

**BEFORE THE  
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

In the Matter of the Petition of

DOCKET UE-230482

PACIFICORP d/b/a PACIFIC POWER &  
LIGHT COMPANY, Complainant,

Petitioner,

2022 Power Cost Adjustment Mechanism  
Annual Report.

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

**(REDACTED VERSION)**

**March 28, 2024**

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Mullins, Exh. BGM-6C	PacifiCorp’s Currently Effective Hedging Policy
Mullins, Exh. BGM-7C	PacifiCorp’s Hedging Policy as of Jan 7, 2021
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Mullins, Exh. BGM-10C	Power Hedging Percentage Analysis

1 **I. INTRODUCTION AND SUMMARY**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Bradley G. Mullins, and my business address is Tietotie 2, Oulunsalo,  
4 Finland FI-90460.

5 **Q. PLEASE STATE YOUR OCCUPATION AND ON WHOSE BEHALF YOU ARE**  
6 **TESTIFYING.**

7 A. I am the Principal Consultant for MW Analytics, a consulting firm that provides  
8 professional services to large energy consumers, primarily in the Western United States.  
9 I am appearing in this matter on behalf of Alliance of Western Energy Consumers  
10 (“AWEC”). AWEC is a non-profit trade association whose members are energy  
11 consumers located throughout the Pacific Northwest, including electric service customers  
12 of PacifiCorp.

13 **Q. PLEASE SUMMARIZE YOUR EDUCATION AND WORK EXPERIENCE.**

14 A. I have a Master of Accounting degree from the University of Utah. I have sponsored  
15 testimony in regulatory jurisdictions in the United States, including before the  
16 Washington Utilities and Transportation Commission (the “Commission”). A  
17 qualification statement and list of recent cases where I have submitted testimony can be  
18 found in **Mullins, Exh. BGM-2**.

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

20 A. I discuss PacifiCorp’s 2022 Power Cost Adjustment Mechanism (“PCAM”), in which  
21 PacifiCorp is seeking to recover deferred actual Net Power Costs (“NPC”) incurred over  
22 the period January 1, 2022 through December 31, 2022 (the “Deferral Period”) in the

1 amount of \$71,467,276.<sup>1</sup> Specifically, I evaluate the impact of heightened prices in the  
2 Deferral Period and PacifiCorp's gas and power hedging practices, including the effects  
3 of those hedging practices on Washington-allocated NPC included in the PCAM. In  
4 connection with the issues identified below, I recommend that the PCAM balance be  
5 reduced by \$26,173,777.

6 **Q. PLEASE SUMMARIZE YOUR PRINCIPAL CONCLUSIONS AND**  
7 **RECOMMENDATIONS RELATED TO GAS HEDGING.**

8 A. Under the Washington Interjurisdictional Allocation Methodology ("WIJAM"),  
9 Washington customer rates include two natural gas power plants, Chehalis and  
10 Hermiston, both of which are located in PacifiCorp's western balancing area.  
11 Washington customer rates do not include natural gas power plants located in  
12 PacifiCorp's eastern balancing area, where the majority of the gas power plants in  
13 PacifiCorp's generation fleet are located.<sup>2</sup> The Deferral Period was marked by  
14 heightened natural gas market prices, and the impact of heightened prices would have  
15 otherwise been mitigated through the prudent execution of a hedging policy.  
16 Notwithstanding, PacifiCorp did not specifically hedge the gas requirements of natural  
17 gas power plants located in the western balancing area, and the trade data shows that the  
18 volumes of hedges allocated to Washington customer rates was inadequate relative to the  
19 risk of fueling the Chehalis and Hermiston natural gas power plants. Since specific  
20 natural gas power plants are used to serve Washington customers and there are unique

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<sup>1</sup> Painter, Exh. JP-2 at 1:26 (See Excel version; line 23-26 appear to have been omitted from the PDF document).

<sup>2</sup> PacifiCorp's conversion of Units 1 and 2 of the Jim Bridger plant to natural gas was not completed in 2022 and, therefore, is not applicable to this case.

1 risks associated with those plants, prudent utility practice would have been for PacifiCorp  
2 to apply its hedging policy to those specific resources, though it did not. Accordingly, I  
3 recommend the Commission find that PacifiCorp was imprudent for not adequately  
4 hedging the gas requirements of the natural gas power plants located in its western  
5 balancing area and included in Washington customer rates. In the alternate, if  
6 PacifiCorp's system-wide hedging implementation is found to be prudent, I recommend  
7 that hedges be allocated on a system-wide basis, consistent with the method PacifiCorp  
8 followed when implementing its hedging policies.

9 In **Mullins, Exh. BGM-3C**, I present an analysis detailing the NPC impact of  
10 PacifiCorp's gas hedging practices during the Deferral Period. That analysis shows that,  
11 had PacifiCorp specifically hedged for gas requirements of the west-side of its system,  
12 Washington ratepayers would have avoided \$ [REDACTED] in unnecessary fuel expenses.  
13 Correspondingly, a system-based allocation of gas hedges would produce an incremental  
14 benefit to Washington ratepayers of \$ [REDACTED]. Based on those analyses, I recommend  
15 an adjustment to the PCAM deferral equal to the lesser of the two. Since much of these  
16 benefits should have been included in the final NPC update in the 2022 Power Cost Only  
17 Rate Case ("PCORC"), I also recommend that, beginning on May 1, 2022, half of the  
18 adjustment be applied as a reduction to base NPC, after applying the sharing percentages.  
19 Including sharing and interest of \$ [REDACTED] at the FERC interest rate, I recommend the  
20 Commission approve a reduction to the PCAM balance of \$ [REDACTED] for gas hedging.

1 **Q. PLEASE SUMMARIZE YOUR RECOMMENDATION RELATED TO POWER**  
2 **HEDGING.**

3 A. [REDACTED]  
4 [REDACTED]  
5 [REDACTED]  
6 [REDACTED]  
7 [REDACTED]

8 [REDACTED] This result of this disparity is that only a small portion of Washington-allocated  
9 purchased power expenses are being hedged. In recognition that Washington has a  
10 greater net short position than the system average and does not include the benefit of  
11 resources that cause PacifiCorp system to be long, it is necessary to allocate more of the  
12 system power hedges to Washington's short position to cover the increased risk being  
13 allocated to Washington customers in the WIJAM. Based on this, I evaluated  
14 PacifiCorp's actual power hedging transactions in the Deferral Period and using that data,  
15 recommend an adjustment of \$ [REDACTED] to the PCAM balance for power hedging,  
16 inclusive of sharing and interest.

17 **Q. HAS PACIFICORP PRUDENTLY MANAGED ITS WASHINGTON'S NET**  
18 **SHORT POSITION?**

19 A. Importantly, there has been no legitimate evidence presented in this case that PacifiCorp  
20 is taking concrete actions to manage Washington's net short position, and while my  
21 adjustments address some of the risks associated with the WIJAM, they do not address  
22 this broader concern. And by all accounts, PacifiCorp is moving backwards on this front.  
23 On September 29, 2023, for example, PacifiCorp suspended its 2022 All Source Request

1 for Proposal (“RFP”), which would have filled some of Washington’s net short position.<sup>3</sup>  
2 PacifiCorp has also been vocal that it may cease investing in states such as Oregon and  
3 Washington due to wildfire risks. In his recent letter to shareholders, Warren Buffet  
4 announced “[i]t will be many years until we know the final tally from BHE’s forest-fire  
5 losses and can intelligently make decisions about the desirability of future investments in  
6 vulnerable western states.”<sup>4</sup> This statement, viewed in conjunction with the cancellation  
7 of the 2022 All-Source RFP, is deeply concerning, and reason to disallow the entire  
8 PCAM balance on the basis that PacifiCorp has not found it *desirable* to invest in  
9 Washington’s portfolio.

## 10 II. BACKGROUND

### 11 Q. HOW DOES PACIFICORP RECOVER NPC?

12 A. The annual PCAM filings establish the Deferred PCAM Rates in Rate Schedule 97,  
13 Power Cost Adjustment Mechanism Adjustment. The purpose of the Deferred PCAM  
14 Rate is to provide PacifiCorp with additional revenue recovery, or ratepayers with a  
15 refund, depending on whether actual NPC is higher or lower than Base NPC approved in  
16 general rates. The excess- or under-recovery is applied against various design elements  
17 to, among other things, ensure equitable risk sharing between the shareholders and  
18 ratepayers. The Commission recently reaffirmed these design elements in its Final Order  
19 in PacifiCorp’s most recent general rate case.<sup>5</sup>

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<sup>3</sup> See Docket No. UE-210979, PacifiCorp Update to PacifiCorp’s 2022 All Source Request for Proposals Schedule (Sep. 29, 2023).

<sup>4</sup> Warren Buffet, 2023 Letter to Shareholders 14 (Feb. 24 2024).

<sup>5</sup> Docket Nos. UE-230172/UE-210852, Order 08 ¶ 404 (Mar. 19, 2024)

1 **Q. IN WHAT DOCKETS WAS BASE NPC APPROVED?**

2 A. In the Deferral Period, Base NPC was approved in two proceedings. Over the four-  
3 month period January 1, 2022 through April 30, 2022, Base NPC was established in  
4 PacifiCorp's 2021 general rate case ("GRC"), Docket UE-191024. Over the eight-month  
5 period May 1, 2022 through December 31, 2022, Base NPC was established in  
6 PacifiCorp's 2022 PCORC, Docket UE-210402.

7 **Q. WHAT COSTS ARE CONSIDERED IN NPC?**

8 A. NPC represents the variable energy costs associated with providing electric services. It  
9 includes the cost of fuel (both coal and gas), the cost of purchased power, and the cost of  
10 wheeling (*i.e.*, the cost of transmitting electricity on other utilities' transmission systems).  
11 It also includes the revenues associated with power sales in wholesale markets, including  
12 long-term power sales agreements and short-term sales in regional markets. The *net* in  
13 NPC, therefore, is representative of the fact that it includes wholesale sales transactions  
14 that offset the variable energy costs of serving retail customers. The specific FERC  
15 Accounts included in NPC include the following:

- 16 • Account 447 – Sales for Resale;
- 17 • Account 501 – Fuel (for Steam Power);
- 18 • Account 503 – Steam from Other Sources (Geothermal);
- 19 • Account 547 – Fuel (for Mechanical Power);
- 20 • Account 555 – Purchased Power; and



- 1           • Account 565 – Wheeling.<sup>6</sup>

2           These costs are calculated on a total-system basis and allocated to Washington  
3           using a method, known as the WIJAM, in which only certain resources are included in  
4           Washington rates and a corresponding adjustment to Washington’s resultant short  
5           position is filled with reduced sales or increased purchase. In addition to these NPC  
6           FERC accounts, the PCAM docket is also used to true up production tax credits  
7           (“PTCs”), the recovery or refund of which occurs through Schedule 99.

8   **Q.   HOW DID ACTUAL NPC IN THE DEFERRAL PERIOD COMPARE TO BASE**  
9   **NPC?**

10   **A.**   Prior to the application of adjustments and allocation to Washington, total-Company  
11       actual NPC was \$2,040,318,303 in the Deferral Period.<sup>7</sup> This compares to total-  
12       Company Base NPC of \$1,465,672,250 in the 2021 GRC, and \$1,470,392,621 in the  
13       2022 PCORC.<sup>8</sup> For the Deferral Period this resulted in an average total-Company Base  
14       NPC of \$1,468,784,171, based on a weighting of the actual loads in the months when the  
15       respective base NPC levels were in effect. Thus, total-Company actual NPC was  
16       \$571,534,132, or 39%, higher than Base NPC. This variance is detailed in **Table 1**,  
17       below.

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<sup>6</sup>       Uniform System of Accounts Prescribed For Public Utilities And Licensees Subject to The Provisions of  
      The Federal Power Act, 18 CFR 101.

<sup>7</sup>       Mullins, Exh. BGM-4 at 8 (PacifiCorp’s Resp. to AWEC Data Request (“DR”) 10).

<sup>8</sup>       Mullins, Exh. BGM-4 at 26 (PacifiCorp’s Resp. to AWEC DR 58).

**Table 1**  
PCORC GRC Base NPC vs. Forecast NPC

<b>Category</b>	<b>2022 Base NPC</b>	<b>2022 Actuals</b>	<b>Variance</b>	<b>%</b>
Net S.T. Purchases	(137,906,160)	\$ 135,625,310	\$ 273,531,469	NMF
Net L.T. Purchases	553,961,677	544,173,647	(9,788,030)	-2%
Gas	281,182,713	610,525,466	329,342,754	117%
Coal	622,677,367	580,834,961	(41,842,405)	-7%
Wheeling	144,274,941	164,088,727	19,813,786	14%
Other	4,593,634	5,070,192	476,558	10%
<b>Total</b>	<b>\$ 1,468,784,171</b>	<b>\$ 2,040,318,303</b>	<b>\$ 571,534,132</b>	<b>39%</b>

1 As can be seen, higher natural gas expenses and short-term purchased power expenses  
2 produced most of the variance. Wheeling expenses were also higher than the Base NPC,  
3 though this change had a smaller impact on overall NPC. Coal costs, on the other hand,  
4 were lower than the forecast, and long-term purchases and sales were largely in line with  
5 the Base NPC forecast.

