

**BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON**

Docket No. LC 77

In the Matter of ·  
PACIFICORP, dba PACIFIC POWER,  
2021 Integrated Resource Plan.

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Opening Comments of  
NW Energy Coalition

The NW Energy Coalition (NVEC) provides the following comments on the 2021 Integrated Resource Plan (IRP) filed by PacifiCorp.

NVEC's initial view of the IRP has three aspects: the stakeholder review process, the general substance of the filing, and several anomalous components that create significant procedural questions.

First, the stakeholder review process prior to the IRP filing was erratic and unsatisfactory. Some parts of the process worked as anticipated, for example, review of resource cost inputs and some aspects of the technical analysis. However, the process overall was severely hampered by the inability to review the modeling results until the very end of the time allotted, despite a five month extension in the filing date.

We understand that a major change in modeling creates process and schedule risk – points we discussed with the Company very early in the process. But the difficulties extended beyond simple delays. While not recounting the details here, the multiple instances of postponement, cancellation and rescheduling, some within only hours of scheduled workshops, substantially decreased effective interaction. By the time modeling results started becoming available, there was almost no time to review and gain more clarity in the workshop process. Additionally, the Company did not file a Draft IRP.

Furthermore, the modeling could not be completed in full before the final IRP filing was made. Several sensitivity runs were not finished; the Company states it will submit seven of them, shown in Table 9.20, in a supplemental filing. IRP at 317.

The consequence is that Staff and stakeholders did not have sufficient time nor a complete preparatory set of materials to review and provide informal comment on prior to the IRP filing. As a result, the IRP review now depends more heavily on data requests and review during the formal process of this docket. This decreases the ability to delve into many aspects of the new

analysis, particularly with a new modeling platform in place, and exposes uncertainties about the robustness of the modeling in the associated RFP process.

The five-month delay in IRP filing also has increased the schedule clash between the IRP and RFP cycles. On September 2, the day after the IRP was submitted, PacifiCorp filed for a new 2022 All Source RFP, now being reviewed in Docket No. UM 2193. Thereafter, Staff stated:

UM 2193 will also be the third consecutive RFP the Company has launched prior to receiving acknowledgement of and concurrent to an open IRP . . . The pressures and complications from running these two types of dockets concurrently are manifest in past orders, reports, and comments in both UM 1845 and UM 2059. For example, in the UM 1845 Order No. 18-178, Commissioners noted that the IRP running concurrently with the RFP resulted in surprises that were not easy to deal with in the RFP docket.

Redacted Staff Report, October 11, 2021, adopted in Order No. 21-351, App. A, at 9.

Turning to the substance of the IRP, NWEC finds a combination of fairly satisfactory results, a continued lack of ambition in some respects, and some very surprising and perplexing new developments.

The new Plexos modeling platform, which caused the Company so much trouble and both postponed and compressed the pre-filing review process, does appear to have significant benefits compared to the prior approach.

These include improvements in modeling resource flexibility and look-ahead for system dispatch, particularly for storage and similar resources; co-assessment of new generation and related transmission options; and reserve optimization. NWEC also specifically notes the new approach to modeling inputs for both the energy and capacity value of energy efficiency resources as an important advance.

## **Coal Retirement**

Concerning coal retirement, we believe the Company is making modest progress but more is needed. We recognize the substantial effort required to accelerate coal retirement and to establish a robust and reliable clean energy replacement mix, but for economic, environmental and climate protection reasons, we believe that a more ambitious effort is necessary.

Compared to the 2019 IRP, earlier coal retirements are now planned as follow:

Unit	PacifiCorp Capacity	Retirement (2019 and 2021 IRPs)
Jim Bridger unit 2	359 MW	from 2028 to 2023 (conversion to gas)
Colstrip unit 3	74 MW	from 2027 to 2025
Colstrip unit 4	74 MW	from 2027 to 2025
Hayden unit 1	44 MW	from 2030 to 2028
Hayden unit 2	33 MW	from 2030 to 2027

However, in contrast, Craig unit 2 retirement (79 MW) is being extended from 2026 to 2028. IRP p. 299 and Table 6-2.

In addition, the conversion of Jim Bridger units 1 and 2 to gas peaking resources until 2037 raises some concerns we will address in subsequent comments.

### **Preferred Portfolio**

The Preferred Portfolio contains some positive features as well as raising some important questions.

