UE-230812

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Jeff Killip
Executive Director and Secretary
Washington Utilities and Transportation Commission
P.O. Box 47250 Olympia, WA 98504-7250

Re: Comments of Renewable Northwest on PacifiCorp's Draft 2025 Integrated Resource Plan in UE - 230812

Dear Mr. Killip,

On January 10, 2025, the Washington Utilities and Transportation Commission ("UTC" or "Commission") filed a Notice of Opportunity to File Written Comments on PacifiCorp's draft 2025 Integrated Resource Plan ("IRP"). Renewable Northwest ("RNW") appreciates the opportunity to provide comments on PacifiCorp's draft IRP and to participate in the upcoming open meeting on the same subject. RNW is a non-profit advocacy organization that works to decarbonize the region by accelerating the transition to renewable electricity. RNW has been involved in PacifiCorp's planning process for many cycles, including the public input process leading up to the draft IRP before us. We were also deeply engaged in the review of PacifiCorp's 2023 Biennial Clean Energy Implementation Plan Update before the Commission and the 2023 IRP and IRP Update in front of the Oregon Public Utility Commission. We submit the following comments to the UTC with the goal of aiding the Commission in its pursuit of an IRP that optimizes cost and risk for Washington customers while meeting state energy policies, particularly given that the IRP informs both PacifiCorp's procurement decisions and its next Clean Energy Implementation Plan ("CEIP") for compliance with the Clean Energy Transformation Act ("CETA"). These comments seek to synchronize our advocacy across the Washington and Oregon Commissions.

I. Introduction

We recognize the challenge PacifiCorp faces in developing a plan that meets varying requirements across its six state footprint while also incorporating regulatory uncertainty at the federal level. At the same time, the company is continuing to experience the financial fallout from the 2020 Labor Day wildfires in Oregon. These challenges only underscore the need for prudent planning that will ultimately lead to a lowest-reasonable-cost resource strategy to serve customers across all states.

Unfortunately, PacifiCorp's draft plan may not represent a lowest-reasonable-cost strategy and marks yet another step backward from the trajectory the company had charted in its 2023 IRP. The 2025 plan delays and significantly reduces build outs of zero fuel cost resources such as wind, solar, and storage. Instead of investing in large quantities of low cost renewables and storage, the plan relies heavily on market purchases for energy, along with operating an aging and high-variable-cost coal fleet indefinitely.[1]

In our comments, we highlight several areas of PacifiCorp's plan that are cause for concern:

- **Washington Climate Policy:** PacifiCorp's Draft IRP does not provide a clearly articulated process or pathway toward achieving compliance with adopted CETA targets, which do not appear to be clearly integrated into its modeling framework.
- **Procurement Plans:** PacifiCorp's Draft IRP provides very limited information regarding its forward-looking procurement plans, and has demonstrated minimal procurement progress since the 2023 IRP given its canceled 2022 Request for Proposals ("RFP").
- **State Allocation:** PacifiCorp's Draft IRP presents a new, problematic framework for resource allocation which does not appear well-suited to fairly and reasonably allocating resources in alignment with state policy needs or developing least-cost portfolios for state customers.
- **Modeling Setup:** PacifiCorp's Draft IRP maintains legacy issues with their PLEXOS LT modeling setup which limit the model's ability to solve efficiently or effectively, limiting confidence in the asserted least-cost outcomes of the IRP modeling process.
- **Candidate Resources:** PacifiCorp's Draft IRP continues the problematic practice of making opaque adjustments to forward-looking resource cost assumptions, which impact the resource buildout and inform future resource decisions.

Collectively, these and other concerns raise doubts regarding the ability of the IRP process to provide an accurate roadmap forward to ensure Washington customers are served with a reliable, decarbonized, cost-effective portfolio. While RNW looks forward to continued development and resolution of these issues in the final IRP to be submitted at the end of this month, the lack of resolution of these concerns at this late stage in the process should raise questions and concerns for the Commission as it considers if or how to incorporate IRP results into downstream processes, including procurement-related decisions in the CEIP proceeding or cost-related decisions in a future rate case or multi-state allocation proceeding.

[1] While Washington customers will not pay directly for coal generation after December 31, 2025, RCW 19.405.030(1)(a), PacifiCorp's continued reliance on coal nevertheless likely imposes risks and indirect costs on Washington customers. These comments discuss this dynamic below.

These high-level comments represent RNW's initial concerns with the draft IRP; our thinking and focus may evolve as we continue to review the plan and as PacifiCorp responds to stakeholder inquiries. We recognize that that evolution may have to play out through review of other dockets and/or plans before the Commission, including any docket established to review a Commission-mandated RFP under WAC 480-107-009(2) and the Commission's review of PacifiCorp's next CEIP.

II. Planning to Meet CETA Obligations

PacifiCorp's Pathway to CETA Compliance Should Align with its Approved CEIP

Achieving compliance with CETA is one of the foundational planning goals of the IRP for PacifiCorp's Washington service territory.[2] CETA guides Washington utilities towards the state's decarbonization policy objectives, beginning with carbon neutrality in 2030 and fully decarbonizing the electric sector by 2045. Achieving these goals will require extensive new investment in non-GHG-emitting resources to compensate for PacifiCorp's historical reliance on thermal GHG-emitting resources. To guide its progress toward 2030, PacifiCorp has interim annual targets approved by the Commission which place it on a glidepath to carbon neutrality.

Unfortunately, the 2025 IRP Draft and associated materials, including updates and discussions at the Public Input Meetings, do not provide substantive clarity regarding PacifiCorp's intent to achieve Washington state climate goals or methods of incorporating CETA compliance into the IRP process. While PacifiCorp indicates that the 2030 carbon neutrality goal has been included as a modeling constraint, PacifiCorp indicated it did not incorporate interim targets as modeling constraints and, based on preliminary analysis from RNW (*see Figure 1*), does not appear to be on target to meet either 2026 or 2028 annual targets. PacifiCorp has also acknowledged that the preliminary jurisdictional allocation included in the draft IRP is not intended to align with its stated interim CETA goals and cannot yet be rectified with CETA compliance[3], indicating that this will be completed prior to the final IRP submission.

[2] *See*, *e.g.*, WAC 480-100-620(1) (citing RCW 19.405 and providing that the purpose of the IRP is "to ensure the utility provides energy to its customers that is clean, affordable, reliable, and equitably distributed"); WAC 480-100-620(11) ("Each utility must … [explain] how the utility's long-range integrated resource plan expects to: (a) Achieve the clean energy transformation standards in WAC 480-100-610 (1) through (3) at the lowest reasonable cost[.]").

[3] PacifiCorp staff discussion at February 27 PIM.

