

REDACTED

Docket No. 20000-__-EM-24

Witness: Jack Painter

BEFORE THE WYOMING PUBLIC SERVICE
COMMISSION

ROCKY MOUNTAIN POWER

REDACTED
Direct Testimony of Jack Painter

April 2024

1 **Q. Please state your name, business address, and present position with PacifiCorp**
2 **d/b/a Rocky Mountain Power (“Rocky Mountain Power” or the “Company”).**

3 A. My name is Jack Painter, and my business address is 825 NE Multnomah Street, Suite
4 600, Portland, Oregon 97232. My title is Net Power Cost Specialist.

5 **QUALIFICATIONS**

6 **Q. Please describe your education and professional experience.**

7 A. I received a Bachelor of Arts degree in Business Administration with a Finance
8 emphasis from Washington State University in 2007. I have been employed by
9 PacifiCorp since 2008 and have held positions in the regulation and jurisdictional loads
10 departments. I joined the regulatory net power costs group in 2019 and assumed my
11 current role as a Net Power Cost Specialist in 2020.

12 **Q. Have you testified in previous regulatory proceedings?**

13 A. Yes. I have provided testimony to the public utility commissions in Wyoming, Utah,
14 Idaho, Oregon, Washington, and California.

15 **PURPOSE OF TESTIMONY**

16 **Q. What is the purpose of your testimony in this proceeding?**

17 A. My testimony presents and supports the Company’s calculation of the Energy Cost
18 Adjustment Mechanism (“ECAM”) balancing account for the 12-month period of
19 January 1, 2023, through December 31, 2023 (“Deferral Period”). More specifically, I
20 provide the following:

- 21 • Background on the ECAM and an accounting of how the ECAM balance was
22 calculated for the Deferral Period;

- 1 • Details supporting the calculation of the Company’s request to recover
2 \$139.4 million for excess ECAM-related costs and interest;
- 3 • Discussion of the main differences between adjusted actual net power costs
4 (“Actual NPC”) and net power costs in rates (“Base NPC”); and,
- 5 • Discussion about the Company’s participation in the Western Energy Imbalance
6 Market (“WEIM”) with the California Independent System Operator
7 (“CAISO”), and the benefits from the WEIM that are passed through to
8 customers.

9 **Q. What other witnesses present testimony for the ECAM and Tariff Schedule 95 in**
10 **this case?**

11 A. Company witness Andre T. Lipinski, Pricing and Cost of Service Specialist, provides
12 testimony on the proposed rates in Tariff Schedule 95, Energy Cost Adjustment
13 Mechanism (“Schedule 95”).

14 SUMMARY OF THE ECAM DEFERRAL CALCULATION

15 **Q. Please briefly describe the Company’s ECAM authorized by the Public Service**
16 **Commission of Wyoming (“Commission”).**

17 A. The Commission’s Order in Docket No. 20000-368-EA-10 (“2010 Order”) approved
18 the original structure of the ECAM to allow the Company to recover from or refund to
19 customers 70 percent of the difference between Actual NPC and Base NPC (which are
20 established in a general rate case) on an annual basis. In the 2010 Order, the
21 Commission determined the ECAM should sunset after the fifth annual filing. The
22 Company requested and was granted an extension of the ECAM in the 2015 general

1 rate case (“2015 GRC”), Docket No. 20000-469-ER-15, without a sunset date. The
2 details for the calculation of the ECAM deferral are contained in Schedule 95.

3 **Q. Have there been any changes to the ECAM structure since its approval in 2010?**

4 A. Yes. Changes have been included as part of the ECAM calculation for the following
5 items:

- 6 • Base NPC has been updated, beginning July 1, 2021, to reflect the Company’s most
7 recent 2020 general rate case (“2020 GRC”) filing in Docket No.
8 20000-578-ER-20;
- 9 • The sharing band has been updated beginning July 1, 2021, from 70 percent to
10 80 percent, as approved in the 2020 GRC;
- 11 • Production Tax Credits (“PTC”) have been included in the ECAM calculation as
12 approved in the 2020 GRC, beginning July 1, 2021. PTCs are returned to customers
13 at 100 percent of their value, without application of the sharing band;
- 14 • The embedded cost differential (“ECD”) has been discontinued from the ECAM as
15 of December 31, 2020, while the Qualifying Facility (“QF”) Adjustment has been
16 included in the ECAM beginning January 1, 2021, to reflect the approved 2020
17 PacifiCorp Inter-Jurisdictional Allocation Protocol (“2020 Protocol”) in Docket
18 No. 20000-572-EA-19;¹
- 19 • Chemical costs and start-up fuel costs were approved by the Commission to be
20 included in the ECAM as requested by the Company in the 2015 GRC filing in
21 Docket No. 20000-469-ER-15;

¹ The QF Adjustment is also credited to customers at 100 percent of its value without application of the sharing band.

- 1 • Wind availability liquidated damages have been included in the ECAM at 100
2 percent of the Wyoming-allocated value without application of the sharing band;
3 and,
4 • Costs have been included related to the WEIM Body of State Regulators (“BOSR”)
5 for commission-related work as a participant of the WEIM, as allowed in the
6 Commission-approved stipulation in the 2022 ECAM in Docket
7 No. 20000-617-EM-22.

8 **Q. Please summarize the Company’s ECAM application.**

9 A. The ECAM deferral is calculated on a monthly basis as the difference between items
10 subject to the sharing band included in Base ECAM collected through rates and
11 Wyoming-allocated Actual ECAM costs. As of July 1, 2021, this difference is subject
12 to an 80/20 percent sharing band. For the Deferral Period, the ECAM differential
13 subject to the sharing band was an increase of approximately \$157.6 million. After
14 applying the sharing band, the Company absorbs \$31.5 million in net power costs,
15 leaving \$126.1 million in deferred ECAM costs to be collected from customers. The
16 remaining ECAM deferral is then calculated as the difference between items not subject
17 to the sharing band included in Base ECAM collected through rates and Wyoming-
18 allocated Actual ECAM costs. After applying the sharing band, interest, and residual
19 balances from the 2022 ECAM and 2023 ECAM deferrals, the Company is requesting
20 approval to recover approximately \$139.4 million from customers.

1 **Q. Have you provided detailed support for the calculation of the ECAM balance with**
2 **your testimony?**

3 A. Yes. Exhibit 2.1 includes a detailed calculation of the ECAM deferral on a monthly
4 basis.

5 **Q. Please describe the other exhibits to your testimony and how they are related to**
6 **the calculation of the ECAM deferral.**

7 A. The following exhibits are included to support the calculation in Exhibit 2.1 and the
8 ECAM deferral:

- 9 • Confidential Exhibit 2.2 details the monthly Actual NPC amounts recorded in
10 the Company's books on a total-Company and Wyoming-allocated basis,
11 adjustments made to Actual NPC for ratemaking purposes, the chemical and
12 start-up fuel costs, and PTCs.
- 13 • Exhibit 2.3 illustrates the approved revenues collected from prior ECAM
14 dockets, including Dockets No. 20000-617-EM-22 ("2022 ECAM") and
15 20000-642-EM-23 ("2023 ECAM").² Residual balances from these dockets
16 have been included in the current ECAM deferral calculation consistent with
17 Schedule 95.

18 **Q. Are you also providing exhibits for informational purposes?**

19 A. Yes. The following exhibits are provided for the Deferral Period:

- 20 • Exhibit 2.4 includes monthly market prices at major markets.
- 21 • Confidential Exhibit 2.5 includes hourly logs of the Company's thermal and
22 wind generation resources.

² The 2022 ECAM revenue true-up amount was included within the Commission-approved rates that went into effect on January 1, 2024, in Docket No. 20000-642-EM-23.

