

Application No. 23-09-\_\_\_\_  
Exhibit No. PAC/400  
Witness: Zepure Shahumvan

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA

PACIFICORP 2024 ECAC

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Direct Testimony of Zepure Shahumyan – Confidential  
GHG Allowance Costs and Revenues

**[PUBLIC VERSION]**

September 2023

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**ATTACHED EXHIBITS**

- Confidential Exhibit PAC/401 – Commission Template C – Weighted Average Cost of Compliance Instruments
- Confidential Exhibit PAC/402 – Commission Template D-2 – Annual GHG Emissions and Associated Compliance Obligation
- Confidential Exhibit PAC/403 – Summary of the GHG Allowance Costs Sub-Balancing Account
- Confidential Exhibit PAC/404 – 2024 Forecast Compliance Obligation and GHG Allowance Costs
- Confidential Exhibit PAC/405 – Commission Template C-2 – GHG Balancing Account Table for Direct GHG Costs in 2022
- Confidential Exhibit PAC/406 – 2022 Recorded GHG Allowance Revenue
- Confidential Exhibit PAC/407 – 2023 Recorded/Forecast GHG Allowance Revenue
- Confidential Exhibit PAC/408 – Summary of the GHG Allowance Revenue Balancing Account
- Confidential Exhibit PAC/409 – 2024 Forecast GHG Allowance Revenue

1                                   **I.       INTRODUCTION AND QUALIFICATIONS**

2   **Q.     Please state your name, business address, and present position with PacifiCorp**  
3       **d/b/a Pacific Power (PacifiCorp or Company).**

4   A.    My name is Zepure Shahumyan. My business address is 825 NE Multnomah Street,  
5        Suite 2000, Portland, Oregon 97232. I am employed by PacifiCorp as Director of  
6        Energy and Environmental Policy.

7   **Q.     Please describe your education and business experience.**

8   A.    I have a Bachelor of Science in Biochemistry from Portland State University. I have  
9        been employed by PacifiCorp since 2017, initially as a net power cost specialist, and  
10       for the last five years in Environmental Policy and Strategy functions. Prior to  
11       PacifiCorp, I worked for the Bonneville Power Administration for over six years in  
12       various positions including enterprise risk management consulting and utility  
13       management strategy.

14   **Q.     Please explain your responsibilities as PacifiCorp’s Director of Energy and**  
15       **Environmental Policy.**

16   A.    My current responsibilities include developing PacifiCorp’s environmental policy,  
17        strategy and programs as well as ensuring compliance for Company-wide renewable  
18        portfolio standards (RPS), reporting of greenhouse gas (GHG) emissions for  
19        California, Oregon, and Washington, and overseeing environmental commodity  
20        transactions. Most relevant to this application, I manage PacifiCorp’s compliance  
21        with the California Air Resources Board (ARB) Mandatory Reporting Regulation and  
22        Cap and Trade Program.

**II. PURPOSE OF TESTIMONY**

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- Q. Please summarize your direct testimony.**
- A. My direct testimony: (1) reconciles PacifiCorp’s forecast GHG allowance costs and revenues set out in the Company’s 2023 Energy Cost Adjustment Clause (ECAC) and GHG Application (A.) 22-08-001 (2023 ECAC) with actual GHG allowance costs and revenues through May 31, 2023; and (2) forecasts PacifiCorp’s GHG allowance costs and revenues for the remainder of 2023 and 2024. This testimony incorporates template revisions required by Decision (D.) 21-08-026 and D.21-05-004.
- PacifiCorp’s forecast of 2023 GHG allowance costs and revenues will be reconciled next year in the 2025 ECAC. The 2025 Application will also include a final reconciliation of 2022 GHG allowance costs based on ARB’s 2022 verified emissions data report.<sup>1</sup>
- Q. Please describe the exhibits provided in support of your direct testimony.**
- A. I prepared nine exhibits in support of my direct testimony.
- Confidential Exhibit PAC/401 – California Public Utilities Commission (Commission) Template C – Weighted Average Cost of Compliance Instruments. This exhibit provides the Company’s monthly accrued compliance obligation based on the weighted average cost methodology prescribed by the Commission. This template was developed by the Commission.<sup>2</sup>
  - Confidential Exhibit PAC/402 – Commission Template D-2 – Annual GHG Emissions and Associated Compliance Obligation. This exhibit provides annual forecast and actual compliance obligation by year in metric tons carbon dioxide equivalent (MTCO<sub>2</sub>e) and dollars. This template was developed by the Commission.<sup>3</sup>
  - Confidential Exhibit PAC/403 – Summary of the GHG Allowance Costs Sub- Balancing Account. This exhibit provides a reconciliation of the balance