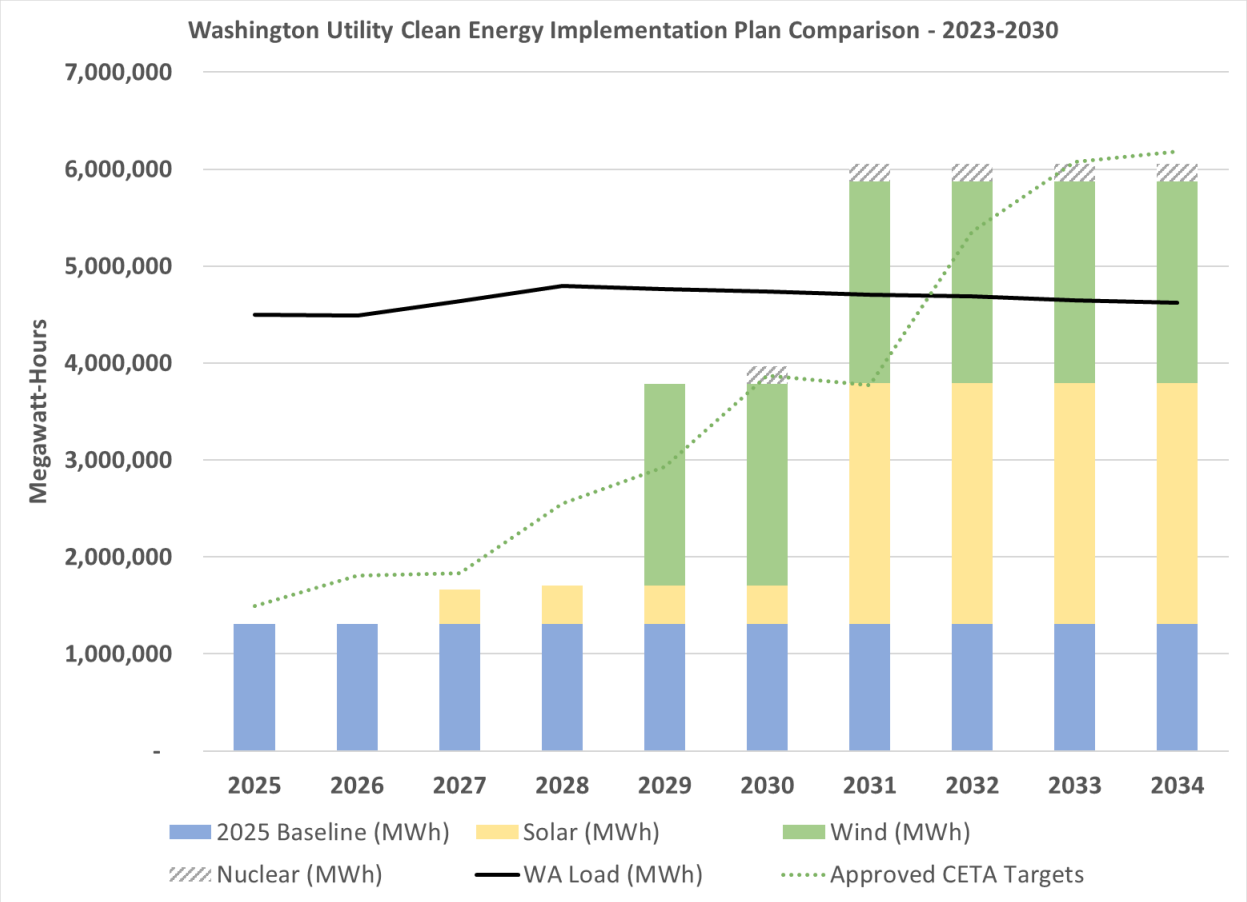

Figure 1: Estimated PacifiCorp CETA Compliance Positions based on Jurisdictional Shares of Draft IRP[4]

As Appendix O is still in progress, and compliance data was not yet available for these comments, RNW attempted to estimate PacifiCorp's CETA compliance pathway using estimated capacity factors for these resources. This estimate assesses CETA requirements based on PacifiCorp's Washington load net of efficiency adjustments, and adds resources allocated for Washington to PacifiCorp's 2025 baseline estimated from its proposed 2025 interim target. While RNW acknowledges the approximate nature of such an analysis - and looks forward to a more detailed path forward in the final IRP - it is concerning to see such significant gaps

[4] Data Sources:
Load Forecast (pre-DSM): Table A.2
DSM Adjustments: (P)_Table D.3-D.4 - DSM Selections - Dec 20 Draft Preferred Portfolio (LT 106955 ST 106957)
Interim Targets and 2025 Baseline: 2025 PacifiCorp Interim Targets: PacifiCorp Draft 2025 Integrated Resource Plan, Volume II, Appendix O - Washington Clean Energy Implementation Plan, p. 329 of 340
Resource Additions: (P)_Tables Tables 9.2-9.4 Jurisdictional Shares (With Checks)
Assumed Capacity Factors: Solar 30%, Wind 40%, Nuclear 37%

between PacifiCorp's adopted interim targets and the values produced by the IRP modeling process.

As acknowledged by PacifiCorp, this approach to CETA constraints is expected to drive "just-in-time" procurement within the model in the final years prior to 2030 and 2045. This results in significant and potentially unrealistic build scales in penultimate compliance years, with little room for error or delay. In addition to creating more compliance risk, this approach offers significantly reduced climate benefits due to delayed action, and creates undue timeline pressure and risk on the project development ecosystem. As has been demonstrated in other markets, siting, permitting, interconnection studies, and transmission upgrades all work better with smooth, steady development over multiple years, avoiding the bottlenecks which arise with just-in-time procurement. Compared to a procurement and compliance strategy that incrementally adds resources, PacifiCorp's procurement pathway will place significant strain on Washington ratepayers in later years. Again, with no enforcement of interim targets or clear allocation to support PacifiCorp's CETA compliance, RNW is concerned that these assumptions will translate into RFP parameters and delayed procurement actions which will fail to achieve timely CETA compliance.

The company does state that they do not "expect to use the alternative compliance payment, energy transformation project, or energy recovery facility pathway to meet the standards under RCW 19.405.090", but remain open to using unbundled RECs to address annual variation in weather-driven generation.[5]

PacifiCorp has indicated that the current approach to allocation, specifically the jurisdictional allocation table included in the Draft IRP and presented at the February public input meeting, will be further revised and cannot yet be reconciled with CETA compliance requirements. While RNW appreciates that further work will be conducted, it is troubling that this analysis - which is so central to the Washington planning framework - remains in development at this late stage in the process.

Beyond the lack of clear process or mechanics, for this critical planning constraint, PacifiCorp continues to assert – although apparently not model – its deeply unambitious interim targets. As is being discussed in UE-210829, PacifiCorp's 2025 CEIP targets are considerably lower than its relatively unambitious 2023 targets and start from a far lower baseline than its peer utilities, Puget Sound Electric ("PSE") and Avista.

[5] 2025 PacifiCorp Interim Targets: PacifiCorp Draft 2025 Integrated Resource Plan, Volume II, Appendix O - Washington Clean Energy Implementation Plan, p. 328 of 340, Figure O.1.

