PACIFIC POWER
A DIVISION OF PACIFICORP

825 NE Multnomah, Suite 2000
Portland, Oregon 97232

August 19, 2021

VIA ELECTRONIC FILING

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

Re: UE 390—Errata of PacifiCorp Reply and Surrebuttal Testimony for Witness Douglas R. Staples

PacifiCorp d/b/a Pacific Power hereby submits an errata filing to the Reply and Surrebuttal Testimony of PacifiCorp witness Mr. Douglas R. Staples. Included in this filing is a clean and redline version of Mr. Staples' testimony reflecting the changes described in more detail below.

On July 9, 2021, PacifiCorp filed Reply Testimony in UE 390 including the confidential testimony and exhibits of Company witness Mr. Douglas R. Staples. PacifiCorp has identified an error in the labeling of the figures included in Mr. Staples' confidential testimony such that there were two figures labeled as Figure 3. This also impacted the subsequent labeling of the remaining figures included in his testimony. In this errata PacifiCorp has corrected the labeling of the figures to correct this error. PacifiCorp is filing redline and clean individual replacement pages of Mr. Staples' Reply Testimony reflecting these changes.

On August 13, 2021, PacifiCorp filed surrebuttal testimony in UE 390, including the confidential testimony of Company witness Mr. Douglas R. Staples. PacifiCorp has added the following question and answer to page 53 of Mr. Staples' Surrebuttal Testimony to address how the allocation of the energy imbalance market benefits were reflected in the July Reply Update. As this change impacts the pagination of the testimony, PacifiCorp is filing complete redline and clean versions of Mr. Staples' Surrebuttal Testimony.

Q. Was this change reflected in the July Reply Update?

A. No; while PacifiCorp quantified the impact of this proposed change in my reply testimony, this change was not reflected in the NPC calculation in my reply testimony and exhibits. Therefore, the removal of this EIM allocation factor shift has no impact on the proposed NPC in PacifiCorp's reply update.

Please direct any informal correspondence and questions regarding this filing to Cathie Allen, Regulatory Affairs Manager, at (503) 813-5934.

Sincerely,

Shelley McCoy

Shelley McCoy
Director, Regulation

Enclosures

CERTIFICATE OF SERVICE

I certify that I delivered a true and correct copy of PacifiCorp's **Errata of PacifiCorp Reply and Surrebuttal Testimony for Witness Douglas R. Staples** on the parties listed below via electronic mail and/or or overnight delivery in compliance with OAR 860-001-0180.

Service List
UE 390

AWEC	
TYLER C PEPPLE **(C)** **(HC)** DAVISON VAN CLEVE, PC 1750 SW HARBOR WAY STE 450 PORTLAND OR 97201 tcp@dvclaw.com	BRENT COLEMAN **(C)** **(HC)** DAVISON VAN CLEVE, PC 1750 SW HARBOR WAY STE 450 PORTLAND OR 97201 blc@dvclaw.com
JESSE O GORSUCH **(C)** **(HC)** DAVISON VAN CLEVE 1750 SW HARBOR WAY STE 450 PORTLAND OR 97201 jog@dvclaw.com	
CALPINE SOLUTIONS	
GREGORY M. ADAMS **(C)** RICHARDSON ADAMS, PLLC PO BOX 7218 BOISE ID 83702 greg@richardsonadams.com	GREG BASS CALPINE ENERGY SOLUTIONS, LLC 401 WEST A ST, STE 500 SAN DIEGO CA 92101 greg.bass@calpinesolutions.com
KEVIN HIGGINS **(C)** ENERGY STRATEGIES LLC 215 STATE ST - STE 200 SALT LAKE CITY UT 84111-2322 khiggins@energystrat.com	
OREGON CITIZENS UTILITY BOARD	
OREGON CITIZENS' UTILITY BOARD 610 SW BROADWAY, STE 400 PORTLAND, OR 97205 dockets@oregoncub.org	MICHAEL GOETZ **(C)** **(HC)** OREGON CITIZENS' UTILITY BOARD 610 SW BROADWAY STE 400 PORTLAND, OR 97205 mike@oregoncub.org
ROBERT JENKS **(C)** **(HC)** OREGON CITIZENS' UTILITY BOARD 610 SW BROADWAY, STE 400 PORTLAND, OR 97205 bob@oregoncub.org	

<table>
<tr><td colspan="2">PACIFICORP</td></tr>
<tr><td>PACIFICORP, DBA PACIFIC POWER
825 NE MULTNOMAH ST, STE 2000
PORTLAND, OR 97232
oregondockets@pacificorp.com</td><td>AJAY KUMAR (C) (HC)
PACIFICORP
825 NE MULTNOMAH ST STE 2000
PORTLAND, OR 97232
ajay.kumar@pacificorp.com</td></tr>
<tr><td colspan="2">SBUA</td></tr>
<tr><td>JAMES BIRKELUND
SMALL BUSINESS UTILITY ADVOCATES
548 MARKET ST STE 11200
SAN FRANCISCO CA 94104
james@utilityadvocates.org</td><td>DIANE HENKELS (C)
SMALL BUSINESS UTILITY ADVOCATES
621 SW MORRISON ST. STE 1025
PORTLAND OR 97205
diane@utilityadvocates.org</td></tr>
<tr><td>DARREN WERTZ (C)
SMALL BUSINESS UTILITY ADVOCATES
wertzds@gmail.com</td><td></td></tr>
<tr><td colspan="2">SIERRA CLUB</td></tr>
<tr><td>ANA BOYD (C) (HC)
SIERRA CLUB
2101 WEBSTER ST STE 1300
OAKLAND CA 94612
ana.boyd@sierraclub.org</td><td>THIEN CHAU (C) (HC)
SIERRA CLUB
thien.chau@sierraclub.org</td></tr>
<tr><td>ROSE MONAHAN (C) (HC)
SIERRA CLUB
2101 WEBSTER ST STE 1300
OAKLAND CA 94612
rose.monahan@sierraclub.org</td><td></td></tr>
<tr><td colspan="2">STAFF</td></tr>
<tr><td>SCOTT GIBBENS (C) (HC)
PUBLIC UTILITY COMMISSION OF OREGON
201 HIGH ST SE
SALEM OR 97301
scott.gibbens@state.or.us</td><td>SOMMER MOSER (C) (HC)
PUC STAFF - DEPARTMENT OF JUSTICE
1162 COURT ST NE
SALEM, OR 97301
sommer.moser@doj.state.or.us</td></tr>
<tr><td>MOYA ENRIGHT (C) (HC)
PUBLIC UTILITY COMMISSION OF OREGON
PO BOX 1088
SALEM OR 97308
moya.enright@state.or.us</td><td></td></tr>
</table>

Dated this 19th day of August, 2021.

Mary Penfield
Adviser, Regulatory Operations

ERRATA
Docket No. UE 390
Exhibit PAC/100
Witness: Douglas R. Staples

BEFORE THE PUBLIC UTILITY COMMISSION

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Reply Testimony of Douglas R. Staples

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values and assuming they are representative of normal conditions, and further assuming that all of them will coincide across all locations in the future.

Figure 3

	Market Hub						
	Mid-Columbia	Palo Verde	COB	Four Corners	Mead	Mona	Total System Liquidity
Time Period 1	1,000	100	100	100	100	100	**1,500**
Time Period 2	100	1,000	100	100	100	100	**1,500**
Time Period 3	100	100	1,000	100	100	100	**1,500**
Time Period 4	100	100	100	1,000	100	100	**1,500**
Time Period 5	100	100	100	100	1,000	100	**1,500**
Time Period 6	100	100	100	100	100	1,000	**1,500**
Maximum of Averages Method	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**6,000**
Average of Averages Method	**250**	**250**	**250**	**250**	**250**	**250**	**1,500**

Q. Staff also claims that PacifiCorp neglected to account for GRID's over-forecasted purchases from market hubs when it cited Staff's analysis from the 2021 Rate Case.[57] Do you agree with this statement?

A. No. GRID does not presently include any purchase constraints. In any case, the magnitude of the variance compared to forecast is different between sales and purchases, with much higher variances for sales as shown in the Figure 4 below.[58]

Figure 4~~3~~

	Short-Term Sales (MWh)			Short-Term Purchases (MWh)		
	Actual[1]	Forecast[2]	(Below)/Above Forecast	Actual[3]	Forecast[4]	(Below)/Above Forecast
2012	7,746,564	9,360,282	(1,613,719)	6,285,543	6,273,594	11,949
2013	7,867,127	11,529,969	(3,662,842)	4,213,141	6,413,790	(2,200,648)
2014	8,130,895	11,152,711	(3,021,816)	2,385,555	4,783,293	(2,397,739)
2015	7,619,541	11,420,069	(3,800,527)	4,686,590	4,938,847	(252,256)
2016	6,018,797	12,139,446	(6,120,649)	4,642,187	5,828,367	(1,186,180)
2017	6,651,663	13,806,284	(7,154,620)	6,408,925	7,134,540	(725,616)
2018	7,765,501	13,977,258	(6,211,757)	5,865,286	7,850,158	(1,984,872)
2019	4,947,298	15,623,544	(10,676,246)	5,433,773	9,503,672	(4,069,898)
2020	4,885,911	13,887,647	(9,001,736)	6,202,789	8,736,908	(2,534,119)

[1] *Adjusted Actual NPC (Total Short-Term Firm Sales + Secondary Sales)*
[2] *Final ORTAM Study by Year (Total Short-Term Firm Sales + Balancing Sales)*
[3] *Adjusted Actual NPC (Total Short-Term Firm Purchases + Secondary Purchases)*
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[57] Staff/800, Dlouhy/34.
[58] Please note, the source for this information is Oregon PCAM filing workpapers for each of the below listed years.

Q. Can you summarize Figure 4 above?

A. The table shows that in every year since 2012, the magnitude of the variance against forecast for sales has been larger than the magnitude of the variance against forecast for purchases. It also shows that, notwithstanding a noticeable increase in the magnitude of variance for both purchases and sales in 2019, the purchase variance has been holding steady while the sales variance grows ever more extreme.

Q. Given that the table above presents only volumes, can you offer a comparable analysis of revenues and expenses?

A. Yes, please see Figure 5 below.

Figure 54

	Short-Term Sales ($)			Short-Term Purchases ($)		
	Actual[1]	Forecast[2]	(Below)/Above Forecast	Actual[3]	Forecast[4]	(Below)/Above Forecast
2012	$ 184,814,023	$ 387,008,366	$ (202,194,343)	$ 95,575,429	$ 212,471,136	$ (116,895,708)
2013	222,455,456	399,101,906	(176,646,450)	161,006,194	198,219,908	(37,213,715)
2014	268,668,056	375,550,288	(106,882,233)	106,735,509	135,358,691	(28,623,181)
2015	211,282,682	402,556,300	(191,273,618)	153,619,101	155,034,108	(1,415,007)
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2018	224,869,978	414,293,413	(189,423,435)	211,491,033	204,436,658	7,054,374
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Q. Can you summarize Figure 5 as well?

A. Yes, it exhibits many of the same characteristics as the volumetric comparison table. In this case as well, the magnitude of the variance against forecast is larger for sales revenue than it is for purchase expense.

Q. Is this sort of comparative analysis meaningful in determining whether a forecast methodology is functioning as intended?

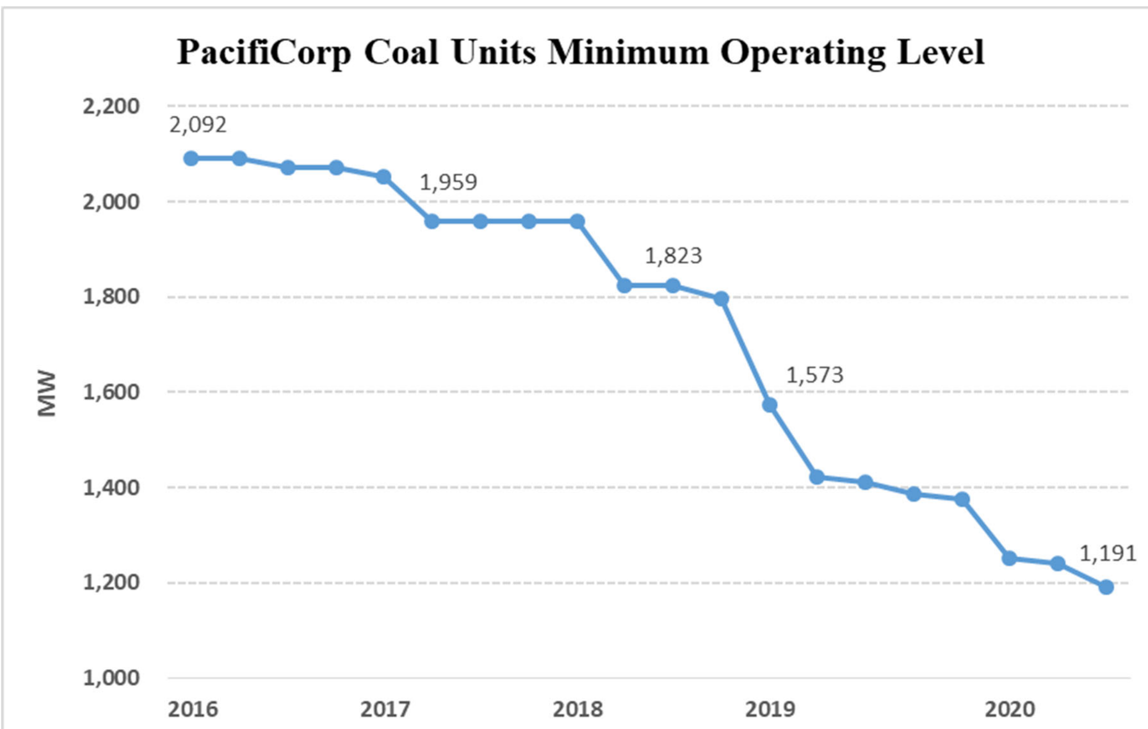
A. Yes. This analysis shows that the current methodology for forecasting sales activity is broken, unlike the forecast for purchase activity.

procedures and the Commission has recently determined that the process will not be redesigned at this time.

Q. Do you agree with Sierra Club that the Company's inputs to adjust for "must run" settings led to economic losses on certain occasions?[137]

A. No. The Company does not allow coal units to cycle year-round in actual operations, and as discussed above, the TAM is intended to model short-term NPC for Oregon rates. As shown in Figure 6 below, the Company has adjusted the minimum operating levels of most of its coal plants in recent years to take advantage of increasing renewable generation for its customers.

Figure 6~~5~~



[137] Sierra Club/100, Burgess/23.

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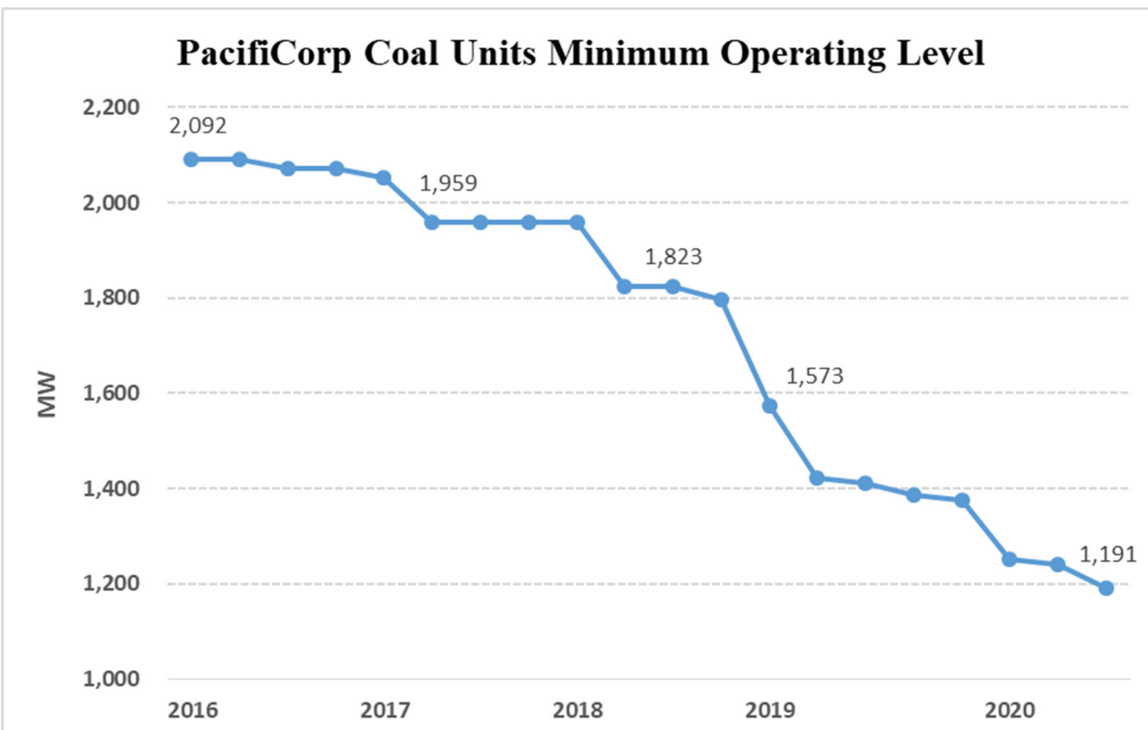

[137] Sierra Club/100, Burgess/23.

ERRATA
REDACTED
Docket No. UE 390
Exhibit PAC/1000
Witness: Douglas R. Staples

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

PACIFICORP

ERRATA
REDACTED
Surrebuttal Testimony of Douglas R. Staples

August 2021

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Q. Are you the same Douglas R. Staples who adopted the initial testimony of David G. Webb and submitted reply testimony in this proceeding on behalf of PacifiCorp dba Pacific Power (PacifiCorp or the Company)?

A. Yes.

I. PURPOSE AND SUMMARY OF TESTIMONY

Q. What is the purpose of your testimony?

A. The purpose of my surrebuttal testimony is to respond to the rebuttal testimony of the Public Utility Commission of Oregon (Commission) Staff (Staff) witnesses Ms. Moya Enright, Ms. Kathy Zarate, Dr. Curtis Dlouhy, Mr. Scott Gibbens, Ms. Rose Anderson, and Mr. John Fox; Alliance of Western Energy Consumers (AWEC) witness Mr. Bradley G. Mullins; Oregon Citizens' Utility Board (CUB) witness Mr. Bob Jenks; and Sierra Club witness Mr. Ed Burgess as it relates to the Company's modeling of net power costs (NPC) for the 2022 Transition Adjustment Mechanism (TAM).

Q. Please summarize your surrebuttal testimony.

A. I demonstrate the reasonableness of PacifiCorp's approach to forecasting NPC in the 2022 TAM through the following points:

- The modeling of the CSAs at Dave Johnston, Craig, Hunter, and Huntington should be found prudent.
- PacifiCorp's Market Cap Methodology as proposed is a simple and straightforward modeling adjustment that more accurately reflects the market depth that is available to the Company for market sales. The adjustments to this proposal filed by parties would decrease the accuracy of NPC.

- PacifiCorp recommends that the Commission reject Staff's and Sierra Club's proposed changes to the "informational run" as such changes would assume away costs that are incurred in actual operations. These assumptions would essentially render the study meaningless.
- The Company will remove the proposal to change the EIM allocation factor from this proceeding and plans to address this issue in PacifiCorp's next round of Multi-State Protocol (MSP) negotiations
- With regards to the other adjustments proposed by the parties, PacifiCorp recommends the Commission reject: (1) Staff adjustments regarding qualifying facility (QF) forecasting, and (2) AWEC's adjustment on other revenues.

Q. Please identify the other witnesses providing surrebuttal testimony supporting the 2022 TAM.

A. In addition to my testimony, the following additional witnesses are providing surrebuttal testimony in support of the Company's 2022 TAM filing:

- Mr. Michael G. Wilding, Vice President, Energy Supply Management, responds to Staff's adjustment on the Nodal Pricing Model.
- Mr. Dana M. Ralston, Senior Vice President of Thermal Generation and Mining, testifies in support of the prudence of the Company's CSAs and responds to Sierra Club's concerns on costs at Bridger Coal Company (BCC).
- Mr. Seth Schwartz, President, Energy Ventures Analysis, Inc., responds to the concerns raised by Sierra Club.
- Ms. Mary M. Wiencke, Vice President, Transmission Regulation and Market Policy, provides testimony to address the transfer of Renewable Energy Credits.

- Mr. Robert M. Meredith, Director, Pricing and Cost of Service, responds to the concerns raised by the Small Business Utility Advocates and addresses the calculation of the Consumer Opt-Out Charge in response to the testimony of Calpine Energy Solutions, LLC (Calpine).

Q. Has PacifiCorp changed its net power cost (NPC) recommendation in its surrebuttal testimony?

A. No.

II. FORECASTING COAL GENERATION

A. <u>Response to Staff 's and CUB's Recommendations on Coal Unit Forecasting, Economic Cycling, and Prudence of CSAs.</u>

Q. Please provide a general overview of Staff's recommendations to which you are responding in this section.

A. Staff has accepted the Company's responses regarding the burn rate at Naughton,[1] the minimum take modeling for Wyodak,[2] and the prudence of the Huntington CSA. But Staff has expanded its recommendations on other issues. Staff still asserts that PacifiCorp's recent CSAs for the Dave Johnston and Craig plants should be deemed imprudent because the Company did not model economic cycling during CSA negotiations, and Staff has now reversed its original position and added the Hunter CSA to that adjustment.[3] As a remedy, Staff proposes that the minimum take levels in these three CSAs be disregarded in the TAM. While this would not result in any adjustment in this case (because all plants are being dispatched above their

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[1] Staff/1500, Fox/6.
[2] Staff/1500, Fox/7.
[3] Staff/1400, Anderson/4.

minimums), it could produce a significant disallowance in the future if, for any reason, plant dispatch is reduced.