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<sup>1</sup> ARB is expected to issue its 2022 Verified Emissions Report in November 2023.  
<sup>2</sup> D.14-10-033, D.14-10-055, D.15-01-024, D.15-04-016, D.19-04-016, and D.21-05-004.  
<sup>3</sup> D.14-10-033, D.14-10-055, D.15-01-024, and D.21-08-026.

1 in the GHG Allowance Costs Sub-Balancing Account and shows whether  
2 there is an over-collection or under-collection from customers that is included  
3 in the calculation of the GHG allowance costs recovered from customers.

4 • Confidential Exhibit PAC/404 – 2024 Forecast Compliance Obligation and  
5 GHG Allowance Costs. This exhibit calculates the Company’s 2024  
6 forecasted monthly GHG compliance cost based on a proxy price.

7 • Confidential Exhibit PAC/405 – Commission Template C-2 provides the  
8 GHG Balancing Account Table showing direct GHG costs in 2022. This  
9 template was developed by the Commission.<sup>4</sup>

10 • Confidential Exhibit PAC/406 – 2022 Recorded GHG Allowance Revenue.  
11 This exhibit summarizes the GHG allowances sold in 2022 at the ARB  
12 quarterly auctions.

13 • Confidential Exhibit PAC/407 – 2023 Recorded/Forecast GHG Allowance  
14 Revenue. This exhibit summarizes the GHG allowances sold at the ARB  
15 quarterly auctions through May 31, 2023, and the amount (if any) forecast to  
16 be sold during the remainder of the year.

17 • Confidential Exhibit PAC/408 – Summary of the GHG Allowance Revenue  
18 Balancing Account. This exhibit provides a reconciliation of the balance in the  
19 GHG Allowance Revenue Balancing Account and shows the remaining  
20 balance to be returned to customers in 2023.

21 • Confidential Exhibit PAC/409 – 2024 Forecast GHG Allowance Revenue.  
22 This exhibit calculates the Company’s 2024 forecast GHG allowance revenue  
23 from the ARB quarterly auctions based on a proxy price.

24 **III. FORECAST AND ACTUAL 2021 AND 2022 GHG ALLOWANCE COSTS**

25 **Q. Please describe the GHG compliance costs that PacifiCorp incurred and**  
26 **forecasted to incur.**

27 A. PacifiCorp is subject to regulation as a first jurisdictional deliverer of electricity into  
28 California under ARB’s GHG Cap and Trade program. As a first jurisdictional  
29 deliverer, PacifiCorp must surrender to ARB one GHG compliance instrument (i.e., a  
30 GHG allowance or offset credit) for each metric ton of carbon dioxide emitted or its

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<sup>4</sup> D.21-05-004.

1 equivalent. At this time, PacifiCorp only has direct GHG costs (i.e., the costs  
2 associated with procuring GHG allowances). PacifiCorp has not incurred, and does  
3 not expect to incur, any indirect GHG costs (e.g., the embedded GHG compliance  
4 costs associated with electricity procured in the wholesale market) as part of its retail  
5 compliance obligation.

6 **Q. What were PacifiCorp’s actual final GHG allowance costs for 2021?**

7 A. On November 4, 2022, ARB issued its 2021 Verified Emissions Report. Based on  
8 PacifiCorp’s 2021 Verified Emissions Report, the actual final cost of PacifiCorp’s  
9 GHG compliance obligation for 2021 is [Begin Confidential] [Redacted] [End  
10 Confidential].<sup>5</sup> The Company’s 2021 actual retail compliance obligation was [Begin  
11 Confidential] [Redacted] [End Confidential] allowances.<sup>6</sup> The actual final cost for 2021  
12 is included in the reconciliation of the balance in the GHG Allowance Costs Sub-  
13 Balancing Account as shown in Confidential Exhibit PAC/403.