Table 1. Summary of ECAM Account Balance

<u>Incremental ECAM Deferral Subject to Sharing Band</u>	
Actual Collections of Base NPC	\$ 210,878,117
Actual Collections of Base Chemical Costs	4,204,580
Actual Collections of Base Start-Up Fuel	885,741
Actual Collections of Base ECAM	215,968,438
Wyoming Allocated Actual Adjusted NPC	367,295,602
Wyoming Allocated Actual Chemical Costs	4,967,994
Wyoming Allocated Actual Start-Up Fuel	1,276,750
Actual Adjusted ECAM	373,540,346
Deferred ECAM	157,571,908
Deferred ECAM @ 80% Symmetrical Sharing	126,057,527
Deferred ECAM Subject to Sharing Band	\$ 126,057,527
<u>Incremental ECAM Deferral Not Subject to Sharing Band</u>	
Actual Collections of Base QF Adjustment	\$ (4,769,859)
Actual Collections of Base PTC	(34,863,560)
Actual Collections of Base ECAM	(39,633,419)
Actual Adjusted QF Adjustment	(5,000,000)
Wyoming Allocated Actual PTC	(33,282,555)
Wyoming Allocated Actual Wind Liquidated Damages	(775,540)
Wyoming Allocated Actual EIM BOSR Costs	16,284
Actual Adjusted ECAM	(39,041,811)
Deferred ECAM Not Subject to Sharing Band	591,608
Total Deferred ECAM	\$ 126,649,135
<u>ECAM Adjustment Balance</u>	
Beginning ECAM Adjustment Balance: Jan 1, 2023	\$ -
Incremental Deferral	126,649,135
Interest	2,424,120
Ending ECAM Adjustment Balance: Dec 31, 2023	129,073,254
Accrued Interest through June 30, 2024	4,391,396
Interest Accrued through Rate Effective Period	4,649,945
Total ECAM Deferral	138,114,596
2022 ECAM Revenue True-Up	-
2023 ECAM Revenue True-Up	1,283,414
Requested ECAM Recovery	\$ 139,398,010

1 **Q. What revenue requirement components are included in the ECAM deferral**
2 **calculation?**

3 A. The ECAM deferral calculation consists of five revenue requirement components:
4 NPC, chemical costs, start-up fuel costs, QF Adjustment, and PTCs. NPC are defined
5 as the sum of fuel expenses, wholesale purchase power expenses, and wheeling
6 expenses, less wholesale sales revenue. The QF Adjustment is an adjustment made
7 under the 2020 Protocol. Chemical costs and start-up fuel costs relating to production
8 at Company-owned power plants are included as approved in the 2015 GRC (Docket
9 No. 20000-469-ER-15). PTCs are a benefit to customers that lower NPC based upon
10 the production of certain Company-owned wind facilities.

11 **Q. Please explain the purpose of the WEIM BOSR.**

12 A. The WEIM BOSR is a body that addresses the regional nature of the WEIM through
13 the WEIM governance process. The purpose of the WEIM BOSR is to provide “a forum
14 for state commissioners to (1) select a voting member of the WEIM Governing Body
15 Nominating Committee, (2) learn about and discuss the WEIM and CAISO markets,
16 and (3) express a common position in CAISO stakeholder processes or the WEIM
17 Governing Body on WEIM issues.”⁵

18 **Q. Please describe the fee that is associated with the WEIM BOSR.**

19 A. The fee is allocated to state-regulated market participants and is used to pay for
20 personnel and indirect expenses, meeting expense, travel expense, and consultants and

⁵ *WEIM BOSR Energy Imbalance Market Body of State Regulators*, WESTERN INTERSTATE ENERGY BOARD, <https://www.westernenergyboard.org/western-energy-imbalance-market-body-of-state-regulators/> (last accessed April 13, 2022).

1 contracts.⁶ The BOSR’s activities support the goal of consistent and informed regulator
2 engagement on regional market operations and developments, which is crucial to
3 efficient and sustainable markets that deliver public benefits.

4 **Q. Please describe the adjustment to the ECAM for the WEIM BOSR Fees.**

5 A. In the 2022 ECAM application, the Commission approved an all-party stipulation that
6 allowed the Company to include fees related to participation in the WEIM BOSR in
7 future ECAM applications, subject to normal prudence review until the Commission
8 reviews those fees in the next general rate case.⁷ The Company included WEIM BOSR
9 fees in base rates in the 2023 GRC, which was approved by the Commission effective
10 January 1, 2024. Accordingly, the Company has included the fees incurred during 2023
11 in this ECAM. The Wyoming-allocated cost is \$16,284 for the WEIM BOSR fees.

12 **Q. Please explain the wind availability liquidated damages credit.**

13 A. The Company has settled a dispute related to a vendor’s service and maintenance
14 performance following commissioning of certain wind projects, and obtained
15 liquidated damages that have been included in the ECAM.

16 **Q. How is the Company proposing to treat the liquidated damages received?**

17 A. In order to return the full benefit of the liquidated damages to customers, the Company
18 is proposing to include them as a credit in the ECAM without application of the sharing
19 band. The liquidated damages are included in Federal Energy Regulatory Commission
20 (“FERC”) account 555 as they pertain to the operational availability of the wind

⁶ See, Western Energy Imbalance Market Body of State Regulators 2021 Business Plan and Budget, December 11, 2020, available at <https://www.westernenergyboard.org/wp-content/uploads/EIM-BOSR-2021-Business-Plan-and-Budget-11-Dec-2020.pdf> (last accessed April 13, 2022).

⁷ See, Memorandum Opinion, Findings, and Order Approving Stipulation issued on February 15, 2023, in Docket No. 20000-617-EM-22 (Record No. 17037).

1 projects.

2 The wind availability liquidated damages amount was removed from total-
3 Company NPC and then allocated to customers using the System Generation (“SG”)
4 allocation factor outside of the 80/20 sharing band so customers receive the full benefit.
5 The Company received \$5.6 million (total-Company) in liquidated damages and
6 \$776 thousand is credited to Wyoming customers in the ECAM for the
7 Wyoming-allocated portion of those damages.

8 **Q. How are the Wyoming-allocated Actual NPC calculated?**

9 A. Wyoming-allocated Actual NPC are calculated in three steps. First, unadjusted actual
10 NPC are established on a total-Company basis. Second, adjustments are made to the
11 unadjusted actual NPC to apply certain regulatory adjustments and to remove
12 out-of-period accounting entries. Third, the adjusted total-Company Actual NPC are
13 allocated to Wyoming based on the 2020 Protocol with the exception of EIM
14 settlements. The Commission approved the use of the System Energy (“SE”) allocation
15 factor for EIM Settlements in the 2020 GRC.

16 **Q. What were the total-Company adjusted Actual NPC for the Deferral Period and**
17 **how were they determined?**

18 A. The total-Company adjusted Actual NPC in the Deferral Period were approximately
19 \$2.492 billion. This amount captures all components of NPC as defined in the
20 Company’s rate case proceedings and modeled by the Company’s Generation and
21 Regulation Initiative Decision Tool (“GRID”) model. Specifically, it includes amounts
22 booked to the following FERC accounts:

1 Account 447 – Sales for resale, excluding on-system wholesale sales and other
2 revenues that are not modeled in GRID.

3 Account 501 – Fuel, steam generation; excluding fuel handling, start-up fuel
4 (gas and diesel fuel, residual disposal) and other costs that are
5 not modeled in GRID.

6 Account 503 – Steam from other sources.

7 Account 547 – Fuel, other generation.

8 Account 555 – Purchased power, excluding the Bonneville Power
9 Administration residential exchange credit pass-through if
10 applicable.

11 Account 565 – Transmission of electricity by others.

12 **Q. What adjustments are made to Actual NPC and why are they needed?**

13 A. The Company adjusts Actual NPC to reflect the ratemaking treatment of several items,
14 including:

- 15 • out-of-period accounting entries booked in the Deferral Period that relate to
16 operations before implementation of the ECAM in December 2010;
- 17 • buy-through of economic curtailment by interruptible industrial customers;
- 18 • revenue from a contract related to the Leaning Juniper wind resource;
- 19 • costs for situs-assigned resources/programs in Oregon, Washington, and Utah;
- 20 • coal inventory adjustments to reflect coal costs in the correct period;
- 21 • coal stripping cost amortization under Financial Accounting Standards Board
22 (“FASB”) Emerging Issues Task Force (“EITF”) 04-6;
- 23 • legal fees related to fines and citations included in the cost of coal;

- 1 • situs assignment of Reasonable Energy Price adjustments to QFs in accordance
2 with the 2020 Protocol; and,
3 • wind availability liquidated damages.

4 **Q. Please state the amount of the adjusted total-Company Actual NPC that were**
5 **allocated to Wyoming and describe how the amount was calculated.**

6 A. Wyoming-allocated Actual NPC were \$367.3 million during the Deferral Period as
7 shown in Table 1 above. To arrive at this value, the Company applied the allocation
8 methodology approved by the Commission using actual allocation factors from
9 calendar year 2023. The actual allocation factors were determined using jurisdictional
10 loads during 2023 and were 15.725 percent for the SE factor and 13.954 percent for SG
11 factor, as shown in Confidential Exhibit 2.2, tab “(2.2.6) Actual Factors.”

