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May 15, 2020

***Via Electronic Filing***

Public Utility Commission of Oregon  
Attn: Filing Center  
201 High St. SE, Suite 100  
Salem OR 97301

Re: In the Matter of PACIFICORP, dba PACIFIC POWER,  
2021 Transition Adjustment Mechanism.  
**Docket No. UE 375**

Dear Filing Center:

Please find enclosed the Opening Testimony and Exhibits of Bradley G. Mullins (AWEC/100 – 103) on behalf of the Alliance of Western Energy Consumers in the above-referenced docket.

Thank you for your assistance. If you have any questions, please do not hesitate to call.

Sincerely,

/s/ Jesse O. Gorsuch  
Jesse O. Gorsuch

Enclosures

**BEFORE THE  
PUBLIC UTILITY COMMISSION OF OREGON  
UE 375**

In the Matter of	)
	)
PacifiCorp, dba Pacific Power,	)
	)
2021 Transition Adjustment Mechanism.	)
_____	)

**OPENING TESTIMONY OF  
BRADLEY G. MULLINS  
ON BEHALF OF THE  
ALLIANCE OF WESTERN ENERGY CONSUMERS**

**May 15, 2020**

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## EXHIBIT LIST

AWEC/101 - Qualification Statement of Bradley G. Mullins

AWEC/102 - PacifiCorp Responses to Discovery Requests

AWEC/103 - EV 2020 Modeling Assumptions

**I. INTRODUCTION AND SUMMARY**

**Q. PLEASE STATE YOUR NAME AND OCCUPATION.**

A. My name is Bradley G. Mullins. I am a Consultant for MW Analytics, an independent consulting firm representing utility customers before state public utility commissions in the Northwest and Intermountain West. My witness qualification statement can be found at Exhibit AWEC/101.

**Q. PLEASE IDENTIFY THE PARTY ON WHOSE BEHALF YOU ARE TESTIFYING.**

A. I am testifying on behalf of the Alliance of Western Energy Consumers ("AWEC"). AWEC is a non-profit trade association whose members are large energy users in the Western United States, including customers receiving electrical services from PacifiCorp dba Pacific Power ("PacifiCorp" or "Company").

**Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

A. I discuss my initial review of PacifiCorp's proposed Net Variable Power Costs ("NVPC") update and present several adjustments to PacifiCorp's proposed Generation and Regulation Initiative Decision Tools ("GRID") model. Given that this Transition Adjustment Mechanism ("TAM") is being conducted in conjunction with a general rate case, I also discuss making changes to the direct access program.

**Q. WHAT WAS THE SCOPE OF YOUR REVIEW?**

A. I performed a limited review of PacifiCorp's filing and conducted a single round of discovery. My review was not comprehensive, so it is possible there are other necessary adjustments that I was not able to document and quantify in time for filing this testimony.

1 **Q. PLEASE SUMMARIZE YOUR PROPOSED MODELING ADJUSTMENTS.**

2 A. The estimated impacts of my recommended modeling adjustments are shown in Table 1,  
3 below.

**Table 1**  
**Estimated Impact of Proposed Modeling Adjustments**  
**(\$000,000)**

	<u>Total Company</u>	<u>OR</u>
PacifiCorp Filing	1,400.9	356.6
Adjustments		
EV 2020 EIM Link	8.3	2.2
EV 2020 Line Loss Benefits	2.5	0.7
EV 2020 Reliability Benefits	4.3	1.1
Gas Optimization	1.0	0.3
Monthly Price Forecast	32.3	8.2
BCC Plant additions	0.3	0.1
BCC Remediation Trust	16.3	4.1
Total Adjustments	65.0	16.6
Adjusted	1,335.9	340.0

4 **II. ENERGY VISION 2020 BENEFITS**

5 **Q. PLEASE SUMMARIZE YOUR RECOMMENDATION RELATED TO EV 2020.**

6 A. I recommend making the following three modeling changes in conjunction with the Energy  
7 Vision (“EV”) 2020:

- 8 1) Including a virtual 300 MW transmission link in the GRID model between  
9 the Jim Bridger transmission area to the Walla Walla transmission area;
- 10 2) Including transmission line loss savings of 11.6 aMW in the GRID model;  
11 and,
- 12 3) Incorporating 36.5 aMW of transfer capability to account for improved  
13 transmission reliability.

1 These adjustments are necessary to conform PacifiCorp's forecasting in this docket to the  
2 forecasting that was used when PacifiCorp made the economic case to acquire the EV 2020  
3 wind and transmission assets. These modeling assumption values were applied when  
4 PacifiCorp forecast the net power cost benefits associated with EV 2020 in the 2017 IRP and  
5 2017R RFP. The assumptions were not, however, applied in the forecast used for this  
6 ratemaking proceeding. It is not reasonable for PacifiCorp to forecast the benefits of the EV  
7 2020 assets for ratemaking purposes in a manner that is inconsistent with the forecast used to  
8 justify the assets. Accordingly, excluding the benefits associated with the above modeling  
9 adjustments in this proceeding is not reasonable.

10 **Q. HOW DO YOU KNOW THAT PACIFICORP USED THESE MODELING**  
11 **TECHNIQUES IN ITS 2017 IRP AND 2017R RFP?**

12 A. In Docket No. UE 339, Exhibit AWEC/102, PacifiCorp confirmed use of the 300 MW energy  
13 imbalance market ("EIM") link in the 2017R Request for Proposal ("RFP") process. In the  
14 response, PacifiCorp also confirmed application of 11.6 aMW of line loss savings, and 36.5  
15 aMW of reliability benefits in the 2017R RFP process. I have attached that response as Exhibit  
16 AWEC/103.

17 **Q. HAVE THESE ADJUSTMENTS BEEN ADOPTED IN PAST TAM FILINGS?**

18 A. Yes. In Docket No. UE 339, PacifiCorp agreed to a monetary adjustment for the 300 MW link.  
19 In this proceeding, however, PacifiCorp has not modeled the 300 MW link in the GRID model.  
20 The other two adjustments were not applicable in past dockets, since the underlying  
21 transmission facilities had not been built. This is the first proceeding where the transmission  
22 benefits have been at issue.

1 **Q. PLEASE PROVIDE BACKGROUND ON THE EV 2020 ASSETS.**

2 A. Energy Vision 2020 was a project originally identified in PacifiCorp's 2017 Integrated  
3 Resource Plan<sup>1/</sup> and procured in PacifiCorp's 2017R RFP.<sup>2/</sup> It included 860 MW of new wind  
4 resources (collectively, "Wind Projects") and a new high voltage transmission line between the  
5 Aeolus and Bridger/Anticline substations, including associated network upgrades (the  
6 "Transmission Projects"). The total cost of the project was \$1.9 billion.

7 **Q. DID THE COMMISSION ACKNOWLEDGE THE 2017 IRP?**

8 A. Yes. In Docket No. LC 67, the Commission acknowledged the 2017 IRP with Conditions and  
9 Modifications.<sup>3/</sup> Parties were concerned the assets were being justified on the basis of  
10 economic benefits, rather than an impending capacity shortfall. Responding to these concerns,  
11 the Commission imposed an express condition: "We intend to ensure that customer risk  
12 exposure is mitigated appropriately, and recovery may be structured to hold PacifiCorp to the  
13 cost and benefit projections in its analysis."<sup>4/</sup>

14 **a. 300 MW Link Jim Bridger - Walla Walla**

15 **Q. PLEASE DISCUSS THE VIRTUAL 300 MW LINK BETWEEN JIM BRIDGER AND**  
16 **WALLA WALLA ASSUMED IN THE 2017R RFP.**

17 A. The modeling for this transmission link was described on page 13 of PacifiCorp's July 28,  
18 2017 IRP Informational Filing with the Commission in Docket No. LC 67:

19 In its final 2017 IRP resource-portfolio screening process, PacifiCorp  
20 described how the Energy Imbalance Market (EIM) can provide potential  
21 benefits when incremental energy is added to transmission-constrained  
22 areas of Wyoming. Unscheduled or unused transmission from  
23 participating EIM entities enables more efficient power flows within the  
24 hour. With increasing participation in the EIM, there will be increasing

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<sup>1/</sup> Docket No. LC. 67, PacifiCorp's 2017 Integrated Resource Plan (April 4, 2017).

<sup>2/</sup> Docket No. UM 1845, PacifiCorp's Application for Approval of 2017R Request for Proposals (June 1, 2017).

