PACIFIC POWER
A DIVISION OF PACIFICORP

825 NE Multnomah, Suite 2000
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August 17, 2021

VIA ELECTRONIC FILING

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

Attn: Filing Center

RE: UM 2059—Response to ALJ Bench Requests 1 through 9

Pursuant to Administrative Law Judge (ALJ) Rowe's Ruling of August 10, 2021, enclosed for filing in this docket are the Responses to ALJ Bench Request Nos. 1 through 9. Also enclosed are Confidential Attachments ALJ Bench Request 2-1, 2-2, 5 and 7.

Please direct any questions regarding this filing to Cathie Allen at (503) 813-5934.

Sincerely,

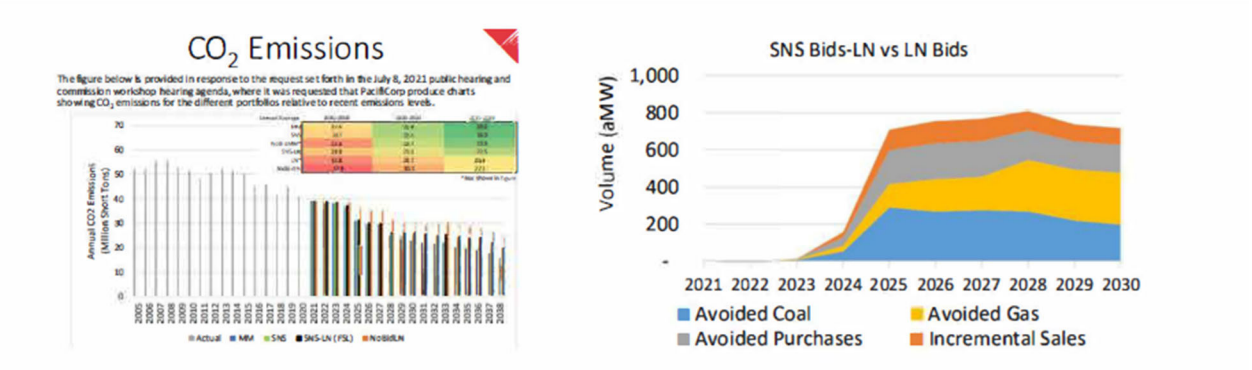
Shelley McCoy
Director, Regulation

Enclosures

ALJ Bench Request 1

Please reference the following graphs on emissions:

Slide 16 of the 8/4/2021 Presentation or Slides 23-24 of the 7/20/2021 slides (filed 7/30/2021)



Response to ALJ Bench Request 1

No response required. ALJ Bench Request 1 contains no question to be answered. ALJ Bench Request 1 provides background information associated with ALJ Bench Requests 2 through 5.

ALJ Bench Request 2

Please fully describe how the model achieves the shown CO2 emissions reductions in 2025, 2026, and 2027. Note: where applicable – see ALJ Bench Request 1.

Response to ALJ Bench Request 2

There are step changes in annual emissions due to planned coal unit retirements, specifically the following retirements (the last year of coal-fired operation is shown):

- Cholla Unit 4 in 2020.
- Jim Bridger Unit 1 in 2023.
- Craig Unit 1, Naughton Unit 1 and Naughton Unit 2 in 2025.
- Craig Unit 2 in 2026.
- Jim Bridger Unit 2, Colstrip Unit 3, Colstrip Unit 4, and Dave Johnston Unit 1 through Dave Johnston Unit 4 in 2028.

These coal retirements are the same in all scenarios evaluated in PacifiCorp's 2020 all source request for proposals (2020AS RFP) and are the same as those identified in PacifiCorp's 2019 Integrated Resource Plan (RFP) preferred portfolio. The emissions reductions between scenarios are therefore entirely due to generator dispatch, primarily as a result of differences in renewable resource additions. Please also refer to Confidential Attachment ALJ Bench Request 2-1 and Confidential Attachment ALJ Bench Request 2-2 for details on the emissions reductions by resource.

Confidential information is designated as Protected Information under the protective order in this proceeding and may only be disclosed to qualified persons as defined in that order.