14 **Q. What were PacifiCorp’s forecast and actual GHG allowance costs for 2022?**

15 A. In its 2023 ECAC, PacifiCorp forecasted that it would incur [Begin Confidential]  
16 [Redacted] [End Confidential] for 2022 GHG allowance costs.<sup>7</sup> As of May 31, 2023,  
17 PacifiCorp accrued [Begin Confidential] [Redacted] [End Confidential] for 2022  
18 GHG allowance costs in the GHG Allowance Costs Sub-Balancing Account. There  
19 will be a final true-up to the verified 2022 GHG allowance costs in the Company’s  
20 next application filed on August 1, 2024, based on the 2022 Verified Emissions  
21 Report.

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<sup>5</sup> Confidential Exhibit PAC/401 (all references to GHG allowance costs are calculated based on the weighted average cost methodology required by the Commission.

<sup>6</sup> Confidential Exhibit PAC/402.

<sup>7</sup> See Confidential Exhibit PAC/402.

1           **IV. FORECAST 2023 AND 2024 GHG ALLOWANCE COSTS**

2   **Q. What did PacifiCorp forecast for 2023 GHG allowance costs in its 2023**

3   **Application?**

4   A. In its 2023 ECAC, PacifiCorp forecasted the Company would incur [Begin  
5   Confidential] ██████████ [End Confidential] for GHG Allowance Costs in 2023.<sup>8</sup>

6   **Q. Has PacifiCorp updated its forecast for 2023 GHG allowance costs in this**

7   **Application?**

8   A. Yes. Through May 31, 2023, PacifiCorp has accrued [Begin Confidential]  
9   ██████████ [End Confidential] for its 2023 compliance obligation in the GHG  
10   Allowance Costs Sub-Balancing Account. PacifiCorp forecasts that it will incur  
11   additional GHG allowance costs of [Begin Confidential] ██████████ [End  
12   Confidential] from June 1, 2023, through the remainder of the year,  
13   December 31, 2023. Based on the amount accrued to date and the forecast for the  
14   remainder of the year, the updated forecast GHG allowance costs for 2023 are [Begin  
15   Confidential] ██████████ [End Confidential].<sup>9</sup>

16   **Q. What proxy price was used to calculate the Company's forecast compliance**  
17   **obligation for June 1, 2023, through December 31, 2023?**

18   The Company used the June 30, 2023, forward Intercontinental Exchange (ICE)  
19   settlement price of \$32.96 as the GHG allowance proxy price to calculate the  
20   Company's forecast compliance costs for June 1, 2023, through

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<sup>8</sup> See Confidential Exhibit PAC/402.

<sup>9</sup> Confidential Exhibit PAC/403.

1 December 31, 2023.<sup>10</sup> The process for calculating the Company's 2023 compliance  
2 obligation is described in more detail below.

3 **Q. What GHG allowance costs does PacifiCorp forecast for 2024?**

4 The 2024 GHG allowance costs are based on the Company's 2024 forecast  
5 compliance obligation and GHG allowance costs, and are forecasted to be [Begin  
6 Confidential ██████████ [End Confidential]].<sup>11</sup>

7 **Q. What methodology was used to forecast PacifiCorp's 2024 GHG allowance  
8 costs?**

9 A. As a multi-jurisdictional retail provider that has a GHG compliance obligation,  
10 PacifiCorp must calculate emissions as set out in California Code of Regulations,  
11 Section 95111. PacifiCorp's calculation of GHG allowance costs is consistent with  
12 D.14-10-033 issued October 16, 2014, and uses the straightforward methodology of  
13 multiplying its compliance obligation by the GHG allowance proxy price.  
14 PacifiCorp's compliance obligation was developed using data consistent with the  
15 Company's system generation mix forecast and California load forecast  
16 assumptions.<sup>12</sup> Allowance costs for 2023 are based on the Company's accrued  
17 compliance obligation through May 31, 2023, plus the forecast compliance obligation  
18 from June 2023 through December 2023, multiplied by the GHG allowance proxy  
19 price. Allowance costs for 2024 are based on a forecast of the Company's compliance  
20 obligation for 2024 multiplied by the GHG allowance proxy price.<sup>13</sup>

21 **Q. How was the 2024 proxy price developed?**

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<sup>10</sup> Confidential Exhibit PAC/401

<sup>11</sup> Confidential Exhibit PAC/404.

<sup>12</sup> See Confidential Exhibits PAC/100 through 104.

<sup>13</sup> See Confidential Exhibits PAC/401 and PAC/404.



