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Exh. RJM-3CT
Docket UE-230172
Witness: Ramon J. Mitchell

BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, Complainant, v. PACIFICORP dba PACIFIC POWER & LIGHT COMPANY Respondent.	Docket UE-230172 ***(Consolidated)***
In the Matter of ALLIANCE OF WESTERN ENERGY CONSUMERS' Petition for Order Approving Deferral of Increased Fly Ash Revenues	Docket UE-210852 ***(Consolidated)***

PACIFICORP

REDACTED REBUTTAL TESTIMONY OF RAMON J. MITCHELL

October 2023

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Q. Are you the same Ramon J. Mitchell who previously submitted direct testimony in this proceeding on behalf of PacifiCorp dba Pacific Power & Light Company (PacifiCorp or the Company)?

A. Yes.

I. PURPOSE AND SUMMARY OF TESTIMONY

Q. What is the purpose of your rebuttal testimony?

A. My rebuttal testimony responds to testimony from John D. Wilson, filed on behalf of Staff of the Washington Utilities and Transportation Commission (Commission) and Bradley G. Mullins, filed on behalf of the Alliance of Western Energy Consumers (AWEC).[1]

Q. Please summarize your rebuttal testimony.

A. My testimony addresses the following topics:

- Staff recommends distinguishing between fixed and variable power costs but does not provide any definition by which to distinguish them. The Company's definition therefore stands uncontested, and the Company's distinguishes all net power costs as variable.

- The Company proposes to accept Staff's net power costs (NPC) adjustments and for those adjustments which rely on historical values, the Company proposes to update those values in the compliance filing(s) when those values fall under the category of updatable items identified in the last Power Cost Only Rate Case (PCORC).

- Company witness Sherona L. Cheung explains why it is both appropriate and precedential to base the NPC forecast period on calendar years. Regardless, AWEC's proposal to move the NPC forecast period forward in time likely increases the multi-year rate plan's NPC for Washington customers.

- Company witness Cheung explains how coal costs at the Jim Bridger plant are appropriately represented.

[1] Unless personal pronouns are specified by a witness in their testimony, in my rebuttal testimony I use "they/them" when using a pronoun to refer to a witness.

- AWEC's proposal to have the Company's system "dispatched specifically to Washington's load" is both infeasible and increases NPC for Washington customers.

- Company witness Isaiah M.R. Zacharia details the Company's response to AWEC's proposal on Market Capacity Limits and Company witness Eshwar Rao details the Company's response to AWEC's proposal on the Ozone Transport Rule (OTR).

- After updating NPC to account for various corrections, modeling updates, and routine updates (including all of Staff's adjustments and none of AWEC's adjustments), Washington's NPC is $8.6 million or 4.5 percent lower and this is illustrative. The compliance filing will provide the final update and the items updated between now and then are proposed to be the same as adopted by the Commission in the prior PCORC.

II. REPLY TO STAFF

A. Fixed or Variable Costs

Q. Please explain Staff's concern over the characterization of costs as either fixed or variable.

A. Staff is concerned that potential changes to the Power Cost Adjustment Mechanism (PCAM) require a clear understanding of the fixed costs that are included in the NPC forecast subject to the PCAM[2] and therefore it is "helpful for the utility to clearly distinguish between fixed and variable O&M costs."[3] To that end, Staff specifically requests that the Company provide additional evidence clearly identifying "all potential fixed [operations and maintenance (O&M)] costs included in the NPC forecast, justify their inclusion, and provide supporting evidence for the method used to calculate the fixed O&M."[4]

[2] Wilson, Exh. JDW-1CT at 6:13-7:2.
[3] *Id.* at 4:2-3.
[4] *Id.* at 7:6-7.

Q. How do you respond to Staff's recommendation?

A. In principle, the Company agrees that it is helpful to clearly distinguish between all types of costs. Regarding fixed versus variable O&M costs, Staff asserts that a need for distinguishing between these two types of costs is necessary because "the methods used to forecast fixed and variable costs are usually different."[5] Setting aside whether this is the case for the Company, before we distinguish between these two types of costs, we must first define them.