Confidential

Avoided Generation (GWh)

Delta SNS (LN)-MM and LNR-MM
Positive Value mean a reduction to Generation

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
CL_Cholla4										
CL_Colstrip3										
CL_Colstrip4										
CL_Craig1										
CL_Craig2										
CL_DJohnston1										
CL_DJohnston2										
CL_DJohnston3										
CL_DJohnston4										
CL_Hayden1										
CL_Hayden2										
CL_Hunter1										
CL_Hunter2										
CL_Hunter3										
CL_Huntington1										
CL_Huntington2										
CL_JBridger1										
CL_JBridger2										
CL_JBridger3										
CL_JBridger4										
CL_Naughton1										
CL_Naughton2										
CL_Wyodak1										
Total										

Confidential

Avoided Generation (GWh)

Delta SNS (LN)-MM and LNR-MM
Positive Value mean a reduction to Generation

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
GS_CurrantCreek	[redacted]									
GS_Gadsby1										
GS_Gadsby2										
GS_Gadsby3										
GS_Gadsby4										
GS_Gadsby5										
GS_Gadsby6										
GS_LakeSide1										
GS_LakeSide2										
CL_Naughton3										
GS_Chehalis										
GS_Hermiston2										
Proxy GAS										
Total										

Confidential

Avoided CO2 (ktons)

Delta SNS (LN)-MM and LNR-MM
Positive Value mean a reduction to Emissions

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
CL_Cholla4										
CL_Colstrip3										
CL_Colstrip4										
CL_Craig1										
CL_Craig2										
CL_DJohnston1										
CL_DJohnston2										
CL_DJohnston3										
CL_DJohnston4										
CL_Hayden1										
CL_Hayden2										
CL_Hunter1										
CL_Hunter2										
CL_Hunter3										
CL_Huntington1										
CL_Huntington2										
CL_JBridger1										
CL_JBridger2										
CL_JBridger3										
CL_JBridger4										
CL_Naughton1										
CL_Naughton2										
CL_Wyodak1										
Total										

Confidential

Avoided CO2 (ktons)

Delta SNS (LN)-MM and LNR-MM
Positive Value mean a reduction to Emissions

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
GS_CurrantCreek	[redacted]									
GS_Gadsby1										
GS_Gadsby2										
GS_Gadsby3										
GS_Gadsby4										
GS_Gadsby5										
GS_Gadsby6										
GS_LakeSide1										
GS_LakeSide2										
CL_Naughton3										
GS_Chehalis										
GS_Hermiston2										
Proxy GAS										(remainder)
Total										

Total	[redacted]
SNS (LN)-MM	
LNR-MM	
Check	

Confidential

Generation (GWh)

Delta LNR-MM and NoBidLN-MM
Positive Value mean a reduction to Generation

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
CL_Cholla4										
CL_Colstrip3										
CL_Colstrip4										
CL_Craig1										
CL_Craig2										
CL_DJohnston1										
CL_DJohnston2										
CL_DJohnston3										
CL_DJohnston4										
CL_Hayden1										
CL_Hayden2										
CL_Hunter1										
CL_Hunter2										
CL_Hunter3										
CL_Huntington1										
CL_Huntington2										
CL_JBridger1										
CL_JBridger2										
CL_JBridger3										
CL_JBridger4										
CL_Naughton1										
CL_Naughton2										
CL_Wyodak1										
Total										

REDACTED

Confidential Attachment ALJ Bench Request 2-2

Confidential

Generation (GWh)

Delta LNR-MM and NoBidLN-MM
Positive Value mean a reduction to Generation

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
GS_CurrantCreek										
GS_Gadsby1										
GS_Gadsby2										
GS_Gadsby3										
GS_Gadsby4										
GS_Gadsby5										
GS_Gadsby6										
GS_LakeSide1										
GS_LakeSide2										
CL_Naughton3										
GS_Chehalis										
GS_Hermiston2										
Proxy GAS										
Total										

Confidential

CO2 (ktons)

Delta LNR-MM and NoBidLN-MM
Positive Value mean a reduction to Emissions

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
CL_Cholla4	[redacted]									
CL_Colstrip3										
CL_Colstrip4										
CL_Craig1										
CL_Craig2										
CL_DJohnston1										
CL_DJohnston2										
CL_DJohnston3										
CL_DJohnston4										
CL_Hayden1										
CL_Hayden2										
CL_Hunter1										
CL_Hunter2										
CL_Hunter3										
CL_Huntington1										
CL_Huntington2										
CL_JBridger1										
CL_JBridger2										
CL_JBridger3										
CL_JBridger4										
CL_Naughton1										
CL_Naughton2										
CL_Wyodak1										
Total										