Staff also now recommends that the Commission provide guidance to PacifiCorp for future prudence reviews of CSAs.[4] Specifically, for the first time, Staff recommends that the Company (1) "should provide an in-depth explanation of how the Company considered the potential for economic cycling" when negotiating minimum take levels, (2) must supply evidence that it "reached out to co-owners to request they consider [economic] cycling," (3) must provide a chart "comparing the MMBtus from the generation forecast used to inform contract negotiations to the number of MMBtus that PacifiCorp will be contractually obligated to pay for at each plant," and (4) "should provide workpapers for the generation forecasts used to inform negotiations on each new coal contract introduced" in each future TAM filing.[5]

Staff also adopts Sierra Club's recommendation to require the Company to provide copies of its highly confidential CSAs and affiliate mine plans in future TAM filings, and CUB's proposal requiring the Company to conduct an additional study that closes Jim Bridger Unit 1 for the entirety of quarter two or, alternatively, "identify economic cycling opportunities across PacifiCorp's system" in a new Economic Cycling Study.[6] Finally, Staff still asserts that the modeling of the Informational Run should exclude liquidated damages and "take or pay" provisions.[7]

[4] Staff/1400, Anderson/7-8.
[5] Staff/1400, Anderson/5-6.
[6] Staff/1400, Anderson/17-18.
[7] Staff/1500, Fox/5.

Q. Please provide a general response to Staff's testimony on forecasting coal generation.

A. Without analytical support, Staff posits that economic cycling will significantly reduce coal burns and minimum take requirements across PacifiCorp's system and reduce costs to customers. Staff largely ignores PacifiCorp's evidence that economic cycling has, at most, *de minimis* economic benefit for PacifiCorp's customers.[8] In recommending that the Commission find the CSAs at Dave Johnston, Craig, and Hunter imprudent, Staff discounts the actual modeling PacifiCorp conducted, creates and retroactively applies an entirely new prudence standard contrary to current Commission precedent, and ignores the fact that the Generation and Regulation Initiative Decision Tool (GRID) model dispatches each of these plants well above their contractual minimums in studies that include economic cycling, confirming that the forecasted generation volumes are reasonably required to serve load.

1. History of Economic Cycling and Minimum Take Provisions in PacifiCorp's TAMs

Q. Has the Commission ever ordered PacifiCorp to model economic cycling of its coal plants to support execution of a CSA or demonstrate the reasonableness of its proposed NPC?

A. No. To the contrary, this issue was fully litigated in the 2018 TAM, docket UE 323, and the Commission rejected Staff's recommendation to require PacifiCorp to model economic cycling for its coal units.[9]

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[8] PAC/100, Web/17.
[9] *In the Matter of PacifiCorp, dba Pacific Power, 2018 Transition Adjustment Mechanism*, Docket No. UE 323, Order No. 17-444 at 10 (Nov. 1, 2017) [hereinafter 2018 TAM].

Q. Has the Commission ever concluded that a CSA was imprudent because it included a minimum take provision?

A. No. This issue was also recently litigated in the 2017 TAM, docket UE 307, and the Commission rejected CUB's prudence challenge to the minimum take provisions in the CSAs for the Jim Bridger, Huntington and Dave Johnston plants.[10]

Q, Has the Commission ever prohibited PacifiCorp from modeling the impact of a minimum take provision in a CSA as Staff proposes in this case?

A. No. This issue was also fully litigated in the 2017 TAM, and the Commission rejected Staff's challenge to the Company's iterative approach to ensure minimum take volumes are properly captured in GRID.[11]

Q. On what basis did the Commission reject Staff's recommendation to require the modeling of economic cycling at PacifiCorp's coal-fired facilities in the 2018 TAM?

A. The Commission agreed with PacifiCorp that the GRID model "reflects historic, normalized practices regarding economic shutdowns of coal units."[12] However, the Commission also recognized that "PacifiCorp's actual operations may be changing under evolving market conditions" and directed the Company to discuss economic cycling at a coal workshop.[13]

[10] *In the Matter of PacifiCorp, dba Pacific Power, 2017 Transition Adjustment Mechanism*, Docket No. UE 307, Order No. 16-482 at 9 (Dec. 20, 2016) [hereinafter 2017 TAM].
[11] 2017 TAM, Order No. 16-482 at 11.
[12] 2018 TAM, Order No. 17-444 at 11.
[13] *Id.*

Q. Have PacifiCorp's actual operations changed since the 2018 TAM with respect to economic cycling?

A. No. The Company economically cycled a limited number of coal plants in 2016 and 2017 due to historical anomalies in natural gas pricing and hydro generation. Since this time, the Company has not economically cycled coal plants at any significant level because of higher natural gas prices, lower hydro generation, and lower minimum operating levels at coal-fired facilities. In addition to those considerations, the continued addition of renewable resources into the Company's generation fleet requires the presence of significant online dispatchable resource capacity to integrate and reliably serve load with those new resources.

Q. Did the removal of the "must run" settings in GRID in this case far overstate the Company's actual economic cycling in light of these constraints?

A. Yes. For example, by removing must run settings in the 2021 TAM, GRID forecast [redacted] total avoided run hours through July, of which approximately [redacted] hours were not dictated by forced, planned, or maintenance outages. In actuality, through July of 2021, when coal plants have been historically allowed to conduct limited cycling, the Company had only [redacted] hours of offline time ([redacted] percent of forecast) that was not attributable to forced, planned, or maintenance outages. To be clear, 2021 has been fairly unusual due to abnormally low hydro conditions, but it is difficult to imagine that this year would have played out the way GRID projected it to, even if it had been closer to normal.

Q. Has the Company been pursuing a strategy that allows it to reduce coal generation more effectively and reliably than through economic cycling?

A. Yes. This is evident in the Company's initial filing in this case, which demonstrated a $114 million reduction in coal costs as compared to the 2021 TAM due to lower coal generation. Of this amount, only $[redacted] is attributable to the removal of the must run setting and economic cycling. In actual operations, the Company has achieved this significant reduction in coal generation largely by a combination of adding new renewable generation and reducing minimum stable run levels at PacifiCorp's coal generation facilities.[14] As described in Mr. Daniel J. MacNeil's reply testimony, the inclusion of these renewable resources requires the online displacement of coal generators to support and integrate ever-increasing amounts of non-dispatchable generation. Coal generators have the greatest ability to reduce output during low-price periods owing to the reduction in minimum stable run levels pursued by the Company over the past several years.[15] This approach is better calibrated to reduce coal generation but makes cycling in actual operations more difficult to achieve.

Q. Can you provide an example that demonstrates the efficacy of the Company's strategy as compared to economic cycling for reducing coal generation?

A. Yes. In the 2022 TAM modeling, the impact of removing Energy Vision 2020 resources from the system was an [redacted] in coal generation of approximately [redacted] megawatt-hours (MWh) (about [redacted] percent),[16] while reinstating the must run condition only [redacted] coal generation by approximately [redacted] MWh

[14] A chart showing how these minimums have reduced over time was provided in my reply testimony. PAC/400, Staples/60.
[15] PAC/700, MacNeil/4
[16] PAC/100, Webb/28.

(about [redacted] percent).[17] In addition to being more impactful and more supportive of system reliability, the Company's approach can be enacted in actual operations. On the other hand, coal cycling is difficult to achieve in actual operations because of reliability concerns.

Q. Has the Company incorporated limited economic cycling into its coal forecast modeling as part of a non-precedential settlement?

A. Yes. In the 2019 TAM, docket UE 339, PacifiCorp entered into a partial stipulation with Staff, AWEC, CUB, and Calpine Solutions[18] to model economic cycling for (1) majority-owned units, (2) that do not participate in the Energy Imbalance Market (EIM), and (3) are not under operational constraints precluding economic shutdowns.[19] The stipulation limited the cycling period from February 1 to May 31 and operated by removing the must run setting for the limited facilities.[20]

Q. What were the results of this limited modeling of economic cycling?

A. Even the limited economic cycling allowed in GRID during the 2019 and 2020 TAMs allowed for more economic cycling than realized in actual operations due to the model's perfect foresight and the Company's implementation of low minimum operating levels for its coal-fired facilities. Specifically, the Company showed that in the 2019 TAM, GRID forecast [redacted] hours of offline time and approximately [redacted] avoided MWh. But in actual operations, PacifiCorp only achieved [redacted] hours of offline time and approximately [redacted] avoided MWh.[21]

[17] PAC/100, Webb/17.
[18] *In the Matter of PacifiCorp, dba Pacific Power, 2019 Transition Adjustment Mechanism*, Docket No. UE 339, Order No. 18-421, App'x A at 6 (Oct. 26, 2018) [hereinafter 2019 TAM].
[19] 2019 TAM, PAC/100, Wilding/35.
[20] 2019 TAM, PAC/100, Wilding/35.
[21] Docket No. UE 375, PAC/500, Webb/19-20.

Q. Did PacifiCorp later agree to expand economic cycling for coal forecast modeling in a second nonprecedential settlement related to the transition to Aurora?

A. Yes. In a partial stipulation in the 2021 TAM, docket UE 375, the Company agreed to remove all must run settings as a part of the transition to Aurora and to hold quarterly calls in 2021 to provide information on the dispatch of its coal facilities and market conditions.[22]

2. Response to Staff's Recommendations Regarding Economic Cycling

Q. Staff recommends that PacifiCorp's CSAs should be deemed imprudent unless the Company models economic cycling according to Staff's new proposed standards prior to contract execution.[23] Would modeling economic cycling as Staff proposes appreciably reduce generation to below minimum take commitment levels?

A. No. While I am not an expert on CSA negotiations, the modeling of economic cycling in GRID over the past four years has shown that economic cycling has a minimal impact on coal generation forecasts. Even taking GRID's inflated numbers for predicted economic cycling in this and previous TAMs, the generation [redacted] from economic cycling has only resulted in a small percent [redacted] in coal burn (less than [redacted] percent in the initial filing in this case).

[22] *In the Matter of PacifiCorp, dba Pacific Power, 2021 Transition Adjustment Mechanism*, Docket No. UE 375, Order No. 20-392, App'x A at 6, 8 (Oct. 30, 2020) [hereinafter 2021 TAM].
[23] Staff/1400, Anderson/4.

Q. Staff recommends a prudence disallowance for the Company's Dave Johnston CSAs because "PacifiCorp must evaluate economic cycling at its coal plants."[24] Does Staff cite any precedent supporting such a disallowance?

A. No, nor does Staff reconcile the directly relevant Commission precedent outlined above. Staff's assertion that "a full assessment of economic cycling on PacifiCorp's system as a whole is needed before PacifiCorp signs its coal supply agreements" is contrary to previous TAM orders.[25] While PacifiCorp voluntarily agreed to explore economic cycling for calculating its NPC in two stipulations as part of the give and take of settlement negotiations, the Commission has never stated nor implied that this is now a prerequisite to execution of a prudent CSA—especially when it remains out of sync with PacifiCorp's actual approach to optimizing its system.

Q. Does the Commission's prudence standard support Staff imposing its newly announced CSA standards to CSAs executed last year?

A. No. Staff's *ex post facto* position that the Company should have modeled economic cycling according to the new CSA standards Staff announced in its rebuttal testimony violates the Commission's prudence standard. As I understand it, this standard requires review of the facts and circumstances at the time of the execution of the CSAs, prohibits hindsight review and retroactive application of new standards, and requires only that the Company acted in an objectively reasonable manner.[26]

[24] Staff/1400, Anderson/10.
[25] Staff/1400, Anderson/10.
[26] 2017 TAM, Order No. 16-482 at 6 (In a prudence review, [the Commission] look[s] at the objective reasonableness of a decision at the time it was made, considering the information then available to the utility.").

Q. Regardless, did the Company allow economic cycling of Dave Johnston for its model runs informing CSA negotiations?

A. Yes. After filing its reply testimony, the Company continued to review the modeling that supported execution of the Dave Johnston CSAs. The Company determined that this modeling did in fact allow Dave Johnston to economically cycle.

Q. Does Staff concede that the Dave Johnston plant is unlikely to cycle because of the plant's low dispatch cost?[27]

A. Yes. While Staff recognizes that Dave Johnston "is unlikely to be elected for economic cycling because of its relatively low cost," it still contends that the CSAs should be deemed imprudent based on standards the Commission has never previously adopted.[28] As detailed more thoroughly in Mr. Ralston and Mr. Schwartz's testimony, the Commission should reject Staff's recommendation.

Q. Staff also suggests that the Craig CSA should be disallowed even though the minimum take levels for Craig "[redacted]"[29] How do you respond?

A. This recommendation also appears contrary to the Commission's prudence standard of objective reasonableness. Modeling economic cycling for Craig would not have changed the minimum take provisions in the Craig CSA, which are already low and relatively flexible. Furthermore, as explained in the testimony of Mr. Ralston, Craig would likely never economically cycle in actual operations because the plant is jointly

[27] Staff/1400, Anderson/10.
[28] Staff/1400, Anderson/11.
[29] Staff/1400, Anderson/10 (Staff has marked this statement as highly confidential, PacifiCorp would redesignate this statement confidential).

owned.[30] While Staff finds this response "unconvincing," it has provided no evidence to counter this operational reality that could never be captured in the GRID model.[31] A follow-up analysis of cycling at Craig using the business plan base study as a starting point indicates that projected generation was approximately [redacted] percent [redacted] with cycling enabled, further demonstrating that cycling does not materially alter projected generation at the Company's coal facilities. Allowing cycling at Craig would still have supported the volumetric requirements of the CSA.

Q. Does Staff continue to view the Hunter modeling as "robust and appropriate," as Staff testified in its rebuttal testimony?[32]

A. No. Staff has changed its position and now contends that the Hunter CSA is imprudent because the Company did not "assess whether economic cycling at any of its coal plants can reduce costs for ratepayers while maintaining reliability and other system requirements."[33] As described in the reply testimony of Mr. MacNeil, PacifiCorp modeled the economic cycling of Hunter before executing the CSA as a part of its analysis.[34] Staff now claims that PacifiCorp's analysis was insufficient—even though Staff previously praised this analysis. Mr. Ralston addresses Staff's retroactive approach to modeling economic cycling in his surrebuttal testimony. Suffice it to say, Staff's shifting position on the prudence of the Hunter CSA demonstrates that Staff's prudence standard is new and novel, and not one that PacifiCorp could have reasonably been aware of at the time it executed the CSA.

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[30] PAC/600, Ralston/15-16.
[31] Staff/1400, Anderson/10.
[32] Staff/700, Anderson/18.
[33] Staff/1400, Anderson/11.
[34] PAC/700, MacNeil/3-4 ("Hunter Units 1 and 2 were allowed to cycle in the spring, consistent with assumptions previously used in Oregon TAM Filings.")

Q. Did Staff address the limited cycling that PacifiCorp allowed during the Hunter CSA modeling?

A. No. Staff seems to suggest that all coal units must be allowed to cycle, year-around, in any modeling for a prudent CSA, irrespective of the Company's actual operations and reliability concerns. As explained in the reply testimony of Mr. MacNeil, the Company employed a reasonable amount of economic cycling in its GRID analysis to support the Hunter CSA.[35]

Q. Staff also believes that "without studying the economic cycling outcome for each of its coal plants, PacifiCorp's estimate of the optimal level of generation at any of its dispatchable plants will be inaccurate, and therefore the Company cannot optimally set its minimum take levels in any of its coal contracts."[36] Do you agree with this reasoning?

A. No. First of all, as described in the testimony of Mr. Ralston, the Company does not unilaterally set the minimum take levels in any of its coal contracts. Rather, the minimum take levels are negotiated with coal suppliers along with other key contract terms. Further, as detailed above, modeling economic cycling during CSA negotiations would have a *de minimis* effect on the coal generation forecast and minimum take levels. As the Company has explained in this proceeding and consistently over the past five years, the Company's increased renewable generation, reduced minimum operating levels, and reduced hydro generation have made economic cycling much less likely across PacifiCorp's system.

[35] PAC/700, MacNeil/4-5.
[36] Staff/1400, Anderson/10.

The Commission's prudence standard "does not require perfection; just that the utility's actions were reasonable."[37] Modeling a reasonable level of economic cycling for the Dave Johnston and Hunter CSAs and forgoing this modeling for the Craig CSA was reasonable considering the lack of historical cycling across these three facilities, the low dispatch cost of Dave Johnston, and the joint ownership of Craig.

In addition, enabling a unit to cycle in isolation should produce a similar or slightly lower projected burn when compared to a study with all units permitted to cycle. The reason is that, when searching for displaceable units, a model with all units enabled for cycling may choose to displace a higher cost resource instead of the unit in question, but if only one unit can be cycled, it will be removed from service whenever it is not needed to support sales or serve load. Staff's concern that "the minimum take commitment level is kept as low as reasonably possible"[38] is misguided. The appropriate concern is whether the CSAs support safe and reliable service to customers in a least cost, least risk manner. Mr. Ralston further expands on this concept and explains how these CSAs meet this standard.

Q. Were the units in question permitted to cycle in the studies submitted in the 2022 TAM?

A. Yes. All of them cleared the minimum take commitment tiers without any adjustment required to the incremental cost, which is a further illustration of the reasonableness of the Company's modeling approach.

[37] 2017 TAM, Order No. 16-482 at 6.
[38] Staff/1400, Anderson/4.

Q. Finally, Staff continues to advocate for a follow-up economic cycling study that "seeks to identify additional opportunities of cost savings through economic cycling."[39] Does the Company agree to this proposal?

A. Consistent with the 2021 TAM settlement, a party may request a modeling run from the Company. However, it is important to note that the TAM, as a ratemaking mechanism does not drive actual operations; instead, the TAM is designed to forecast the Company's actual NPC as accurately as possible. As described above in my testimony, the TAM is already forecasting far more economic cycling than actually occurs in operations.

3. Jim Bridger Cycling Study

Q. CUB continues to assert that conducting a study on the economic cycling of Jim Bridger Unit 1 would provide more information about "the economic viability of the Company's simulated dispatch in the GRID forecast."[40] Is the Company willing to model the Jim Bridger Unit 1 economic cycling?

A. Consistent with the 2021 TAM settlement, CUB can request these assumptions in a modeling run with Aurora in the 2023 TAM. However, for the reasons stated in my reply testimony, this information may be of limited value.

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[39] Staff/1400, Anderson/8.
[40] CUB/200, Jenks/12.

Q. CUB continues to argue that the Integrated Resource Plan (IRP) action plan "raised questions as to whether customers are better off with Jim Bridger Unit 1 operating in 2022 and 2023."[41] Does the IRP action plan impact NPC as forecast in the GRID model?

A. No. As CUB recognizes, the NPC GRID model is a one-year simulation of dispatched resources under normalized conditions.[42] Any long-term economic benefit the stochastic IRP model found in cycling or shutting down Jim Bridger Unit 1 does not affect how GRID models the operation of Jim Bridger Unit 1 in the 2022 TAM.

Q. CUB seems to suggest that conducting its proposed Jim Bridger Unit 1 study now "would provide additional information about the economical operation of the plant and might inform how we develop transition plans" for other coal facilities.[43] Please respond.

A. It is not clear how a modeling run that prohibits Jim Bridger Unit 1 from running would help in the development of transition plans, and it seems this may be a more appropriate issue for the IRP.

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[41] CUB/200, Jenks/14.
[42] CUB/200, Jenks/15.
[43] CUB/200, Jenks/15.

4. Response to Staff's Other Recommendations

Q. Staff agrees with Sierra Club that PacifiCorp should provide copies of its highly confidential CSAs and affiliate mine plans in each TAM filing.[44] Is there a separate process for reviewing these documents?

A. Yes. While Mr. Ralston's surrebuttal testimony will elaborate on this issue, it is my understanding that these documents are already made available to parties in the TAM if requested under the TAM's modified protective order.

Q. Staff also continues to believe that the Informational Run should be exclusive of all costs associated with liquidated damages provisions or take or pay contracts.[45] Do you agree with this assessment?

A. No. I continue to believe that removing these costs that would be incurred would make the informational run meaningless because these costs cannot be avoided by the Company in actual operations.

Q. Staff believes that removing these costs would still allow the Informational Run to "provide insight into opportunities for cost savings in the future."[46] How do you respond?

A. An informational model that does not account for costs the Company would incur cannot provide insight into cost savings. In other words, any savings found in the Informational Run must be compared against the costs incurred while generating those potential savings. Eliminating costs that would be incurred if this course of

[44] Staff/1400, Anderson/6-7.
[45] Staff/1500, Fox/4-5.
[46] Staff/1500, Fox/3.

action were pursued in actual operations exaggerates any potential savings and provides no meaningful feedback to the Company or to stakeholders.

B. Response to Sierra Club's Recommendations on Coal Forecasting and Economic Cycling

1. Sierra Club's Proposed NPC Adjustment

Q. Based on Sierra Club's assertion of "inappropriate" fuel costs for Jim Bridger, does it propose an adjustment to the Company's 2022 NPC forecast?

A. Yes. Sierra Club proposes that the Commission reduce the 2022 NPC forecast by $[redacted] total company or $[redacted] Oregon-allocated.[47]

Q. Why does Sierra Club believe that such a reduction is appropriate?

A. Sierra Club bases its adjustment on the Company's GRID run that substituted average cost for marginal costs at Jim Bridger without making any further adjustments.[48]

Q. Does this model run provide an accurate estimate of NPC for 2022?

A. No. The Company provided this model run for informational purposes in response to Sierra Club's Data Request 2.22 and not as a replacement for the Company's actual 2022 TAM, which uses the marginal fuel cost for modeling all of PacifiCorp's generation resources.