6 **Q. HOW DID ACTUAL NPC COMPARE TO BASE NPC ON A WASHINGTON**  
7 **ALLOCATED BASIS?**

8 A. The Washington-allocated variances, based on the WIJAM method, are detailed in  
9 **Table 2**, below.

**Table 2**  
Comparison of Washington Allocated Base NPC to Actual NPC<sup>9</sup>

<u>Category</u>	<u>2022 Base NPC</u>	<u>2022 Actuals</u>	<u>Variance</u>	<u>%</u>
Net S.T. Purchases	\$ 46,830,667	\$ 94,350,911	\$ 47,520,245	101%
Net L.T. Purchases	12,635,133	12,820,855	185,722	1%
Gas	21,174,096	49,688,884	28,514,788	135%
Coal	46,119,187	42,158,557	(3,960,630)	-9%
Wheeling	11,261,017	13,019,139	1,758,121	16%
Other	(121,107)	403,896	525,003	-434%
<b>Total</b>	<b>\$ 137,898,992</b>	<b>\$ 212,442,241</b>	<b>\$ 74,543,250</b>	<b>54%</b>

1           From this it can be seen that, similar to total-Company NPC, the majority of the  
2 difference between Washington-allocated Actual and Base NPC were short-term  
3 purchases and gas costs. Due to the way the WIJAM is applied, however, the increase to  
4 net short-term purchases was more significant than the total-Company increase. Notably,  
5 the total-system Base NPC forecast showed PacifiCorp to be in a net-long position, with  
6 short-term firm sales revenues exceeding short-term firm purchase expenses. In actual  
7 NPC, this was reversed, with sales expenses exceeding revenues, leading to a net  
8 expense. This change was more impactful to Washington than its overall system shares  
9 of these costs. Washington started in a net-short position, and correspondingly assumed  
10 17% of the increased total-system costs from net short-term purchases.<sup>10</sup> In the absence  
11 of the WIJAM, the increase to net short-term purchases would be allocated based on  
12 Washington’s approximate 8.0% System Generation (“SG”) factor, meaning that the

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<sup>9</sup> Note that Table 2 does not account for volumetric differences between the Base NPC filings and the PCAM. Volumetric differences are captured in the PCAM balance calculation, and accordingly, the variance in Table 2 differs from the \$72,671,801 variance PacifiCorp calculated in Painter, Exh. JP-2 at 1:9.

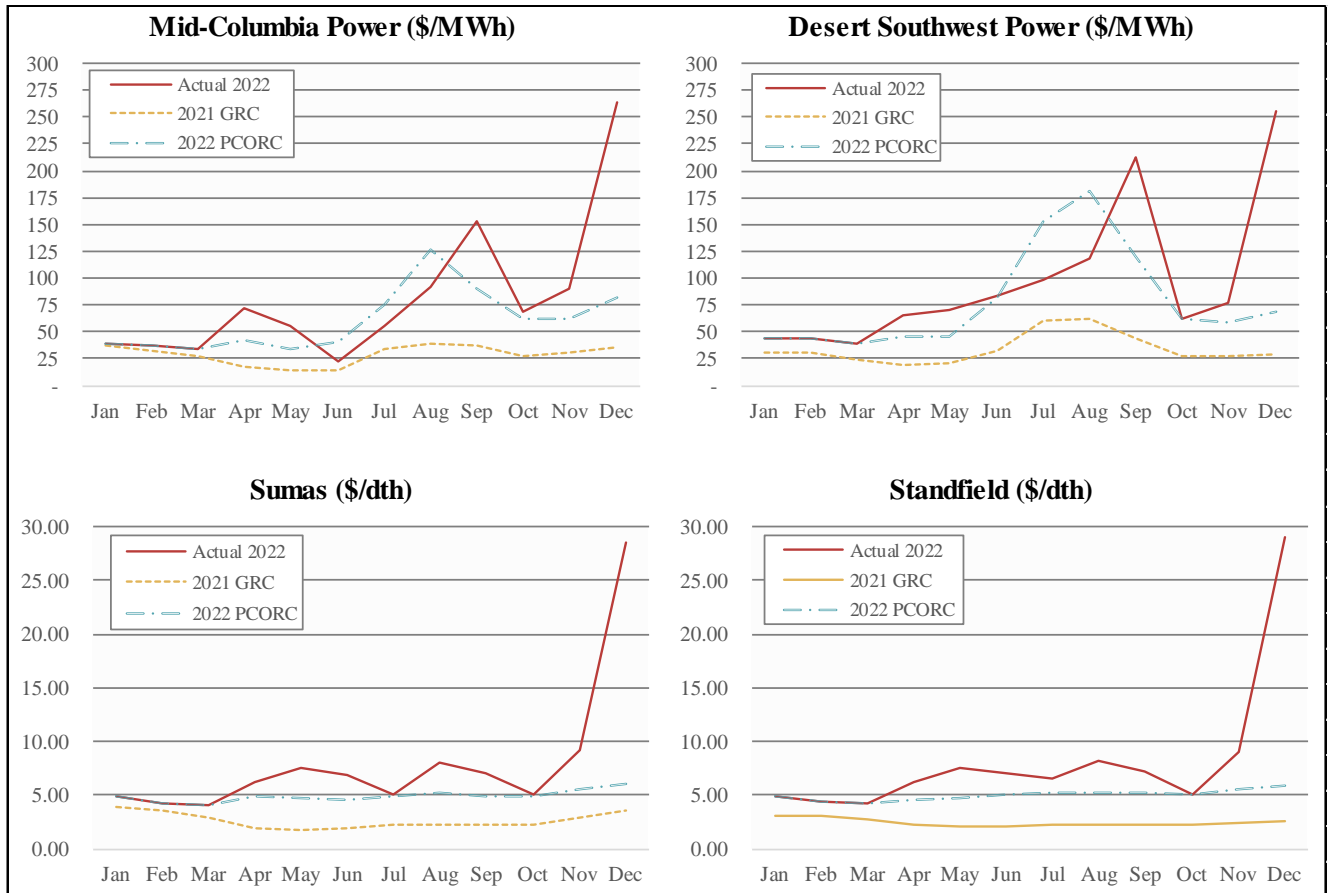
<sup>10</sup> Calculated as 47,520,245 ÷ \$ 273,531,469.

1 increased net short-term purchase expenses allocated to Washington were over double the  
2 system average. Similarly, gas expenses increased by a greater degree than the total  
3 system increase—a 135% Washington allocated increase compared to the 117% total  
4 system increase.

5 **Q. WHAT CAUSED THE VARIANCES IN SHORT TERM PURCHASES AND GAS**  
6 **PRICES?**

7 A. One driver of the variance between Base NPC and actual NPC in the Deferral Period was  
8 market prices. The final NPC study prepared in the 2021 GRC used the September 30,  
9 2020 Official Forward Price Curve (“OFPC”). The Final NPC study prepared in the  
10 2022 PCORC used the March 31, 2022 OFPC. In **Figure 1**, below, I have performed a  
11 comparison between these respective price curves and actual, average daily market index  
12 prices in 2022.

**Figure 1**  
Market Prices: Base NPC vs. 2022 Actual



1                   The actual prices in the figures above are those published by the Intercontinental  
2                   Exchange (“ICE”), which represent average prices over a month and not subject to any  
3                   volumetric weighting. As can be seen, actual prices for both power and natural gas were  
4                   significantly higher than the September 30, 2020 OFPC used to establish Base NPC in  
5                   the 2021 GRC. It can be seen, however, that except for December, prices in the 2022  
6                   PCORC generally followed actual prices, particularly since it was based on forward  
7                   curves developed three months into the Deferral Period. Thus, the price spikes that  
8                   occurred in December are a key driver of the increased market prices and increased NPC

1 experienced in the Deferral Period. In particular, Sumas gas prices in the month of  
2 December were 707% and 372% higher than the price forecast used in the 2021 GRC and  
3 the 2022 PCORC, respectively. These elevated prices continued into early 2023,  
4 although prices have since returned pre-2022 levels. Sumas gas prices on March 25,  
5 2024, for example, were approximately \$1.25/MMBtu.<sup>11</sup>

6 **Q. DOES PACIFICORP HAVE POLICIES TO PROTECT RATEPAYERS FROM**  
7 **THE PRICE SPIKES EXPERIENCED IN THE DEFERRAL PERIOD?**

8 A. Yes. PacifiCorp has a hedging policy which is designed to mitigate the impact of rapid  
9 increases to market prices, such as those noted in **Figure 1**, above. These hedging  
10 policies are designed to moderate increases in market prices for customers, such as those  
11 between the 2021 GRC and the 2022 PCORC, but they did not. AWEC raised this  
12 concern in the 2022 PCORC, noting that “higher costs are ‘due almost entirely’ to the  
13 Company’s lack of hedging for Washington power costs.”<sup>12</sup> The Commission stated that  
14 “[w]e therefore agree with AWEC that Washington customers may be faced with  
15 significant, increased power costs and that PacifiCorp may not have appropriately  
16 managed risk for its Washington portfolio.”<sup>13</sup> Notwithstanding, rather than rejecting the  
17 2022 PCORC Multi-Party Stipulation, the Commission found that the issue related to  
18 hedging was best addressed in this PCAM proceeding,<sup>14</sup> and approved Base NPC

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11 Source Energy Information Administration, <https://www.eia.gov/todayinenergy/prices.php> (accessed  
March 26, 2024).

12 UE-210402, Order 06 at ¶78 (Mar. 29, 2022).

13 UE-210402, Order 06 at ¶152.

14 UE-210402, Order 06 at ¶153.

1 “subject to later review and possible refund.”<sup>15</sup> Specifically, the Commission  
2 conditioned the 2022 PCORC Multi-Party Stipulation on a requirement for PacifiCorp, in  
3 this proceeding, to:

4 Demonstrate the prudence of applying its risk management and hedging  
5 practices to the load and resource mix of Washington customers and (2)  
6 demonstrate that the portfolio of long-term resources the Company acquired  
7 or chose not to acquire for Washington’s allocated resources balanced the  
8 trade-off between portfolio costs and market risk.<sup>16</sup>

9 As I discuss below, much of the increases that PacifiCorp is seeking in this case,  
10 and the increases that were established in the 2022 PCORC, are the result of hedging  
11 practices that are not prudent, thus warranting an adjustment to the PCAM balance.

### 12 III. HEDGING POLICY

#### 13 Q. WHAT IS HEDGING?

14 A. Hedging is a risk management strategy employed by utilities to protect themselves and  
15 their ratepayers from adverse price movements and unforeseen events. Notably, hedging  
16 is not about beating the market, nor is it focused on trying to outperform the market or  
17 making speculative profits. In essence, hedging involves pre-purchasing an energy  
18 commodity at a predetermined price before its actual consumption. By securing a fixed  
19 price for the commodity in advance, a hedged utility reduces its exposure to market  
20 prices and market price changes during the consumption period. In doing so, the utility

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<sup>15</sup> UE-210402, Order 06 at ¶108.

<sup>16</sup> UE-210402, Order 06 at ¶108

1 does not eliminate its exposure to the market. Instead, the consequences of both rising  
2 and falling market prices are distributed more evenly across time.

3 **Q. WHAT FORWARD HEDGING PRODUCTS ARE AVAILABLE TO**  
4 **PACIFICORP?**

5 A. Forward hedging products for natural gas and power are available in a range of markets,  
6 including both bilateral markets and through commodity exchanges, such as  
7 Intercontinental Exchange, the Chicago Mercantile Exchange, and the New York  
8 Mercantile Exchange. Hedging contracts can be for either physical or financial products.  
9 A physical hedging contract provides for delivery of the underlying commodity at a  
10 specific location at a fixed price. Alternatively, financial hedging products, such as a  
11 swap, provide similar hedging characteristics as a physical transaction, albeit settled  
12 based on published index prices without delivery of the underlying commodity. The  
13 practicality of a physical versus financial hedging transaction varies based on the specific  
14 circumstances and markets involved. In the Deferral Period, PacifiCorp [REDACTED]

15 [REDACTED]

16 [REDACTED].<sup>17</sup>

17 **Q. WHAT IS A SWAP?**

18 A. Swaps are the primary instrument used by utilities for implementing financial hedging. A  
19 swap contract is an agreement between two counterparties to exchange a fixed price with  
20 an index price. Natural gas and power swaps usually involve settlement periods that last

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<sup>17</sup> See Mullins, Exh. BGM-4 at 9-10 (PacifiCorp's Resp. to AWEC DR 14. Based on a review of confidential attachments "WY 20000-642-EM-23 Attach ECAM MFR 1 CONF" "WY 20000-642-EM-23 Attach ECAM MFR 3-3 CONF." These voluminous files are not attached but are included in the workpaper versions of Mullins, Exh. BGM-3C and Mullins, Exh. BGM-10C).