12 **Q. How much of Base ECAM did the Company collect from Wyoming customers**
13 **during the Deferral Period?**

14 A. During the Deferral Period, the Company received \$176.3 million in Base ECAM
15 revenue from Wyoming customers, \$126.6 million less than Wyoming-allocated Actual
16 ECAM costs.

17 **Q. Please summarize the calculation of the QF Adjustment.**

18 A. The ECAM accounts for the difference between the actual QF Adjustment and the QF
19 Adjustment credited to customers through base rates. Per the 2020 Protocol, the QF
20 Adjustment is included beginning January 1, 2021. The QF Adjustment included in
21 base rates is a \$5.0 million reduction to revenue requirement, as set in the Company’s
22 2020 GRC, and is based on actual customer usage during the deferral period in effect
23 beginning July 1, 2021. The difference between the actual QF adjustment and the credit

1 to Wyoming customers in base rates amounts to \$230 thousand, which will be returned
2 to customers.

3 **Q. Please describe how the interest on the ECAM deferral balance was determined.**

4 A. Interest is accrued monthly on the ECAM deferral balance at the
5 Commission-prescribed interest rate on customer deposits in Tariff Schedule 300.
6 During the Deferral Period, the ECAM balance accrued \$2.4 million of interest
7 recoverable from Wyoming customers. An additional \$4.4 million of interest
8 recoverable from Wyoming customers will accrue between January 1, 2024, and June
9 30, 2024, before commencement of the collection period for the ECAM deferral, and
10 \$4.6 million of interest recoverable from Wyoming customers is projected to accrue
11 during the collection period ending June 30, 2025.

12 **Q. Have you included any residual balances from prior years' ECAM deferrals in the**
13 **Company's filing?**

14 A. Yes. Schedule 95 requires the Company to true-up any residual balance from prior
15 ECAM filings to account for the variances between actual customer collections and
16 approved ECAM amounts. The Company has included the final 2022 ECAM residual
17 balance as well as an estimate of the 2023 ECAM residual balance in the total request
18 for recovery in this ECAM filing. The 2022 ECAM rate effective period ended June
19 30, 2023, and the 2023 ECAM rate effective will end on June 30, 2024.

20 **Q. What amount has the Company included for the final 2022 ECAM residual**
21 **balance in this filing?**

22 A. The final residual balance from the 2022 ECAM included in this filing is zero because
23 the Company included the actual 2022 ECAM revenue true-up amount in its 2023

1 ECAM rebuttal update, which the Commission approved for rates effective
2 January 1, 2024. An estimate of prior year revenue true-ups are generally used in each
3 ECAM filing because the filing date of the application (April 15th) is done before the
4 end of the prior year's rate effective period is concluded (June 30th).

5 **Q. What amount has the Company included as an estimate of the 2023 ECAM**
6 **residual balance in this filing?**

7 A. The estimated residual balance from the 2023 ECAM included in this filing is a
8 \$1.3 million increase to the ECAM. Exhibit 2.3 shows that the Company estimates that
9 it will collect approximately \$1.3 million less than the approved 2023 ECAM balance
10 by the end of the rate effective period on June 30, 2024.

11 **DIFFERENCES IN NPC**

12 **Q. On a total-Company basis, what was the difference between Actual NPC and Base**
13 **NPC for the Deferral Period?**

14 A. On a total-Company basis, Actual Adjusted NPC for the Deferral Period were
15 \$2.492 billion, which exceeds Base NPC by approximately \$1.061 billion. Table 2
16 below provides a high-level summary of the difference between the Base NPC and
17 Actual NPC by category on a total-Company basis.

1

Table 2. Net Power Cost Reconciliation (\$ millions)

	TOTAL
Base NPC	\$ 1,432
Increase/(Decrease) to NPC:	
Wholesale Sales Revenue	32
Purchased Power Expense	752
Coal Fuel Expense	(29)
Natural Gas Expense	273
Wheeling, Hydro and Other Expense	31
Total Increase/(Decrease)	\$ 1,061
Adjusted Actual NPC	\$ 2,492

2 **Q. Please describe the differences between Actual NPC and Base NPC.**

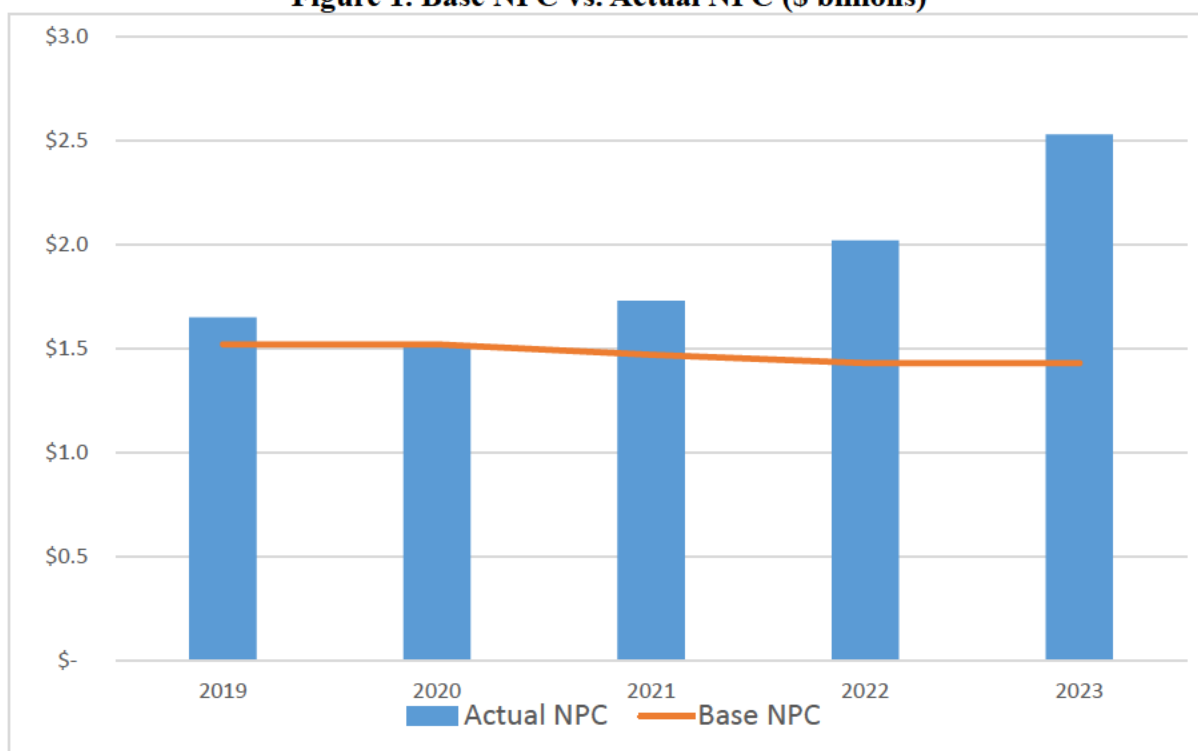
3 A. From an accounting perspective, and as shown in Table 2, Actual NPC were higher than
4 Base NPC due to a \$752 million increase in purchased power expense, a \$273 million
5 increase in natural gas expense, a \$31 million increase in wheeling and other expenses,
6 and a \$32 million decrease in wholesale sales revenue, all of which were partially offset
7 by a \$29 million reduction in coal fuel expense.

8 **Q. Please describe the Base NPC the Company used to calculate the NPC component**
9 **of the ECAM deferral.**

10 A. The Base NPC of \$1.432 billion was set consistent with the 2020 GRC, using a test
11 period of January through December 2021, effective July 1, 2021. Based upon a
12 normalized forecast and perfect operating conditions, circumstances have changed
13 significantly since the Base NPC were established. Both higher market power and
14 natural gas prices, coal fuel supply constraints, extreme weather events, and drought
15 have all contributed to current system operations that do not represent the forecast. The
16 Company operates its system on a least-cost economic dispatch model for its customers

1 and it is important to note that Base NPC are set for ratemaking purposes only, not the
 2 management of actual system operations, nor would it be prudent to do so. Figure 1
 3 below illustrates how Base NPC have been fairly static over time, while Actual NPC
 4 have increased significantly.

