

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

Docket No. UE 420

In the matter of

PACIFICORP, dba PACIFIC POWER,
2024 Transition Adjustment Mechanism

REDACTED OPENING TESTIMONY OF STEVE JOHNSON

June 23, 2023

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ATTACHED EXHIBITS

Exhibit Vitesse/101 – Steve Johnson Qualifications

Exhibit Vitesse/102 – PacifiCorp Data Responses

I. INTRODUCTION AND QUALIFICATIONS

Q. Please state for the record your name, position, and business address.

A. My name is Steve Johnson. I am the Principal of Negative Delta G Consulting located at 2022 32nd Ave South, Seattle, Washington 98144. Negative Delta G Consulting is a sole proprietorship.

Q. On whose behalf are you appearing in this proceeding?

A. I am testifying on behalf of Vitesse, LLC (“Vitesse”).

Q. Please summarize your experience in the field of utility regulation.

A. My consulting practice advises on electric and natural gas utility regulatory issues, including transmission development, markets and decarbonization of the electric energy sector.

Prior to forming my own consulting practice in 2023, I was a senior policy advisor to the commissioners of Washington Utilities and Transportation Commission (“UTC”) for 14 years. As a senior policy advisor, I worked on nearly every aspect of economic rate regulation of electric and natural gas utilities jurisdictional to the UTC. In addition, I worked on regional and federal policy affecting the electric and natural gas industry, including resource adequacy, transmission, and markets.

Prior to working at the UTC, I was a regulatory analyst for the Public Counsel Unit of the Washington State Attorney General’s Office from 2004-2008. While at Public Counsel I testified on power cost issues and provided subject matter expertise in matters before the UTC.

Prior to working at Public Counsel, I was a merchant transmission analyst at Puget Sound Energy from 2001-2004, where I worked on centralized markets, access to transmission service, transmission business plans, and requests for proposals.

I have a Master's in Public Administration from the Evans School of Public Policy and Governance, and a Bachelor of Science in Chemistry from The Evergreen State College. My relevant work experience and witness qualifications are summarized in my resume, provided as Exhibit Vitesse/101.

Q. Have you previously testified before the Public Utility Commission of Oregon (the "Commission" or "OPUC")?

A. I have not previously testified before the Commission in a contested case proceeding.

Q. Was this testimony prepared by you or under your supervision?

A. Yes.

Q. What is the purpose of your testimony?

A. I am testifying on behalf of Vitesse regarding the 2024 Transition Adjustment Mechanism ("2024 TAM") for PacifiCorp dba Pacific Power ("PacifiCorp" or the "Company"). My testimony is limited to issues affecting the net power cost ("NPC") determination. I recommend several adjustments to the 2024 TAM model assumptions and calculations as filed by PacifiCorp. I also recommend changing some cost assumptions related to PacifiCorp's application of the United States Environmental Protection Agency's ("EPA's") Ozone Transport Rule ("OTR"). These changes should improve the accuracy of the forecasts and the likelihood that ratepayers will pay for the actual costs that PacifiCorp will incur during the 2024 calendar year.

Q. Are you sponsoring any exhibits?

A. Yes, I am sponsoring Exhibits Vitesse/101 (Steve Johnson Qualifications) and Vitesse/102 (PacifiCorp Data Responses).

Q. Please summarize your primary recommendations.

A. Below are my recommendations, which I have grouped by subject matter:

(1) Regarding the day ahead/real time (“DA/RT”) percent price adder, I recommend:

1) that the Commission not adopt the Company’s proposed methodology on a precedential basis even if the Commission modifies the Company’s method per my recommendations below, due to ongoing concerns with the Company’s DA/RT adjustment; and 2) that, for the 2024 TAM only, the Commission require a number of modeling changes:

(a) Modify the Company’s DA/RT percent price adder by my [REDACTED] average adjustment. Specifically, I recommend that [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED].

(b) Modify the Company’s DA/RT percent price adder by applying my price correction adjustment. Use the Company’s purchase and sale prices as adjusted by the DA/RT percent price adder to calculate the dollar adjustment to NPC in circumstances where the Company has set the purchase and sale price used in the DA/RT calculation to be [REDACTED]
[REDACTED].

(2) Regarding other modeling components, I recommend the following changes:

(a) Modify the calculation of Energy Imbalance Market (“EIM”) greenhouse gas (“GHG”) benefits to use PacifiCorp’s forecasted California Air Resources Board (“CARB”) allowance market prices in an escalation method [REDACTED]
[REDACTED]
[REDACTED], subject to the reasonableness of

PacifiCorp's CARB price forecast. My proposal [REDACTED]

[REDACTED].

- (b) Incorporate more specific data in modeling the Chehalis plant's expected emissions. This should improve the accuracy of forecasting future costs under Washington State's new cap and invest program. It should also improve the accuracy of least cost dispatch and thereby reduce both power costs and compliance costs.
- (3) I recommend changes to the Company's assumptions regarding the EPA's OTR. I do not oppose the EPA's OTR and support PacifiCorp's compliance with the rule.
 - (a) Remove the proposed costs of compliance for Wyoming natural gas and coal plants, because it is not reasonable to assume that those costs will be incurred in the 2024 calendar year, and the Company has not met its burden to demonstrate how it interpreted the OTR to apply to its Wyoming generation resources and how it derived its modeling methods and inputs from the rule.
 - (b) Remove the proposed costs of compliance for Utah natural gas and coal plants, because the Company has failed to adequately explain how it derived these costs and why its modeling restrictions were appropriate and necessary.

Q. What is the impact on NPC from your recommendations?

A. The following table provides the numerical impact on NPC.

Table 1. NPC Adjustments

Adjustment	Change in NPC, Company-wide	Changes in NPC, Oregon-allocated
Combined DA/RT Adjustments	-\$10.0 million ¹	-\$2.87 million
EIM GHG Benefit Escalation	-\$11.1 million	-\$3.2 million
Wyoming OTR	-\$171 million	-\$49.2 million
Utah OTR	-\$31 million	-\$8.8 million
TOTAL	-\$223.1 million	-\$64.1 million

II. VITESSE’S STATEMENT OF PURPOSE

Q. Has Vitesse intervened in TAM proceedings before?

A. Yes. Vitesse intervened in the 2023 TAM, docket number UE 400, and the 2021 TAM, docket number UE 375. Each of those TAM proceedings occurred simultaneously with a general rate case, which Vitesse was also participating in (docket numbers UE 374 and UE 399). Vitesse did not intervene in the 2022 TAM, docket number UE 390, which was a stand-alone TAM proceeding.

Q. Please describe your client Vitesse’s interest in this case.

A. Vitesse is a limited liability company that is wholly owned by Meta Platforms, LLC (“Meta”) and operates data processing and hosting centers across the country, including in Oregon. Meta has ambitious climate and renewable energy goals, including sourcing 100 percent of its global operations from renewable energy and achieving net zero GHG emissions across its value chain (Scope 3) by 2030.² Vitesse is a cost-of-service customer under Schedule 48 as well as a participant in Schedule 272 Renewable Energy Rider Optional Bulk Purchase Option (“Schedule 272”). Vitesse is interested in

¹ This dollar amount includes the effect of the DA/RT [REDACTED] price adder adjustment, that on a standalone basis reduces NPC by \$0.8 million.

² Urvi Parekh, *Achieving our goal: 100% renewable energy for our global operations*, Tech at Meta (Apr. 14, 2021), <https://tech.fb.com/engineering/2021/04/renewable-energy>.

contributing to a record on which the Commission can determine NPC that are fair, just, reasonable, and sufficient.

III. DA/RT MODELING ADJUSTMENTS

Q. What is the overall goal of PacifiCorp's DA/RT adjustment?

A. PacifiCorp makes balancing sales in advance of the day ahead and real time markets to better align its resources and expected load. Aurora does not natively have the capability to model the expected purchased power expenses and power sales revenues from these balancing sales. The DA/RT adjustment is intended to capture those expenses and revenues in an isolated calculation.

Q. Please provide an overview of the structure of the Company's DA/RT percent price adder adjustment in this proceeding.³

A. The Company uses [REDACTED] of historic data to create purchase and sales percent price adders by month, by trading hub [REDACTED]
[REDACTED].⁴ The Company in turn uses the percent price adders to scale up or down prices [REDACTED]

³ PAC/100, Mitchell/4:7-8; *In re PacifiCorp 2023 Transition Adjustment Mechanism*, Docket No. UE 400, PAC/100, Wilding/35:17-36:4.

⁴ See PacifiCorp confidential workpaper "Aurora GN Market Prices CONF.xlsb" (supporting the direct testimony of Company witness, Ramon J. Mitchell, provided with the Company's response to the TAM Support Set 2 (5-business day)).

