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UTAH DEPARTMENT OF COMMERCE

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Comments

To: Public Service Commission of Utah

From: Utah Division of Public Utilities
Chris Parker, Director
Brenda Salter, Assistant Director
Doug Wheelwright, Utility Technical Consultant Supervisor
David Williams, Utility Technical Consultant

Date: September 26, 2025

Re: **Docket No. 25-035-22,** PacifiCorp's 2025 Integrated Resource Plan

Recommendation (Acknowledge with Recommendation)

The Division of Public Utilities (Division or DPU) recommends that the Public Service Commission (Commission) acknowledge PacifiCorp's (PacifiCorp or Company) 2025 Utah Integrated Resource Plan (2025 Utah IRP), with the following exceptions:

- The strategy of preparing two versions of the IRP (one for Utah and one for the rest of the system) should not be adopted. The Division believes this strategy is the result of the Company's overly technical reading of a Commission order. The Commission recommends that Chapters 11 through 13 of the version of the IRP filed only in Utah not be acknowledged.
- The Division recommends that the Commission instruct the Company to state whether it can meet the Commission-ordered deadlines for the 2027 IRP without creating two versions of the IRP.
- The Division recommends that the portion of the IRP preferred portfolio that contains the Natrium plant and the 100-hour iron air storage batteries not be acknowledged; these technologies do not have sufficient cost and performance data

available to be included in the preferred portfolio. They belong in a variant of the preferred portfolio.

- The Division recommends that the Commission instruct the Company to make the procedure for its final preferred portfolio selection more explicit for the 2027 IRP, with details given ahead of time.

The Division appreciates and commends the efforts of the Company to improve the public input process for the 2025 IRP cycle. The Company did a good job of providing presentation materials before public input meetings. However, the Company still appeared to run short of time; it did not get all of its desired inputs in place in time for the draft IRP, and it did not ask for an extension. This was one of the causes of the two versions of the IRP that were ultimately filed. The Division recommends that the Company strictly adhere to the Data Lockdown Date for the 2027 IRP.

Background

The Company's IRP is due on March 31 of each odd-numbered year. The Commission has issued orders in past IRP dockets that provide more details regarding the timing and procedure for IRPs. One past order provided IRP "Standards and Guidelines."[1] In the 2023 IRP docket (Docket No. 23-035-10), the Commission issued an order addressing the timing of data inputs and other milestones.[2] That order (the Sept. 2024 Order) stated:

> The PSC directs PacifiCorp to adhere to the schedule outlined in PacifiCorp's Notice, which contemplates distribution of modeling results on January 1, 2025. […]
> The IRP Process Order directed PacifiCorp to incorporate all model inputs into its model by September 1, 2024. Having reviewed PacifiCorp's Notice, the PSC finds PacifiCorp's explanation for being unable to comply with that deadline to be reasonable. Nevertheless, as discussed below, the PSC is committed to reforming the IRP planning process to preclude late breaking changes that frustrate stakeholders' efforts and involvement.
>
> Accordingly, for the 2025 IRP cycle, the PSC establishes January 1, 2025, as the Data Lockdown Date. That is, PacifiCorp shall not make changes to the

[1] *Analysis of an Integrated Resource Plan for PacifiCorp*, Docket No. 90-2035-01, Report and Order on Standards and Guidelines issued June 18, 1992 [hereafter "Guidelines"], available at: https://pscdocs.utah.gov/electric/90docs/90203501/121607RprtOrdrStndrdsGdlnes6-18-1992.pdf
[2] PacifiCorp's 2023 Integrated Resource Plan, Docket No. 23-035-10, Order (Sept. 24, 2024) (Sept. 2024 IRP Order).

> modeling assumptions used to produce the modeling results it intends to disclose on January 1, 2025, after disclosure of those modeling results. Any new or changing model inputs that cannot be incorporated into the modeling results disclosed January 1, 2025, must wait to be incorporated into PacifiCorp's 2025 IRP Update.[3]

The basis for this timeline was Guideline 3, which requires that "PacifiCorp must provide parties ample opportunity to review, analyze, and provide meaningful input at all stages of the IRP process" and "this must be done with adequate time for PacifiCorp to evaluate and, as appropriate, apply that input before filing any IRP, whether preliminary or final."[4]

The 2025 Draft IRP and Subsequent Changes/Refinements

The Company notified stakeholders on Dec. 31, 2024 via email that a draft 2025 IRP was posted on the Company's IRP website. The draft IRP was not filed in Docket No. 25-035-22, but rather in the 2023 IRP docket.[5] After filing the 2025 Draft IRP, the Company held a public input meeting (PIM) on Jan. 22-23, 2025. In the presentation for that meeting, the Company noted some errors and omissions that appeared in the 2025 Draft IRP. For example, one slide of the Jan. 22-23 PIM presentation noted that there were some Plexos inputs in the 2025 Draft IRP that were incorrect.[6] On another slide of the Jan. 22-23 PIM Presentation, the Company listed the following "Refinements for Final IRP":[7]

> Methodology
> - Process for addressing jurisdictional shortfalls such as a need for additional Western Resource Adequacy Program (WRAP) capacity
> - Report stochastic risk adjustment