1 A. The GHG allowance proxy price forecast of \$35.18 for 2024 was developed in  
2 accordance with D.14-10-033. PacifiCorp uses a GHG allowance proxy price based  
3 on the forward ICE settlement price for GHG allowances with December delivery of  
4 the forecast year 2024, consistent with the methodology used to calculate forward  
5 prices for other commodities in its ECAC application.<sup>14</sup>

6 **Q. Has the Company prepared an exhibit summarizing the balance in the GHG**  
7 **Allowance Costs Sub-Balancing Account?**

8 A. Yes. A summary of the balance in the GHG Allowance Costs Sub-Balancing Account  
9 is shown in Confidential Exhibit PAC/403. The summary shows a projected [Begin  
10 Confidential] [REDACTED] [End Confidential] of GHG allowance  
11 costs at the end of 2023.

12 **Q. Will the balance in the GHG Allowance Costs Sub-Balancing Account be**  
13 **considered in the calculation of the GHG allowance costs to be recovered in rates**  
14 **in 2024?**

15 A. Yes. See the testimony of Company witness Judith M. Ridenour, Exhibit PAC/700,  
16 and accompanying Exhibit PAC/703.

17 **V. FORECAST AND ACTUAL 2022 GHG ALLOWANCE REVENUE**

18 **Q. What were PacifiCorp's forecast GHG allowance revenues for 2022?**

19 A. In its 2023 ECAC, PacifiCorp forecasted \$16,709,184 in GHG allowance revenues  
20 for 2022.<sup>15</sup>

21 **Q. What were PacifiCorp's actual GHG allowance revenues in 2022?**

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<sup>14</sup> Confidential Exhibit PAC/404

<sup>15</sup> See 2023 ECAC, Confidential Exhibit PAC/407.

1 A. PacifiCorp's total actual GHG allowance revenues in 2022 were \$15,563,147.<sup>16</sup> The  
2 actual 2022 GHG allowance revenue has been included in the reconciliation of the  
3 balance in the GHG Allowance Revenue Balancing Account as shown on  
4 Confidential Exhibit PAC/407, and Confidential Exhibit PAC/705 to the direct  
5 testimony of Company witness Judith M. Ridenour.

6 **VI. 2023 AND 2024 FORECAST GHG ALLOWANCE REVENUE**

7 **Q. What are the total 2023 and 2024 forecast GHG allowance revenue?**

8 A. The Company forecasts that it will receive \$16,766,596 in GHG allowance revenue  
9 for 2023, and \$18,628,478 for 2024.<sup>17</sup>

10 **Q. What methodology was used to forecast 2023 and 2024 GHG allowance revenue?**

11 A. PacifiCorp calculated its forecast GHG allowance revenue by multiplying its annual  
12 allowance allocation from ARB by the GHG allowance proxy price. PacifiCorp's  
13 2023 forecast GHG allowance revenue is based on actual GHG allowance revenue  
14 received from the 2023 quarterly allowance auctions as of May 31, 2023, and the  
15 expected revenue from the sale of GHG allowances PacifiCorp expects to consign to  
16 the remaining 2023 ARB auctions, multiplied by the GHG allowance proxy price.

17 The Company has assumed that it will submit and sell 100 percent of its  
18 2023 allowance allocation from ARB at auctions in 2023, less allowances  
19 administratively retired by ARB to account for Energy Imbalance Market (EIM)  
20 Purchaser Emissions.<sup>18</sup> For calendar year 2024, the forecast is based on the expected

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<sup>16</sup> Confidential Exhibit PAC/406.

<sup>17</sup> Confidential Exhibits PacifiCorp/407 and 409.

<sup>18</sup> PacifiCorp does not currently have a way to forecast EIM Purchaser Emissions; however, the amount is expected to be relatively small.

1 revenue from the sale of the GHG allowances PacifiCorp expects to consign to the  
2 2024 ARB auctions multiplied by forecasted GHG allowance proxy price for 2024.<sup>19</sup>

3 **Q. What GHG allowance proxy price was used to determine forecast GHG**  
4 **allowance revenues in 2023 and 2024?**

5 A. The GHG allowance proxy prices for 2023 and 2024 are \$32.96 and \$35.18,  
6 respectively. Please refer to Section IV of my testimony for a more detailed  
7 discussion about the methodology used to develop the proxy prices for each year.  
8 The Company used the same proxy prices for determining both forecast GHG  
9 allowance costs and GHG allowance revenue in 2023 and 2024.

