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UTAH DEPARTMENT OF COMMERCE

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To: Public Service Commission of Utah

From: Utah Division of Public Utilities

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Date: June 29, 2022

Re: **Docket No. 21-035-09**, PacifiCorp's 2021 Integrated Resource Plan Update.

Recommendation (No Action)

The Division of Public Utilities (Division) has reviewed PacifiCorp's 2021 Integrated Resource Plan Update (2021 IRP Update). The Division has prepared these comments for the Public Service Commission of Utah (Commission). No further action is required.

Issue

On March 31, 2022, PacifiCorp (Company) submitted its 2021 IRP Update to the Commission. The 2021 IRP Update was prepared according to the Company's biennial business process. Each odd year the Company develops an IRP, and each even year the Company develops its IRP Update. The Company files the IRP and IRP Update with each utility commission in its six-state jurisdiction.¹ One week after receiving PacifiCorp's 2021 IRP Update, the Commission issued a Notice of Filing and Comment Period requesting interested

¹ Typically, the Company files its IRP or IRP Update with the Commission annually on March 31st. The Division notes the 2021 IRP was filed late. The Company did not file it until September 1, 2021, and without the supporting data discs. Then on September 15, 2021, the Company filed again its IRP which included some minor corrections and data discs, at which time the Company also published its Supplemental Sensitivity Studies.

parties file comments by Wednesday, June 29, 2022. The Division has prepared these comments in response to the request.

Discussion

Gas, Carbon, and Market Prices

The Company did not update its portfolio pricing for wholesale power prices, natural gas prices, or carbon prices in the 2021 IRP Update. Thus, the Company used the same three market price forecasts in both the 2021 IRP and the 2021 IRP Update. In the 2021 IRP, the base case forecast for wholesale power prices and natural gas prices was compared to those of the 2019 IRP. The lower power prices observed in the 2021 IRP forecast are primarily due to a decline in the reliance of wholesale power market firm purchases as well as forecast assumptions of lower natural gas prices.²

The Company has indicated the increase in wholesale power prices projected in years 2027 to 2031 timeframe is based upon inflation that is impacting new resource costs.³ The Division will continue to monitor this closely. In its May 12, 2022, Public Input Meeting PacifiCorp mentioned that it intends to use a third-party forecast for its wholesale market prices in the 2023 IRP. The Division will closely watch the Company's forecasts for its 2023 IRP, as market conditions are volatile at the present time.

As previously stated, the Company did not update carbon prices in its 2021 IRP Update. The Division will watch for an updated carbon price in the 2023 IRP, as well as how the Social Cost of Greenhouse Gases (SC-GHG) is modeled in the 2023 IRP.

Review of Load Growth and Resource Deficit

Generally, the Company's load forecast "is developed by forecasting the monthly sales by customer class for each jurisdiction."⁴ The Company uses different forecasting methods for the different classes. The main classes are residential, commercial, industrial, irrigation, and

² 2021 IRP, p. 14.

³ Id.

⁴ 2021 IRP Update, 2022, p. 41.

street lighting. The overall system load in the 2021 IRP Update is up 1.11 percent, and forecasted coincidental peak is up 0.013 percent compared to the 2021 IRP.

Load Forecast

The Division reviewed the load forecast methodology for the 2021 IRP Update and its use in the load and resource balance. The load forecast was updated in June 2022⁵ and the compound annual load growth rate for the 10-year period (2021 through 2030) is 1.46 percent.

The system coincident peak load is the annual maximum hourly load on the system. The Company compared the system coincident peak load forecast for the 2021 IRP Update and the 2021 IRP for the years 2022 through 2031.⁶ The forecasted coincidental peak load forecast in the 2021 IRP Update is 1.35 percent higher than in the 2021 IRP.

In general, the Division finds that the load forecast was conducted with modeling and techniques appropriate to the industry.