Q. Sierra Club asserts that even with this adjustment the Company will be able to recover fixed costs at BCC.[49] Do you agree?

A. No. As explained in great detail in Mr. Ralston's surrebuttal testimony, Sierra Club consistently misrepresents the level of fixed costs at BCC.

[47] Sierra Club/200, Burgess/20.
[48] Sierra Club/200, Burgess/21; Sierra Club/123 (Sierra Club Data Request 2.22 Model Run).
[49] Sierra Club/200, Burgess/22.

Q. Sierra Club argues that its average cost model run's coal fuel expenditures of [redacted] for Jim Bridger will be "more than sufficient" to cover remaining costs of "scaled down BCC production and other obligations" at the plant.[50] Do you agree?

A. No. The Company's actual 2022 GRID run from the update filing projects Jim Bridger fuel costs totaling $180.6 million, creating a deficit of $[redacted] from projected NPC. In addition, as Mr. Ralston explains, Sierra Club's estimates of the scalability of BCC costs is incorrect, owing to their refusal to acknowledge the level of fixed costs that accompany mining operations.

Q. Sierra Club purports to show that "sunk costs" at Jim Bridger are "substantially lower" than its average cost model run.[51] Is this accurate?

A. No. This assumption is based on incomplete data and a misrepresentation of the Company's response to Sierra Club's Data Request 5.5(b). In this data request, the Company explained that it has already spent $[redacted] *as of April 1, 2021,* attributable to 2022 BCC production but that this cost does not account for all cost obligations the Company has for 2022 BCC coal production. Mr. Ralston addresses this issue in more detail in his surrebuttal testimony.

Q. Sierra Club's assumptions in its average cost run also require a [redacted] reduction in BCC production for 2022.[52] Is this possible considering operational constraints and reliability concerns?

A. No. As explained more thoroughly in the testimony of Mr. Schwartz and Mr. Ralston,

[50] Sierra Club/200, Burgess/23.
[51] Sierra Club/200, Burgess/23.
[52] Sierra Club/200, Burgess/24 n.39.

BCC cannot operate at a [redacted] reduced capacity and still produce coal at the same dispatch price assumed in the GRID model run because of reduced economies of scale and inefficient use of mine equipment and workforce constraints.

Q. Sierra Club believes that the Company did not address its argument that a "large portion" of fixed costs would still be recovered if PacifiCorp used average cost rather than incremental costs to model BCC costs without any post-modeling adjustments.[53] Did the Company ignore this argument?

A. No. The Company explained that it "does not use an average price as a dispatch price in short-term forecasts such as the TAM because the cost of coal in a take-or-pay volume tier is not avoidable."[54] Sierra Club's argument is also disingenuous and contrary to the purpose of the TAM. The TAM must be an accurate assessment of NPC for the forthcoming year. Sierra Club's unquantified and nebulous assertion that the Company would recover a "large portion" of its BCC costs through average costs ignores the Company's data and the fundamental ratemaking principle that PacifiCorp should have an opportunity to recover *all* of its reasonable and prudent costs. Furthermore, the re-averaging step in the Company's average cost model is essential to create an accurate NPC forecast. Rather than ignore Sierra Club's argument, the Company responded to it through a data request[55] and in my reply testimony.[56]

[53] Sierra Club/200, Burgess/5.
[54] PAC/400, Staples/52-53.
[55] Sierra Club/103, Burgess/9.
[56] PAC/400, Staples/66-67.

Q. In responding to your assertion that using average costs, instead of incremental costs, is contrary to basic economic principles, Sierra Club states that a seller's optimal price is marginal cost "only if the marginal cost is above the average cost."[57] Is this accurate?

A. No, this is simply wrong. First, a marginal cost above the average cost would indicate negative fixed costs, unless Mr. Burgess is trying to reference the diminishing marginal productivity that firms experience on the extremes of their range of production capabilities. Second, even if Mr. Burgess is attempting to make a point about marginal productivity, it is somewhat irrelevant as the marginal cost is the only factor worthy of consideration in either case. For example, if a firm can produce an item at an incremental cost of $20 and sell it for $25, it should produce and sell that item. The production and sale of that item will either defray costs or increase profits by $5. The firm's average cost has no bearing whatsoever on the decision. Consider the following example:

Figure 1

	Without Incremental Generation	With Incremental Generation
Fixed Costs	$800	$800
Variable Costs	$1,000	$1,010
Average Costs	$18	$17.92
Incremental Revenue	$0	$13
Output (MW)	100	101
Total Net Costs	$1,800	$1,797

In this scenario, the marginal cost of production is $10, which is well below the average cost of $18 per MWh—a cost scenario that Mr. Burgess believes should

[57] Sierra Club/200, Burgess/13 (emphasis omitted).

invalidate the marginal cost as an input to the decision. So long as the incremental revenue exceeds the incremental cost (in this case, incremental revenue was set to $13 in order to satisfy that condition), the decision to increase production will lower net costs.

The same is true when the incremental cost is above average cost. Consider the following example, which makes this point abundantly clear.

Figure 2

	Without Incremental Generation	With Incremental Generation
Fixed Costs	$800	$800
Variable Costs	$1,900	$1,950
Average Costs	$27	$27.23
Incremental Revenue	-	$51
Output (MW)	100	101
Total Net Costs	$2,700	$2,699

In this scenario, the marginal cost is set to $50/MWh, but the incremental revenue is $51/MWh to demonstrate that increasing production is still economically sound and cost minimizing so long as incremental revenue exceeds incremental costs, regardless of whether the incremental cost is above or below the average cost.

Q. Sierra Club also argues that marginal prices assumed in GRID are not reflective of true marginal prices because they are set to meet minimum takes.[58] How do you respond?

A. Sierra Club correctly notes that the Company uses an iterative approach to settle on an incremental pricing tier that satisfies minimum take obligations for *some* plants. This is primarily a consequence of the fact that GRID is not configured to accept

[58] Sierra Club/200, Burgess/13.

more than one dispatch price, and cannot recognize volumetric constraints, so the Company must find a way to align consumption with the cost structure. However, Sierra Club makes this observation when speaking specifically about the BCC supplemental pricing tier, which is used as the incremental cost for the Jim Bridger plant in GRID. In this TAM, the Jim Bridger incremental price required no adjustment at any point, as the BCC supplemental price easily satisfies the volumetric requirements of both the base supply contract and the base mine plan.

Q. Is PacifiCorp's supplemental pricing at BCC above the average cost?

A. No. The supplemental tier of pricing reflects the cost of incremental production, which is lower than average costs because of the existence of fixed costs at the mine. This is common in industries with high barriers to entry, of which the utility and mining industries are undoubtedly a part. However, as noted above, the relationship between average and incremental costs is irrelevant when making short-run economic decisions, which are the only sort of decisions contemplated in the TAM, as it is a one-year study to determine NPC based on existing obligations, constraints, contracts, and resources.

Q. Do you agree with Sierra Club's continued insistence that "it is generally favorable for the model to select an alternative resource that can displace coal from BCC, even if the alternative is more expensive on a per unit basis that the BCC supplemental coal supply"?[59]

A. No. Sierra Club's argument generally revolves around the supposition that fixed costs are not, in fact, fixed. This is why Sierra Club's analysis largely relies on a

[59] Sierra Club/200, Burgess/18.

study that was provided by the Company in discovery with a caveat that the "absence of a re-averaging step that is inclusive of all cost components invalidates this study as a means by which to determine the impact of the proposed change on net power costs (NPC)."[60] The scenario Sierra Club requested essentially denies GRID important information, first by failing to provide an accurate incremental price, then by withholding the impact of fixed costs, which cannot be accounted for separately in GRID and must be accounted for in the cost averaging step.

Q. Sierra Club argues that its analysis in Confidential Table 2[61] proves its point. Do you agree?

A. No. As explained in Mr. Ralston's testimony, Sierra Club's Confidential Table 2 is another example of Mr. Burgess mischaracterizing fixed costs as variable costs. Mr. Ralston's testimony demonstrates that when fixed costs are incorporated into the cost forecast, the course of action recommended by Sierra Club results in increased costs.

2. Operational Dispatch Practices

Q. Sierra Club continues to claim that the "extreme difference" between the BCC supplemental price and the BCC base price results in an over forecast of Jim Bridger generation in iOpt and Power Costs Incorporated (PCI).[62] Do you agree with this assessment?

A. No. Sierra Club agrees that "modest differences" between forecast and actual dispatch in energy trader forecasts are "expected and reasonable."[63] However, Sierra

[60] Sierra Club/103, PacifiCorp Response to Sierra Club Data Request 2.22.
[61] Sierra Club/200, Burgess/19.
[62] Sierra Club/200, Burgess/31.
[63] Sierra Club/200, Burgess/31.

Club suggests that the problem here is a matter of degree based on the supplemental price of BCC coal. But Sierra Club failed to acknowledge the unique position of Jim Bridger and its ability to provide reliable power to maintain system integrity throughout PacifiCorp's system. Essentially, Sierra Club repackages its core argument that PacifiCorp should model Jim Bridger using average cost (which Mr. Burgess attempts to rebrand as "long-run marginal cost" in his direct testimony)[64] rather than incremental costs, which is contrary to actual operations and economic principles as stated above.

Q. Sierra Club continues to advocate for an accounting of energy trader fuel cost assumptions in the PCAM as part of this proceeding, arguing that "it does not make sense to construct artificial procedural barriers to gathering relevant information on PacifiCorp's dispatch practices."[65] Please respond.

A. The TAM is meant to be a limited assessment of NPC for the next year and costs associated with customer transition to direct access. The limited nature of this proceeding is essential given the compressed timeline of the docket and the fact that it must be completed to ensure accurate power costs for the following year. Increasing the number of issues in this docket without asking for changes to the TAM Guidelines in a general rate case frustrates the purpose of the TAM as an expedited, limited docket.

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[64] Sierra Club/100, Burgess/29
[65] Sierra Club/200, Burgess/32.

Q. Sierra Club also cites a 2019 Portland Business Journal article to argue that the Company's integration into an "organized regional energy market" could "exacerbate" the alleged inaccurate dispatch practices.[66] Do you agree with this assessment?

A. No. First, the dispatch practices to which Sierra Club objects are perfectly in keeping with basic economic principles. Second, the "organized regional energy market" in question is the EIM, which PacifiCorp already participates in. The only change being contemplated is the formation of an extended day-ahead market. There is no reason to believe that this will require a modified dispatch approach by the Company.

3. Economic Cycling

Q. You provided a hypothetical example of economic cycling in your reply testimony to illustrate how rarely economic cycling would occur for Jim Bridger due to startup costs.[67] Did Sierra Club find this example plausible?

A. Yes, although Sierra Club disagreed that it was representative of all possible system conditions Jim Bridger would face in a given year.

Q. Did Sierra Club provide any additional analysis to support its contention?

A. Yes. Sierra Club extended its previous analysis of a five-day period to cover iOpt/PCI forecasts from January 2020 through May 2021. Sierra Club concluded that this analysis shows many instances where economic losses were greater than the startup costs of any individual units. It provided this data in Confidential Table 4.[68]

[66] Sierra Club/200, Burgess/32.
[67] PAC/400, Staples/58-59.
[68] Sierra Club/200, Burgess/34.

Q. Have you reviewed Sierra Club's analysis?

A. Yes.

Q. Is Sierra Club's testimony deceptive by not discussing critical alterations that they made to the data that was provided by the Company?

A. Yes. Sierra Club's testimony makes two critical alterations to data that was provided by the Company.

First, in his "analysis," the actual fuel consumption as calculated by iOpt was replaced with Mr. Burgess' estimation, derived using static heat rates that do not account for the varying levels of efficiency across the feasible output range.

Second and far more consequentially, the fuel costs themselves, which are calculated by iOpt and PCI and were provided in discovery, have been recalculated using a price of $[redacted] per one million British Thermal Units (MMBtu), which appears to be some kind of average cost estimate. However, the average price for Jim Bridger fuel in (1) the final 2020 TAM study was $[redacted] per MMBtu; (2) the final 2021 TAM study was $[redacted] per MMBtu; and (3) this year's update study was $[redacted] per MMBtu. Thus, it would appear that Mr. Burgess' arbitrarily high number of $[redacted] per MMBtu was not based on any average cost information used by the Company in any of the last three TAM proceedings.

Mr. Burgess then misleadingly labeled his newly created fuel cost as "Unit 1 pac incr cost" or "Unit 2 pac incr cost" (and so on) in his work papers. Again, this "fuel cost" is not an incremental cost provided by PacifiCorp. In reviewing the information provided through discovery, I was able to back into the *actual* incremental cost included because the iOpt output files that Mr. Burgess received from the Company include both fuel cost and fuel consumption. The incremental prices that Mr. Burgess was made aware of through discovery ranged from $[redacted] to $[redacted] per MMBtu.

In summary, Mr. Burgess included a fuel cost that the Company has not used in any of the last three TAM proceedings (either on an average or incremental basis) and attempted to label it as a Company input. He performed a similar operation in the PCI analysis, which he labeled "upd coal price." None of this was explained or even alluded to in the testimony offered by Mr. Burgess.

Q. Why is this sort of misrepresentation problematic?

A. In my opinion, if Mr. Burgess wishes to alter data provided to him in discovery, he should mention those alterations in testimony. Using what appears to be an estimate of average costs, particularly average costs that haven't been used by the Company in forecasting costs during the last three TAM proceedings, is inappropriate in all sorts of ways, the most important of which is that average costs include fixed cost components. In other words, in using those costs and comparing them to the start charge, Mr. Burgess is conducting an avoided cost analysis in a way that fails to acknowledge that not all costs are avoidable. It is also worth noting that in doing so he is directly contradicting his own testimony, which concedes at least some level of fixed costs at BCC (though he refuses to use the amount provided to him in discovery by the Company).

Q. Do you agree with his conclusions?

A. Of course not. The analysis is based upon data that has been inappropriately altered.

4. Miscellaneous Issues

Q. Sierra Club argues that your example of marginal costs relating to a car trip is inaccurate and instead argues that because NPC is forward looking it "must consider all of the relevant costs."[69] Do you agree?

A. No. Sierra Club hinges this claim on the idea that the year of the mine plan and the year in which the TAM takes place are different.[70] For the sake of clarity, "the year of the mine plan" in my testimony[71] refers to the actual calendar year to which the mine plan applies. It is not intended to imply that all costs are variable until January 1, 2022, at which point many become fixed.

Q. Sierra Club also agrees with Staff that future Informational Runs should be conducted without "take or pay" adjustments.[72] Do you continue to believe that any Informational Run without such adjustments would lack informational value?

A. Yes, for the reasons stated above in my response to Staff on the same topic.

III. MARKET CAPACITY LIMITS

A. Response to AWEC's Rebuttal Testimony on Market Caps

Q. Does AWEC continue to reject the Company's market cap proposal?

A. Yes. However, AWEC has also proposed a complex alternative methodology targeted to specific markets if the Commission fundamentally agrees with PacifiCorp that its "sales to market (also referred to as off-system sales) are being over-forecast."[73]

[69] Sierra Club/200, Burgess/35.
[70] Sierra Club/200, Burgess/35; 14-16.
[71] PAC/400, Staples/ 54; 15-16.
[72] Sierra Club/200, Burgess/39.
[73] Order No. 20-473 at 130.

Q. Does AWEC agree with PacifiCorp and CUB that the Company is consistently under recovering NPC in the TAM?

A. No. AWEC argues that the Company has been "fully recovering" all of its costs "when viewed on a holistic basis" based on PacifiCorp's total return on equity.[74]

Q. Is this the proper way to assess under recovery of NPC in the TAM?

A. No. AWEC's argument ignores the indisputable fact that the Company has under recovered NPC in 12 of the last 13 years by focusing on PacifiCorp's total earnings. This sort of comparison is irrelevant in the TAM, which focuses on NPC forecasting, not the Company's total return on equity.

Q. Does AWEC believe that any modeling changes should be reserved for next year's TAM?

A. Yes. AWEC believes that "it would be more fruitful" to maintain the status quo and wait until the Aurora model is implemented to resolve modeling issues because "it is impossible to know whether any analysis adopted in this proceeding will be relevant going forward."[75] There is nothing fruitful about maintaining a broken status quo.

1. AWEC's Quantitative Analysis

Q. Does AWEC believe that the Company's analysis in its reply testimony adequately supports its market cap proposal?

A. No. AWEC finds PacifiCorp's illustrative example of the flaws of maximum market caps in Figure 3 irrelevant primarily because GRID's market caps "function as the maximum amount of sales that can be made in a particular time period at a particular

[74] AWEC/200, Mullins/3-4.
[75] AWEC/200, Mullins/4-5.

market hub, not the average."[76] Therefore, AWEC argues that a maximum value market cap does not prove that the model will produce sales above the historical average.

Q. Do you agree with the statement?

A. No. I presented evidence in Figures 4 and 5 of my reply testimony that the short-term sales variance in GRID has become more extreme in nearly every year since 2012.[77] AWEC's argument does not reflect actual modeling conditions in GRID over the past 10 years. In addition, it is an oversimplification to say that the only thing to be gleaned from Figure 3 is that "the maximum of a set of numbers exceeds the average of the same set of numbers."[78] The most important takeaway from Figure 3 is that the assumptions that the maximum value is representative of normal conditions and that all maximums will coincide in the future overestimates aggregate system liquidity, which leads to an over-forecast of sales.

Q. AWEC claims to have conducted its own analysis supporting its argument in Confidential Table 2 and Table 3.[79] Have you reviewed this analysis?

A. Yes.

Q. What is your conclusion?

A. The historical transactions that AWEC has compared its projections to are the numbers upon which the market caps are based, which is actual transaction data. However, it is actual transaction data that includes booked out volumes. This is sensible for the purpose of deriving market caps because it represents the amount of

[76] AWEC/200, Mullins/6.
[77] PAC/400, Staples/22-24.
[78] AWEC/200, Mullins/6, 9-10.
[79] AWEC/200, Mullins/6-9.

volume that could be transacted in those markets; however, applying the data as AWEC does fails to recognize that PacifiCorp did not deliver all of those volumes and did not gain all of the revenues associated with those sales. As I explain below, this is inappropriate and would not produce a forecast that would more closely match the Company's actual expectation regarding off-system sales and the associated revenues.

Q. Does AWEC critique the Company's analysis of historical sales?

A. Yes. AWEC believes that PacifiCorp's comparisons of sales in Figures 4 and 5 are "inaccurate and invalid" because they have not been adjusted for bookouts.[80]

Q. Specifically, AWEC argues that because the GRID model NPC report includes both the "imputed offsetting volumes associated with the DA/RT" and sales encompassing an "exchange transaction with the Public Service Commission of Colorado (PSCo), PacifiCorp's analysis results in an invalid comparison.[81] Do you agree?

A. To an extent. The PSCo Exchange is correctly noted by Mr. Mullins as a valid candidate to be carved out of the forecast, given that an examination of historical behavior indicates that the Company books out the volumes with great frequency. The Day-Ahead/Real-Time (DA/RT) adjustment is also composed of volumes that will be booked out in some measure. I would not concede that the DA/RT should be considered nothing but bookouts, but rather than identify the appropriate proportion, I propose to simply remove it completely from the historical forecasts for illustrative purposes. However, even when accepting the premise of AWEC's arguments, the

[80] AWEC/200, Mullins/9.
[81] AWEC/200, Mullins/10-11.

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analysis plainly shows that AWEC overstates the significance of these purported adjustments.

[redacted]

Q. Please describe the table above.

A. Confidential Figure 3 above shows that even after removing all DA/RT Adjustment sales volumes and removing all PSCo Exchange volumes from the historical forecasts, GRID has still historically over-forecasted sales by an average of approximately 4.2 million MWh per year.

Q. What was the volumetric impact of the Company's proposed change to market caps in this year's TAM proceeding?

A. The use of average market caps reduced total sales by approximately [redacted] MWh.

Q. Does this indicate that the change in market caps will not fully solve the issue of sales over-forecasting in the TAM?

A. Yes. The Company believes that the problem of over-forecasting sales will continue even after this change, but at every step along the way, we have tried to behave in a manner consistent with both the letter and the spirit of the Commission's order in the last GRC. The Company still proposes to use gross volumes in the calculation of the market caps, and continues to only impose market caps at illiquid locations. Simply put, this is not a revolutionary change, and it fits perfectly within the confines of the Commission's direction to explore straightforward changes to limits in order to remedy the under-recovery of NPC.

Q. AWEC has also conducted a comparative analysis of historical sales included in the actual NPC report to the level of sales forecasted in GRID, with an adjustment removing bookouts.[82] Why does Figure 3 not match AWEC's analysis?

A. AWEC's analysis attempts to compare GRID outputs and actual sales after adding back booked out volumes. However, this misses the point. Doing so would imply that GRID is designed to account for bookouts in its forecast, which is not the case. As demonstrated above, even when allowing for AWEC's position that the DA/RT adjustment will result in nothing but booked out volumes and removing the PSCO exchange, we arrive at a forecast history that indicates a vast overestimation of sales. GRID's balancing purchases and sales simply do not include bookouts because the purchase price is set higher than the sales price, which prevents GRID from finding economic opportunities to buy and sell at the same location in the same hour.

[82] AWEC/200, Mullins/15-16; *see also* AWEC/202.