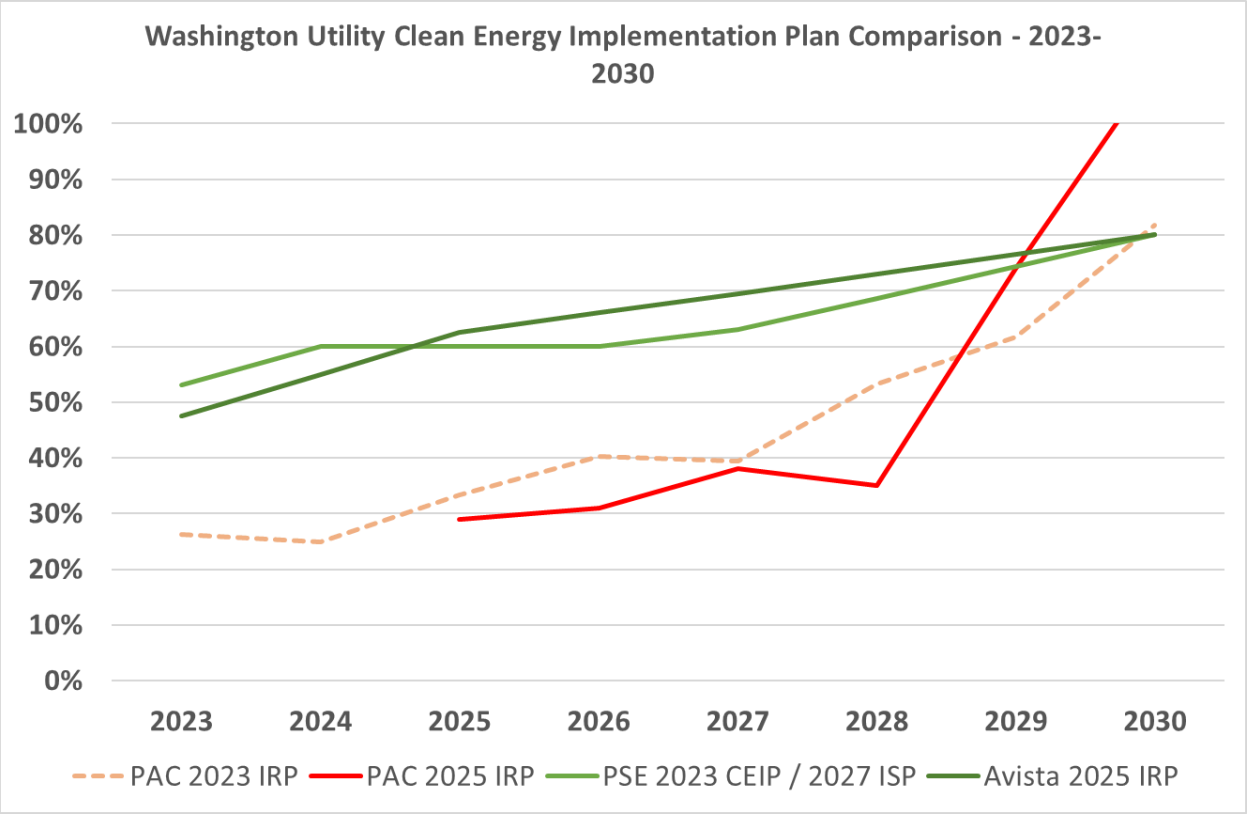

Figure 2: Benchmarking PacifiCorp's Lack of Planned Progress Relative to Peers and Historical Commitments[6]

This unambitious path – which remains contentious and under litigation – is a key driver for the 2025 RFP. As stated in the IRP draft, "PacifiCorp will seek to file the 2025 All Source RFP ("2025AS RFP") based on results identified in the 2025 IRP Preferred Portfolio."[7] While

[6] Data Sources:
2023 PacifiCorp Interim Targets: 200420-PAC-Public(P)-Figure O.1 and Table O.1 Interim Targets, 2023 IRP May 31 Data Disk (Public) - WA
2025 PacifiCorp Interim Targets: PacifiCorp Draft 2025 Integrated Resource Plan, Volume II, Appendix O - Washington Clean Energy Implementation Plan, p. 328 of 340, Figure O.1.
https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-plan/2025-irp/2025_DRAFT_IRP_Vol.2.pdf
PSE 2023 Interim Targets: PSE 2023 Corrected Biennial CEIP 11/20/2023, p. 1.2.
https://apiproxy.utc.wa.gov/cases/GetDocument?docID=1234&year=2021&docketNumber=210795
PSE 2025 Interim Targets: PSE 12/19/024 RPAG Meeting, p. 35
https://irp.cdn-website.com/dc0dca78/files/uploaded/2024_1219_RPAGMeeting_Final_19.pdf
Avista 2025 Interim Targets: Avista 2025 Electric IRP, p.150
https://www.myavista.com/-/media/myavista/content-documents/about-us/our-company/irp-documents/2025/2025-avista-electric-irp.pdf
[7] Volume I, p. 75.

information is limited, this implies that quantities, resource characteristics, reliability contributions, cost-benefit analyses, and other datapoints are likely to flow into the RFP from the IRP. Failure to incorporate a reasonable glidepath toward 2030 CETA compliance, one which "demonstrate[s] progress toward meeting the standards" established by CETA from now through the 2030 and 2045 milestones, will translate into RFP parameters which undersignal and undervalue the resources needed to meet Washington CETA compliance.[8] Moreover, even if PacifiCorp's lack of ambition is corrected (through UTC action or otherwise), these modest targets significantly disincentivize resource developers from investing in projects which could serve PacifiCorp's needs.

Beyond failing to configure its PLEXOS model to explicitly reflect all key provisions required under CETA, PacifiCorp has withheld critical details on their CETA-compliance strategy. The draft IRP provides sparse details on the specific actions PacifiCorp plans to take to meet the 2030 and 2045 compliance requirements, providing stakeholders only with the following:

> *Note – The following specific actions are anticipated for the 2025 IRP final filing on March 31, 2025, but may not be available before that time:*
>
> • *Supply-side resource actions*
>
> • *Demand-side resource actions.*[9]

Without further detail, PacifiCorp fails to provide stakeholders with the information necessary to assess whether the model results and subsequent proposal for compliance are reasonable and realistic.

RNW is concerned that, without a course correction, PacifiCorp will provide a final IRP that fails to provide a clear and meaningful path toward CETA compliance, establishing relatively firm IRP outputs that will dictate outcomes in the RFP, in valuation exercises, including cost allocation, and in other downstream processes that will have negative implications not only for CETA compliance but for the Washington portfolio as a whole, including potentially detrimental outcomes for Washington ratepayers. RNW recommends that the Commission bear in mind these concerns with PacifiCorp's approach to resource planning when reviewing PacifiCorp's planned 2025 All-Source RFP and the CEIP that will be based on the 2025 IRP.

[8] RCW 19.405.060(1)(b)(iii).
[9] 2025 PacifiCorp Interim Targets: PacifiCorp Draft 2025 Integrated Resource Plan, Volume II, Appendix O - Washington Clean Energy Implementation Plan, p. 329 of 340

PacifiCorp Should Provide More Detailed, Actionable Procurement Plans in the Final IRP

PacifiCorp's 2025 Draft IRP indicates its intention to initiate a 2025 All Source RFP but provides relatively limited information regarding the resource quantities, characteristics, or timeline associated with resources of interest to PacifiCorp. The company's procurement action item (2b) only states that PacifiCorp "will issue as appropriate by jurisdiction need, one or more all-source requests for proposals (RFP) to procure resources aligned with the 2025 IRP preferred portfolio that can achieve commercial operations by the end of December 2029."[10] PacifiCorp does not provide any timeline other than the 2029 COD. While PacifiCorp notes activities are "Ongoing" for procurement of renewable energy credits for Washington, Oregon, and California compliance needs, the status and process for this compliance remains unclear.

Given the significance of the upcoming RFP for meeting Washington's 2030 climate goals and fulfilling other portfolio needs, including compliance with Western Resource Adequacy Program (WRAP) requirements, PacifiCorp should provide updated and more detailed information about both its RFP and bilateral actions to meet compliance. Further, given the significance of the IRP in defining the RFP parameters and need, the Commission should ensure detailed review of the RFP design details.

PacifiCorp's IRP Should Assess and Mitigate Risk of Coal Leakage Between East and West Regions

Under CETA, PacifiCorp must remove coal power from the Washington portfolio by the end of 2025. However, during the February Public Input Meeting, the company confirmed that its Washington Jurisdictional PLEXOS model lacks constraints to explicitly prevent Rocky Mountain Power's coal-fired energy from flowing into any of Washington's three transmission zones starting in January 2026.[11] This is a missed opportunity to ensure compliance with CETA and prevent Washington customers from inadvertently purchasing coal remaining on the PacifiCorp system.

RNW acknowledges that the laws of physics prevent the tracking of specific electrons on the physical grid, nor does this filing propose a method to track coal transfers during system operations. However, the IRP is a useful forum to test whether there are any periods during which PacifiCorp's Washington and Oregon customers are reliant on coal - for example, in periods during which their net position is larger than what can be provided by market purchases or specified clean resources, and which must otherwise be served by marginal coal resources

[10] 2025 Draft IRP, Volume I, p. 261
[11] The PLEXOS transmission regions that are located within Washington state are Chehalis, Walla Walla, and Yakima.

from the Eastern system. One of the many benefits fundamental models afford practitioners is the ability to construct representations of actual systems that enable evaluation of such requirements through thoughtful utilization of modeling features and ex post heuristic analysis.

Specifically, PLEXOS' generic constraint feature may be useful in modeling the risk of coal transfers across the system.[12] While the utility did confirm that their PLEXOS setup does include constraints to ensure sufficient CETA-eligible generation for the 2030 and 2045 targets, it does not provide sufficient details on how these targets will actually be met. For example, PacifiCorp has not provided stakeholders with a detailed breakdown of the proxy and existing resources that will be used to comply with CETA along with the specified share of each resource designated for Washington. Thus, RNW requests that the company provide additional details regarding how CETA's targets will be met.