██████████.⁵ The percent price adders are also used in determining the expected ██████████ in the 2024 rate year.⁶

Q. Is the use of percent price adders in the DA/RT adjustment new?

A. Yes. In the 2023 TAM, the Company introduced the percent price adders to replace the flat nominal price adder.⁷ PacifiCorp states that the intent of the use of the percent price adders is to more accurately reflect the market prices the Company experiences when making balancing sales and purchases.⁸

Q. How was the issue of the percent price adders resolved in the 2023 TAM?

A. The 2023 TAM, including the issue of the DA/RT percent price adder, was resolved through a non-precedential settlement.⁹

Q. What do you propose with regard to the DA/RT adjustment?

A. I recommend the Commission not adopt the DA/RT adjustment on a precedential basis in this proceeding even if the Commission modifies the Company's method per my recommendations below. This will allow interested parties additional time to review the DA/RT adjustment. At this time, I flag two additional concerns I have with the DA/RT

⁵ A percent price adder is calculated for each calendar month of the year by hub. ██████████ and will be updated in this proceeding after July 1, 2023 with a new set ██████████ that will move forward in time by ██████████. The total cost of balancing purchases and sales ██████████. The DA/RT adjustment creates two scaled prices one for balancing purchases and one for balancing sales to reflect the historic prices the Company has experienced when making balancing purchases and sales. See PacifiCorp confidential workpaper "Aurora GN Market Prices CONF.xlsx" (supporting the direct testimony of Company witness, Ramon J. Mitchell, provided with the Company's response to the TAM Support Set 2 (5-business day).

⁶ Docket No. UE 400, PAC/100, Wilding/35:22-36:1.

⁷ Docket No. UE 400, PAC/100, Wilding/35:16-36:20.

⁸ Docket No. UE 400, PAC/100, Wilding/35:22-36:3.

⁹ Docket No. UE 400, Order No. 22-389, Appendix A at 8 (Oct. 25, 2022).

adjustment that I am not recommending solutions to in this case and recommend be addressed at a later date. In addition, I anticipate other parties may raise others. I discuss these concerns after my modeling adjustment proposals below.

1. [REDACTED] Averaging Adjustment of Percent Price Adders

Q. What is the goal of the percent price adders?

A. The percent price adder is intended to reflect the difference, in percentage terms, between the price of the Company's actual balancing purchases (or sales) and the historic daily (day ahead) market price by month, by trading hub.¹⁰ As mentioned above, the percent price adder is used to scale up or down [REDACTED] [REDACTED]. The scaling of [REDACTED] by the percent price adder also changes [REDACTED] [REDACTED]. The balancing transactions by volume and price for a given month need to be matched to the historic daily market price of that same month to accurately reflect the historic relationship between the purchase and sale price of the balancing transactions and market prices. For instance, one would not match the historic market prices from April of one year to the price of the balancing transactions in January of the same year, or use the volumes of the balancing transactions from the July of one historic year in place of the actual volumes of balancing transactions in the July of a different year. Both the price and the volume of balancing transactions need to be matched with the market prices of the same month.

¹⁰ Docket No. UE 400, PAC/100, Wilding/36:1-3 ("These prices account for the historical price differences between the Company's purchases and sales compared to the monthly average market prices.").

Q. How does the Company's proposed DA/RT adjustment determine the percent price adders?

A. Using the example of purchases, the percent price adder is composed of two components.

The first component, the numerator, is [REDACTED] of the Company's historic balancing purchases for each of the [REDACTED] of historic data at a specific trading hub [REDACTED] \$/MWh [REDACTED] each of the [REDACTED] of historic data [REDACTED].¹² For instance, using [REDACTED] years of historic data, [REDACTED] balancing purchases from each July of each of the [REDACTED] years [REDACTED] prices from each of the [REDACTED] Julys in the [REDACTED] years. This example is also correct for sales transactions.

The second component, the denominator, [REDACTED] [REDACTED]. In contrast to the day ahead market prices used in the numerator, the day ahead market prices in the denominator are [REDACTED] of all [REDACTED] months of the day ahead market prices at a specific trading hub.

11

12 The Company's trading hubs are [REDACTED].

- Q. What is the significance of [REDACTED] [REDACTED]?**
- A.** The use of [REDACTED] in the denominator creates a mismatch in the relationship between the underlying day ahead market prices of a given month and the sale and purchase prices [REDACTED] of the balancing energy transacted in that given month. For example, if one of the Julys of the [REDACTED] Julys in the historic data set of a given trading hub [REDACTED], the Company's [REDACTED] the day ahead market prices includes that month's prices [REDACTED] as the day ahead market prices of the Julys that [REDACTED]. This result clearly works against the very purpose of the percent price adder [REDACTED] between the monthly day ahead market prices and the balancing transactions that the percentage price adder adjustment is intended to reflect.

Q. What is the effect of this [REDACTED] on the NPC?

- A.** When examining the [REDACTED], it appears likely that the Company's [REDACTED] [REDACTED] increases the Company's DA/RT adjustment and NPC.¹³ This increase in cost occurs because the Company typically purchases more balancing volumes in months with higher market prices.¹⁴ The Company's use of [REDACTED] [REDACTED]

¹³ Without re-running Aurora, it is premature to definitively conclude how much this adjustment will reduce NPC for 2024, especially since the volumes of sales and purchases will change with the Company's July update. However, regardless of the exact outcome on NPC, the [REDACTED] percent price adder should be used.

¹⁴ Docket No. UE 400, PAC/100, Wilding/35:18-21 ("The price adder component of the DA/RT adjustment addresses the costs incurred by the Company as a result of multiple variables within a dynamic system in which *the Company has historically bought more during higher-than-average price periods and sold more during lower-than-average price periods.*" (emphasis added)).

[REDACTED]

artificially lowering the market prices used in the denominator of the percent price adder.¹⁵ Lowering the denominator ultimately leads to a higher DA/RT percent price adder, incorrectly amplifying the effect of the DA/RT adjustment.

Q. What change do you recommend to the calculation of the percent price adders?

A. The market prices used in the denominator for each of the [REDACTED] months of the [REDACTED] years of data (for example all [REDACTED] Julys) should be [REDACTED]. The same [REDACTED] to market prices for the calculation of the percent price adder for sales.

Q. What is the estimated dollar effect of your [REDACTED] on the Company's approximate \$5.21 million DA/RT price adder adjustment?¹⁶

A. My recommendation reduces the Company's price adder adjustment by approximately \$0.8 million on a Company-wide NPC, or \$0.2 million on an Oregon allocated basis, to approximately \$5.01 million on an Oregon allocated basis. I have not rerun Aurora to calculate the DA/RT adjustment with [REDACTED] percent price adder. Using [REDACTED] in Aurora would also be expected to slightly reduce the forecasted volume of balancing transactions, resulting in a slightly greater

¹⁵ When the denominator of a fraction gets smaller the fraction gets larger thus overstating the percent price adder.

¹⁶ PAC/100, Mitchell/4:7-8 (citing to PAC/100, Wilding/35-36). While PacifiCorp's testimony in this instant docket is unclear, I cite the \$5.21 million number from PacifiCorp's cited testimony in Docket No. UE 400 as a baseline for purposes of comparison. Docket No. 400, PAC/107, Wilding/1 (showing the Company's price adder adjustment is approximately \$20 million on a Company wide basis). In PacifiCorp's response to OPUC Data Request 93, the Company states that the adjustment is unchanged from UE 400 and they have not recalculated the adjustment amount. PacifiCorp Response to OPUC DR 93 (appended hereto as Exhibit Vitesse/102, Johnson/126-27).

reduction in NPC than I have calculated here. This is primarily due to the fact that the Company historically makes a greater volume of balancing purchases at prices above the market prices and fewer balancing purchases that are below the market prices.¹⁷ The dollar amount of this adjustment will also change with the update of the [REDACTED] data set expected later in this proceeding.

2. DA/RT Price Correction Adjustment

Q. Can you explain how the Company uses the percent price adders to scale up or down [REDACTED] to determine its DA/RT price adder adjustment?

A. In most circumstances, the Company uses the [REDACTED] percent price adder to scale up or down [REDACTED]. In a parallel fashion, the Company uses the [REDACTED] percent price adder to scale up or down [REDACTED]

[REDACTED]. Unfortunately, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]. This is an inherent limitation of Aurora that to date does not have a solution. As a work-around, whenever [REDACTED]

[REDACTED] the Company uses [REDACTED]

[REDACTED]. The Company creates [REDACTED]

[REDACTED].¹⁸

This work-around effectively raises the forecasted purchase price of balancing

¹⁷ Historic balancing purchases at prices above the corresponding month of historic market prices increase the percent price adder which in turn increases total NPC.

¹⁸ [REDACTED]

transactions (increasing the NPC by increasing costs) and lowers the forecasted sale price of balancing transactions (increasing the NPC by decreasing offsetting revenues).

