- BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH -

Voluntary Request of Rocky Mountain Power for Approval of Resource Decision to Repower Wind Facilities	DOCKET NO. 17-035-39 REPORT AND ORDER

ISSUED: May 25, 2018

SYNOPSIS

The PSC approves, on a project-by-project basis, the projects and costs identified in PacifiCorp's voluntary request for approval of a resource decision to repower the Glenrock I, Glenrock III, Rolling Hills, Seven Mile Hill I, Seven Mile Hill II, High Plains, McFadden Ridge, Dunlap, Marengo I, Marengo II, and Goodnoe Hills wind facilities. The PSC declines to approve PacifiCorp's voluntary request for approval of a resource decision to repower the Leaning Juniper facility. The PSC declines to approve the proposed resource tracking mechanism.

I. BACKGROUND AND PROCEDURAL HISTORY

This docket arises out of the Application for Approval of Resource Decision to Repower Wind Facilities (Application) that PacifiCorp dba Rocky Mountain Power (PacifiCorp) filed with the Public Service Commission (PSC) on June 30, 2017.

a. Voluntary Request for Resource Decision

On June 23, 2017, PacifiCorp filed with the PSC a notice of its intent to file a voluntary request for approval of a resource decision, pursuant to Utah Administrative Code R746-440-1(2). On June 30, 2017, PacifiCorp filed its Application to upgrade or "repower" the following wind resources: the Glenrock I, Glenrock III, Rolling Hills, Seven Mile Hill I, Seven Mile Hill II, High Plains, McFadden Ridge, and Dunlap facilities in Wyoming; the Leaning Juniper facility in Oregon; and the Marengo I, Marengo II, and Goodnoe Hills facilities in

Washington. The proposed upgrades to wind facilities are referred to in this order as the "Repowering Project."

Under Utah Code Ann. § 54-17-402, the PSC has the authority to hear voluntary requests to approve all or part of a proposed resource decision by a public utility before the utility implements the resource decision. Resource decisions include those relating to "an energy utility's acquisition, management, or operation of energy production, processing, transmission, or distribution facilities or processes . . . ."[1] When considering a voluntary request to approve a resource decision, Utah Code Ann. § 54-17-402(3)(b) requires the PSC to determine whether the decision is in the public interest, taking into consideration: (i) whether it will most likely result in the acquisition, production, and delivery of utility services at the lowest reasonable cost to the retail customers of an energy utility located in this state; (ii) long-term and short-term impacts; (iii) risk; (iv) reliability; (v) financial impacts on the energy utility; and (vi) other factors determined by the PSC to be relevant. In the event the PSC approves a resource decision under this statute, Utah Code Ann § 54-17-402(7) requires the PSC to include in its order: (a) findings as to the approved projected costs of a resource decision; and (b) the basis upon which the findings are made.

b. Procedural History

The PSC held a scheduling conference on July 12, 2017 to establish an adjudication schedule. On July 13, 2017, the PSC issued a Scheduling Order, Notice of Technical Conference, Notice of Hearing, and Order Granting Extension to Exceed 180-Day Approval Deadline

[1] Utah Code Ann. § 54-17-401(2)(a)(i).

(Scheduling Order).[2] The PSC granted the following parties' intervention requests: Utah Association of Energy Users (UAE); Nucor Steel-Utah (Nucor); Interwest Energy Alliance (IEA); Utah Clean Energy (UCE); and Western Resource Advocates (WRA).

Pursuant to the Scheduling Order, on September 20, 2017, the Division of Public Utilities (DPU), the Office of Consumer Services (OCS), and UAE filed direct testimony. On October 19, 2017, PacifiCorp and UAE filed rebuttal testimony. On November 15, 2017, PacifiCorp, the DPU, and the OCS filed surrebuttal testimony.[3]

On November 22, 2017, PacifiCorp filed an Unopposed Motion to Amend Procedural Schedule (Motion), requesting the PSC amend the deadlines established in the Scheduling Order for the purpose of gaining more certainty concerning pending federal tax legislation that could affect the Repowering Project. On November 27, 2017, the PSC granted the Motion and issued an Amended Scheduling Order (Amended Scheduling Order).