1 for a month or a quarter. With a swap, the hedging utility is paid, or must pay, the  
2 difference between the agreed-upon fixed price and the actual market index price,  
3 sometimes referred to as the floating price. If prices go up, the utility receives a financial  
4 payment offsetting the increased cost of purchasing gas in the market; if prices go down,  
5 however, the utility must make a financial payment offsetting the benefit of the declining  
6 prices. Assuming the settlement index price is the same as the prices the utility pays to  
7 acquire the underlying commodity in the consumption period,<sup>18</sup> the net cost to the utility  
8 (*i.e.*, the cost of purchasing the commodity, less the payout from the swap) is the fixed  
9 price of the swap.

10 **Q. HOW DOES PACIFICORP ACCOUNT FOR GAS SWAPS?**

11 A. For accounting purposes, a swap is included in the cost of fuel for specific natural gas  
12 power plants, consistent with the gas supply that is being hedged by the swap.<sup>19</sup> A swap  
13 settled at the Rockies index is assigned to the fuel cost of the east-side natural gas power  
14 plants; whereas, a swap settled at the Sumas index is assigned to the fuel cost of the west-  
15 side natural gas power plants. According to PacifiCorp, it “believes that the allocation  
16 methodology the [sic] is used to allocate natural gas swaps (financial allocations) is  
17 appropriate since natural gas swaps are only used to hedge natural gas supply (physical  
18 allocations), and natural gas supply is allocated in a similar manner.”<sup>20</sup> Hedges are  
19 executed to mitigate the price risk of natural gas supply. Thus, from the fact that swaps

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18 Note that this is often not the case, leading to a situation where financial swaps are an imperfect hedge for  
the underlying commodity.

19 Mullins, Exh. BGM-4 at 25 (PacifiCorp Resp. to AWEC DR 57).

20 *Id.*

1 are, in fact, separately allocated to natural gas supplies on the west- versus east-side of  
2 the system, one can conclude that there are different price risks to mitigate for the gas  
3 supply on the two sides of the system. These unique price risks, therefore, are the reason  
4 why, for accounting purposes, it is necessary to assign swaps to the fuel cost of specific  
5 natural gas power plants, as opposed to a system-wide assignment of swaps across the  
6 entire fleet. The accounting for hedges follows the unique supply and risk being hedged.

7 **Q. HOW ARE GAS SWAPS ALLOCATED IN WIJAM?**

8 A. The WIJAM does not specify how swaps are to be allocated. Washington rates only  
9 include the Chehalis and Hermiston power plants, and under PacifiCorp's  
10 implementation of the WIJAM, it follows the same financial accounting approach  
11 discussed above to allocate swaps to Washington customer rates. In other words, the  
12 swaps that hedge the natural gas supply for the east-side natural gas power plants—*i.e.*  
13 the swaps settled at the Sumas market price—are allocated to Washington customer rates.  
14 Correspondingly, swaps assigned to the east-side plants—*i.e.* those swaps settled at  
15 Rockies index prices—are excluded from Washington customer rates because those  
16 instruments do not hedge the natural gas supply of the Chehalis or Hermiston power  
17 plants. When it comes to PacifiCorp's execution of its hedging policy, this presents a  
18 conundrum. A swap is either a hedge for the total system, or it is not. PacifiCorp's  
19 hedging policy implementation assumed that swaps are hedges for the total system,<sup>21</sup>  
20 whereas its financial accounting assumes that swaps are hedges for specified gas

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<sup>21</sup> See, *e.g.*, UE-210402, Order 06 at ¶ 147 (“The Company also hedges for its system as a whole and does not separately hedge for its Washington-allocated resources and Washington load.”)

1 supplies. These two conflicting assumptions cannot be reconciled. Either PacifiCorp  
2 executed its hedging policy in a way that was wrong (and thus, imprudent) or its  
3 accounting method is wrong.

4 **Q. WHERE IS PACIFICORP’S HEDGING POLICY DOCUMENTED?**

5 A. PacifiCorp’s internal hedging policy is established in its “Energy Risk Management  
6 Policy.” In response to AWEC Data Request 2, PacifiCorp provided each of its Energy  
7 Risk Management Policy documents in effect over the period January 1, 2019 through  
8 May 31, 2023.<sup>22</sup> PacifiCorp’s current hedging policy is attached as

9 **Mullins, Exh. BGM-6C.** [REDACTED]

10 [REDACTED]

11 [REDACTED]<sup>23</sup> [REDACTED]

12 [REDACTED]<sup>24</sup>

13 [REDACTED]

14 [REDACTED]<sup>25</sup>

15 **Q. HAS PACIFICORP CHANGED ITS HEDGING POLICY SINCE 2019?**

16 A. Yes. The currently effective hedging policy has been in effect since July 1, 2021. Prior  
17 to that date, the hedging policy was based in part on a To-Expiry Value-at-Risk  
18 (“TEVaR”) model. The prior hedging policy is attached as **Mullins, Exh. BGM-7C.**  
19 The hedges impacting the transactions included in the Deferral Period were executed

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22 Mullins, Exh. BGM-4 at 1 (PacifiCorp Resp. to AWEC DR 2).

23 Mullins, Exh. BGM-6C.

24 *Id.*

25 *Id.*

1 under both PacifiCorp’s current and old hedging policies. Because of this, both policies  
2 are potentially at issue in this case. My analysis, however, focuses on the current policy  
3 because it was in effect in the months leading up to, and throughout, the Deferral Period.  
4 As PacifiCorp stated in Response to AWEC Data Request 7, “[TEVaR] reporting is no  
5 longer produced and no longer relevant in the new hedging program after June 30,  
6 2021.”<sup>26</sup> Further, while the power hedging method changed materially with the new  
7 policy, the natural gas hedging limits did not change.

8 **Q. PLEASE DESCRIBE THE CURRENT HEDGING POLICY.**

9 A. On April 19, 2021, PacifiCorp provided a presentation to the Commission previewing the  
10 current hedging policy and its justification for shifting away from the TEVaR model. I  
11 have attached that presentation as **Mullins, Exh. BGM-8C**.<sup>27</sup> As can be seen,

12 PacifiCorp’s current policy [REDACTED]

13 [REDACTED]

14 [REDACTED]

15 Limits apply to both gas and power hedges and are detailed in **Confidential Table 3**,  
16 below.

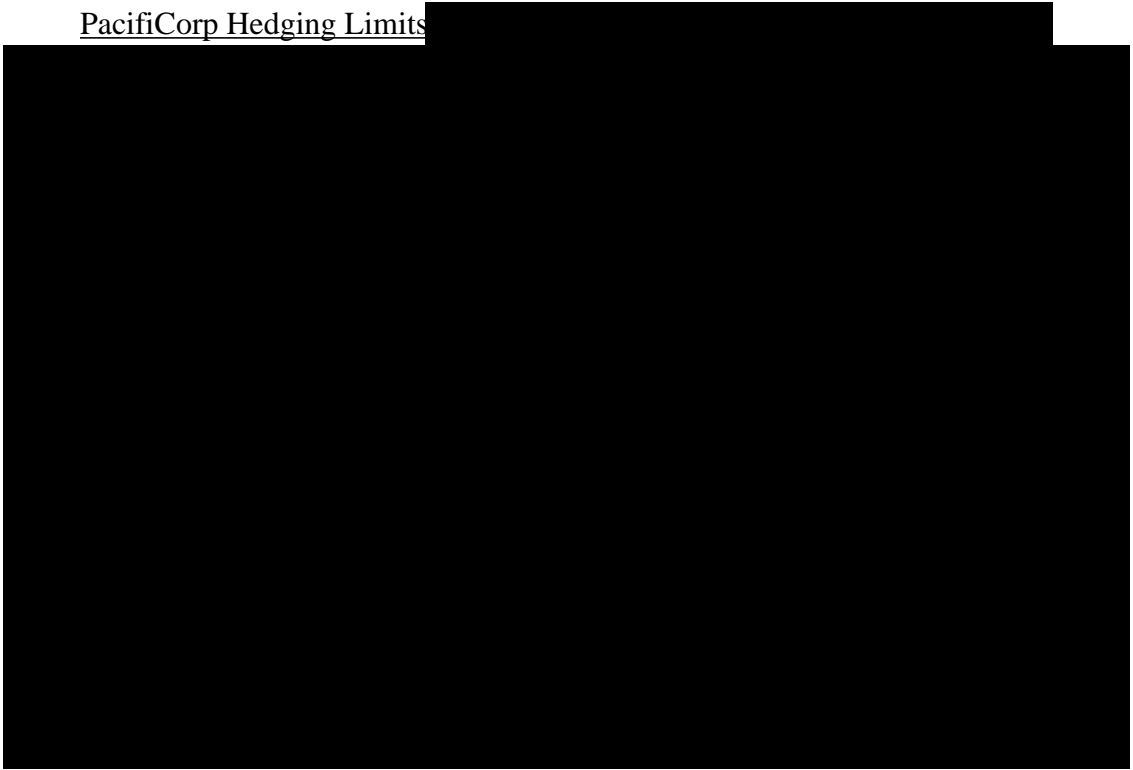
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<sup>26</sup> Mullins, Exh. BGM-4 at 5 (PacifiCorp Resp. to AWEC DR 7).

<sup>27</sup> See also, Mullins, Exh. BGM-4 at 4 (PacifiCorp Resp. to AWEC DR 6).

**Confidential Table 3**

PacifiCorp Hedging Limits



1 **Q. HOW DID PACIFICORP CALCULATE THE LIMITS IN THE CURRENT**  
2 **HEDGING POLICY?**

3 A. [Redacted]  
4 [Redacted]  
5 [Redacted]  
6 [Redacted]  
7 [Redacted]  
8 [Redacted]

9 **Q. HOW DO THE CURRENT LIMITS COMPARE TO THE OLD POLICY?**

10 A. [Redacted]  
11 [Redacted]

1 [REDACTED]  
2 [REDACTED]  
3 [REDACTED]  
4 [REDACTED]<sup>28</sup>  
5 [REDACTED]  
6 [REDACTED]  
7 [REDACTED] are detailed in **Confidential Table 4** below:

**Confidential Table 4**

[REDACTED]

[REDACTED]

8 [REDACTED]  
9 [REDACTED]  
10 [REDACTED]  
11 [REDACTED]  
12 [REDACTED]  
13 [REDACTED]

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<sup>28</sup> Mullins, Exh. BGM-7C at 4.

1 **Q. HOW DOES PACIFICORP CALCULATE ITS NATURAL GAS AND POWER**  
2 **REQUIREMENTS WHEN APPLYING ITS HEDGING LIMITS?**

3 A. In response to AWEC Data Request 8, PacifiCorp provided a sample of the daily models  
4 that it used to calculate its hedging requirements, which PacifiCorp employs to evaluate  
5 whether it is within the above hedging limits.<sup>29</sup> As PacifiCorp explained, “[n]atural gas  
6 hedging limits are prepared daily by PacifiCorp’s middle office and risk management  
7 groups.” In **Mullins, Exh. BGM-9C**, I have attached the hedging position report from  
8 September 30, 2021. The natural gas and power requirements in that analysis are  
9 calculated using a forward-looking power cost simulation. PacifiCorp uses a model  
10 called “PCI” to perform these simulations.<sup>30</sup> [REDACTED]

11 [REDACTED]  
12 [REDACTED]  
13 [REDACTED]  
14 [REDACTED]  
15 [REDACTED]  
16 [REDACTED]

17 **IV. GAS HEDGING**

18 **Q. WHAT HAVE YOU FOUND WITH RESPECT TO PACIFICORP’S GAS**  
19 **HEDGING IN THE DEFERRAL PERIOD?**

20 A. PacifiCorp applied its hedging policy in a way that effectively ignored the natural gas  
21 power plants located on the west-side of its system, which are the plants included in

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<sup>29</sup> Mullins, Exh. BGM-4 at 6 (PacifiCorp Resp. to AWEC DR 8).  
<sup>30</sup> Mullins, Exh. BGM-4 at 24 (PacifiCorp’s Resp. to AWEC DR 54).

1 Washington customer rates. Chehalis and Hermiston are fueled through natural gas  
2 supplies that are unique and distinct from the supplies that are used to fuel other natural  
3 gas power plants on the east side of PacifiCorp's system. In implementing its hedging  
4 policy, PacifiCorp did so based on its total-system natural gas position, ignoring whether  
5 this resulted in adequate hedging of the unique gas supplies used to fuel its the west-side  
6 natural gas power plants.<sup>31</sup> As I will establish, this implementation resulted in PacifiCorp  
7 [REDACTED] its Washington gas requirements, harming Washington ratepayers.

8 **Q. WAS PACIFICORP REQUIRED TO CONDUCT GAS HEDGING ON A**  
9 **SYSTEM-WIDE BASIS?**

10 A. No. There is nothing in its hedging policy that requires PacifiCorp to implement its  
11 hedging policy for natural gas power plants on a system-wide basis, as opposed to  
12 hedging for the specific gas supplies of plants on the east- versus west-side of its system.