Annual Energy Load Forecast

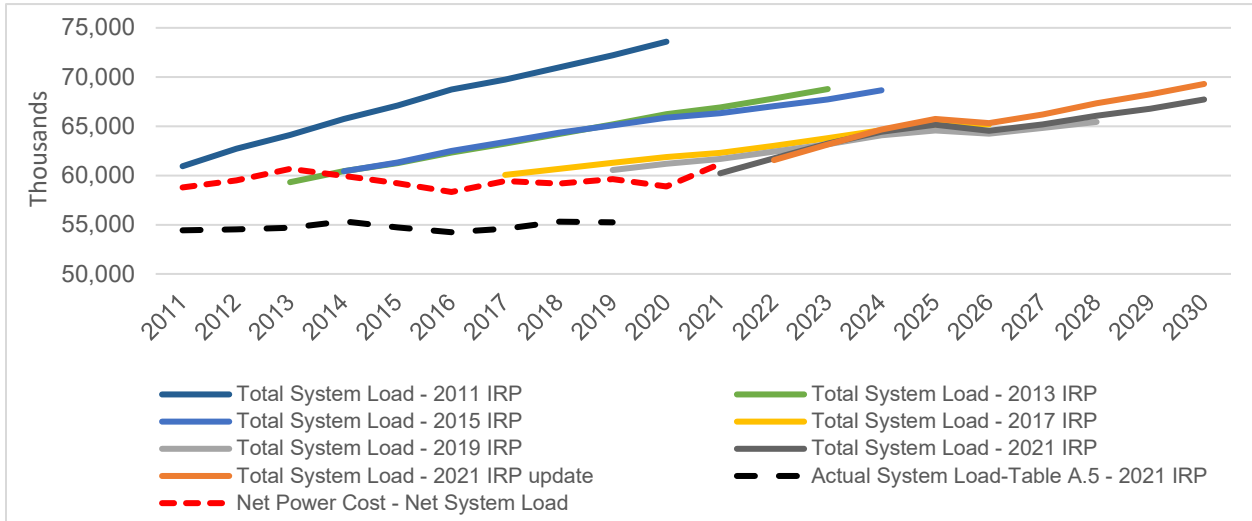
PacifiCorp's 2021 IRP Update Table A.1 estimates the forecast annual system load at generation over a 10-year period. PacifiCorp provided the Division with an Excel file entitled "Appendix A – Forecasted load details" that contained the information from Table A.1 as well as the forecasted annual load data tables.

Table A.5 in the 2021 IRP Update records actual retail sales. The Division compared the information from the Excel file entitled Appendix A – Forecasted load details (which includes Table A.1) with PacifiCorp's Table A.5 for Utah and the total system in the following two charts. For comparison, the Division has also loaded the Net System Load information into Figure 1. This information has been provided as part of the Net Power Cost Report.