A key reason stakeholders remain uncertain about PacifiCorp's compliance strategy is that the company itself appears unsure. In the February Public Input Meeting, PacifiCorp acknowledged that it has yet to decide on the accounting rules it will assume when assessing compliance with the 100% GHG-free energy requirement by 2045. Whether this accounting will be on an annual, hourly, or some other alternative basis will have a defining impact on the portfolio the utility chooses to bring forward to the Commission to demonstrate compliance. RNW acknowledges that this CETA implementation issue remains unresolved and will require further discussion.

To properly evaluate whether PacifiCorp's submitted portfolio is lowest-reasonable-cost and fully compliant with CETA, UTC, Staff, and stakeholders must have a clear understanding of these critical modeling assumptions. Without this transparency, a meaningful assessment of the company's approach remains impossible.

III. PacifiCorp Must Address Concerns and Ambiguity in its Proposed Allocation Methodology

Starting with its 2025 Draft IRP, PacifiCorp has introduced a new methodology for allocating proxy resources to its regional jurisdictions to better reflect which portions of the portfolio drive new resource needs. The objective is to use an accurate and fair cost-causation framework to assign any cost premiums associated with complying with regional environmental policies, thereby protecting ratepayers in other jurisdictions from undue financial burden. As these comments will detail, this approach represents a fundamental departure from PacifiCorp's historical approach to optimize its resource acquisition strategy across its six-state system. As

[12] For example, PacifiCorp could implement a constraint in PLEXOS to ensure that the maximum aggregate amount of dispatched coal is less than or equal to the load obligations in PAC-E across all hours in the year.

designed, the planning and allocation framework put forth in the Draft IRP are likely to lead to inefficiencies that diminish the benefits of shared planning across its six-state system.

The methodology divides PacifiCorp's system into three distinct jurisdictions: Washington (WA), which complies with state requirements; Oregon (OR), which complies with Oregon requirements; and a combined Utah-Idaho-Wyoming-California (UIWC) jurisdiction that represents the rest of PacifiCorp's system. RNW has attempted to replicate PacifiCorp's allocation methodology using the information provided in the Draft IRP and public input meetings. Although it is unable to exactly reproduce the numbers provided by the utility in the January public input meeting,[13] RNW still argues PacifiCorp's allocation methodology is fundamentally flawed, resulting in the suboptimal allocation of proxy resources across all jurisdictions. The magnitude of the impact and the jurisdictions most affected vary by technology type. Below we walk through an example involving new wind resources to show how the OR and UIWC jurisdictions are both impacted by the company's allocation process.

Figure 3 illustrates the wind buildout for each of the three jurisdictional portfolios. Under PacifiCorp's allocation process, new proxy wind resources can only be assigned to a jurisdiction when the cumulative deployment of that technology achieves a new maximum in any one of the three jurisdictions. This maximum cumulative deployment amount is represented by the black line in the figure below. As shown, the WA jurisdictional portfolio drives new wind resources for most of the planning horizon, except for 2032–2035, when the UIWC jurisdiction is calling for the largest additions of proxy wind resources. Step changes in the black line are captured by the black columns in the figure and indicate the amount of incremental wind resources that are available for assignment. These step changes occur in 2027, 2029, 2032, 2036, and 2037.

[13] Note: When assuming System Generation (SG) factors on a going-forward annual load basis, RNW was unable to reproduce the values PacifiCorp demonstrated for long-duration storage. See slide 21 in the January 2025 Public Input Meeting slide deck.
https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-plan/2025-irp/January_22-23_2025_IRP_Public_Input_Meeting.pdf

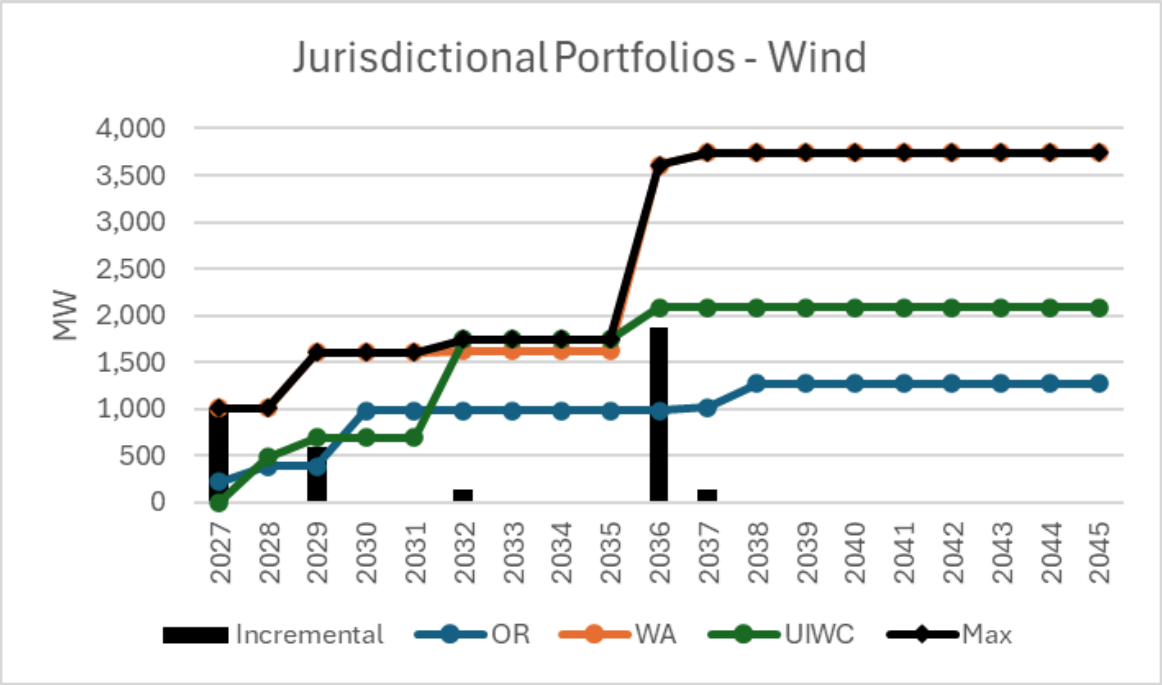

Figure 3: Projected Wind Buildout by Jurisdictional Portfolio[14]

RNW's concern arises when a jurisdictional portfolio requires new wind resources in a given year, but the maximum cumulative wind deployment remains largely unchanged. Because incremental MWs of proxy wind resources can only be assigned when a new maximum is reached, jurisdictional portfolios risk being unable to access those resources even when the model deems them cost-effective. This results in suboptimal portfolio construction. As highlighted by the dashed lines in Figure 4, this risk is particularly evident in the OR jurisdiction in 2030 and the UIWC jurisdiction in 2032.