13 According to PacifiCorp, its hedging policy "[REDACTED]

14 [REDACTED]."<sup>32</sup> [REDACTED]

15 [REDACTED]

16 [REDACTED]

17 [REDACTED]

18 [REDACTED],<sup>33</sup> yet it implemented its hedging policy in way that

19 ignored the differences between the two. [REDACTED]

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31 See, e.g., UE-210402, Order 06 at ¶ 147 ("The Company also hedges for its system as a whole and does not separately hedge for its Washington-allocated resources and Washington load.") See also, Mullins, Exh. BGM-5C at 4-5 (PacifiCorp's Resp. to AWEC DR 41).

32 Mullins, Exh. BGM-5C at 4-5 (PacifiCorp's Resp. to AWEC DR 41).

33 See Mullins, Exh. BGM-9C.



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[REDACTED]

[REDACTED]<sup>34</sup> And, even if there were such a requirement in the hedging policy (*i.e.*, to hedge on a system basis), the policy itself is not a license to conduct hedging in an imprudent manner.

**Q. WHAT HAVE YOU CONCLUDED BASED ON THESE FINDINGS?**

A. Even if Washington did not have a unique allocation method, ignoring the unique risks for gas supply on the west-side versus the east-side of its system was not prudent. Considering that PacifiCorp does have customers—such as those in Washington—only served with the west-side gas plants, PacifiCorp’s indifference was doubly so.

**Q. HOW DID YOU EVALUATE THE PRUDENCE OF PACIFICORP’S HEDGING PRACTICES?**

A. Evaluation of the effectiveness of a hedging policy inherently must be done after the fact. It is also true, however, that evaluating the prudence of a utility’s actions must be based on what the utility knew, or what it should have known, at the time it made its decisions. Based on available information, PacifiCorp should have known that it was risky to execute hedges only for the gas plants located on the east-side of its system, while effectively ignoring the unique risks of the gas plants located on the west-side of its system. It also should have known that Washington customers only pay for the cost of plants located on the west-side of the system, and that ignoring the risks of those specific plants, while focusing only on the total-system position, was harmful to Washington

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<sup>34</sup> *Id.*

1 customers. Either of these factors, the truth of which is supported by further evidence  
2 below, support a finding of imprudence.

3 On the other hand, if it is true that PacifiCorp was prudent in managing its gas  
4 position on a total-system basis, it must be concluded that the accounting method for  
5 assigning hedges to individual power plants—which is not done on a total-system basis  
6 but follows the specific fuel supply being hedged—is inaccurate, justifying a reallocation  
7 of hedging benefits between the east- and west-side gas plants.

8 **a. Hedging Evaluation**

9 **Q. HOW IS A HEDGING PERCENTAGE CALCULATED?**

10 A. Evaluating PacifiCorp's hedging position relative to hedging policy limits involves the  
11 calculation of hedging percentages. A hedging percentage can be calculated at any given  
12 point in time prior to, and including, the consumption period. It is a simple calculation  
13 requiring two data points: 1) natural gas supply requirements, and 2) the volume of  
14 executed hedges. The hedging percentage is simply the hedged volume divided by the  
15 total supply requirements (*i.e.*,  $2 \div 1$ ).

16 **Q. IS IT NECESSARY TO CONSIDER HINDSIGHT WHEN CALCULATING**  
17 **HEDGING PERCENTAGES?**

18 A. In some cases, yes. The notional volume of hedges executed at any given point in time  
19 prior to the consumption period (*i.e.* #2 above) is an objective measure. It is whatever  
20 transactions PacifiCorp had executed at that point in time. Because PacifiCorp must  
21 hedge prior to knowing the actual volumes that will be consumed, however, the  
22 denominator—the expected natural gas supply requirements (*i.e.* #1 above)—may change

1 over time depending on PacifiCorp's expectations. This is where hindsight comes into  
2 play. PacifiCorp's expectations regarding expected natural gas supply requirements must  
3 be judged based on what PacifiCorp knew, or what it should have known, at the time it  
4 executed the hedges. After-the-fact hedging percentages can be calculated to determine  
5 the percentage of the actual natural gas supply that was ultimately hedged at varying time  
6 intervals prior to the consumption period. Notwithstanding, actual natural gas supply  
7 requirements may be higher or lower than PacifiCorp had expected at the time the  
8 underlying hedges were executed. This forecasting error may result in hedging  
9 percentages that are too low, or too high. Thus, in such circumstances, there is reason to  
10 make a secondary inquiry as to the reasonableness of the expectation, viewed in the  
11 absence of hindsight.

12 **b. Natural Gas Requirements**

13 **Q. HOW DOES PACIFICORP PURCHASE PHYSICAL NATURAL GAS?**

14 A. [REDACTED]

15 [REDACTED]<sup>35</sup> Firm index gas supply products are commonly used in the natural gas industry  
16 and provide rights to physical gas supply at a particular delivery point and settled at  
17 monthly, First of Month ("FOM") index prices. The prices for FOM market index  
18 products are settled based on average market prices for monthly natural gas transactions  
19 cleared in the week prior to the first of the month, also known as the Bid Week. The  
20 monthly market prices used for index gas are, therefore, different from the cost of gas

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<sup>35</sup> See e.g. Mullins, Exh. BGM-4 at 9-10 (PacifiCorp's Resp. to AWEC DR 14).

1 purchased in daily markets over the course of a month. The ICE market prices, for  
2 example, represent the average daily price of natural gas over a month, rather than the  
3 FOM prices used as the market index for most of PacifiCorp's physical gas supply. In  
4 the Deferral Period approximately █% of PacifiCorp's gas requirements were acquired  
5 using FOM index products, whereas the remaining █% of gas was acquired in daily gas  
6 markets.<sup>36</sup>

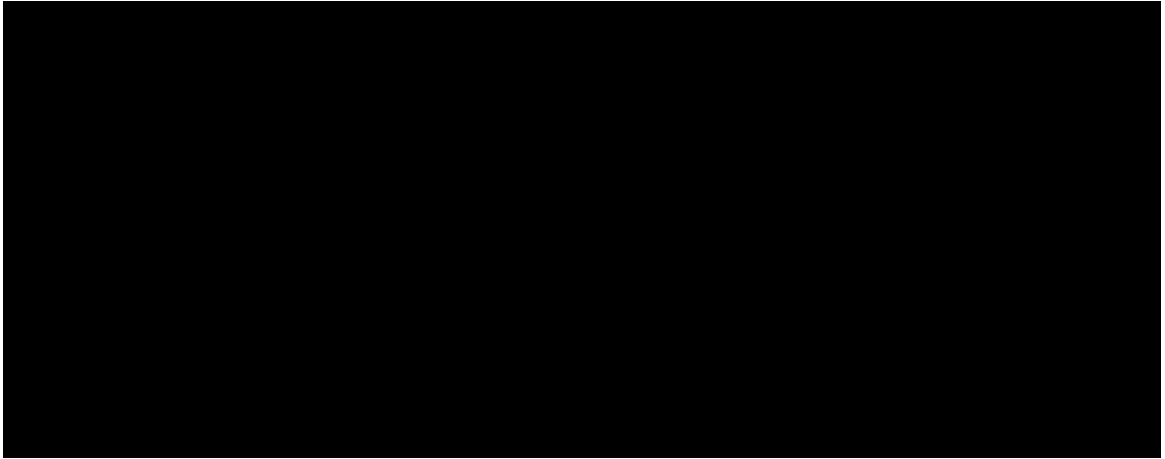
7 **Q. WHAT WERE PACIFICORP'S NATURAL GAS SUPPLY REQUIREMENTS**  
8 **FOR THE DEFERRAL PERIOD?**

9 A. There are several different ways to view the supply requirements, resulting in different  
10 values depending on the data source relied upon. It also may be necessary to consider the  
11 forecast requirements at the time that hedging was being performed, as opposed to actual  
12 supply requirements, when evaluating hedging practices. Three of the gas supply  
13 requirement data sets considered in my analysis are detailed in **Confidential Table 5**,  
14 below:

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<sup>36</sup> Mullins, Exh. BGM-3C (In the workpaper version Tab "Requirements", Cell "AQ32").

**Confidential Table 5**  
PacifiCorp 2022 Gas Requirements - MMBtu



1           The first row of **Confidential Table 5** corresponds to the natural gas consumption  
2 forecast as of September 30, 2021 for the Deferral Period in the hedging position report  
3 attached as **Mullins, Exh. BGM-9C** and which PacifiCorp used to decide when to  
4 execute hedges. The second and third rows detail the actual gas consumption for 2022.  
5 In response to AWEC Data Request 27,<sup>37</sup> PacifiCorp provided a report detailing the  
6 actual MMBtu of natural gas consumed at each power plant. In response to AWEC Data  
7 Request 14, PacifiCorp detailed the actual physical gas purchases by location.<sup>38</sup> Note  
8 that there were minor differences between these two sources, likely attributable to factors  
9 such as pipeline imbalances. In general, my analysis focuses on the September 30, 2021  
10 hedging position report to evaluate the reasonableness of PacifiCorp’s hedging  
11 percentages to avoid questions surrounding hindsight. Since PacifiCorp’s hedging policy

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<sup>37</sup> See Mullins, Exh. BGM-4 at 11 (PacifiCorp Resp. to AWEC DR 27). The confidential attachment is included in my workpapers.

<sup>38</sup> See Mullins, Exh. BGM-4 at 9-10 (PacifiCorp Resp. to AWEC DR 14). From Attachment “WY 20000-642-EM-23 Attach ECAM MFR 3-3 CONF,” included in workpaper version of Mullins, Exh. BGM-3C.

1 changed in mid-2021, earlier requirements forecasts were unavailable in the information  
2 PacifiCorp provided.<sup>39</sup>

3 **Q. HOW ACCURATE WAS PACIFICORP'S FORECAST NATURAL GAS SUPPLY**  
4 **REQUIREMENTS FOR THE DEFERRAL PERIOD?**

5 A. As of the September 30, 2021 hedging position report, PacifiCorp had materially [REDACTED]  
6 [REDACTED] its gas consumption when applying its hedging policy limits for the Deferral  
7 Period. That forecast was approximately [REDACTED] than the actual natural gas supply  
8 consumed. This variance, however, was entirely driven [REDACTED]

9 [REDACTED].  
10 **Q. DOES THIS FORECAST ERROR CALL HINDSIGHT INTO QUESTION?**

11 A. Not with respect to the west-side natural gas power plants. When evaluating hedging  
12 percentages, hindsight is called into question when there is a material difference between  
13 the forecast and actual natural gas consumption. This was established above. [REDACTED]

14 [REDACTED]  
15 [REDACTED]  
16 [REDACTED]  
17 [REDACTED]  
18 [REDACTED]  
19 [REDACTED]  
20 [REDACTED]  
21 [REDACTED]

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<sup>39</sup> See Mullins, Exh BGM-5C at 1 (PacifiCorp's Resp. to AWEC DR 07).

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[REDACTED]

Since my analysis does not focus explicitly on the east-side natural gas requirements, I have not taken up that issue here. Instead, where the requirements for the east-side plants are concerned, I have performed my analysis based on both forecast and actual natural gas consumption, recognizing that the forecast for the east-side natural gas requirements may, or may not, have been prudently developed.