<sup>3/</sup> Docket No. LC. 67, Order No. 18-138 (April 27, 2018).

<sup>4/</sup> Id. at 8.

opportunities to move incremental energy from Wyoming to offset higher-priced generation in the PacifiCorp system or other EIM participants' systems. The more efficient use of transmission that is expected with growing participation in the EIM was captured in the updated economic analysis by increasing the transfer capability between the east and west sides of PacifiCorp's system by 300 MW (from the Jim Bridger plant to south-central Oregon). The ability to more efficiently use intra-hour transmission from a growing list of EIM participants is not driven by the Energy Vision 2020 projects; however, this increased connectivity provides the opportunity to move low-cost incremental energy out of transmission constrained areas of Wyoming.

**Q. DID YOU ASK PACIFICORP ABOUT THE JIM BRIDGER TO WALLA WALLA LINK IN DISCOVERY?**

A. Yes. In response to AWEC Data Request 05, PacifiCorp confirmed that it did not model the 300MW increase in transfer capability between Jim Bridger and Walla Walla in this proceeding.<sup>5/</sup>

**Q. WHAT IS THE IMPACT OF MODELING THIS LINK?**

A. I was not able to add this new link in the GRID model because the GRID model crashed due to a server error each time I attempted to do so. I contacted PacifiCorp but was unable to resolve the error (which are not uncommon with the GRID model) prior to testimony. Based on my involvement in the EV2020 docket, I estimate the impact of this adjustment to be between \$1,100,000 and \$8,300,000 on a total-Company basis. Rather than applying an out of model adjustment, I recommend the link be modeled directly in the GRID model because doing so will provide a more accurate calculation of coal costs. Coal costs are calculated using an iterative process that involves several GRID model runs. Considering the link in this iterative process will impact coal output, and accordingly, will impact the \$/ton price for coal included in the GRID model.

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<sup>5/</sup> AWEC/102 at 3.



1       **b. Line Loss Benefits**

2       **Q.     WHAT AMOUNT OF LINE LOSS BENEFITS DID PACIFICORP ESTIMATE WITH**  
3       **RESPECT TO THE EV 2020 TRANSMISSION LINE?**

4       A.     In AWEC/103, PacifiCorp estimated line loss benefits of 11.6 aMW. These line loss savings  
5       were described on page 13 of PacifiCorp's July 28, 2017 IRP Informational Filing with the  
6       Commission in Docket No. LC 67, as follows:

7               [W]hen the Aeolus-to-Bridger/Anticline transmission project is added in  
8               parallel to the existing transmission lines, resistance is reduced, which  
9               lowers line losses. With reduced line losses, an incremental 11.6 average  
10              MW (aMW) of energy, which equates to approximately 102 GWh, will  
11              be able to flow out of eastern Wyoming each year.

12      **Q.     DOES PACIFICORP'S FILING CONSIDER THESE LINE LOSS SAVINGS**  
13      **BENEFITS?**

14      A.     No. In response to AWEC Data Request 007 PacifiCorp stated that its "net power costs  
15      forecast does not include line loss savings associated with the Energy Vision 2020 (EV 2020)  
16      transmission line."<sup>6/</sup>

17      **Q.     WHAT DO YOU RECOMMEND?**

18      A.     I recommend applying the line loss savings PacifiCorp forecast in the 2017 IRP in the  
19      ratemaking forecast used for the TAM.

20      **Q.     WHAT IS THE IMPACT OF MODELING THIS REDUCTION?**

21      A.     I applied the line loss savings in the GRID model as a flat reduction to Wyoming Central load.  
22      Prior to the impacts of screening, and coal cost updates, the impact was \$2,474,833 on a total-  
23      company basis.

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<sup>6/</sup> AWEC/102 at 5.

1       **c. Reliability Benefits**

2       **Q.     WHAT AMOUNT OF RELIABILITY BENEFITS DID PACIFICORP CONSIDER IN**  
3       **THE 2017 IRP?**

4       A.     To account for transmission line outages, PacifiCorp has historically de-rated the capacity of  
5       the existing 230 KV transmission line by 36.5 MW. When modeling the new transmission  
6       capacity, however, PacifiCorp removed the de-rate from the existing lines, increasing the  
7       transfer capability:

8               [D]e-rates on the existing 230-kV transmission system were captured in  
9               the SO model and PaR as a 36.5 MW reduction in the transfer capability  
10              from eastern Wyoming to the Aeolus area. In simulations that include the  
11              new wind and transmission, this de-rate assumption was eliminated when  
12              the new transmission project is assumed to be placed in service at the end  
13              of October 2020.<sup>7/</sup>

14      **Q.     DOES PACIFICORP'S FILING INCLUDE THESE BENEFITS?**

15      A.     In response to AWEC Data Request 008, PacifiCorp argues that "reliability benefits are  
16      inherent to power costs created by GRID."<sup>8/</sup> I disagree. If the reliability benefits are inherent  
17      in GRID, then they would have been inherent in the System Optimizer and PaR models used in  
18      the RFP. I recommend applying these additional benefits to the transfer capabilities calculated  
19      in the GRID model.

20      **Q.     WHAT IS THE IMPACT OF THIS ADJUSTMENT?**

21      A.     Since my version of the GRID model produced an error that would not allow for the addition  
22      of new transmission links or modification of existing ones, I have estimated the impact of this  
23      adjustment based on my involvement in EV 2020 to be between \$2,600,000 and \$4,300,000 on  
24      a total-Company basis. As discussed above, I recommend that this modeling be applied

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<sup>7/</sup>       Docket No. LC 67, PacifiCorp 2017 IRP Informational Filing at 13 (July 28, 2017).

<sup>8/</sup>       AWEC/102 at 6.

1 directly in the final GRID runs performed in this proceeding, so that the coal cost and plant  
2 dispatch impacts can be considered.

3 **d. Capacity Factor**

4 **Q. WHAT DO YOU RECOMMEND WITH RESPECT TO THE CAPACITY FACTORS**  
5 **FOR THE EV 2020 PROJECTS?**

6 A. I recommend that the capacity factors for the EV 2020 projects that were modeled in the RFP  
7 be used as a minimum capacity factor for these facilities in the future. For this proceeding, my  
8 recommendation has no impact on NPC because PacifiCorp is using the modeled capacity  
9 factors for these resources. It may, however, have an impact in future TAM proceedings when  
10 historical data for these facilities exists. Additionally, because AWEC views this issue as  
11 related to the prudence of PacifiCorp's decision to pursue the EV 2020 projects, I will provide  
12 more discussion and justification for this proposal in my Opening Testimony in PacifiCorp's  
13 ongoing general rate case, UE 374.

14 **III. GAS OPTIMIZATION**

15 **Q. WHAT ARE GAS OPTIMIZATION REVENUES?**

16 A. PacifiCorp maintains pipeline rights over a broad geographic region and has many  
17 opportunities to purchase and sell gas in order to optimize the cost associated with fueling its  
18 system. These activities include purchasing at one hub and transporting to another in order to  
19 earn a margin on the price difference between the two locations. PacifiCorp's modeling of gas  
20 supply costs is based on the location of each individual plant and therefore does not consider  
21 the beneficial aspects of how PacifiCorp monetizes its gas transportation rights. In actual  
22 operations, these activities result in a reduction to power costs that offset the cost of fuel at  
23 PacifiCorp's gas plants.

1 **Q. HAVE YOU PROPOSED AN ADJUSTMENT RELATED TO OPTIMIZATION**  
2 **REVENUES IN THE PAST?**

3 A. Yes. In Docket No. UE 356, I recommend including an adjustment to account for PacifiCorp's  
4 gas optimization activities. This issue was resolved by PacifiCorp agreeing to conduct a  
5 workshop prior to this proceeding. In the workshop, PacifiCorp continued to maintain that it  
6 was not earning any incremental margins associated with its gas trading activities. After  
7 further review of the trade data for 2019, however, I continue to disagree with PacifiCorp's  
8 position.