Q. Does the inherent limitation of the Aurora model require the use of [REDACTED] on the NPC of the price adder adjustment?

A. No. In calculating the dollar impact of the price adder adjustment the Company uses [REDACTED]. The Company's use of [REDACTED] in the calculation is not required as part of the work-around of the Aurora's limitation. The Company provides no justification for its use [REDACTED].

Q. Can you provide an illustrative example of the [REDACTED]?

A. Yes. If the adjusted purchase price is \$1.00 [REDACTED]
[REDACTED]
[REDACTED]. The Company's [REDACTED]
[REDACTED].¹⁹

Q. How does this affect the DA/RT adjustment?

A. The use of [REDACTED] increases the purchase price, as can be seen in my example [REDACTED] price. This increases the cost of the purchases and thereby increases the DA/RT adjustment and overall NPC. It [REDACTED]. This [REDACTED] thereby increases the DA/RT adjustment and the overall NPC. This

¹⁹ For simplicity's sake, I use an example where the volumes of balancing purchases and sales are the same.

upward effect on NPC shown by my example [REDACTED]

[REDACTED]. Since historically the Company makes more purchases than sales, the purchases would be expected to contribute more to the increase in NPC under the Company's use of [REDACTED] than the sales.

Q. Is there also an effect on [REDACTED] Aurora would calculate?

A. Yes, it is reasonable to conclude that [REDACTED] are lower due to the use of PacifiCorp's [REDACTED]. This conclusion can be drawn even without re-running Aurora with varied [REDACTED] as a test. Without the Company's [REDACTED] [REDACTED] the purchase price would be lower. During times the purchase price is above the market price, the Aurora model would be expected to slightly increase the volume of purchases as the purchases would be less disadvantageous. Since all balancing purchases above the market price increase the NPC, a slight increase in such purchases due to the use of [REDACTED] would increase the NPC, all other effects aside. During times the purchase price is below the market price, purchase volumes would be expected to decrease slightly as the purchases would be less advantageous. Since all balancing purchases below the market price have the effect of lowering the NPC, [REDACTED] [REDACTED] due to the use of [REDACTED] would increase the NPC, all other effects aside. A similar set of reasoning can be applied to understand the effect of the change in the balancing sale volumes.²⁰

²⁰ The effect of the change in sales volumes on NPC would be the opposite of the effect of the change in purchase volumes on the NPC when they are above and below the market price.

Q. Can the Company's use of [REDACTED] be removed from the [REDACTED]?

A. No. Aurora cannot [REDACTED] This means that regardless of which [REDACTED] [REDACTED] must be fed into Aurora. Because this must only be done [REDACTED] [REDACTED] Aurora will be imperfect and very likely bias towards raising the NPC.

Q. What do you recommend to cure the [REDACTED] by Aurora?

A. At this point in the development of the use of Aurora to perform the DA/RT price adder adjustment, I do not have a recommendation that resolves the calculations [REDACTED] the Aurora run on a long-term basis. Lopsided recommendations could be recommended that would either benefit the Company or the ratepayer. I recommend the Commission require the Company to work with interested parties after the conclusion of this case to develop a solution to [REDACTED] Company's [REDACTED] adjustment.

Q. Do you have an interim recommendation, considering that Aurora cannot [REDACTED] [REDACTED]?

A. Yes. Some type [REDACTED] [REDACTED] new modeling fix to Aurora is designed. However, when calculating *the dollar effect* of the DA/RT adjustment [REDACTED] [REDACTED] [REDACTED] that must be fed into the Aurora model.

Q. Does the Company provide a reason why it uses the [REDACTED] calculate the dollar amount of the adjustment?

A. No, it does not. For the Aurora work-around, the model only needs [REDACTED].

The calculation of the dollar effect can be performed after-the-fact, outside of Aurora using [REDACTED] but with the best, most representative purchase and sale prices adjusted by the percent price adders derived from the historic data, i.e., without being [REDACTED]. After all, the very goal of shifting from a nominal dollar adder to prices adjusted by the percent price adder was to better represent the price at which the Company transacted its balancing purchases and sales.²¹

Q. What is the dollar impact on NPC?

A. My recommended price correction adjustment to the Company's DA/RT price adder adjustment in conjunction with my [REDACTED] lowers the Company adjustment by \$10.0 million on a Company-wide basis or \$2.6 million on an Oregon allocated basis, from a \$5.21 million increase to a \$2.61 million increase on an Oregon allocated basis.²²

²¹ Docket No. UE 400, PAC/100, Wilding/35:22-36:3.

²² Due to large and anomalous results for [REDACTED] resulting from the Company's use of [REDACTED] of the price adder, I present the combined results of my two DA/RT adjustments.

3. Refinement of the DA/RT.

Q. Assuming your recommendations above were adopted, would you still have concerns with the DA/RT adjustment as currently proposed?

A. Yes. I explain two unresolved concerns below, and I anticipate other parties may also flag concerns I have not yet considered or evaluated. These two concerns are: 1) how future rates are embedded with [REDACTED]; and 2) the data set used in the Company's DA/RT percent price adder adjustment has a significant number of [REDACTED]. Interested parties need more time to fully evaluate the DA/RT adjustment. I recommend the Commission require the Company to work with interested parties after the conclusion of this case to develop solutions to these two concerns.

Q. Do you have concerns with embedding in future rates [REDACTED]?

A. Yes. The balancing transactions are performed to better match the Company's resources and load as it approaches the time that its actual load will need to be met. The accuracy of the Company's matching of its resources and load as it approaches real time is very dependent on the accuracy of its forecasts of its load and generation resources. Improving those forecasts reduces cost to ratepayers. Unfortunately, the DA/RT adjustment [REDACTED] without the Company having to demonstrate its forecasting is reasonably accurate or to improve its forecasts. As utilities add more variable energy resources and global warming has greater and greater effects on load, improvements in forecasting actual

operations and test period NPC will become increasingly important to holding rates down.

Q. Do you have concerns about the data set used in the Company's DA/RT percent price adder adjustment?

A. Yes. A significant number of the [REDACTED] [REDACTED]. These [REDACTED] are still used in the calculation of the percent price adder. I am concerned that using data with such [REDACTED] to the relationship trying to be captured in the percent price adder calculation may add more noise than signal to the calculation. The [REDACTED] also appear to be [REDACTED] of relatively [REDACTED] [REDACTED] when compared to [REDACTED]. Even with the adoption of my [REDACTED] percent price adder adjustment, I am concerned that the use of [REDACTED] of data may introduce bias.

IV. OTHER MODELING ADJUSTMENTS

1. EIM GHG Benefits [REDACTED] Adjustment

Q. What is the EIM GHG benefit amount the Company proposes for 2024 NPC?

A. The Company projects [REDACTED] benefits on a Company-wide basis.²³

Q. How did the Company develop this number?

A. In relevant part, they [REDACTED]
[REDACTED].

Q. How is the [REDACTED] determined now?

A. [REDACTED]
[REDACTED].²⁴

Q. Can you summarize your recommendation?

A. [REDACTED]
by an escalation method based on PacifiCorp's forecast of CARB allowance prices.

Q. Has PacifiCorp's [REDACTED] approach been approved by the Commission?

A. No. The Commission has never addressed this as a contested issue, nor have the parties ever agreed on the permanent use of this approach in a Commission-adopted stipulation.²⁵

Q. Why do the CARB allowance prices matter?

A. The EIM GHG benefits the Company realizes in the EIM are directly related to the *market price* of the allowances, not [REDACTED].²⁶ The market price of allowances is the price set by the supply and demand for allowances through willing seller and willing buyer transactions. Examples of this market price setting are the CARB allowance auctions and the bi-lateral transactions of allowances reported on the Intercontinental Exchange ("ICE"). In contrast [REDACTED]
[REDACTED]

²⁴ [REDACTED]

²⁵ See Docket No. UE 400, Order No. 22-389; *In re PacifiCorp, 2022 Transition Adjustment Mechanism*, Docket No. UE 390, Order No. 21-379 (Nov. 1, 2021); *In re PacifiCorp, 2021 Transition Adjustment Mechanism*, Docket No. UE 375, Order No. 20-392 (Oct. 30, 2020).

²⁶ As shown later in my testimony, the market prices of allowances and [REDACTED]
[REDACTED].

[REDACTED]

[REDACTED].

Q. What is the weakness of the existing approach?

A.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] does not reflect market forces of supply and demand for allowances.

PacifiCorp's current methodology assumes its benefits follow [REDACTED]

[REDACTED] when estimating future allowance prices results in an unreasonably low estimate.