**c. Executed Hedges**

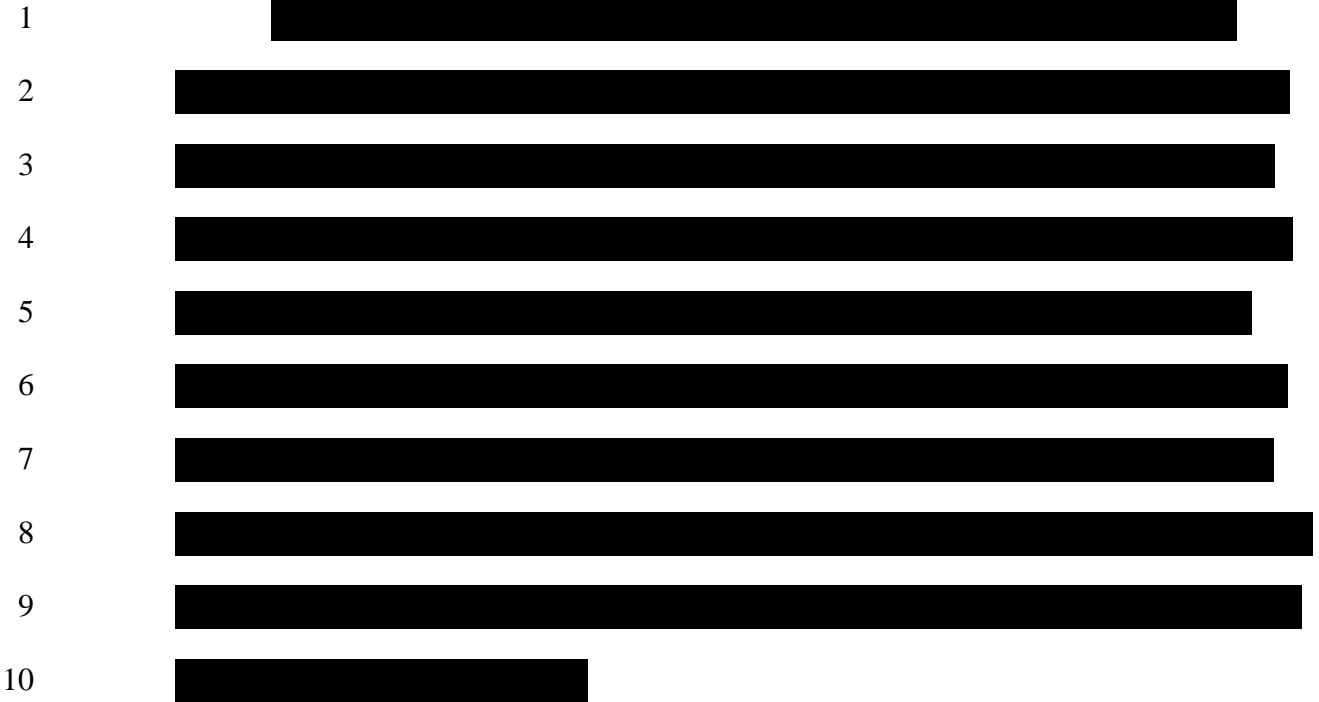
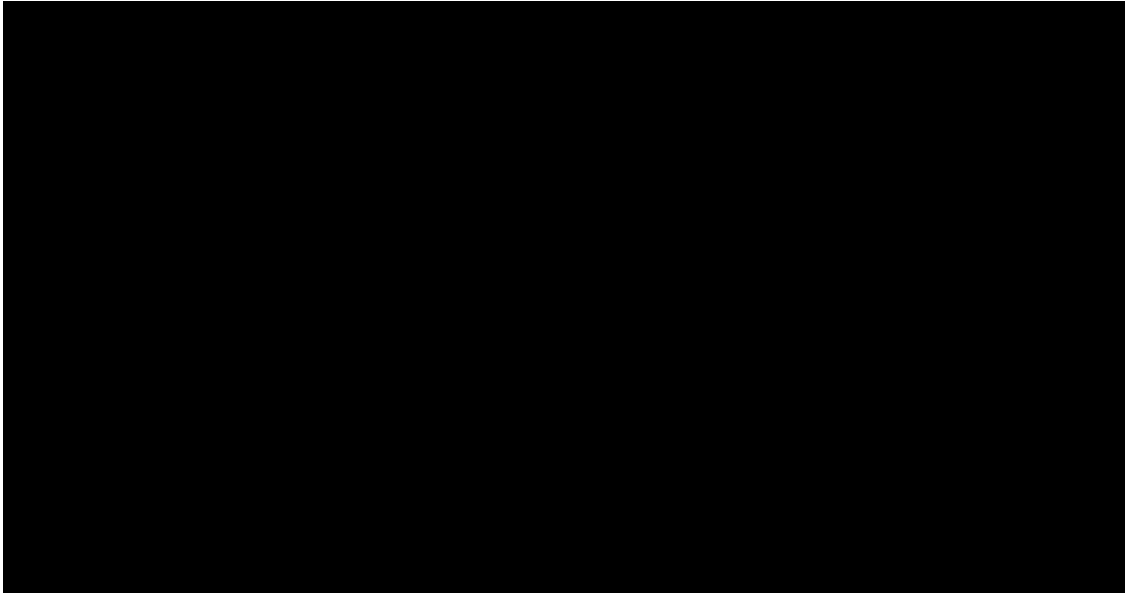
**Q. WHAT NATURAL GAS HEDGES DID PACIFICORP EXECUTE FOR THE DEFERRAL PERIOD?**

A. PacifiCorp’s executed hedges were provided in response to AWEC Data Request 14.<sup>40</sup> In total, there were [REDACTED] swap transactions with settlements in the Deferral Period. Of these, there were [REDACTED] swap transactions that settled at the Rockies index, the index generally applicable to the east-side natural gas power plants. There were also [REDACTED] swap transactions settled at the Sumas index, the index generally applicable to the west-side natural gas power plants. The volumes and timing of these swaps varied greatly. **Confidential Figure 2**, below, details the timing and volumes of these transactions.

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<sup>40</sup> See See Mullins, Exh. BGM-4 at 9-10 (PacifiCorp Resp. to AWEC DR 14) From attachment “WY 20000-642-EM-23 Attach ECAM MFR 3-3 CONF,” which is included in the workpaper version of Mullins, Exh. BGM-3C.

**Confidential Figure 2**  
Temporal Distribution of Deferral Period Hedges  
MMBtu





1 **Q. DID PACIFICORP KNOW THAT THE WEST SIDE NATURAL GAS POWER**  
2 **PLANTS WERE [REDACTED] ?**

3 A. Yes. [REDACTED]  
4 [REDACTED]  
5 [REDACTED]  
6 [REDACTED]  
7 [REDACTED]  
8 [REDACTED]<sup>41</sup> [REDACTED]  
9 [REDACTED]  
10 [REDACTED]<sup>42</sup> [REDACTED]  
11 [REDACTED]  
12 [REDACTED]<sup>43</sup> [REDACTED]  
13 [REDACTED]  
14 [REDACTED].

15 **Q. WHAT IS THE SIGNIFICANCE OF [REDACTED] ?**

16 A. [REDACTED]  
17 [REDACTED]  
18 [REDACTED]  
19 [REDACTED]  
20 [REDACTED]

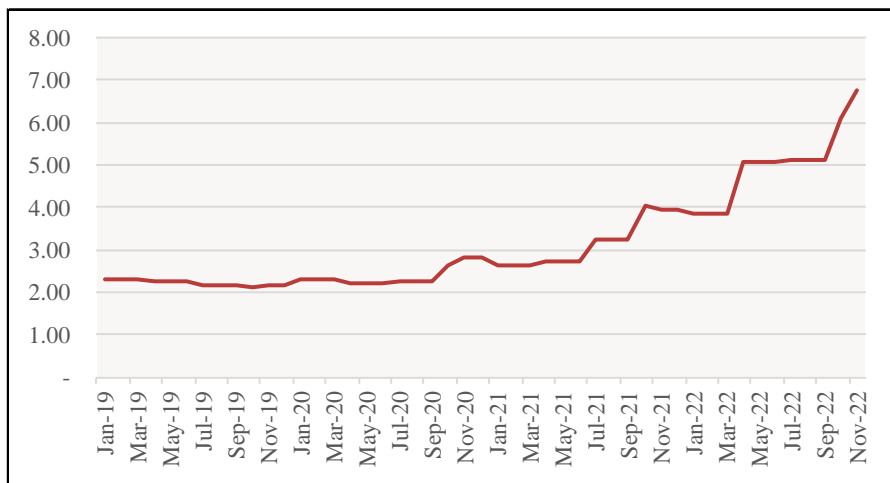
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41 Mullins, Exh. BGM-5C at 6-9 (PacifiCorp’s Resp. to AWEC DR 43).  
42 *Id.*  
43 *Id.*

1 [REDACTED] In

2 **Figure 3**, below, I detail the average Sumas forward prices for the Deferral Period by  
3 hedging date, based on the forward prices in each OFPC PacifiCorp issued over the  
4 period 2019 through 2022.

**Figure 3**  
Deferral Period Forward Hedging Price at Sumas by Date  
Per Most Recent OFPC - \$/MMBtu



5 **Figure 3** represents the 12-month average Sumas gas price for the Deferral Period  
6 based on the most recent OFPC that was prepared as of each date shown on the horizontal  
7 axis. The forward prices in the OFPC are based on broker quotes, and therefore,  
8 represent the approximate hedging prices that could have been achieved at the date the  
9 OFPC was issued. In practice, PacifiCorp issues a new trading curve every trading day,  
10 but in the absence of having every single trading curve issued over this period, this  
11 quarterly snapshot provides a good indication of how the hedging prices were trending  
12 leading up to the Deferral Period. As can be seen the OFPC prices increased rapidly in  
13 late 2021 and throughout 2022, [REDACTED]

1 [REDACTED],  
2 [REDACTED]  
3 [REDACTED]  
4 [REDACTED]

5 **d. Counterfactual Hedging Analysis**

6 **Q. WHAT WAS THE CONSEQUENCE OF** [REDACTED]  
7 [REDACTED] ?

8 A, [REDACTED]  
9 [REDACTED] Note that such an  
10 analysis is an estimate, and there are many ways that such an estimate can be performed.  
11 In doing so, I have tried to consider several factors and look at the analysis from many  
12 different angles. My analysis shows that PacifiCorp's poor gas hedging practices cost  
13 Washington ratepayers between \$ [REDACTED] and \$ [REDACTED], depending on the  
14 assumptions used.

15 **Q. PLEASE DESCRIBE THE ANALYTICS YOU DEVELOPED.**

16 A. The analysis in **Mullins, Exh. BGM-3C** is conceptually identical to the analysis  
17 presented in **Confidential Figure 2**, except that it is performed on a monthly basis. I  
18 reviewed the gas requirements and executed gas swaps on a month-by-month basis to  
19 determine the percentages hedged in the months leading up to the consumption month.  
20 By evaluating each month independently, it was possible to determine, at any given point  
21 prior to that month, what portion of the gas requirements for that month had been hedged.  
22 In doing this, I added logic through which I could evaluate the impacts of using different

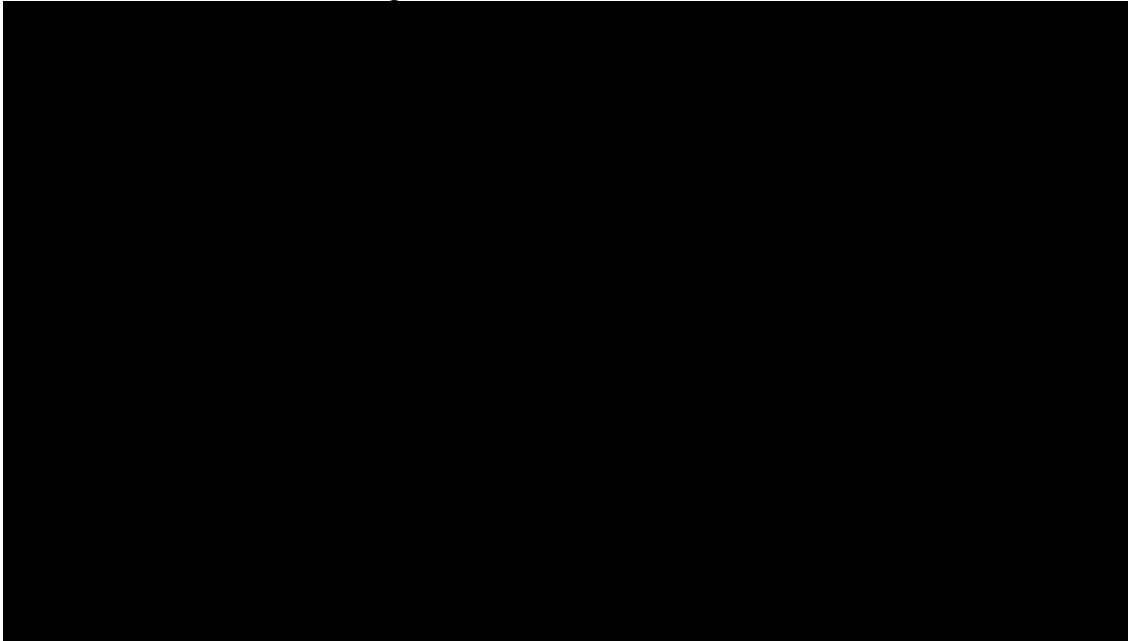
1 natural gas supply amounts, including evaluating the hedging position report forecast as  
2 opposed to actual gas requirements.

3 For each consumption month in the Deferral Period, I calculated a hedging  
4 percentage, and did so for each of the 36 months prior to the consumption month. The  
5 resulting 432 hedging percentage values were then compared back to the gas hedging  
6 limits outlined in PacifiCorp's hedging policy to calculate the degree to which PacifiCorp  
7 was over or under hedged for each of the 36 months prior to the consumption month, and  
8 for each consumption month in the year. The analysis was performed three times: first,  
9 for the total system; second, for the westside natural gas plants (*i.e.*, Chehalis and  
10 Hermiston) and 3) for PacifiCorp's eastside natural gas plants (*i.e.*, Lakeside, Currant  
11 Creek, Gadsby, and Naughton).