Confidential

CO2 (ktons)

Delta LNR-MM and NoBidLN-MM
Positive Value mean a reduction to Emissions

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
GS_CurrantCreek	[redacted]									
GS_Gadsby1										
GS_Gadsby2										
GS_Gadsby3										
GS_Gadsby4										
GS_Gadsby5										
GS_Gadsby6										
GS_LakeSide1										
GS_LakeSide2										
CL_Naughton3										
GS_Chehalis										
GS_Hermiston2										
Proxy GAS										(remainder)
Total										
Total										
NoBidLN-MM	[redacted]									
LNR-MM										
Check										

ALJ Bench Request 3

Please specifically describe the avoided gas and avoided coal generation. Note: where applicable – see ALJ Bench Request 1.

Response to ALJ Bench Request 3

Please refer to the Company's response to ALJ Bench Request 2, specifically Confidential Attachment ALJ 2-1, for the changes in coal and gas generation by resource between the "SNS Bid (LN)" portfolio and the "LN Bid" portfolio.

Please refer to the Company's response to ALJ Bench Request 2, specifically Confidential Attachment ALJ 2-2, for the changes in coal and gas generation by resource between the "LN Bid" portfolio and the "No Bid (LN)" portfolio.

The "LN Bid" portfolio contains a subset of the bids in the "SNS Bid (LN)" portfolio. Relative to a "No Bid (LN)" portfolio, the "LN Bid" portfolio results in the largest reductions in coal generation for units in Utah South, namely Hunter and Huntington, but reductions also occur to coal and gas resource across the system. By 2030, more than half of the avoided gas generation would otherwise have been generated by future gas resource additions. Note also that the total number of new gas resources in 2030 drops from nine simple cycle combustion turbines (SCCT) in the "No Bid (LN)" portfolio to eight SCCTs in the "LN Bid" portfolio. The addition of 2020 all source request for proposals (2020AS RFP) bids in the "LN Bid" portfolio allows those gas resources to operate less frequently.

Relative to the "LN Bid" portfolio, the "SNS Bid (LN)" portfolio primarily adds wind resource bids in eastern Wyoming, along with the Energy Gateway South transmission line. Again, this results in the largest reductions in coal generation for the Hunter and Huntington units in Utah South (where Energy Gateway South delivers), as well as reductions at Jim Bridger. While the incremental 2020AS RFP bids in the "SNS Bid (LN)" portfolio are located in the same area as Dave Johnston and Wyodak, the impact on these units output is relatively small because the addition of the Energy Gateway South transmission line allows for output from these low-cost units to be exported to other points on the system during periods when wind output is relatively low. The impact on existing gas generation is slightly larger than the step change from no bids to the "LN Bids", but by 2030, more than half of the avoided gas generation would otherwise have been generated by future gas resource additions. The total number of new gas resources in 2030 drops from eight SCCTs in the "LN Bid" portfolio to four SCCTs in the "SNS Bid (LN)" portfolio.

ALJ Bench Request 4

If not already covered, please describe if the emissions reductions are due to planned coal unit retirements or due to reduced coal unit dispatch. Note: where applicable – see ALJ Bench Request 1.

Response to ALJ Bench Request 4

Please refer to the Company's response to ALJ Bench Request 2.

ALJ Bench Request 5

If not already covered, please specifically describe which coal units reduce dispatch to achieve the emissions reductions.

(a) For each coal plant that reduces dispatch, please describe the capacity factors and the production levels (MWh) in 2024, 2025, and 2026 with the SNS-LN (FSL) portfolio.

(b) For each coal plant that reduces dispatch, please describe:

i. the volume of coal consumed in 2025 (tons and MMBtu),

ii. the price of coal consumed in 2025 ($/ton and $/MMBtu).

Note: where applicable – see ALJ Bench Request 1.