Q. How does the Company define fixed costs for purposes of the NPC forecast?

A. As stated by Staff, the Company defines fixed costs as "non-variable power costs that remain static over time regardless of changes in market conditions or system conditions."[6] The Company further explained through discovery that the NPC forecast includes only variable costs.[7]

Q. Did Staff provide its own definition of fixed costs?

A. No. Staff does not appear to dispute the Company's definition of fixed costs. However, Staff identifies two costs that it believes should be treated as fixed costs—Fixed Pipeline Reservation Fees and wheeling expense. Staff does not disagree that these costs should be included in the NPC forecast, but Staff claims that both these costs do not vary from year to year based on any volumetric measure and therefore are not variable costs.[8]

However, wheeling expenses (cost of transmission capacity) are proportionate to the volume of market transactions or system generation since transmission is

[5] *Id.* at 6:19-20.
[6] *Id.* at 4:1-2.
[7] *Id.* at 5:14-23.
[8] *Id.* at 5:11-6:4.

required to move energy from market / generation to load. Furthermore, the Company's Integrated Resource Plan contemplates a number of gas conversions over the planning horizon and those conversions are system conditions that will result in increases to pipeline reservation fees over the coming years.

B. NPC Adjustments

Q. Please explain Staff's proposed adjustments to the NPC forecast.

A. Staff's testimony identifies a number of proposed corrections and proposed modeling updates to the NPC forecast, which are summarized in Table 1 of Exh. JDW-1CT.[9] These adjustments are broken out into an Energy Imbalance Market (EIM) modeling update (discussed in Section III of Exh. JDW-1CT), a gas storage cost forecast modeling update (discussed in Section IV of Exh. JDW-1CT), and various NPC corrections (discussed in Section V of Exh. JDW-1CT).

Q. How do you respond to the EIM and gas storage modeling updates?

A. The Company proposes to adopt these modeling updates into the NPC forecast. Specifically, the Company proposes to use Staff's method but update with the latest information available at the time the NPC forecast for the compliance filing(s) is assembled.

Q. How do you respond to Staff's corrections?

A. The Company proposes to adopt Staff's adjustments into the NPC forecast. Regarding the correction to thermal unit variable O&M specifically, Staff noted that the data used as an input to Aurora is outdated.[10] For this specific correction, the Company proposes to use the latest costs available at the time the NPC forecast for

[9] *Id.* at 8, Table 1.
[10] *Id.* at 17:9-12.

the compliance filing(s) is assembled.

III. REPLY TO AWEC

A. Proposed NPC Update

Q. Please explain AWEC's proposal for requiring the Company to provide a NPC update prior to the rate effective date for Rate Year 1.

A. AWEC points out that the Company forecasted NPC using calendar years 2024 and 2025 even though the rate years in this case begin in March 2024 and 2025.[11] Therefore, AWEC recommends that the Company update the NPC forecast to align with the rate year and perform that update in January 2024, subject to certain parameters, which I will discuss below.[12]

Q. As an initial matter, does the use of calendar years to forecast NPC create a problematic mismatch as AWEC claims?

A. No. In fact, it is likely that adopting AWEC's recommendation would increase NPC for Washington customers. AWEC claims that NPC is misstated, in part, because the outage necessary for the Jim Bridger gas conversion begins in January 2024 and is expected to end sometime between March and May 2024.[13] According to AWEC, the full impact of the outage is included in the Company's calendar year NPC forecast, even though two months of the outage is expected to occur before the March 1 rate effective date.[14] Because AWEC estimates that "71% of Washington's short position can be attributed to the [gas conversion] outage," [15] AWEC believes that NPC would

[11] Mullins, Exh. BGM-1CT at 19:16-21.
[12] *Id.* at 20:21-21:12.
[13] *Id.* at 20:4-20.
[14] *Id.*
[15] *Id.* at 36:3-4.

decrease if the Company calculated it using the rate year instead of calendar year. AWEC also notes that the Rock Creek I and Rock River I wind facilities would be online for a greater percentage of the forecast period if the NPC forecast was based on the rate years.[16]

Q. How do you respond to AWEC's claims?

A. As an initial matter, AWEC's analysis that "71% of Washington's short position can be attributed to the [gas conversion] outage" is not based on complete modeling (i.e., does not use any production cost model).[17] Regardless, AWEC ignores the fact that by moving the NPC forecast period forward in time, as per their suggestion, the Washington-allocated coal units—Jim Bridger Unit 3, Jim Bridger Unit 4 and Colstrip Unit 4—would then be removed from Washington rates in Rate Year 2. This removal is necessary since Washington's Clean Energy Transformation Act (CETA) requires that coal be excluded from Washington rates after 2025.

Therefore, it is expected that moving the NPC forecast period forward to encompass two months of 2026 would increase Washington NPC due to an increase in the Washington supply / demand deficit—as discussed below in Section III(C)—resulting from that loss of coal supply. Given the magnitude of lost coal generation—across those three coal units—in 2026, the multi-year rate plan's NPC impact from moving the NPC forecast period forward by two months to "encompass the 12-months ending February 2025 for Rate Year 1 and the 12-months ending February

[16] *Id.* at 53:4-12.
[17] *Id.* at 36:3-4.