12 **Q. WHAT WAS THE RESULT OF YOUR ANALYSIS?**

13 A. As can be seen, PacifiCorp was hedged at various levels in the Deferral Period. The  
14 hedging levels also varied by months and the number of months ahead of the  
15 consumption period. An annual summary of that analysis is detailed in **Confidential**  
16 **Figure 4**, below:

**Confidential Figure 4**  
PacifiCorp Gas Hedging Percentages by Month Ahead of Consumption Month –  
Average of all Months in Deferral Period



1           The above table represents the average of the 12 monthly hedging percentages,  
2           for each month prior to the consumption period. Thus, the values for 12 months prior to  
3           the consumption month correspond to the average of the January 2021 hedging  
4           percentage for January 2022, the February 2021 hedged percentage for February 2022,  
5           and so on for each month of the Deferral Period. Further, the percentages were based on  
6           the September 30, 2021 requirements forecast, as detailed in **Mullins, Exh BGM- 9C**, as  
7           opposed to actual gas requirements, though the equivalent figure based on actual  
8           requirements can be derived in my workpapers. The blue and red areas correspond to the  
9           hedging policy limits. [REDACTED]

10           [REDACTED]

11           [REDACTED]

1 [REDACTED]

2 [REDACTED]

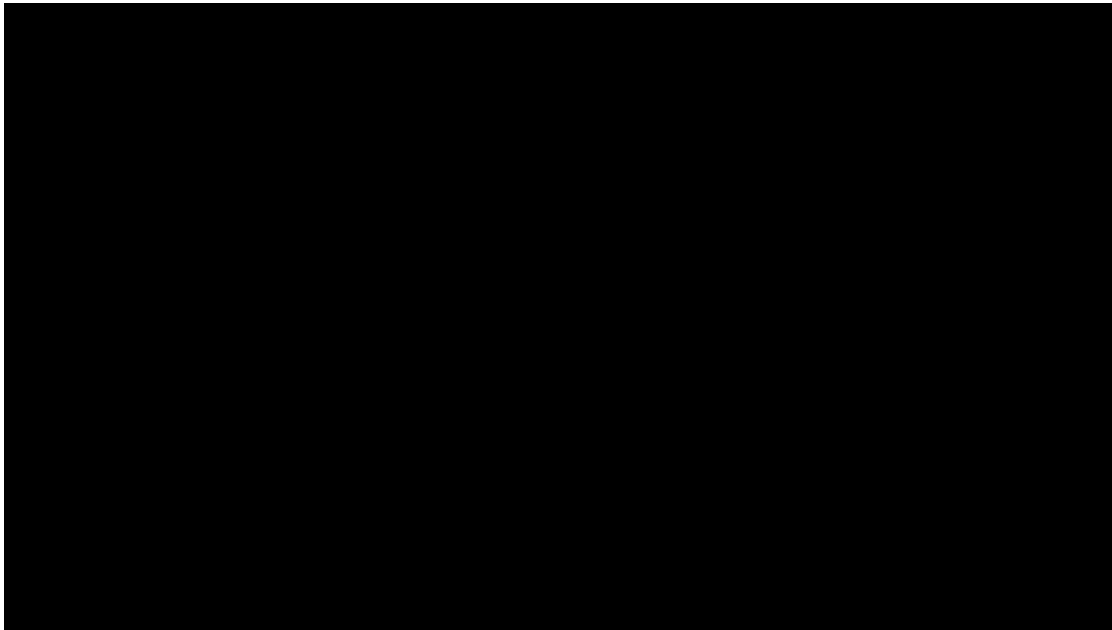
3 [REDACTED].

4 **Q. HOW DID YOU EVALUATE THE COST OF PACIFICORP [REDACTED]**  
5 **ITS WEST-SIDE REQUIREMENTS?**

6 A. In **Mullins Exh. BGM-3C**, I also performed a counterfactual hedging scenario, in which  
7 I model the hedging benefits that would have been recognized if [REDACTED]  
8 [REDACTED]

9 Using the same construct employed to develop **Confidential Figure 4**, I modeled  
10 incremental swap transactions at each time interval prior to the consumption period such  
11 that the hedging policy limits were satisfied for the west-side natural gas power plants.  
12 Further, to the extent that over-hedging of the east-side caused the total-system hedging  
13 percentage to exceed the upper policy limit, that over-hedging was reduced, such that the  
14 total-Company hedging percentage fell within the specified limits. Where the east-side  
15 plants were already under-hedged in the data, however, I did not model any incremental  
16 east-side hedges. The resulting counterfactual hedging percentages are detailed in  
17 **Confidential Figure 5** below.

**Confidential Figure 5**  
Counterfactual Gas Hedging Percentages by Month Ahead of Consumption Month –  
Average of all Months in Deferral Period



1           As can be seen, under this approach, hedges for the west-side were increased and  
2 hedges for the east-side were reduced, such that the overall policy limits were met on a  
3 total-system basis, as well as separately for the east-side and west-side.

4 **Q.   WHAT PRICES DID YOU ASSIGN TO THE INCREMENTAL HEDGES IN**  
5 **YOUR COUNTERFACTUAL SCENARIO?**

6 A.   I used the forward pricing in the most recent OFPC at the date that the incremental  
7 hedges were modeled. Thus, if an incremental hedge was modeled to be executed in  
8 April 2021, the prices assumed for the incremental hedge would be from the March 31,  
9 2021 OFPC. Further granularity could have been achieved by using PacifiCorp's trading  
10 curves on each day in the historical period. Lacking this data, the OFPCs are a  
11 reasonable assumption.

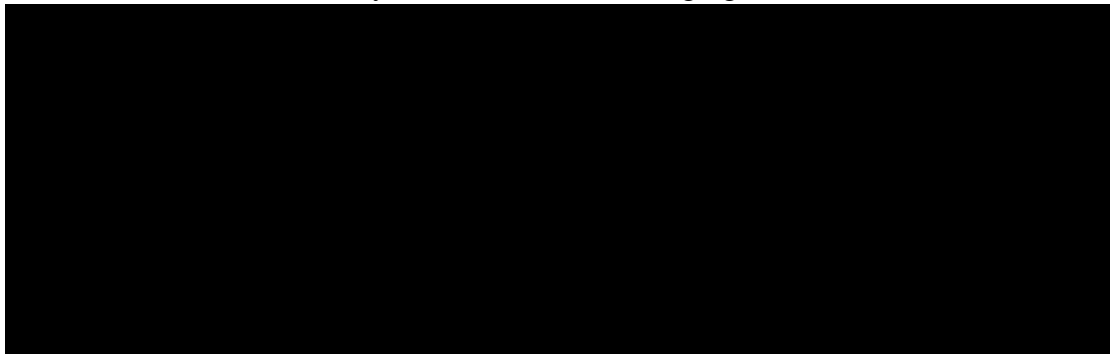
1 Q. HOW DID YOU USE THIS INFORMATION TO ESTIMATE THE COST OF  
2 [REDACTED] THE WEST-SIDE NATURAL GAS POWER PLANTS?

3 A. I calculated the theoretical hedging benefit that would have been recognized had the  
4 incremental hedges in the counterfactual hedging scenario been executed. This was done  
5 by comparing the modeled hedge price to the actual FOM settlement price and  
6 multiplying the resultant amount by the volume of each incremental hedge modeled.

7 Q. DID YOU PERFORM ANY SENSITIVITIES WHEN DEVELOPING THE  
8 COUNTERFACTUAL?

9 A. Yes. I performed three sensitivities. First, I calculated a counterfactual hedging scenario  
10 based on the September 30, 2021 hedging position forecast. Second, I calculated a  
11 counterfactual hedging scenario based on actual gas transactions provided in response to  
12 AWEC Data Request 14. Third, I calculated a counterfactual hedging scenario based on  
13 actual gas transactions provided in response to AWEC Data Request 27. The results of  
14 these three studies each produced different levels of counterfactual hedging benefits  
15 allocable to Washington customer rates. These results are detailed in **Confidential**  
16 **Table 6**, below.

**Confidential Table 6**  
Summary of Counterfactual Hedging Scenarios





1 **e. Prudence of PacifiCorp Gas Hedging**

2 **Q. WHAT JUSTIFICATION HAS PACIFICORP GIVEN FOR THE WEST-SIDE**  
3 **GAS HEDGING PERCENTAGES?**

4 A. [REDACTED]  
5 [REDACTED]  
6 [REDACTED]<sup>44</sup> [REDACTED]  
7 [REDACTED]  
8 [REDACTED]

9 **Q. DID THE HEDGING POLICY PRECLUDE CONSIDERING THE SPECIFIC**  
10 **REQUIREMENTS OF THE WEST-SIDE NATURAL GAS POWER PLANTS?**

11 A. [REDACTED]  
12 [REDACTED]<sup>45</sup> [REDACTED]  
13 [REDACTED]  
14 [REDACTED]<sup>46</sup> [REDACTED]  
15 [REDACTED]  
16 [REDACTED]

17 **Q. WAS IT PRUDENT FOR PACIFICORP TO IGNORE THE HEDGING**  
18 **POSITION OF THE WEST-SIDE NATURAL GAS POWER PLANTS?**

19 A. PacifiCorp’s assertions that it was prudent by hedging for the system, as opposed to the  
20 specific requirements of the east- and west-side plants, are not credible for at least two  
21 reasons. First, PacifiCorp’s natural gas power plants in the east and west are exposed to

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44 Mullins, Exh. BGM-5C at 4-5 (PacifiCorp Resp. to AWEC DR 41).  
45 *Id.*  
46 Mullins, Exh. BGM-8C

1 different markets with different risks. Second, natural gas power plants on the west-side  
2 are allocated to a different set of ratepayers than those on the east-side. By disregarding  
3 these two facts, PacifiCorp's assertions about the prudence of its hedging policy  
4 undermine the very purpose of hedging to begin with—to manage risk for the benefit of  
5 its customers.

6 **Q. ARE THE SUMAS AND ROCKIES MARKETS EQUALLY RISKY?**

7 A. No. The natural gas power plants on the east-side are exposed to gas from the Rockies  
8 market. In contrast, the plants in the west-side are primarily exposed to the Sumas  
9 market.<sup>47</sup> While sometimes these two markets trade in tandem, often they do not,  
10 particularly in the winter months. Because of limitations of pipeline capacity and limited  
11 storage capability in the Northwest, Sumas has recently been a more volatile market than  
12 the Rockies market, although access to low cost gas from Canada can often result in  
13 lower prices in the Northwest. As a result of differences between the two markets,  
14 executing a swap transaction based on Sumas prices does not provide a perfect hedge  
15 against prices at the Rockies market and vice versa.

16 **Q. HOW DID SUMAS PRICES COMPARE TO ROCKIES PRICES IN THE**  
17 **DEFERRAL PERIOD?**

18 A. In **Confidential Table 7**, below, I detail both the FOM and ICE monthly market prices  
19 for Sumas and Rockies in the Deferral Period.

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<sup>47</sup> Note that the Hermiston power plant is located adjacent to the Stanfield interconnect, which has a daily market that is separate from the Sumas market. A monthly market does not exist for Stanfield, and accordingly, the Sumas FOM prices are the closest hedging market for Stanfield gas.



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[REDACTED]

[REDACTED]

[REDACTED]

**Q. WAS IT REASONABLE FOR PACIFICORP TO IGNORE THE WIJAM WHEN IMPLEMENTING ITS HEDGING PROGRAM?**

A. No. Hedging is supposed to benefit customers by avoiding large swings in commodity prices. [REDACTED]

[REDACTED]

[REDACTED] PacifiCorp was surely aware that Washington customers are served only from the west-side plants, as opposed to its entire generation fleet.

Accordingly, PacifiCorp should have known that applying hedging limits on a total-system basis had the potential to over- or under-expose Washington ratepayers to natural gas price risks. It is inconsistent with the purpose of the hedging policy not to consider the way that the policy impacts customers. Accordingly, PacifiCorp's practice of focusing only on the system gas hedging limits, without also considering the impact of that practice on Washington customers, was also imprudent.

**f. WIJAM Allocation of Hedges**

**Q. DOES THE WIJAM DISCUSS THE ALLOCATION OF HEDGES?**

A. No. Fundamental to the reasonableness of PacifiCorp's hedging practice is the way that hedges are being allocated to Washington customer rates. PacifiCorp's accounting assigns hedges to the fuel supply cost of power plants based on the specific natural gas

1 supply being hedged.<sup>48</sup> This accounting practice is then used to assign fuel costs for  
2 Chehalis and Hermiston to Washington customers. It is inconsistent to conduct gas  
3 hedging on a total system basis, while allocating hedges based on the specific supplies  
4 being hedged. If it is reasonable for PacifiCorp to hedge on a total-system basis, then it is  
5 also reasonable for PacifiCorp to allocate the benefits of hedging on a total-system basis.

6 **Q. WHAT AMOUNT OF TOTAL-COMPANY GAS HEDGING BENEFITS DID**  
7 **PACIFICORP RECOGNIZE IN THE DEFERRAL PERIOD?**

8 A. PacifiCorp recognized \$ [REDACTED] of financial gains associated with gas swaps in the  
9 deferral period.<sup>49</sup> Of this amount, \$ [REDACTED] were attributable to west-side plants.<sup>50</sup>  
10 That is approximately [REDACTED] % of the total system gas swap gains, which were allocated to  
11 west-side resources. Of that amount approximately \$ [REDACTED] was allocated to  
12 Washington customer rates based on the 22.47% Control Area Energy West (“CAEW”)  
13 allocation factor.