[3] *Id.* at 5-6 (footnotes omitted).
[4] *PacifiCorp's 2023 Integrated Resource Plan*, Docket No. 23-035-10, Order issued April 17, 2024 (April 2024 Order).
[5] *PacifiCorp's 2023 Integrated Resource Plan*, Docket No. 23-035-10, Cover Letter to PacifiCorp's Draft 2025 Integrated Resource Plan; RMP Attachment A and RMP Attachment B (Dec. 31, 2024) (2025 Draft IRP).
[6] *2025 Integrated Resource Plan Public Input Meeting January 22-23, 2025*, slide 15 (Jan. 22-23 PIM Presentation). Available at: 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
[7] Jan. 22-23 PIM Presentation at slide 17.

Assumptions

- Load forecast update removes loads that fall outside of the traditional IRP planning process
- Incorporate final CPA results and updated stochastic risk credits.
- Small-scale resources limited to 5% of local load in PACE and 50% in PACW
- Natrium demonstration project commercial operation date (COD) shifted out to 2032
- Update forced outages for thermal units to be consistent with full range of historical data
- Earliest resource availability may be updated to reflect realistic CODs
- FOT limits begin in 2028
- Updated regulation reserves
- The final IRP will also incorporate stakeholder feedback to the fullest extent possible
- CO2-E reporting will be updated to reflect current carbon factors for NOx and CH4

The Company noted on the slide that these corrections and updates would not appear in the IRP filed in Utah. There were further enhancements and refinements that the Company planned to make to the 2025 Draft IRP described in the Company presentation given at the February 27, 2025 PIM.[8]

The Filing of the 2025 IRP

For the final filing of the 2025 IRP, the Company prepared two versions of the IRP: the "Utah 2025 Integrated Resource Plan" (2025 Utah IRP), which is for Utah only, and the "2025 Integrated Resource Plan" (2025 System IRP), which is for the other states that the Company serves. Both versions are posted on the Company's website, but only the Utah version was filed in the present docket. The difference between the two versions is that the Utah version has three additional chapters: Chapter 11—Utah Executive Summary; Chapter 12—Utah Model Results; and Chapter 13—Utah Action Plan. Chapters 1 through 10 are the same for the 2025 Utah IRP and the 2025 System IRP, although Chapters 1, 9, and 10 in

[8] *2025 Integrated Resource Plan Public Input Meeting February 27, 2025* (Feb. 27 PIM Presentation). Available at: https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-plan/2025-irp/February_27_2025_IRP_Public_Input_Meeting.pdf

the 2025 System IRP are technically replaced by Chapters 11, 12, and 13 in the 2025 Utah IRP.[9]

Chapters 11 through 13 of the 2025 Utah IRP utilize model input information and modeling results that are from an earlier period than the "final" IRP results (which appear in Chapters 1 through 10). In other words, the model inputs and modeling results from Chapters 11 through 13 are preliminary; the model inputs and modeling results in Chapters 1, 9, and 10 are "final" (more up-to-date). The Company describes the Utah filing as follows:

> Chapters 11, 12 and 13 are provided in compliance with the Utah Order issued in Docket No. 23-035-10. Per the order, modeling input and assumption changes were locked down as of the publication of the Draft 2025 IRP on December 31, 2024:
>
> > o "For the 2025 IRP cycle, the Data Lockdown Date is January 1, 2025; PacifiCorp shall not further alter modeling inputs after that date. . ."
> >
> > o "PacifiCorp shall not make changes to the modeling assumptions used to produce the modeling results it intends to disclose on January 1, 2025."
>
> If the Public Service Commission of Utah wishes to consider updated data and analysis, Chapters 1, 9 and 10 represent the most recent available results corresponding to these three Utah-specific Chapters 11 through 13.
>
> As the Utah Order does not restrict non-model inputs and assumptions, Chapters 2 through 8 and all Appendices A through Z represent the most up-to-date information.[10]

At the July 22, 2025 Technical Conference, the Division asked whether any of the information in Chapters 11 through 13 of the 2025 Utah IRP would be used for planning purposes (if it differed from the information in the 2025 System IRP), and the Company said it would not. In other words, if any information in the 2025 System IRP differs from the information in Chapters 11 through 13 of the Utah IRP, the information in the 2025 System IRP will take precedence. Thus, in the Division's understanding, the information in Chapters

[9] Note that since Chapters 1 through 10 of the 2025 IRP and the 2025 Utah IRP are the same, any reference to Chapters 1 through 10 of the 2025 Utah IRP is functionally the same as a reference to the 2025 System IRP. This creates terminological confusion, because the 2025 Utah IRP technically "contains" the 2025 System IRP. The Division will refer to the document filed in the Utah docket (with three extra chapters) as the 2025 Utah IRP. In the Division's understanding, Vol. II is the same for both versions of the IRP.
[10] 2025 Utah IRP at Volume I, p. 319 (footnotes omitted).