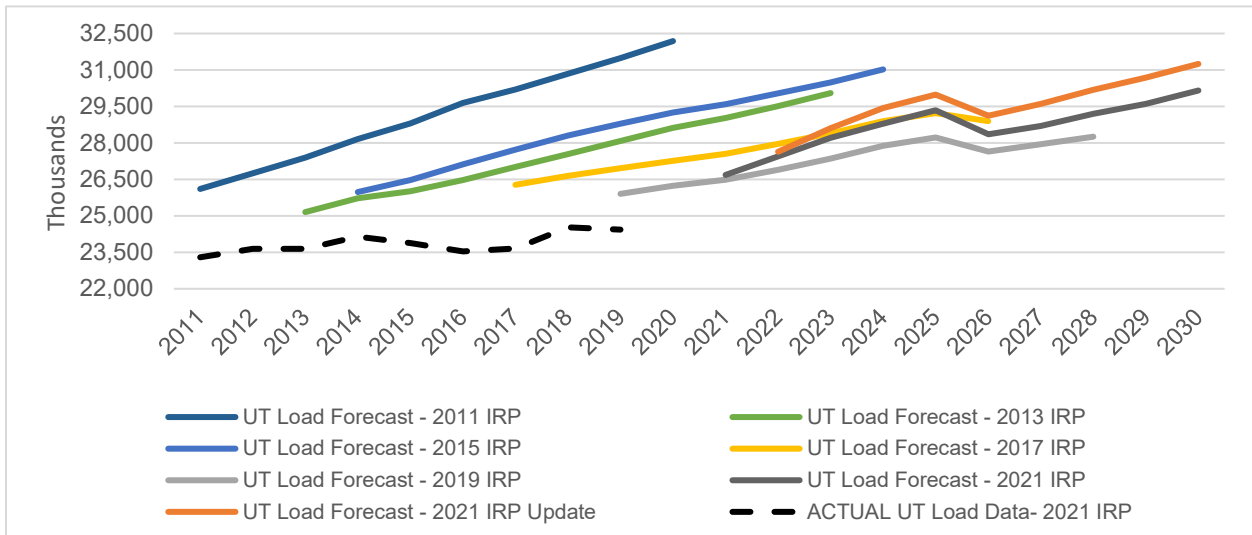
⁵ *Id.* at 1.

⁶ Docket No. 19-035-02, PacifiCorp's 2019 IRP Update, p. 42.

Division Figure 1 - System IRP Load Forecasts with Actual Load Data (MWh)



Division Figure 2 - UT IRP Load Forecasts with Actual Load Data (MWh)



As observed in the Division’s comparison graphs, Division Figures 1 and 2, PacifiCorp’s forecast growth rate has consistently been much greater than the historical growth. The Company is projecting a greater growth rate in the 2021 IRP Update than in the 2021 IRP.

2021 IRP Update Resource Summary

The differences in the mix of selected new resources for the 2021 IRP Update and the 2021 IRP are summarized in graph form in Figure 6.1 of the 2021 IRP Update.⁷

There are no changes in the timing and additions of nuclear plants, or the additions of thermal plants, between the 2021 IRP and the 2021 IRP Update. As in the 2021 IRP, the 2021 IRP Update does not include any new natural gas resources over the 20-year IRP planning period. The dates for the retirement of coal plants and the conversion of coal plants to natural gas are the same in the 2021 IRP and the 2021 IRP Update.⁸ Some general trends in the 2021 IRP Update emerge from Figure 6.1 with the details of resource additions that follow.

1. Slightly less new solar capacity is added in the 2021 IRP Update preferred portfolio as compared to the 2021 IRP.⁹
2. The timing of new wind additions varies between the 2021 IRP and the 2021 IRP Update. However, by 2030 the same amount of accumulated new wind has been added.¹⁰
3. The 2021 IRP Update slightly accelerates the addition of new storage capacity until 2032, and slightly decelerates the addition of new storage starting in 2037 as compared to the 2021 IRP.¹¹
4. The 2021 IRP and the 2021 IRP Update add non-emitting capacity in roughly the same amount and timing up until 2036. One slight difference is the added capacity two years earlier (2031 as opposed to 2033).¹² This non-emitting capacity consists of advanced nuclear and proxy non-emitting peaker plants of as-yet-unspecified technology.

⁷ Figure 6.1 – Cumulative Increase/(Decrease) in 2021 IRP Update & 2021 IRP Preferred Portfolio, p. 66.

⁸ Figure 6.10 – Preferred Portfolio Coal Retirements/Gas Conversions, p. 73.

⁹ Figure 6.4 – 2021 IRP Update, Preferred Portfolio New Solar Capacity, p. 70.