2. AWEC's Alternative Proposal

Q. Does AWEC acknowledge that GRID overestimates short-term firm sales at some of the Company's market hubs?

A. Yes. AWEC acknowledges that GRID tends to overestimate sales at the California-Oregon Border and Four Corners market hubs. AWEC also points out that GRID under-forecasts sales at Mead likely because of transmission constraints.[83]

Q. Based on this information, has AWEC proposed an alternative modeling approach that seeks to adjust these GRID inaccuracies?

A. Yes. AWEC proposes setting a market cap through iterative GRID runs so that the model produces results that equal, but do not exceed, the historical average for any period.[84] AWEC summarizes this approach in Table 4-REB.[85]

Q. Using this alternative method, what is the adjustment to NPC?

A. The impact of this alternative approach produces a $[redacted] decrease to NPC system-wide, or a $[redacted] reduction Oregon-allocated.[86]

Q. Does the Company have any reservations about AWEC's proposed alternative method?

A. Yes. While PacifiCorp appreciates AWEC's alternative proposal, the Company believes that the complicated iterative approach needed to employ this method is cumbersome and not in the spirit of the Commission's order, which recommended straightforward inputs or adjustments rather than "complex new adjustments."[87] In addition, AWEC's proposal suffers from the drawback of being measured against

[83] AWEC/200, Mulllins/17.
[84] AWEC/200, Mullins/17.
[85] AWEC/200, Mullins/19.
[86] AWEC/200, Mullins/19.
[87] Order No. 20-473 at 130.

historical sales figures that haven't had booked out volumes removed, as noted above. Ultimately, PacifiCorp believes that its original approach aligns best with the Commission's directive.

Q. Would the Company endorse using this updated methodology in this year's TAM?

A. No. In addition to the above-mentioned concerns about whether the methodology closely matches the direction received from the Commission and whether it would ultimately produce a truly accurate forecast, there is an additional question of timing for this year's TAM proceeding. The Company is unlikely to receive an order until late October, leaving very little time to implement and carry out the approach prior to the indicative November filing. That creates an additional hurdle to AWEC's proposed methodology.

B. <u>Response to Staff's Rebuttal Testimony on Market Caps</u>

Q. Has Staff's position on PacifiCorp's proposed market capacity limits changed since the Company filed its reply testimony?

A. No. Staff maintains that the Company's proposal is (1) poorly supported, (2) poorly timed, and (3) based on a misinterpretation of the Commission's directive in Order No. 20-473.[88] Staff asserts that any change to market caps is premature without an exploration of the "*many* ways" to address the Company's overestimation of off-system sales in GRID.[89]

[88] *In the Matter of PacifiCorp, dba Pacific Power, Request for a General Rate Revision*, Docket No. UE 374, Order No. 20-473 at 128-131 (Dec. 18, 2020) (addressing PacifiCorp and parties requested changes to the TAM and PCAM mechanisms in the Company's last general rate case).
[89] Staff/1200, Dlouhy/2.

Q. Does Staff provide any alternative recommendations to address GRID overestimation of off system sales?

A. Yes. Staff now believes "it is possible that the current 'maximum of averages' approach is not the optimal method for forecasting off-system sales."[90] In its place, Staff proposes to use a so-called "third quartile of averages" approach for the 2022 TAM. Staff claims that this approach maintains "true market depth" while addressing PacifiCorp's concerns.[91] Under this approach, Staff revises its adjustment down to approximately $[redacted] Oregon-allocated.

Q. Is the name of Staff's alternative proposal misleading?

A. Yes. Staff labels this approach as a "third quartile" approach, but this label inaccurately describes Staff's methodology. Staff's approach blends the third and fourth quartiles of PacifiCorp's historical off-system sales to arrive at a "third quartile." To conduct an accurate third quartile approach, Staff would simply need to choose the second highest of the four observations. Staff's current proposal only slightly reduces market caps from the "maximum of averages" approach and does not adequately address the Company's persistent over estimation of off-system sales.

Q. What is your general response to Staff's arguments?

A. Staff's position disregards the near-certain reality that maintaining current market caps will contribute to significant NPC under recovery for PacifiCorp in 2022. Contrary to Staff's claims, PacifiCorp's proposed change is (1) supported by eight years of data showing that the current market caps approach consistently overestimates power costs, (2) timed to ensure more accurate power cost estimates for

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[90] Staff/1200, Dlouhy/12.
[91] Staff/1200, Dlouhy/2-3.

2022, and (3) complies with the Commission's directive to propose straightforward changes to address sales over-forecasting.

The current "maximum of averages" methodology, the Company's "average of averages" proposal, and Staff's alternative are all variations on the same basic construct. The issue is ultimately whether the particular approach places sufficient limits on market sales to accurately simulate actual market depth and liquidity. The Company's actual experience since 2013 shows that the market caps under the maximum of averages approach are woefully insufficient and Staff's alternative—which makes only minor adjustments to the current approach—is similarly inadequate. Returning to the original "average of average" approach for 2022 is the best option for realistically modeling actual market conditions for off-system sales.

3. History of the "Maximum of Averages" Approach

Q. Does Staff question the validity of the "average of averages" approach proposed by PacifiCorp?

A. Yes. Staff argues that despite PacifiCorp's persistent overestimation of off-system sales since the Commission adopted the "maximum of averages" approach in docket UE 245, the Commission should not return to the "average of averages" approach "that was known to be problematic."[92]

Q. Is this an accurate characterization of the Commission's resolution of the issue in the 2013 TAM, docket UE 245?

A. No. While Staff and AWEC (then the Industrial Customers of Northwest Utilities (ICNU)) made arguments to remove market caps entirely in the 2013 TAM, the

[92] Staff/1200, Dlouhy/7.

Commission observed that "market caps have always been part of GRID and neither Staff nor ICNU persuasively argue that GRID, as it currently exists, no longer needs market caps."[93] Critically, the Commission noted that neither Staff nor ICNU asserted that GRID would "function perfectly" without market caps.[94] Even though the Commission—at the time—believed that the "maximum of averages" approach was "superior" to the "average of averages" approach, it did not foreclose the issue for future TAMs or affirmatively state that the "average of averages" approach was fundamentally flawed or unreasonable.[95] Instead it made clear that properly functioning market caps were important for accurately modeling NPC in GRID.

Q. Did the Commission address problems related to the "maximum of averages" approach in PacifiCorp's last general rate case?

A. Yes. The Commission directly addressed the significance of its 2013 market cap decision in the Company's 2020 General Rate Case, docket UE 374. After recognizing the importance of the DA/RT adjustment to improve PacifiCorp's forecast,[96] the Commission further stated that the Company could continue to improve the accuracy of its forecast with "straightforward inputs or limits," citing the over forecast of off-system sales as a place for forecast improvement.[97] The Commission signaled a willingness to address PacifiCorp's persistent under recovery of NPC through TAM adjustments that improve forecast accuracy.

[93] *In the Matter of PacifiCorp, dba Pacific Power, 2013 Transition Adjustment Mechanism*, Docket No. UE 245, Order No. 12-409 at 7 (Oct. 29, 2012) [hereinafter 2013 TAM].
[94] 2013 TAM, Order No. 12-409 at 7.
[95] *See* 2013 TAM, Order No. 12-409 at 7-8.
[96] Order No. 20-473 at 130.
[97] *See* Order No. 20-473 at 130.

Q. Staff argues that Order No. 20-473 allows PacifiCorp to address these modeling changes at any time between now and 2024.[98] Does this fact preclude the Company addressing the issue in this proceeding?

A. No. Staff's underlying point here seems to be that because PacifiCorp will switch to Aurora in 2023, the adjustment to market caps is unnecessary in 2022. But as I stated in my reply testimony, this argument is irrelevant in this proceeding, where the Company will not be able to accurately forecast NPC in GRID without this change to market caps.[99] Nothing in Order No. 20-473 prohibits the Company from addressing its persistent under recovery in this proceeding and the Commission's order does not require PacifiCorp to under recover in 2022 simply because COVID-19 delayed its switch to Aurora.

Q. Staff also points out that the Company does not need to "restrict" itself to "simple methods" under the Commission's directive.[100] Do you agree?

A. Not really. The Commission stated that PacifiCorp "does not necessarily need to develop a complex new adjustment," signaling that PacifiCorp could expeditiously propose remedial modeling changes.[101] Furthermore, Staff contradicts its own point when it boasts that the proposed alternative "third quartile of averages" approach is an "easily replicated" "simple solution" to over estimation of off-system sales.[102]

[98] Staff/1200, Dlouhy/10.
[99] PAC/400, Staples/20-21.
[100] Staff/1200, Dlouhy/10.
[101] *See* Order No. 20-473 at 130.
[102] Staff/1200, Dlouhy/16.

Q. Finally, Staff suggests that because the Commission did not directly mention market caps and did mention "other options" in Aurora, the Company should not address market caps in this proceeding.[103] Is this an accurate reading of Order No. 20-473?

A. No. Once again Staff seems to be suggesting that the Commission's directive requires PacifiCorp to wait until it switches to Aurora to address its under recovery of NPC through over forecasting of off-market sales. Nothing in the Commission's order suggest such a conclusion. In fact, the Commission points out that the TAM is an *annual filing* and "PacifiCorp has an annual opportunity to improve its forecast."[104] While the Company can continue to explore further opportunities to improve NPC forecasting through the upcoming Aurora workshops and subsequent TAMs, it is also entitled to forecast accurate NPC for 2022.

4. Analytical Support for PacifiCorp's Proposal

Q. What does Staff believe that the Company would need to adequately support the adoption of the "average of averages" approach?

A. Staff believes that PacifiCorp would need to provide a time series of (1) actual off-system sales from 2013 to 2020, (2) projected off-system sales from 2013 to 2020 using the "maximum of averages" approach, and (3) projected off-system sales from 2013 to 2020 using the "average of averages" approach. According to Staff, the data would also need to be run through Aurora in this proceeding to make the change precedential.[105]

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[103] Staff/1200, Dlouhy/11.
[104] Order No. 20-473 at 130.
[105] Staff/1200, Dlouhy/8.

Q. Has PacifiCorp provided any of this information already in this proceeding?

A. Yes. The Company has provided a time series of actual off-system sales and a comparison of these sales to projected off-system sales using the "maximum of averages" approach to show the "gross over-estimation of the sales benefit" Staff found in its similar study in docket UE 374.[106]

Q. Why hasn't PacifiCorp conducted a time series of each GRID run from 2013 to 2020 using the "average of averages" approach?

A. Running such a series of studies would be onerous and would not provide additional analytical insight. As shown in Figure 4 of my reply testimony, sales have been consistently over-forecasted over the course of the past eight years. As shown in Figure 3 above, even removing the portions of the forecast that AWEC contends will eventually be booked out still results in a large over-forecast of sales. Reducing market caps and reducing the sales forecast by definition as a result of that reduction to market caps would have inherently made the forecasts more accurate. As discussed above, the change to market caps proposed by PacifiCorp in this proceeding will likely reduce the amount of the sales over-forecasted, but is almost certain not to eliminate it completely.

Q. Would running these time series through Aurora provide any relevant information for this proceeding?

A. No. Aurora is not at issue in this proceeding and any runs through Aurora would have no bearing on NPC forecasts for 2022. Once again, the Company should not be

[106] Docket No. UE 374, Staff/2400, Gibbens/19-22.

forced to over-forecast off-system sales in this proceeding because it expects to shift to a new model in 2023.

Q. Staff also claims that PacifiCorp's responses to data requests have not helped Staff support their position.[107] Please respond.

A. The Company made plain in its response to Staff Data Request 15 that the information contained therein was not comparable to the actual purchase and sales data provided in response to Staff Data Requests 2 and 4 (a fact that Dr. Dlouhy acknowledged in his rebuttal testimony).[108] The Company is required to answer the questions asked of it, not the questions it would prefer were being asked. We may sometimes include comments like the one in response to Staff Data Request 15 as a means by which to inform Staff of potential issues with their approach, but we do not know with any certainty how they plan to use the data so we do so with the hope that Staff will follow up in another request, ask for a supplemental response, or simply request a brief phone call to discuss the relevant details. PacifiCorp strives to make our interactions with Staff as productive as possible. In this case, Staff simply made no attempt to address something that the Company made them aware of in the response we provided.

Q. Staff believes that the data supplied by the Company in Data Request 15 "points to a completely different result" than PacifiCorp's analysis in Table 4 of your testimony.[109] Can you resolve this discrepancy?

A. Yes. As pointed out in my reply testimony, bookout volumes do not belong in an

[107] Staff/1200, Dlouhy/11-12.
[108] Staff/1200, Dlouhy/ 11, 10-13
[109] Staff/1200, Dlouhy/12.

analysis comparing forecasted sales to actual sales. Delivered sales volumes are the most useful point of comparison.

5. The "Third Quartile of Averages" Approach

Q. How does Staff describe its alternative "third quartile of averages" approach?

A. Staff supports "using the third quartile of the four most recently available relevant averages for each trading hub, each month, and differentiated by on- and off-peak hours."[110] Staff then averages the highest and second highest observed averages to reach its proposed market cap.

Q. Does this approach accurately describe what you would consider a third quartile approach?

A. No. It is not a third quartile approach, which would simply be selecting the second highest of the four values.

Q. Staff suggests that this approach "will lead to a market cap that is greater than or equal to the 'average of averages' approach."[111] Do you agree?

A. Yes; but using Staff's methodology for the market cap will be much closer to the "maximum of averages" approach rather than the "average of averages" approach. Staff seems to suggest that its approach is an equal compromise between the Company and Staff's positions. In reality, Staff simply seeks to blend the two most extreme values instead of using the single most extreme value, as it has proposed in the past.

Q. Is Staff's approach more accurate than the one proposed by PacifiCorp?

A. No. As demonstrated above, even if one accepts AWEC's position on the DA/RT

[110] Staff/1200, Dlouhy/14.
[111] Staff/1200, Dlouhy/15.

adjustment and PSCo Exchange contracts, adjusting those out of the GRID forecast still results in a historical over-forecast of sales that dwarfs the impact of the proposal put forth by the Company in this case. Accepting Staff's methodology would do virtually nothing to address the issue highlighted in the Commission's order.

6. Miscellaneous Issues

Q. Staff also points out that the Company's acknowledgement that the "average of averages" approach is used in other states in which PacifiCorp operates has no bearing on its use in Oregon.[112] Do you agree?

A. No. While I do agree that another state commission's evaluation is not precedential in Oregon, it does lend credibility to the "average of averages" approach as a workable, time-tested methodology. If the "average of averages" approach was so restrictive and problematic that it resulted in gross under estimation of off-system sales, other states would have likely addressed this issue long ago.

Q. Staff also argues that the whole intent of the Company market cap is to "model what can *possibly* be sold at a market hub" making the most extreme outlier the most appropriate value.[113] Do you agree with this characterization of market caps?

A. No, and this suggestion goes against the entire purpose of NPC forecasts in the TAM, which is to accurately model PacifiCorp's actual NPC.[114] As the Commission noted in the 2013 TAM, the primary purpose of market caps is to simulate real-world inputs that GRID cannot account for, such as load requirements, transmission constraints,

[112] Staff/1200, Dlouhy/19.
[113] Staff/1200, Dlouhy/19-20.
[114] *In the matter of PacifiCorp, dba Pacific Power, 2017 Transition Adjustment Mechanism*, Docket No. UE 307, Order No. 16-482 at 2-3 (Dec. 20, 2016) (stating that the goal of the TAM is to "achieve an accurate forecast of PacifiCorp's [NPC] for the upcoming year.").

and market illiquidity.[115] Staff's suggestion here goes against the core assumptions of TAM modeling.

Q. Does PacifiCorp's criticisms of Staff's and AWEC's analysis contradict each other, as Staff suggests?[116]

A. My reply testimony did not accept the validity of AWEC's claims that the DA/RT adjustment represents a large amount of booked out volumes that are included in the forecast. Further consideration has made me willing to acknowledge that the DA/RT adjustment does include at least some volumes that will eventually be booked out. As demonstrated above, the impact of reducing the forecast by a like amount is immaterial to the question of whether GRID over-forecasts sales as a result of the historical market cap approach required in the TAM.

C. Response to CUB's Rebuttal Testimony on Market Caps

Q. Has CUB's position on market caps changed since its direct testimony?

A. Somewhat. CUB still acknowledges that the Company has been over forecasting off-system sales in prior TAM proceedings but believes that the Company's suggestion that market caps are the only culprit is misguided.[117] CUB argues that other factors also help explain the Company's over forecasting, including weather variances and PacifiCorp's shifting resource base. CUB also believes that the development and expansion of the EIM and the Company's focus on sales volumes and revenues overstates the claimed forecast errors. Finally, CUB argues that any 2020 data will be unreliable because of the COVID-19 pandemic.[118]

[115] 2013 TAM, Order No. 12-409 at 7.
[116] Staff/1200, Dlouhy/21.
[117] CUB/200, Jenks/2-3.
[118] CUB/200, Jenks/3.

Q. CUB argues that GRID's assumption of normalized weather could also account for some of the inaccuracies in forecasting off-system sales.[119] Do you agree?

A. Yes, but creating an adjustment for non-normalized weather conditions is practically impossible. Making weather adjustments would also be much more complicated than the Company's proposal and would have a less than straightforward modeling effect.

Q. CUB also argues that while GRID over forecasts sales more than purchases, the difference becomes less severe if one accounts for the larger margins for short-term sales.[120] Is this accurate?

A. No. The primary issue with CUB's analysis is that Mr. Jenks attempts to calculate a *margin* on sales and compare that to the *expense* (not margin) for purchases. This is not an apples-to-apples comparison. Further, the expenses incurred to generate for the purpose of making sales are quite specific, not average. The generation costs avoided by making purchases are similarly specific, assuming that generation costs are even being avoided (many purchases are needed to serve load). Those specific expenses and avoided costs are both included in the GRID forecasts for each TAM year, and a comparison of those forecasts to actual NPC yields a series of large under-recoveries, driven in part by overestimated sales revenue forecasts that cannot be realized in actual operations.

Q. CUB argues that PacifiCorp's data showing over-forecasting of short-term sales needs to be examined in the context of the EIM.[121] Is this necessary?

A. No. Equating EIM exports with market sales could logically close the gap between

[119] CUB/200, Jenks/3-5.
[120] CUB/200, Jenks/6-7; *see also* CUB/102.
[121] CUB/200, Jenks/7-8.

the Company's observed historical sales and the much higher levels of sales that it has been forced to forecast because of the maximum market cap approach. However, including both the sales revenue for GRID sales forecasts that are later replaced by EIM transfers, *and* including the EIM benefits themselves would constitute a double counting of benefits. One or the other would still need to be reduced after the proposed re-examination. The Company's approach of simply revising the market cap input with the goal of producing a more reasonable sales forecast is more straightforward and allows for easier back testing against actuals in order to assess the methodologies.

Q. CUB argues that the Company's 2020 data "is of very little use for predicting future sales and purchases."[122] Do you agree?

A. No. Every year has supply and demand fluctuations that can make profound differences on power costs during that year. As described above, historically low gas prices in 2016 and high hydro generation in 2017 led to unpredicted economic cycling. In contrast, low hydro generation in 2021 coupled with a historic northwest heat wave led to high power costs despite the ongoing COVID-19 pandemic. The intent of using historical averages in power forecasting is to ensure that while anomalies will invariably occur, the average should serve to normalize NPC. If CUB and other stakeholders begin to pick and choose which years they would like to include in a "average," the numbers will be skewed by definition.

[122] CUB/200, Jenks/8-9.

Q. CUB continues to believe that PacifiCorp is poised to increase short-term power sales because of the Company's shift towards renewables compared to other power sellers on the system.[123] Do you agree?

A. No. The Company has made investments in renewable resources to cost-effectively serve customers, not to operate them as merchant generators.

Q. But CUB points out that the Company's new wind resources in the 2022 TAM led to [redacted] MWh of balancing sales, earning the Company $[redacted].[124] Has CUB taken these numbers out of context?

A. Yes. First and foremost, those resources exist to cost effectively serve customers. In the study cited by CUB, GRID generated a small portion of the savings [redacted] on a total-company basis) by increasing sales, but the overall savings from the inclusion of the Energy Vision 2020 resources was approximately $[redacted] on a total-company basis, indicating that other factors far outweigh the incremental sales revenue. One factor that deserves consideration when examining the Company's recent sales history is that PacifiCorp is hardly the only entity introducing large amounts of renewable generation to its system. When the Company's resources are exceeding forecast, it is quite likely that the resources of others are performing in a similar fashion, which can have the effect of depressing prices and making sales a less attractive or economic option.

Q. Based on all these competing factors, does CUB propose an alternative to the Company's market cap proposal?

A. Yes. CUB believes that the "average of averages" approach is too restrictive and

[123] CUB/200, Jenks/9.
[124] CUB/200, Jenks/10.

therefore proposes setting the market cap at the mid-point between the "average of averages" and the "maximum of averages."[125]

Q. Does this approach suffer from flaws similar to Staff's "third quartile of averages" approach?

A. Yes. As mentioned above in my response to Staff's proposal, the evidence would suggest that even the approach favored by the Company is unlikely to fully address the over-forecasting of sales in the TAM, so an approach that has a smaller impact on the forecast will, by definition, be less accurate.

IV. OTHER ADJUSTMENTS

A. <u>QF Contracts</u>

Q. Does Staff continue to support an adjustment to QF power costs based on historical overestimation?

A. Yes. Staff continues to believe that its $[redacted] Oregon-allocated adjustment is "sound and reasonable."[126] While Staff acknowledges that the Company's QF overestimations have reduced since the adoption of the contract delay rate, it maintains that a [redacted] overestimation "is still significant for the purpose of setting TAM rates."[127]

Q. Staff claims that PacifiCorp is not using the best information available to forecast its QF costs.[128] Is that accurate?