9 **Q. WHY DO YOU DISAGREE WITH PACIFICORP?**

10 A. PacifiCorp's actual trade data tells a different story.

11 In AWEC Data Request 11, PacifiCorp was asked to provide support for the fuel supply  
12 costs for its gas plants included in Net Power Costs. PacifiCorp responded by providing the  
13 fuel cost journal entries, but the response did not detail how the fuel supply cost amounts were  
14 calculated, as requested.<sup>9/</sup>

15 In AWEC Data Request 12, PacifiCorp was requested to provide all physical purchase  
16 and sales transactions by plant. The data PacifiCorp provided, however, had all of the vital  
17 information about the transactions removed in 2018 and 2019. This was evident from the fact  
18 that versions of the spreadsheet from earlier periods had counterparty data and other fields  
19 available.<sup>10/</sup>

20 Notwithstanding, it is clear from the data in AWEC Data Requests 11 and 12 that, at  
21 times when it is economic to do so, PacifiCorp is reselling gas to earn margins, rather than  
22 burning it in its power plants.

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<sup>9/</sup> AWEC/102 at 7.

<sup>10/</sup> Id. at 8.

1 **Q. DOES GRID CAPTURE THESE AMOUNTS?**

2 A. No. Since these gas optimization margins are not considered in GRID, I request that  
3 PacifiCorp provide further testimony on this issue. For purposes of this testimony, I have  
4 quantified an adjustment based on the value of actual sales transactions in 2019. In AWEC  
5 Data Request 12, I was able to identify over \$20,000,000 in opportunistic gas sales revenues in  
6 2019, although the details about these trades are somewhat unclear because much of the  
7 relevant trade data was removed from that document. Assuming an average sales price of  
8 \$3.43/MMBtu and 5% margin per trade, however, this results in optimization revenues of at  
9 least \$1,000,760 total-Company. Based on this estimate, I applied a downward adjustment to  
10 the TAM net power costs.

11 **IV. MARKET PRICE FORECASTING**

12 **Q. PLEASE SUMMARIZE AWEC'S CONCERNS WITH PACIFICORP'S PRICE**  
13 **FORECAST.**

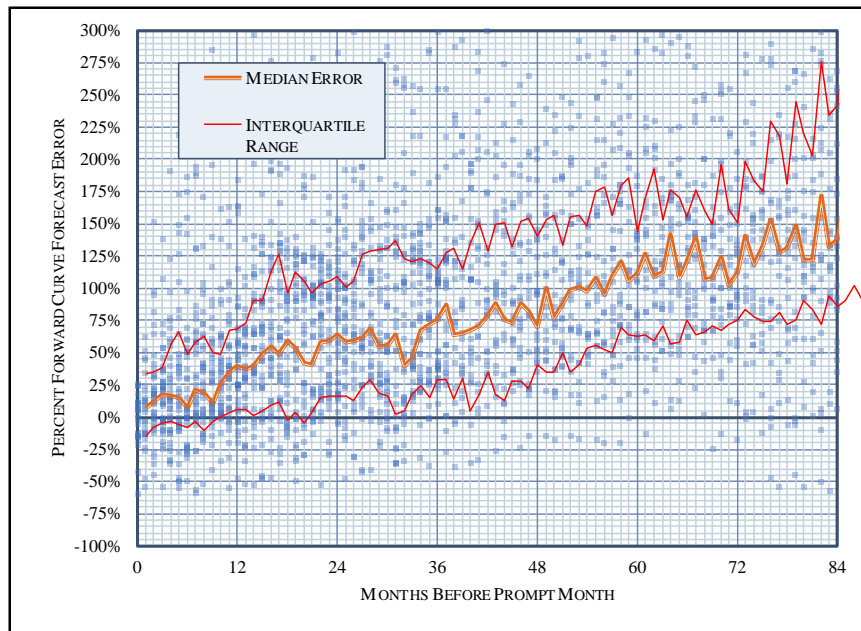
14 A. As discussed in response to AWEC Data Request 01, PacifiCorp relies on broker quotes to  
15 establish its price forecast in the TAM test period. While those prices represent the cost that  
16 PacifiCorp would incur if it were to acquire a monthly block of power today for future  
17 delivery, the use of market forward prices is not necessarily indicative of what actual prices  
18 will be in the future.

19 **Q. WHAT ANALYSIS HAVE YOU PERFORMED?**

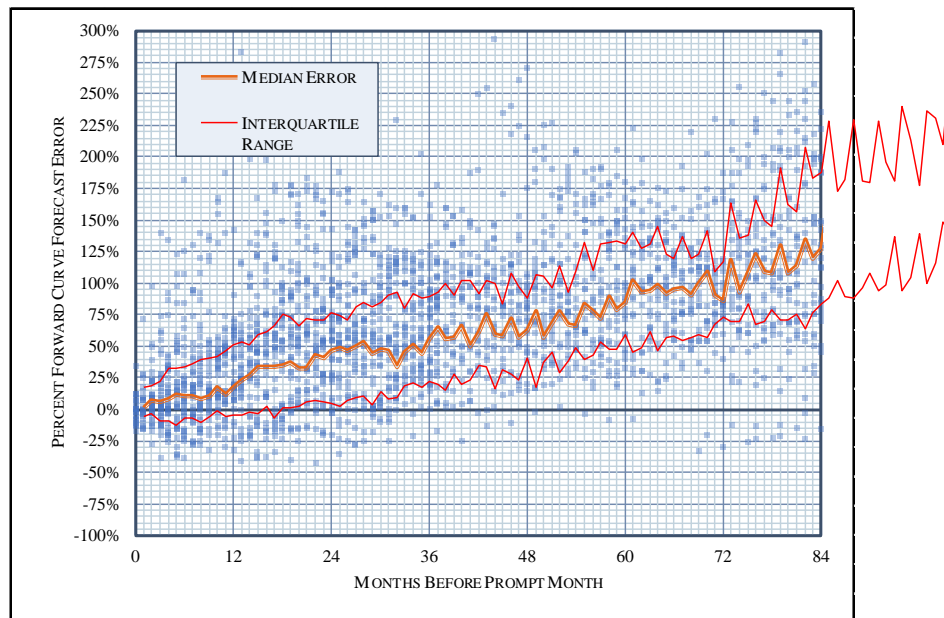
20 A. The below figures present an analysis exploring the accuracy of PacifiCorp's previously issued  
21 official forward price curve ("OFPCs") for both gas and electric markets. These are based on  
22 the non-confidential information that PacifiCorp provided in response to AWEC Data Request

02. The purpose of these analyses is to examine the accuracy of PacifiCorp's OFPCs issued over the historical period 2007 through 2019.

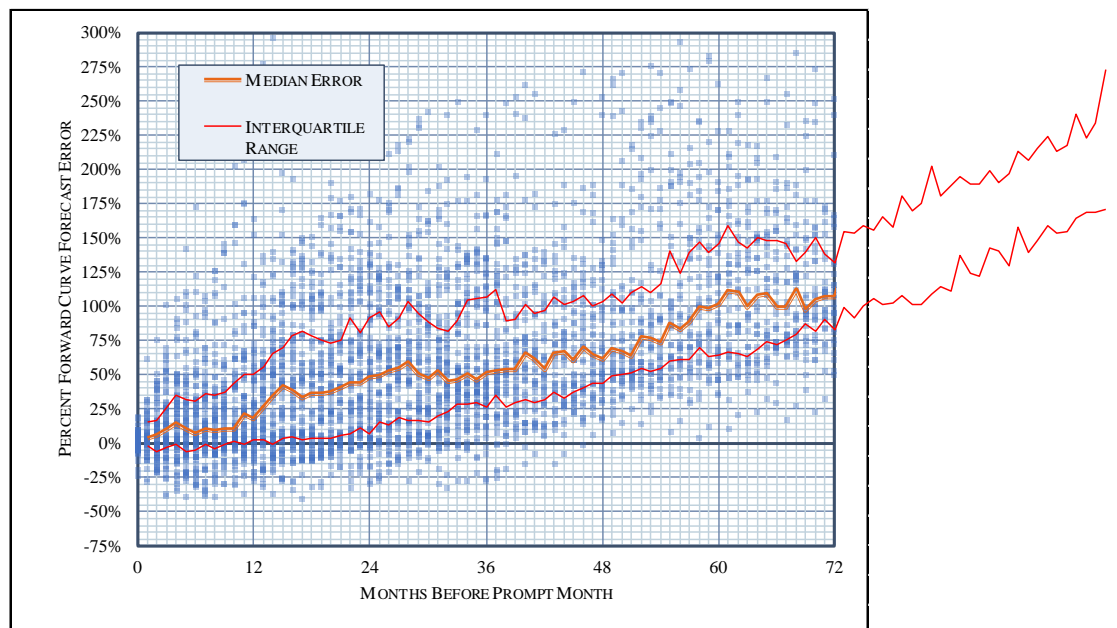
**Figure 1**  
Mid Columbia Market Forecast Error  
For PacifiCorp OFPCs issued 2007-2019