[14] Data Source: Working papers - (P)_Table 9.5-9.7 Jurisdictional Portfolios

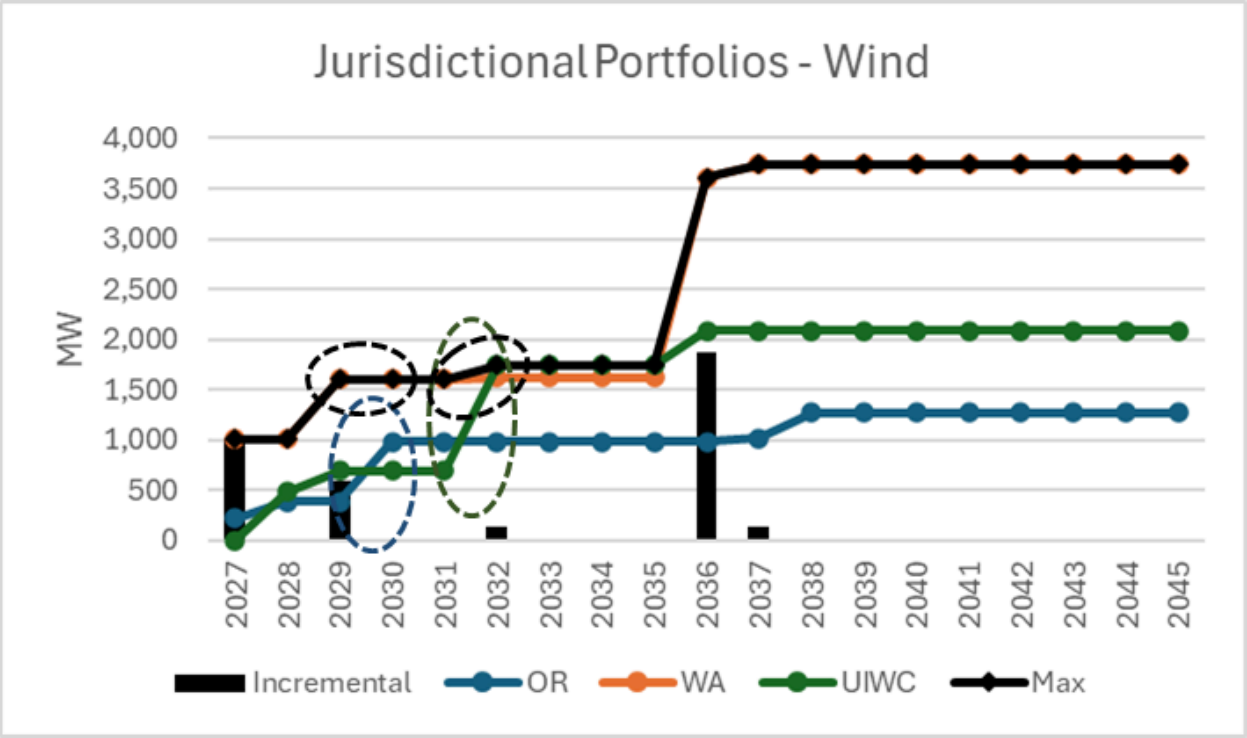

Figure 4: Projected Wind Buildout by Jurisdictional Portfolio, *with Highlights*

As shown by the blue line in Figure 4, the OR Jurisdictional Portfolio seeks to add 594 MW of wind in 2030. However, since the maximum cumulative wind deployment remains unchanged, no wind can be assigned to any jurisdictional portfolio requesting it. Moreover, there is no opportunity to compensate for this missed allocation in future years. This foregone wind capacity can be viewed as a "haircut" of 594 MW to the OR Jurisdictional Portfolio. A similar issue arises for the UIWC in 2032 when it calls for 1,045 MW of wind, but only 140 MW can be allocated across the eligible portfolios due to the small step change in the cumulative deployed MWs of wind. The first 140 MWs of wind are distributed to the UWIC and WA jurisdictions on a load share basis, while UIWC is forced to absorb a haircut of 905 MW of wind for the year. Again, there is no opportunity to recover this shortfall in later years. Both the annual and cumulative wind haircuts for the OR and UIWC jurisdictional portfolios across the entire planning horizon are illustrated below in Figure 5.

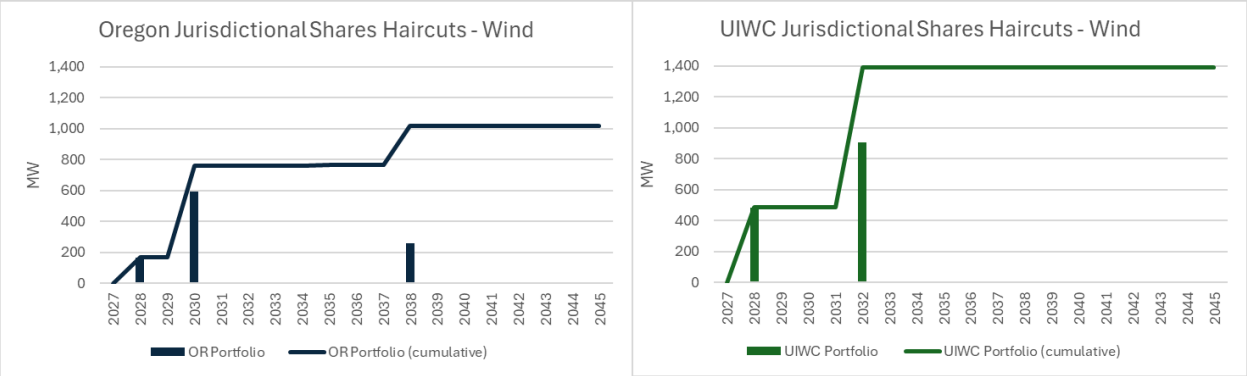

Figure 5: Annual and Cumulative Wind "Haircuts" to OR and UIWC Jurisdictional Portfolios

IV. PacifiCorp Should Address Known Concerns with its PLEXOS Modeling Setup

Chronology Not Being Preserved

PLEXOS LT, the capacity expansion module ("CEM") within Energy Exemplar's PLEXOS software, is a critical tool for determining optimal resource buildout decisions (i.e., when to build new resources, what type to build, how much to build, and where to build them). PLEXOS LT identifies the least-cost portfolio that meets reliability requirements while also complying with federal, regional, and state environmental policies, provided a feasible solution exists. However, the effectiveness of this modeling approach depends heavily on how it is configured and the extent to which it accurately captures future system operating conditions.

RNW recognizes that capacity expansion modeling is an inherently complex optimization problem, requiring model practitioners to balance computational tractability with modeling accuracy. Thus, some level of simplification in the model setup is unavoidable. However, PacifiCorp's reliance on an overly simplified, reduced-form chronology for its PLEXOS LT setup raises significant concerns. RNW has flagged this issue in previous IRP proceedings within other jurisdictions.[15]

Specifically, PacifiCorp configures its PLEXOS LT module by categorizing all hours in a month into four discrete time blocks: (1) the top ten percent of highest net load hours (i.e., demand minus variable renewable generation), (2) the highest solar energy generating hours, (3) the highest wind energy generating hours, and (4) all other remaining hours. While this approach aims to capture distinct operating conditions, it fundamentally ignores the hour-by-hour dynamics of the bulk electric system. This lack of chronological preservation is particularly problematic given the increasing roles of renewable energy, storage, and demand response –

[15] Oregon Public Utility Commission, LC 82: Round 1 Comments of Renewable Northwest at 31-39 (Oct. 25, 2023). https://edocs.puc.state.or.us/efdocs/HAC/lc82hac17443.pdf

technologies inherently dependent on chronological constraints – in planning exercises to identify resource buildout plans for future years. PLEXOS offers two alternative chronology options in its LT module – "Fitted" and "Sampling" – that preserve chronological relationships but may require tradeoffs in other aspects of the model setup due to greater computational demands.

When requesting PacifiCorp explore these alternatives, the utility has failed to provide empirical data to adequately demonstrate why its current methodological approach is the best available option.[16] While RNW and other stakeholders continue to engage in good faith with PacifiCorp, providing written comments and constructive feedback in public input meetings, it has often been challenging to link PacifiCorp's assertions of completed testing or analysis with material evidence, and further discussions have raised questions regarding some claimed actions.[17] To justify this configuration—as well as all decisions and assumptions related to key modeling parameters—the utility must provide empirical data and actual modeling results demonstrating that its methodology yields more accurate or reliable outcomes than available alternatives. Without this transparency, stakeholders cannot meaningfully assess whether PacifiCorp's approach is truly the best option.