A. No. For renewable QF contracts with a nameplate capacity greater than 10 megawatts, the Company forecasts capacity based on the P50 in the QF

[125] SUB/200, Jenks11-12.
[126] Staff/1100, Zarate/3.
[127] Staff/1100, Zarate/2.
[128] Staff/1100, Zarate/3.

developer's interconnection agreement for all facilities that have connected in the past four years. Once the facility has been interconnected for four years, the Company forecasts capacity based on the actual history of the QF.

Q. Is Staff's approach consistent with how PacifiCorp forecasts generation for its owned renewable facilities?

A. No. PacifiCorp forecasts owned generation based on the developer's forecast during the first four years of operation, then uses a historical capacity factor thereafter. Staff has taken the position in the past that the P50 forecasts should be used (which decreases NPC) for owned generation,[129] while arguing against their use for QFs (which tend to increase NPC). This is inconsistent and appears calibrated to opportunistically reduce NPC. If these developer forecasts represent the best information that is available to PacifiCorp regarding their owned resources, then that information should be applied to QFs as well in the TAM forecast.

B. EIM Benefits Allocation Factor

Q. Does Staff have any concerns about the Company's proposal to shift from System Generation to System Energy for PacifiCorp's EIM benefit allocation factor?

A. Yes. Staff believes that this change is unwarranted because (1) it represents a new issue raised too late into the case, (2) it should be addressed in the Company's MSP, (3) the change conflicts with the 2020 Interjurisdiction Cost Allocation Protocol, and (4) PacifiCorp does not adequately support the recommendation.[130]

[129] *In the Matter of PacifiCorp d/b/a Pacific Power, 2020 Transition Adjustment Mechanism*, Docket No. UE-356, Staff/100, Gibbens/23 (June 10, 2019).
[130] Staff/1000, Enright/6-9.

Q. Do any other parties oppose the shift?

A. Yes. CUB also believes that addressing this shift late in this year's TAM sets bad precedent and believes that the allocation process should be addressed through the MSP.[131]

Q. After reviewing the testimony of Staff and CUB, has PacifiCorp reconsidered its proposal?

A. Yes. The Company will remove this EIM allocation factor shift from this proceeding and plans to address this issue in PacifiCorp's next round of MSP negotiations.

Q. Was this change reflected in the July Reply Update?

A. No; while PacifiCorp quantified the impact of this proposed change in my reply testimony, this change was not reflected in the NPC calculation in my reply testimony and exhibits. Therefore, the removal of this EIM allocation factor shift has no impact on the proposed NPC in PacifiCorp's reply update.

C. Other Revenues

Q. Has AWEC's position changed regarding its adjustment to Other Revenues?

A. Not substantially. AWEC continues to believe that fly-ash sales should be included in the TAM because fly-ash sales are directly tied to the production at PacifiCorp's coal plants. However, AWEC notes that the Company seems to have increased its revenue on fly-ash for the first quarter of 2021. Accordingly, AWEC suggests using fly-ash sales from the prior year to calculate NPC in the TAM forecast.[132]

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[131] CUB/200, Jenks/22-24.
[132] AWEC/200, Mullins/24-25.

Q. Have any other parties addressed this issue or the Company's inclusion of the Stateline Contract expiration?

A. Yes. Staff is concerned that PacifiCorp "has taken a selective approach in updating its Other Revenues" in contravention of the 2011 TAM, Order No. 10-363.[133] Nonetheless, Staff would support the $3 million reduction to Other Revenues due to the expiration of the Stateline Contract on the condition that the Company ensure any new contacts that may increase Other Revenues are included in the indicative November filing.[134]

Staff also supports AWEC's position on fly-ash sales. Staff believes that the inclusion of fly-ash in the TAM (1) ensures benefits are captured fully and (2) reduces the risk of sales underestimation in PacifiCorp's next general rate case.[135] Staff also supports AWEC's proposal to base fly-ash sales off calendar year 2020 for the 2022 TAM, adjusted to reflect Cholla's retirement.[136]

Q. What was the purpose of the other revenue adjustment?

A. Staff first proposed the other revenue adjustment in the 2011 TAM and described it the following way:

> In non-general rate case years, in which only a power cost update is filed, the Company is allowed to include or update the costs associated with new resources, contracts and existing facilities for services that it is providing to a third party entity. With the update or inclusion of these new costs there can also be a corresponding change in revenue. If these revenues are accounted for as "other revenue" they currently go un-recognized in rates. This mismatch between updating costs and revenues is unreasonable.[137]

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[133] *In the Matter of PacifiCorp, dba Pacific Power, 2011 Transition Adjustment Mechanism*, Docket No. UE 216, Order No. 10-363, App'x A at 4 (Sept. 16, 2010).
[134] Staff/1000, Enright/11.
[135] Staff/1000, Enright/11.
[136] Staff/1000, Enright/11.
[137] *In the Matter of PacifiCorp, d/b/a/ Pacific Power, 2011 Transition Adjustment Mechanism*, Docket UE-216, Staff/100, Brown/14 (May 12, 2010).

The other revenue adjustment was specifically intended to match updated costs for services provided to a third-party entity with the revenues it receives for those services. The settlement in the 2011 TAM identified the specific revenue items to which this situation applied.[138] The only remaining one of these contracts is the Stateline Contract, which expires this year.

Q. Staff contends that the update related to the Stateline Contract is a selective update to other revenues. Do you agree?

A. No. It was an error in the direct filing that occurred because of a miscommunication. PacifiCorp is simply correcting that error.

Q. Didn't the Commission already include fly-ash sales in the Company's revenues as part of the 2020 General Rate Case?

A. Yes. As AWEC acknowledges, the Commission included $[redacted] in fly-ash sales in base rates in the Company's last general rate case.[139]

Q. Is fly-ash traditionally included in the Federal Energy Regulatory Commission (FERC) accounts identified in the TAM guidelines?

A. No. Attachment A identifies the specific subset of FERC accounts that are included in the TAM. PacifiCorp does not reflect fly-ash sales in those accounts. In fact, fly-ash sales are reflected in FERC account 456.

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[138] Order No. 10-363, Appendix A, Exhibit B.
[139] AWEC/200, Mullins/24.

Q. If fly-ash sales were not contemplated to be included in other revenues and are not included in the FERC accounts identified in the TAM guidelines, is it appropriate to include them now?

A. No. Just like many other elements in base rates, fly-ash production (but not necessarily fly-ash sales) may fluctuate based on how often our plants generate. However, there are other elements like chemical costs that fluctuate based on generation that still remain in base rates. Identifying a single variable to pull out of base rates to include in the TAM, when it has not traditionally been included in the past solely because it will reduce NPC is not appropriate.

Q. Does the Commission normally remove revenues from base rate calculations and into the TAM outside of a change to TAM guidelines in a general rate case?

A. No. As discussed in my reply testimony, if AWEC and now Staff want to shift calculations of fly-ash sales into the TAM they must do so through a change to the TAM Guidelines in the Company's next general rate case.

Q. What is your recommendation?

A. The Commission should reject Staff's and AWEC's proposal.

V. 2023 TAM FILING DATE

Q. Does CUB continue to recommend moving up the 2023 TAM filing date?

A. Yes, although CUB changed its proposed filing date change to March 1, 2022, instead of January 15, to allow the Company to implement the December 31 forward price curve in its NPC forecasts.[140]

[140] CUB/200, Jenks/21-22.

Q. Do any other parties support CUB's proposal?

A. Yes. Staff also supports an early filing of the 2023 TAM based on the Company's switch to Aurora.[141] However, Staff supports an earlier filing date of February 14, 2022, based on the Company's filing of the 2021 TAM on that date last year.[142] Staff then recommends allowing the Company to file an update on April 1, 2022 with updated inputs.

Q. Would an April 1, 2022 update be appropriate?

A. No. An April 1, 2022 update would use the same price curve as a filing in February or March, and as a result would provide limited value.

Q. Is PacifiCorp amendable to holding workshops on the new model for stakeholders?

A. Yes, but there is a trade-off between pre-filing workshop and moving up the schedule. As the schedule moves earlier in the year, the Company is less able to hold workshops before the TAM is filed. As a result, workshops may need to occur after PacifiCorp files the TAM. Additionally, the administrative burden of Staff and CUB's recommended course of action remains a point of concern for the Company.

Q. Does an earlier TAM filing place a greater difficulty on PacifiCorp's ability to calculate the transition adjustment?

A. Yes. If the Commission were to order PacifiCorp to make an earlier TAM filing, PacifiCorp would request that it still provide the Transition Adjustment sample calculation for Schedule 294 on May 15 and the Transition Adjustment calculation for

[141] Staff/1000, Enright/13.
[142] Staff/1000, Enright/14.

Schedule 296 on May 30 consistent with an unadjusted TAM schedule. With the transition to Aurora, these calculations would require some additional time.

Q. Does that conclude your surrebuttal testimony?

A. Yes.

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Q. Are you the same Douglas R. Staples who adopted the initial testimony of David G. Webb and submitted reply testimony in this proceeding on behalf of PacifiCorp dba Pacific Power (PacifiCorp or the Company)?

A. Yes.

I. PURPOSE AND SUMMARY OF TESTIMONY

Q. What is the purpose of your testimony?

A. The purpose of my surrebuttal testimony is to respond to the rebuttal testimony of the Public Utility Commission of Oregon (Commission) Staff (Staff) witnesses Ms. Moya Enright, Ms. Kathy Zarate, Dr. Curtis Dlouhy, Mr. Scott Gibbens, Ms. Rose Anderson, and Mr. John Fox; Alliance of Western Energy Consumers (AWEC) witness Mr. Bradley G. Mullins; Oregon Citizens' Utility Board (CUB) witness Mr. Bob Jenks; and Sierra Club witness Mr. Ed Burgess as it relates to the Company's modeling of net power costs (NPC) for the 2022 Transition Adjustment Mechanism (TAM).

Q. Please summarize your surrebuttal testimony.

A. I demonstrate the reasonableness of PacifiCorp's approach to forecasting NPC in the 2022 TAM through the following points:

- The modeling of the CSAs at Dave Johnston, Craig, Hunter, and Huntington should be found prudent.
- PacifiCorp's Market Cap Methodology as proposed is a simple and straightforward modeling adjustment that more accurately reflects the market depth that is available to the Company for market sales. The adjustments to this proposal filed by parties would decrease the accuracy of NPC.

- PacifiCorp recommends that the Commission reject Staff's and Sierra Club's proposed changes to the "informational run" as such changes would assume away costs that are incurred in actual operations. These assumptions would essentially render the study meaningless.
- The Company will remove the proposal to change the EIM allocation factor from this proceeding and plans to address this issue in PacifiCorp's next round of Multi-State Protocol (MSP) negotiations
- With regards to the other adjustments proposed by the parties, PacifiCorp recommends the Commission reject: (1) Staff adjustments regarding qualifying facility (QF) forecasting, and (2) AWEC's adjustment on other revenues.

Q. Please identify the other witnesses providing surrebuttal testimony supporting the 2022 TAM.

A. In addition to my testimony, the following additional witnesses are providing surrebuttal testimony in support of the Company's 2022 TAM filing:

- Mr. Michael G. Wilding, Vice President, Energy Supply Management, responds to Staff's adjustment on the Nodal Pricing Model.
- Mr. Dana M. Ralston, Senior Vice President of Thermal Generation and Mining, testifies in support of the prudence of the Company's CSAs and responds to Sierra Club's concerns on costs at Bridger Coal Company (BCC).
- Mr. Seth Schwartz, President, Energy Ventures Analysis, Inc., responds to the concerns raised by Sierra Club.
- Ms. Mary M. Wiencke, Vice President, Transmission Regulation and Market Policy, provides testimony to address the transfer of Renewable Energy Credits.

- Mr. Robert M. Meredith, Director, Pricing and Cost of Service, responds to the concerns raised by the Small Business Utility Advocates and addresses the calculation of the Consumer Opt-Out Charge in response to the testimony of Calpine Energy Solutions, LLC (Calpine).

Q. Has PacifiCorp changed its net power cost (NPC) recommendation in its surrebuttal testimony?

A. No.

II. FORECASTING COAL GENERATION

A. <u>Response to Staff 's and CUB's Recommendations on Coal Unit Forecasting, Economic Cycling, and Prudence of CSAs.</u>

Q. Please provide a general overview of Staff's recommendations to which you are responding in this section.

A. Staff has accepted the Company's responses regarding the burn rate at Naughton,[1] the minimum take modeling for Wyodak,[2] and the prudence of the Huntington CSA. But Staff has expanded its recommendations on other issues. Staff still asserts that PacifiCorp's recent CSAs for the Dave Johnston and Craig plants should be deemed imprudent because the Company did not model economic cycling during CSA negotiations, and Staff has now reversed its original position and added the Hunter CSA to that adjustment.[3] As a remedy, Staff proposes that the minimum take levels in these three CSAs be disregarded in the TAM. While this would not result in any adjustment in this case (because all plants are being dispatched above their

[1] Staff/1500, Fox/6.
[2] Staff/1500, Fox/7.
[3] Staff/1400, Anderson/4.

minimums), it could produce a significant disallowance in the future if, for any reason, plant dispatch is reduced.

Staff also now recommends that the Commission provide guidance to PacifiCorp for future prudence reviews of CSAs.[4] Specifically, for the first time, Staff recommends that the Company (1) "should provide an in-depth explanation of how the Company considered the potential for economic cycling" when negotiating minimum take levels, (2) must supply evidence that it "reached out to co-owners to request they consider [economic] cycling," (3) must provide a chart "comparing the MMBtus from the generation forecast used to inform contract negotiations to the number of MMBtus that PacifiCorp will be contractually obligated to pay for at each plant," and (4) "should provide workpapers for the generation forecasts used to inform negotiations on each new coal contract introduced" in each future TAM filing.[5]

Staff also adopts Sierra Club's recommendation to require the Company to provide copies of its highly confidential CSAs and affiliate mine plans in future TAM filings, and CUB's proposal requiring the Company to conduct an additional study that closes Jim Bridger Unit 1 for the entirety of quarter two or, alternatively, "identify economic cycling opportunities across PacifiCorp's system" in a new Economic Cycling Study.[6] Finally, Staff still asserts that the modeling of the Informational Run should exclude liquidated damages and "take or pay" provisions.[7]

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[4] Staff/1400, Anderson/7-8.
[5] Staff/1400, Anderson/5-6.
[6] Staff/1400, Anderson/17-18.
[7] Staff/1500, Fox/5.

Q. Please provide a general response to Staff's testimony on forecasting coal generation.

A. Without analytical support, Staff posits that economic cycling will significantly reduce coal burns and minimum take requirements across PacifiCorp's system and reduce costs to customers. Staff largely ignores PacifiCorp's evidence that economic cycling has, at most, *de minimis* economic benefit for PacifiCorp's customers.[8] In recommending that the Commission find the CSAs at Dave Johnston, Craig, and Hunter imprudent, Staff discounts the actual modeling PacifiCorp conducted, creates and retroactively applies an entirely new prudence standard contrary to current Commission precedent, and ignores the fact that the Generation and Regulation Initiative Decision Tool (GRID) model dispatches each of these plants well above their contractual minimums in studies that include economic cycling, confirming that the forecasted generation volumes are reasonably required to serve load.

1. History of Economic Cycling and Minimum Take Provisions in PacifiCorp's TAMs

Q. Has the Commission ever ordered PacifiCorp to model economic cycling of its coal plants to support execution of a CSA or demonstrate the reasonableness of its proposed NPC?

A. No. To the contrary, this issue was fully litigated in the 2018 TAM, docket UE 323, and the Commission rejected Staff's recommendation to require PacifiCorp to model economic cycling for its coal units.[9]

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[8] PAC/100, Web/17.
[9] *In the Matter of PacifiCorp, dba Pacific Power, 2018 Transition Adjustment Mechanism*, Docket No. UE 323, Order No. 17-444 at 10 (Nov. 1, 2017) [hereinafter 2018 TAM].

Q. Has the Commission ever concluded that a CSA was imprudent because it included a minimum take provision?

A. No. This issue was also recently litigated in the 2017 TAM, docket UE 307, and the Commission rejected CUB's prudence challenge to the minimum take provisions in the CSAs for the Jim Bridger, Huntington and Dave Johnston plants.[10]

Q, Has the Commission ever prohibited PacifiCorp from modeling the impact of a minimum take provision in a CSA as Staff proposes in this case?

A. No. This issue was also fully litigated in the 2017 TAM, and the Commission rejected Staff's challenge to the Company's iterative approach to ensure minimum take volumes are properly captured in GRID.[11]

Q. On what basis did the Commission reject Staff's recommendation to require the modeling of economic cycling at PacifiCorp's coal-fired facilities in the 2018 TAM?

A. The Commission agreed with PacifiCorp that the GRID model "reflects historic, normalized practices regarding economic shutdowns of coal units."[12] However, the Commission also recognized that "PacifiCorp's actual operations may be changing under evolving market conditions" and directed the Company to discuss economic cycling at a coal workshop.[13]

[10] *In the Matter of PacifiCorp, dba Pacific Power, 2017 Transition Adjustment Mechanism*, Docket No. UE 307, Order No. 16-482 at 9 (Dec. 20, 2016) [hereinafter 2017 TAM].
[11] 2017 TAM, Order No. 16-482 at 11.
[12] 2018 TAM, Order No. 17-444 at 11.
[13] *Id.*

Q. Have PacifiCorp's actual operations changed since the 2018 TAM with respect to economic cycling?

A. No. The Company economically cycled a limited number of coal plants in 2016 and 2017 due to historical anomalies in natural gas pricing and hydro generation. Since this time, the Company has not economically cycled coal plants at any significant level because of higher natural gas prices, lower hydro generation, and lower minimum operating levels at coal-fired facilities. In addition to those considerations, the continued addition of renewable resources into the Company's generation fleet requires the presence of significant online dispatchable resource capacity to integrate and reliably serve load with those new resources.

Q. Did the removal of the "must run" settings in GRID in this case far overstate the Company's actual economic cycling in light of these constraints?

A. Yes. For example, by removing must run settings in the 2021 TAM, GRID forecast [redacted] total avoided run hours through July, of which approximately [redacted] hours were not dictated by forced, planned, or maintenance outages. In actuality, through July of 2021, when coal plants have been historically allowed to conduct limited cycling, the Company had only [redacted] hours of offline time ([redacted] percent of forecast) that was not attributable to forced, planned, or maintenance outages. To be clear, 2021 has been fairly unusual due to abnormally low hydro conditions, but it is difficult to imagine that this year would have played out the way GRID projected it to, even if it had been closer to normal.

Q. Has the Company been pursuing a strategy that allows it to reduce coal generation more effectively and reliably than through economic cycling?

A. Yes. This is evident in the Company's initial filing in this case, which demonstrated a $114 million reduction in coal costs as compared to the 2021 TAM due to lower coal generation. Of this amount, only $[redacted] is attributable to the removal of the must run setting and economic cycling. In actual operations, the Company has achieved this significant reduction in coal generation largely by a combination of adding new renewable generation and reducing minimum stable run levels at PacifiCorp's coal generation facilities.[14] As described in Mr. Daniel J. MacNeil's reply testimony, the inclusion of these renewable resources requires the online displacement of coal generators to support and integrate ever-increasing amounts of non-dispatchable generation. Coal generators have the greatest ability to reduce output during low-price periods owing to the reduction in minimum stable run levels pursued by the Company over the past several years.[15] This approach is better calibrated to reduce coal generation but makes cycling in actual operations more difficult to achieve.

Q. Can you provide an example that demonstrates the efficacy of the Company's strategy as compared to economic cycling for reducing coal generation?

A. Yes. In the 2022 TAM modeling, the impact of removing Energy Vision 2020 resources from the system was an [redacted] in coal generation of approximately [redacted] megawatt-hours (MWh) (about [redacted] percent),[16] while reinstating the must run condition only [redacted] coal generation by approximately [redacted] MWh

[14] A chart showing how these minimums have reduced over time was provided in my reply testimony. PAC/400, Staples/60.
[15] PAC/700, MacNeil/4
[16] PAC/100, Webb/28.

(about [redacted] percent).[17] In addition to being more impactful and more supportive of system reliability, the Company's approach can be enacted in actual operations. On the other hand, coal cycling is difficult to achieve in actual operations because of reliability concerns.

Q. Has the Company incorporated limited economic cycling into its coal forecast modeling as part of a non-precedential settlement?

A. Yes. In the 2019 TAM, docket UE 339, PacifiCorp entered into a partial stipulation with Staff, AWEC, CUB, and Calpine Solutions[18] to model economic cycling for (1) majority-owned units, (2) that do not participate in the Energy Imbalance Market (EIM), and (3) are not under operational constraints precluding economic shutdowns.[19] The stipulation limited the cycling period from February 1 to May 31 and operated by removing the must run setting for the limited facilities.[20]

Q. What were the results of this limited modeling of economic cycling?

A. Even the limited economic cycling allowed in GRID during the 2019 and 2020 TAMs allowed for more economic cycling than realized in actual operations due to the model's perfect foresight and the Company's implementation of low minimum operating levels for its coal-fired facilities. Specifically, the Company showed that in the 2019 TAM, GRID forecast [redacted] hours of offline time and approximately [redacted] avoided MWh. But in actual operations, PacifiCorp only achieved [redacted] hours of offline time and approximately [redacted] avoided MWh.[21]

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[17] PAC/100, Webb/17.
[18] *In the Matter of PacifiCorp, dba Pacific Power, 2019 Transition Adjustment Mechanism*, Docket No. UE 339, Order No. 18-421, App'x A at 6 (Oct. 26, 2018) [hereinafter 2019 TAM].
[19] 2019 TAM, PAC/100, Wilding/35.
[20] 2019 TAM, PAC/100, Wilding/35.
[21] Docket No. UE 375, PAC/500, Webb/19-20.

