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Jeff Killip
Executive Director and Secretary
Washington Utilities and Transportation Commission
621 Woodland Square Loop SE
Lacey, WA 98503

Re: ***PacifiCorp d/b/a Pacific Power and Light Company Draft 2025 Integrated Resource Plan*, Docket UE-230812**

Dear Director Killip:

The Sierra Club respectfully submits these comments in response to the January 10, 2025, Notice of Opportunity to File Written Comments regarding PacifiCorp d/b/a/ Pacific Power and Light Company's ("PacifiCorp" or "Company") Draft 2025 Integrated Resource Plan ("IRP"). PacifiCorp filed its Draft 2025 IRP on December 31, 2025 and a Final 2025 IRP is expected by April 1, 2025.

As the Washington Utilities and Transportation Commission ("Commission") is aware, PacifiCorp's IRPs establish the analytical framework for the Company's Clean Energy Implementation Plans ("CEIPs"). Accordingly, the IRP is critical to PacifiCorp's ability to comply with Washington laws, including the Clean Energy Transformation Act ("CETA"). Additionally, assumptions and inputs in the IRP used for non-Washington states directly impact Washington's resource mix and costs. The rate at which PacifiCorp transitions away from its coal and gas fleet across its system influences the costs of transitioning away from coal and gas resources for Washington customers. Specifically, if PacifiCorp's resource plan assumes that it will rely on coal and gas for many decades into the future—as the Draft 2025 IRP does—then Washington ratepayers will have to pay for Washington-specific resources to comply with CETA. On the other hand, if PacifiCorp's resource plan assumes a faster transition to clean energy, then many of the new resource costs can be shared across Washington and PacifiCorp's other states.

Accordingly, these comments highlight concerns that Sierra Club has regarding PacifiCorp's Draft 2025 IRP, some of which are specific to Washington and others that are relevant to all of PacifiCorp's states but affect Washington as well.

Sierra Club shared these concerns with PacifiCorp via written feedback submitted to PacifiCorp in January and February. Given that the Final 2025 IRP has not yet been filed as of the date of these comments, we do not know whether PacifiCorp will make changes to the Draft IRP to address any of the issues we identify below. We reiterate our comments to PacifiCorp here in order to assist the Commission in evaluating PacifiCorp's Final 2025 IRP.

Selection of the Preferred Portfolio

We are concerned that the Draft 2025 IRP does not adequately explain the bases for PacifiCorp's selection of its preferred portfolio. In the Draft IRP, PacifiCorp selects the MN portfolio as the preferred portfolio. However, the Integrated Base MR portfolio has nearly the same costs as the preferred portfolio, but significantly lower carbon dioxide ("CO_2") emissions. Given its much lower CO_2 emissions, the Integrated Base MR portfolio better protects against the risk of future state and federal CO_2 regulations than PacifiCorp's preferred portfolio. In addition, because the Integrated Base MR portfolio would have lower emissions of other pollutants (e.g., sulfur dioxide ("SO_2"), nitrogen oxides ("NO_x"), etc.) than PacifiCorp's preferred portfolio, the Integrated Base MR portfolio better protects against the risk of future federal regulations imposing stricter limits on conventional pollutants such as SO_2 and NO_x. Thus, when both cost and risk are considered, the Integrated Base MR portfolio appears to be the least-cost, least-risk portfolio.

We recommend that the Commission scrutinize whether the Final 2025 IRP provides an adequate explanation of the reasons PacifiCorp selects its preferred portfolio. If PacifiCorp does not select the Integrated Base MR portfolio as the preferred portfolio, the Commission should evaluate whether PacifiCorp has provided reasonable grounds for rejecting the Integrated Base MR portfolio.

Use of Natrium to Comply with Washington and Oregon Clean Energy Requirements

The Draft 2025 IRP assumes that PacifiCorp's system adds 500 megawatts ("MW") of new nuclear capacity by the end of 2030 from the Natrium reactor demonstration project ("Natrium") in Wyoming, which we understand PacifiCorp is pushing back to 2032 for the Final 2025 IRP. The Draft IRP assumes that the energy and capacity from, and the costs of, Natrium are allocated across all of PacifiCorp's states, including Washington. Furthermore, based on the Draft IRP and discussions during stakeholder meetings, it is our understanding that the Draft IRP

assumes that carbon-free energy produced by Natrium is a significant portion of the carbon-free energy needed to comply with Washington's CETA and with Oregon's House Bill 2021.