Q. How have historic allowance prices diverged from [REDACTED]?

A. CARB data shows a steep climb in the settlement price, i.e., the market price for allowances since mid-2021. In contrast [REDACTED]

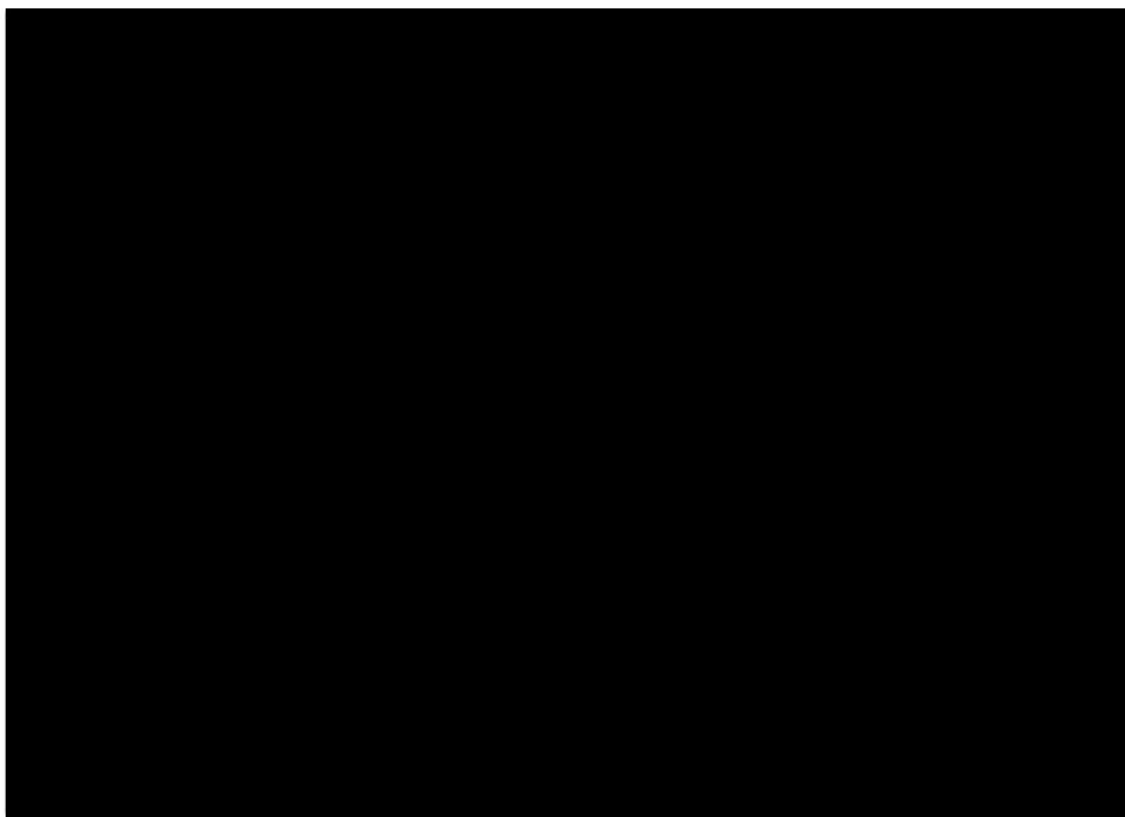
[REDACTED]

[REDACTED]. The chart in Figure 1 below shows this divergence. In addition, the most recent bi-lateral trades of allowances as publicly reported by ICE show 2024 allowances trading at \$35.48/Mt.²⁷

²⁷

Report Center, The ICE (accessed June 22, 2023), <https://www.theice.com/marketdata/reports/142> (use the drop-down menu to select "CB4", select 6/21/2023 for the CB4-California Carbon Allowance Vintage 2024 Future report).

Figure 1. [REDACTED] 28



Q. Please describe your proposal.

A. The future expected EIM GHG benefits should reflect the expected future market price of allowances. To achieve this, I recommend a two-step process. In the first step, the historic EIM GHG benefits should be scaled by the historic market price of allowances. For an example of the calculation of the scaling, if the EIM benefits for a historic time period were \$100 and the allowance cost was \$10 then the scaled benefits would be 10 (\$100 / \$10).

[REDACTED]

In the second step of my recommendation, the scaled benefit should be multiplied by the forecast PacifiCorp relies on to forecast 2024 allowance prices. Following my example, if the forecasted price is \$25 per allowance the total forecasted benefit would be \$250 (10 X \$25/allowance). My understanding is that [REDACTED] of historic data is used for the EIM GHG benefits and [REDACTED] though the Company and my recommended adjustment is [REDACTED]. For a complete calculation of my recommendation, see my confidential workpapers.

Q. Why is using forecasted allowance prices better than [REDACTED] [REDACTED]?

A. Using forecasted market prices for commodities is in step with Commission practice. The California GHG allowances are a traded commodity with market prices. The market-based allowance price is the allowance price that informs the EIM GHG marginal cost used to compensate PacifiCorp for its EIM GHG sales deemed to serve California. For other traded commodities such as natural gas and electric power the Commission uses the best available *market prices*.²⁹ Allowances and certificates are a growing tool for environmental compliance enforcement. They are designed to be traded in markets to provide price discovery. Examples include renewable energy certificates, Washington cap and invest allowances, CARB GHG allowances, and NOx allowances under the OTR. With the growth of tradable allowance programs, it will be necessary to move toward adopting a market-based pricing measurement of allowances for regulatory rate setting.

²⁹ For instance, in the 1970s there was well-head price regulation of natural gas. Now there is not, and commissions use market prices rather than regulated prices for setting rates.

Q. Why do you recommend the use of the forecast method for 2024 allowance prices that PacifiCorp relies upon?

A. To meet prudent utility practice, PacifiCorp's 2024 allowance price forecast should be reflective of future market prices. PacifiCorp should use such a forecast in its resource decision for meeting load while maximizing revenues in 2024. It is also important that allowance prices are consistent across different modeling practices within the TAM. For example, modeling practices for ratemaking should avoid a situation where PacifiCorp uses a high allowance price when formulating their energy price forecast, but then does not reflect the impact those high allowance prices are likely to have on increasing GHG benefits as well.

Q. Have you reviewed PacifiCorp's 2024 allowance price forecast?

A. No. I requested the forecast in Vitesse Data Request 20 but was not able to review the dataset with sufficient time to incorporate it in this testimony. All parties should be given an opportunity to review that forecast, as it is not only important to this adjustment but to PacifiCorp's power operations as well.

Q. Have you performed an approximation of projected EIM GHG benefits using publicly available market data on CARB allowances in your proposed escalation method?

A. Yes. Using a CARB 2024 allowance price of \$35.48 informed by ICE allowance prices reported on June 21, 2023, I project 2024 EIM GHG benefits of \$11.1 million on a Company-wide basis compared to the Company's benefit of [REDACTED] million on a Company-wide basis. The market allowance price used in this example should be refined but it

provides insight on the difference between using [REDACTED] versus market-based prices.

2. Chehalis Emissions Modeling

Q. What is your concern about the modeling of Washington cap and trade emissions allowances for the Chehalis generation plant?

A. The Company is calculating an emission [REDACTED]
[REDACTED].³⁰ The use of
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED].

Q. How would you propose the Company model emissions of the Chehalis plant?

A. I recommend using an approach that allows Aurora to [REDACTED]
[REDACTED].
Such an approach will allow for the determination of the least cost dispatch under an allowance regime. This approach should be the approach the Company uses in its actual operations as it determines its resource dispatch. The Aurora model [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

³⁰ PacifiCorp Response to OPUC DR 62, Attach OPUC 62-1 CONF (appended hereto as Exhibit Vitesse/102, Johnson/120).

where “i” is the dispatch hour, [REDACTED]

[REDACTED], and a units conversion is applied.

V. ASSUMED COSTS FROM THE EPA’s OTR

Q. Please provide a brief explanation of the EPA’s OTR.

A. Under the “good neighbor” provision (alternately the “interstate transport” provision) of the Clean Air Act, the EPA has proposed the OTR to reduce the contribution to ozone levels from fossil fueled power plants in 22 states.³¹ Through the rule, EPA is moving to limit NOx emissions, a precursor to ozone formation, from natural gas and coal plants. I note that I am not a lawyer and am not opining on the law, and I include this explanation only to provide context for my concerns and recommendations below regarding PacifiCorp’s forecasted costs for compliance.

Q. Did the published rule include Wyoming?

A. The rule did not include Wyoming.³²

³¹ See generally Federal “Good Neighbor Plan” for the 2015 Ozone National Ambient Air Quality Standards, 88 Fed. Reg. 36,654 (June 5, 2023) (to be codified at 40 C.F.R. pts. 52, 75, 78, 97), available at <https://www.federalregister.gov/documents/2023/06/05/2023-05744/federal-good-neighbor-plan-for-the-2015-ozone-national-ambient-air-quality-standards>.