**Figure 2**  
Palo Verde Market Forecast Error  
For PacifiCorp OFPCs issued 2007-2019



**Figure 3**  
Henry Hub Market Forecast Error  
For PacifiCorp OFPCs issued 2007-2019



1   **Q.     PLEASE PROVIDE AN OVERVIEW OF THE ABOVE FIGURES.**

2   A.     The figures are a plot of the percentage forecast error associated with forward prices included  
3           in price curves PacifiCorp issued over the period 2005 to the end of 2019. Each dot in a figure  
4           represents the percentage difference between a particular monthly price that was forecast in a  
5           forward curve and the ultimate monthly price for the given prompt month. To the extent that  
6           the error is positive, it means that the price in the forward curve exceeded the actual price. To  
7           the extent that the error is negative, it means that the price in the forward curve was less than  
8           the actual price. Along the x-axis, the set of forecast errors is separated by the number of  
9           months before the prompt month for which the forward price was calculated. Thus, a forecast  
10          error further to the right indicates the forecast error associated with a price that was forecast  
11          further in advance of the prompt month. Similarly, a forecast error on the left side of the x-axis  
12          represents a price that was forecast nearer to the prompt month. Overlaid on the figure is the  
13          median forecast error based on the number of months in advance of the prompt month that the  
14          forward prices were calculated, as well as the interquartile range of the forecast errors.

15   **Q.     WHAT DOES YOUR ANALYSIS SHOW?**

16   A.     The above analysis shows that PacifiCorp's forward price curves tend to overestimate actual  
17          monthly prices. It also shows that the degree of overestimation increases the further ahead of  
18          the prompt month that the forecast is prepared. For an annual OFPC prepared between 2 and  
19          13 months ahead of the prompt month (i.e., the equivalent of the November TAM forecast), for  
20          example, the average monthly forecast error was 21% at the Mid-Columbia market.

21   **Q.     BASED ON THIS ANALYSIS, WHAT DO YOU RECOMMEND?**

22   A.     I recommend a downward adjustment to day-ahead/real-time ("DA/RT") electric and gas  
23          market prices to account for the historical over-estimation. The prices in the GRID model are



1 not representative of actual monthly prices, but rather are based on forward monthly prices.  
2 PacifiCorp calculates the day-ahead/real-time adjustment by calculating the difference between  
3 actual monthly prices and the average price for day-ahead and real-time transactions in actual  
4 operations for that month. PacifiCorp then applies the difference to the forward prices  
5 assumed in the GRID model, which are based on forward broker quotes. This is an  
6 inconsistent assumption, however, because the actual monthly market prices are not the same  
7 as the forecast monthly market prices that are input into the GRID model. As demonstrated  
8 above, the forecast monthly prices are statistically higher than the actual monthly market prices  
9 used to calculate the day-ahead/real-time adjustment. In my analysis, I have recalculated the  
10 DA/RT adjustment by making an adjustment to the forecast monthly market prices so that they  
11 can be compared on an “apples-to-apples” basis against actual monthly market prices. I also  
12 applied the adjustment to gas prices in the DA/RT model.

13 **Q. DID YOU MAKE ANY OTHER CHANGES TO THE DA/RT ADJUSTMENTS?**

14 A. Yes. In connection with this adjustment, I recommend normalizing the effects of the Enbridge  
15 outage in the DA/RT adjustment. The Enbridge outage was not a normal event, so it is  
16 necessary to exclude the high DA/RT adjustment amounts for the month of March 2019 from a  
17 normalized forecast. In addition to normalizing the effects of the Enbridge outage, I  
18 recommend the DA/RT be calculated over a longer period of time.

19 **Q. WHAT IS THE IMPACT OF YOUR RECOMMENDATION?**

20 A. Applying the above median forecast error amounts in the DA/RT adjustment to reconcile the  
21 use of forward prices results in a \$5,846,807 reduction to total-Company NPC. Applying the  
22 forecast error amount to the gas prices included in the GRID results in a \$26,525,694 reduction

1 to power costs. Collectively, these two components result in a \$32,372,501 total-Company  
2 adjustment.

## 3 V. BRIDGER COAL COSTS

### 4 a. Bridger Coal Company Plant Additions

5 **Q. WHAT PLANT ADDITIONS HAS PACIFICORP PROPOSED IN THE COST OF**  
6 **FUEL?**

7 A The depreciation expense for the Bridger Coal Company (“BCC”) mine includes provisional  
8 amounts for plant additions through December 31, 2021. These plant additions may be found  
9 in the confidential workpapers of PacifiCorp witness Ralston at “3.45M REV5 12-12-  
10 19/OPEX-CAPEX/14 Depr Exp 10YP.xlsx.”

11 **Q. WHAT DO YOU RECOMMEND?**

12 A. I recommend using a rate base valuation date of December 31, 2020. Accordingly, my  
13 analysis excludes the post-rate-effective-date plant additions from the BCC depreciation  
14 expense.

15 **Q. WHAT IS THE IMPACT OF YOUR RECOMMENDATION?**

16 A. Removing these expenses results in a \$559,201 reduction to BBC’s fuel budget. PacifiCorp’s  
17 2/3rds share of this amount is \$372,801 on a total-Company basis.

### 18 b. Bridger Coal Company Remediation Fund

19 **Q. PLEASE PROVIDE BACKGROUND ON THE BRIDGER COAL COMPANY**  
20 **RECLAMATION FUND.**

21 A. PacifiCorp has a trust fund in place to cover reclamation costs at BCC. Contributions to the  
22 trust fund are included in the cost of fuel for the Jim Bridger Power Plant.

1 **Q. HOW MUCH IS PACIFICORP REQUESTING OREGON RATEPAYERS**  
2 **CONTRIBUTE IN 2021?**

3 A. This amount may be found in the confidential workpapers of PacifiCorp witness Ralston at  
4 “3.45M REV5 12-12-19/OPEX-CAPEX/ 01 OpsCostSchedules.xlsx”, Tab “FR - Sinking  
5 Fund.”

6 **Q. WHAT DO YOU RECOMMEND?**

7 A. Due to Oregon’s exit from PacifiCorp’s coal fired resources over the next several years, I  
8 recommend the Commission remove Oregon’s share of the reclamation trust fund and transfer  
9 it into a regulatory liability that accrues interest at PacifiCorp’s cost of capital. Contributions  
10 would be tracked in general rates and removed from net power costs. If the reclamation  
11 contribution amounts are continued to be included in fuel costs, it will be difficult to track the  
12 funds in order to provide assurance that customers receive credit for all contributions made  
13 towards the reclamation liability.

14 **Q. WHAT INTEREST RATE DO YOU RECOMMEND?**

15 A. I recommend that the liability account accrue interest at PacifiCorp’s cost of capital.

16 **Q. HAVE YOU IDENTIFIED ANY INCONSISTENCIES IN THE TRUST FUND**  
17 **CONTRIBUTION AMOUNTS?**

18 A. Yes. I have identified what appear to be inconsistencies between the amounts that PacifiCorp  
19 has included in rates and the amounts that it has actually contributed. For example, the  
20 contribution amount for 2019 show in Tab “FR - Sinking Fund” cell “E15” of the workpaper  
21 “3.45M REV5 12-12-19/OPEX-CAPEX/ 01 OpsCostSchedules.xlsx” is materially less than  
22 the amount that was considered in the 2019 TAM.

1 **Q. HOW DO YOU RECOMMEND THESE INCONSISTENCIES BE RESOLVED?**

2 A. Given the substantial costs involved, I recommend the Commission open an investigation to  
3 audit the trust fund and require PacifiCorp to reconcile the amount of trust fund contributions  
4 historically included in rates and the amounts actually contributed to the trust.

5 **Q. WHAT IS THE IMPACT OF YOUR RECOMMENDATION?**

6 A. Based on PacifiCorp's 2/3rds share of the mine, moving the reclamation liability contributions  
7 to a regulatory asset will reduce net power costs by \$16,330,920 on a total-Company basis.