14 **Q. IS THAT A REASONABLE ALLOCATION OF HEDGES?**

15 A. No. If one assumes that hedging is a benefit at the total-system level, as opposed to  
16 individual plants, that allocation is not reasonable. From **Confidential Table 5**, it can be  
17 seen that PacifiCorp’s natural gas requirements for its west-side plants comprised [REDACTED] % of  
18 PacifiCorp’s forecast gas requirements at the time that it was conducting hedging. Using  
19 that allocation percentage, the total amount of deferral period gas hedges to allocate to

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48 Mullins, Exh. BGM-4 at 25 (PacifiCorp Resp. to AWEC DR 57).

49 See Mullins, Exh. BGM-4 at 9-10 (PacifiCorp’s Resp. to AWEC DR 14) From attachment “WY 20000-642-EM-23 Attach ECAM MFR 3-3 CONF,” which is included in the workpaper version of Mullins, Exh. BGM-3C.

50 *Id.*

1 the west-side resources should have been \$ [REDACTED], with approximately \$ [REDACTED]  
2 allocated to Washington customer rates using the CAEW factor. This means that the  
3 allocation of hedges, based total-system allocation, would result in an increase of  
4 \$ [REDACTED] in the amount of hedging gains allocated to Washington rates. This estimate  
5 is generally in line with, albeit slightly larger than, the counterfactual estimates detailed  
6 above. Accordingly, regardless of the reasonableness of PacifiCorp's practice of  
7 focusing only on the total-system gas requirements in its hedging policy, an adjustment to  
8 the PCAM is warranted, either as a prudence disallowance or an adjustment to the  
9 allocation of hedges.

10 **g. Recommendation**

11 **Q. WHAT ADJUSTMENT DO YOU PROPOSE MAKING TO THE PCAM**  
12 **DEFERRAL BALANCE?**

13 A. Given the range of values presented in both my counterfactual hedging analysis and the  
14 incremental benefit from reallocating hedges on a system-wide basis, I recommend an  
15 adjustment to the PCAM in an amount equal to \$ [REDACTED]. This amount corresponds  
16 to the counterfactual study prepared using the natural gas supply forecast included in  
17 PacifiCorp's September 30, 2021 hedging position report. I find this to be the most  
18 reasonable figure because it avoids any controversy over hindsight considerations, as well  
19 as the need to reconcile the major forecasting variances for the east-side gas  
20 requirements. My recommendation, however, is still less than an approach that  
21 reallocates hedges on a total-system basis, consistent with the way PacifiCorp  
22 implemented its hedging policy.

1 **Q. DO YOU RECOMMEND APPLYING THE SHARING BANDS TO THESE**  
2 **AMOUNTS?**

3 A. In the final Order in the 2022 PCORC, the Commission stated that “the Company’s  
4 recovery of the difference between NPC baseline based on the March OFPC and the NPC  
5 baseline set forth in the Company’s initial filing will be subject to later review and  
6 possible refund.”<sup>51</sup> In the initial filing in the 2022 PCORC PacifiCorp forecast  
7 Washington allocated NPC of \$114.8 million.<sup>52</sup> This compares to a final approved NPC  
8 of \$145.2 million.<sup>53</sup> Thus, the difference between these two values, and the amount  
9 subject to refund in this case, is \$30.4 million. This amount subject to refund exceeds the  
10 amount of the gas hedging adjustment I am recommending, and therefore, the limit in the  
11 amount that can be refunded is not applicable to my analysis.

12 **Q. HOW MUCH OF YOUR ADJUSTMENT WAS ATTRIBUTABLE TO HEDGES**  
13 **AT THE TIME THE 2022 PCORC RATE WAS IMPLEMENTED?**

14 A. In my counterfactual analysis all of the hedging benefit was from incremental swaps that  
15 should have been executed prior to the March 2022 update in the 2022 PCORC filing.  
16 Given that prices had already escalated by the date of that filing, the incremental hedging  
17 transactions modeled in my study after May 1, 2022 resulted in a \$ [REDACTED] to  
18 ratepayers. From this, one could conclude that the entire amount of the counterfactual  
19 hedging benefits after May 1, 2022 should be applied as an adjustment to the portion of  
20 the base NPC subject to refund.

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<sup>51</sup> Docket UE-210402, Order 06, ¶154.

<sup>52</sup> Docket UE-210402, Staples, Exh. DRS-1CT at 4:6.

<sup>53</sup> See Painter, Exh. JP-2 at 1:7.

1 **Q. WHAT AMOUNT OF SYSTEM GAS HEDGES WERE INCLUDED IN THE**  
2 **PCORC?**

3 A. It is also relevant that the final NPC studies in the PCORC included a total-Company  
4 hedging benefit of \$ [REDACTED], of which only [REDACTED] % or \$ [REDACTED] was assigned to west-  
5 side plants, with just \$ [REDACTED] of hedging benefit allocated to Washington.<sup>54</sup> In that  
6 filing west-side natural gas power plants consumed [REDACTED] % of total fuel consumption,  
7 meaning that a system allocation of gas hedges would have supported an annual benefit  
8 of \$ [REDACTED] allocated to the west-side plants, with \$ [REDACTED] allocated to  
9 Washington customer rates. Accordingly, under either approach, some portion of a  
10 hedging adjustment would be reasonable to apply against the balance subject to refund in  
11 the 2022 PCORC, or in other words, applied after the sharing bands, in a manner similar  
12 to the Deferred Based NPC adjustment approved in the 2021 GRC.

13 **Q. WHAT SPECIFICALLY DO YOU PROPOSE?**

14 A. While one could be justified in applying the entire amount against the 2022 PCORC rates  
15 subject to refund, I recommend that half of the incremental hedging benefit proposed in  
16 the PCAM after May 1, 2022 be applied without sharing. This level is consistent with the  
17 fact that a system allocation of hedges approach would have yielded about half the  
18 adjustment that I calculated in this testimony. For the period January 1, 2022 through  
19 April 31, 2022, the entire amount of the sharing percentages would apply.

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<sup>54</sup> See Mullins, Exh. BGM-4 at 26 (PacifiCorp. Resp. to AWEC DR 58). Relevant attachment included in confidential workpapers.



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

2 A. Prior to the application of interest, my recommendation results in a \$ [REDACTED]  
3 reduction to the PCAM Deferral. This calculation may be found in **Mullins, Exh. BGM-**  
4 **3C** at Page 5

5 **Q. HOW MUCH INTEREST WILL ACCRUE ON THIS AMOUNT?**

6 A. Based on the FERC interest rate, approximately \$ [REDACTED] will accrue on this amount  
7 through September 30, 2024. In total, including interest and sharing, I recommend a  
8 \$ [REDACTED] reduction to the PCAM balance.

9 **V. POWER HEDGING**

10 **Q. WHAT INFORMATION DID PACIFICORP PROVIDE TO SUPPORT ITS**  
11 **HEDGING POLICY?**

12 A. PacifiCorp witness Mitchell provided testimony where he discussed the WIJAM and the  
13 power hedging benefits that he believed were embedded in the WIJAM method. Note  
14 that PacifiCorp's discussion was focused only on power hedging, with no specific  
15 discussion of gas hedging, which I addressed above. According to witness Mitchell,  
16 hedging is "built into the WIJAM."<sup>55</sup> In other words, there is no need to hedge for  
17 Washington's unique requirements because "treatment provided for under the WIJAM  
18 accomplishes [hedging] by minimizing spot market price exposure."<sup>56</sup> Mr. Mitchell  
19 performs a study in which he alleges that Washington customers benefit by \$7.1 million  
20 as a result of this alleged hedging embedded in the WIJAM method.

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<sup>55</sup> Mitchell, Exh. RJM 1T at 10:19-20.

<sup>56</sup> Mitchell, Exh. RJM 1T at 11:5-6.

1 **Q. DOES THE WIJAM METHOD MINIMIZE SPOT MARKET PRICE**  
2 **EXPOSURE?**

3 A. No. PacifiCorp’s claim that the WIJAM minimizes spot market exposure is a new one  
4 and is inconsistent with both its past testimony and actual experience. In the 2022  
5 PCORC, PacifiCorp plainly stated that under the WIJAM Washington customers have  
6 been “uniquely vulnerable to market purchases.”<sup>57</sup> And apart from this abrupt change in  
7 position, it also is inconsistent with the actual increases to Washington-allocated NPC  
8 that customers have experienced. As noted from **Table 1** and **Table 2**, above, total-  
9 Company NPC increased by 39%, whereas the WIJAM-allocated NPC increased by 54%.  
10 PacifiCorp’s contention that the WIJAM insulates customers from price volatility cannot  
11 be squared with this experience.

12 **Q. IS THE \$7.1 MILLION FIGURE PACIFICORP CALCULATED A HEDGING**  
13 **BENEFIT?**

14 A. No. The \$7.1 million figure PacifiCorp calculated is not a meaningful value and calling  
15 it an implicit hedging benefit is misleading. It was calculated assuming the WIJAM  
16 method were to be changed such that 100% of Washington’s net short position is  
17 assigned a cost based on the average cost of short-term purchases. This compares to the  
18 approved WIJAM method which fills the Washington net short position by first adjusting  
19 short-term sales volumes and second by adjusting short-term purchase volumes. Such a  
20 value is not meaningful because it compares to an alternative scenario that has nothing to  
21 do with the WIJAM. The only way for one to conclude that the \$7.1 million figure is a

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<sup>57</sup> See, e.g., Docket UE-240402, PacifiCorp Post-Hearing Brief ¶ 23.

1 benefit to Washington ratepayers is based on the premise that it would otherwise be more  
2 accurate to allocate 100% of Washington's net short position based on the average cost of  
3 short-term purchases, rather than the approved WIJAM method of adjusting both sales  
4 and purchases. In other words, it assumes that the WIJAM treatment for Washington's  
5 net short position is flawed and that customers are benefitting from this flaw. Further, the  
6 figure has nothing to do with hedging. Regardless of how hedged PacifiCorp is, there  
7 will always be differences between sales and purchase prices. The impact of this  
8 difference is not a hedge and does not insulate customers from rising and falling prices.

9 **Q. DOES PACIFICORP SEPARATELY HEDGE PURCHASES AND SALES?**

10 A.

[REDACTED]

11 [REDACTED]

12 [REDACTED] <sup>58</sup> [REDACTED]

13 [REDACTED]

14 [REDACTED]

15 [REDACTED]

16 [REDACTED] Since Washington's net position is adjusted in the WIJAM, its hedging  
17 requirements viewed in isolation are therefore different than the hedging requirement of  
18 PacifiCorp viewed in totality.

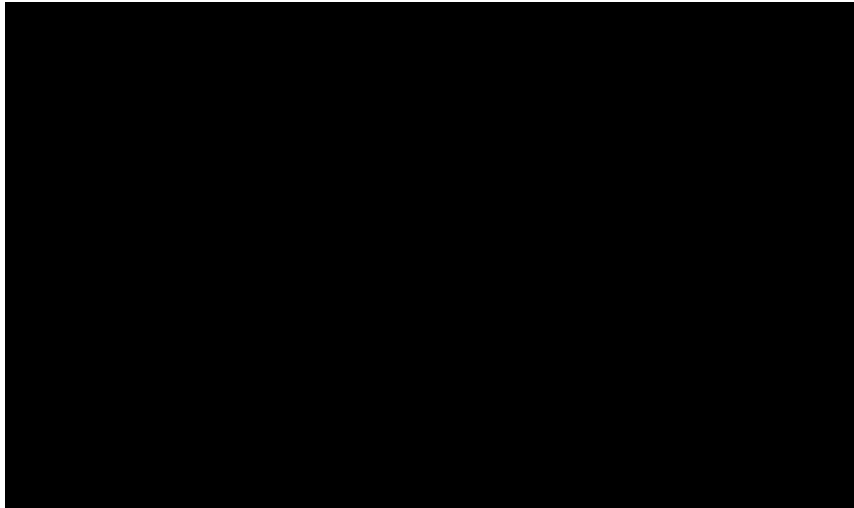
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<sup>58</sup> Mullins, Exh. BGM-6C.