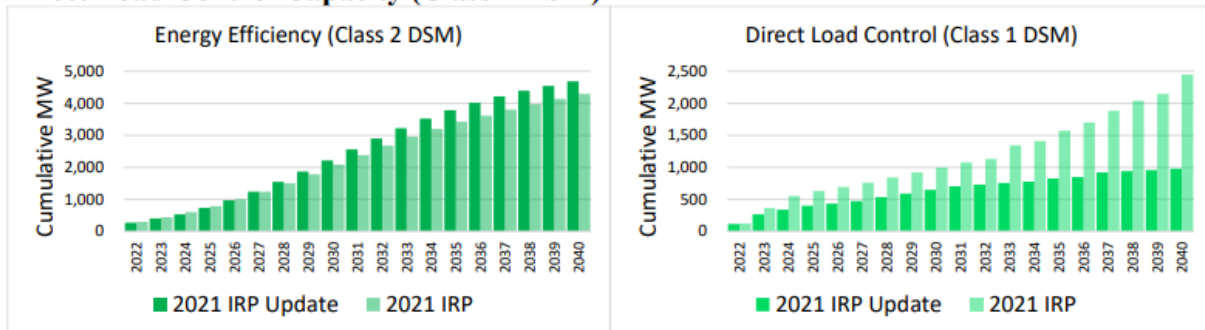
¹⁰ Figure 6.5 – 2021 IRP Update, Preferred Portfolio New Wind Capacity, p. 70.

¹¹ Figure 6.6 – 2021 IRP Update, Preferred Portfolio New Storage Capacity, p. 71.

¹² Figure 6.7 – 2021 IRP Update, Other Non-Emitting Resources Capacity, p. 71.

5. The 2021 IRP Update adds more energy efficiency and substantially less Class 1 demand-side management (DSM)¹³ than does the 2021 IRP. This is shown in Figure 6.8 of the 2021 IRP Update, which is reproduced below.

Figure 6.8 – 2021 IRP Update Preferred Portfolio Energy Efficiency (Class 2 DSM) and Direct Load Control Capacity (Class 1 DSM)



The resource changes from the 2021 IRP to the 2021 IRP Update are due to several updates in the data that is input into the IRP modeling. These changes include the updated load forecast, updated economic and commodity price forecasts, and other updated inputs. The Summer Peak Load and Resource balance has also changed modestly, as shown by the following charts, taken from the 2021 IRP and the 2021 IRP Update.¹⁴

Table 1 2021 IRP vs 2021 IRP Update: Obligation + Reserves

	2022	2023	2024	2025	2026
2021 IRP Obligation + Reserves MW	11,053	11,115	11,193	11,162	10,958
2021 IRP Update Obligation + Reserves MW	11,029	11,077	11,165	11,155	11,034
Difference	24	38	29	8	(76)

The overall “obligation + reserves” totals from the 2021 IRP and the 2021 IRP Update for the next five years (2022 to 2026) are close (within around 40 MW until 2026, then around 75 MW). The format of the summary tables is slightly different between the 2021 IRP and the

¹³ Class 1 DSM consists of direct load control programs.

¹⁴ 2021 IRP values are excerpted from the 2021 IRP, Table 6.11 – Summer Peak – System Capacity Loads and Resources without Resource Additions, 2021 IRP Volume I, p. 154. 2021 IRP Update values are excerpted from the 2021 IRP Update, Table 4.2 – Summer Peak – System Capacity Load and Resource Balance without Resource Additions, 2021 IRP Update (2022-2031), 2021 IRP Update, p. 47.

2021 IRP Update. In the 2021 IRP, the capacity categories listed in the “Summer Peak L&R - without Resource Additions” table are:

- Thermal
- Hydroelectric
- Renewable
- Purchase
- Qualifying Facilities, and
- Sale

In the 2021 IRP Update, the capacity categories are:

- Coal
- Gas
- Hydroelectric
- Solar
- Wind
- Geothermal
- Contracts
- Sales and Ancillary Services

The difference in the two sets of categories makes it difficult to compare the details of these tables in the IRP and the IRP Update. For example, for 2023 in the East region, the 2021 IRP lists 815 MW of “renewable” resources. For 2023 in the East region, the 2021 IRP Update lists 521 MW of solar, 405 MW of wind, and 50 MW of geothermal—this is a total of 977 MW of capacity that is classified as “renewable.” The Division’s understanding is that some of the 977 MW of solar, wind, and geothermal in the 2021 IRP Update appears in other categories (e.g., qualifying facilities) in the 2021 IRP, and that is why the 2021 IRP only has 815 MW of renewables. However, this is not clear from the charts. The categories should be the same for comparison purposes.