Recursive Nature of Block Definitions

Further compounding the absence of chronology in PacifiCorp's CEM model setup, the block definitions outlined in the previous section are recursive (i.e., they require an initial projection of future renewable buildouts, which is precisely what PLEXOS LT is designed to determine). While recursion is not intrinsically flawed, its circular reference nature demands careful consideration to ensure accurate input values. According to information shared by the utility in the January Public Input Meeting, PacifiCorp uses the portfolio buildout results from its 2023 IRP to define the netload, wind, and solar time series that PLEXOS uses to first calculate the four blocks per month in each future year in the planning horizon before making its selection of proxy resources.[18]

As documented in the 2025 Draft IRP, PacifiCorp's proposed Preferred Portfolio differs significantly from the 2023 IRP cycle. Figure 6 compares the May 2022 load forecast used in the 2023 IRP with the May 2024 forecast that is used in the 2025 IRP draft. Similarly, Figure 7

[16] Stakeholder Feeback Response: 2025.021 FPA 07-09-2024 (with response). https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-plan/2025-irp/2025-irp-comments/2025.021_FPA_07-09-2024_with_response.pdf

[17] In the 2023 IRP, PacifiCorp included *Appendix K: Capacity Contribution* to describe its use of the Capacity Factor method for estimating firm capacity contributions (i.e., ELCCs of renewable resources). However, the company admitted in the February 2025 Public Input Meeting that that analysis was not updated in 2023.

[18] Based on information shared by Daniel McNeil during the January 2025 Public Input Meeting.

illustrates the shifting assumptions about solar and wind buildouts in PacifiCorp's Preferred Portfolio between the two IRP cycles. Given these substantial differences, the PLEXOS LT model is making investment decisions based on outdated information, diminishing the usefulness of its results.

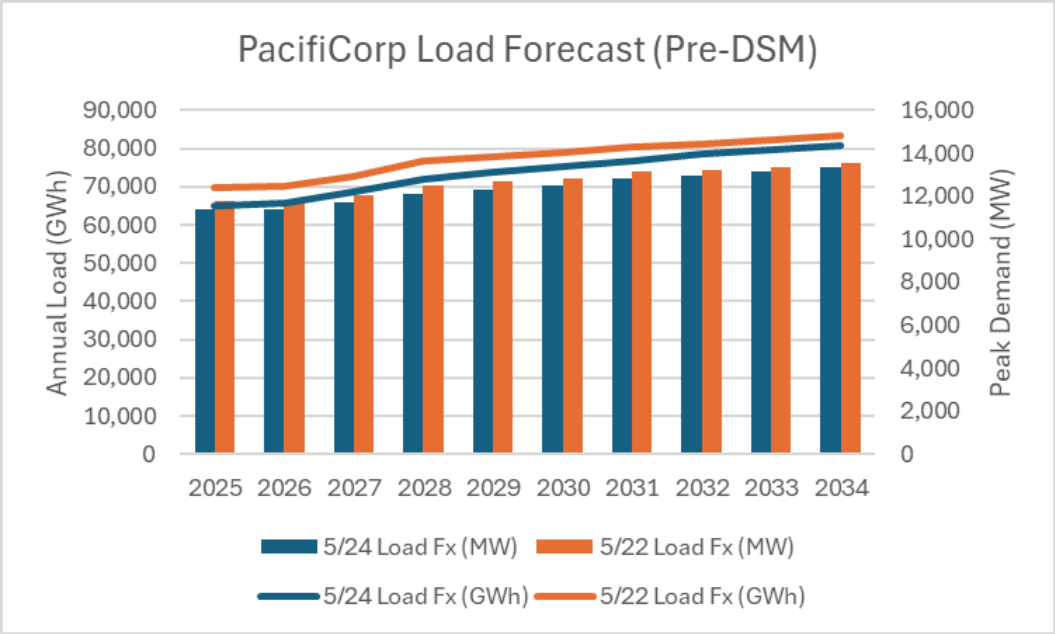

Figure 6: PacifiCorp Load Forecast[19]

[19] Data Sources: Table A.1, Table A.2, Table A.3, and Table A.4.

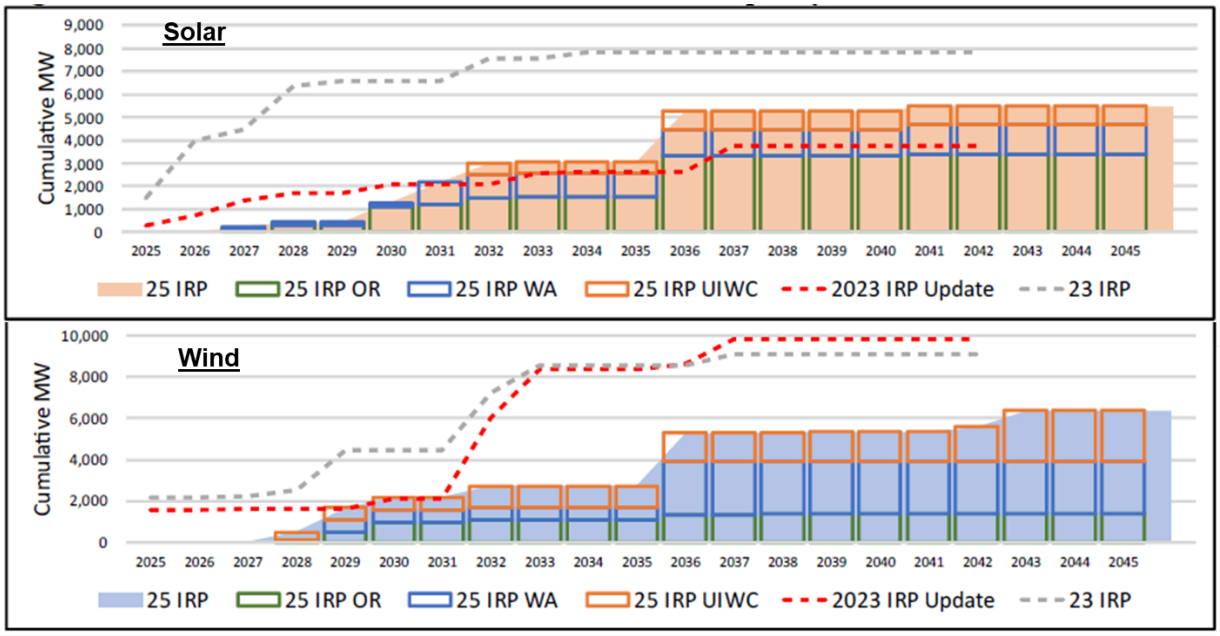

Figure 7: PacifiCorp Preferred Portfolio: Solar and Wind Buildout[20]

RNW believes these design choices drive PacifiCorp's continued heavy reliance on Reliability Adjustments ("RA") and Granularity Adjustments ("GA"). These adjustments not only require multiple iterative modeling runs for each jurisdictional portfolio and scenario variant but also create persistent challenges in achieving model convergence. With PacifiCorp now using PLEXOS LT to optimize both resource additions and transmission network upgrades, balancing model tractability and accuracy has even greater importance than before. Heavy reliance on RA and GA adjustments unnecessarily increases model complexity by obscuring interactive effects, which in turn reduces transparency. A more robust approach to chronological representation is essential to improving the quality and reliability of PacifiCorp's long-term planning outcomes and could help reduce the need for excessive manual adjustments.

V. PacifiCorp's Draft Preferred Portfolio May Not Represent a Lowest-Reasonable Cost Plan that Appropriately Considers Risk

A fundamental objective of the IRP process is to identify a lowest-reasonable-cost portfolio for serving customers. "Lowest reasonable cost" includes consideration of risk.[21] However, based on PacifiCorp's modeling choices and scenario results, we question whether the

[20] Draft 2025 IRP, pp. 6-7
[21] WAC 480-100-605.

selected portfolio adequately manages customer costs and risk. In particular, RNW is concerned about 1) discrepancies between PacifiCorp's resource cost assumptions with their stated data sources; 2) inconsistencies in the portfolio selection process; 3) lack of rationale and transparency behind major retirement and transmission decisions; 4) inadequate assessment of market risk; and 5) inadequate emissions accounting.