We would be extremely concerned if PacifiCorp is assuming that it can meet its compliance obligations under CETA by relying on carbon-free generation from Natrium. To begin, it is highly doubtful that Natrium can come online by the end of 2032. Construction of the nuclear components of the projects has not even begun, in part because the project does not yet have necessary regulatory approvals from the Nuclear Regulatory Commission. Moreover, even traditional nuclear power plants have a long history of taking much longer to construct than anticipated—and this is a first-of-its-kind advanced reactor project. There is simply no evidence supporting the assumption in the Draft IRP that Natrium can come online by the end of 2032.

Setting aside the unrealistic assumption about when Natrium might come online, the Draft IRP provides no evidence that Natrium is an economic resource that should be selected in the first place. PacifiCorp has stated during stakeholder meetings that it does not know what the cost of power from Natrium would be, because negotiations between PacifiCorp and TerraPower are ongoing. Given that PacifiCorp has no idea what Natrium will cost PacifiCorp's customers, PacifiCorp cannot say that Natrium is an economic resource relative to other potential resources. Instead, the Draft IRP contains Natrium because PacifiCorp manually forced the model to select Natrium—not because the model selected Natrium economically on the basis of the actual costs PacifiCorp's customers would pay for Natrium.

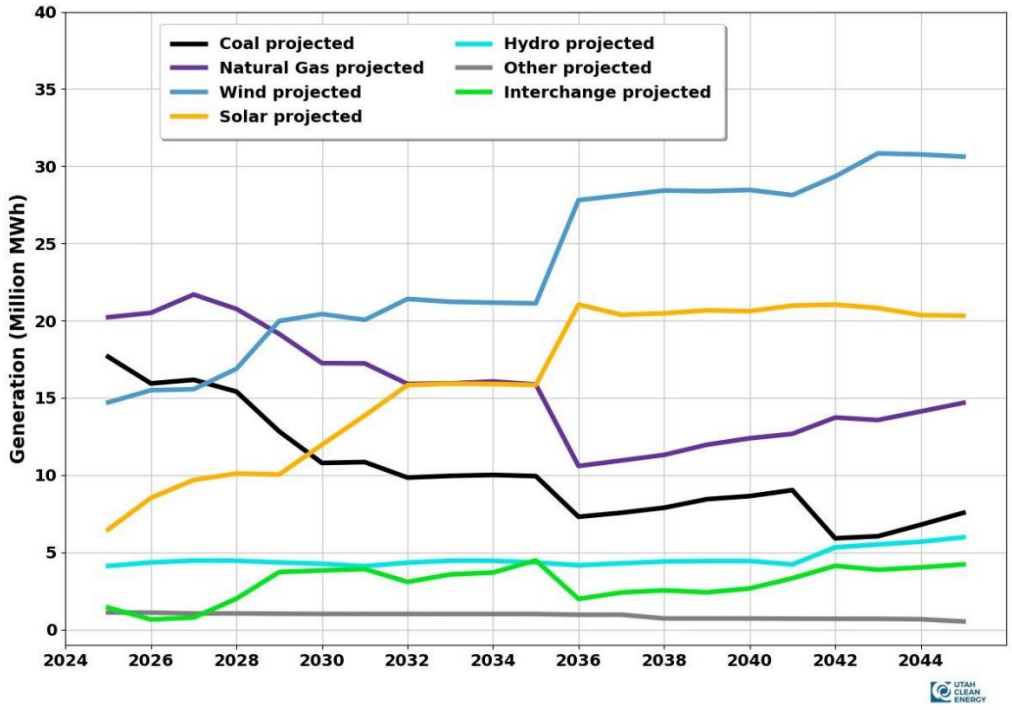
Given the high degree of uncertainty regarding the timing, feasibility, and cost of Natrium, we are concerned that the Draft IRP assumes that Washington will receive energy from Natrium starting in 2033, and that this energy is part of PacifiCorp's plan to comply with CETA in 2033 and beyond.

Modeling of the Production Tax Credit for Renewable Resources

During PacifiCorp's January 22-23 Public Input Meeting, stakeholders asked why the Draft 2025 IRP features a large increase in solar and wind resources in the year 2035 (see Figure 1 below). PacifiCorp explained that this is a result of how PacifiCorp set up the model to handle Production Tax Credits ("PTCs") for renewable resources, which are available to eligible resources for the first 10 years of their operating lives. Specifically, in both the capacity expansion and production cost modules, PacifiCorp splits renewable resources into two separate, 10-year resources: a 10-year resource that receives the PTC; and a subsequent 10-year resource that does not receive the PTC. In addition, the Draft IRP assumes that the production tax credit is available throughout the planning horizon, 2045. Combined, this incentivizes the model to select PTC eligible resources in the last 10 years of the planning horizon, because the model assumes that those resources have the PTC for the entirety of their lifespan (as the model does not see past 2045), whereas resources selected earlier in the planning horizon lose the PTC after 10 years.