Response to ALJ Bench Request 5

(a) Please refer to the Company's response to ALJ Bench Request 2, specifically Confidential Attachment ALJ Bench Request 2-1 and Confidential Attachment ALJ Bench Request 2-2, for the change to coal generation. Please refer to Confidential Attachment ALJ Bench Request 5 for coal capacity factors (CF) that were calculated as they are not reported in Planning and Risk (PaR) model.

(b) Please refer to the Company's responses to subparts i. and ii. below for coal with reduced dispatch in 2025:

i. Please refer to Confidential Attachment ALJ Bench Request 5 for volume of coal consumed in 2025. Note: the PaR model reports giga British thermal units (GBtu). The tons are calculated based on the respective coal Btu per pound (Btu/lb) coal quality and the GBtu that resulted from the PaR model redispatch.

ii. Please refer to Confidential Attachment ALJ Bench Request 5 for price of coal consumed in 2025. Note: PaR reports dollars per million British thermal units ($/MMbtu). The price per ton ($/ton) is calculated based on the respective coal Btu/lb coal quality and the GBtu that resulted from the PaR model redispatch, and the $/MMBtu coal cost assumption for 2025.

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2019 IRP After Redispatch With Short Listed RFP Renewable Resources

Gigawatt-hours (GWh) Redispatch Result and Calculated Net Capacity Factor (NCF)

Generation (GWh)		2024		2025		2026	
	Capacity MW	GWh	NCF	GWh	NCF	GWh	NCF
CL_Colstrip3	[redacted]						
CL_Colstrip4							
CL_Craig1							
CL_Craig2							
CL_Hayden1							
CL_Hayden2							
CL_Hunter1							
CL_Hunter2							
CL_Hunter3							
CL_Huntington1							
CL_Huntington2							
CL_JBridger2							
CL_JBridger3							
CL_JBridger4							
CL_Naughton1							
CL_Naughton2							
CL_Wyodak1							
Total		[redacted]		[redacted]		[redacted]	

2019 IRP After Redispatch With Short Listed RFP Renewable Resources

Description of Volume and Price of Coal Consumed

		Subpart (i) Volume of Coal Consumed		Subpart (ii) Price of Coal Consumed	
Plant	BTU/lb	GBtu (i)	Calculated Tons (i)	(Nominal Dollars/MMBtu) (ii)	Price/Ton (ii)
Colstrip 3	[redacted]				
Colstrip 4					
Craig 1					
Craig 2					
Hayden 1					
Hayden 2					
Hunter 1					
Hunter 2					
Hunter 3					
Huntington 1					
Huntington 2					
Jim Bridger 2					
Jim Bridger 3					
Jim Bridger 4					
Naughton 1					
Naughton 2					
Wyodak					

UM 2059 / PacifiCorp
August 17, 2021
ALJ Bench Request 6

ALJ Bench Request 6

Please reference the rate impacts estimate on slide 15 of the presentation filed on 8/4/2021. Please explain whether the row titled "GWS/D.1/Network Upgrades" encompasses the expected annual customer rate impact of Gateway South at $1.9 billion, minus an approximate 20 percent wheeling credit? If not, then what does it include?

TOTAL COMPANY ($ million)	2025	2026	2027
GWS/D.1/Network Upgrades	$191.8	$220.3	$213.2
Resource Capital	$122.0	$113.7	$107.7
Resource Non-Capital Fixed Costs	$9.3	$9.5	$9.7
PTC Benefit	($40.0)	($42.3)	($43.7)
PPA Costs	$280.5	$280.7	$280.8
RFP FSL Costs	$563.6	$581.9	$567.8
NPC Fuel Savings	($135.1)	($139.2)	($143.0)
NPC Market Savings	($101.9)	($116.3)	($129.2)
CO2 Cost Savings	($50.0)	($55.1)	($64.2)
"NPC" Benefits	($287.0)	($310.5)	($336.4)
Net (Benefit)/Cost	$276.6	$271.4	$231.4
OR ALLOCATED* ($ million)	2025	2026	2027
Net (Benefit)/Cost	$69.2	$67.8	$57.8
Approved Base Rates	$1,203	$1,203	$1,203
%(Decrease)/Increase	5.7%	5.6%	4.8%
* Assumes 25% allocation of RFP bids/transmission to Oregon			

Response to ALJ Bench Request 6

Referencing the Company's 2020 All Source Request for Proposals (2020AS RFP) presentation materials from the Public Utility Commission of Oregon (OPUC) Workshop regarding the RFP Final Short List Sensitivities dated August 5, 2021, the Company responds as follows:

The rate impacts estimate, slide 15 (Nominal Revenue Requirement) of the August 5, 2021 presentation materials, specifically row "GWS/D.1/Network Upgrades" encompasses the expected annual customer rate impact of $2.31 billion of new transmission investments, minus an estimated 20 percent wheeling credit, comprised of the following:

(1) Energy Gateway South: Aeolus-Clover 500 kilovolts (kV) - $1.92 billion.