11 through 13 of the 2025 Utah IRP is a snapshot in time of certain preliminary IRP inputs and modeling results; these inputs and modeling results have in some cases been superseded by, and replaced by, the more recent inputs and modeling results from the 2025 System IRP.[11]

This memo will refer mainly to the 2025 Utah IRP, as that is what was filed in the present docket. The Company filed the PDF versions of the 2025 Utah IRP on March 31, 2025. The Company filed the various appendices and supporting information for the 2025 Utah IRP on April 15, 2025.[12] The Division has stated in the past that it does not consider the IRP to be completely filed until all supplemental information is filed, including the data discs;[13] by that standard, the 2025 IRP was technically filed late.

Discussion

The Usefulness of the 2025 Utah IRP

The Division understands that the 2025 Utah IRP represents a preliminary snapshot in time of the 2025 System IRP. The inputs and modeling results from Chapters 11 through 13 of the 2025 Utah IRP, if they differ from inputs and modeling results from the 2025 System IRP, will not be used. The Division confirmed this with the Company in the IRP Technical Conference.[14] The obvious question is: what is the point of the 2025 Utah IRP? The Company's answer is that it was necessary to comply with the Commission's order in the 2023 IRP docket, which stated that "[f]or the 2025 IRP cycle, the Data Lockdown Date is January 1, 2025; PacifiCorp shall not further alter modeling inputs after that date".[15]

The Company's interpretation of the Commission's order is overly technical and does not comply with the spirit of the order. Although the Division cannot speak for the Commission's

[11] It is worth stating again that the 2025 System IRP and Chapters 1 through 10 of the 2025 Utah IRP are identical.
[12] Rocky Mountain Power's 2025 Integrated Resource Plan Confidential and Highly Confidential Supporting Information, Docket 25-035-22 (April 15, 2025).
[13] *See, e.g.*, *PacifiCorp's 2023 Integrated Resource Plan*, Docket No. 23-035-10, Comments from the Division of Public Utilities at 5 (March 10. 2023).
[14] Recorded Live Stream of Technical Conference Held on July 22, 2025, Docket 25-035-22, available at: https://www.youtube.com/live/_VCt2ufSDmE
[15] Sept. 2024 Order at 10.

thought process behind the order, it does not believe that the Commission intended a separate IRP for Utah, with differences from the "main" IRP not to be used in any analysis.

The Division had informal conversations with the Company and other Utah stakeholders in February of 2025 to discuss whether an official request for clarification to the Commission would be helpful. The clarification could have discussed whether the Commission envisioned (or would accept) two separate IRPs. The Division did not ultimately advocate for a joint request for clarification. One reason for this is that the Division believed there was simply not enough time to get the matter settled before the March 31, 2025 filing deadline. The Division expressed its view that the Company was reading the Sept. 2024 Order in too technical a manner and believed that stakeholder comments would be the place to discuss the matter.

The Differences Between the 2025 Draft IRP and the 2025 Utah IRP

The Company noted in its Jan. 22-23 PIM Presentation that the errors, omissions, and refinements mentioned in the slides would not be utilized in the 2025 Utah IRP.[16] The same holds true for the refinements and enhancements discussed in the Feb. 27 PIM Presentation. The Division found that for the most part, this means that the results from the 2025 Draft IRP were the same as those presented in Chapters 11 through 13 of the 2025 Utah IRP. For example, in the 2025 Draft IRP, the total system loads and resources under the preferred portfolio in Tables 9.11 through 9.14 appear to be the same as the loads and resources of Tables 12.11 through 12.14 in Chapter 12 of the 2025 Utah IRP.[17]

The Differences Between the 2025 Utah IRP and the 2025 System IRP

The Jan. 22-23 PIM Presentation described some of the differences that would occur between the 2025 Draft IRP and the 2025 System IRP. The slides for that meeting listed "Post-Draft Corrections" as follows:

> • The following resources had inaccurate inputs in PLEXOS that were corrected after the draft:

[16] Jan. 22-23 PIM Presentation at slides 15; 17.
[17] 2025 Draft IRP at Tables 9.11-9.14, pages 237-40; 2025 Utah IRP at Tables 12.11-12.14, pages 363-66.

o Incorrect levelized capital carrying rates: pumped hydro storage, nuclear, geothermal

o Incorrect FOM cost for hydrogen peaker

• The overhaul and maintenance outages for some thermal resources were incomplete.

• The hourly solar generation profiles for proxy resources used in the model were not updated to use data based on coordinated historical weather conditions and location-specific characteristics.[18]

That same slide had the following note: "Note for Utah Stakeholders: Due to the UPSC directives pertaining to the 2025 IRP (Docket No. 23-035-10, Sept. 24, 2024), the final 2025 IRP filed in Utah will not contain any of the corrections and updates listed on this slide."[19] A later slide listed "refinements" that would be made for the final draft of the 2025 System IRP (these are quoted above in this memo). Some of the refinements included: changing the Natrium COD from 2030 to 2032; a load forecast update that "removes loads that fall outside of the traditional IRP planning process," changes to the front-office transaction (FOT) limits; and several more.

In the Feb. 27 PIM Presentation, the last PIM before the final IRP, there were no final modeling results discussed. This meant that the first time stakeholders had the opportunity to see the "final" modeling results and action plan was on March 31, 2025, when the IRP was filed.