5 **Figure 1. Base NPC vs. Actual NPC (\$ billions)**



6 **Q. What are the main drivers of increased NPC in 2023?**

7 A. For 2023, two main drivers increased NPC, coal fuel supply constraints and increased
 8 market power and natural gas prices, both of which are discussed with further detail in
 9 my testimony below. Coal supply constraints, which began at the end of calendar year
 10 2022, continued through 2023 and still impact the Company today. Market power
 11 prices and natural gas prices have risen sharply since 2021. These drivers have an
 12 overarching influence on all components of the Company's actual system operations
 13 through its least cost economic dispatch model. Some of the more significant changes

1 identified in 2023 are reduced wholesale sales volumes, reduced coal generation
2 volumes, and increased gas generation volumes.

3 **Q. Please explain the changes in wholesale sales revenue.**

4 A. Wholesale sales volumes declined relative to Base NPC due to an increase in
5 total-Company load combined with coal supply constraints and decreases in renewable
6 resource output and hydro generation. When actual market conditions differ from
7 normalized forecast conditions in the power cost production model, the opportunities
8 for the Company to sell excess generation to the market are limited. Additionally, as
9 market power prices and loads increase simultaneously, wholesale sales volumes
10 decrease as the Company serves its load through its own generation. Overall, the above
11 market and system dynamics, decreased wholesale sales revenue by \$32 million
12 compared to Base NPC. While the average price of actual market sales transactions
13 was \$67.63 per megawatt-hour (“\$/MWh”), or 136 percent higher than the average
14 price in Base NPC, actual wholesale market volumes were 4,636 gigawatt-hours
15 (“GWh”), or 64 percent, lower than Base NPC.

16 **Q. Please explain the changes in purchased power expense.**

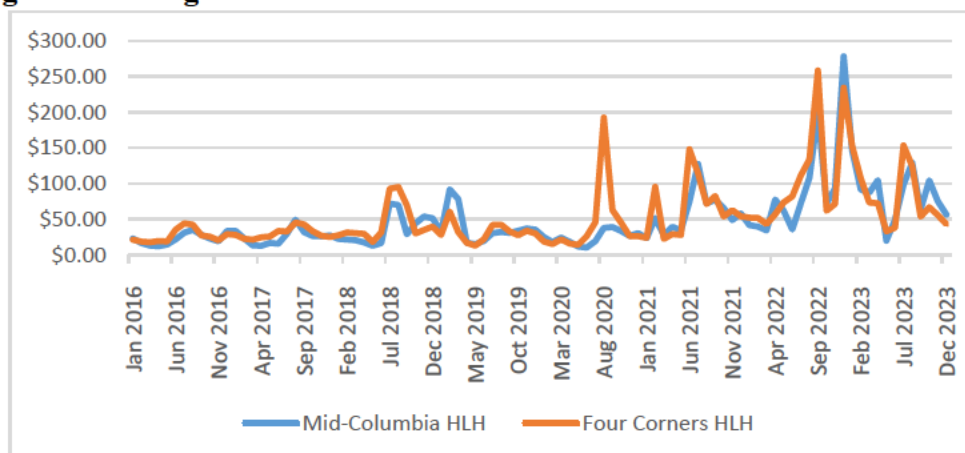
17 A. Overall, actual purchased power expense increased \$752 million over Base NPC
18 because the actual average price from market purchase transactions, represented in the
19 power cost production model as short-term firm and system balancing purchases,
20 significantly increased. On a dollar-per megawatt-hour basis, actual market purchase
21 transactions increased from \$19.05/MWh in Base NPC to \$116.40/MWh, or
22 511 percent and actual market purchase volume increased by 3,360 GWh or 76 percent
23 higher than Base NPC.

1 The average monthly price of market transactions at the Mid-Columbia and
 2 Four Corners market hubs has risen significantly since 2021. Between 2016 and 2020,
 3 the average monthly Heavy Load Hour (“HLH”) market price at the Mid-Columbia
 4 market hub was \$29.27/MWh and \$35.11/MWh at the Four Corners market hub while
 5 the average monthly HLH market price in 2023 was \$85.51/MWh and \$81.12/MWh
 6 respectively. Table 3 and Figure 2 illustrate these significant market price increases
 7 impacting 2023 NPC.

8 **Table 3. Average HLH Mid-Columbia & Four Corners Market Price**

Year	Mid-C HLH Average	Four-C HLH Average
2016-2020	\$29.27	\$35.11
2021	\$58.36	\$65.42
2022	\$92.75	\$102.59
2023	\$85.51	\$81.12

9 **Figure 2. Average HLH Mid-Columbia & Four Corners Market Price**



10 **Q. Please explain the changes in coal fuel expense and volumes.**

11 **A.** As discussed in my testimony above and explained in detail further below, coal supply
 12 shortages, primarily at the Hunter and Huntington plants, that began in the fourth
 13 quarter of 2022 and extended through 2023, had a significant impact on the Company’s
 14 coal generating resources and total system operations. Due to overall lower coal fuel

1 availability, the Company had to adjust its overall system operations through increased
 2 natural gas resource output, increased purchased power volumes, and reduced
 3 wholesale sales. Total coal fuel expense decreased because coal generation volume was
 4 6,639 GWh, or 23 percent lower than Base NPC as presented in Table 4.

5 **Table 4. Coal Generation**

Year	Base GWh	Actual GWh	Variance	Percent
2020	40,529	30,635	(9,894)	-24%
2021	34,772	31,590	(3,182)	-9%
2022	28,590	28,391	(199)	-1%
2023	28,590	21,951	(6,639)	-23%

6 The coal supply shortages also increased the average cost of coal generation from
 7 \$20.52/MWh in Base NPC to \$25.43/MWh in the Deferral Period. Overall, the lower
 8 generation volume results in a decrease of \$29 million in coal fuel expense, but the coal
 9 supply limitations impacted all other aspects of the Company's system operations and
 10 net power costs in 2023 as previously explained.

11 **Q. Please explain the changes in natural gas fuel expense.**

12 A. With a reduction in coal generating resource output in 2023, the Company increased
 13 output at its natural gas generating resources. While natural gas prices and the average
 14 cost of natural gas generation are higher than Base NPC, the price for operating the
 15 Company's natural gas generating resources was more economical than market power
 16 purchases on average. Overall, the total natural gas fuel expense in Actual NPC
 17 increased by \$273 million compared to Base NPC. This was due to both an increase in
 18 the average cost of natural gas generation from \$22.16/MWh in Base NPC to
 19 \$39.61/MWh in the Deferral Period and an increase in gas generation volumes of 1,250
 20 GWh (10 percent) as shown in Table 5 below.

1

Table 5. Natural Gas Generation

Year	Base GWh	Actual GWh	Variance	Percent
2020	11,707	12,042	335	3%
2021	12,796	13,312	516	4%
2022	12,800	13,686	886	7%
2023	12,800	14,050	1,250	10%

2

3

4

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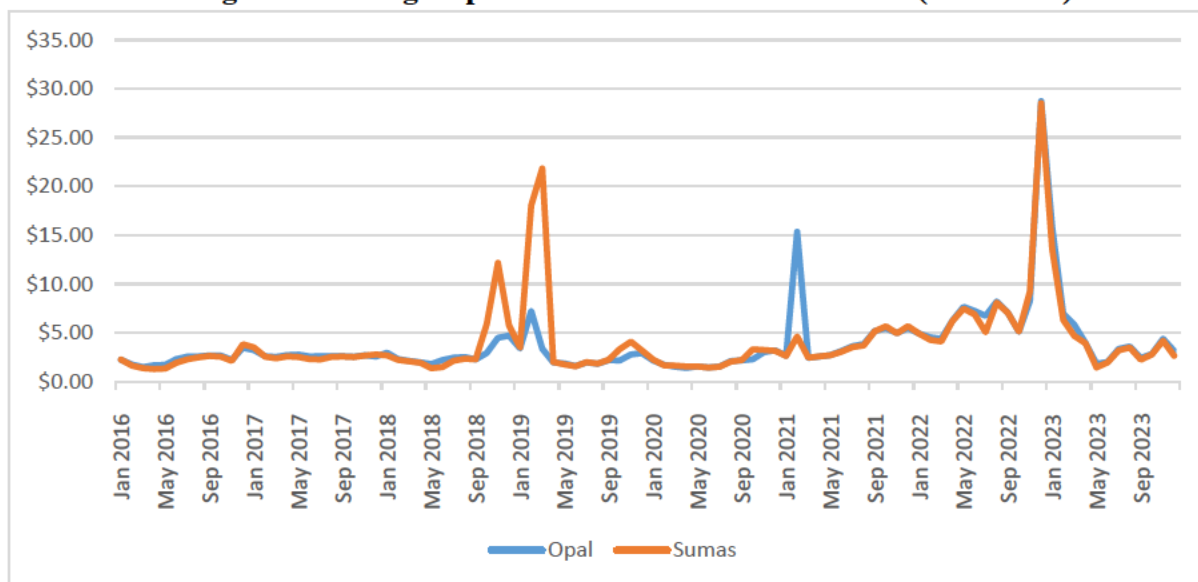
Like the significant increase in the average price of market power purchases discussed above, average natural gas prices have also seen a significant increase during the same timeframe. Table 6 and Figure 3 below illustrate these increases impacting 2023 NPC.