10 **Q. Were all of PacifiCorp's consigned allowances sold in the February 2023 and**  
11 **May 2023 auctions?**

12 A. Yes.

13 **Q. Has the Company prepared an exhibit summarizing the balance in the GHG**  
14 **Allowance Revenue Balancing Account?**

15 A. Yes. A summary of the GHG Allowance Revenue Balancing Account is shown in  
16 Confidential Exhibit PAC/408. The summary shows a projected balance of [Begin  
17 Confidential ██████████ [End Confidential] at the end of 2023 which represents less  
18 GHG allowance revenue returned to eligible customers than what was available to  
19 return to customers.

20 **Q. Will the balance in the GHG Allowance Revenue Balancing Account be included**  
21 **in the GHG allowance revenue to be distributed through the California Climate**  
22 **Credit in 2024?**

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<sup>19</sup> See Confidential Exhibits PAC/407 and 409.

1 A. Yes. See the testimony of Company witness Judith M. Ridenour, Exhibit PAC/700,  
2 and accompanying Exhibit PAC/706.

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

4 A. Yes.

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Exhibit No. PAC/401-C  
Witness: Zepure Shahumvan

BEFORE THE PUBLIC UTILITIES COMMISSION  
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PACIFICORP 2024 ECAC

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Commission Template C – Weighted Average Cost of Compliance Instruments

**[CONFIDENTIAL]**

September 2023

Application No. 23-09-\_\_\_\_  
Exhibit No. PAC/402-C  
Witness: Zepure Shahumvan

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA

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Commission Template D-2 – Annual GHG Emissions and Associated Compliance Obligation

**[CONFIDENTIAL]**

September 2023

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BEFORE THE PUBLIC UTILITIES COMMISSION  
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Summary of the GHG Allowance Costs Sub-Balancing Account

**[CONFIDENTIAL]**

September 2023

Application No. 23-09-\_\_\_\_  
Exhibit No. PAC/404-C  
Witness: Zepure Shahumvan

BEFORE THE PUBLIC UTILITIES COMMISSION  
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PACIFICORP 2024 ECAC

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2024 Forecast Compliance Obligation and GHG Allowance Costs

**[CONFIDENTIAL]**

September 2023



Application No. 23-09-\_\_\_\_  
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Witness: Zepure Shahumvan

BEFORE THE PUBLIC UTILITIES COMMISSION  
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Commission Template C-2 – GHG Balancing Account Table for Direct GHG Costs in 2022

**[CONFIDENTIAL]**

September 2023

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Witness: Zepure Shahumvan

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA

PACIFICORP 2024 ECAC

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2022 Recorded GHG Allowance Revenue

**[PUBLIC VERSION]**

September 2023

**Exhibit PAC/406**  
**PacifiCorp**  
**2022 Recorded GHG Allowance Revenue**  
**August 1, 2023**

Line No.	Description	Volume <sup>(1)</sup>	Price <sup>(2)</sup>	Dollars
1	Auction Date:			
2	February 2022		\$29.15	
3	May 2022		\$30.85	
5	August 2022		\$27.00	
6	November 2022		\$26.80	
8	Total 2022		\$	(15,563,147)

<sup>(1)</sup> Volumes are in Metric Tons CO2e

<sup>(2)</sup> Settled Price for the Auction

<sup>(3)</sup> Volume is set by California Cap and Trade Regulation Section § 95892. Allocation to Electrical Distribution Utilities for Protection of Electricity Ratepayers. Table 9-4: Annual Allowances Allocated to Each Electrical Distribution Utility from 2021 through 2030. Annual allowance allocation is adjusted with a reduction by CARB to account for EIM Purchaser Emissions.

**CONFIDENTIAL INFORMATION IS SHADED**

Application No. 23-09-\_\_\_\_  
Exhibit No. PAC/407-C  
Witness: Zepure Shahumvan

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2023 Recorded/Forecast GHG Allowance Revenue

**[CONFIDENTIAL]**

September 2023

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Summary of the GHG Allowance Revenue Balancing Account

**[CONFIDENTIAL]**

September 2023

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PACIFICORP 2024 ECAC

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2024 Forecast GHG Allowance Revenue

**[CONFIDENTIAL]**

September 2023