The Company described in the Feb. 27 PIM Presentation more refinements and enhancements that it would make to the 2025 Draft IRP. Many changes were described, including:

- "Heat rates for existing gas plants, which previously overstated the efficiency of gas plants"
- "Heat rates for Oregon's share of gas plants, which now reflect the heat rate for a smaller gas plant"[20]
- "Modeling for the Draft included an incentive to build for WRAP capacity starting in 2027. Subsequent modeling will shift this to 2028, leading to a possible decrease in 2027 resource additions"

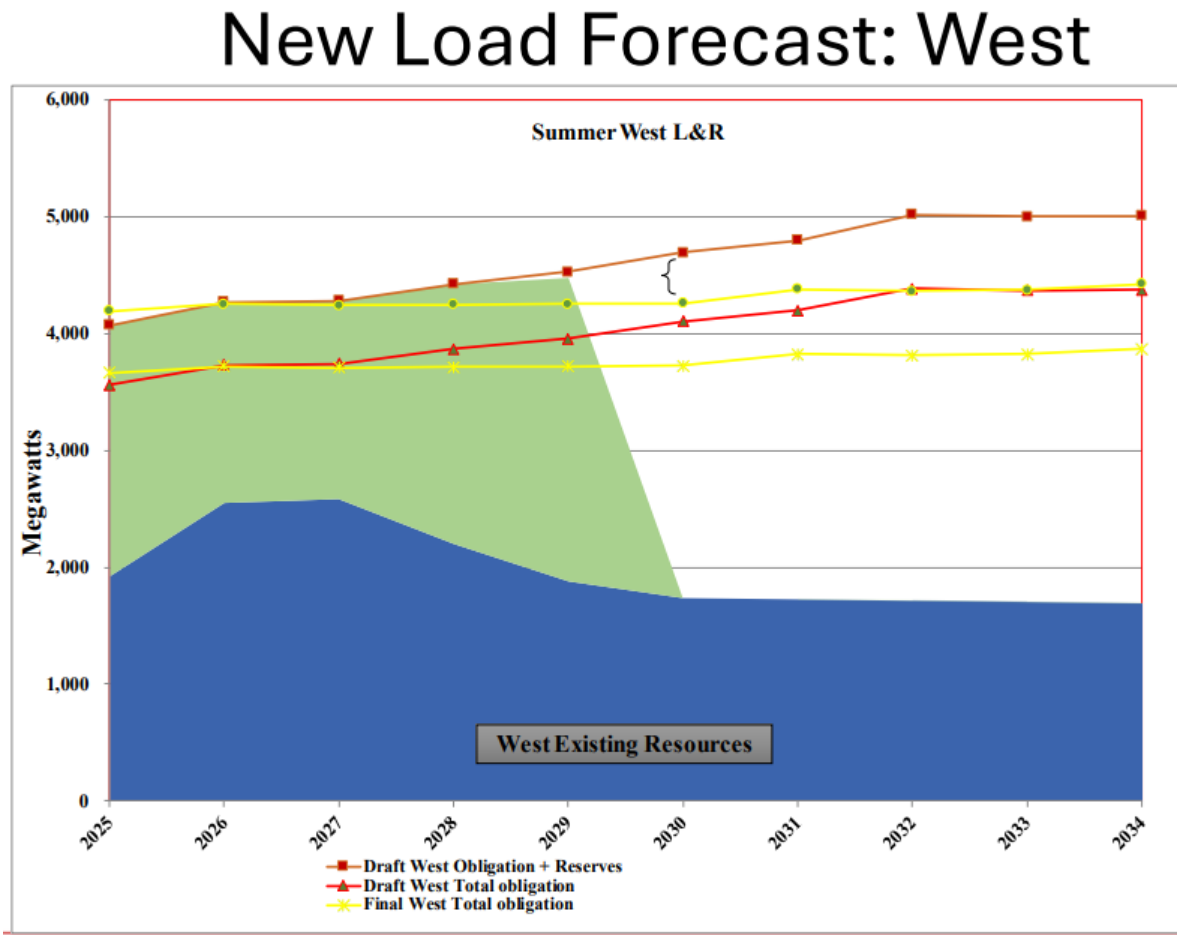
[18] *2025 Integrated Resource Plan Public Input Meeting January 22-23, 2025*, slide 15. Available at: https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-plan/2025-irp/January_22-23_2025_IRP_Public_Input_Meeting.pdf
[19] Id.
[20] Feb. 27 PIM Presentation at slide 5.

- "The 2025 Draft included more small-scale capacity allocated to Oregon than required by legislation. Refinements will ensure that the model will only select more small-scale than required if it is economic"[21]
- Demand response (DR) and energy efficiency (EE) potential were changed, partially in response to an oversight discovered in the Conservation Potential Assessment (CPA)
- Load forecast changes were depicted.[22]
- DR cost changes[23]
- The thermal outage factor changes mentioned in the previous PIM were quantified

These refinements and enhancements had a large effect on some inputs. One slide depicted the new load forecast for the western portion of PacifiCorp as follows:[24]

[21] *Id.* at slide 6.
[22] *Id.* at slides 7-8.
[23] *Id.* at slide 15.
[24] *Id.* at slide 7.