Table 6. Average Opal & Sumas Natural Gas Prices (\$/MMBtu)

Year	Opal Average	Sumas Average
2016-2020	\$2.51	\$3.19
2021	\$4.80	\$3.91
2022	\$8.27	\$8.09
2023	\$4.70	\$4.22

6

Figure 3. Average Opal & Sumas Natural Gas Prices (\$/MMBtu)



7

Q. Please describe how extreme weather events have impacted NPC.

8

A. Ongoing drought in the West, which began in the summer of 2020, has continued to

1 impact Actual NPC because it reduced the availability of the Company's
 2 hydro-generation resources. In 2023, actual generation from the Company's hydro
 3 resources was 614 GWh (17 percent) lower than forecasted generation from the 2020
 4 GRC, as shown in Table 7 below and needed to be replaced to meet customer demand.

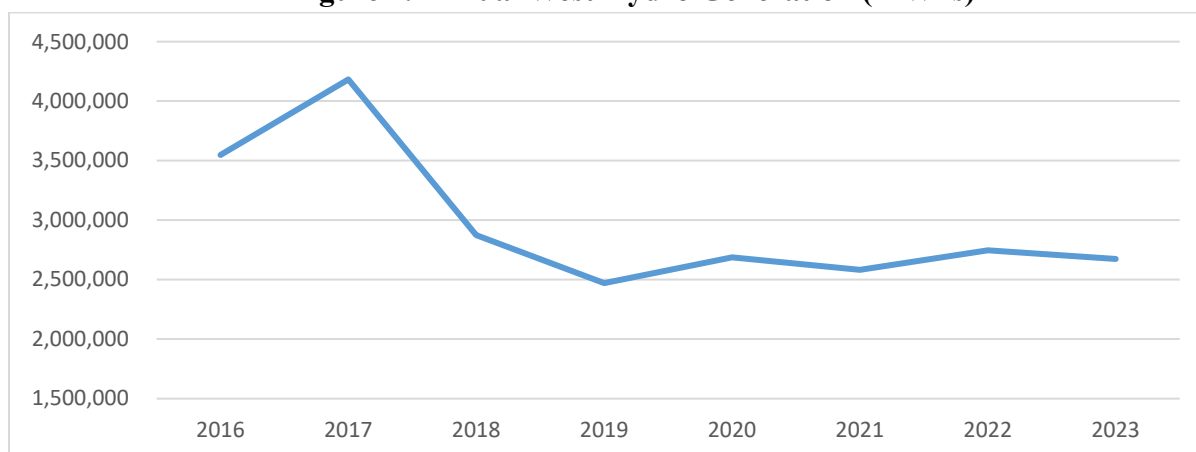
5 **Table 7. Hydro Generation**

Year	Base GWh	Actual GWh	Variance	Percent
2020	3,884	3,037	(847)	-22%
2021	3,848	2,789	(1,059)	-28%
2022	3,615	2,936	(679)	-19%
2023	3,615	3,000	(615)	-17%

6 The estimated impact on total-Company NPC in 2023 due to decreased
 7 hydro-generation caused by drought conditions is \$58 million.

8 In the four years preceding the drought (2016-2019), average west hydro
 9 resource generation was 3.3 million MWhs while the average west hydro resource
 10 generation during the drought (2020-2023) was 2.7 million MWhs, a difference of 600
 11 thousand MWhs, on average. Figure 4 below shows the decline over time.

12 **Figure 4. Annual West Hydro Generation (MWhs)**



13 Additionally, in December 2022, a historic winter cyclone event occurred
 14 across the majority of the United States, which impacted both market prices and natural

1 gas prices, along with an increase in demand. The impacts of this event on both natural
 2 gas prices across the Company's delivery points and market power purchase prices
 3 were not only significant and elevated, but also carried over into January 2023. Table
 4 8 and Table 9 below show the large variance between average January prices and the
 5 remaining average for the year prices between February and December at the Opal and
 6 Sumas natural gas hubs and Mid-Columbia and Four Corners market purchase power
 7 hubs.

8 **Table 8. Opal and Sumas Average Monthly Price (\$/MMBtu)**

Month	Opal	Sumas
Jan	\$15.85	\$13.58
Feb - Dec	\$3.68	\$3.37

9 **Table 9. Mid-Columbia and Four Corners Average Monthly Price (\$/MWh)**

Month	Mid-C HLH	Four-C HLH
Jan	\$146.06	\$152.35
Feb - Dec	\$80.01	\$74.64

10 COAL SUPPLY CONSTRAINTS

11 **Q. Please describe the many challenges the Company faced fueling its coal generating
 12 resources in 2023.**

13 A. All of Utah's operating mines and some Wyoming mines experienced significant
 14 production difficulties and challenges in 2023 due to geological, logistical, and
 15 financial challenges. The most significant challenge was the mine fire that occurred at
 16 American Consolidated Natural Resources' ("ACNR") Lila Canyon mine. The mine
 17 had produced more than 25 percent of Utah's coal production in recent years and
 18 stopped production in September 2022. ACNR announced the permanent closure of the
 19 Lila Canyon mine in November 2023 after determining that it was not possible to safely
 20 remediate and operate the mine.

1 In 2023, all of PacifiCorp’s Utah coal suppliers and a major Wyoming coal
 2 supplier operated under *force majeure* declarations that resulted in significant delivery
 3 shortfalls of PacifiCorp’s contracted coal supply. Consequently, the Utah coal mines
 4 experienced a 35 percent decrease in coal production from 10.7 million tons in 2022 to
 5 6.9 million tons. Table 10 below highlights recent Utah coal market production data.

6 **Table 10. Utah Coal Production by Supplier (source: Mine Safety and Health**
 7 **Administration)**

	TONS			Change	
	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2022 v. 2023</u>	<u>%</u>
Bronco Utah Operations, LLC	1,170,988	1,062,707	798,023	(264,684)	-25%
Wolverine Fuels, LLC	6,845,083	6,425,241	5,477,050	(948,191)	-15%
ACNR Holdings, Inc.	3,470,644	2,281,289	159,240	(2,122,049)	-93%
Gentry Mountain Mining, LLC	512,951	599,770	419,592	(180,178)	-30%
Alton Coal Development, LLC	434,165	354,265	66,659	(287,606)	-81%
	12,433,831	10,723,272	6,920,564	(3,802,708)	-35%

8 Additionally, challenges in the U.S. coal market in 2022 due to historically low
 9 coal inventories and soaring natural gas prices led many utilities to increase coal
 10 purchases for generation and to restock depleted coal inventories. In many coal basins,
 11 coal pricing more than doubled in 2022 and remained high into 2023. This effect on
 12 coal pricing was exacerbated by the war in Ukraine, when many U.S. mines, including
 13 mines in Utah and Colorado, rushed to take advantage of high coal prices by exporting
 14 coal to Europe.

15 **Q. What did the Company do to acquire additional coal supply in 2023?**

16 A. The Company explored economic coal from possible sources. PacifiCorp contracted
 17 with a new supplier in 2023, Gentry Mountain Mining (“Gentry”), for additional coal
 18 supply for the Hunter plant. The Gentry coal supply agreements were designed to
 19 purchase all known economically-available Utah coal for use at the Utah plants.

1 PacifiCorp continued to cooperate with the Hunter plant's co-owners to deliver coal
2 from one of the plant co-owner's mines in Colorado. PacifiCorp even excavated a small
3 amount of coal from the buried coal pile at the Gadsby plant, a converted natural gas
4 plant in Salt Lake City, and delivered the coal to the Hunter plant. PacifiCorp also
5 continued to transport coal from the Rock Garden safety pile to the Huntington plant.
6 This activity continued through September 2023 when the Rock Garden inventory was
7 completely depleted.