8 **VI. DIRECT ACCESS OPT-OUT PROGRAM**

9 **Q. WHAT CHANGES DO YOU RECOMMEND FOR PACIFICORP'S OPT-OUT**  
10 **PROGRAM?**

11 A. In the interest of reducing the need to acquire replacement capacity when PacifiCorp's coal  
12 fired resources are retired from Oregon rates, I recommend the Direct Access opt-out program  
13 be restructured to provide potential participants with more efficient price signals for  
14 participating in the program. The current opt-out charge for PacifiCorp requires a customer to  
15 pay stranded costs for 10 years of fixed cost recovery over a 5-year period. Notwithstanding  
16 its need for new resources, PacifiCorp's opt-out program has the longest stranded cost recovery  
17 period in Oregon. The stranded cost period for PGE's opt-out program, for example, is just  
18 five years. The punitive nature of the opt-out charge for PacifiCorp is compounded by the fact  
19 that customers are required to finance the 10 years of stranded costs over a 5-year period. As a  
20 result, PacifiCorp's program is infeasible from the economic perspective of customers. Thus,  
21 even if the system would benefit from departing load, through the avoidance of building new  
22 capacity, it is probable that customers will not participate.

1 **Q. WILL SHORTENING THE TRANSITION PERIOD SEND A BETTER PRICE**  
2 **SIGNAL TO PARTICIPATING CUSTOMERS?**

3 A. Yes. Since PacifiCorp will be imminently retiring coal-fired resources, or at least removing  
4 those resources from rates, shortening the transition period used in the opt-out program will  
5 help Oregon avoid acquiring new resources.

6 **Q. WHY WAS THE 10-YEAR TRANSITION PERIOD ORIGINALLY ADOPTED?**

7 A. The 10-year period was justified based on Section X of the 2010 protocol, which required the  
8 direct access loads of Oregon to be included in the dynamic allocation factors.

9 **Q. DO THE PROVISIONS OF THE 2010 PROTOCOL USED TO JUSTIFY THE 10-**  
10 **YEAR PERIOD STILL APPLY?**

11 A. No. Section X of the 2010 protocol was rewritten in its entirety in the 2017 Protocol. Under  
12 the new provisions, Oregon is free to adopt any stranded cost period which the Commission  
13 finds to be reasonable. Accordingly, it is no longer necessary under the terms of the Multi-  
14 State Process (“MSP”) agreement to use a 10-year period for Oregon’s opt-out program. The  
15 2020 Protocol retained the language of the 2017 Protocol.

16 **A. HOW DO YOU RECOMMEND THE STRANDED COST PERIOD BE**  
17 **DETERMINED?**

18 A. Rather than specifying the number of years that a participating customer must pay a transition  
19 adjustment, I recommend the program be designed around the specific exit dates for coal-fired  
20 resources. Instead of specifying the term of the transition period, I propose redesigning the  
21 program such that it specifies the quantity of load (“aMW”) eligible to participate in the  
22 program by retirement date. Participating customers will be required to pay transition charges  
23 until the specified coal retirement date. If more customers apply to participate in the program  
24 than specified, then the customer further down in the queue will be required to pay transition  
25 adjustments for a longer period of time, until the next resource is retired.

1 **Q. CAN YOU PROVIDE AN EXAMPLE?**

2 A. Table 2 provides an example of the direct access eligibility based on the retirement dates in the  
3 2020 Protocol. These dates and the associated capacity amounts would be subject to change as  
4 the respective retirement dates change:

**Table 2**  
**Example of Opt-Out Eligibility Queue**

<u>Year</u>	<u>Coal Plant Retirements</u>	<u>Capacity</u>	<u>Oregon SG%</u>	<u>Oregon Capacity</u>	<u>Opt-out Eligible</u>
2023	Cholla 4/ JB1	741	26.46%	196	98
2025	JB 3-4/ Naughton 3-4/ Craig 1	1,500	26.46%	397	198
2026	Craig 2	82	26.46%	22	11
2027	Colstrip 3-4/ DJ 1-4	903	26.46%	239	119
2029	Hunter/ Huntington/ Wyodak	2,335	26.46%	618	309

5 Under the above example, I have set the eligible capacity at 50% of the amount of  
6 Oregon capacity that is expected to retire by year. Under this approach, the first 98 aMW to  
7 participate in the program would be responsible for transition adjustment until December 31,  
8 2023. The next 198 aMW to participate in the program would have to pay a transition charge  
9 until 2025, and so on. Under this approach, if there is high demand for the program, customers  
10 will have to pay transition adjustments for longer periods of time. This will have the effect of  
11 sending better price signals to customers, who might be willing to pay transition adjustments  
12 for a longer period of time in order to secure a high queue position.

**VII. TAM GUIDELINES**

**Q. DO YOU INTEND TO PROPOSE CHANGES TO THE TAM GUIDELINES AND ADDRESS PACIFICORP'S PROPOSED CHANGES TO THE TAM AND TAM GUIDELINES?**

**A.** Yes; however, my understanding of the TAM Guidelines and the stipulations and orders that adopted those guidelines is that any recommended changes to the TAM Guidelines should be proposed in a concurrently filed general rate case.<sup>11/</sup> This also appears to be PacifiCorp's understanding, as it has proposed substantial changes to the TAM and the TAM Guidelines in its testimony in UE 374, its 2020 general rate case.<sup>12/</sup> I disagree with many of PacifiCorp's proposed changes and also believe the existing TAM Guidelines can be improved, but will address these issues in my Opening Testimony in UE 374.

**Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

**A.** Yes.

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<sup>11/</sup> Docket No. UE 207, Order No. 09-432, App. A at 5:9-16 (Oct. 30, 2009) ("The Parties agree that the TAM Guidelines do not limit the ability of the Company or other Parties to propose changes to the TAM Guidelines...in future rate general rate cases.).

<sup>12/</sup> Docket No. UE 374, Exh. PAC/500-501.

**BEFORE THE  
PUBLIC UTILITY COMMISSION OF OREGON  
UE 375**

In the Matter of	)
	)
PacifiCorp, dba Pacific Power,	)
	)
2021 Transition Adjustment Mechanism.	)
_____	)

**EXHIBIT AWEC/101  
QUALIFICATION STATEMENT OF  
BRADLEY G. MULLINS**



**QUALIFICATIONS OF BRADLEY G. MULLINS**

**Q. PLEASE STATE PROVIDE AN OVERVIEW OF YOUR EDUCATIONAL AND WORK EXPERIENCE?**

A. I am the Principal Consultant of MW Analytics, a professional consulting practice that represents utility customers in regulatory proceedings before state utility commissions throughout the West. I have been performing independent energy and utilities consulting services for approximately six years and have provided services to utility customers on matters such as revenue requirement, power cost forecasting, and rate development. I have a Master of Accounting degree from the University of Utah. After obtaining my master's degree, I worked at Deloitte in San Jose, California, where I specialized in performing research and development tax credit studies. I later worked at PacifiCorp as an analyst involved in power cost forecasting.

**Q. PLEASE PROVIDE A LIST OF YOUR REGULATORY APPEARANCES.**

A. I have sponsored testimony in regulatory jurisdictions around the United States, including the following proceedings:

- In re Northwest Natural Company dba NW Natural, Request for a General Rate Revision, Or.PUC Docket No. UG 388.
- In re Portland General Electric Company, Renewable Resource Automatic Adjustment Clause (Schedule 122), Or. PUC Docket No. UE 370.
- In re Public Utility Commission of Oregon, Investigation of the Recovery of Capital Costs Consistent with Commission Legal Authority and the Public Interest, Or.PUC Docket No. UM 2004.
- Avista Corporation 2020 General Rate Case, Wa.UTC Docket No. UE-190334 (Cons.).
- In re Cascade Natural Gas Corporation Application for Approval of a Safety Cost Recovery Mechanism, Or. PUC Docket No. UM 2026.
- In re Avista Corporation, Request for a General Rate Revision, Or.PUC Docket No. UG 366.
- In re Portland General Electric, 2020 Annual Update Tariff (Schedule 125), Or.PUC Docket No UE 359.
- In re PacifiCorp 2020 Transition Adjustment Mechanism, Or.PUC Docket No. UE 356.
- In re PacifiCorp 2020 Renewable Adjustment Clause, Or.PUC Docket No. UE 352.