1 Q. HOW DOES WASHINGTON'S NET POSITION COMPARE TO THE TOTAL-  
2 SYSTEM?

3 A. Confidential Table 8, below provides a comparison of Washington's net position as  
4 opposed to the total-system.

**Confidential Table 8**  
System vs. Washington Net Short / (Long) Position  
2022 Actual NPC



5 Confidential Table 8 details the average net position over the course of the  
6 Deferral Period. Since it is based on average energy usage it is not necessarily the  
7 hedging position, [REDACTED]. It does show, however,  
8 that there is a major difference between the total system net position and the Washington  
9 net position. [REDACTED]

10 [REDACTED]

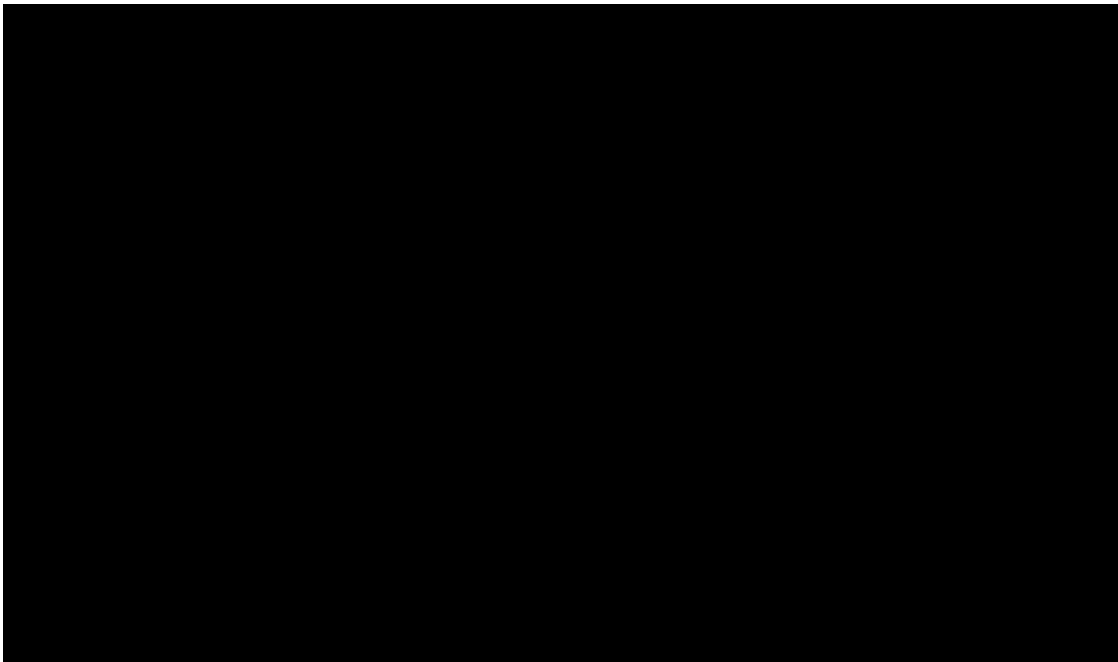
11 [REDACTED]

12 [REDACTED]

1 **Q. WHAT NET POSTION WAS PACIFICORP ACTUALLY HEDGING?**

2 A. Turning to the actual hedging position, in **Mullins, Exh. BGM-9C** it can be seen [REDACTED]  
3 [REDACTED]. The  
4 monthly power positions in that document, compared to the average actual monthly  
5 positions under the WIJAM, are detailed in **Confidential Table 9**, below.

**Confidential Table 9**  
Hedging Power Position vs. WIJAM – MW Long / (Short)



6 Here the actual power positions to which PacifiCorp was hedging are shown. As  
7 can be seen, due to the large volume of resources on the east-side, which are not included  
8 in the WIJAM method, PacifiCorp is long on the east-side of its system in most months  
9 of the year. Thus, no hedges were necessary for the east-side of the system. The  
10 resources, themselves, provide a hedge for the system costs, but since those resources are  
11 not included in Washington rates, the allocation of system risks is skewed. Similarly on

1 the west-side, hedges were only necessary in a few months of the year. This compares to  
2 the average Washington position in the WIJAM, which is short in every month.

3 **Q. ARE THERE ANY LIMITS IN PACIFICORP'S HEDGING POLICY FOR**  
4 **HEDGING SALES TRANSACTIONS?**

5 A.

[REDACTED]

19 **Q. HAVE YOU PERFORMED AN ANALYSIS OF PACIFICORP'S ACTUAL**  
20 **POWER HEDGING IN THE DEFERRAL PERIOD?**

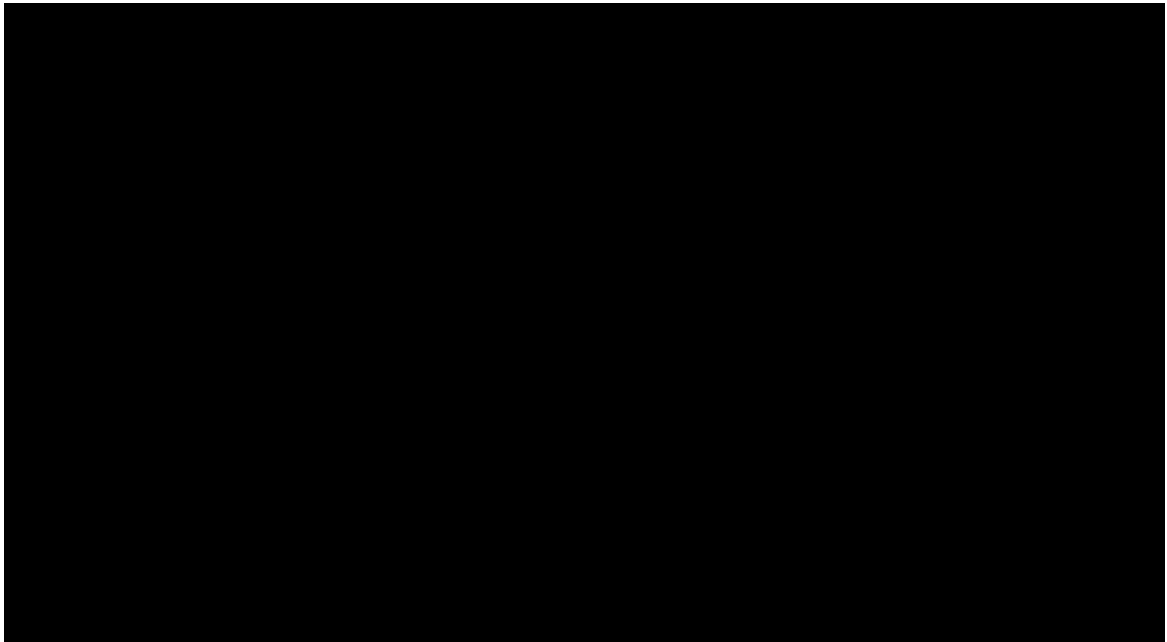
21 A. Yes. In **Mullins, Exh. BGM-10C**, I perform a power hedging analysis similar to the one  
22 performed for natural gas. The power hedging analysis uses power trade data provided in  
23 response to AWEC Data Request 14. With that data I filtered for short-term purchase

1 and sales transactions. I segregated these transactions into three categories: hedging, day-  
2 ahead and real time. I also removed various trades related to losses, reserve sharing and  
3 out of period adjustments. For each month, I evaluated the total requirements as the  
4 average net purchases for any given monthly period. Note that PacifiCorp's hedging  
5 policy applies a different approach by focusing on the highest daily average purchase  
6 level. Not having the data to determine the highest daily average purchase level in any  
7 particular month, I relied on the average. Focusing on the peak would have required  
8 more hedging, meaning my analysis overstates the resultant hedging percentages. Using  
9 the calculated level of actual purchases for each month, I calculated the percentage  
10 hedged for each month leading up to the consumption month. I also performed this  
11 analysis separately for purchases and sales transactions.

12 **Q. WHAT DID YOU FIND?**

13 A. **Confidential Figure 6**, below, summarizes the results of my analysis for purchase  
14 transactions.

**Confidential Figure 6**  
PacifiCorp's Deferral Power Hedging Percentage (Purchases) aMW



1 [REDACTED]

2 [REDACTED]. Due to the trade data available, this analysis was

3 performed on an average basis over the course of a month, as opposed to the peak which

4 could not be ascertained clearly from the data. These percentages would be reduced

5 downward if the peak were considered as the power hedging requirement. Similarly, it

6 was not possible in this analysis to use the September hedging position report

7 requirements because those were not separately stated with purchases, as opposed to sales

8 transactions. In total, PacifiCorp executed approximately [REDACTED] aMW of hedges for sales

9 transactions and [REDACTED] aMW of hedges for sales transaction, with a net of just [REDACTED] aMW.

10 Considering the long-total system position, these percentages may be reasonable.

11 Notwithstanding, given that Washington has a different net position than the total system,

12 that is a reason to consider how these hedges are being allocated.



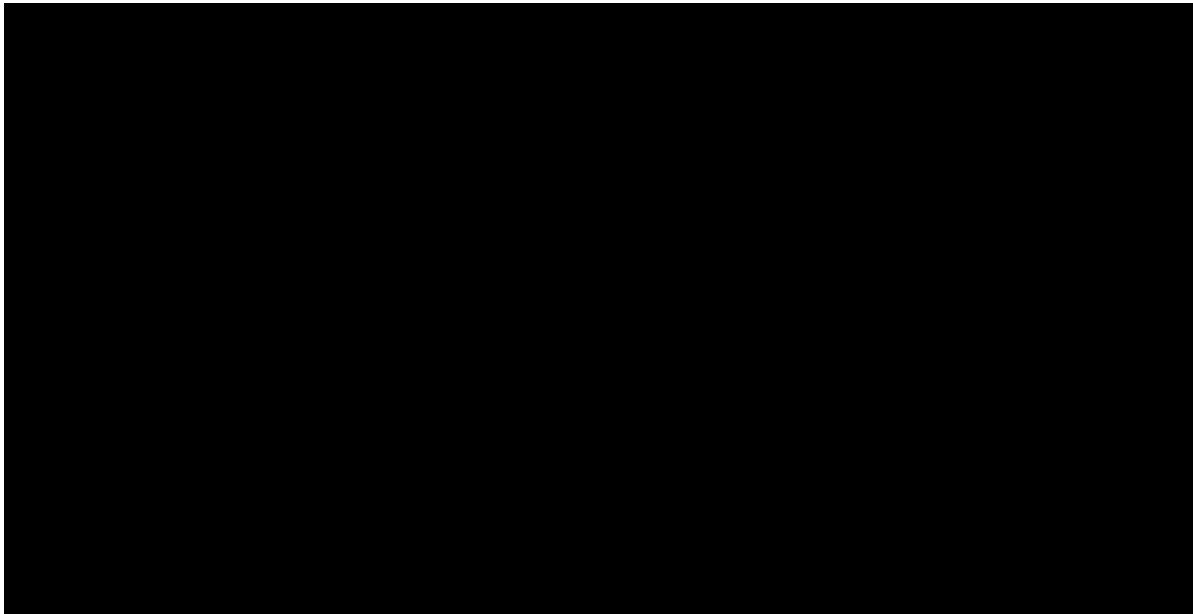
1 **Q. WHAT PERCENTAGE OF PACIFICORP'S PURCHASE TRANSACTIONS ARE**  
2 **ALLOCATED TO WASHINGTON?**

3 A. As a part of the system balancing adjustment in the WIJAM, Washington is allocated  
4 approximately 18% of total system purchases, in contrast to its 8.0% SG system  
5 allocation. This means that only 18% of the system hedges are being allocated to  
6 Washington, even though Washington is in a net long position in every month. Since  
7 hedges were being executed on a total system basis the volume of power hedges being  
8 allocated to Washington are inadequate relative to its short position, as detailed in  
9 **Confidential Figure 6.**

10 **Q. DO YOU HAVE AN ALTERNATIVE APPROACH?**

11 A. Foremost, given that Washington is in such a short position, it calls into question the  
12 reasonableness of PacifiCorp's planning for Washington's portfolio. Considering this, I  
13 recommend that actual executed hedges be allocated to Washington based on its net short  
14 position. Such an approach recognizes the fact that Washington comprises most of  
15 PacifiCorp's short position and does not benefit from the hedging value of the east-side  
16 resources, which create PacifiCorp's length in terms of power. The analysis is  
17 summarized in **Confidential Table 10**, below.

**Confidential Table 10**  
Proposed Reallocation of Power Hedges to Washington Short Position



1           The above analysis is relatively straightforward, in that it simply compares the  
2           monthly hedging percentages for purchased power calculated in **Mullins, Exh.**  
3           **BGM-10C** to the [REDACTED] limit in the hedging policy. The difference between the limit and  
4           the actual percentage hedged is then multiplied by the total short-term firm sales  
5           allocated to Washington using the WIJAM method to determine the incremental hedges  
6           to allocate to Washington as a result of its long net position. The volume of incremental  
7           hedges is then multiplied by the difference between the average cost of the hedges and  
8           the average cost of the STF transactions to determine the benefit from reallocating those  
9           hedges to Washington. The result is that an approximate \$ [REDACTED] of incremental  
10          power hedging benefits should be reallocated to Washington rates.

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

2 A. Washington does not get the benefit of the system resources that cause PacifiCorp to be  
3 in a net long hedging position in many months of the year. Therefore, it is appropriate in  
4 this case to provide Washington with a higher allocation of the benefit from power  
5 hedges that were executed. This approach allocates power hedges based on the net-short  
6 position, as opposed to allocating hedges based on the total volume of power purchase.  
7 After applying the 90% sharing band, this adjustment produces a \$ [REDACTED] reduction to  
8 the PCAM balance, prior to interest. After interest of \$ [REDACTED] at the FERC interest  
9 rate, this adjustment results in a \$ [REDACTED] reduction to the PCAM balance.

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

11 A. Yes.