PacifiCorp's resource cost assumptions are incomplete and incongruous with stated data sources

PacifiCorp states that the 2025 IRP uses National Renewable Energy Laboratory (NREL) Annual Technology Baseline (ATB) cost assumptions for new resources "as much as possible"[22]. However, a comparison of PacifiCorp's supply side resource ("SSR") database with NREL ATB data reveals significant discrepancies. The capital cost assumptions for solar and carbon capture and sequestration ("CCS") retrofits appear to be significantly lower than NREL's published estimates, while wind resource costs are notably higher—up to 60% more expensive in the case of offshore wind (*see Figure 8*). Clearly, PacifiCorp is continuing to adjust NREL ATB values beyond the locational modifiers they have shared. There continues to be a lack of transparency in how the company adjusts NREL ATB values, potentially leading to biased economic selection of certain resource types. We request that PacifiCorp explicitly document its cost adjustments and provide an opportunity for stakeholder review of these assumptions.

[22] 2025 Draft IRP, Volume 1 p. 140

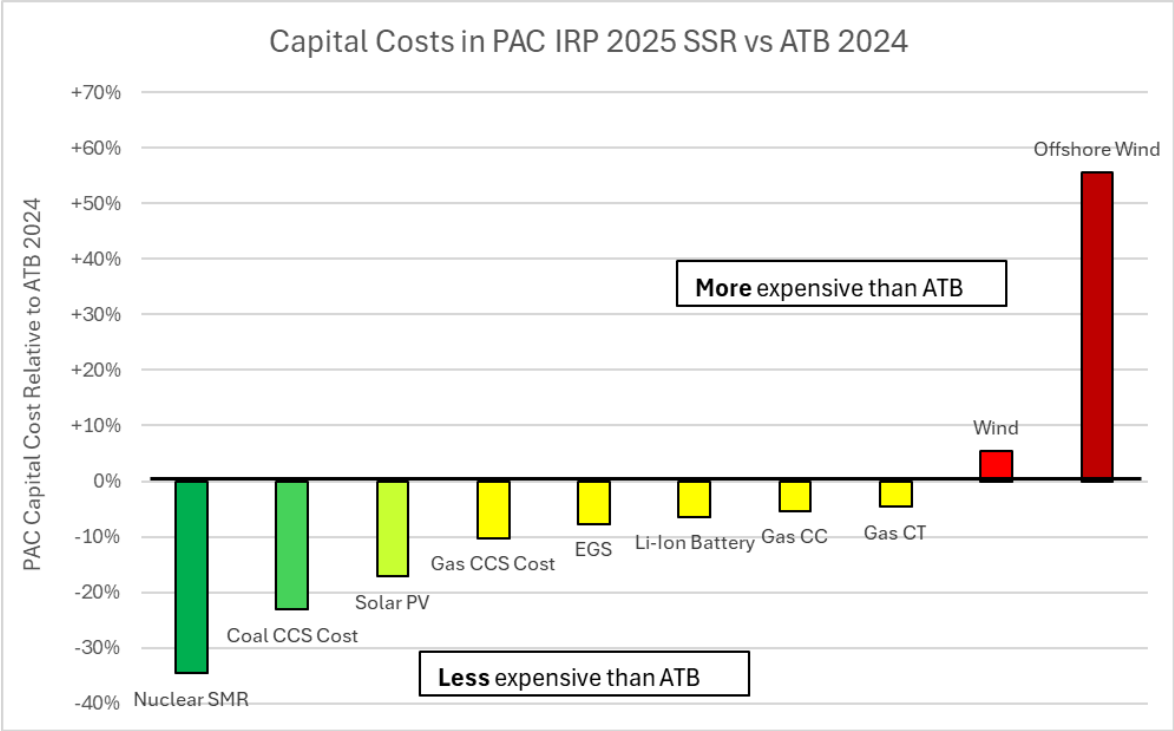

Figure 8: Capital cost discrepancies between PacifiCorp's 2025 Draft IRP and NREL ATB 2024 [23,24]

In addition to low capital costs, PacifiCorp uses other assumptions to reduce the modeled cost of CCS in their 2025 IRP. In particular, PacifiCorp excludes the cost to utilize or store captured carbon[25]. As such, the company's assumed variable cost of $10/MWh far understates the true variable cost of adding CCS to Jim Bridger. Using a conservative estimate of $10/ton for carbon transportation and storage costs (*see Figure 9 for range in values*) and the stated emissions rate of Jim Bridger from PacifiCorps's public SSR table, we estimate that transportation and storage would add $13/MWh in variable costs, more than doubling PacifiCorp's stated assumption.

[23] PAC SSR Database from: https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-plan/2025-irp/2025-irp-support-studies/Public_SSR_Database_Summary_Tab_2025.xlsx
[24] NREL ATB 2024 from: https://atb.nrel.gov/electricity/2024/data
[25] Draft 2025 IRP, Volume 1, p. 157

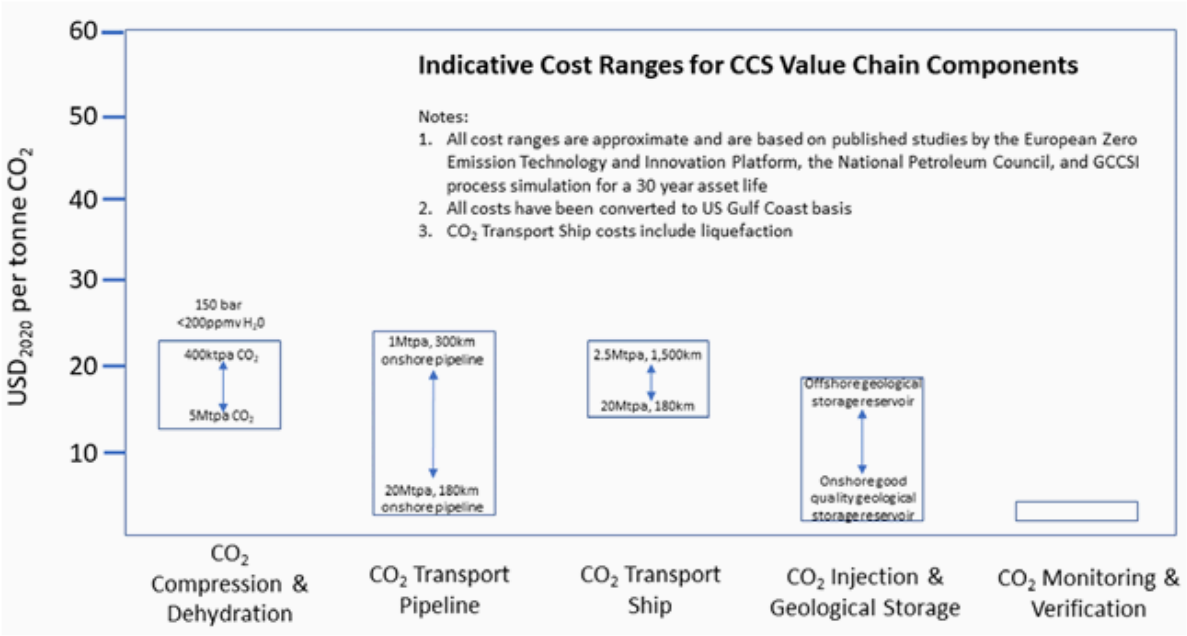

Figure 9:Estimated costs to transport and store captures CCS[26]

While CETA removes any direct link between coal operation costs and Washington customer rates, uneconomic selection of CCS will likely have indirect effects that increase costs to Washington customers. First, the selection of CCS likely increases reliance on Jim Bridger and displaces investment in system-wide clean resources. A share of those missing renewable investments would otherwise have gone to Washington, displacing the need to invest in resources solely for WA customers. Second, PacifiCorp expects CCS to earn 45Q tax credits, which could mean that CCS is the last resource to get curtailed in times of excess, which further impacts the economics on renewables on the system. We ask that PacifiCorp incorporate storage and transportation costs into their modeling of CCS, and provide more transparency on how they plan to store or utilize the captured carbon. We also ask that PacifiCorp clarify how its modeling accounts for long-term operational risks and cost uncertainties associated with CCS retrofits.