- 1 • 2020 Joint Power and Transmission Rate Proceeding, Bonneville Power Administration, Case  
2 No. BP-20.
- 3 • In the Matter of the Application of MSG Las Vegas, LLC for a Proposed Transaction with a  
4 Provider of New Electric Resources, PUC Nv. Docket No. 18-10034.
- 5 • Puget Sound Energy 2018 Expedited Rate Filing, Wa.UTC Dockets UE-180899/UG-180900  
6 (Cons.).
- 7 • Georgia Pacific Gypsum LLC's Application to Purchase Energy, Capacity, and/or Ancillary  
8 Services from a Provider of New Electric Resources, PUC Nv. Docket No. 18-09015.
- 9 • Joint Application of Nevada Power Company d/b/a NV Energy for approval of their 2018-2038  
10 Triennial Integrated Resource Plan and 2019-2021 Energy Supply Plan, PUCN Docket No. 18-  
11 06003.
- 12 • In re Cascade Natural Gas Corporation Request for a General Rate Revision, Or.PUC, Docket  
13 No. UG 347.
- 14 • In re Portland General Electric Company Request for a General Rate Revision, Or.PUC Docket  
15 No UE 335.
- 16 • In re Northwest Natural Gas Company, dba NW Natural, Request for a General Rate Revision,  
17 Or.PUC Docket No. UG 344.
- 18 • In re Cascade Natural Gas Corporation Request for a General Rate Revision, Wa.UTC, Docket  
19 No. UE-170929.
- 20 • In the Matter of Hydro One Limited, Application for Authorization to Exercise Substantial  
21 Influence over the Policies and Actions of Avista Corporation, Or.PUC, Docket No. UM 1897.
- 22 • In re PacifiCorp, dba Pacific Power, 2016 Power Cost Adjustment Mechanism, Or.PUC, Docket  
23 No. UE 327.
- 24 • In re Avista Corporation 2018 General Rate Case, Wa.UTC Dockets UE-170485 and UG-170486  
25 (Consolidated).
- 26 • Application of Nevada Power Company d/b/a NV Energy for authority to adjust its annual  
27 revenue requirement for general rates charged to all classes of electric customers and for relief  
28 properly related thereto, PUCN. Docket No. 17-06003.
- 29 • In re the Application of Rocky Mountain Power for Authority to Decrease Current Rates by \$15.7  
30 Million to Refund Deferred Net Power Costs Under Tariff Schedule 95 Energy Cost Adjustment  
31 Mechanism and to Decrease Current Rates By \$528 Thousand Under Tariff Schedule 93, REC  
32 and SO2 Revenue Adjustment Mechanism, Wy. PSC, Docket No. 20000-514-EA-17 (Record No.  
33 14696).
- 34 • In re the 2018 General Rate Case of Puget Sound Energy, Wa.UTC, Docket No. 170033 (Cons.).
- 35 • In re PacifiCorp, dba Pacific Power, 2018 Transition Adjustment Mechanism, Or.PUC, Docket  
36 No. UE 323.
- 37 • In re Portland General Electric Company, Request for a General Rate Revision, Or.PUC, Docket  
38 No. UE 319.
- 39 • In re Portland General Electric Company, Application for Transportation Electrification  
40 Programs, Or.PUC, UM 1811.

- 1 • In re Pacific Power & Light Company, Application for Transportation Electrification Programs,  
2 Or.PUC, Docket No. UM 1810.
- 3 • In re the Public Utility Commission of Oregon, Investigation to Examine PacifiCorp, dba Pacific  
4 Power's Non-Standard Avoided Cost Pricing, Or.PUC, Docket No. UM 1802.
- 5 • In re Pacific Power & Light Co., Revisions to Tariff WN U-75, Advice No. 16-05, to modify the  
6 Company's existing tariffs governing permanent disconnection and removal procedures,  
7 Wa.UTC, Docket No. UE-161204.
- 8 • In re Puget Sound Energy's Revisions to Tariff WN U-60, Adding Schedule 451, Implementing a  
9 New Retail Wheeling Service, Wa.UTC, Docket No. UE-161123.
- 10 • 2018 Joint Power and Transmission Rate Proceeding, Bonneville Power Administration, Case  
11 No. BP-18.
- 12 • In re Portland General Electric Company Application for Approval of Sale of Harborton  
13 Restoration Project Property, Or.PUC, Docket No. UP 334 (Cons.).
- 14 • In re An Investigation of Policies Related to Renewable Distributed Electric Generation, Ar.PSC,  
15 Matter No. 16-028-U.
- 16 • In re Net Metering and the Implementation of Act 827 of 2015, Ar.PSC, Matter No. 16-027-R.
- 17 • In re the Application of Rocky Mountain Power for Approval of the 2016 Energy Balancing  
18 Account, Ut.PSC, Docket No. 16-035-01
- 19 • In re Avista Corporation Request for a General Rate Revision, Wa.UTC, Docket No. UE-160228  
20 (Cons.).
- 21 • In re the Application of Rocky Mountain Power to Decrease Current Rates by \$2.7 Million to  
22 Recover Deferred Net Power Costs Pursuant to Tariff Schedule 95 and to Increase Rates by \$50  
23 Thousand Pursuant to Tariff Schedule 93, Wy.PSC, Docket No. 20000-292-EA-16.
- 24 • In re PacifiCorp, dba Pacific Power, 2017 Transition Adjustment Mechanism, Or.PUC, Docket  
25 No. UE 307.
- 26 • In re Portland General Electric Company, 2017 Annual Power Cost Update Tariff (Schedule  
27 125), Or.PUC, Docket No. UE 308.
- 28 • In re PacifiCorp, Request to Initiate an Investigation of Multi-Jurisdictional Issues and Approve  
29 an Inter-Jurisdictional Cost Allocation Protocol, Or.PUC, UM 1050.
- 30 • In re Pacific Power & Light Company, General rate increase for electric services, Wa.UTC,  
31 Docket No. UE-152253.
- 32 • In The Matter of the Application of Rocky Mountain Power for Authority of a General Rate  
33 Increase in Its Retail Electric Utility Service Rates in Wyoming of \$32.4 Million Per Year or 4.5  
34 Percent, Wy.PSC, Docket No. 20000-469-ER-15.
- 35 • In re Avista Corporation, General Rate Increase for Electric Services, Wa.UTC, Docket No. UE-  
36 150204.
- 37 • In re the Application of Rocky Mountain Power to Decrease Rates by \$17.6 Million to Recover  
38 Deferred Net Power Costs Pursuant to Tariff Schedule 95 to Decrease Rates by \$4.7 Million  
39 Pursuant to Tariff Schedule 93, Wy.PSC, Docket No. 20000-472-EA-15.

- 1 • Formal complaint of The Walla Walla Country Club against Pacific Power & Light Company for  
2 refusal to provide disconnection under Commission-approved terms and fees, as mandated under  
3 Company tariff rules, Wa.UTC, Docket No. UE-143932.
- 4 • In re PacifiCorp, dba Pacific Power, 2016 Transition Adjustment Mechanism, Or.PUC, Docket  
5 No. UE 296.
- 6 • In re Portland General Electric Company, Request for a General Rate Revision, Or.PUC, Docket  
7 No. UE 294.
- 8 • In re Portland General Electric Company and PacifiCorp dba Pacific Power, Request for Generic  
9 Power Cost Adjustment Mechanism Investigation, Or.PUC, Docket No. UM 1662.
- 10 • In re PacifiCorp, dba Pacific Power, Application for Approval of Deer Creek Mine Transaction,  
11 Or.PUC, Docket No. UM 1712.
- 12 • In re Public Utility Commission of Oregon, Investigation to Explore Issues Related to a  
13 Renewable Generator's Contribution to Capacity, Or.PUC, Docket No. UM 1719.
- 14 • In re Portland General Electric Company, Application for Deferral Accounting of Excess Pension  
15 Costs and Carrying Costs on Cash Contributions, Or.PUC, Docket No. UM 1623.
- 16 • 2016 Joint Power and Transmission Rate Proceeding, Bonneville Power Administration, Case  
17 No. BP-16.
- 18 • In re Puget Sound Energy, Petition to Update Methodologies Used to Allocate Electric Cost of  
19 Service and for Electric Rate Design Purposes, Wa.UTC, Docket No. UE-141368.
- 20 • In re Pacific Power & Light Company, Request for a General Rate Revision Resulting in an  
21 Overall Price Change of 8.5 Percent, or \$27.2 Million, Wa.UTC, Docket No. UE-140762.
- 22 • In re Puget Sound Energy, Revises the Power Cost Rate in WN U-60, Tariff G, Schedule 95, to  
23 reflect a decrease of \$9,554,847 in the Company's overall normalized power supply costs,  
24 Wa.UTC, Docket No. UE-141141.
- 25 • In re the Application of Rocky Mountain Power for Authority to Increase Its Retail Electric  
26 Utility Service Rates in Wyoming Approximately \$36.1 Million Per Year or 5.3 Percent,  
27 Wy.PSC, Docket No. 20000-446-ER-14.
- 28 • In re Avista Corporation, General Rate Increase for Electric Services, RE, Tariff WN U-28,  
29 Which Proposes an Overall Net Electric Billed Increase of 5.5 Percent Effective January 1, 2015,  
30 Wa.UTC, Docket No. UE-140188.
- 31 • In re PacifiCorp, dba Pacific Power, Application for Deferred Accounting and Prudence  
32 Determination Associated with the Energy Imbalance Market, Or.PUC, Docket No. UM 1689.
- 33 • In re PacifiCorp, dba Pacific Power, 2015 Transition Adjustment Mechanism, Or.PUC, Docket  
34 No. UE 287.
- 35 • In re Portland General Electric Company, Request for a General Rate Revision, Or.PUC, Docket  
36 No. UE 283.
- 37 • In re Portland General Electric Company's Net Variable Power Costs (NVPC) and Annual Power  
38 Cost Update (APCU), Or.PUC, Docket No. UE 286.
- 39 • In re Portland General Electric Company 2014 Schedule 145 Boardman Power Plant Operating  
40 Adjustment, Or.PUC, Docket No. UE 281.