2026 for Rate Year 2"[18] is likely an increase to NPC, as opposed to the decrease that AWEC implies.

Q. Does AWEC acknowledge that its recommendation will encompass the removal of Jim Bridger Units 3 and 4 and Colstrip Unit 4 from the NPC forecast used for Rate Year 2?

A. It does not appear so. AWEC agrees that removal of these coal units "will have a major impact on NPC" and therefore opposes a stand-alone NPC update that accounts for removal of these units.[19] However, AWEC's recommendation to use rate years to forecast NPC creates the very NPC update AWEC purports to oppose.

Q. AWEC recommends that the NPC forecast (time) period conform to the rate effective period but makes no mention of the time period used for the remainder of revenue requirement.[20] How do you respond?

A. Company witness Cheung details the Company's response.[21]

Q. AWEC recommends that the NPC Update be more limited in scope[22] than the scope last approved by the Commission.[23] How do you respond?

A. In Section IV(C) below I demonstrate that updating elements of the NPC forecast as approved by the Commission in the 2022 PCORC reduces Washington NPC on a net basis. With information known to date, leaving those elements unchanged, as per AWEC's recommendation, indicates an increase to Washington NPC, on a net basis.

[18] *Id.* at 20:23-21:2.
[19] *Id.* at 22:11-16.
[20] *Id.* at 20:22-21:2.
[21] Cheung, Exh. SLC-8T at 68-71.
[22] Mullins, Exh. BGM-1CT, at 21:14.
[23] *WUTC v. PacifiCorp d/b/a Pacific Power & Light Co.*, Docket No. UE-210402, Order 06 ¶109 (Mar. 29, 2022).

B. Jim Bridger Coal Costs

Q. AWEC implies that the NPC forecast includes coal costs at the Jim Bridger power plant that have already been paid for by Washington customers.[24] How do you respond?

A. Company witness Cheung provides the Company's response in her testimony.[25]

C. Washington's Supply / Demand Deficit

Q. In this general rate case (GRC), the Washington Inter-Jurisdictional Allocation Methodology (WIJAM) results in Washington load (demand) having insufficient supply (energy). How was the WIJAM designed to remedy this situation?

A. The WIJAM was designed to eliminate this volumetric supply / demand deficit with modeled market transactions; either through a reduction in market sales or an increase in market purchases, both of which result in an increase in energy onto the modeled system. The costs associated with this market energy is valued at the corresponding market prices.[26] AWEC refers to the costs that remedy this volumetric supply / demand deficit as the "Washington Balancing Adjustment."[27]

Q. Does AWEC propose a change to this WIJAM design?

A. Yes. AWEC proposes to eliminate the volumetric supply / demand deficit, *first* with an increase in energy from modeled gas plant (gas resource) dispatch and then *second*, as described above.[28]

[24] Mullins, Exh. BGM-1CT at 31:2-35:2.
[25] Cheung, Exh. SLC-8T at 26:13-31:10.
[26] *WUTC v. PacifiCorp,* Docket No. UE-191024, Wilding, Exh. No. MGW-1CT at 10:3-18 (Sept. 25, 2020).
[27] Mullins, Exh. BGM-1CT at 35:15-16.
[28] *Id.* at 38:4-39:20.

Q. What does AWEC claim as the NPC impact of their proposal?

A. AWEC derives a decrease to Washington NPC of approximately $5.1 million.[29]

Q. Are there any other issues with AWEC's proposal?

A. Yes. There are five issues that render AWEC's proposal either incomplete or infeasible.

Q. What is the first issue with AWEC's proposal?

A. The WIJAM was designed based on a recognition that "PacifiCorp operates its system on an integrated basis across its six-state territory."[30] The WIJAM aligns cost allocation with cost causation because "Washington customers drive costs through their load, which is served through the operations of PacifiCorp's integrated system. The WIJAM, through a system reflection of some of these costs, provides a more accurate allocation of the costs caused by Washington customers."[31]

That is to say, the premise of the WIJAM is that generation dispatch is calculated on a total-system basis, serving the integrated needs of the holistic six-state service territory. AWEC's proposal, however, requires generation dispatch to be specific to the Company's Washington service territory.[32]

Q. How does this first issue render AWEC's proposal incomplete?

A. Currently, gas resources in this GRC are assigned a fixed percentage share of the total-system dispatch. AWEC's proposal is to increase the amount of gas resource dispatch. However, since generation dispatch is both calculated and operationalized on a total-system, six-state integrated basis then AWEC's proposal requires that this

[29] Mullins, Exh. BGM-3 at 6:23, Column "Pre-Tax Net Oper. Income".
[30] *WUTC v. PacifiCorp,* Docket No. UE-191024, Wilding, Exh. MGW-1CT at 20:17-23:6 (Sept. 25, 2020).
[31] *Id.* at 20:3-16.
[32] Mullins, Exh. BGM-1CT at 38:4-18.