(2) Energy Gateway South Supporting Projects, including D.1 - $263 million.

(3) Network Upgrade Costs Final Shortlist Projects - $126 million. Please also refer to slide 11 (Network Upgrade Costs) which provides network upgrade costs by project.

ALJ Bench Request 7

Please provide the a copy of the system impact study and the transmission service agreement for the transmission service request (TSR) for 500 MW of point-to-point service from Aeolus to Mona 500 MW, referenced on slide 8 of the presentation.

Response to ALJ Bench Request 7

The transmission system impact study (SIS) is publicly available on PacifiCorp's Open Access Same-Time Information System (OASIS) and can be accessed by utilizing the following website link: http://www.oatioasis.com/PPW/PPWdocs/TSRQ2594SIS.pdf.

Please refer to Confidential Attachment ALJ Bench Request 7 for a copy of the Transmission Service Agreement 989.

Confidential information is designated as Protected Information under the protective order in this proceeding and may only be disclosed to qualified persons as defined in that order.

CONFIDENTIAL ATTACHMENT
ALJ BENCH REQUEST 7 IS CONFIDENTIAL IN ITS ENTIRETY AND PROVIDED UNDER SEPARATE COVER

ALJ Bench Request 8

Please describe whether all of the generator interconnection requests listed on slide 8 are on the final shortlist.

Response to ALJ Bench Request 8

Referencing the Company's 2020 All Source Request for Proposals (2020AS RFP) presentation materials from the Public Utility Commission of Oregon (OPUC) Workshop regarding the RFP Final Short List Sensitivities dated August 5, 2021, the Company responds as follows:

The generator interconnection requests list, slide 8 (OATT Contracts) of the August 5, 2021 presentation materials, is as follows:

Queue #	MW	One or Both Transmission Projects Required
Q409	320	Gateway South
Q713	350	Gateway South, Gateway West Segment D.1
Q719	280	Gateway South, Gateway West Segment D.1
Q783	30	Gateway South, Gateway West Segment D.1
Q784	80	Gateway South, Gateway West Segment D.1
Q785	100	Gateway South, Gateway West Segment D.1
Q789	74.9	Gateway South, Gateway West Segment D.1
Q801	80	Gateway South, Gateway West Segment D.1
Q802	50	Gateway South, Gateway West Segment D.1
Q807	75.9	Gateway South, Gateway West Segment D.1
Q835	190	Gateway South, Gateway West Segment D.1
Q836	400	Gateway South, Gateway West Segment D.1

Based on the above provided list, the following assets related to the transmission queue numbers referenced below are not being considered on the 2020AS RFP final shortlist (FSL):

- Q783 30.0 megawatts (MW)
- Q784 80.0 MW
- Q789 74.9 MW
- Q801 80.0 MW
- Q802 50.0 MW
- Q807 75.9 MW

ALJ Bench Request 9

For any updated PVRR(d) analysis that is filed with corrected Gateway South costs, please specify whether the $1.4 billion cost of providing service for the 500 MW TSR is included in the LN portfolio, or included in any baseline that the FSL is compared against.

Response to ALJ Bench Request 9

The 500 megawatt (MW) transmission service request (TSR) was not included in the "LN RFP" portfolio and the "LN No RFP" portfolio because by including in both studies, the results would net to zero.

CERTIFICATE OF SERVICE

I certify that I served a true and correct copy of PacifiCorp's **Response to ALJ Bench Requests 1 through 9** on the parties listed below via electronic mail in compliance with OAR 860-001-0180.

Service List
UM 2059

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Dated this 17th day of August, 2021.

Katie Savarin

Katie Savarin
Coordinator, Regulatory Operations