- 1       •   In re PacifiCorp, dba Pacific Power, Transition Adjustment, Five-Year Cost of Service Opt-Out  
2       (adopting testimony of Donald W. Schoenbeck), Or.PUC, Docket No. UE 267.

**BEFORE THE  
PUBLIC UTILITY COMMISSION OF OREGON  
UE 375**

In the Matter of	)
	)
PacifiCorp, dba Pacific Power,	)
	)
2021 Transition Adjustment Mechanism.	)
_____	)

**EXHIBIT AWEC/102  
PACIFICORP RESPONSES TO DISCOVERY REQUESTS**

UE 375/PacifiCorp  
May 7, 2020  
AWEC Data Request 001

**AWEC Data Request 001**

- (a) Please provide a brief description of how PacifiCorp developed the Official Forward Price Curve (OFPC) for the test period.
- (b) To the extent that broker quotes were relied upon to establish or benchmark the prices in the forecast, please provide a copy of the relevant broker quotes PacifiCorp used.

**Response to AWEC Data Request 001**

Note: the PacifiCorp official forward price curve (OFPC) used in the direct testimony in this proceeding is the December 31, 2019 OFPC. Based on the above clarification, the Company responds as follows:

- (a) PacifiCorp's gas and electricity OFPC are developed from a combination of forward market prices on a given quote date and a long-term fundamentals-based price forecast. The first 37 months of the curve are based upon an average of monthly broker quotes for the market period. Months 38 through 49 are an average of the previous year market forward price and the next year's fundamentals price forecast. A fundamentals-based price forecast is used exclusively beyond month 49. As such, the entire test period in this proceeding, calendar year 2021, is based upon broker quotes.
- (b) Please refer to Confidential Attachment AWEC 001. Power forward prices in the market period are derived from an average of broker quotes received daily from multiple brokers who provide monthly, quarterly, and calendar prices. Confidential Attachment AWEC 001 provides a comparison of broker quotes to the December 31, 2019 OFPC.

Confidential information is provided subject to the terms and conditions of the protective order in this proceeding.

UE 375/PacifiCorp  
May 7, 2020  
AWEC Data Request 002

**AWEC Data Request 002**

Please provide the data necessary to duplicate Confidential Exhibit AWEC/103 in Docket UE 339, including:

- (1) each OFPC issued between 2007 and 2016, and
- (2) actual monthly market index prices between 01/2007-09/2017.

**Response to AWEC Data Request 002**

- (1) Please refer to Attachment AWEC 002-1 which provides copies of PacifiCorp's official forward price curves (OFPC) from 2007 through March 2020, including copies of the indicative and final transition adjustment mechanism OFPCs.
- (2) Please refer to Attachment AWEC 002-2 which provides actual monthly market prices (electricity and gas) for 2007 through March 2020.



UE 375/PacifiCorp  
May 7, 2020  
AWEC Data Request 005

**AWEC Data Request 005**

Does PacifiCorp's topology include an increase in transfer capability between Jim Bridger and Walla Walla in connection with Idaho Power Company joining the Energy Imbalance Market (EIM). If yes, please identify the amount of transfer capability assumed and the basis for PacifiCorp's assumption.

**Response to AWEC Data Request 005**

PacifiCorp's Generation and Regulation Initiative Decision Tool topology does not include an increase in transfer capability between Jim Bridger and Walla Walla in connection with Idaho Power Company joining the energy imbalance market.

UE 375/PacifiCorp  
May 7, 2020  
AWEC Data Request 006

**AWEC Data Request 006**

What is PacifiCorp's understanding of the amount of transmission capability Idaho Power has made available to the EIM? Please identify the basis for this understanding.

**Response to AWEC Data Request 006**

PacifiCorp understands that the amount of Idaho Power Company's (IPC) transmission capability made available to the energy imbalance market (EIM) is its available transfer capability (ATC) in real-time. ATC, in this context, is a measure of the transfer capability that remains available for further commercial activity over and above already committed uses. Please refer to Section 29.17 (f) and Appendix L of the California Independent System Operator's (CAISO) tariff for further description of ATC.

CAISO's tariff, including ATC information, is publicly available and can be accessed by utilizing the following website link:

<http://www.caiso.com/rules/Pages/Regulatory/Default.aspx>

UE 375/PacifiCorp  
May 7, 2020  
AWEC Data Request 007

**AWEC Data Request 007**

Does PacifiCorp's net power cost forecast assume any line loss savings, originally estimated at 11.6 average megawatts (see, e.g., OPUC Docket No. UE 339, AWEC/104 at 2), associated with the new Energy Vision 2020 transmission line? If yes, please provide the work papers detailing how the line loss savings were incorporated into net power costs. If no, please explain why the line loss savings were not considered.

**Response to AWEC Data Request 007**

PacifiCorp's net power costs forecast does not include line loss savings associated with the Energy Vision 2020 (EV 2020) transmission line. The line losses included in the Oregon transition adjustment mechanism is calculated by taking the difference between annual historical system level loads and historical retail sales. PacifiCorp uses the average annual line losses over the previous five years as the basis for grossing retail sales to the system level. The EV 2020 transmission line is not yet in service, and therefore any savings associated with EV 2020 are not included in the current line losses calculation.

UE 375/PacifiCorp  
May 7, 2020  
AWEC Data Request 008

### AWEC Data Request 008

Does PacifiCorp's filing assume any reliability benefits, originally estimated at 36.5 average megawatts, associated with the new Energy Vision 2020 transmission line? If yes, please provide the work papers detailing how the reliability savings were incorporated into the net power cost forecast. If no, please explain why the reliability benefits were not considered.

### Response to AWEC Data Request 008

PacifiCorp's net power costs forecast includes reliability benefits associated with the Energy Vision 2020 (EV 2020) transmission line beginning November 1, 2020. In the Generation and Regulation Initiative Decision Tool (GRID), the Company incorporates the total system reliability and reserve requirement to comply with reliability standards. Additional transmission capacity associated with EV 2020 is utilized in GRID total system optimization. The reliability benefits are inherent to power costs created by GRID with EV 2020 transmission capacity effective starting November 1, 2020. The following paths have increased transmission capacity from the EV2020 project:

	Transmission Capacity (MW)
Borah -> Jim Bridger	1900
Jim Bridger -> Wyoming Central	1900
Wyoming Central -> Jim Bridger	1900
Wyoming Central -> Wyoming E	1500
Wyoming East -> Wyoming Cent	2380

Despite PacifiCorp's diligent efforts, certain information protected from disclosure by the attorney-client privilege or other applicable privileges or law may have been included in its responses to these data requests. PacifiCorp did not intend to waive any applicable privileges or rights by the inadvertent disclosure of protected information, and PacifiCorp reserves its right to request the return or destruction of any privileged or protected materials that may have been inadvertently disclosed. Please inform PacifiCorp immediately if you become aware of any inadvertently disclosed information.