Table 1 Load Forecast Change from 2025 Draft IRP to 2025 System IRP (West Region)



Some of these changes appeared to be in response to stakeholder input, but most of them were apparently “enhancements” and “refinements” that the Company made to the modeling process after the 2025 Draft IRP.

Some of the effects of these input changes can also be seen in the Forecasted System Summer Coincident Peak Load in the 2025 Draft IRP as compared to the final IRP, as shown in the tables below.

Table 2 2025 Draft IRP Forecasted System Summer Coincident Peak Load[25]

Table 6.1 – Forecasted System Summer Coincident Peak Load in Megawatts, Before Energy Efficiency (MW)

	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
System	11,374	11,410	11,708	12,085	12,303	12,501	12,824	12,961	13,156	13,358
	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
System	13,603	13,919	14,190	14,479	14,764	15,065	15,368	15,785	16,026	16,307

Table 3 2025 System IRP Forecasted System Summer Coincident Peak Load[26]

Table 6.1 – Forecasted System Summer Coincident Peak Load in Megawatts, Before Energy Efficiency (MW)

	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
System	11,318	11,270	11,425	11,553	11,690	11,844	12,104	12,193	12,363	12,575
	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
System	12,819	13,134	13,404	13,693	13,978	14,279	14,581	15,008	15,237	15,518

These tables show that the inputs changed significantly from the 2025 Draft IRP to the 2025 System IRP. These changed inputs resulted in a preferred portfolio that differed significantly. One obvious change is the COD of the Natrium plant. The differences in timing and amount of new resources are seen when comparing Tables 9.11 through 9.14 of the 2025 Draft IRP with Tables 9.12 through 9.15 of the 2025 System IRP. Not only is the Natrium COD different, but the timing of (for example) planned storage in the east part of the system is very different under the two versions:[27]

Table 4 Planned Storage, Preferred Portfolio Summer Capacity Load and Resource Balance (2025-2034) (2025 Draft IRP vs 2025 System IRP)

	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Storage Planned Resources: Draft IRP (East) MW	0	0	2	2	25	27	27	27	26	26
Storage Planned Resources: Final System IRP (East) MW	0	0	136	160	220	867	1029	1049	1139	1224

[25] 2025 Draft IRP, Vol. I at 112.
[26] 2025 Utah IRP, Vol. 1 at 114.
[27] Data taken from Table 9.11 of 2025 Draft IRP (p. 237); Table 9.12 of 2025 Utah IRP (p. 245).

There are many other differences in timing and type of resources selected between the two versions. The Division picked this one to illustrate that the 2025 System IRP differs significantly from the 2025 Draft IRP (and therefore the 2025 Utah IRP) in many respects.

Of the items listed on the PIM slides from the January 22-23 and February 27 meetings, some of them are errors (inaccurate inputs in Plexos) and some could be characterized as either errors or omissions (incomplete outages for thermal resources). For some changes, it is not clear if the data inputs are late-breaking (i.e. did the company receive the data regarding hourly solar generation load profiles after the draft IRP?), or were not included in the draft for other reasons (e.g. an inadvertent omission). Many changes described in the January and February public meetings appear to be a result of either late-breaking information (e.g. the commercial operation date (COD) of the Natrium nuclear plant) or simply changes that the Company wanted to add on its own volition after the data lockdown date (e.g. the new procedures for the load forecast).[28]

The PIM slide that describes “refinements” to the 2025 Draft IRP (listed above on page 3-4 of this memo) is essentially a list of modeling input changes; most of these qualify as the type of changes the Commission was discussing in its Sept. 2024 Order: “Any new or changing model inputs that cannot be incorporated into the modeling results disclosed January 1, 2025, must wait to be incorporated into PacifiCorp’s 2025 IRP Update.” For example, changing the COD of the Natrium plant, changing the load forecast to remove certain loads, and changing the FOT limits all count as “new or changing model inputs.” The Division agrees with the Company that, based on the Commission’s orders, this type of late-breaking data should not be included in the Utah IRP (based on the language in the Sept. 2024 IRP Order).

Therefore, the Division agrees with the Company (and the Commission) that with respect to Utah, most of these “refinements” should not be changed until the 2025 IRP Update. However, the Division does not agree with the Company’s solution: making refinements and

[28] *See, e.g.*, 2025 Utah IRP at Vol. I, p 323; 2025 System IRP at Vol. I, p. 217. In the 2025 Draft IRP, the COD is 2030; in the 2025 System IRP, the COD is 2032.The Company indicated in a PIM that as it expects Natrium to be online at the end of 2031, it indicates in charts and graphs 2032 at the first full year of Natrium operation.

changes for the system IRP, resulting in dual IRPs. Furthermore, the Company need not retain errors in its analysis under the Sept. 2024 Order. Indeed, the feedback process is designed, in part, to identify these errors so they can be corrected.