³² 88 Fed. Reg. at 36,657 and 36,717; see also Air Plan Disapprovals; Interstate Transport of Air Pollution for the 2015 8-Hour Ozone National Ambient Air Quality Standards, 88 Fed. Reg. 9,336 (Mar. 15, 2023) (to be codified at 40 C.F.R. pt. 52), available at <https://www.federalregister.gov/documents/2023/02/13/2023-02407/air-plan-disapprovals-interstate-transport-of-air-pollution-for-the-2015-8-hour-ozone-national>.

Q. Did PacifiCorp include costs of compliance for both Utah and Wyoming in its initial filing?

A. Yes. In PacifiCorp's Aurora run calculating NPC it placed NOx restrictions on the dispatch of its plants in Utah and Wyoming. PacifiCorp [REDACTED]
[REDACTED]. PacifiCorp did not provide an explanation for how it determined [REDACTED] the OTR.

Q. Is your testimony addressing whether the EPA should or should not impose requirements on fossil-fueled generation plants in Wyoming or Utah?

A. No. My testimony is limited to addressing the rate setting for the 2024 TAM.

1. Assumed Costs of Compliance in Wyoming

Q. What is the status of EPA's actions on Wyoming?

A. On February 13, 2023 the EPA deferred its final action on Wyoming's state implementation plan for ozone transport until December 15, 2023.³³

Q. What standards do you recommend the Commission use to set future test year rates in 2024?

A. In projecting future test year rates to reflect the direct impact of a government regulation, there are at least three elements of government agency actions to consider. First, has the agency published a rule? Second, will the rule's content reasonably result in an enforcement affecting the Company in the test year? Assuming these two questions are answered in the affirmative, then the third question rests on the Company's obligation to meet its burden of proof: Has the Company provided a factual basis demonstrating how

³³ PacifiCorp Response to OPUC DR 17 (appended hereto as Exhibit Vitesse/102, Johnson/5).

the requirements in the rule affect rates? There are other factors to consider, including whether the utility's costs to comply were prudent, which I am not focusing on here.

Q. Has the EPA published a rule on Wyoming limits?

A. No. The EPA has not established standards for NOx limits under the Clean Air Act for fossil-fueled generation plants in Wyoming. The Company acknowledges as much in its testimony, stating that “[t]he final rule [OTR] has been issued, but there remains uncertainty regarding the implementation, and a decision on the inclusion of Wyoming in 2024 has been deferred.”³⁴

Q. Do you think it is imprudent or improper in principle to include costs the Company incurs for preparing for an expected rule, such as the EPA's standard for NOx limits for Wyoming fossil-fueled generation under the OTR?

A. No. The costs of preparing for the potential regulation or the cost of resource additions to reduce the risk of future regulation, if prudently incurred, are reasonable to include in a test year or through a proceeding to place the cost of a new resource into rates.

Q. What costs for its Wyoming fossil-fueled generation plants is the Company including in this proceeding?

A. The Company proposes to include the NPC incurred due to NOx restrictions it assumes will apply to its Wyoming fossil-fuel generation plants in 2024, which is approximately \$49.2 million on an Oregon-allocated basis, or \$202 million on a Company-wide basis.³⁵

³⁴ PAC/100, Mitchell/18:19-21.

³⁵ PAC/100, Mitchell/19:15-22 (indicating that \$49.2 million is the difference between the \$58 million for both plants and the Utah only cost of \$8.8 million).

The Company seems to indicate that the restrictions it is applying are those of the published OTR.³⁶

Q. Does the Company provide a description of the OTR allowance program design that it is applying to its Wyoming plants?

A. No. The Company does not provide a narrative description demonstrating how it interpreted [REDACTED] under the OTR and applied that interpretation to arrive at its modeling assumptions.

Q. Does the Company provide an explanation for how it interprets the rule to arrive at the NOx limitations it imposed on its Wyoming plants in Aurora?

A. No. It imposes [REDACTED]
[REDACTED]. It has also failed to meet its burden to demonstrate the factual basis for meeting the three factors I present below in my discussion of the Company's projected costs for Utah OTR compliance.

Q. Does the Company explain why it is reasonable to conclude that the EPA will enforce NOx limits on its Wyoming generation plants in 2024?

A. No. In contrast it testifies that there is uncertainty around enforcement.

Q. Does the Company explain why it does not provide the Aurora model [REDACTED]

[REDACTED]
[REDACTED]?

A. No, it does not.

³⁶ PAC/100, Mitchell/19:16 ("Assuming that both Utah and Wyoming are subject to the OTR in 2024...").

Q. What is your recommendation with regard to the increase in NPC due to the Company's restriction of Wyoming fossil-fuel generation based on its imposed NOx limitation?

A. The Company's \$49.2 million adjustment for Wyoming OTR should be rejected. It is speculative to include costs in rates for a rule that is not in place. The costs are not known and measurable at this time. In addition, the Company has not met its burden to demonstrate how it interpreted the OTR to apply to its Wyoming generation resources and how it derived its modeling methods and inputs from the rule. Specifically, the Company has not explained why it [REDACTED]. Absent a change, I am concerned the Company is asking ratepayers to pay for environmental compliance that may not take place in 2024.

2. Assumed Costs of Compliance in Utah

Q. With Utah included in the published OTR what burden must the Company meet to include costs in rates?

A. The Company still bears the burden of demonstrating the factual basis of its proposed rates. In the case of the application of the OTR to Utah those include:

1. Identifying in narrative testimony the portions of the OTR the Company uses to determine its compliance obligations, including [REDACTED].
2. Explaining in narrative testimony how it interprets those portions of the OTR to determine the modeling methods it proposes, including [REDACTED].

3. Where the OTR allows the Company discretion in modeling methods, explaining in narrative testimony how the modeling methods the Company chooses are the best available methods.

Q. What constraints does PacifiCorp place in its model to represent the enforcement of the OTR?

A. The Company places [REDACTED]. It does not model [REDACTED]. The Company does not explain why it chose this approach or cite to the OTR to justify modeling [REDACTED]. It also does not provide an explanation for how it arrived at [REDACTED] nor the consequences of this modeling for least-cost dispatch operations.

Q. Does the Company discuss the potential for [REDACTED] and its effect on its compliance costs?

A. No. The Company's testimony does not mention the [REDACTED] or its potential impact on costs.

Q. Has the Company met its burden to demonstrate the factual basis for its rates?

A. No. The Company does not provide a factual basis connecting the OTR requirements and its calculation of the rate impact. The Company has entered NOx constraints in its Aurora model but has not demonstrated how those constraints are derived from the OTR.

Q. What is your recommendation?

A. The Commission should exclude the Company's \$8.8 million in proposed costs of compliance for its Utah fossil-fueled generation plants until such time as the Company

provides an explanation of how it derives from the OTR the type of restrictions it applies in its modeling.³⁷

VI. CONCLUSION

Q. Does that conclude your testimony?

A. Yes.

³⁷ PAC/100, Mitchell/19:20-22 (indicating that on a Company-wide basis the assumed costs of compliance for Utah are \$31 million).

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

Docket No. UE 420

In the matter of

PACIFICORP, dba PACIFIC POWER,

2024 Transition Adjustment Mechanism

**EXHIBIT VITESSE/101
STEVE JOHNSON QUALIFICATIONS**

June 23, 2023

Steve Johnson

(206) 605-4064 (m) ♦ xstevejohnson@msn.com

Relevant Professional Experience

Negative Delta G Consulting

Seattle, WA 2023-Present

Through my sole proprietorship, I provide expert consultant services to organizations working on the transition to a clean energy grid and stable, affordable rates.

Senior Policy Advisor

Washington State Utilities and Transportation Commission (UTC), Lacey, WA 2008-2022

- Provide analysis, council, and recommendations in written and oral form to UTC Commissioners and Administrative Law Judges in adjudicated and non-adjudicated cases.
- Recommend agency positions and assist in determining agency policy and actions on Western Interconnection-wide and federal regulatory policy issues affecting Washington State.
- Act as lead policy advisor on electricity market development, resource adequacy, resource acquisition, coal plant retirement, integrated resource planning, transmission operation and policy.
- Act as rulemaking lead on *Purchases of Electricity* rulemaking and the *Markets and CETA Compliance Rulemaking*, interpreting the term “use” of clean energy in the Washington State’s Clean Energy Transformation Act (CETA).
- Develop policy in coordination with other Washington State agencies and other states in the Western Interconnect.
- Work as a member of internal and external teams on regional markets governance, rulemakings, rate cases, integrated resource plans, and legislative analysis.
- Member of the Northwest Power and Conservation Council *Resource Adequacy Advisory Committee*, *Resource Adequacy Technical Advisory Committee*, and *Regional Technical Forum Policy Advisory Committee*. Served on the *Western Resource Adequacy Program Technical Advisory Committee*.
- Developed and conducted in-person presentations on the development of the Energy Imbalance Market and centralized markets in the U.S. West coast at conferences of the *USAID Black Sea Regulatory Initiative* in Kiev, Ukraine and Tbilisi, Georgia.

