, but this is brief as the no bid portfolio

under MM price-policy assumptions adds an even greater quantity of battery and pumped hydro resources by 2037.

- In the second half of the study horizon, the SNS Bids-LN portfolio has more gas resources, while the no bid portfolio under MM price-policy assumptions has more renewable and storage resources; however, there will be many opportunities to optimize these resource selections over time.

B. Final Shortlist Projects

Based on the foregoing analysis including a range of potential bid portfolios, reflecting results from the transition interconnection cluster study process, and corrected bid assumptions, PacifiCorp has confirmed its selection of final shortlist bids, which includes 19 projects (18 projects without Steel Solar I & II):

- 1,792 MW of new wind resources (590 MW as BTAs and 1,202 MW as PPAs)
- 1,453 MW of solar capacity (all PPAs)—1,306 MW without Steel Solar I & II
- 735 MW of battery storage capacity (708 MW without Steel Solar I & II)—535 MW paired with solar bids (PPAs, 508 MW without Steel Solar I & II), and 200 MW as standalone battery storage (BSA)

The projects included in the final shortlist are summarized in Table 11.

Table 11: 2020AS RFP Final Shortlist Projects

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

*PVS: Solar paired with battery storage
**BESS: Standalone battery storage
*** DESRI has withdrawn its bid from the final shortlist.

III. CONCLUSION

The updated results from the Company's 2020AS RFP final shortlist analysis confirm that the initial final shortlist of projects continue to be the least-cost, least-risk resources to implement the 2019 IRP Action Plan. The 2020AS RFP was well received by the market and resulted in robust competition among bidders.

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

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

Respectfully submitted this 12th day of August, 2021.

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

CERTIFICATE OF SERVICE

I certify that I served a true and correct copy of PacifiCorp's **UPDATE TO REQUEST FOR ACKNOWLEDGEMENT OF FINAL SHORTLIST OF BIDDERS IN 2020 ALL-SOURCE REQUEST FOR PROPOSALS (CORRECTED UPDATED REQUEST)** on the parties listed below via electronic mail and/or or overnight delivery in compliance with OAR 860-001-0180.

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Dated this 12th day of August, 2021.

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