8 PacifiCorp also procured coal from the North Antelope Rochelle Mine
9 ("NARM") in Wyoming's Powder River Basin for the first time for the Jim Bridger
10 plant. Historically, Jim Bridger's coal has been supplied by the captive Bridger Coal
11 Company mine and Lighthouse Resources' local Black Butte mine ("Black Butte").
12 PacifiCorp's deliveries from Black Butte were 0.88 million tons or [REDACTED] less than
13 contracted in 2023. The shortfall occurred due to Black Butte's [REDACTED]
14 [REDACTED]. Black Butte mine
15 declared *force majeure* in October 2023 [REDACTED]. Early in 2023, once
16 the Black Butte delivery shortfall became apparent, PacifiCorp took steps to mitigate
17 the shortfall. First, dispatch of the Jim Bridger plant was adjusted to account for the
18 shortfall. Second, PacifiCorp contracted for the delivery of NARM coal which also
19 required PacifiCorp to lease railcars. PacifiCorp received 0.33 million tons from
20 NARM in 2023 to partially offset the reduction in Black Butte mine deliveries.

21 **Q. How did the Company ensure existing coal suppliers in Utah did not suspend**
22 **operations during 2023?**

23 A. Bronco Utah Operations, LLC ("Bronco") operates the Emery mine in Utah. PacifiCorp

1 signed a coal supply agreement with Bronco in 2020 which allowed the Company to
2 purchase [REDACTED] tons per year for calendar years
3 2021-2024 for coal to the Hunter Plant. Bronco notified PacifiCorp in late 2022 that it
4 was unable to supply coal to the Hunter Plant at the current contract price and needed
5 a commitment longer than the remaining two years of the contract for it to make the
6 necessary capital investment for a reliable supply of coal to the Hunter plant.
7 PacifiCorp evaluated the economic effects of this request and determined to adjust the
8 Bronco contract terms to allow Bronco to obtain the necessary financing.

9 To avoid the unfavorable cost impacts to PacifiCorp's customers resulting from
10 the unexpected loss of Bronco's coal supply, PacifiCorp amended its contract with
11 Bronco in March 2023 to maintain Bronco as a coal supplier to serve Hunter through
12 December 31, 2025. The contract amendment reduced Bronco's deliveries to the
13 Hunter Plant as follows: (2023) [REDACTED] tons, (2024) [REDACTED] tons, and (2025)
14 [REDACTED] tons. Despite PacifiCorp's best efforts to maintain the Emery mine as a
15 reliable coal supplier, Bronco continued to struggle with production and ultimately
16 delivered only 0.51 million tons in 2023, a shortfall of [REDACTED] tons from the
17 contractual tons.

18 **Q. How have the coal supply limitations impacted the Company's dispatch of its coal**
19 **generating resources?**

20 A. As a result of the *force majeure* declarations and resulting coal delivery shortfalls in
21 Utah, the dispatch price of the Hunter and Huntington plants was adjusted to match the
22 coal deliveries and assure system reliability throughout 2023. In other words, the
23 dispatch of these coal resources was adjusted to ensure the Company had sufficient coal

1 to serve load during high-demand periods. Additionally, the dispatch price of the Jim
2 Bridger plant was adjusted for three months in early 2023 due to delivery shortfalls at
3 the Black Butte mine which eventually resulted in a *force majeure* declaration.
4 Ultimately due to these issues, the Company had to reduce its overall coal generating
5 resource output in 2023 as illustrated in Table 4 above.

6 **Q. How has the Company amended its coal contracts for future supply?**

7 A. In February 2024, PacifiCorp amended the Hunter and Huntington coal supply
8 agreements with Wolverine. The amended coal supply agreement with Wolverine for
9 the Hunter plant's fuel supply [REDACTED]
10 [REDACTED] for the Hunter plant. Beginning in [REDACTED], the amendment
11 facilitates additional coal production through renewed operations at the Fossil Rock
12 mine in Emery County, Utah. Deliveries from the Fossil Rock mine will begin in [REDACTED].
13 When fully operational, the Fossil Rock mine will provide [REDACTED] tons per year to
14 the Hunter plant. The contract amendment allows the Company to direct this coal to
15 the Huntington plant as needed.

16 COMPLIANCE COSTS

17 **Q. Please generally describe the Ozone Transport Rule ("OTR").**

18 A. The OTR is the Environmental Protection Agency's ("EPA") finalized federal plan for
19 interstate transport of the 2015 ozone National Ambient Air Quality Standards, and had
20 an effective date of August 4, 2023. The plan applied to 23 states, including Utah, and
21 includes requirements to eliminate significant contributions of ozone or ozone
22 precursors (specifically, nitrogen oxides ("NOx")) to nonattainment or maintenance
23 areas in neighboring states. With respect to fossil fuel-fired electric generating units,

1 the final rule sought to implement an allowance-based trading program where each unit
2 was allocated a portion of the state’s NOx budget during the ozone season (identified
3 in the rule as May 1 – September 30).

4 **Q. What is the current status of the OTR?**

5 A. On July 27, 2023, the U.S. Tenth Circuit Court of Appeals granted petitioners’,
6 including PacifiCorp’s, motion to stay the EPA’s final disapproval of Utah’s OTR state
7 implementation plan (“SIP”) on July 27, 2023; and EPA proposed approval of
8 Wyoming’s OTR SIP on August 14, 2023. While timelines cannot be predicted
9 precisely, the OTR stay for the state of Utah is still under litigation with the U.S. Tenth
10 Circuit Court of Appeals and is expected to remain in place at least through the 2024
11 ozone season. For Wyoming, the EPA published its final approval of Wyoming’s
12 interstate ozone transport plan in the Federal Register on December 19, 2023. The final
13 approval of Wyoming’s plan removes cross-state ozone transport requirements from
14 electric generating units in the state, including PacifiCorp’s generating units. As a
15 result, Wyoming is not subject to the OTR federal implementation plan.

16 **Q. Did the OTR impact NPC in 2023?**

17 A. The stay was not granted until a week before the OTR was set to become effective, and
18 the Company had to plan as if the OTR was going to be implemented for the Utah
19 thermal generating units. Therefore, the Company needed to plan to alter its dispatch
20 through market power purchases and its thermal generating resources as necessary to
21 ensure there were sufficient NOx allowances to cover the generation. In 2023, the
22 Company incurred \$17 million in additional NPC to comply with the prospective OTR
23 requirements.

1 **Q. Are other environmental compliance costs included in Wyoming customer rates?**

2 A. Yes. All the Company's generation resources incur various types of environmental
3 compliance costs and generation taxes, many of which are imposed by the state where
4 the resource is located. These include costs like the Wyoming wind tax, and upgrades
5 at generation facilities that are necessary to comply with environmental requirements
6 like fish passage at hydroelectric plants or avian curtailments at wind facilities. These
7 direct impacts to generation are consistently system allocated. Wyoming customers
8 pay these environmental compliance and generation tax costs incurred by resources
9 that are used to serve Wyoming customers.

10 **IMPACT OF PARTICIPATING IN THE WEIM**

11 **Q. What is the CAISO Western Energy Imbalance Market?**

12 A. The CAISO WEIM is an advanced real-time energy market that automatically finds
13 low-cost energy to serve real-time consumer demand across the west by allowing
14 participants to buy and sell power close to the time electricity is consumed. Since its
15 launch in 2014, the WEIM has enhanced grid reliability, improved the integration of
16 renewable resources, lowered carbon emissions, and generated significant cost savings
17 for its participants.

18 **Q. Are the actual benefits from participating in the WEIM included in the ECAM**
19 **deferral?**

20 A. Yes. Participation in the WEIM provides significant benefits to customers in the form
21 of reduced Actual NPC. The benefits are embedded in Actual NPC through lower fuel
22 costs, lower purchased power costs, and higher wholesale sales revenue.

1 **Q. What are the actual WEIM benefits included in the ECAM deferral?**

2 A. CAISO's WEIM benefits report indicates that PacifiCorp has received \$154 million in
3 benefits in 2023. Since inception of the WEIM, PacifiCorp has received \$745.7 million
4 in total benefits.

5 **CONCLUSION**

6 **Q. Please summarize your testimony.**

7 A. The ECAM deferral of \$139.4 million, including interest and prior ECAM residual
8 balances for the Deferral Period was accurately calculated in compliance with the
9 ECAM tariff and previous Commission orders. The increase is driven by coal supply
10 limitations, significantly higher market prices and natural gas prices, and extreme
11 weather events. Increased costs were offset by lower coal fuel expenses and liquidated
12 damages that were credited to customers outside of the sharing band.