Finally, PacifiCorp assumes that they can build peaking resources that use biodiesel or renewable diesel fuel[27]. However, these fuel sources are not necessarily readily available at the locations in which PacifiCorp may choose to build such a resource, and therefore the true costs of supplying the assumed fuel source are likely missed in PacifiCorp's modeling. According to the Energy Information Administration ("EIA"), among all states that PacifiCorp operates in

[26]From Kearns, 2021. *Technology Readiness and Costs of CCS*. Global CCS Institute. CCE-CCS-Technology-Readiness-and-Costs-22-1.pdf
[27] Pacificorp 2025 Draft IRP, pp. 186, 188

there is only one biofuel production plant located in Washington.[28] We ask that PacifiCorp clarify whether their non-emitting peaker is assumed to be located in close proximity to a biodiesel production facility and, if not, how they plan to incorporate the costs of transporting the biodiesel from the production facility to the peaking plant.

Portfolio Selection Process Exposes Customers to Economic, Emission, and Compliance Risks

RNW is concerned that the preferred portfolio does not consistently rank well against PacifiCorp's portfolio scoring metrics – present value revenue requirement (PVRR) and CO2 emissions – under the company's five price-policy scenarios. Tables 9.30-9.33[29] show that the "Integrated Base MN" case is only least-cost under the Medium Gas / Zero CO2 scenario, and is often among the worst in CO2 emissions. This demonstrates that the selected portfolio is particularly sensitive to fuel costs and CO2 emission regulation. Further, PacifiCorp states that "the only variant cases which would be compliant under the current language in EPA 111(d) are the MR case and the No Coal Post 2032 case."[30] PacifiCorp confirmed that the company is not modeling compliance with current federal law in a recent New York Times article, stating that the regulations are "not modeled as a formal requirement."[31] Meanwhile, the case that complies with existing federal regulations (MR case) performs well across price-policy scenarios, consistently ranking among the top portfolios on cost and risk. RNW believes that this calls into question the objectivity of the selection process.

Lack of Transparency in Retirement and Transmission Decisions

PacifiCorp's portfolio modeling approach should be scrutinized for potentially overlooking lower-cost resource combinations due to its apparent constraint settings. The company's approach to coal unit retirements appears inconsistent, as all minority-owned coal units retire by 2030, but the majority of PacifiCorp's majority-owned coal capacity remains online or converts to gas. RNW seeks clarification on why majority-owned units were not made available for retirement in modeling. In addition, RNW is concerned about the removal of the Boardman-to-Hemingway ("B2H") transmission project from the preferred portfolio. This removal is a major departure from past IRP cycles, and PacifiCorp has failed to provide clarity on critical components of this decision. RNW requests that PacifiCorp provide clarity on the rationale and anticipated impacts of this decision. Is PacifiCorp's decision driven by changed

[28] EIA, 2024. U.S. Biodiesel Plant Production Capacity
[29] Pacificorp 2025 Draft IRP, pp. 247-249
[30] Pacificorp 2025 Draft IRP, p. 249
[31] Gaffney, Austyn and Rojanasakul, Mira. "Where Coal Is Retiring, and Hanging On, in the U.S." *The New York Times.* Feb. 6, 2025. https://www.nytimes.com/interactive/2025/02/06/climate/coal-plants-retirement.html

load growth assumptions or external factors such as other entity's continued participation? What is the impact of B2H's exclusion on overall system reliability and renewable integration? Will PacifiCorp continue to financially contribute to the project despite its non-selection in the preferred portfolio?

Economic and Compliance Risks with Market Purchase Reliance

While PacifiCorp no longer relies on market purchases to meet its reliability needs at key hours, its modeling still fails to adequately account for market purchase risks. PacifiCorp eliminates reliance on market purchases for reliability needs by restricting market purchases during the top 5 gross load days in its model. As a result, the model selects sufficient resources for those five days, but can still rely on unlimited market purchases during other hours. In addition, market purchases provide noteworthy energy to the portfolio, up to about 10% on an annual basis[32]. RNW has found that PacifiCorp can be exposed to up to 3,500 MW of market purchases in certain hours.[33]

Given the increasing uncertainty around Western market liquidity and inter-hour variability, PacifiCorp should conduct a sensitivity analysis in the final IRP that models tighter market conditions for energy procurement. Increased market dependence heightens economic risk in two ways: greater exposure to fuel price volatility and increased reliance on a WECC market with accelerating thermal retirements. Furthermore, reliability risk is increasingly being driven by net peak rather than gross peak. As electrification and renewable penetration grow, peak risk distribution will spread across more days and hours, further complicating identifying high risk days in both PacifiCorp portfolios as well as others throughout the WECC region. Given the greater uncertainty, PacifiCorp's ability to accurately capture all the days with heightened reliability risk is reduced.

PacifiCorp's reliance on market purchases raises concerns about compliance with Washington's CETA. It is currently not clear to what extent market purchases are included in the CETA portfolio. RNW seeks clarification on the role of market purchases in CETA compliance. Does PacifiCorp assume that planned and existing resources owned or contracted by the company are sufficient for CETA compliance? Has PacifiCorp performed a sensitivity analysis on the performance of these resources relative to Washington load to identify the hours of greatest market purchase risk? Without answers to these questions, it is difficult to assess whether PacifiCorp's preferred portfolio can reasonably ensure CETA compliance.

[32] From public workbook "(P)_ST Cost Summary -25I.LP.ST.r21.Base.EP.2409MN.Integrated.106955 (LT. 106955 - 106957) v78.3.xlsb"
[33] January 22-23, 2025 Public Input Meeting, Slide 85.

VI. Conclusion

RNW appreciates the opportunity to provide feedback on PacifiCorp's Draft 2025 IRP for the Washington Commission. As a significant electricity supplier for Washington state, PacifiCorp carries consequential responsibilities towards fulfilling Washington state's climate and clean energy goals, and much of the planning and execution for that responsibility lies within this central planning framework - the IRP. As perhaps the last major opportunity to identify needs for 2030 compliance within the IRP context, PacifiCorp must move with thoughtful urgency toward soliciting, executing, and bringing online clean energy and storage resources.

RNW reiterates its concerns and recommendations here:

- **Washington Climate Policy:** PacifiCorp's Draft IRP does not provide a clearly articulated process or pathway toward achieving compliance with adopted CETA targets, which do not appear to be clearly integrated into its modeling framework.
- **Procurement Plans:** PacifiCorp's Draft IRP provides very limited information regarding its forward-looking procurement plans, and has demonstrated minimal procurement progress since the 2023 IRP given its canceled 2022 Request for Proposals ("RFP").
- **State Allocation:** PacifiCorp's Draft IRP presents a new, problematic framework for resource allocation which does not appear well-suited to fairly and reasonably allocating resources in alignment with state policy needs or developing least-cost portfolios for state customers.
- **Modeling Setup:** PacifiCorp's Draft IRP maintains legacy issues with their PLEXOS LT modeling setup which limit the model's ability to solve efficiently or effectively, limiting confidence in the asserted least-cost outcomes of the IRP modeling process.
- **Candidate Resources:** PacifiCorp's Draft IRP continues the problematic practice of making opaque adjustments to forward-looking resource cost assumptions, which impact the resource buildout and inform future resource decisions. These adjustments appear to support continued investments in utility-owned generation, primarily carbon capture for coal resources, which are likely to both inform an RFP and be excluded from the competitive review which would be considered in all-source RFP for non-utility resources.

While RNW is discouraged with the declining ambition presented in the 2023 IRP Update and expected in the 2025 IRP, RNW appreciates the continued efforts toward strong oversight and action from the Commission in this and other proceedings, and appreciates the opportunity to bring these recommendations forward.

Respectfully submitted this 3rd day of March, 2025,

/s/ Mike Goetz
/s/ Katie Chamberlain

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