Q. Did PacifiCorp later agree to expand economic cycling for coal forecast modeling in a second nonprecedential settlement related to the transition to Aurora?

A. Yes. In a partial stipulation in the 2021 TAM, docket UE 375, the Company agreed to remove all must run settings as a part of the transition to Aurora and to hold quarterly calls in 2021 to provide information on the dispatch of its coal facilities and market conditions.[22]

2. Response to Staff's Recommendations Regarding Economic Cycling

Q. Staff recommends that PacifiCorp's CSAs should be deemed imprudent unless the Company models economic cycling according to Staff's new proposed standards prior to contract execution.[23] Would modeling economic cycling as Staff proposes appreciably reduce generation to below minimum take commitment levels?

A. No. While I am not an expert on CSA negotiations, the modeling of economic cycling in GRID over the past four years has shown that economic cycling has a minimal impact on coal generation forecasts. Even taking GRID's inflated numbers for predicted economic cycling in this and previous TAMs, the generation [redacted] from economic cycling has only resulted in a small percent [redacted] in coal burn (less than [redacted] percent in the initial filing in this case).

[22] *In the Matter of PacifiCorp, dba Pacific Power, 2021 Transition Adjustment Mechanism*, Docket No. UE 375, Order No. 20-392, App'x A at 6, 8 (Oct. 30, 2020) [hereinafter 2021 TAM].
[23] Staff/1400, Anderson/4.

Q. Staff recommends a prudence disallowance for the Company's Dave Johnston CSAs because "PacifiCorp must evaluate economic cycling at its coal plants."[24] Does Staff cite any precedent supporting such a disallowance?

A. No, nor does Staff reconcile the directly relevant Commission precedent outlined above. Staff's assertion that "a full assessment of economic cycling on PacifiCorp's system as a whole is needed before PacifiCorp signs its coal supply agreements" is contrary to previous TAM orders.[25] While PacifiCorp voluntarily agreed to explore economic cycling for calculating its NPC in two stipulations as part of the give and take of settlement negotiations, the Commission has never stated nor implied that this is now a prerequisite to execution of a prudent CSA—especially when it remains out of sync with PacifiCorp's actual approach to optimizing its system.

Q. Does the Commission's prudence standard support Staff imposing its newly announced CSA standards to CSAs executed last year?

A. No. Staff's *ex post facto* position that the Company should have modeled economic cycling according to the new CSA standards Staff announced in its rebuttal testimony violates the Commission's prudence standard. As I understand it, this standard requires review of the facts and circumstances at the time of the execution of the CSAs, prohibits hindsight review and retroactive application of new standards, and requires only that the Company acted in an objectively reasonable manner.[26]

[24] Staff/1400, Anderson/10.
[25] Staff/1400, Anderson/10.
[26] 2017 TAM, Order No. 16-482 at 6 (In a prudence review, [the Commission] look[s] at the objective reasonableness of a decision at the time it was made, considering the information then available to the utility.").

Q. Regardless, did the Company allow economic cycling of Dave Johnston for its model runs informing CSA negotiations?

A. Yes. After filing its reply testimony, the Company continued to review the modeling that supported execution of the Dave Johnston CSAs. The Company determined that this modeling did in fact allow Dave Johnston to economically cycle.

Q. Does Staff concede that the Dave Johnston plant is unlikely to cycle because of the plant's low dispatch cost?[27]

A. Yes. While Staff recognizes that Dave Johnston "is unlikely to be elected for economic cycling because of its relatively low cost," it still contends that the CSAs should be deemed imprudent based on standards the Commission has never previously adopted.[28] As detailed more thoroughly in Mr. Ralston and Mr. Schwartz's testimony, the Commission should reject Staff's recommendation.

Q. Staff also suggests that the Craig CSA should be disallowed even though the minimum take levels for Craig "[redacted]"[29] How do you respond?

A. This recommendation also appears contrary to the Commission's prudence standard of objective reasonableness. Modeling economic cycling for Craig would not have changed the minimum take provisions in the Craig CSA, which are already low and relatively flexible. Furthermore, as explained in the testimony of Mr. Ralston, Craig would likely never economically cycle in actual operations because the plant is jointly

[27] Staff/1400, Anderson/10.
[28] Staff/1400, Anderson/11.
[29] Staff/1400, Anderson/10 (Staff has marked this statement as highly confidential, PacifiCorp would redesignate this statement confidential).

owned.[30] While Staff finds this response "unconvincing," it has provided no evidence to counter this operational reality that could never be captured in the GRID model.[31] A follow-up analysis of cycling at Craig using the business plan base study as a starting point indicates that projected generation was approximately [redacted] percent [redacted] with cycling enabled, further demonstrating that cycling does not materially alter projected generation at the Company's coal facilities. Allowing cycling at Craig would still have supported the volumetric requirements of the CSA.

Q. Does Staff continue to view the Hunter modeling as "robust and appropriate," as Staff testified in its rebuttal testimony?[32]

A. No. Staff has changed its position and now contends that the Hunter CSA is imprudent because the Company did not "assess whether economic cycling at any of its coal plants can reduce costs for ratepayers while maintaining reliability and other system requirements."[33] As described in the reply testimony of Mr. MacNeil, PacifiCorp modeled the economic cycling of Hunter before executing the CSA as a part of its analysis.[34] Staff now claims that PacifiCorp's analysis was insufficient—even though Staff previously praised this analysis. Mr. Ralston addresses Staff's retroactive approach to modeling economic cycling in his surrebuttal testimony. Suffice it to say, Staff's shifting position on the prudence of the Hunter CSA demonstrates that Staff's prudence standard is new and novel, and not one that PacifiCorp could have reasonably been aware of at the time it executed the CSA.

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[30] PAC/600, Ralston/15-16.
[31] Staff/1400, Anderson/10.
[32] Staff/700, Anderson/18.
[33] Staff/1400, Anderson/11.
[34] PAC/700, MacNeil/3-4 ("Hunter Units 1 and 2 were allowed to cycle in the spring, consistent with assumptions previously used in Oregon TAM Filings.")

Q. Did Staff address the limited cycling that PacifiCorp allowed during the Hunter CSA modeling?

A. No. Staff seems to suggest that all coal units must be allowed to cycle, year-around, in any modeling for a prudent CSA, irrespective of the Company's actual operations and reliability concerns. As explained in the reply testimony of Mr. MacNeil, the Company employed a reasonable amount of economic cycling in its GRID analysis to support the Hunter CSA.[35]

Q. Staff also believes that "without studying the economic cycling outcome for each of its coal plants, PacifiCorp's estimate of the optimal level of generation at any of its dispatchable plants will be inaccurate, and therefore the Company cannot optimally set its minimum take levels in any of its coal contracts."[36] Do you agree with this reasoning?

A. No. First of all, as described in the testimony of Mr. Ralston, the Company does not unilaterally set the minimum take levels in any of its coal contracts. Rather, the minimum take levels are negotiated with coal suppliers along with other key contract terms. Further, as detailed above, modeling economic cycling during CSA negotiations would have a *de minimis* effect on the coal generation forecast and minimum take levels. As the Company has explained in this proceeding and consistently over the past five years, the Company's increased renewable generation, reduced minimum operating levels, and reduced hydro generation have made economic cycling much less likely across PacifiCorp's system.

[35] PAC/700, MacNeil/4-5.
[36] Staff/1400, Anderson/10.

The Commission's prudence standard "does not require perfection; just that the utility's actions were reasonable."[37] Modeling a reasonable level of economic cycling for the Dave Johnston and Hunter CSAs and forgoing this modeling for the Craig CSA was reasonable considering the lack of historical cycling across these three facilities, the low dispatch cost of Dave Johnston, and the joint ownership of Craig.

In addition, enabling a unit to cycle in isolation should produce a similar or slightly lower projected burn when compared to a study with all units permitted to cycle. The reason is that, when searching for displaceable units, a model with all units enabled for cycling may choose to displace a higher cost resource instead of the unit in question, but if only one unit can be cycled, it will be removed from service whenever it is not needed to support sales or serve load. Staff's concern that "the minimum take commitment level is kept as low as reasonably possible"[38] is misguided. The appropriate concern is whether the CSAs support safe and reliable service to customers in a least cost, least risk manner. Mr. Ralston further expands on this concept and explains how these CSAs meet this standard.

Q. Were the units in question permitted to cycle in the studies submitted in the 2022 TAM?

A. Yes. All of them cleared the minimum take commitment tiers without any adjustment required to the incremental cost, which is a further illustration of the reasonableness of the Company's modeling approach.

[37] 2017 TAM, Order No. 16-482 at 6.
[38] Staff/1400, Anderson/4.

Q. Finally, Staff continues to advocate for a follow-up economic cycling study that "seeks to identify additional opportunities of cost savings through economic cycling."[39] Does the Company agree to this proposal?

A. Consistent with the 2021 TAM settlement, a party may request a modeling run from the Company. However, it is important to note that the TAM, as a ratemaking mechanism does not drive actual operations; instead, the TAM is designed to forecast the Company's actual NPC as accurately as possible. As described above in my testimony, the TAM is already forecasting far more economic cycling than actually occurs in operations.

3. Jim Bridger Cycling Study

Q. CUB continues to assert that conducting a study on the economic cycling of Jim Bridger Unit 1 would provide more information about "the economic viability of the Company's simulated dispatch in the GRID forecast."[40] Is the Company willing to model the Jim Bridger Unit 1 economic cycling?

A. Consistent with the 2021 TAM settlement, CUB can request these assumptions in a modeling run with Aurora in the 2023 TAM. However, for the reasons stated in my reply testimony, this information may be of limited value.

[39] Staff/1400, Anderson/8.
[40] CUB/200, Jenks/12.

Q. CUB continues to argue that the Integrated Resource Plan (IRP) action plan "raised questions as to whether customers are better off with Jim Bridger Unit 1 operating in 2022 and 2023."[41] Does the IRP action plan impact NPC as forecast in the GRID model?

A. No. As CUB recognizes, the NPC GRID model is a one-year simulation of dispatched resources under normalized conditions.[42] Any long-term economic benefit the stochastic IRP model found in cycling or shutting down Jim Bridger Unit 1 does not affect how GRID models the operation of Jim Bridger Unit 1 in the 2022 TAM.

Q. CUB seems to suggest that conducting its proposed Jim Bridger Unit 1 study now "would provide additional information about the economical operation of the plant and might inform how we develop transition plans" for other coal facilities.[43] Please respond.

A. It is not clear how a modeling run that prohibits Jim Bridger Unit 1 from running would help in the development of transition plans, and it seems this may be a more appropriate issue for the IRP.

[41] CUB/200, Jenks/14.
[42] CUB/200, Jenks/15.
[43] CUB/200, Jenks/15.

4. Response to Staff's Other Recommendations

Q. Staff agrees with Sierra Club that PacifiCorp should provide copies of its highly confidential CSAs and affiliate mine plans in each TAM filing.[44] Is there a separate process for reviewing these documents?

A. Yes. While Mr. Ralston's surrebuttal testimony will elaborate on this issue, it is my understanding that these documents are already made available to parties in the TAM if requested under the TAM's modified protective order.

Q. Staff also continues to believe that the Informational Run should be exclusive of all costs associated with liquidated damages provisions or take or pay contracts.[45] Do you agree with this assessment?

A. No. I continue to believe that removing these costs that would be incurred would make the informational run meaningless because these costs cannot be avoided by the Company in actual operations.

Q. Staff believes that removing these costs would still allow the Informational Run to "provide insight into opportunities for cost savings in the future."[46] How do you respond?

A. An informational model that does not account for costs the Company would incur cannot provide insight into cost savings. In other words, any savings found in the Informational Run must be compared against the costs incurred while generating those potential savings. Eliminating costs that would be incurred if this course of

[44] Staff/1400, Anderson/6-7.
[45] Staff/1500, Fox/4-5.
[46] Staff/1500, Fox/3.

action were pursued in actual operations exaggerates any potential savings and provides no meaningful feedback to the Company or to stakeholders.

B. Response to Sierra Club's Recommendations on Coal Forecasting and Economic Cycling

1. Sierra Club's Proposed NPC Adjustment

Q. Based on Sierra Club's assertion of "inappropriate" fuel costs for Jim Bridger, does it propose an adjustment to the Company's 2022 NPC forecast?

A. Yes. Sierra Club proposes that the Commission reduce the 2022 NPC forecast by $[redacted] total company or $[redacted] Oregon-allocated.[47]

Q. Why does Sierra Club believe that such a reduction is appropriate?

A. Sierra Club bases its adjustment on the Company's GRID run that substituted average cost for marginal costs at Jim Bridger without making any further adjustments.[48]

Q. Does this model run provide an accurate estimate of NPC for 2022?

A. No. The Company provided this model run for informational purposes in response to Sierra Club's Data Request 2.22 and not as a replacement for the Company's actual 2022 TAM, which uses the marginal fuel cost for modeling all of PacifiCorp's generation resources.

Q. Sierra Club asserts that even with this adjustment the Company will be able to recover fixed costs at BCC.[49] Do you agree?

A. No. As explained in great detail in Mr. Ralston's surrebuttal testimony, Sierra Club consistently misrepresents the level of fixed costs at BCC.

[47] Sierra Club/200, Burgess/20.
[48] Sierra Club/200, Burgess/21; Sierra Club/123 (Sierra Club Data Request 2.22 Model Run).
[49] Sierra Club/200, Burgess/22.

Q. Sierra Club argues that its average cost model run's coal fuel expenditures of [redacted] for Jim Bridger will be "more than sufficient" to cover remaining costs of "scaled down BCC production and other obligations" at the plant.[50] Do you agree?

A. No. The Company's actual 2022 GRID run from the update filing projects Jim Bridger fuel costs totaling $180.6 million, creating a deficit of $[redacted] from projected NPC. In addition, as Mr. Ralston explains, Sierra Club's estimates of the scalability of BCC costs is incorrect, owing to their refusal to acknowledge the level of fixed costs that accompany mining operations.

Q. Sierra Club purports to show that "sunk costs" at Jim Bridger are "substantially lower" than its average cost model run.[51] Is this accurate?

A. No. This assumption is based on incomplete data and a misrepresentation of the Company's response to Sierra Club's Data Request 5.5(b). In this data request, the Company explained that it has already spent $[redacted] *as of April 1, 2021,* attributable to 2022 BCC production but that this cost does not account for all cost obligations the Company has for 2022 BCC coal production. Mr. Ralston addresses this issue in more detail in his surrebuttal testimony.

Q. Sierra Club's assumptions in its average cost run also require a [redacted] reduction in BCC production for 2022.[52] Is this possible considering operational constraints and reliability concerns?

A. No. As explained more thoroughly in the testimony of Mr. Schwartz and Mr. Ralston,

[50] Sierra Club/200, Burgess/23.
[51] Sierra Club/200, Burgess/23.
[52] Sierra Club/200, Burgess/24 n.39.

BCC cannot operate at a [redacted] reduced capacity and still produce coal at the same dispatch price assumed in the GRID model run because of reduced economies of scale and inefficient use of mine equipment and workforce constraints.

Q. Sierra Club believes that the Company did not address its argument that a "large portion" of fixed costs would still be recovered if PacifiCorp used average cost rather than incremental costs to model BCC costs without any post-modeling adjustments.[53] Did the Company ignore this argument?

A. No. The Company explained that it "does not use an average price as a dispatch price in short-term forecasts such as the TAM because the cost of coal in a take-or-pay volume tier is not avoidable."[54] Sierra Club's argument is also disingenuous and contrary to the purpose of the TAM. The TAM must be an accurate assessment of NPC for the forthcoming year. Sierra Club's unquantified and nebulous assertion that the Company would recover a "large portion" of its BCC costs through average costs ignores the Company's data and the fundamental ratemaking principle that PacifiCorp should have an opportunity to recover *all* of its reasonable and prudent costs. Furthermore, the re-averaging step in the Company's average cost model is essential to create an accurate NPC forecast. Rather than ignore Sierra Club's argument, the Company responded to it through a data request[55] and in my reply testimony.[56]

[53] Sierra Club/200, Burgess/5.
[54] PAC/400, Staples/52-53.
[55] Sierra Club/103, Burgess/9.
[56] PAC/400, Staples/66-67.

Q. In responding to your assertion that using average costs, instead of incremental costs, is contrary to basic economic principles, Sierra Club states that a seller's optimal price is marginal cost "only if the marginal cost is above the average cost."[57] Is this accurate?

A. No, this is simply wrong. First, a marginal cost above the average cost would indicate negative fixed costs, unless Mr. Burgess is trying to reference the diminishing marginal productivity that firms experience on the extremes of their range of production capabilities. Second, even if Mr. Burgess is attempting to make a point about marginal productivity, it is somewhat irrelevant as the marginal cost is the only factor worthy of consideration in either case. For example, if a firm can produce an item at an incremental cost of $20 and sell it for $25, it should produce and sell that item. The production and sale of that item will either defray costs or increase profits by $5. The firm's average cost has no bearing whatsoever on the decision. Consider the following example:

Figure 1

	Without Incremental Generation	With Incremental Generation
Fixed Costs	$800	$800
Variable Costs	$1,000	$1,010
Average Costs	$18	$17.92
Incremental Revenue	$0	$13
Output (MW)	100	101
Total Net Costs	$1,800	$1,797

In this scenario, the marginal cost of production is $10, which is well below the average cost of $18 per MWh—a cost scenario that Mr. Burgess believes should

[57] Sierra Club/200, Burgess/13 (emphasis omitted).

invalidate the marginal cost as an input to the decision. So long as the incremental revenue exceeds the incremental cost (in this case, incremental revenue was set to $13 in order to satisfy that condition), the decision to increase production will lower net costs.

The same is true when the incremental cost is above average cost. Consider the following example, which makes this point abundantly clear.

Figure 2

	Without Incremental Generation	With Incremental Generation
Fixed Costs	$800	$800
Variable Costs	$1,900	$1,950
Average Costs	$27	$27.23
Incremental Revenue	-	$51
Output (MW)	100	101
Total Net Costs	$2,700	$2,699

In this scenario, the marginal cost is set to $50/MWh, but the incremental revenue is $51/MWh to demonstrate that increasing production is still economically sound and cost minimizing so long as incremental revenue exceeds incremental costs, regardless of whether the incremental cost is above or below the average cost.

Q. Sierra Club also argues that marginal prices assumed in GRID are not reflective of true marginal prices because they are set to meet minimum takes.[58] How do you respond?

A. Sierra Club correctly notes that the Company uses an iterative approach to settle on an incremental pricing tier that satisfies minimum take obligations for *some* plants. This is primarily a consequence of the fact that GRID is not configured to accept

[58] Sierra Club/200, Burgess/13.

more than one dispatch price, and cannot recognize volumetric constraints, so the Company must find a way to align consumption with the cost structure. However, Sierra Club makes this observation when speaking specifically about the BCC supplemental pricing tier, which is used as the incremental cost for the Jim Bridger plant in GRID. In this TAM, the Jim Bridger incremental price required no adjustment at any point, as the BCC supplemental price easily satisfies the volumetric requirements of both the base supply contract and the base mine plan.

Q. Is PacifiCorp's supplemental pricing at BCC above the average cost?

A. No. The supplemental tier of pricing reflects the cost of incremental production, which is lower than average costs because of the existence of fixed costs at the mine. This is common in industries with high barriers to entry, of which the utility and mining industries are undoubtedly a part. However, as noted above, the relationship between average and incremental costs is irrelevant when making short-run economic decisions, which are the only sort of decisions contemplated in the TAM, as it is a one-year study to determine NPC based on existing obligations, constraints, contracts, and resources.

Q. Do you agree with Sierra Club's continued insistence that "it is generally favorable for the model to select an alternative resource that can displace coal from BCC, even if the alternative is more expensive on a per unit basis that the BCC supplemental coal supply"?[59]

A. No. Sierra Club's argument generally revolves around the supposition that fixed costs are not, in fact, fixed. This is why Sierra Club's analysis largely relies on a

[59] Sierra Club/200, Burgess/18.

study that was provided by the Company in discovery with a caveat that the "absence of a re-averaging step that is inclusive of all cost components invalidates this study as a means by which to determine the impact of the proposed change on net power costs (NPC)."[60] The scenario Sierra Club requested essentially denies GRID important information, first by failing to provide an accurate incremental price, then by withholding the impact of fixed costs, which cannot be accounted for separately in GRID and must be accounted for in the cost averaging step.

Q. Sierra Club argues that its analysis in Confidential Table 2[61] proves its point. Do you agree?

A. No. As explained in Mr. Ralston's testimony, Sierra Club's Confidential Table 2 is another example of Mr. Burgess mischaracterizing fixed costs as variable costs. Mr. Ralston's testimony demonstrates that when fixed costs are incorporated into the cost forecast, the course of action recommended by Sierra Club results in increased costs.

2. Operational Dispatch Practices

Q. Sierra Club continues to claim that the "extreme difference" between the BCC supplemental price and the BCC base price results in an over forecast of Jim Bridger generation in iOpt and Power Costs Incorporated (PCI).[62] Do you agree with this assessment?

A. No. Sierra Club agrees that "modest differences" between forecast and actual dispatch in energy trader forecasts are "expected and reasonable."[63] However, Sierra

[60] Sierra Club/103, PacifiCorp Response to Sierra Club Data Request 2.22.
[61] Sierra Club/200, Burgess/19.
[62] Sierra Club/200, Burgess/31.
[63] Sierra Club/200, Burgess/31.