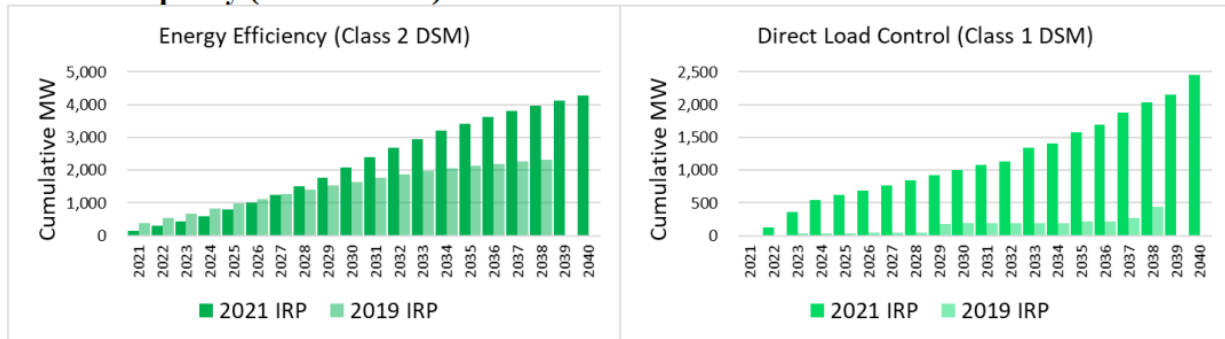
The energy efficiency (Class 2 DSM) effort continues to progress, and as shown in Figure 9.37, indicates a substantial upswing continuing after the mid-2020s, in comparison to previous IRPs where energy efficiency tended to decline year-over-year after that point.

The rapid uptake of demand response, also called direct load control (Class 1 DSM) to distinguish that from rate-design induced demand response (Class 3 DSM, price response and load shifting), is a major new development, after many years of low ambition and long lead times. The Preferred Portfolio anticipates 549 MW of new DR by 2024 – a level achieved only in the late 2030s in the 2019 IRP.

We applaud this recognition at last of DR potential, while noting that achieving this ambitious early target will require considerable effort by the Company and effective coordination with customers and suppliers. The anticipated value of DR for balancing and reliability in a cost-

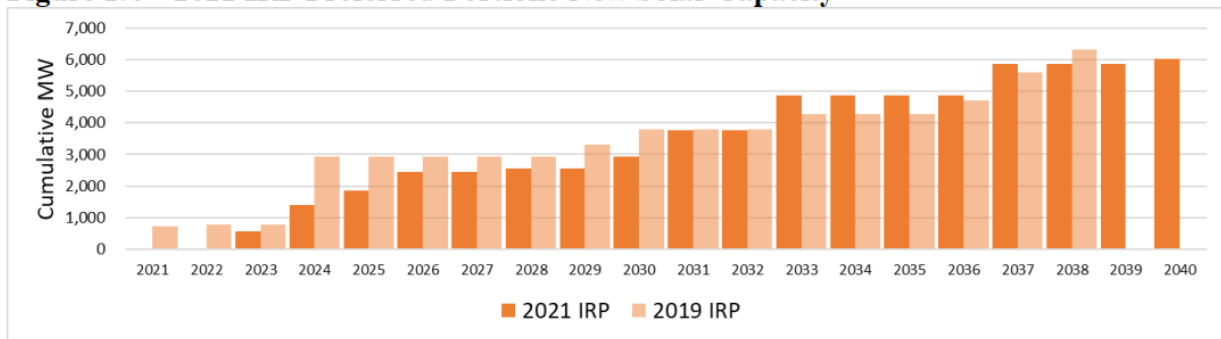
effective manner is substantial for a system increasingly relying on variable renewable resources and facing extreme weather and other climate-change driven challenges.

**Figure 9.37 – 2021 IRP Preferred Portfolio Energy Efficiency (Class 2 DSM) and Direct Load Control Capacity (Class 1 DSM)**

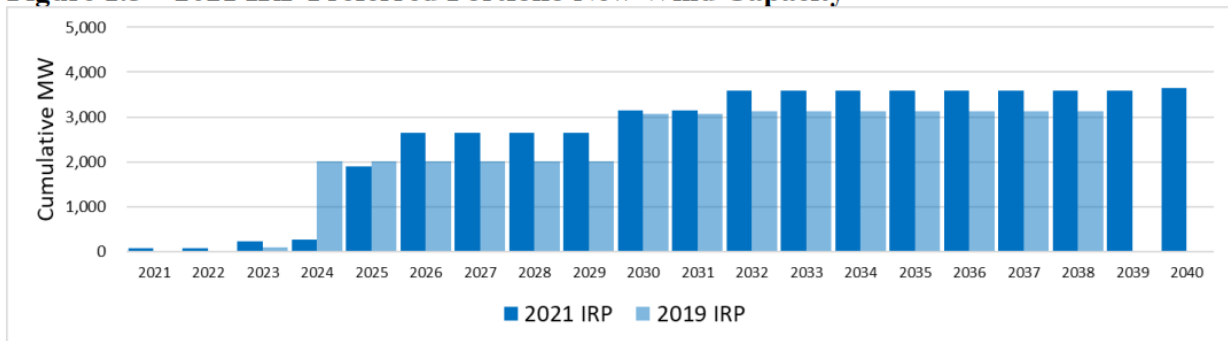


NWEC is also heartened by the continued expansion of renewable and storage resources in the 2021 IRP, as shown in Figures 1.4, 1.5 and 1.6.