We are not aware of any other electric utility in the country that models the PTC in this manner, which was confirmed through conversations with PacifiCorp. We are concerned that the novel way in which PacifiCorp has decided to model the PTC is leading the model to postpone selection of renewables until the final 10 years of the 20-year planning horizon. It is our understanding that in response to stakeholder feedback on this issue, PacifiCorp may change how it models the PTC in the Final IRP.

Figure 1: PacifiCorp Generation 2025 IRP Draft (12/31/2024)[1]



In evaluating the Final IRP, we recommend that the Commission pay close attention to both (1) the specific assumptions and modeling parameters by which PacifiCorp models the production tax credit and (2) the impact that these assumptions have on when the model selects wind and solar resources. The Commission should scrutinize whether PacifiCorp's assumptions are causing the model to artificially delay acquisition of new renewable resources. As noted above, a delay in new renewable resources even for states other than Washington will result in higher CETA compliance costs as Washington will only be able to share in the cost of a smaller portion of new clean resources across PacifiCorp's states. If the Commission concludes that renewable resource acquisitions are being artificially delayed, the Commission should consider instructing PacifiCorp to rerun its modeling using PTC assumptions that are more standard across the electricity utility industry. One option would be levelizing the PTC across the lifespan of eligible resources, which would reduce the likelihood that the model would postpone selection of clean resources until the last 10 years of the planning horizon.

[1] Figure 1 was produced by Logan Mitchell, PhD, Climate Scientist and Energy Analyst for Utah Clean Energy.

Modeling of Coal Unit Retirements

In the Draft 2025 IRP, the only portfolio that forces the model to cease burning coal at coal units is the "No Coal" scenario, in which all existing coal units must stop burning coal by 2030. Because this scenario requires all existing coal units to cease burning coal, it is impossible to glean information on the economics of ceasing to burn coal at any particular unit. Therefore, this scenario does not provide useful information on the economics of individual coal units.

As mentioned previously, even if the costs of coal units will not be directly allocated to Washington, the operation of PacifiCorp's coal units still has a significant cost impact on Washington customers. If coal units were replaced with lower-emitting resources, those system-wide clean resources could be used to comply with CETA. Conversely, all else equal, PacifiCorp's continued operation of coal units decreases the amount of system-wide clean energy PacifiCorp brings online, which means that the cost to Washington customers for CETA compliance will increase.

In our comments to PacifiCorp on the Draft 2025 IRP, we recommended that PacifiCorp present modeling of portfolios in which individual coal units, and combinations of coal units, are forced to cease burning coal by 2030. Specifically, we recommended that the Final IRP include the results from modeling the following portfolios:

- A portfolio that forces Hunter to cease burning coal by 2030;
- A portfolio that forces Jim Bridger to cease burning coal by 2030; and
- A portfolio that forces Huntington to cease burning coal by 2030.

If the Final IRP does not contain the portfolios described in the bullet points above, we recommend that the Commission instruct PacifiCorp to run those portfolios and present the results to the Commission.

Modeling of CCS on Jim Bridger Units 3-4

The Draft 2025 IRP assumes that carbon capture and sequestration ("CCS") is installed on the coal-fired Jim Bridger Units 3 & 4 and that CCS comes online in 2030. While our understanding is that the Draft IRP does not propose to allocate energy or costs from CCS to Washington, the assumed availability of CCS still has a significant impact on Washington customers. As mentioned previously, all else equal, continued operation of coal units displaces lower-emitting resources, thereby decreasing the amount of clean energy generation that is available to comply with CETA and raising the cost to Washington customers of CETA compliance.

We have several concerns with the modeling of CCS at Jim Bridger Units 3 & 4, including the modeling conducted for the "No CCS" scenario. Similar to PacifiCorp's unrealistic assumption that Natrium can come online by 2030, PacifiCorp's assumption that CCS can come online by the year 2030 is unrealistic. As far as we are aware, PacifiCorp has not commenced any permitting, design, or construction work for CCS at Jim Bridger. Thus, the entire CCS project, from permitting and design work through construction and testing, would need to take 5 years or less to come online by 2030. We are not aware of any CCS project on a coal unit that has been installed in this short time frame. Moreover, other utilities have estimated it would take at least double this amount of time—at least 10 years—to design, permit, and construct CCS on a coal unit. For these reasons, we recommended to PacifiCorp that it rerun all portfolios by making CCS available for selection in PLEXOS no earlier than 2035.