GRC's fixed percentage share be increased for gas resources. Increasing the fixed percentage share for gas resources decreases Washington NPC but also increases capital costs and other non-NPC components of revenue requirement allocated to Washington.

After accounting for these non-NPC increases to Washington rates, AWEC's proposal can be considered complete. However, if this change to the WIJAM is not the direction that AWEC is driving towards then the remaining four issues render AWEC's proposal infeasible.

Q. What is the second issue with AWEC's proposal?

A. The Company operates its system on an integrated basis across its six-state territory to serve all customer load (energy) and reserve (capacity) obligations. The WIJAM was in part necessary to accommodate the passage of CETA[33] and has resulted in nearly double the nameplate capacity of wind resources allocated to Washington.[34] However, serving load with wind (and solar) resources requires reserves to integrate those wind or solar resources. If, in the NPC modeling, the Company's Washington gas resources are dispatched specifically to serve Washington load (per AWEC's suggestion) then all resources—inclusive of the wind and solar resources—must also be dispatched in this manner, because the system is an *integrated* transmission system (as recognized by the WIJAM[35]) and not a modular system.

Q. How does this second issue render AWEC's proposal infeasible?

A. Currently, generation dispatch is calculated on a total-system basis, serving the

[33] *WUTC v. PacifiCorp,* Docket No. UE-191024, Wilding, Exh. MGW-1CT at 3:2-5 (Sept. 25, 2020).
[34] *Id.,* at 6:1-4.
[35] *WUTC v. PacifiCorp d/b/a Pacific Power & Light Co*., Docket No. UE-191024, Wilding, Exh. MGW-2 at 3, Section 4 (Dec. 13, 2019).

integrated needs of the holistic six-state service territory. This dispatch accommodates system load service *along with wind and solar integration (reserve) service*. In the total-system dispatch, coal and gas resources that are not allocated to Washington serve Washington's reserve obligations, and this is workable because these reserves have a near net-zero energy impact over the long run (near zero net emissions).

However, because all resources—inclusive of wind and solar resources—must now be dispatched specifically to serve Washington load, then the prevailing total-system dispatch is no longer present to serve Washington's reserve obligations (wind and solar integration). Therefore, Washington resources must now carry the full burden of integrating Washington's wind and solar resources. Based on AWEC's workpapers, this increases NPC by approximately $20 million under optimistic assumptions.

Q. What is the third issue with AWEC's proposal?

A. AWEC ignores transmission and in doing so displaces non-Washington generators to help serve Washington load. AWEC recommends to "assume the resource's output, up to its derated capacity, to fulfill Washington's short position,"[36] which implies that there is some measure of unused capacity when these resources are "not running at their maximum or holding reserves."[37] However, this measure of unused capacity often results from a lack of additional transmission capacity.

To apply AWEC's proposal in this context would *first*, require dispatching non-Washington resources (coal or gas) down to free up transmission capacity and

[36] Mullins, Exh. BGM-1CT at 39:3-4.
[37] *Id.* at 39:6.

then *second*, dispatching Washington gas resources up. This directly uses the dispatch of non-Washington resources to alleviate Washington's short position and therefore directly includes that dispatch into Washington NPC. The flaw with AWEC's proposal, however, is that this action is contradictory to the WIJAM. The WIJAM only allows for Washington resources to be included in Washington NPC.[38] Dispatching non-Washington resources to lower Washington NPC is impermissible.

Q. What is the fourth issue with AWEC's proposal?

A. AWEC's proposal will increase carbon pollution, which is contrary to the intent and design of the Climate Commitment Act (CCA) and the associated cap-and-invest program.

Q. What is the fifth issue with AWEC's proposal?

A. AWEC's workpaper[39] is erroneous. Setting aside the aforementioned four issues:

- First, AWEC purports to calculate "the cost of Washington's hourly load on an hourly basis,"[40] but then uses monthly average generation instead of hourly generation to calculate the NPC impact.