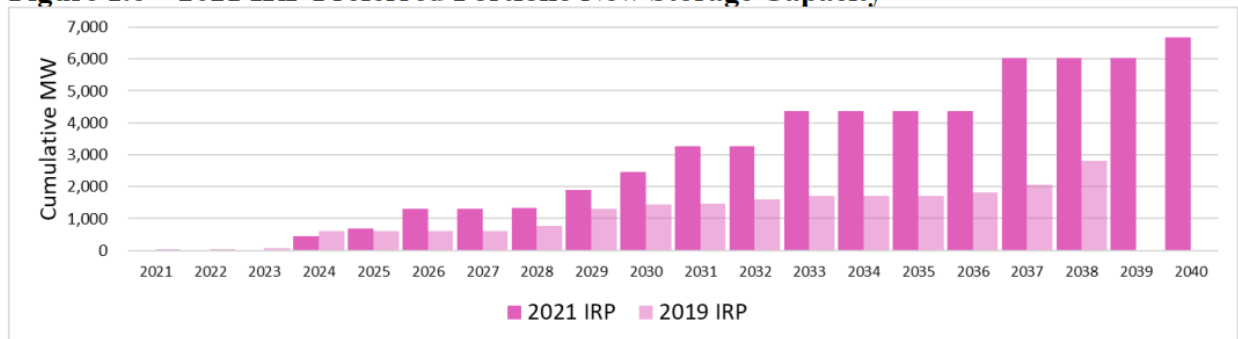
**Figure 1.4 – 2021 IRP Preferred Portfolio New Solar Capacity\***



**Figure 1.5 – 2021 IRP Preferred Portfolio New Wind Capacity\***



**Figure 1.6 – 2021 IRP Preferred Portfolio New Storage Capacity\***



The results of the 2020 All Source RFP clearly show that acquiring wind, solar and battery resources at scale is both feasible and cost-effective. It is notable that in response to the RFP's call for about 4,000 MW of new resources, around 40,000 MW of bids were received. This gives confidence that further acquisition rounds will continue to be successful and accelerate decarbonization of the PacifiCorp system.

An additional important development is the rapid emergence of solar-battery hybrid facilities. The Company's modeling is clearly capturing the flexibility value of these resources, and there is strong alignment with the 2020AS RFP result where most of the solar bids and Final Short List selections were paired with storage. The market is clearly signaling very strong interest in providing these more complete clean energy composite resources.

### **Irregularities**

**Natural Gas.** The IRP arbitrarily excludes new natural gas plants from consideration for the Initial Portfolios or the Preferred Portfolio:

There are considerable stranded-cost risks associated with planning a system that is reliant on new natural gas resources with depreciable lives ranging between 30 to 40 years (i.e., a new gas-fired resource placed in service in 2030 would be depreciated as late as 2070). Further, when considering current state policies, it is not feasible to assume new natural gas resources can obtain the permits needed to site and operate such a facility in many parts of PacifiCorp's service territory. Finally, PacifiCorp has observed that there is very limited development activity for new natural gas facilities. This was most recently evident in the 2020AS RFP, which did not result in a single bid for new natural gas resources. Therefore, new natural gas proxy resources were not made available for selection in any of Initial Portfolios.

IRP at 244.

To be sure, NWEC does not support new gas plants for many of the reasons mentioned above as well as others. However, the IRP Guidelines of this Commission require their consideration:

**Guideline 1: Substantive Requirements**

a. All resources must be evaluated on a consistent and comparable basis.

- All known resources for meeting the utility's load should be considered, including supply-side options which focus on the generation, purchase and transmission of power – or gas purchases, transportation, and storage – and demand side options which focus on conservation and demand response.

Order No. 07-002 at 28, emphasis added.

Indeed, the 2021 IRP contains extensive review of natural gas resources attributes, including the very detailed cost analysis in Table 7.1 derived from the report provided by Burns & McDonnell, as well as extended discussion on pp. 202-203 and other places in the IRP.

It stretches credulity to say that extensive profiling of new natural gas resources but categorical exclusion from modeling for inclusion in the scenario assessment and potentially the Preferred Portfolio qualifies as “consideration” under the IRP Guidelines.