Given PacifiCorp's unrealistic assumption as to when CCS can come online, we are concerned that PacifiCorp has used similarly unrealistic assumptions about other aspects of CCS. We are concerned about the accuracy of the assumptions PacifiCorp used for CCS for capital and operation and maintenance ("O&M") costs; the CCS capture rate (i.e., what percent of CO_2 produced by the coal boilers is captured by the CCS equipment); and the cost to transport and/or store the captured CO_2. We have not yet seen PacifiCorp's assumptions as to these elements of CCS, and thus at this stage it is impossible for us to meaningfully review the assumptions PacifiCorp used in modeling CCS. We are concerned that the modeling in the Draft 2025 IRP underestimates the cost to install and operate CCS at Jim Bridger Units 3 & 4.

If the Final IRP continues to assume that CCS at Jim Bridge 3 & 4 comes online in 2030, we recommend that the Commission instruct PacifiCorp to rerun all portfolios by making CCS available for selection in PLEXOS no earlier than 2035, and that PacifiCorp disclose all cost and operational assumptions it used for CCS in the IRP modeling.

Accounting for the Risk of Future State and Federal Carbon Regulations

In our comments to PacifiCorp on the Draft 2025 IRP, we suggested that PacifiCorp provide further clarity on each of the price-policy scenarios, including the specific CO_2 prices and/or other constraints assumed under each of the scenarios. For instance, the Draft 2025 IRP does not explain what assumptions or constraints were used in the "MR" price-policy scenario, except to say that only the MR scenario would be compliant with the U.S. Environmental Protection Agency's ("EPA") 111(d) regulation and that it includes "current EPA regulations." The draft does not include a list of "current EPA regulations" or state what constraints were included in the MR scenario in order to comply with the 111(d) regulation. Moreover, since the 111(d) regulation is not a carbon tax, it is unclear whether MR also included an assumed carbon price or whether zero carbon price was used under this scenario. Additionally, although PacifiCorp representatives stated in public input meetings (e.g., a public input meeting held for the Washington Clean Energy Implementation Plan on October 29, 2024) that "MN" is not "no

CO_2," it is unclear whether any carbon price was included in the MN scenario, particularly because "MN" is described as "medium gas/zero CO_2." Draft 2025 IRP at 175. Figure 8.4 appears to indicate that no CO_2 was assumed under MR or MN, but again it is not clear. This information should be included in narrative form, not buried in spreadsheets, and an explanation of each portfolio at the January meetings would greatly help stakeholders in their review of the Draft IRP.

For several IRP cycles, PacifiCorp has used an assumed CO_2 price not to represent an anticipated carbon tax but to represent the risk of future environmental regulations impacting fossil fuel generation. PacifiCorp should continue that practice in the 2025 IRP. As a 20-year document, failing to account for the risk of future environmental regulations places significant risk on customers that the chosen resource strategy will not comply with future regulations and require rapid and expensive transitions to cleaner technologies that could have been achieved over a longer time frame. Lack of CO_2 pricing further ignores the external costs of continuing to burn fossil fuels. While PacifiCorp has explained it will use the social cost of greenhouse gas ("SCGHG') for Washington's portion of the portfolio, as required by statute, the resource decisions being made for other PacifiCorp states should include some CO_2 pricing, for the reasons stated here.

Assumptions for the Price of Coal

The Draft 2025 IRP indicates on page 192 that, in response to stakeholder feedback, the high gas and market price-policy scenario includes an elevated coal fuel supply cost. However, the draft does not include a chart, similar to Figure 8.5, depicting the differences between the "base" coal forecast and the "elevated" coal forecast. Moreover, we assume that coal pricing is dependent upon the coal plant, as coal supply from the Powder River Basin, for instance, is generally much less expensive than other coal supplies. PacifiCorp should explain, in narrative form, what coal pricing was assumed for each plant. To the extent that this information is considered confidential, we recommended to PacifiCorp that the Final 2025 IRP indicate where this information can be found in PacifiCorp's workpapers and could still provide a general narrative explanation of the differences between the base and elevated forecasts (e.g., "the elevated forecast is approximately 25% higher than the base forecast for the Jim Bridger plant").

Dated this 3rd day of March 2025.

Respectfully submitted,

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