- Second, AWEC calculates the weightings between purchase and sale prices using monthly averages instead of hourly averages, despite AWEC's recommendation to use hourly data.[41]

- Third, AWEC's monthly generation is taken from the Aurora model which has purchase prices spread apart from sell prices.[42] However, in valuing the generation in-spreadsheet, AWEC *first* used prices that are ***not*** an input to the Aurora model to re-dispatch gas generation that is an output of the Aurora model, and *second,* collapses purchase and sales prices into one, and in doing so produces invalid results.

[38] *WUTC v. PacifiCorp d/b/a Pacific Power & Light Co*., Docket No. UE-191024, Wilding, Exh. MGW-2 at 5, Section 6 (Dec. 13, 2019).
[39] Mullins, Workpaper 230172-AWEC-Mullins-Exh-BGM-8-09-14-2023(C).
[40] Mullins, Exh. BGM-1CT at 39:15-16.
[41] *Id*. at 39:17-19 ("In doing this, I used the same weightings between purchases and sales as the Company did. I calculated the impact on an hourly basis based on the hourly prices in the forward price curve.").
[42] This is the DA/RT adjustment.

- Fourth, gas dispatch costs include fuel startup costs, yet AWEC excluded fuel startup costs, producing lower-than-forecast costs to calculate the NPC impact.

- Fifth, it appears as if the inputs into AWEC's workpaper come from at least two different modeling sensitivities.[43] If inputs are not consistently taken from one model, the results are invalid.

- Sixth, AWEC incorrectly states that "PacifiCorp has excluded CCA allowance costs from the cost of Chehalis in NPC."[44] The Company includes CCA allowance costs into Chehalis' dispatch cost and then offsets the allowance costs with no-cost allowances. This allows for the CCA to achieve reductions in carbon pollution while mitigating the impact to customer rates through no-cost allowances.

Q. What is the NPC impact after correcting for and accounting for all these issues?

A. AWEC's proposal increases Washington NPC by approximately $41 million.

Q. Is there any merit to AWEC's "Washington Balancing Adjustment" proposal?

A. Yes. In a later section of his testimony, AWEC witness Mullins recommends that Washington parties engage with the Multi-State Process Framework Issues Workgroup (MSP) to work on a solution, "including evaluating a scenario where Washington assumes full responsibility of the costs and benefits of the Chehalis power plant."[45] Company witness McVee further discusses issues concerning the allocation of Chehalis issue,[46] and if Washington assumes the full responsibility for the costs and benefits of the Chehalis power plant through a negotiated outcome in the MSP, the result can be lowered NPC for Washington customers.

[43] Based on the different values in the "Run_ID" column found in the "Gas Details" worksheet and the "Reserves" worksheet. *See* Mullins, Workpaper 230172-AWEC-Mullins-Exh-BGM-8-09-14-2023(C).
[44] Mullins, Exh. BGM-1CT at 39:9.
[45] Mullins, Exh. BGM-1CT at 72:4-7.
[46] McVee, Exh. MDM-2T at 79-83.

D. Market Capacity Limits

Q. AWEC proposes to remove market capacity limits from certain market hubs.[47] How do you respond?

A. Company witness Zacharia details the Company's response.[48]

E. The Ozone Transport Rule

Q. AWEC proposes to remove the application of the OTR from the state of Wyoming within the NPC modeling.[49] How do you respond?

A. Company witness Rao details the Company's response and in Section IV(B) below I detail the NPC impact.[50]

IV. ILLUSTRATIVE NPC UPDATE

A. Corrections and Modeling Updates

Q. Has the Company identified any NPC corrections (in addition to Staff's) or a need for any NPC modeling updates since its direct testimony?

A. Yes. There are four additional corrections and two modeling updates which in aggregate decrease NPC by $4.4 million. The four corrections are titled: (1) Startup Costs; (2) Wind Capacity Factors; (3) Contingency Reserves for Non-Owned Generation; and (4) Day Ahead / Real Time (DA/RT) Volume Component. The two modeling updates are titled: (1) Thermal Generation Marginal Costs; and (2) EIM greenhouse gas (GHG) Benefits.

Q. Please provide a brief summary of those changes which lower Washington NPC.

A. The summaries are as follows:

[47] Mullins, Exh. BGM-1CT at 41-46.
[48] Zacharia, Exh. IMRZ-1CT at 1-8.
[49] Mullins, Exh. BGM-1CT at 47:16-48:3.
[50] Rao, Exh. EVRR-1T at 3-4.