Regulatory Analyst

The Public Counsel Unit of the Washington Attorney General's Office, Seattle, WA 2004-2008

- Provided analysis on rate cases and expert testimony on power costs and merger cases.

- Negotiated settlements and managed expert witness testimony.
- Led work on Bonneville Power Administration (BPA) issues and utility acquisitions.
- Worked as part of close-knit team on rate cases, rulemakings, and policy development related to rate decoupling.

Transmission Resource Analyst

Puget Sound Energy, Bellevue, WA 2001-2004

- Assisted with analysis and development of policy on RTO WEST for merchant division.
- Analyzed merchant division's long-term transmission planning needs.
- Evaluated transmission needs and availability for wind only and all-source requests for proposals.
- Analyzed merchant transmission requests in BPA's first open season transmission service request process and Colstrip related transmission assets and contracts in the context of translating them into congestion revenue rights.
- Analyzed business prospects for expanding Cross-Cascade transmission capacity.

PRE-ENERGY INDUSTRY WORK

I worked in multiple positions as a chemist. I served as an analytical chemist in a lab at the site of a Superfund groundwater remediation project in Washington State. I worked as a quality control chemist in the commercial food industry in Oregon. I served as an aquaculture manager for a natural product pharmaceutical company that grew microscopic algae and extracted omega-three fatty acids with anti-inflammatory properties in Washington.

EDUCATION

Masters of Public Administration, University of Washington, The Daniel J Evans School of Public Policy and Governance, Seattle, WA, 2002

Bachelor of Science, The Evergreen State College, Olympia, WA, 1988

Major: Chemistry

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

Docket No. UE 420

In the matter of

PACIFICORP, dba PACIFIC POWER,

2024 Transition Adjustment Mechanism

**REDACTED EXHIBIT VITESSE/102
PACIFICORP DATA RESPONSES**

June 23, 2023

Vitesse Data Request 14

In UE 400, PAC/100, Wilding/35:18-21, Wilding addressed the pattern of the Company's balancing transactions in support of the Company's proposed DA/RT adjustment, by stating:

The price adder component of the DA/RT adjustment addresses the costs incurred by the Company as a result of multiple variables within a dynamic system *in which the Company has historically bought more during higher-than-average price periods and sold more during lower-than-average price periods. (emphasis added)*

In reference to UE 420, PAC/100, Mitchell/4:7-8:

- (a) Does PacifiCorp still believe that Wilding's statement that "...the Company has historically bought more during higher-than-average price periods and sold more during lower-than-average price periods" is correct for PacifiCorp's historic pattern of buying and selling that should inform the DA/RT adjustment proposed in this proceeding to calculate PacifiCorp's 2024 net power costs?

Response to Vitesse Data Request 14

The Company assumes that the reference to "the DA/RT adjustment proposed in this proceeding" is intended to refer to having changed the day-ahead / real-time (DA/RT) adjustment price component's flat adder to a percentile adder in PacifiCorp's prior Transition Adjustment Mechanism (TAM) proceeding, the 2023 TAM, Docket UE-400, and the continuation of such modeling in this proceeding. Based on the foregoing stated context, the Company responds as follows:

The DA/RT price component's adder change in Docket UE-400 from a flat adder to a percentile adder was not premised on the assumptions stated in the Public Utility Commission of Oregon (OPUC) staff's request above. Rather, the DA/RT price component's adder change in Docket UE-400 was premised on the need to capture intra-monthly variability. Based on the foregoing clarification, the Company responds as follows:

The purpose of the DA/RT adjustment in its entirety (as opposed to an isolated section of one component) is to more accurately capture the true cost of balancing the Company's system in the short-term markets by: (1) adjusting forward market prices to reflect historical variations between the average market indexed prices over each month and actual realized prices for the Company's day-ahead and real-time transactions in that month (*price component*); and (2) adjusting system

balancing transaction volumes to reflect the inefficiencies and associated costs of the operational practice of transacting on a monthly basis using, *as an example*, standard 25 megawatt (MW) increment, 16-hour block products, rebalancing on a daily basis using standard 25 MW increment eight-hour block products, and finally closing the remaining position on an hourly basis in real-time markets (*volume component*).

This inefficiency in actuals operations is not reflected in Aurora which has perfect foresight, perfect execution and is a single stage model which simulates *all* market transactions with unrealistic single one-hour block products at fractions of a MW.

Vitesse Data Request 15

In discussing EPA's Ozone Transport Rule at UE 420, PAC/100, Mitchell/19:4-8, Mitchell states, in part:

All Company operated gas-fired and coal-fired generation units in the states of Wyoming and Utah are now constrained by specific NOx emissions limits across the ozone season. These unit level NOx emissions limits are directly input into Aurora, which natively allows for this type of modeling.

- (a) This request asks about the Company's decision to place individual NOx emissions caps on each plant versus using a fleet wide cap per state and how that decision is derived from the design of the allowance program.
1. Please provide the specific portions of the Ozone Transport Rule the Company relied on to determine NOx emission limits must be enforced on a per generation unit or per generation plant basis. Provide any workpapers used by the Company to determine that such plant level limits would apply and how much they would be.
 2. For the year 2024, is it the Company's conclusion that it will receive and must turn in annual allowances that are designated for a specific generation unit or generation plant to meet its compliance standards?
 3. In determining the NOx limits it applied in its modeling of 2024 NPC, what assumptions on the level of trading activities for allowances did the Company assume?
 4. If the Company believes trading allowances is allowed under the OTR, does the Company view it as permissible to trade an allowance from one generator owner to another and then use those allowances for compliance?

Response to Vitesse Data Request 15

- (a) Please refer to the Company's responses to subparts 1. through 4. below:
1. The Company's implementation of the nitrogen oxide (NOx) emissions limits within the net power costs (NPC) forecast was finalized before the Ozone Transport Rule (OTR) itself was finalized or published, and as such the Company's initial NPC filing relied on certain assumptions which will be updated in the Company's reply testimony / NPC update scheduled to be filed in this proceeding in July 2023. The updated assumptions will address the appropriate level of aggregation of NOx emissions limits

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

based on the prevailing version of the OTR. The resource level NO_x emissions limits used in the Company's initial filing is included with the confidential work papers provided with the Company's response to TAM Support Set 2 (5-business day), specifically confidential folder "All_DataSeriesFiles CONF", confidential file "Aurora GNw Resource Table Thermal CONF.xlsx", worksheet "Allocation Summary".

The Company relied on the OTR methodology for allocating and requiring surrender of NO_x allowances. Please refer, for example, to the United States (U.S.) Environmental Protection Agency's (EPA), unit-level allocations and underlying data for the proposed rule¹; and power plants: allowance allocation under the proposed rule² (available at <https://www.epa.gov/system/files/documents/2022-03/allowance-allocation-under-the-proposed-rule-tsd.pdf>). PacifiCorp modeled its compliance after EPA's system.

2. Yes.
3. The Company's implementation of the OTR within the NPC forecast for the initial filing assumed negligible liquidity in NO_x allowance trading for calendar year 2024.
4. The Company believes that trading allowances between generators is permissible and that it is permissible to use allowances obtained through trading for compliance.

¹ Available at <https://www.epa.gov/system/files/documents/2022-03/unit-level-allocations-and-underlying-data-for-the-proposed-rule.xlsx>

² Available at <https://www.regulations.gov/document/EPA-HQ-OAR-2021-0668-0132>

OPUC Data Request 17

Environmental Requirements and Operations Changes; Ozone Transport Rule (OTR); Washington Cap and Invest - See PAC/100 Mitchell/19. Please discuss the applicability of the OTR on generation in each of Utah and Wyoming.

- (a) What are the reasons why such requirements might not be applicable to Wyoming in 2024 and what actions PacifiCorp has taken operationally and legally regarding the Wyoming operations with regards to OTR?

Response to OPUC Data Request 17

The Ozone Transport Rule (OTR) allocates nitrogen oxides (NO_x) allowances during the ozone season (May to September) based on historical heat input and historical NO_x emissions. As such, these allocations do not necessarily allow a unit to dispatch up to its maximum capacity during the ozone season. Coal and natural gas units in Utah may need to limit generation during the 2023 ozone season based on the available allocated allowances. The OTR does not apply to generation in Wyoming during the 2023 ozone season. If the OTR applies to both Utah and Wyoming during the 2024 ozone season, coal and natural gas units in Utah and in Wyoming may need to limit generation during the 2024 ozone season based on available allocated allowances.