Pursuant to the Amended Scheduling Order, on February 1, 2018, PacifiCorp filed Supplemental Testimony. On April 2, 2018, the DPU, the OCS, and UAE filed supplemental response testimony and on April 23, 2018, PacifiCorp and the OCS filed supplemental rebuttal testimony.

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[2] Utah Code Ann. § 54-17-402(6) provides the PSC 180 days to approve or disapprove a voluntary request for approval of a resource decision, starting with the day on which the request is filed. The statute also authorizes the PSC to extend the time for issuing a decision, if the PSC determines additional time to analyze the resource decision is warranted and is in the public interest. PacifiCorp filed its application on June 30, 2017 and requested a PSC decision by December 29, 2017, which exceeded the PSC's 180-day deadline to issue its decision by approximately two days. The parties present at the July 12, 2017 scheduling conference all agreed an extension was warranted. Given the relatively short extension requested, and considering it was supported by all those present at the scheduling conference, the PSC concluded a delay was warranted and in the public interest and subsequently granted an extension pursuant to Utah Code Ann. § 54-17-402(6).

[3] On November 16, 2017, UAE filed surrebuttal testimony in accordance with the PSC's November 16, 2017 Order Granting Stipulated One-Day Extension to UAE to File Surrebuttal Testimony.

The PSC held a hearing on May 3 and 4, 2018 at which PacifiCorp, the DPU, the OCS, and UAE presented testimony.

c. The Application

i. Background

PacifiCorp requests the PSC approve the Repowering Project, with estimated costs of $1.101 billion, as being prudent and in the public interest, pursuant to Utah Code Ann. § 54-17-402. PacifiCorp seeks PSC approval for the Repowering Project now, before it commits to the costs of major equipment orders and equipment installation contracts. PacifiCorp's request is contingent upon approval of its ability to fully recover the costs of its investment in plant equipment replaced due to the Repowering Project and upon approval of its proposed ratemaking treatment, discussed in detail below.

The proposed Repowering Project represents an upgrade to 999.1 megawatts (MW) of PacifiCorp-owned existing wind capacity at the 12 sites listed above and includes the installation of new nacelles with higher-capacity generators and new rotors with longer blades allowing wind turbines to produce more energy over a wider range of wind speeds. With these upgrades, total nameplate capacity of the repowered facilities will increase to 1,123.6 MW resulting in an expected average increase in energy output of about 26 percent, or an additional 738 gigawatt-hours (GWh) of energy annually.[4]

PacifiCorp claims the Repowering Project will reduce operating costs, extend the useful lives of the wind facilities by another 10 years, and will provide for greater control of power

[4] *See* Supplemental Direct Testimony of Rick T. Link (Redacted), filed February 1, 2018 at 4, lines 73-76; Exhibit RTL-1SD, p. 1 of 1.

quality and voltage, allowing PacifiCorp to more easily integrate the energy from the wind facilities into the transmission system and support the reliability of the grid. PacifiCorp also claims the Repowering Project will avoid significant future capital expenditures associated with turbine gearbox failures and will increase long-term net power cost (NPC) benefits to customers and will provide for new federal Production Tax Credit (PTC) benefits that will be fully passed on to PacifiCorp's customers.

PacifiCorp states its 2017 Integrated Resource Plan (IRP) identifies the Wind Repowering project as a least-cost, least-risk resource and is included in the IRP's preferred portfolio. In addition, PacifiCorp asserts the Repowering Project is a time-limited resource opportunity allowing PacifiCorp to take advantage of recent changes to the federal Internal Revenue Code implemented by the Internal Revenue Service (IRS).

PacifiCorp testifies the existing PTCs for most of the wind facilities in question are set to expire in 2018 and 2019, and asserts that by October 2020, the PTCs associated with approximately 2.64 terrawatt-hours of electricity generated by PacifiCorp's wind facilities will expire, representing the loss of approximately $100 million per year in customer PTC benefits (in 2017 dollars).[5] PacifiCorp maintains the Repowering Project will allow the pertinent wind facilities to requalify for PTCs for an additional 10 years.