UE 375/PacifiCorp  
May 11, 2020  
AWEC Data Request 0011

**AWEC Data Request 0011**

Please provide work papers used to support the fuel supply costs for PacifiCorp's gas plants over the period 2015 through the most recent month available. Note that the "Power Supply Report" work paper PacifiCorp provided in response to PCA Data Request 014 in WUTC Docket Nos. UE-191024 et al. contained only fuel supply calculations for coal plants, and provided no detail supporting the fuel supply costs for PacifiCorp's gas plants.

**Response to AWEC Data Request 0011**

Please refer to Confidential Attachment AWEC 0011.

Confidential information is provided subject to the terms and conditions of the protective order in this proceeding.

Despite PacifiCorp's diligent efforts, certain information protected from disclosure by the attorney-client privilege or other applicable privileges or law may have been included in its responses to these data requests. PacifiCorp did not intend to waive any applicable privileges or rights by the inadvertent disclosure of protected information, and PacifiCorp reserves its right to request the return or destruction of any privileged or protected materials that may have been inadvertently disclosed. Please inform PacifiCorp immediately if you become aware of any inadvertently disclosed information.

UE 375/PacifiCorp  
May 11, 2020  
AWEC Data Request 0012

**AWEC Data Request 0012**

Please provide transaction detail supporting each natural gas purchase and sale transaction by power plant that PacifiCorp has entered into for deliveries between 2018 and 2019.

**Response to AWEC Data Request 0012**

Please refer to Confidential Attachment AWEC 0012.

Confidential information is provided subject to the terms and conditions of the protective order in this proceeding.

Despite PacifiCorp's diligent efforts, certain information protected from disclosure by the attorney-client privilege or other applicable privileges or law may have been included in its responses to these data requests. PacifiCorp did not intend to waive any applicable privileges or rights by the inadvertent disclosure of protected information, and PacifiCorp reserves its right to request the return or destruction of any privileged or protected materials that may have been inadvertently disclosed. Please inform PacifiCorp immediately if you become aware of any inadvertently disclosed information.

UE 375/PacifiCorp  
May 11, 2020  
AWEC Data Request 0013

**AWEC Data Request 0013**

Please identify all fixed pipeline expenses included historically in the cost of fuel by power plant and pipeline over the period 2018 and 2019.

**Response to AWEC Data Request 0013**

Please refer to Confidential Attachment AWEC 0013.

Confidential information is provided subject to the terms and conditions of the protective order in this proceeding.

Despite PacifiCorp's diligent efforts, certain information protected from disclosure by the attorney-client privilege or other applicable privileges or law may have been included in its responses to these data requests. PacifiCorp did not intend to waive any applicable privileges or rights by the inadvertent disclosure of protected information, and PacifiCorp reserves its right to request the return or destruction of any privileged or protected materials that may have been inadvertently disclosed. Please inform PacifiCorp immediately if you become aware of any inadvertently disclosed information.

UE 375/PacifiCorp  
May 7, 2020  
AWEC Data Request 0014

**AWEC Data Request 0014**

Has PacifiCorp ever assigned its interest in the Grant Meaningful Priority contract? If yes, please identify when the contract has been assigned and where the revenues from that sale have been modeled in net power costs.

**Response to AWEC Data Request 0014**

Yes. The Grant Public Utility District (PUD) Meaningful Priority contract was assigned for calendar year 2016 on September 11, 2015, for calendar year 2017 on September 9, 2016, for calendar year 2018 on September 15, 2017, and for calendar year 2019 on September 11, 2018. Revenue from these sales are recorded in Federal Energy Regulatory Commission (FERC) Account 456 (Other Revenue). FERC Account 456 is not included in net power costs (NPC), and therefore not modeled in the Company's 2021 NPC in this Transition Adjustment Mechanism proceeding. Revenues recorded in the Base Year are allocated on the System Generation allocation factor in the Company's general rate case, docket UE 374.



**BEFORE THE  
PUBLIC UTILITY COMMISSION OF OREGON  
UE 375**

In the Matter of	)
	)
PacifiCorp, dba Pacific Power,	)
	)
2021 Transition Adjustment Mechanism.	)
_____	)

**EXHIBIT AWEC/103  
EV 2020 MODELING ASSUMPTIONS**

PAC-E-17-07 / Rocky Mountain Power  
March 19, 2018  
PIIC 5<sup>th</sup> Set Data Request 29

**PIIC Data Request 29**

Reference the Rebuttal Testimony of Rick T. Link at 27:17-28:1: Mr. Link states that “[t]he GRID studies and assumptions referred to by Mr. Mullins were used in the 2017 IRP, but not in the economic analysis included in this case”.

- (a) Does PacifiCorp agree that, in preparing the economic analyses identified in the Second Supplemental Direct Testimony of Rick T. Link, it has incorporated the adjustments underlying the referenced supplemental GRID studies into the System Optimizer and Planning and Risk models?
- (b) On what basis, if any, does PacifiCorp conclude that the impacts of the adjustments underlying the supplemental GRID studies have changed materially after being incorporated into System Optimizer and Planning and Risk models? Please provide all studies showing what PacifiCorp believes the impact of those adjustments to be when incorporated into the System Optimizer and Planning and Risk models.
- (c) Does PacifiCorp’s economic analysis identified in the Second Supplemental Direct Testimony of Rick T. Link still include an assumption where the transfer capability between Jim Bridger and Walla Walla is increased by 300 MW corresponding to growing participation in the Energy Imbalance Market (EIM)? If yes, please provide PacifiCorp’s best estimate of the impact of this assumption on the medium gas and medium CO2 scenario. If no, please explain.
- (d) Does PacifiCorp’s economic analysis identified in the Second Supplemental Direct Testimony of Rick T. Link still include an assumption where the Wyoming loads are reduced to account for purported line loss benefits of the Transmission projects? If yes, please provide PacifiCorp’s best estimate of the impact of this assumption on the medium gas and medium CO2 scenario. If no, please explain?
- (e) Does PacifiCorp’s economic analysis identified in the Second Supplemental Direct Testimony of Rick T. Link still include an assumption to account for reduced de-rates associated with constructing Gateway segment D2? If yes, please provide PacifiCorp’s best estimate of the impact of this assumption on the medium gas and medium CO2 scenario. If no, please explain.

**Response to PIIC Data Request 29**

- (a) PacifiCorp does not agree. The line loss, reliability and energy imbalance market (EIM) assumptions adopted in the 2017 Integrated Resource Plan (IRP) were previously evaluated in the Generation and Regulation Initiative Decision Tool (GRID). In the 2017 IRP, PacifiCorp applied the results from

PAC-E-17-07 / Rocky Mountain Power  
March 19, 2018  
PIIC 5<sup>th</sup> Set Data Request 29

these GRID studies into the portfolio costs used to analyze the new wind and transmission projects. In the economic analysis presented in this proceeding, including the economic analysis summarized in the Company's second supplemental direct testimony filing, these assumptions were subsequently incorporated in the System Optimizer model (SO model) and the Planning and Risk (PaR) model. Consequently, no results from GRID have been used in the Company's economic analysis presented in this case.

- (b) PacifiCorp has not isolated the incremental impact of referenced assumptions in the SO model and PaR model. Please refer to the following supporting materials:

EIM Benefit

PacifiCorp's estimate of a 300 megawatt (MW) increase in transfer capability was based on historical experience with adjacent entities that have joined the energy imbalance market (EIM) since 2014. Please refer to Attachment PIIC 29-1, which provides the transmission intertie connectivity volumes as of December 2017. In each case that an entity has joined the EIM, total transmission connectivity to PacifiCorp has been greater than or equal to 300 MW. Idaho Power Company (IPC) has not yet finalized its transmission availability to the market, however, it is in each entity's best interest to make its transmission available to the market to maximize EIM benefits.

Line Loss Benefit

Please refer to Confidential Attachment PIIC 29-2, which provides calculations supporting the 11.6 average megawatts (aMW) referenced value.

Reliability Benefit

Please refer to Confidential Attachment PIIC 29-3, which provides calculations supporting the 36.5 average megawatts (aMW) referenced value.

- (c) Yes. Please refer to the Company's response to subpart (b) above.
- (d) Yes. Please refer to the Company's response to subpart (b) above.
- (e) Yes. Please refer to the Company's response to subpart (b) above.

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Confidential information is provided subject to the terms and conditions of the protective agreement in this proceeding.

Recordholder: Randy Baker

Sponsor: Rick Link