Summary of Transmission Changes

The changes in transmission plans from the 2021 IRP to the 2021 IRP Update are summarized in Table 1.1 of the 2021 IRP Update (p. 6), which is reproduced below.

Table 2 Table 1.1 of the 2021 IRP Update

Upgrade	Export Capacity	2021 Update Year	2021 IRP Year	Change
CON Central OR > TxCON 2027	100	2030	2037	-7
CON Yakima > TxCON 2027a	180	2029	2030	-1
CON Yakima > TxCON 2027b	100	2029	-	New
INC Central OR > Willamette Valley 2037	1500	2037	2040	-3
INC Portland North Coast > Southern Oregon 2037	1500	-	2040	Removed
INC Portland North Coast > Willamette Valley 2032	450	2038	2032	6
INC Utah South > Utah North 2032	800	2032	2033	-1
INC Walla Walla - WA > Yakima 2030	200	2030	-	New

1 – Negative values in the “Change” column indicates the number of years of acceleration compared to the 2021 IRP Preferred Portfolio.

One project is removed (Portland North Coast to Southern Oregon), one is delayed (Portland North Coast to Willamette Valley), and several projects are either added or moved up. The Company states that the new and accelerated transmission projects are driven by the higher load forecast.¹⁵ The earliest project, whose completion date is updated in the 2021 IRP Update is scheduled to come online in 2029 (Yakima to TxCON 2027a and Yakima to TxCON 2027b, both are 100 MW projects). The Company’s schedule for Gateway South remains the same in the 2021 IRP and the 2021 IRP Update.¹⁶

2020AS RFP and 2022AS RFP

The negotiations for the projects selected in the 2020 all-source RFP (“2020AS RFP”) are ongoing. The 2021 IRP stated that “[c]ontract negotiations are expected to proceed into early Q1 2022.”¹⁷ The final shortlist is described as follows: “These projects include 1,792 MW of wind, 1,302 MW of solar additions, and 697 MW of battery storage capacity—497 MW paired with solar and a 200 MW standalone battery.”¹⁸ These figures match up with the Independent Evaluator’s report in Docket 20-035-05.¹⁹

However, the 2021 IRP Update notes that two 2020AS RFP resources withdrew from consideration, comprising 153 MW of solar capacity and 58 MW of storage capacity.²⁰ The 2021 IRP Update gives the updated final shortlist for the 2020AS RFP as: “1,792 MW of wind,

¹⁵ 2021 IRP Update, p. 6.

¹⁶ Compare Table 4.1 in the 2021 IRP (p. 98) and Table 3.2 in the 2021 IRP Update (p. 39).

¹⁷ 2021 IRP Volume I, Action Plan, p. 332.

¹⁸ Id. at 8.

¹⁹ Shortlist Report of Merrimack Energy Group, Inc. To Utah Public Service Commission PacifiCorp 2020 All Source Request for Proposals (2020AS RFP), Docket No 20-035-05, September 2021, p. 67.

²⁰ 2021 IRP Update, p. 63.