13 **Q. What is your recommendation?**

14 A. The actual costs incurred in this ECAM filing were prudent and in the public interest.
15 Therefore, I respectfully request the Commission approve the proposed ECAM deferral
16 in this application as filed, with interim rates effective July 1, 2024.

17 **Q. Does this conclude your direct testimony?**

18 A. Yes.

BEFORE THE WYOMING PUBLIC SERVICE COMMISSION

IN THE MATTER OF THE)
APPLICATION OF ROCKY MOUNTAIN)
POWER TO RECOVER DEFERRED NET) DOCKET NO. 20000-__-EM-24
POWER COSTS PURSUANT TO TARIFF) (RECORD NO. ____)
SCHEDULE 95 ENERGY COST)
ADJUSTMENT MECHANISM AND)
PURSUANT TO TARIFF SCHEDULE 93,)
REC AND SO2 REVENUE ADJUSTMENT)
MECHANISM)

AFFIDAVIT, OATH AND VERIFICATION

Jack Painter (Affiant) being of lawful age and being first duly sworn, hereby deposes and says that:

Affiant is the Net Power Cost Specialist for PacifiCorp, which is a party in this matter.

Affiant prepared and caused to be filed the testimony submitted on April 15, 2024. Affiant has, by all necessary action, been duly authorized to file the testimony and make this Oath and Verification.

Affiant hereby verifies that, based on Affiant’s knowledge, all statements and information contained within the testimony and all of its associated attachments are true and complete and constitute the recommendations of the Affiant in their official capacity as Net Power Cost Specialist.

Further Affiant Sayeth Not.

Dated this 9th day of April, 2024

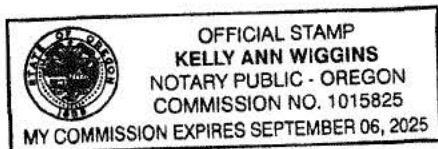
Jack Painter signature
Jack Painter
Net Power Cost Specialist
825 NE Multnomah St Portland OR, 97232

STATE OF OREGON)
) SS:
COUNTY OF Multnomah)

The foregoing was acknowledged before me by Jack Painter on this 9th day of April, 2024. Witness my hand and official seal.

Notary Public signature

My Commission Expires: SEPT 6, 2025



Rocky Mountain Power
Exhibit 2.1
Docket No. 20000-____-EM-24
Witness: Jack Painter

BEFORE THE WYOMING PUBLIC SERVICE
COMMISSION

ROCKY MOUNTAIN POWER

Exhibit Accompanying Direct Testimony of Jack Painter
Calculation of Wyoming ECAM Deferral

April 2024

Wyoming Energy Cost Adjustment Mechanism
Deferral Period: January 1, 2023 - December 31, 2023

Exhibit 2.1 - Calculation of Wyoming ECAM Deferral

Line No.	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Total	Reference
Incremental ECAM Deferral Calculation Subject to Sharing Band														
1 Actual Collections of Base NPC	\$ 19,014,051	\$ 19,003,317	\$ 16,727,234	\$ 17,372,689	\$ 16,263,821	\$ 15,503,954	\$ 18,830,403	\$ 17,368,242	\$ 17,460,534	\$ 16,747,317	\$ 17,504,676	\$ 19,081,879	\$ 210,878,117	Wyoming Schedule 95
2 Actual Collections of Base Chemicals	379,110	378,896	333,515	346,384	324,275	309,125	375,449	346,296	348,136	333,915	349,016	380,463	4,204,580	Wyoming Schedule 95
3 Actual Collections of Base Start-Up Fuel	79,864	79,819	70,259	72,970	68,312	65,121	79,092	72,951	73,339	70,343	73,524	80,149	885,741	Wyoming Schedule 95
4 Actual Collections of Base ECAM	19,473,026	19,462,033	17,131,007	17,792,043	16,656,408	15,878,199	19,284,945	17,787,489	17,882,008	17,151,575	17,927,216	19,542,491	215,968,438	Σ Lines 1:3
5 Wyoming Allocated Actual Adjusted NPC	29,928,157	31,049,593	30,416,107	23,450,106	22,908,788	25,751,532	43,242,206	43,520,705	33,737,085	25,502,363	29,021,859	28,767,100	367,295,602	Exhibit 2.2.1
6 Wyoming Allocated Chemical Costs	456,016	523,636	411,512	292,071	299,074	328,881	428,103	525,740	472,405	440,559	409,159	360,840	4,967,994	Exhibit 2.2.7
7 Wyoming Allocated Start-Up Fuel Costs	111,377	161,041	164,130	78,331	175,999	91,399	82,531	89,873	124,646	128,761	118,009	(49,349)	1,276,750	Exhibit 2.2.7
8 Actual Adjusted ECAM	30,495,560	31,734,270	30,991,748	23,820,508	23,363,861	26,171,812	43,762,840	44,136,318	34,334,136	26,071,684	29,549,027	29,098,593	373,540,346	Σ Lines 5:7
9 Deferred ECAM Subject to Sharing Banc	11,022,524	12,272,237	13,860,741	6,028,465	6,727,453	10,293,613	24,467,895	26,348,829	16,452,128	8,920,109	11,621,811	9,556,102	157,571,908	Line 8 - Line 4
10 Deferred ECAM @ 80% Symmetrical Sharing	\$ 8,818,019	\$ 9,817,790	\$ 11,088,593	\$ 4,822,772	\$ 5,381,962	\$ 8,234,890	\$ 19,574,316	\$ 21,079,063	\$ 13,161,702	\$ 7,136,087	\$ 9,297,449	\$ 7,644,882	\$ 126,057,527	Line 9 x 80%
Incremental ECAM Deferral Calculation Not Subject to Sharing Band														
11 Actual Collections of Base QF Adjustment	(430,079)	(429,837)	(378,354)	(392,953)	(367,872)	(350,684)	(425,925)	(392,853)	(394,940)	(378,808)	(395,939)	(431,614)	(4,769,859)	Wyoming Schedule 95
12 Actual Collections of Base PTC	(3,143,510)	(3,141,736)	(2,765,441)	(2,872,151)	(2,688,827)	(2,563,201)	(3,113,149)	(2,871,416)	(2,886,674)	(2,768,761)	(2,893,972)	(3,154,724)	(34,863,560)	Wyoming Schedule 95
13 Actual Collections of Base ECAM	(3,573,590)	(3,571,572)	(3,143,795)	(3,265,104)	(3,056,698)	(2,913,885)	(3,539,074)	(3,264,269)	(3,281,614)	(3,147,569)	(3,289,911)	(3,586,338)	(39,633,419)	Σ Lines 11:12
14 Actual Adjusted QF Adjustment	(416,667)	(416,667)	(416,667)	(416,667)	(416,667)	(416,667)	(416,667)	(416,667)	(416,667)	(416,667)	(416,667)	(416,667)	(5,000,000)	Exhibit 2.2.8
15 Wyoming Allocated Actual PTC	(3,673,410)	(3,725,167)	(3,290,200)	(3,172,297)	(2,190,554)	(2,012,483)	(1,855,709)	(2,141,429)	(2,086,176)	(2,150,083)	(3,548,681)	(3,436,367)	(33,282,555)	Exhibit 2.2.9
16 Wyoming Allocated Actual Wind Liquidated Damages	-	(36,651)	-	-	-	-	(49,109)	(689,781)	-	-	-	-	(775,540)	
17 Wyoming Allocated Actual EIM BOSR Costs	1,357	1,357	1,357	1,357	1,357	1,357	1,357	1,357	1,357	1,357	1,357	1,357	16,294	
18 Actual Adjusted ECAM	(4,088,720)	(4,177,127)	(3,705,510)	(3,587,607)	(2,605,863)	(2,427,792)	(2,320,127)	(3,246,519)	(2,501,485)	(2,565,393)	(3,963,991)	(3,851,677)	(39,041,811)	Σ Lines 14:17
19 Deferred ECAM Not Subject to Sharing Banc	\$ (515,130)	\$ (605,555)	\$ (661,715)	\$ (322,503)	\$ 450,835	\$ 486,093	\$ 1,218,947	\$ 17,749	\$ 780,129	\$ 582,176	\$ (674,080)	\$ (265,339)	\$ 591,608	Line 18 - Line 13
ECAM Adjustment Balance														
20 Annual Interest Rate	3.97%	3.97%	3.97%	3.97%	3.97%	3.97%	3.97%	3.97%	3.97%	3.97%	3.97%	3.97%	3.97%	Wyoming Schedule 300
21 Beginning ECAM Adjustment Balance	\$ -	\$ 8,316,624	\$ 17,571,611	\$ 28,174,035	\$ 32,774,958	\$ 38,725,834	\$ 47,589,362	\$ 68,574,462	\$ 89,933,039	\$ 104,195,461	\$ 112,271,205	\$ 121,280,269	\$ -	Prior Month Line 24
22 Incremental Deferral	8,302,889	9,212,235	10,526,878	4,500,270	5,832,797	8,720,984	20,793,263	21,096,813	13,941,831	7,718,264	8,623,369	7,379,543	126,649,135	Line 10 + Line 19
23 Interest	13,734	42,753	75,546	100,653	118,079	142,544	191,837	261,765	320,591	357,481	385,695	413,443	2,424,120	Line 20 / 12 * (Line 21 + Line 22 x 50%)
24 Ending ECAM Adjustment Balance	\$ 8,316,624	\$ 17,571,611	\$ 28,174,035	\$ 32,774,958	\$ 38,725,834	\$ 47,589,362	\$ 68,574,462	\$ 89,933,039	\$ 104,195,461	\$ 112,271,205	\$ 121,280,269	\$ 129,073,284	\$ 129,073,284	Σ Lines 21:23