The Sept. 2024 IRP Order: Errors, Omission, and Late-Breaking Data

The Company's interpretation of the Sept. 2024 Order was both overly technical, and at the same time too broad. It was overly technical because the Division does not read the Sept. 2024 Order as requiring the Company to keep errors in its modeling inputs if they are discovered after the lockdown date. In the Division's view, one reason for the stakeholder review after the lockdown date is that stakeholders might identify errors. Feedback is not merely an opinion-sharing exercise, it is a form of review intended to improve the final product. However, the Division requests confirmation on this issue from the Commission.

At the same time, the Company's interpretation of the Sept. 2024 Order was too broad. The Division does not believe the Commission intended a system of dual IRPs (with the Utah filing "containing" the system version). Nothing in the Commission's orders in the 2023 IRP docket indicates that dual IRPs were contemplated.

The "refinements" listed in the Jan. 22-23 and Feb. 27 PIM slides are somewhat akin to getting an extension without having to ask for an extension. These were inputs that for whatever reason the Company was unable to incorporate into the draft IRP. Rather than asking for an extension (which is probably what would be needed, if the Company wished to use the refinements, and the dual-IRP solution were not used), and in an effort to still technically comply with the Sept. 2024 Order, the Company decided on dual IRPs. The dual IRPs put Utah stakeholders in an awkward spot. In January of 2025, were Utah stakeholders supposed to spend time analyzing the specific results of the 2025 Draft IRP, knowing that they will be modified for the final system IRP? Similarly, after the two IRPs were filed on March 31, should Utah stakeholders spend any time at all analyzing Chapters 11 through 13 of the 2025 Utah IRP, knowing that these chapters have been superseded?

To take a particular example, with respect to the Natrium COD, it is not clear to the Division why the Company could not have just gone ahead with one IRP, but kept the COD at 2030,

with the understanding that this is just one of those cases where the late-breaking information should not have been included. Similar arguments apply to the other "refinements" (e.g. FOT limits). However, the Division does recognize that some changes could be made after the lockdown date—if they are in response to stakeholder feedback (in contrast to late-breaking information such as the Natrium COD). And there is no reason that feedback could not include parties' reactions to Company-identified errors.

The results from Chapters 1 through 10 of the 2025 Utah IRP are, practically speaking, the "real" (most up-to-date) results, and Chapters 11 through 13 are preliminary and are not to be used. Therefore, in a practical sense, the "final" modeling results were seen by stakeholders for the first time on March 31.

As to the "incomplete" items that the Company changed between the two IRPs (e.g. "the overhaul and maintenance outages for some thermal resources were incomplete"), these are a bit of a gray area, depending on whether they are categorized as errors or as new data. In the Division's opinion, unless the "incomplete" items are outright errors (e.g. the Company meant to include outage data but mistakenly omitted certain portions of it, or included incorrect outage data), then such incomplete items should not be included after the lockdown date. However, the Division also requests confirmation from the Commission on this gray area.

The Dual-IRP Solution

The Division's assumption is that the dual-IRP solution is not what the Commission had in mind when it issued the Sept. 24, 2024 IRP Order (and, regardless of whether it was contemplated beforehand by the Commission, that it is not the preferred way to meet the requirements of the Order). However, the Division requests clarification from the Commission on this topic.

Assuming that two IRPs are not the preferred solution, the Division thinks the relevant questions are: can the Company comply with the timelines in the Sept. 2024 Order, which entail: (1) allowing sufficient time for stakeholder input, including identifying errors, and (2)

not making changes to modeling inputs due to late-breaking, newer versions of inputs. This issue must be resolved before the 2027 IRP.

The Division recommends the following schedule for the 2027 IRP (per the Sept. 2024 Order):

- Assuming the IRP is submitted March 31, the Company should "present indicative resource portfolios to stakeholders at a PIM at least five months before" March 31, which would mean by October 31, 2026.[29]
- October 31, 2026 will also function as the Data Lockdown Date.
- There should be only one version of the IRP (no Utah-only version). The filed IRP should be in accord with the Company's plans.
- Late-breaking refinements, enhancements, etc. of the type in the Jan. 22-23 and Feb. 27 PIM Presentations will not be allowed after the Data Lockdown Date, with the exception that the Company may make changes suggested by or agreed to by stakeholders that are not merely late-breaking updates.
- The Company may correct errors after the Data Lockdown Date, if they are simply a matter of the Company failing to use the correct data (that it had in its possession in a final form in time to incorporate into the indicative resource portfolios) before the Data Lockdown Date.
- The Company may make changes to the model suggested by stakeholders after the Data Lockdown Date.

If the Company cannot meet these deadlines, while still meeting deadlines imposed by other jurisdictions, it should so indicate, and the Commission can consider alternate solutions. The Division appreciates the Company's effort to meet the timeline in 2025; it is a difficult task, given the requirements of multiple jurisdictions and the ever-growing complexity of the IRP analysis. However, the Division does not believe the dual-IRP solution is the answer.

[29] Sept. 2024 Order at 10.