- **Startup Costs** – **Correction**: The Company corrected a formulaic error in the calculation of startup costs. In direct testimony, some costs were calculated based on a generating unit's minimum capacity; however, Aurora requires the numbers be input based on a generating unit's maximum capacity. In addition, some maintenance costs-per-start were omitted from coal units. Although coal maintenance costs-per-start are not part of NPC, they are variable power costs that need to be accounted for in-model. The impact of this correction in isolation is a decrease to Washington NPC of $3.0 million.

- **Wind Capacity Factors** – **Correction**: The Company corrected an error in the annual wind shape inputs of certain wind facilities. For wind facilities that have forecasts based on historical data, there was a deviation of 0.00042 percent in the input capacity factors from the historical data. For some wind facilities that do not have sufficient historical data, the efficiency increases in the repowered turbines were used to determine the input wind generation profiles instead of the capacity factors determined through prior Company analyses. The impact of this correction in isolation is a decrease to Washington NPC of $0.61 million.

- **EIM GHG Benefits** – **Modeling Update**: To more accurately model EIM GHG benefits, the Company updated the EIM GHG model to use forecasted California Air Resources Board GHG allowance market prices to proxy for growth in EIM GHG benefits in addition to incorporating Staff's suggestion to use the last 12 months of historical data as the base for the forecast. The impact of this modeling update in isolation is a decrease to Washington NPC of $0.13 million.[51]

- **Thermal Generation Marginal Costs** – **Modeling Update**: The Company updated modeling logic within Aurora's optimization to remove the usage of shadow prices to determine the marginal costs of both coal and gas generation subject to explicit seasonal or annual constraints. This modeling logic refinement allows for increased flexibility in coal and gas generation and primarily results in increased coal generation due to lower in-model costs. The impact of this modeling update in isolation is a decrease to Washington NPC of $9.7 million.

Q. Please provide a detailed summary of those changes which increase Washington NPC.

A. Please refer to the below sub-sections for the relevant summaries.

[51] After consideration of Staff's EIM GHG modeling update and after updating with recent historical data.

1. Contingency Reserves for Non-Owned Generation – Correction

Q. Please briefly summarize this correction.

A. The Company corrected a formulaic error in the calculation of MWh generated in the Company's PacifiCorp East and PacifiCorp West balancing authority areas by third-party (non-owned) generation which determines the Company's North American Electric Reliability Corporation (NERC) mandated contingency reserve requirements (BAL-002-WECC-3, spinning and non-spinning reserves).

Q. What are contingency reserves?

A. Contingency reserves are capacity set aside on upward dispatchable generators to provide immediately responsive—i.e., within 10 minutes—energy to cover the unplanned outage (trip or high-speed wind cutout) of a large generator or transmission line and maintain system supply /demand balance.

Q. Why are contingency reserves held for generation that the Company does not receive energy from?

A. NERC mandatory standards—subject to Federal Energy Regulatory Commission (FERC) oversight—require that all balancing authorities[52] provide ancillary services, inclusive of contingency reserves, within their balancing area to maintain reliable and safe operations of the interconnected transmission system. The Company maintains two balancing areas, PacifiCorp West (PACW) and PacifiCorp East (PACE), and both balancing areas contain generation that is owned or used by other utilities.

[52] PacifiCorp is a balancing authority.

Q. How do Washington customers recover the costs of contingency reserves held for generation that the Company does not receive energy from?

A. Through allocation of the revenues received under the Company's FERC jurisdictional Open Access Transmission Tariff rates, from the owners of that third-party generation.

Q. How does holding contingency reserves in PACE benefit Washington customers who are all in PACW?

A. Under the WIJAM in 2024, Washington receives a substantial amount of wind and solar energy from PACE and a substantial amount of gas and coal energy from PACE (Jim Bridger).[53] Without energy from PACE—that energy which is made reliable and safe with contingency reserves—the Company would not be able to economically accommodate the renewable integration requirements of CETA for Washington customers.

Q. How does the Company decide how much contingency reserves to hold?

A. The amount held is a formula that is enforced by NERC and not subject to the Company's discretion. Specifically, for the Company, NERC standard BAL-002-WECC-3[54] requires that the Company hold contingency reserves equal to three percent of balancing area load plus three percent of balancing area generation.

Q. Where in the Company's workpapers can this correction be found?

A. Please refer to the confidential workpapers supporting the direct testimony of Company witness Mitchell, specifically confidential file "230172-PAC-RJM-

[53] Which is pseudo-tied into PACE as of 2022.
[54] NERC, BAL-002-WECC-3—Contingency Reserve (June 28, 2021) (available here: https://www.nerc.com/pa/Stand/Reliability%20Standards/BAL-002-WECC-3.pdf).