REDACTED
Rocky Mountain Power
Exhibit 2.2
Docket No. 20000-____-EM-24
Witness: Jack Painter

BEFORE THE WYOMING PUBLIC SERVICE
COMMISSION

ROCKY MOUNTAIN POWER

REDACTED
Exhibit Accompanying Direct Testimony of Jack Painter
Monthly Actual Net Power Costs

April 2024

**THIS EXHIBIT IS CONFIDENTIAL IN
ITS ENTIRETY AND IS PROVIDED
UNDER SEPARATE COVER**

Rocky Mountain Power
Exhibit 2.3
Docket No. 20000-____-EM-24
Witness: Jack Painter

BEFORE THE WYOMING PUBLIC SERVICE
COMMISSION

ROCKY MOUNTAIN POWER

Exhibit Accompanying Direct Testimony of Jack Painter
Calculation of Wyoming Balances from 2022/2023 ECAM

April 2024

2022 ECAM True-Up \$ and 2023 ECAM True-Up Estimate \$				
	2022 ECAM	Forecast	7/1/2022-6/30/2023	23,167,656
Less	2022 ECAM	Actual	7/1/2022-6/30/2023	24,525,871
			Total	(1,358,215)
Less	2022 ECAM	True-Up Estimate	7/1/2022-6/30/2023	(1,358,215)
	2022 ECAM	True-Up	Total	-
	2023 ECAM	Forecast	7/1/2023-2/29/2024	43,564,991
Less	2023 ECAM	Actual	7/1/2023-2/29/2024	42,281,577
	2023 ECAM	True-Up Estimate	7/1/2023-2/29/2024	1,283,414

Rocky Mountain Power
Exhibit 2.4
Docket No. 20000-____-EM-24
Witness: Jack Painter

BEFORE THE WYOMING PUBLIC SERVICE
COMMISSION

ROCKY MOUNTAIN POWER

Exhibit Accompanying Direct Testimony of Jack Painter
Summary of Monthly Market Prices at Major Markets

April 2024

Wyoming Energy Cost Adjustment Mechanism (ECAM)														
RMP Exhibit 2.4 - Summary of Monthly Market Prices at Major Markets														
Start Date	1/1/2023	Data Source:	ICE	ICE	ICE	ICE	ICE	ICE	ICE	ICE	ICE	ICE	ICE	ICE
End Date	12/31/2023	Commodity:	ELEC	ELEC	ELEC	ELEC	ELEC	ELEC	ELEC	ELEC	ELEC	ELEC	ELEC	ELEC
		POD:	COB N-S	COB N-S	PV	PV	MID-C	MID-C	MONA	MONA	4C	4C	MEAD 230	MEAD 230
			COB		Palo Verde		Mid-Columbia		Mona		Four Corners		MEAD	
			Historical Prices		Historical Prices		Historical Prices		Historical Prices		Historical Prices		Historical Prices	
Start	End	Peak Type:	HLH	LLH	HLH	LLH	HLH	LLH	HLH	LLH	HLH	LLH	HLH	LLH
1/1/2023	1/31/2023	Jan 2023	\$135.52	\$152.94	\$141.44	\$128.70	\$146.06	\$145.07	\$164.88	\$150.67	\$152.35	\$138.71	\$150.92	\$136.92
2/1/2023	2/28/2023	Feb 2023	\$80.84	\$75.38	\$69.32	\$63.75	\$91.57	\$72.67	\$77.90	\$56.17	\$107.25	\$76.52	\$70.78	\$65.67
3/1/2023	3/31/2023	Mar 2023	\$82.50	\$95.57	\$61.37	\$66.22	\$87.31	\$83.67	\$74.25	\$68.98	\$73.20	\$61.44	\$68.26	\$73.07
4/1/2023	4/30/2023	Apr 2023	\$100.50	\$84.14	\$63.37	\$67.59	\$104.77	\$82.49	\$69.46	\$69.54	\$72.41	\$74.19	\$63.53	\$66.64
5/1/2023	5/31/2023	May 2023	\$22.59	\$11.06	\$28.01	\$21.34	\$19.97	\$6.80	\$31.65	\$28.12	\$32.98	\$22.10	\$30.89	\$22.12
6/1/2023	6/30/2023	Jun 2023	\$52.49	\$30.38	\$34.94	\$29.79	\$49.38	\$37.08	\$35.89	\$37.83	\$38.19	\$38.00	\$40.06	\$33.47
7/1/2023	7/31/2023	Jul 2023	\$103.16	\$66.00	\$111.49	\$76.17	\$98.15	\$63.29	\$96.26	\$61.06	\$153.33	\$60.78	\$116.87	\$75.63
8/1/2023	8/31/2023	Aug 2023	\$112.14	\$44.27	\$134.33	\$60.77	\$129.23	\$53.93	\$80.67	\$57.43	\$124.56	\$44.61	\$102.94	\$62.50
9/1/2023	9/30/2023	Sep 2023	\$62.01	\$28.97	\$45.04	\$37.19	\$63.39	\$39.91	\$49.96	\$34.17	\$53.50	\$32.50	\$49.66	\$40.61
10/1/2023	10/31/2023	Oct 2023	\$117.08	\$49.23	\$59.89	\$50.96	\$104.51	\$70.37	\$70.85	\$57.87	\$66.82	\$57.00	\$60.86	\$53.59
11/1/2023	11/30/2023	Nov 2023	\$67.25	\$58.39	\$52.30	\$51.65	\$75.43	\$63.70	\$60.79	\$50.94	\$55.83	\$43.50	\$54.14	\$52.74
12/1/2023	12/31/2023	Dec 2023	\$63.00	\$44.67	\$39.95	\$39.09	\$56.40	\$49.37	\$51.74	\$46.74	\$43.00	\$51.86	\$42.99	\$39.91

REDACTED
Rocky Mountain Power
Exhibit 2.5
Docket No. 20000-____-EM-24
Witness: Jack Painter

BEFORE THE WYOMING PUBLIC SERVICE
COMMISSION

ROCKY MOUNTAIN POWER

REDACTED
Exhibit Accompanying Direct Testimony of Jack Painter
Hourly Generation Logs of Thermal/Wind Resources

April 2024

**THIS EXHIBIT IS VOLUMINOUS AND
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REDACTED
Rocky Mountain Power
Exhibit 2.6
Docket No. 20000-____-EM-24
Witness: Jack Painter

BEFORE THE WYOMING PUBLIC SERVICE
COMMISSION

ROCKY MOUNTAIN POWER

REDACTED
Exhibit Accompanying Direct Testimony of Jack Painter
List of Hydro Outages

April 2024

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REDACTED
Rocky Mountain Power
Exhibit 2.7
Docket No. 20000-____-EM-24
Witness: Jack Painter

BEFORE THE WYOMING PUBLIC SERVICE
COMMISSION

ROCKY MOUNTAIN POWER

REDACTED
Exhibit Accompanying Direct Testimony of Jack Painter
List of Thermal Outages

April 2024

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