Resources without Established Costs

The Company included two types of resources in its preferred portfolio that do not have established costs. In the case of the Natrium project, the costs were not established because at the time of the modeling there was not a contracted price (e.g. an executed power-purchase agreement, or PPA). Thus, there was no way for stakeholders to evaluate the modeled cost of the Natrium plant. In fact, in response to a Stakeholder Feedback Form question from the Oregon Public Utilities Commission, the Company stated:

> Natrium was endogenously selected by the model as part of the least-cost, least-risk portfolio. At the January public input meeting, PacifiCorp explained that no costs associated with Natrium were included in the modeling process given that the Company has not yet reached an agreement with Terra Power.[30]

The Division asked a follow-up question in a data request (DR) in the current docket, confirming that the Natrium projects had a cost of zero in the modeling, and the Company responded:

> The Division of Public Utilities (DPU) is correct in its understanding that the Natrium project (also known as Kemmerer Unit 1) was assigned no costs in PacifiCorp's 2025 Integrated Resource Plan (IRP) PLEXOS modeling and that the model was able to endogenously select the resource.[31]

The Division and others have objected to Natrium's inclusion in the preferred portfolio when there is no cost assigned to it.[32] The Division renews this objection for the 2025 Utah IRP. However, in the Division's understanding, this issue may be resolved before the next IRP, so it does not belabor the point here.

The inclusion of 100-hour iron air storage batteries in the preferred portfolio is also problematic. The preferred portfolio (in Chapter 1 of the 2025 Utah IRP) includes "511 MW of 100-hour iron air storage by the end of 2030, 616 MW by 2035 and 3,073 MW by 2045."[33] However, there are no 100-hour iron air storage batteries in utility-scale operation

[30] 2025 Utah IRP, Vol. II at p. 446 of the pdf.
[31] Company Response to DPU Data Request 1.6 (attached to these Comments as Attachment 1). The Company also noted that the zero cost was not the only reason the model endogenously selected Natrium; Natrium "was assigned an energy value which the model saw as valuable." *Id.*
[32] *PacifiCorp's 2023 Integrated Resource Plan*, Docket No. 23-035-10, Comments from the Division of Public Utilities at 2 (Dec. 12, 2023); Comments from the Office of Consumer Services at 2 (Dec. 12, 2023).
[33] 2025 Utah IRP, Vol. I, page 7.

in the country to the Division's knowledge. The Company confirmed this in its answer to Division DR 1.5.[34] The Division understands that some such projects may be in the works in other locations, but are not online yet.[35] Given this, it could even be argued that 100-hour iron air storage batteries are not yet "technically feasible" under Guideline 4(b)(ii).[36]

It is therefore difficult for stakeholders to evaluate the costs or compare them to actual projects for 100-hour iron air batteries. There are two issues: (1) there could be unforeseen issues that prevent this technology from being used on a utility scale, and (2) even if the technology is suitable for utility-scale plants, the cost ranges for this technology are not well-established.

Some common resources that could serve as a "sanity check" for the listed costs of the 100-hour batteries do not list batteries of such duration.[37] The Division applauds the Company for considering emerging technologies in its modeling but believes that the 100-hour batteries are not proven enough to appear in the preferred portfolio. They are appropriate for a variant, but not the preferred portfolio. Recent IRPs have consistently included in preferred portfolios resources that can best be characterized as aspirational. This is inconsistent with the purposes of the IRP. The Company is free to—in fact, encouraged to—pursue promising technologies, but the IRP's purpose is the evaluation of proven resource types with reasonably forecasted assumptions, not nascent technologies and zero-cost resources.

One possible cause of the inclusion of nascent technologies in the IRP action plan (non-emitting hydrogen peaker plants in the 2023 IRP; 100-hour iron air batteries in the current IRP) is that the IRP action plan has become divorced from the Company's Business Plan.

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[34] *See* Attachment 1, DPU Data Request 1.5(4).
[35] *See, e.g.*, Carrie Hempel, *Form Energy iron-air battery in Maine granted $147 million*, ESS News (Aug 16, 2024). https://www.ess-news.com/2024/08/16/form-energy-iron-air-battery-in-maine-granted-147-million/
[36] *See* Guidelines at 4(b)9ii): "PacifiCorp's future integrated resource plans will include: […] An assessment of all technically feasible generating technologies including: renewable resources, cogeneration, power purchases from other sources, and the construction of thermal resources."
[37] *See, e.g.*, Lazard Inc., *Lazard LCOE+ Levelized Cost of Energy+*, June 2025 (Lazard LCOE+). https://www.lazard.com/media/eijnqja3/lazards-lcoeplus-june-2025.pdf
The Lazard LCOE is a commonly cited source for the levelized cost of generation and storage options. The latest version of the Lazard LCOE+ report lists cost ranges for various types of 2-hour and 4-hour batteries, but not 100-hour batteries. *See* Lazard LCOE+ at 19-20.

As the Company notes in the 2025 Utah IRP, the Action Plan does not differ from the Company's Business Plan for the first three years of the forecast.[38] In the Division's reading of the order from the 2015 IRP, the Company is not required to list the differences in resource acquisition between the Business Plan and the IRP action plan for years 4 through 10 of the action plan.[39] Therefore, the presence of the 100-hour iron air batteries in the IRP preferred portfolio is no indication of whether they are in the Business Plan.