- (a) The United States (U.S.) Environmental Protection Agency (EPA) deferred its final action on Wyoming's state implementation plan (SIP) for ozone interstate transport until December 15, 2023. The EPA's deferral introduces uncertainty around Wyoming and OTR requirements in 2024. PacifiCorp is currently processing operational actions for the 2023 ozone season. Operational actions for the 2024 ozone season will be determined later and will take the 2023 actions into account. Legally, PacifiCorp and the Black Hills Corporation filed a petition for review of EPA's deferral of action on Wyoming's ozone transport plan in the Tenth Circuit Court of Appeals on April 6, 2023, as well as filing a motion to expedite the Tenth Circuit's review of the deferral on April 13, 2023.

OPUC Data Request 32

OTR - PAC/100, Mitchell/19 says that the OTR would result in an adjustment of \$202 million if WY were included in the OTR, but only \$31 million if WY were not included. However, the work papers show that the Net Power Cost between these two scenarios is only different by about \$30 million dollars (cell D285) on the NPC Summary tab of the work papers:

“OneOff_Ozone_Transport_Rule_NPC_Report CONF” and
“OneOff_Ozone_Transport_Rule_No_WY_NPC_Report CONF”.

Please explain why the work papers do not reflect a \$170 million dollar difference as described in testimony.

Response to OPUC Data Request 32

To understand the \$202 million increase caused by the Ozone Transport Rule (OTR), please refer to the confidential concurrent work papers supporting the direct testimony of Company witness, Ramon J. Mitchell, provided with TAM Support Set 1 (concurrent), specifically confidential file “_OR UE-420 ORTAM24_Mitchell Direct Mar 2023 CONF.xlsm”. This file shows total company net power costs of \$2.642 billion.

Next, please refer to the Company’s response to TAM Support Set 1 (concurrent), specifically confidential file “OneOff_Ozone_Transport_Rule_NPC_Report CONF.xlsm”. This scenario removes all OTR related constraints from the Aurora model, thus it is showing the result of NPC if Aurora was modeled without any OTR related constraints. The NPC for this model run is \$2.440 billion, which is approximately \$202 million lower than the base NPC of \$2.642 billion. Because the model run shows that NPC decreases by \$202 million when OTR is removed, then it can be inferred that the impact of including OTR in the model is an increase of \$202 million.

To understand the \$31 million increase caused by OTR (assuming Wyoming was not affected by OTR), please refer to the Company’s response to TAM Support Set 1 (concurrent), specifically confidential file “OneOff_Ozone_Transport_Rule_NPC_Report CONF.xlsm”. This file shows the impact of having no OTR constraints in the Aurora model and results in a total company NPC of \$2.440 billion. To see the impact of OTR without Wyoming, the Company did a “one-off” sensitivity in which the OTR constraints were added back into Aurora except those constraints were not applied to the resources located in Wyoming. To see this NPC, please refer to the Company’s response to TAM Support Set 1 (concurrent), specifically confidential file “OneOff_Ozone_Transport_Rule_No_WY_NPC_Report CONF.xlsm”. This

“one-off” study shows a total company NPC of \$2.470 billion, which is approximately \$31 million higher than the sensitivity with no OTR, and approximately \$170 million lower than the base NPC of \$2.652 billion. This shows that not including OTR for Wyoming increases NPC by roughly \$31 million.

To understand a \$170 million increase, please refer to the Company’s response to TAM Support Set 1 (concurrent), specifically confidential file “OneOff_Ozone_Transport_Rule_No_WY_NPC_Report CONF.xlsm” which shows a total company NPC of \$2.470 billion. When compared to the total company NPC of \$2.642 billion, confidential file “_OR UE-420 ORTAM24_Mitchell Direct Mar 2023 CONF.xlsm”, the delta shows an increase of \$170 million for applying OTR constraints only to Wyoming.

OPUC Data Request 48

DA/RT - Provide PGE's response to CONF DR 92 from UE 400 and include Staff's initial DR description.

In addition, provide updated information if this is incorrect for any reason.

Response to OPUC Data Request 48

The reference to "PGE" is incorrect. The Company assumes that the intended entity is PacifiCorp. Based on the foregoing assumption, the Company responds as follows:

Please refer to Confidential Attachment OPUC 48-1 which provides a copy of the Company's response to OPUC Data Request 92 in Docket UE-400 (2023 Transition Adjustment Mechanism (TAM)).

Updated information provided below:

- In Confidential Attachment OPUC 48-1, the Public Utility Commission of Oregon (OPUC) staff outline their understanding of the steps to calculate the day-ahead / real-time (DA/RT) adjustment. Step 6 is incorrectly titled "Adjust price adder to remove historic gains in DA-RT transactions".

An accurate title for Step 6 would be "A single price adjustment for both sales and purchases to remove artificial arbitrage opportunity".

Please refer to the reply testimony of Company witness, Ramon J. Mitchell in the Company's 2023 TAM, Docket No. UE-400, specifically Exhibit PAC/600, Mitchell/21-22 which provides additional detail on OPUC staff's misunderstanding of Step 6. For ease of reference, the referenced reply testimony is provided as Confidential Attachment OPUC 48-2.

- Furthermore, the descriptions in Step 6 are misaligned with the function of the referenced cells and therefore inaccurately described. The following text below describes an updated Step 6 with underlined red text highlighting the changes needed to accurately describe the step. Text in the original Step 6 that is not present below is text that is intentionally removed from the description of Step 6.

Step 6: A single price adjustment for both sales and purchases to remove artificial arbitrage opportunity

Adjusted price adder is referred to as "Actual vs Monthly Price - GRID input" (cells A249:Z261)

Buy and sell adder calculated for each month as follows:

IF historic transactions provide GRID the ability to be purchasing MWh at a higher price than it is selling MWh, then

= "Actual vs Monthly Price - Adder"

IF historic transactions provide GRID the ability to be purchasing MWh at a lower price than it is selling MWh, then

A single price adjustment for both sales and purchases to remove artificial arbitrage opportunity based on the volume-weighted average of the combined sales and purchases "Actual vs Monthly Price – Adder"

= ("Actual vs Monthly Price - Adder" for purchases * "MWh - Monthly Average" for purchases - "Actual vs Monthly Price - Adder" for sales * "MWh - Monthly Average" for sales) / ("MWh Monthly Average" purchases - "MWh Monthly Average" sales)

Confidential information is designated as Protected Information under Order No. 16-128 and may only be disclosed to qualified persons as defined in that order.

REDACTED VERSIONS OF
CONFIDENTIAL ATTACHMENTS
OPUC 48-1 AND 48-2
WERE NOT PROVIDED

OPUC Data Request 62

CONFIDENTIAL REQUEST - Ozone Transport Rule (OTR); Washington Cap and Invest; Gateway South Transmission Project

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

- (b) Please explain why the latest GHG allowance price determined in the auction was not used by the Company.
- (c) Please provide by month the forecast of the following for both Oregon-allocated and on a total system basis separately:
- i. The volumes that are subject to GHG allowance price.
 - ii. The total costs of the allowances contributed to NVPC.

Please provide all workbooks with cell formulae intact.

- (d) Did PacifiCorp consider GHG allowance compliance alternatives such as offset credits? If so, please explain what they were and if not, please explain why other alternatives were not considered.

Confidential Response to OPUC Data Request 62

- (a) The February 23, 2023 auction price determined the allowance price to be \$48.50 per metric ton of carbon dioxide equivalent (CO₂e). Please refer to Confidential Attachment OPUC 62-1 which provides the conversion of that number to [REDACTED] per megawatt-hour (\$/MWh) for Chehalis specifically.
- (b) The February 23, 2023 auction price determined the allowance price to be \$48.50 per metric ton of CO₂e and this is a price applicable to calendar year

2023. This price is not applicable to calendar year 2024 which is the test period of this 2024 transition adjustment mechanism (TAM) filing.

Prior to the February 23, 2023 auction, the state of Washington commissioned independent analysis to estimate the greenhouse gas (GHG) allowance prices from calendar year 2023 through calendar year 2050. This independent analysis was conducted by Vivid Economics and is provided in Attachment OPUC 62-2. This analysis, in conjunction with the design of the Climate Commitment Act (CCA), shows rising GHG allowance prices from 2023 through 2030 based on “the rapidly increasing stringency of [Washington’s] regulatory baseline emissions cap through 2030”.¹

As formulaically demonstrated in Confidential Attachment OPUC 62-1, the 2024 GHG allowance price is based upon the February 23, 2023 auction price and scaled upwards to reflect that rapidly increasing stringency of Washington’s regulatory baseline emissions cap.