**Pumped Storage.** The IRP Preferred Portfolio contains a generic 500 MW pumped storage resource in 2040, the very last year of study. However, the IRP takes no note of PacifiCorp's active pursuit of no less than 11 pumped storage projects ranging across five states, including one 300 MW project, nine 500 MW and one 1800 MW, for a total of 6600 MW. Stakeholders learned of this development only through the media.<sup>1</sup> Filings at the Federal Energy Regulatory Commission occurred in October 2021 and were clearly contemplated while the IRP was being prepared.<sup>2</sup>

**Sodium Nuclear Demonstration Project.** The IRP contains a proposed 345 MW sodium-moderated nuclear generation project with 150 MW of thermal (molten salt) storage for peaking with an operational date of 2028.

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<sup>1</sup> Clearing Up, “PacifiCorp Mulls Developing 6,600 MW of Pumped Storage Projects,” Nov 16, 2021, [https://www.newsdata.com/water\\_power\\_west/hydro\\_licensing/pacificorp-mulls-developing-6-600-mw-of-pumped-storage-projects/article\\_17fa1a78-46b3-11ec-81e8-23f364326c54.html](https://www.newsdata.com/water_power_west/hydro_licensing/pacificorp-mulls-developing-6-600-mw-of-pumped-storage-projects/article_17fa1a78-46b3-11ec-81e8-23f364326c54.html)

<sup>2</sup> See for example, PacifiCorp, Saddle Mountains Pumped Storage Project, Application for Preliminary Permit, October 13, 2021, Federal Energy Regulatory Commission Docket P-15245. The application anticipates \$3.15 million for studies to be conducted through 2025.

The Natrium design is novel and yet the proposed project is included in the Preferred Portfolio of least-cost and least-risk resources. While PacifiCorp has positioned this proposal in carefully worded statements in the IRP and the media, the following facts are pertinent:

- The Natrium nuclear plant design has not received design certification approval from the Nuclear Regulatory Commission. In fact, no filing has yet been submitted; the project is currently in pre-application review.<sup>3</sup> As a result, the project has also not been submitted to the NRC for a construction permit and operating license.
- The project developer, Terrapower, has no demonstrated experience in construction and commissioning of its design, nor has it developed a small-scale operational test facility.
- There are no alternative suppliers for the specific type of nuclear reactor being proposed.
- There is no sufficient assured fuel supply of the high-assay, low-enriched uranium (HALEU) fuel required by the Natrium design.<sup>4</sup>
- There is no plan in place for safe containment of spent fuel, arrangements for a financial mechanism for decommissioning and other necessary steps for the Natrium proposed project, nor is there a licensed long term repository in the United States for high level radioactive nuclear power plant waste.
- PacifiCorp states it will be the plant operator, but has no previous experience operating nuclear power plants.
- The IRP states: “At this time, the specific cost and performance assumptions for the Natrium™ advanced nuclear demonstration project are confidential and are not summarized in the SSR.” IRP at 206.
- The IRP contains no discussion or assessment whatsoever of potential project delay, cost overrun, performance and dry hole risks.

PacifiCorp has indicated that the Natrium proposed project is included in the Preferred Portfolio because it is cost-effective. This appears to mean that any costs above that level for development, operation and decommissioning of this first-of-its-kind demonstration project

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<sup>3</sup> <https://www.nrc.gov/reactors/new-reactors/advanced/ongoing-licensing-activities/pre-application-activities/natrium.html>

<sup>4</sup> Edwin Lyman, "Advanced" Isn't Always Better: Assessing the Safety, Security, and Environmental Impacts of Non-Light-Water Nuclear Reactors, p. 21, Cambridge, MA: Union of Concerned Scientists, 2021, <https://doi.org/10.47923/2021.14000>

will be completely covered by the United States government. Indeed, some development funding has been provided and more has been promised, but there is no assurance of complete coverage for excess cost.

The fact remains that there is no basis on which to make claims regarding cost or performance of the proposed Natrium project. The one scenario not including the Natrium Project, designated P02e-No Nuc, readily demonstrates that other options are available. IRP at 279.

A threshold question is whether the Natrium proposal qualifies as a “known resource” under the IRP Guidelines. The Commission’s commentary accompanying the Guidelines notes, “We do not want utilities to limit their consideration to currently available resources, but rather to include all those that are expected to become available. We prefer the IRP be inclusive of all such resources and allow the parties to debate in the planning process whether it is reasonable to rely on a new technology.” Order 07-002 at 4.

This then raises the question of what potential Commission acknowledgment could actually mean. The Company proposes five points in Action Item 2c. The points include not only additional study but, among other things, execution of binding agreements, training of operators and submission of a waiver request to this Commission “to explicitly acknowledge an alternative acquisition method consistent with OAR 860-089-0100(3)(c).”

We will defer further discussion of these issues as well as other relevant factors to later comment, but NWEC currently takes the view that the Natrium project cannot be acknowledged as it now stands due to the lack of reasonableness of relying on this new technology given the risks it raises for customers, and it should therefore not be included in the Action Plan or the Preferred Portfolio.

This concludes NWEC’s comments.

Respectfully submitted,

/s/

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