AGNwResourceTableContracts (C).xlsx"; tab "tp_x", rows 99-1054, column D. This is the original data.

Please also refer to the confidential workpapers provided with this testimony, specifically confidential file "230172-PAC-RJM-AGNwResourceTableContracts (C).xlsx"; tab "tp_x", rows 99-1058, Column D. This is the corrected data.

Q. What is the NPC impact of this correction?

A. The impact of this correction in isolation is an increase to Washington NPC of $3.9 million.

2. DA/RT Volume Component – Correction

Q. Please briefly summarize this correction.

A. The Company corrected an error in the DA/RT adjustment by removing unsupported artificial arbitrage revenue from the DA/RT volume component. The arbitrage revenue present in the direct testimony was above the levels supported by the historical data and showed a substantial and illogical *decrease* to power costs resulting from *inefficiencies* in actual power trading, as compared to the actual increase in power costs that result from inefficiencies in actual power trading.

Q. What is the DA/RT volume component?

A. In actual operations, the Company continually balances its market position—first with monthly products, then with daily products, and finally with hourly products. The products used to balance the Company's forward position in the wholesale market are primarily available in flat 25 megawatt (MW), 16-hour or 8-hour blocks. The Company's load and resource balance, however, varies continuously each hour in quantities that may vary widely from those multi-hour, flat 25 MW block products.

Thus, in real world operations, the Company must continuously purchase or sell additional volumes to keep the system in balance.

In contrast, Aurora has no segregation of trading horizons, and has perfect foresight and perfect efficiency, and models wholesale market transactions at the hourly granularity at whatever volume is necessary (within fractions of a MW) to balance the system. Because of these unrealistic modeling efficiencies, Aurora balances the system with far fewer transactions (and far lower costs) than would be the case in actual operations.

The DA/RT volume component adds additional volumes and associated cost to the NPC forecast to reflect the *inefficiencies* and associated *costs* of that operational practice of transacting on a monthly basis using, as an example**,** standard 25-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.

Q. What was the NPC impact of the DA/RT volume component in direct testimony and how was it erroneous?

A. The NPC impact of the DA/RT volume component in direct testimony was a reduction (*revenue*) to NPC of $102 million total-Company. However, the DA/RT volume component adjusts system balancing transaction volumes to reflect the *inefficiencies* and associated *costs* incurred in actual operations. A calculation that is designed to simulate *costs* associated with real-world trading *inefficiencies* but produces substantial ($102 million) and unrealistic (artificial) arbitrage *revenue* is producing an erroneous result.

Q. What is artificial arbitrage revenue?

A. Artificial arbitrage revenue is revenue from the DA/RT volume component that is in excess of any reasonable metric of real arbitrage revenue and not achievable in the test period. Real arbitrage revenue is synonymous with the historical gain present in the four-year historical market transaction data that is a part of the DA/RT volume component. This historical gain is the combination of actual arbitrage transactions that create revenue and the historical revenue calculated when the Company buys below the official price forward curve (OFPC) and sells above the OFPC. In the past four years, this real arbitrage revenue has been between $6.2 million per year and $9.3 million per year.

Q. With this as context, please explain how the error in the DA/RT volume component was corrected.

A. Please refer to the confidential work papers supporting the direct testimony of Company witness Mitchell, specifically confidential file "230172-PAC-RJM-Aurora2024NPCMasterBaseWA1 (C).xlsm"; tab "STF DA-RT", rows 211-222, Columns C-P. This is the original data.

Please refer to the confidential work papers provided with this testimony, specifically confidential file "230172-PAC-RJM-NPC-Reb01TC (C).xlsm"; tab "STF DA-RT", rows 208-219, Columns C-P. This is the corrected data.

Whenever the monthly sales revenue from a volume adjustment at a trading hub shows arbitrage revenue by exceeding the monthly purchase cost for the same amount of volume in the same time period at the same trading hub, the formulaic pricing of the DA/RT volumes was corrected such that: (1) both the monthly sales revenue and the

monthly purchase cost offset for no net impact to the NPC forecast; and then (2) the monthly sales revenue is adjusted upwards to re-introduce real arbitrage revenues from the historical data into the NPC forecast.

Q. What is the NPC impact of this correction?

A. The impact of this correction in isolation is an increase to Washington NPC of $5.2 million.

B. Routine Updates

Q. What routine updates have been incorporated into this illustrative NPC update?

A. The precedential updates last ordered by the Commission and implemented in the 2022 PCORC[55] have been incorporated into this illustrative NPC update.