Club suggests that the problem here is a matter of degree based on the supplemental price of BCC coal. But Sierra Club failed to acknowledge the unique position of Jim Bridger and its ability to provide reliable power to maintain system integrity throughout PacifiCorp's system. Essentially, Sierra Club repackages its core argument that PacifiCorp should model Jim Bridger using average cost (which Mr. Burgess attempts to rebrand as "long-run marginal cost" in his direct testimony)[64] rather than incremental costs, which is contrary to actual operations and economic principles as stated above.

Q. Sierra Club continues to advocate for an accounting of energy trader fuel cost assumptions in the PCAM as part of this proceeding, arguing that "it does not make sense to construct artificial procedural barriers to gathering relevant information on PacifiCorp's dispatch practices."[65] Please respond.

A. The TAM is meant to be a limited assessment of NPC for the next year and costs associated with customer transition to direct access. The limited nature of this proceeding is essential given the compressed timeline of the docket and the fact that it must be completed to ensure accurate power costs for the following year. Increasing the number of issues in this docket without asking for changes to the TAM Guidelines in a general rate case frustrates the purpose of the TAM as an expedited, limited docket.

[64] Sierra Club/100, Burgess/29
[65] Sierra Club/200, Burgess/32.

Q. Sierra Club also cites a 2019 Portland Business Journal article to argue that the Company's integration into an "organized regional energy market" could "exacerbate" the alleged inaccurate dispatch practices.[66] Do you agree with this assessment?

A. No. First, the dispatch practices to which Sierra Club objects are perfectly in keeping with basic economic principles. Second, the "organized regional energy market" in question is the EIM, which PacifiCorp already participates in. The only change being contemplated is the formation of an extended day-ahead market. There is no reason to believe that this will require a modified dispatch approach by the Company.

3. Economic Cycling

Q. You provided a hypothetical example of economic cycling in your reply testimony to illustrate how rarely economic cycling would occur for Jim Bridger due to startup costs.[67] Did Sierra Club find this example plausible?

A. Yes, although Sierra Club disagreed that it was representative of all possible system conditions Jim Bridger would face in a given year.

Q. Did Sierra Club provide any additional analysis to support its contention?

A. Yes. Sierra Club extended its previous analysis of a five-day period to cover iOpt/PCI forecasts from January 2020 through May 2021. Sierra Club concluded that this analysis shows many instances where economic losses were greater than the startup costs of any individual units. It provided this data in Confidential Table 4.[68]

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[66] Sierra Club/200, Burgess/32.
[67] PAC/400, Staples/58-59.
[68] Sierra Club/200, Burgess/34.

Q. Have you reviewed Sierra Club's analysis?

A. Yes.

Q. Is Sierra Club's testimony deceptive by not discussing critical alterations that they made to the data that was provided by the Company?

A. Yes. Sierra Club's testimony makes two critical alterations to data that was provided by the Company.

First, in his "analysis," the actual fuel consumption as calculated by iOpt was replaced with Mr. Burgess' estimation, derived using static heat rates that do not account for the varying levels of efficiency across the feasible output range.

Second and far more consequentially, the fuel costs themselves, which are calculated by iOpt and PCI and were provided in discovery, have been recalculated using a price of $[redacted] per one million British Thermal Units (MMBtu), which appears to be some kind of average cost estimate. However, the average price for Jim Bridger fuel in (1) the final 2020 TAM study was $[redacted] per MMBtu; (2) the final 2021 TAM study was $[redacted] per MMBtu; and (3) this year's update study was $[redacted] per MMBtu. Thus, it would appear that Mr. Burgess' arbitrarily high number of $[redacted] per MMBtu was not based on any average cost information used by the Company in any of the last three TAM proceedings.

Mr. Burgess then misleadingly labeled his newly created fuel cost as "Unit 1 pac incr cost" or "Unit 2 pac incr cost" (and so on) in his work papers. Again, this "fuel cost" is not an incremental cost provided by PacifiCorp. In reviewing the information provided through discovery, I was able to back into the *actual* incremental cost included because the iOpt output files that Mr. Burgess received from the Company include both fuel cost and fuel consumption. The incremental prices that Mr. Burgess was made aware of through discovery ranged from $[redacted] to $[redacted] per MMBtu.

In summary, Mr. Burgess included a fuel cost that the Company has not used in any of the last three TAM proceedings (either on an average or incremental basis) and attempted to label it as a Company input. He performed a similar operation in the PCI analysis, which he labeled "upd coal price." None of this was explained or even alluded to in the testimony offered by Mr. Burgess.

Q. Why is this sort of misrepresentation problematic?

A. In my opinion, if Mr. Burgess wishes to alter data provided to him in discovery, he should mention those alterations in testimony. Using what appears to be an estimate of average costs, particularly average costs that haven't been used by the Company in forecasting costs during the last three TAM proceedings, is inappropriate in all sorts of ways, the most important of which is that average costs include fixed cost components. In other words, in using those costs and comparing them to the start charge, Mr. Burgess is conducting an avoided cost analysis in a way that fails to acknowledge that not all costs are avoidable. It is also worth noting that in doing so he is directly contradicting his own testimony, which concedes at least some level of fixed costs at BCC (though he refuses to use the amount provided to him in discovery by the Company).

Q. Do you agree with his conclusions?

A. Of course not. The analysis is based upon data that has been inappropriately altered.

4. Miscellaneous Issues

Q. Sierra Club argues that your example of marginal costs relating to a car trip is inaccurate and instead argues that because NPC is forward looking it "must consider all of the relevant costs."[69] Do you agree?

A. No. Sierra Club hinges this claim on the idea that the year of the mine plan and the year in which the TAM takes place are different.[70] For the sake of clarity, "the year of the mine plan" in my testimony[71] refers to the actual calendar year to which the mine plan applies. It is not intended to imply that all costs are variable until January 1, 2022, at which point many become fixed.

Q. Sierra Club also agrees with Staff that future Informational Runs should be conducted without "take or pay" adjustments.[72] Do you continue to believe that any Informational Run without such adjustments would lack informational value?

A. Yes, for the reasons stated above in my response to Staff on the same topic.

III. MARKET CAPACITY LIMITS

A. Response to AWEC's Rebuttal Testimony on Market Caps

Q. Does AWEC continue to reject the Company's market cap proposal?

A. Yes. However, AWEC has also proposed a complex alternative methodology targeted to specific markets if the Commission fundamentally agrees with PacifiCorp that its "sales to market (also referred to as off-system sales) are being over-forecast."[73]

[69] Sierra Club/200, Burgess/35.
[70] Sierra Club/200, Burgess/35; 14-16.
[71] PAC/400, Staples/ 54; 15-16.
[72] Sierra Club/200, Burgess/39.
[73] Order No. 20-473 at 130.

Q. Does AWEC agree with PacifiCorp and CUB that the Company is consistently under recovering NPC in the TAM?

A. No. AWEC argues that the Company has been "fully recovering" all of its costs "when viewed on a holistic basis" based on PacifiCorp's total return on equity.[74]

Q. Is this the proper way to assess under recovery of NPC in the TAM?

A. No. AWEC's argument ignores the indisputable fact that the Company has under recovered NPC in 12 of the last 13 years by focusing on PacifiCorp's total earnings. This sort of comparison is irrelevant in the TAM, which focuses on NPC forecasting, not the Company's total return on equity.

Q. Does AWEC believe that any modeling changes should be reserved for next year's TAM?

A. Yes. AWEC believes that "it would be more fruitful" to maintain the status quo and wait until the Aurora model is implemented to resolve modeling issues because "it is impossible to know whether any analysis adopted in this proceeding will be relevant going forward."[75] There is nothing fruitful about maintaining a broken status quo.

1. AWEC's Quantitative Analysis

Q. Does AWEC believe that the Company's analysis in its reply testimony adequately supports its market cap proposal?

A. No. AWEC finds PacifiCorp's illustrative example of the flaws of maximum market caps in Figure 3 irrelevant primarily because GRID's market caps "function as the maximum amount of sales that can be made in a particular time period at a particular

[74] AWEC/200, Mullins/3-4.
[75] AWEC/200, Mullins/4-5.

market hub, not the average."[76] Therefore, AWEC argues that a maximum value market cap does not prove that the model will produce sales above the historical average.

Q. Do you agree with the statement?

A. No. I presented evidence in Figures 4 and 5 of my reply testimony that the short-term sales variance in GRID has become more extreme in nearly every year since 2012.[77] AWEC's argument does not reflect actual modeling conditions in GRID over the past 10 years. In addition, it is an oversimplification to say that the only thing to be gleaned from Figure 3 is that "the maximum of a set of numbers exceeds the average of the same set of numbers."[78] The most important takeaway from Figure 3 is that the assumptions that the maximum value is representative of normal conditions and that all maximums will coincide in the future overestimates aggregate system liquidity, which leads to an over-forecast of sales.

Q. AWEC claims to have conducted its own analysis supporting its argument in Confidential Table 2 and Table 3.[79] Have you reviewed this analysis?

A. Yes.

Q. What is your conclusion?

A. The historical transactions that AWEC has compared its projections to are the numbers upon which the market caps are based, which is actual transaction data. However, it is actual transaction data that includes booked out volumes. This is sensible for the purpose of deriving market caps because it represents the amount of

[76] AWEC/200, Mullins/6.
[77] PAC/400, Staples/22-24.
[78] AWEC/200, Mullins/6, 9-10.
[79] AWEC/200, Mullins/6-9.

volume that could be transacted in those markets; however, applying the data as AWEC does fails to recognize that PacifiCorp did not deliver all of those volumes and did not gain all of the revenues associated with those sales. As I explain below, this is inappropriate and would not produce a forecast that would more closely match the Company's actual expectation regarding off-system sales and the associated revenues.

Q. Does AWEC critique the Company's analysis of historical sales?

A. Yes. AWEC believes that PacifiCorp's comparisons of sales in Figures 4 and 5 are "inaccurate and invalid" because they have not been adjusted for bookouts.[80]

Q. Specifically, AWEC argues that because the GRID model NPC report includes both the "imputed offsetting volumes associated with the DA/RT" and sales encompassing an "exchange transaction with the Public Service Commission of Colorado (PSCo), PacifiCorp's analysis results in an invalid comparison.[81] Do you agree?

A. To an extent. The PSCo Exchange is correctly noted by Mr. Mullins as a valid candidate to be carved out of the forecast, given that an examination of historical behavior indicates that the Company books out the volumes with great frequency. The Day-Ahead/Real-Time (DA/RT) adjustment is also composed of volumes that will be booked out in some measure. I would not concede that the DA/RT should be considered nothing but bookouts, but rather than identify the appropriate proportion, I propose to simply remove it completely from the historical forecasts for illustrative purposes. However, even when accepting the premise of AWEC's arguments, the

[80] AWEC/200, Mullins/9.
[81] AWEC/200, Mullins/10-11.

analysis plainly shows that AWEC overstates the significance of these purported adjustments.

[redacted]

[redacted]

Q. Please describe the table above.

A. Confidential Figure 3 above shows that even after removing all DA/RT Adjustment sales volumes and removing all PSCo Exchange volumes from the historical forecasts, GRID has still historically over-forecasted sales by an average of approximately 4.2 million MWh per year.

Q. What was the volumetric impact of the Company's proposed change to market caps in this year's TAM proceeding?

A. The use of average market caps reduced total sales by approximately [redacted] MWh.

Q. Does this indicate that the change in market caps will not fully solve the issue of sales over-forecasting in the TAM?

A. Yes. The Company believes that the problem of over-forecasting sales will continue even after this change, but at every step along the way, we have tried to behave in a manner consistent with both the letter and the spirit of the Commission's order in the last GRC. The Company still proposes to use gross volumes in the calculation of the market caps, and continues to only impose market caps at illiquid locations. Simply put, this is not a revolutionary change, and it fits perfectly within the confines of the Commission's direction to explore straightforward changes to limits in order to remedy the under-recovery of NPC.

Q. AWEC has also conducted a comparative analysis of historical sales included in the actual NPC report to the level of sales forecasted in GRID, with an adjustment removing bookouts.[82] Why does Figure 3 not match AWEC's analysis?

A. AWEC's analysis attempts to compare GRID outputs and actual sales after adding back booked out volumes. However, this misses the point. Doing so would imply that GRID is designed to account for bookouts in its forecast, which is not the case. As demonstrated above, even when allowing for AWEC's position that the DA/RT adjustment will result in nothing but booked out volumes and removing the PSCO exchange, we arrive at a forecast history that indicates a vast overestimation of sales. GRID's balancing purchases and sales simply do not include bookouts because the purchase price is set higher than the sales price, which prevents GRID from finding economic opportunities to buy and sell at the same location in the same hour.

[82] AWEC/200, Mullins/15-16; *see also* AWEC/202.

2. AWEC's Alternative Proposal

Q. Does AWEC acknowledge that GRID overestimates short-term firm sales at some of the Company's market hubs?

A. Yes. AWEC acknowledges that GRID tends to overestimate sales at the California-Oregon Border and Four Corners market hubs. AWEC also points out that GRID under-forecasts sales at Mead likely because of transmission constraints.[83]

Q. Based on this information, has AWEC proposed an alternative modeling approach that seeks to adjust these GRID inaccuracies?

A. Yes. AWEC proposes setting a market cap through iterative GRID runs so that the model produces results that equal, but do not exceed, the historical average for any period.[84] AWEC summarizes this approach in Table 4-REB.[85]

Q. Using this alternative method, what is the adjustment to NPC?

A. The impact of this alternative approach produces a $[redacted] decrease to NPC system-wide, or a $[redacted] reduction Oregon-allocated.[86]

Q. Does the Company have any reservations about AWEC's proposed alternative method?

A. Yes. While PacifiCorp appreciates AWEC's alternative proposal, the Company believes that the complicated iterative approach needed to employ this method is cumbersome and not in the spirit of the Commission's order, which recommended straightforward inputs or adjustments rather than "complex new adjustments."[87] In addition, AWEC's proposal suffers from the drawback of being measured against

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[83] AWEC/200, Mulllins/17.
[84] AWEC/200, Mullins/17.
[85] AWEC/200, Mullins/19.
[86] AWEC/200, Mullins/19.
[87] Order No. 20-473 at 130.

historical sales figures that haven't had booked out volumes removed, as noted above. Ultimately, PacifiCorp believes that its original approach aligns best with the Commission's directive.

Q. Would the Company endorse using this updated methodology in this year's TAM?

A. No. In addition to the above-mentioned concerns about whether the methodology closely matches the direction received from the Commission and whether it would ultimately produce a truly accurate forecast, there is an additional question of timing for this year's TAM proceeding. The Company is unlikely to receive an order until late October, leaving very little time to implement and carry out the approach prior to the indicative November filing. That creates an additional hurdle to AWEC's proposed methodology.

B. <u>Response to Staff's Rebuttal Testimony on Market Caps</u>

Q. Has Staff's position on PacifiCorp's proposed market capacity limits changed since the Company filed its reply testimony?

A. No. Staff maintains that the Company's proposal is (1) poorly supported, (2) poorly timed, and (3) based on a misinterpretation of the Commission's directive in Order No. 20-473.[88] Staff asserts that any change to market caps is premature without an exploration of the "*many* ways" to address the Company's overestimation of off-system sales in GRID.[89]

[88] *In the Matter of PacifiCorp, dba Pacific Power, Request for a General Rate Revision*, Docket No. UE 374, Order No. 20-473 at 128-131 (Dec. 18, 2020) (addressing PacifiCorp and parties requested changes to the TAM and PCAM mechanisms in the Company's last general rate case).
[89] Staff/1200, Dlouhy/2.

Q. Does Staff provide any alternative recommendations to address GRID overestimation of off system sales?

A. Yes. Staff now believes "it is possible that the current 'maximum of averages' approach is not the optimal method for forecasting off-system sales."[90] In its place, Staff proposes to use a so-called "third quartile of averages" approach for the 2022 TAM. Staff claims that this approach maintains "true market depth" while addressing PacifiCorp's concerns.[91] Under this approach, Staff revises its adjustment down to approximately $[redacted] Oregon-allocated.

Q. Is the name of Staff's alternative proposal misleading?

A. Yes. Staff labels this approach as a "third quartile" approach, but this label inaccurately describes Staff's methodology. Staff's approach blends the third and fourth quartiles of PacifiCorp's historical off-system sales to arrive at a "third quartile." To conduct an accurate third quartile approach, Staff would simply need to choose the second highest of the four observations. Staff's current proposal only slightly reduces market caps from the "maximum of averages" approach and does not adequately address the Company's persistent over estimation of off-system sales.

Q. What is your general response to Staff's arguments?

A. Staff's position disregards the near-certain reality that maintaining current market caps will contribute to significant NPC under recovery for PacifiCorp in 2022. Contrary to Staff's claims, PacifiCorp's proposed change is (1) supported by eight years of data showing that the current market caps approach consistently overestimates power costs, (2) timed to ensure more accurate power cost estimates for

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[90] Staff/1200, Dlouhy/12.
[91] Staff/1200, Dlouhy/2-3.

2022, and (3) complies with the Commission's directive to propose straightforward changes to address sales over-forecasting.

The current "maximum of averages" methodology, the Company's "average of averages" proposal, and Staff's alternative are all variations on the same basic construct. The issue is ultimately whether the particular approach places sufficient limits on market sales to accurately simulate actual market depth and liquidity. The Company's actual experience since 2013 shows that the market caps under the maximum of averages approach are woefully insufficient and Staff's alternative—which makes only minor adjustments to the current approach—is similarly inadequate. Returning to the original "average of average" approach for 2022 is the best option for realistically modeling actual market conditions for off-system sales.

3. History of the "Maximum of Averages" Approach

Q. Does Staff question the validity of the "average of averages" approach proposed by PacifiCorp?

A. Yes. Staff argues that despite PacifiCorp's persistent overestimation of off-system sales since the Commission adopted the "maximum of averages" approach in docket UE 245, the Commission should not return to the "average of averages" approach "that was known to be problematic."[92]

Q. Is this an accurate characterization of the Commission's resolution of the issue in the 2013 TAM, docket UE 245?

A. No. While Staff and AWEC (then the Industrial Customers of Northwest Utilities (ICNU)) made arguments to remove market caps entirely in the 2013 TAM, the

[92] Staff/1200, Dlouhy/7.

Commission observed that "market caps have always been part of GRID and neither Staff nor ICNU persuasively argue that GRID, as it currently exists, no longer needs market caps."[93] Critically, the Commission noted that neither Staff nor ICNU asserted that GRID would "function perfectly" without market caps.[94] Even though the Commission—at the time—believed that the "maximum of averages" approach was "superior" to the "average of averages" approach, it did not foreclose the issue for future TAMs or affirmatively state that the "average of averages" approach was fundamentally flawed or unreasonable.[95] Instead it made clear that properly functioning market caps were important for accurately modeling NPC in GRID.

Q. Did the Commission address problems related to the "maximum of averages" approach in PacifiCorp's last general rate case?

A. Yes. The Commission directly addressed the significance of its 2013 market cap decision in the Company's 2020 General Rate Case, docket UE 374. After recognizing the importance of the DA/RT adjustment to improve PacifiCorp's forecast,[96] the Commission further stated that the Company could continue to improve the accuracy of its forecast with "straightforward inputs or limits," citing the over forecast of off-system sales as a place for forecast improvement.[97] The Commission signaled a willingness to address PacifiCorp's persistent under recovery of NPC through TAM adjustments that improve forecast accuracy.

[93] *In the Matter of PacifiCorp, dba Pacific Power, 2013 Transition Adjustment Mechanism*, Docket No. UE 245, Order No. 12-409 at 7 (Oct. 29, 2012) [hereinafter 2013 TAM].
[94] 2013 TAM, Order No. 12-409 at 7.
[95] *See* 2013 TAM, Order No. 12-409 at 7-8.
[96] Order No. 20-473 at 130.
[97] *See* Order No. 20-473 at 130.

Q. Staff argues that Order No. 20-473 allows PacifiCorp to address these modeling changes at any time between now and 2024.[98] Does this fact preclude the Company addressing the issue in this proceeding?

A. No. Staff's underlying point here seems to be that because PacifiCorp will switch to Aurora in 2023, the adjustment to market caps is unnecessary in 2022. But as I stated in my reply testimony, this argument is irrelevant in this proceeding, where the Company will not be able to accurately forecast NPC in GRID without this change to market caps.[99] Nothing in Order No. 20-473 prohibits the Company from addressing its persistent under recovery in this proceeding and the Commission's order does not require PacifiCorp to under recover in 2022 simply because COVID-19 delayed its switch to Aurora.

Q. Staff also points out that the Company does not need to "restrict" itself to "simple methods" under the Commission's directive.[100] Do you agree?

A. Not really. The Commission stated that PacifiCorp "does not necessarily need to develop a complex new adjustment," signaling that PacifiCorp could expeditiously propose remedial modeling changes.[101] Furthermore, Staff contradicts its own point when it boasts that the proposed alternative "third quartile of averages" approach is an "easily replicated" "simple solution" to over estimation of off-system sales.[102]

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[98] Staff/1200, Dlouhy/10.
[99] PAC/400, Staples/20-21.
[100] Staff/1200, Dlouhy/10.
[101] *See* Order No. 20-473 at 130.
[102] Staff/1200, Dlouhy/16.

Q. Finally, Staff suggests that because the Commission did not directly mention market caps and did mention “other options” in Aurora, the Company should not address market caps in this proceeding.[103] Is this an accurate reading of Order No. 20-473?