This possible gap between the two types of plans makes it difficult for stakeholders to know how much effort to spend on certain items. The hydrogen peaker plants appear to be off the table at the present time. The Natrium plant looks much more likely to be in the Company's resource portfolio within ten years. However, the 100-hour batteries may be more like the hydrogen peaker plants than the Natrium plant. This possible gap speaks to a discussion that stakeholders may need to have in the future—how should the action plan of the IRP balance the aspiration towards new technologies with the more practical requirements of putting an actual business plan into place?

The Selection of the Preferred Portfolio

In the 2023 IRP docket, the Division noted that the selection of the preferred portfolio was opaque.[40] In the 2025 Utah RFP, the methodology used to select the preferred portfolio was different, although to the Division this difference was not immediately apparent.

The Selection of the Preferred Portfolio

In the 2023 IRP, the Company modeled the initial and variant cases under various price/policy scenarios. The results were shown in Tables 9.14 through 9.17. Using the results in those tables, the Company selected the preferred portfolio variant as follows:

[38] 2025 Utah IRP, Vol. I at 215 ("Over the first three years, resources align with those assumed in PacifiCorp's current Business Plan.")
[39] In the Matter of Rocky Mountain Power's 2015 Integrated Resource Plan, Docket No. 15-035-04, Order at 5-6 (Sept. 16, 2016).
[40] PacifiCorp's 2023 Integrated Resource Plan, Docket No. 23-035-10, Comments from the Division of Public Utilities at 31 (Dec. 12, 2023).

> In consideration of current policies in motion and unmodeled risks for which ongoing trends recommend the adoption and development of tax-supported renewable projects, P-MM is determined as the preferred portfolio.[41]

At the 2023 IRP Technical Conference, the Division asked if there were any calculations or records for this determination, or if it was more of an eyeball test, and the Company said there were no materials for review.[42] Therefore, in 2023, the Company essentially did a manual selection by surveying and considering the top performers in Table 9.14 and other tables, along with some risks and policies.

In the 2025 IRPs, the selection of the preferred portfolio was different, although this was difficult to tell from the text of the IRP itself. Table 9.34 of the 2025 Utah IRP summarizes the results of portfolio modeling under the "Medium Gas/Zero CO_2" price/policy scenario. In that table, the "Integrated Base MN" scenario was ranked fourth in the ST modeling, second in the Risk Adjusted modeling, and first in the "With End Effects" modeling. Other portfolios also did well overall—for example, "Integrated Hunter Retire MN" was ranked first in the ST modeling, third in the Risk Adjusted modeling, and third in the "With End Effects" modeling.

The Division was initially unsure why "Integrated Base MN" was selected over "Integrated Hunter Retire MN" or other portfolios as the preferred portfolio in the 2025 IRP; there was no text the Division could find that said "Integrated Base MN was selected as the preferred portfolio because… [reasons]." The Division asked a DR about this, and the Company stated:

> Table 9.34 illustrates the process used to select the "Integrated Base MN" portfolio as the preferred portfolio. After applying a risk adjustment and end effects, the "Integrated Base MN" portfolio had the lowest present value of revenue requirements (PVRR) under the expected "Medium Gas / Zero CO2" price-policy scenario and so it was selected as the preferred portfolio.[43]

In contrast to the process used in 2023, in which the Company exercised its judgment after considering "current policies in motion and unmodeled risks for which ongoing trends recommend the adoption and development of tax-supported renewable projects," the

[41] 2023 IRP, Volume I at 306.
[42] 2023 IRP Technical Conference at 1:16:40.
[43] Attachment A to this memo (Company's response to Division DR 1.2).

process in 2025 is more of a mechanistic/formula-driven process: whichever portfolio was ranked #1 after the “With End Effects” modeling was going to be the preferred portfolio.

However, this process was not described sufficiently ahead of time. The “With End Effects” modeling was not discussed in any detail in the public input meetings, to the Division’s recollection. The “end effects” are mentioned on page 260 of the 2025 Utah IRP but are not described in any detail. If the Company is going to decide that “whatever portfolio finishes with the best PVRR after the end effect modeling is performed will be the preferred portfolio,” it should so state in the public input meetings and give some parameters around the modeling. This will instill confidence amongst the stakeholders and allow them to ask questions. Going just by the narration in the 2025 Utah IRP as published, the entire process is still opaque, even as the process switched from more of a judgment call in the 2023 IRP to a mechanistic modeling result in 2025.

Conclusion

The Division recommends that the Commission not allow the dual-IRP solution for future IRPs. If the Company believes it cannot meet the deadlines in the Sept. 2024 Order without resorting to dual IRPs, it should so indicate.

- The Division recommends that Chapters 11 through 13 of the version of the IRP filed in Utah not be acknowledged.
- The Division recommends that the Commission instruct the Company to state whether it can meet the Commission’s ordered deadlines for the 2027 IRP without creating two versions of the IRP.
- The Division recommends that the portion of the IRP preferred portfolio that contains the Natrium plant and the 100-hour iron air storage batteries not be acknowledged; these technologies do not have sufficient cost and performance data available to be included in the preferred portfolio. They belong in a variant of the preferred portfolio.
- The Division recommends that the Commission instruct the Company to make the procedure for its final selection more explicit and provide those details ahead of time.

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