> First, forward prices for natural gas and electricity will be updated in Aurora itself. In addition, hedge positions for power and gas will be updated based on the most recent month-end hedge positions available, and any mark-to-market values will be updated to reflect the use of the same OFPC that was described in the first step. Any new power purchase agreements and Qualifying Facility contracts will be included in the model, and any required updates to contracts that were previously included will be made. Finally, Energy Imbalance Market (EIM) transfer and greenhouse gas (GHG) benefits will be reforecast, also based on the same OFPC, in order to synchronize the model inputs for the most accurate output.[56]

Q. What other major changes were incorporated?

A. The other major changes that were incorporated include:

- The OTR has been removed in its entirety due to a recent litigation outcome as explained in the testimony of Company witness Rao.[57] The impact of this change in isolation, after updating the OTR modeling to account for the filed rule, is a decrease to Washington NPC of $2.2 million.

[55] *WUTC v. PacifiCorp d/b/a Pacific Power & Light Co.*, Docket No. UE-210402, Order 06 at ¶109 (Mar. 29, 2022).
[56] *Id.,* Staples, Exh. DRS-6T, at 2:7-15 (Dec. 13, 2021).
[57] Rao, Exh. EVRR-1T.

- The Company updated coal fuel assumptions to reflect changes in prices, volumes, and coal supply limitations in the states of Utah and Wyoming. The impact of this correction in isolation is a decrease to Washington NPC of $21.9 million.

- [redacted] The impact of this change in isolation is an increase to Washington NPC of $0.39 million.

C. NPC Update

Q. After incorporating these corrections, modeling updates, and routine updates, what is the cumulative NPC and NPC impact?

A. The cumulative impact of all these changes results in Washington-allocated NPC of $190.2 million and is a decrease to Washington NPC of $8.6 million or 4.5 percent, relative to the Company's direct testimony.

Q. How is this cumulative NPC impact less than the sum of all the individual, isolated NPC impacts?

A. The cumulative effect of two or more corrections or updates cancel portions of each other out and this is referred to as a "system balancing impact of adjustments."[58]

Q. Explain in further detail.

A. A simplified example best illustrates this phenomenon. Assuming that the OTR was still applicable to the test period, increased flexibility in the OTR would increase the generation of gas plants in the state of Utah. Lowered gas prices would also increase the generation of gas plants in the state of Utah. On an isolated basis, if the NPC impact of increased flexibility in the OTR is calculated, there will be a certain increase to gas generation in the state of Utah when this calculation is done in

[58] This is different from AWEC's "system balancing adjustment" referenced in Mullins, Exh. BGM-1CT at 40:22.

isolation, without consideration of lowered gas prices. The NPC impacts presented above are exactly this type of isolated impact without consideration of other changes on the Company's system.

On the other hand, if the NPC impact of lowered gas prices is calculated there will also be a certain increase to gas generation in the state of Utah when this calculation is done in isolation, without consideration of increased flexibility in the OTR. However, if both adjustments are analyzed together (analyzed as one cumulative adjustment), then it is possible that after the increased flexibility in the OTR increases Utah gas generation, the Utah gas generation is high enough such that there may be no more capacity left for the lowered gas prices to bring about additional increases in Utah gas generation.

In this cumulative analysis, the combined effect of increased flexibility in the OTR and lowered gas prices may show limited impact to NPC from the lowered gas prices (or vice versa), but on an isolated basis there may be some substantive NPC impact shown for both the increased flexibility in the OTR and simultaneously for the lowered gas prices. The difference between this cumulative analysis and these two isolated analyses is a "system balancing impact of adjustments" and demonstrates a dampened NPC impact in the cumulative analysis as compared to the sum of the isolated analyses.

V. CONCLUSION

Q. Please summarize your recommendations to the Commission.

A. I recommend that the Commission accept Staff's NPC recommendation and adjustments, accept the Company's NPC recommendation and adjustments, reject

AWEC's NPC recommendations and adjustments, and allow for the compliance filings to update NPC based on the precedent set by the Commission in the last PCORC.[59] An illustrative impact of this proposal is a reduction to the Washington NPC identified in direct testimony of $8.6 million or 4.5 percent.

Q. Does this conclude your rebuttal testimony?

A. Yes.

[59] *WUTC v. PacifiCorp d/b/a Pacific Power & Light Co.*, Docket No. UE-210402, Order 06 at ¶109 (Mar. 29, 2022).