1,150 MW of solar additions, and 639 MW of battery storage capacity—439 MW paired with solar and a 200 MW standalone battery.”²¹

Furthermore, the 2023 IRP presentation for May, which was presented after the 2021 IRP Update was filed, stated: “Final contracting efforts continue as part of this process. Most 2020AS RFP agreements are expected to be executed prior to the close of Q2 2022.”²² That presentation states that the final shortlist has 1,792 MW of new wind, 1,453 MW of solar, 735 MW of battery storage (535 MW paired with solar and 200 MW standalone). The amount of the solar capacity of the final shortlist of the 2020AS RFP mentioned in the 2023 IRP presentation (1,453 MW) is different than the capacity mentioned in the 2021 IRP Update (1,150 MW). Similarly, the storage capacity stated to be in the 2020AS RFP is also different (735 MW versus 639 MW). In either this docket or the 2020AS RFP docket, the Company should clarify the 2020AS RFP capacity (with a timeline of what projects have dropped out of, or have been added to, the final shortlist).

The Division is also concerned that the contract negotiations may be moving more slowly than expected. Originally the contracts were “expected to proceed into early Q1 2022.”²³ In the 2021 IRP Update, “[m]ost 2020AS RFP agreements are expected to be executed prior to the close of Q2 2022.”²⁴ The Division understands that some renewable contracts, especially for solar, are being held up due to supply and other issues.²⁵ If the contracts are not in place by the end of Q2 2022, the Company should provide an update as to the expected execution dates, and whether contingency plans are appropriate in case these 2020AS RFP project agreements cannot reach execution in time for the planned completion dates.

²¹ Id. at 4-5.

²² See “Integrated Resource Plan 2023 IRP Public Input Meeting, May 12, 2022” at slide 39, available at https://www.pacificorp.com/content/dam/pacorp/documents/en/pacificorp/energy/integrated-resource-plan/2023-irp/PacifiCorp_2023_IRP_PIM_May_12_2022.pdf

²³ 2021 IRP, p. 332.

²⁴ See footnote 16.

²⁵ See, e.g., *Probe Casts Shadow on Solar Projects*, The Wall Street Journal, May 2, 2022 (“American utilities are anticipating a significant slowdown in the buildout of new solar farms amid a U.S. probe into Asian solar panels that has created uncertainty for developers and manufacturers and caused widespread delays and cancellations.”).

Modeling of New Gas Resources

In the 2021 IRP, the Company did not model new natural gas resources in its “main” modeling runs. In its comments for the 2021 IRP, the Division criticized this decision, and recommended that the Commission not acknowledge the portions of the IRP (e.g. the preferred portfolio) that did not allow the model to select natural gas resources.²⁶ In its June 2, 2022 Order, the Commission declined to acknowledge the Company’s 2021 IRP, in part because of the Company’s “unilateral decision” to exclude natural gas from the modeling.²⁷ The Division reiterates its objection to this practice, but sees little value in forcing the Company to re-run any modeling for the 2021 IRP Update. However, the Division expects the Company to address this issue in the 2023 IRP.

Comments on 2021 IRP Update Action Plan (Action Plan Update)

A major component of the Company’s 2021 IRP Update filing is the Action Plan Update, which reports the status and progress the Company has made in delivering certain actions from the prior action plan, as contained in the Company’s 2021 IRP. The general purpose of the Action Plan is to identify the specific steps the Company will take over the next two to four years to deliver the preferred portfolio. The 2021 Action Plan is identified as Table 7.1 in the 2021 IRP Update and includes the following broad categories: existing resource actions, new resource actions, transmission action items, demand-side management actions, short-term firm market purchases, and the purchase and sale of renewable energy credits (RECs). The Division’s comments on the status of the Action Plan items address areas where status or progress on certain action items has been delayed or is ongoing.

The Division notes that, since the Company filed the 2021 IRP late on September 1, 2021, the Action Plan Update was filed approximately 211 days after the IRP. Typically, the Company has approximately 365 days to show the actions that it has taken to implement the 2021 Preferred Portfolio. Even though this period was shortened by 154 days, the Company managed to keep on track with most items it had planned to be executed in the 2021 Action

²⁶ See *Comments from the Division of Public Utilities*, Docket No. 21-035-09, March 4, 2022, p. 31-39.