PacifiCorp commits to assume the risk of non-qualification for PTCs if the repowered facilities are not 100-percent PTC eligible because of some occurrence within PacifiCorp's control. According to PacifiCorp, this commitment "extends to entities with whom the Company has contracted for services including contractors, vendors, and suppliers—meaning that if the

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[5] *See* Direct Testimony of Timothy J. Hemstreet, filed June 30, 2017, at 8-9, lines 178-185.

failure to qualify for PTCs is due to an event within a contractor's control, the Company will hold customers harmless."[6]

ii. Economic Analysis

PacifiCorp's economic analysis of the Repowering Project studies the change in its system revenue requirements with implementation of the Repowering Project across nine different scenarios, each with varying natural gas and carbon dioxide (CO2) price assumptions. The analysis covers both a 20-year period and the Repowering Project's remaining life (through 2050) on both an overall basis and on a project-by-project basis. In the 20-year analysis (2017 through 2036), PacifiCorp employed the same modeling approach it used to develop and analyze resource portfolios in its 2017 IRP, with the exception that PTC benefits are determined on a nominal rather than levelized basis.[7,8] The longer-term study analyzes annual revenue requirement through 2050 to determine impacts over the full depreciable life of the repowered projects. Here revenue requirement from capital associated with the Repowering Project is treated as a nominal cost, and PacifiCorp extrapolates the results from the 20-year IRP-based analysis to estimate the change in system net benefits from 2037 through 2050.

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[6] *See* Supplemental Rebuttal Testimony of Gary W. Hoogeveen, filed April 23, 2018, at 8, lines 182-185.

[7] This represents a change in the analysis from PacifiCorp's direct and rebuttal filings; *see* Supplemental Direct Testimony (Redacted) of Link, filed February 1, 2018 at 10-11, lines 185-204.

[8] This approach calculates system present-value revenue requirement (PVRR) by identifying least-cost resource portfolios and dispatching system resources over the 20-year planning horizon. PacifiCorp calculates levelized net customer benefits as the PVRR differential (PVRR(d)) between two simulations of PacifiCorp's system, one simulation including the Repowering Project, and the other simulation excluding the Repowering Project. Customer benefits are expected to occur when the PVRR(d) with the Repowering Project is lower than the system PVRR(d) without repowering.

The economic analysis assumes PacifiCorp will fully recover the unrecovered investment in the original equipment and earn its authorized rate of return on the unrecovered balance over the remainder of the original 30-year depreciable life of each repowered facility.

PacifiCorp claims net customer benefits occur across all nine natural gas/CO2 price-policy scenarios within both the 20- and 30-year periods of its analysis. Combined PVRR(d) results for all of the facilities (i.e., the full scope of the Repowering Project) among all nine price-policy scenarios over the 20-year period through 2036 range from $139 million in net customer benefits when assuming low natural gas prices and medium CO2 prices, to $248 million in customer benefits when assuming high natural gas prices and medium CO2 prices.[9] Combined PVRR(d) results over the remaining life (through 2050) of the repowered wind facilities range from $121 million (low natural gas prices and medium CO2 prices) to $466 million (high natural gas prices and high CO2 prices), according to PacifiCorp.[10]

For its updated project-by-project analysis, PacifiCorp only uses two price-policy scenarios: 1) the low natural gas price and zero CO2 price scenario, and 2) the medium natural gas price and medium CO2 price scenario. On a project-by-project basis, assuming the low natural gas price and zero CO2 price-policy scenario, all repowered facilities yield a net benefit within the 20-year period through 2036, except Leaning Juniper, which yields a stochastic-mean PVRR(d) net cost of $3 million. Estimated net benefits for the remaining 11 facilities range from $3 million to $28 million, totaling $149 million. Under the medium natural gas and medium CO2

[9] *See* Supplemental Direct Testimony (Redacted) of Link at 20, Table 5-SD. These represent Planning and Risk Model (PaR)-derived stochastic mean PVRR(d) values which PacifiCorp defines as the average of net variable operating costs from the distribution of system variable costs combined with system fixed costs from PacifiCorp's IRP-based System Optimizer (SO) model.