- (c) Please refer to the Company’s responses to subparts i. and ii. provided below:
- i. For the volumes that are subject to the GHG allowance price, please refer to Confidential Attachment OPUC 62-3, specifically row 2. Note: PacifiCorp does not allocate volumes to states.
 - ii. Please refer to Confidential Attachment OPUC 62-3, specifically row 6, for the total-company costs associated with the allowances, and row 8 for the Oregon-allocated costs associated with the allowances.
- (d) Offset credits are the only other compliance mechanism under the Climate commitment Act. However, there is currently no market for offset credits because the Washington State Department of Ecology has not yet issued any. Offset credits are only issued after the development of new projects that meet the criteria, which the Department of Ecology has indicated could take two years. Further, the use of offset credits for compliance is limited.

Confidential information is designated as Protected Information under Order No. 16-128 and may only be disclosed to qualified persons as defined in that order.

¹ Page 130, Confidential Attachment OPUC 62-2.

A REDACTED VERSION OF CONFIDENTIAL
ATTACHMENT OPUC 62-1 WAS NOT
PROVIDED
AND
ATTACHMENT OPUC 62-2 AND
CONFIDENTIAL ATTACHMENT OPUC 62-3 ARE
NOT INCLUDED HERE

OPUC Data Request 83

DA/RT - What was the original purpose of the DA/RT adjustment when it was originally accepted by the Commission?

(a) Has that purpose changed?

Response to OPUC Data Request 83

The purpose of the day-ahead / real-time (DA/RT) adjustment is to more accurately capture the true cost of balancing the Company's system in the short-term markets by: (1) adjusting forward market prices to reflect historical variations between the average market indexed prices over each month and actual realized prices for the Company's day-ahead and real-time transactions in that month (*price component*); and (2) adjusting system balancing transaction volumes to reflect the inefficiencies and associated costs of the operational practice of transacting on a monthly basis using, *as an example*, standard 25 megawatt (MW) increment, 16-hour block products, rebalancing on a daily basis using standard 25 MW increment eight-hour block products, and finally closing the remaining position on an hourly basis in real-time markets (*volume component*).

This inefficiency in actuals operations is not reflected in Aurora which has perfect foresight, perfect execution and is a single stage model which simulates *all* market transactions with unrealistic single one-hour block products at fractions of a MW.

(a) No. The purpose of the DA/RT adjustment has not changed.

OPUC Data Request 87

DA/RT - See PacifiCorp's List of TAM Corrections or Omissions filed by Joelle Steward filed on 6-2-23. Please interpret the following sentence, “PacifiCorp has identified a correction related to the Day Ahead – Real Time (DA-RT) adjustment. The NPC impact of this correction has not yet been calculated and will be quantified in the Company’s July Update—” by explaining what Staff can expect to receive in the July update.

Response to OPUC Data Request 87

In PacifiCorp’s July 2023 net power costs (NPC) update in this 2024 Transition Adjustment Mechanism (TAM), the Public Utility Commission of Oregon (OPUC) staff may receive a correction to the ***volume component*** of the day-ahead / real-time (DA/RT) adjustment. To the extent any correction is required, it will be quantified and testimony will be provided to explain the correction. Note: the Company has not yet completed its examination of this issue.

OPUC Data Request 88

DA/RT - Why is the DA/RT adjustment still applicable in Aurora?

- (a) Please include any communication with Energy Exemplar explaining why Aurora does not have a similar feature and/or supporting the use of this adder.

Response to OPUC Data Request 88

The Aurora model, like its predecessor the Generation and Regulation Initiative Decision Tools (GRID) model, is a single stage model. Please refer to the Company's response to OPUC Data Request 83 for further detail on the problem with a single stage model.

- (a) The Company has held oral discussions with Energy Exemplar to develop functional 25 megawatt (MW) increment multi-hour block trading functionality. However, this would not resolve the "single stage model" problem.

OPUC Data Request 91

DA/RT - Detail what supporting evidence PacifiCorp has included in their UE 420 filing to support the DA/RT change to the price component.

Response to OPUC Data Request 91

The change to the day-ahead / real-time (DA/RT) adjustment price component was initiated in PacifiCorp's 2023 Transition Adjustment Mechanism, Docket UE-400. The 2024 TAM, Docket UE-420 makes no change to the enhancement and the direct testimony of Company witness, Ramon J. Mitchell, Exhibit PAC/100, Mitchell/4, footnote 4 refers the reader to the Company's testimony in the 2023 TAM, Docket UE-400. Further detail on the change to the DA/RT price component, as initiated in the 2023 TAM, Docket UE-400, is provided in the Company's response to OPUC Data Request 89. Additional detail on the response to this issue and further justification from PacifiCorp is provided in Confidential Attachment OPUC 91, which provides Confidential Exhibit PAC/600, Mitchell/12-23, which further responds to concerns about the proposed change from the Company in the 2023 TAM, Docket UE-400. Please refer to the Company's response to OPUC Data Request 99 for further detail on supporting evidence.

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CONFIDENTIAL ATTACHMENT
OPUC 91 IS NOT INCLUDED HERE

OPUC Data Request 93

DA/RT - Does the DA/RT adjustment have an impact to NPC? If there is an impact to NPC:

- (a) Provide an excel workbook with all formula in-tact that details the impact to NPC that the DA/RT adjustment has.
- (b) State what the impact is to NPC and this year's 2024 forecast at both a system and Oregon allocated level.
- (c) Identify where this can be found in the work papers.

Response to OPUC Data Request 93

The Company assumes that the reference to “the DA/RT adjustment” is intended to refer to having changed the day-ahead / real-time (DA/RT) adjustment price component's flat adder to a percentile adder in PacifiCorp's prior Transition Adjustment Mechanism (TAM) proceeding, the 2023 TAM, Docket UE-400, and the continuation of such modeling in this proceeding. Based on the foregoing stated context, the Company responds as follows:

Yes, the DA/RT price component enhancement that was introduced in the 2023 TAM, Docket UE-400, and remains wholly unchanged, has an impact to net power costs (NPC).

- (a) Please refer to Confidential Attachment OPUC 93 which provides a copy of the workbooks that details the impact to NPC from the DA/RT price component enhancement as initially proposed (and remains unchanged) in Docket UE-400. Please refer to NPC report “SL03 DA RT Price Adder NPC ORTAM CY2023 CONF”, tab “NPC”, cell D316 and NPC report “SL02 Planned Outages NPC ORTAM CY2023 CONF”, tab “NPC”, cell D316. The difference between the two NPC reports provides a **total-company** NPC impact. At the time of the estimation of that NPC impact the Oregon-allocated amount was approximately \$5.21 million based on the then prevailing Oregon system generation (SG) allocation factor.
- (b) PacifiCorp objects to this request as overly broad, unduly burdensome, requiring the development of a new study or analysis, and not reasonably calculated to lead to the discovery of admissible evidence. Without waiving the foregoing objection, PacifiCorp responds as follows:

Please refer to the Company's response to subpart (a) above for the NPC impact from the initial DA/RT price component enhancement which is unchanged in Docket UE 420. The Company has not performed the analysis to re-assess the impact of the DA/RT price component enhancement under the updated inputs of the initial filing in Docket UE-420.

(c) Please refer to the Company's response to subpart (a) above.

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CONFIDENTIAL ATTACHMENT
OPUC 93 IS NOT INCLUDED HERE

OPUC Data Request 98

DA/RT - Explain in step-by-step instructions how the forecasted MWhs are determined for each of the transmission areas.

Response to OPUC Data Request 98

It is unclear to the Company how the term “forecasted MWhs” is applicable to the day-ahead / real-time (DA/RT) adjustment price component adder. The forecasted energy (megawatt hours (MWh)) to which the DA/RT price component is applied to is the forecasted system balancing volumes at the modeled trading hubs. These volumes result from Aurora’s optimization. The Company does not have access to Aurora’s step-by-step mathematical optimization logic as it is proprietary to Energy Exemplar, the company which makes the Aurora software.

From: [Dustin Prater](#)
To: ["Greg Adams"](#); [Andrus Stephanie](#); [leah.bahramipour@sierraclub.org](#); ["Brent L. Coleman"](#); ["Mike Goetz"](#); ["Jesse Gorsuch"](#); ["Kevin Higgins"](#); ["Bob Jenks"](#); ["Ajay Kumar"](#); [oregondockets@pacificorp.com](#); [rose.monahan@sierraclub.org](#); ["Corinne O. Olson"](#); ["Tyler C. Pepple"](#); [psimmons@somachlaw.com](#); ["Brad Mullins"](#)
Cc: ["Joni Sliger"](#)
Subject: UE 420 - Vitesse Confidential Opening Testimony
Date: Friday, June 23, 2023 2:49:30 PM
Attachments: [REDACTED]

Dear Parties,

Attached is the encrypted zip file with Vitesse's **confidential** Opening Testimony of Steve Johnson in docket number UE 420. The password to access the file will be sent in a separate email.

Thank you and have a great weekend,

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