²⁷ Order, Docket No. 21-035-09, June 2, 2022, p. 8.

Plan. The Division comments on the following two action items with respect to the 2022 AS RFP and certain Transmission Action Items, respectively.

✓ Action Item 2(d). 2022 All-Source Request for Proposals

The Division notes that there were delays in achieving interim goals and dates set in the 2021 IRP Action Plan for the 2022 AS RFP. The 2021 IRP Update Action Plan shows the final date for the new resources resulting from the 2022 AS RFP to achieve commercial operation, not by the originally planned date of December 31, 2026, but rather an entire year later, by December 31, 2027, or December 31, 2028, for long-lead time resources such as pumped storage hydro, geothermal and nuclear resources.²⁸

The Division was able to reconcile this change by referring to the Commission's Order Approving 2022 All Source RFP that states in footnote 2:²⁹

Initially, RMP's proposed process required commercial operation by the end of 2026. In response to stakeholder feedback, RMP agreed to revise the RFP to require commercial operation by December 31, 2027.

✓ Action Item 2(e). 2020 All-Source Request for Proposals

At the Company's May 12, 2022, 2023 IRP Public Input Meeting, on slide 39, the Company provided a status update on the 2020 AS RFP.³⁰ The Company completed the transitional interconnection cluster study process and selected the final shortlist that includes:

- 1,792 MW of new wind resources (590 MW as build-transfer agreements and 1,202 MW as power-purchase agreements)
- 1,453 MW of solar capacity (all power-purchase agreements)
- 735 MW of battery energy storage system capacity—535 MW paired with solar bids and 200 MW as standalone battery storage (power-purchase agreement)

²⁸ Docket No. 21-035-42, Application for a Solicitation Process, January 22, 2022.

²⁹ Docket No. 21-035-42, Order Approving 2022 All Source RFP, April 22, 2022, p. 2.

³⁰ See: https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-plan/2023-irp/PacifiCorp_2023_IRP_PIM_May_12_2022.pdf.

The Company stated that most 2020 AS RFP agreements are expected to be executed prior to the close of Q2 2022.³¹

✓ Action Item 3. Transmission Action Items

The Energy Gateway South transmission project was slated to be placed in service in Q4 2023 in the 2019 IRP Action Plan.³² However, the 2021 IRP Action Plan superseded the 2019 IRP Action Plan)³³ and contains the adjusted in-service schedule.

✓ Action Plan Progress

Overall, the Company continues to make the progress it claimed it would be making at this time to implement the 2021 IRP. The Division has determined that the Action Plan Update in the Company's 2021 IRP Update is adequate and encourages continued work on the action items that are still in flux or are in various stages of implementation.

Conclusion

The Company filed the 2021 IRP Update and the Action Plan Update on March 31, 2022. The Division's comments address several of the inputs, assumptions, and resource mix changes to the preferred portfolio in the 2021 IRP Update. The Division interprets the short period of time that has transpired since the 2021 IRP filing on September 1, 2021, to have limited some of the changes and results contained in the 2021 IRP Update. Per Rule R746-430-1(3), the Commission is not required to acknowledge, accept, or issue an order pertaining to the action plan, so no action is required in this matter. The Division has begun working with the stakeholders for the 2023 IRP and recommends looking forward, focusing on improvements the 2023 IRP. The Division recommends that no action is required by the Commission.

cc: Michele Beck, Office of Consumer Services

Jana Saba, Rocky Mountain Power

³¹ Id.

³² PacifiCorp's 2019 IRP, Volume I, October 8, 2019, p. 24.

³³ PacifiCorp's 2021 IRP, Volume 1, September 1, 2021, p. 339. See:

<https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-plan/2021-irp/Volume%20I%20-%209.15.2021%20Final.pdf>.