A. No. Once again Staff seems to be suggesting that the Commission’s directive requires PacifiCorp to wait until it switches to Aurora to address its under recovery of NPC through over forecasting of off-market sales. Nothing in the Commission’s order suggest such a conclusion. In fact, the Commission points out that the TAM is an *annual filing* and “PacifiCorp has an annual opportunity to improve its forecast.”[104] While the Company can continue to explore further opportunities to improve NPC forecasting through the upcoming Aurora workshops and subsequent TAMs, it is also entitled to forecast accurate NPC for 2022.

4. Analytical Support for PacifiCorp’s Proposal

Q. What does Staff believe that the Company would need to adequately support the adoption of the “average of averages” approach?

A. Staff believes that PacifiCorp would need to provide a time series of (1) actual off-system sales from 2013 to 2020, (2) projected off-system sales from 2013 to 2020 using the “maximum of averages” approach, and (3) projected off-system sales from 2013 to 2020 using the “average of averages” approach. According to Staff, the data would also need to be run through Aurora in this proceeding to make the change precedential.[105]

[103] Staff/1200, Dlouhy/11.
[104] Order No. 20-473 at 130.
[105] Staff/1200, Dlouhy/8.

Q. Has PacifiCorp provided any of this information already in this proceeding?

A. Yes. The Company has provided a time series of actual off-system sales and a comparison of these sales to projected off-system sales using the "maximum of averages" approach to show the "gross over-estimation of the sales benefit" Staff found in its similar study in docket UE 374.[106]

Q. Why hasn't PacifiCorp conducted a time series of each GRID run from 2013 to 2020 using the "average of averages" approach?

A. Running such a series of studies would be onerous and would not provide additional analytical insight. As shown in Figure 4 of my reply testimony, sales have been consistently over-forecasted over the course of the past eight years. As shown in Figure 3 above, even removing the portions of the forecast that AWEC contends will eventually be booked out still results in a large over-forecast of sales. Reducing market caps and reducing the sales forecast by definition as a result of that reduction to market caps would have inherently made the forecasts more accurate. As discussed above, the change to market caps proposed by PacifiCorp in this proceeding will likely reduce the amount of the sales over-forecasted, but is almost certain not to eliminate it completely.

Q. Would running these time series through Aurora provide any relevant information for this proceeding?

A. No. Aurora is not at issue in this proceeding and any runs through Aurora would have no bearing on NPC forecasts for 2022. Once again, the Company should not be

[106] Docket No. UE 374, Staff/2400, Gibbens/19-22.

forced to over-forecast off-system sales in this proceeding because it expects to shift to a new model in 2023.

Q. Staff also claims that PacifiCorp's responses to data requests have not helped Staff support their position.[107] Please respond.

A. The Company made plain in its response to Staff Data Request 15 that the information contained therein was not comparable to the actual purchase and sales data provided in response to Staff Data Requests 2 and 4 (a fact that Dr. Dlouhy acknowledged in his rebuttal testimony).[108] The Company is required to answer the questions asked of it, not the questions it would prefer were being asked. We may sometimes include comments like the one in response to Staff Data Request 15 as a means by which to inform Staff of potential issues with their approach, but we do not know with any certainty how they plan to use the data so we do so with the hope that Staff will follow up in another request, ask for a supplemental response, or simply request a brief phone call to discuss the relevant details. PacifiCorp strives to make our interactions with Staff as productive as possible. In this case, Staff simply made no attempt to address something that the Company made them aware of in the response we provided.

Q. Staff believes that the data supplied by the Company in Data Request 15 "points to a completely different result" than PacifiCorp's analysis in Table 4 of your testimony.[109] Can you resolve this discrepancy?

A. Yes. As pointed out in my reply testimony, bookout volumes do not belong in an

[107] Staff/1200, Dlouhy/11-12.
[108] Staff/1200, Dlouhy/ 11, 10-13
[109] Staff/1200, Dlouhy/12.

analysis comparing forecasted sales to actual sales. Delivered sales volumes are the most useful point of comparison.

5. The "Third Quartile of Averages" Approach

Q. How does Staff describe its alternative "third quartile of averages" approach?

A. Staff supports "using the third quartile of the four most recently available relevant averages for each trading hub, each month, and differentiated by on- and off-peak hours."[110] Staff then averages the highest and second highest observed averages to reach its proposed market cap.

Q. Does this approach accurately describe what you would consider a third quartile approach?

A. No. It is not a third quartile approach, which would simply be selecting the second highest of the four values.

Q. Staff suggests that this approach "will lead to a market cap that is greater than or equal to the 'average of averages' approach."[111] Do you agree?

A. Yes; but using Staff's methodology for the market cap will be much closer to the "maximum of averages" approach rather than the "average of averages" approach. Staff seems to suggest that its approach is an equal compromise between the Company and Staff's positions. In reality, Staff simply seeks to blend the two most extreme values instead of using the single most extreme value, as it has proposed in the past.

Q. Is Staff's approach more accurate than the one proposed by PacifiCorp?

A. No. As demonstrated above, even if one accepts AWEC's position on the DA/RT

[110] Staff/1200, Dlouhy/14.
[111] Staff/1200, Dlouhy/15.

adjustment and PSCo Exchange contracts, adjusting those out of the GRID forecast still results in a historical over-forecast of sales that dwarfs the impact of the proposal put forth by the Company in this case. Accepting Staff's methodology would do virtually nothing to address the issue highlighted in the Commission's order.

6. Miscellaneous Issues

Q. Staff also points out that the Company's acknowledgement that the "average of averages" approach is used in other states in which PacifiCorp operates has no bearing on its use in Oregon.[112] Do you agree?

A. No. While I do agree that another state commission's evaluation is not precedential in Oregon, it does lend credibility to the "average of averages" approach as a workable, time-tested methodology. If the "average of averages" approach was so restrictive and problematic that it resulted in gross under estimation of off-system sales, other states would have likely addressed this issue long ago.

Q. Staff also argues that the whole intent of the Company market cap is to "model what can *possibly* be sold at a market hub" making the most extreme outlier the most appropriate value.[113] Do you agree with this characterization of market caps?

A. No, and this suggestion goes against the entire purpose of NPC forecasts in the TAM, which is to accurately model PacifiCorp's actual NPC.[114] As the Commission noted in the 2013 TAM, the primary purpose of market caps is to simulate real-world inputs that GRID cannot account for, such as load requirements, transmission constraints,

[112] Staff/1200, Dlouhy/19.
[113] Staff/1200, Dlouhy/19-20.
[114] *In the matter of PacifiCorp, dba Pacific Power, 2017 Transition Adjustment Mechanism*, Docket No. UE 307, Order No. 16-482 at 2-3 (Dec. 20, 2016) (stating that the goal of the TAM is to "achieve an accurate forecast of PacifiCorp's [NPC] for the upcoming year.").

and market illiquidity.[115] Staff's suggestion here goes against the core assumptions of TAM modeling.

Q. Does PacifiCorp's criticisms of Staff's and AWEC's analysis contradict each other, as Staff suggests?[116]

A. My reply testimony did not accept the validity of AWEC's claims that the DA/RT adjustment represents a large amount of booked out volumes that are included in the forecast. Further consideration has made me willing to acknowledge that the DA/RT adjustment does include at least some volumes that will eventually be booked out. As demonstrated above, the impact of reducing the forecast by a like amount is immaterial to the question of whether GRID over-forecasts sales as a result of the historical market cap approach required in the TAM.

C. Response to CUB's Rebuttal Testimony on Market Caps

Q. Has CUB's position on market caps changed since its direct testimony?

A. Somewhat. CUB still acknowledges that the Company has been over forecasting off-system sales in prior TAM proceedings but believes that the Company's suggestion that market caps are the only culprit is misguided.[117] CUB argues that other factors also help explain the Company's over forecasting, including weather variances and PacifiCorp's shifting resource base. CUB also believes that the development and expansion of the EIM and the Company's focus on sales volumes and revenues overstates the claimed forecast errors. Finally, CUB argues that any 2020 data will be unreliable because of the COVID-19 pandemic.[118]

[115] 2013 TAM, Order No. 12-409 at 7.
[116] Staff/1200, Dlouhy/21.
[117] CUB/200, Jenks/2-3.
[118] CUB/200, Jenks/3.

Q. CUB argues that GRID's assumption of normalized weather could also account for some of the inaccuracies in forecasting off-system sales.[119] Do you agree?

A. Yes, but creating an adjustment for non-normalized weather conditions is practically impossible. Making weather adjustments would also be much more complicated than the Company's proposal and would have a less than straightforward modeling effect.

Q. CUB also argues that while GRID over forecasts sales more than purchases, the difference becomes less severe if one accounts for the larger margins for short-term sales.[120] Is this accurate?

A. No. The primary issue with CUB's analysis is that Mr. Jenks attempts to calculate a *margin* on sales and compare that to the *expense* (not margin) for purchases. This is not an apples-to-apples comparison. Further, the expenses incurred to generate for the purpose of making sales are quite specific, not average. The generation costs avoided by making purchases are similarly specific, assuming that generation costs are even being avoided (many purchases are needed to serve load). Those specific expenses and avoided costs are both included in the GRID forecasts for each TAM year, and a comparison of those forecasts to actual NPC yields a series of large under-recoveries, driven in part by overestimated sales revenue forecasts that cannot be realized in actual operations.

Q. CUB argues that PacifiCorp's data showing over-forecasting of short-term sales needs to be examined in the context of the EIM.[121] Is this necessary?

A. No. Equating EIM exports with market sales could logically close the gap between

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[119] CUB/200, Jenks/3-5.
[120] CUB/200, Jenks/6-7; *see also* CUB/102.
[121] CUB/200, Jenks/7-8.

the Company's observed historical sales and the much higher levels of sales that it has been forced to forecast because of the maximum market cap approach. However, including both the sales revenue for GRID sales forecasts that are later replaced by EIM transfers, *and* including the EIM benefits themselves would constitute a double counting of benefits. One or the other would still need to be reduced after the proposed re-examination. The Company's approach of simply revising the market cap input with the goal of producing a more reasonable sales forecast is more straightforward and allows for easier back testing against actuals in order to assess the methodologies.

Q. CUB argues that the Company's 2020 data "is of very little use for predicting future sales and purchases."[122] Do you agree?

A. No. Every year has supply and demand fluctuations that can make profound differences on power costs during that year. As described above, historically low gas prices in 2016 and high hydro generation in 2017 led to unpredicted economic cycling. In contrast, low hydro generation in 2021 coupled with a historic northwest heat wave led to high power costs despite the ongoing COVID-19 pandemic. The intent of using historical averages in power forecasting is to ensure that while anomalies will invariably occur, the average should serve to normalize NPC. If CUB and other stakeholders begin to pick and choose which years they would like to include in a "average," the numbers will be skewed by definition.

[122] CUB/200, Jenks/8-9.

Q. CUB continues to believe that PacifiCorp is poised to increase short-term power sales because of the Company's shift towards renewables compared to other power sellers on the system.[123] Do you agree?

A. No. The Company has made investments in renewable resources to cost-effectively serve customers, not to operate them as merchant generators.

Q. But CUB points out that the Company's new wind resources in the 2022 TAM led to [redacted] MWh of balancing sales, earning the Company $[redacted].[124] Has CUB taken these numbers out of context?

A. Yes. First and foremost, those resources exist to cost effectively serve customers. In the study cited by CUB, GRID generated a small portion of the savings [redacted] on a total-company basis) by increasing sales, but the overall savings from the inclusion of the Energy Vision 2020 resources was approximately $[redacted] on a total-company basis, indicating that other factors far outweigh the incremental sales revenue. One factor that deserves consideration when examining the Company's recent sales history is that PacifiCorp is hardly the only entity introducing large amounts of renewable generation to its system. When the Company's resources are exceeding forecast, it is quite likely that the resources of others are performing in a similar fashion, which can have the effect of depressing prices and making sales a less attractive or economic option.

Q. Based on all these competing factors, does CUB propose an alternative to the Company's market cap proposal?

A. Yes. CUB believes that the "average of averages" approach is too restrictive and

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[123] CUB/200, Jenks/9.
[124] CUB/200, Jenks/10.

therefore proposes setting the market cap at the mid-point between the "average of averages" and the "maximum of averages."[125]

Q. Does this approach suffer from flaws similar to Staff's "third quartile of averages" approach?

A. Yes. As mentioned above in my response to Staff's proposal, the evidence would suggest that even the approach favored by the Company is unlikely to fully address the over-forecasting of sales in the TAM, so an approach that has a smaller impact on the forecast will, by definition, be less accurate.

IV. OTHER ADJUSTMENTS

A. <u>QF Contracts</u>

Q. Does Staff continue to support an adjustment to QF power costs based on historical overestimation?

A. Yes. Staff continues to believe that its $[redacted] Oregon-allocated adjustment is "sound and reasonable."[126] While Staff acknowledges that the Company's QF overestimations have reduced since the adoption of the contract delay rate, it maintains that a [redacted] overestimation "is still significant for the purpose of setting TAM rates."[127]

Q. Staff claims that PacifiCorp is not using the best information available to forecast its QF costs.[128] Is that accurate?

A. No. For renewable QF contracts with a nameplate capacity greater than 10 megawatts, the Company forecasts capacity based on the P50 in the QF

[125] SUB/200, Jenks11-12.
[126] Staff/1100, Zarate/3.
[127] Staff/1100, Zarate/2.
[128] Staff/1100, Zarate/3.

developer's interconnection agreement for all facilities that have connected in the past four years. Once the facility has been interconnected for four years, the Company forecasts capacity based on the actual history of the QF.

Q. Is Staff's approach consistent with how PacifiCorp forecasts generation for its owned renewable facilities?

A. No. PacifiCorp forecasts owned generation based on the developer's forecast during the first four years of operation, then uses a historical capacity factor thereafter. Staff has taken the position in the past that the P50 forecasts should be used (which decreases NPC) for owned generation,[129] while arguing against their use for QFs (which tend to increase NPC). This is inconsistent and appears calibrated to opportunistically reduce NPC. If these developer forecasts represent the best information that is available to PacifiCorp regarding their owned resources, then that information should be applied to QFs as well in the TAM forecast.

B. <u>EIM Benefits Allocation Factor</u>

Q. Does Staff have any concerns about the Company's proposal to shift from System Generation to System Energy for PacifiCorp's EIM benefit allocation factor?

A. Yes. Staff believes that this change is unwarranted because (1) it represents a new issue raised too late into the case, (2) it should be addressed in the Company's MSP, (3) the change conflicts with the 2020 Interjurisdiction Cost Allocation Protocol, and (4) PacifiCorp does not adequately support the recommendation.[130]

[129] *In the Matter of PacifiCorp d/b/a Pacific Power, 2020 Transition Adjustment Mechanism*, Docket No. UE-356, Staff/100, Gibbens/23 (June 10, 2019).
[130] Staff/1000, Enright/6-9.

Q. Do any other parties oppose the shift?

A. Yes. CUB also believes that addressing this shift late in this year's TAM sets bad precedent and believes that the allocation process should be addressed through the MSP.[131]

Q. After reviewing the testimony of Staff and CUB, has PacifiCorp reconsidered its proposal?

A. Yes. The Company will remove this EIM allocation factor shift from this proceeding and plans to address this issue in PacifiCorp's next round of MSP negotiations.

Q. Was this change reflected in the July Reply Update?

A. No; while PacifiCorp quantified the impact of this proposed change in my reply testimony, this change was not reflected in the NPC calculation in my reply testimony and exhibits. Therefore, the removal of this EIM allocation factor shift has no impact on the proposed NPC in PacifiCorp's reply update.

C. Other Revenues

Q. Has AWEC's position changed regarding its adjustment to Other Revenues?

A. Not substantially. AWEC continues to believe that fly-ash sales should be included in the TAM because fly-ash sales are directly tied to the production at PacifiCorp's coal plants. However, AWEC notes that the Company seems to have increased its revenue on fly-ash for the first quarter of 2021. Accordingly, AWEC suggests using fly-ash sales from the prior year to calculate NPC in the TAM forecast.[132]

[131] CUB/200, Jenks/22-24.
[132] AWEC/200, Mullins/24-25.

Q. Have any other parties addressed this issue or the Company's inclusion of the Stateline Contract expiration?

A. Yes. Staff is concerned that PacifiCorp "has taken a selective approach in updating its Other Revenues" in contravention of the 2011 TAM, Order No. 10-363.[133] Nonetheless, Staff would support the $3 million reduction to Other Revenues due to the expiration of the Stateline Contract on the condition that the Company ensure any new contacts that may increase Other Revenues are included in the indicative November filing.[134]

Staff also supports AWEC's position on fly-ash sales. Staff believes that the inclusion of fly-ash in the TAM (1) ensures benefits are captured fully and (2) reduces the risk of sales underestimation in PacifiCorp's next general rate case.[135] Staff also supports AWEC's proposal to base fly-ash sales off calendar year 2020 for the 2022 TAM, adjusted to reflect Cholla's retirement.[136]

Q. What was the purpose of the other revenue adjustment?

A. Staff first proposed the other revenue adjustment in the 2011 TAM and described it the following way:

> In non-general rate case years, in which only a power cost update is filed, the Company is allowed to include or update the costs associated with new resources, contracts and existing facilities for services that it is providing to a third party entity. With the update or inclusion of these new costs there can also be a corresponding change in revenue. If these revenues are accounted for as "other revenue" they currently go un-recognized in rates. This mismatch between updating costs and revenues is unreasonable.[137]

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[133] *In the Matter of PacifiCorp, dba Pacific Power, 2011 Transition Adjustment Mechanism*, Docket No. UE 216, Order No. 10-363, App'x A at 4 (Sept. 16, 2010).
[134] Staff/1000, Enright/11.
[135] Staff/1000, Enright/11.
[136] Staff/1000, Enright/11.
[137] *In the Matter of PacifiCorp, d/b/a/ Pacific Power, 2011 Transition Adjustment Mechanism*, Docket UE-216, Staff/100, Brown/14 (May 12, 2010).

The other revenue adjustment was specifically intended to match updated costs for services provided to a third-party entity with the revenues it receives for those services. The settlement in the 2011 TAM identified the specific revenue items to which this situation applied.[138] The only remaining one of these contracts is the Stateline Contract, which expires this year.

Q. Staff contends that the update related to the Stateline Contract is a selective update to other revenues. Do you agree?

A. No. It was an error in the direct filing that occurred because of a miscommunication. PacifiCorp is simply correcting that error.

Q. Didn't the Commission already include fly-ash sales in the Company's revenues as part of the 2020 General Rate Case?

A. Yes. As AWEC acknowledges, the Commission included $[redacted] in fly-ash sales in base rates in the Company's last general rate case.[139]

Q. Is fly-ash traditionally included in the Federal Energy Regulatory Commission (FERC) accounts identified in the TAM guidelines?

A. No. Attachment A identifies the specific subset of FERC accounts that are included in the TAM. PacifiCorp does not reflect fly-ash sales in those accounts. In fact, fly-ash sales are reflected in FERC account 456.

[138] Order No. 10-363, Appendix A, Exhibit B.
[139] AWEC/200, Mullins/24.

Q. If fly-ash sales were not contemplated to be included in other revenues and are not included in the FERC accounts identified in the TAM guidelines, is it appropriate to include them now?

A. No. Just like many other elements in base rates, fly-ash production (but not necessarily fly-ash sales) may fluctuate based on how often our plants generate. However, there are other elements like chemical costs that fluctuate based on generation that still remain in base rates. Identifying a single variable to pull out of base rates to include in the TAM, when it has not traditionally been included in the past solely because it will reduce NPC is not appropriate.

Q. Does the Commission normally remove revenues from base rate calculations and into the TAM outside of a change to TAM guidelines in a general rate case?

A. No. As discussed in my reply testimony, if AWEC and now Staff want to shift calculations of fly-ash sales into the TAM they must do so through a change to the TAM Guidelines in the Company's next general rate case.

Q. What is your recommendation?

A. The Commission should reject Staff's and AWEC's proposal.

V. 2023 TAM FILING DATE

Q. Does CUB continue to recommend moving up the 2023 TAM filing date?

A. Yes, although CUB changed its proposed filing date change to March 1, 2022, instead of January 15, to allow the Company to implement the December 31 forward price curve in its NPC forecasts.[140]

[140] CUB/200, Jenks/21-22.

Q. Do any other parties support CUB's proposal?

A. Yes. Staff also supports an early filing of the 2023 TAM based on the Company's switch to Aurora.[141] However, Staff supports an earlier filing date of February 14, 2022, based on the Company's filing of the 2021 TAM on that date last year.[142] Staff then recommends allowing the Company to file an update on April 1, 2022 with updated inputs.

Q. Would an April 1, 2022 update be appropriate?

A. No. An April 1, 2022 update would use the same price curve as a filing in February or March, and as a result would provide limited value.

Q. Is PacifiCorp amendable to holding workshops on the new model for stakeholders?

A. Yes, but there is a trade-off between pre-filing workshop and moving up the schedule. As the schedule moves earlier in the year, the Company is less able to hold workshops before the TAM is filed. As a result, workshops may need to occur after PacifiCorp files the TAM. Additionally, the administrative burden of Staff and CUB's recommended course of action remains a point of concern for the Company.

Q. Does an earlier TAM filing place a greater difficulty on PacifiCorp's ability to calculate the transition adjustment?

A. Yes. If the Commission were to order PacifiCorp to make an earlier TAM filing, PacifiCorp would request that it still provide the Transition Adjustment sample calculation for Schedule 294 on May 15 and the Transition Adjustment calculation for

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[141] Staff/1000, Enright/13.
[142] Staff/1000, Enright/14.

Schedule 296 on May 30 consistent with an unadjusted TAM schedule. With the transition to Aurora, these calculations would require some additional time.

Q. Does that conclude your surrebuttal testimony?

A. Yes.