[10] *See id.* at 22, Table 6-SD.

price-policy scenario over this period, all repowered facilities yield a net benefit except Leaning Juniper which breaks even, with estimated net benefits for the remaining 11 facilities ranging from $4 million to $33 million for a total of $180 million.[11]

Through the 2050 time frame, PacifiCorp's analysis shows all projects except Leaning Juniper yield positive net benefits under both price-policy scenarios. During this period of the analysis, individual project nominal PVRR(d) net benefits range between $0 (Leaning Juniper breaks even) and $46 million (totaling $194 million) under the low natural gas/zero CO2 price-policy scenario, and between $7 million and $75 million (totaling $306 million) under the medium natural gas/medium CO2 price-policy scenario.[12]

To evaluate its extrapolated results over the 2037 to 2050 time frame PacifiCorp provides an alternative analysis based on flat market prices at the Palo Verde market hub. The analysis assumes three different levels of Palo Verde prices, i.e., at 70 percent, 100 percent, and 130 percent of the Palo Verde forward price curve with no escalation in Palo Verde prices after 2042. Based on this approach, PacifiCorp claims if the Repowering Project's incremental energy is valued at 100 percent of the Palo Verde forward price curve, the PVRR(d) benefits would be $78 million higher.[13]

iii. Proposed Ratemaking Treatment

To recover Repowering Project costs and to account for customer benefits, PacifiCorp requests the PSC approve a new cost recovery mechanism, the Resource Tracking Mechanism (RTM). Through the RTM PacifiCorp proposes to record and defer, on a monthly basis,

[11] *See id.* at 13-14, Tables 1-SD and 2-SD.
[12] *See id.* at 15, Table 3-SD.
[13] *See id.* at 26-27, lines 445-462.

incremental capital and operating costs, net power cost savings not captured in the Energy Balancing Account (EBA), and PTC benefits, beginning with the on-line date of the first repowered facility.

PacifiCorp calculates the RTM deferral as the difference between the value included in base rates for the deferral costs and benefits and the new value, accounting for the costs and benefits of repowered wind facilities as they are placed into service. When the repowered wind resources are captured in base rates through a future general rate case, the amount in rates will become the “wind base” plant balance that will be subtracted from the capital investment in subsequent annual RTM filings.

Regarding the accounting treatment for wind equipment replaced by the Repowering Project, PacifiCorp proposes to remove these assets from plant in service and record remaining book balances in its accumulated depreciation reserve account. PacifiCorp requests that it be allowed to continue to recover these costs in rates. Once the Repowering Project’s full costs are reflected in base rates in a general rate case, PacifiCorp proposes that the RTM continue to track only year-over-year changes in PTCs to capture the full impact of the new PTCs.

In its Application, PacifiCorp proposes to cap the RTM until the next general rate case to avoid a customer surcharge. Without a cap, PacifiCorp claims the RTM would show a net revenue requirement increase to customers of $0.9 million in 2019, $9.6 million in 2020, and $4.1 million in 2021, with a net decrease thereafter.[14] PacifiCorp proposes to separately defer these costs for future ratemaking treatment.

[14] *See* Supplemental Direct Testimony of Joelle R. Steward, filed February 1, 2018 at 5, lines 89-90.

II. POSITIONS OF THE PARTIES ON THE REPOWERING PROJECT SCOPE AND RECOMMENDED ALTERNATIVES

The DPU, the OCS, and UAE all recommend that the PSC not approve PacifiCorp's Application. Should all or some of the individual sites be approved, each party recommends alternative proposals that would limit the Repowering Project's scope and apply conditions limiting the risk that estimated benefits fail to materialize.

The DPU develops a project-by-project benefit-cost analysis from 2018 through 2050 based on PacifiCorp's modeled results and its alternative Palo Verde price forecast methodology, assuming the low gas/zero CO2 and medium gas/medium CO2 price-policy scenarios. The DPU's analysis shows that 11 of the 12 projects are cost beneficial under the medium Palo Verde price case, medium gas/medium CO2 and low gas/zero CO2 price-policy scenarios. Under DPU's 70 percent of PacifiCorp's low Palo Verde forward price scenario, 11 of the 12 projects are cost beneficial under the medium gas/medium CO2 scenario and 9 of the 12 projects are cost beneficial under the low gas/low CO2 scenario.[15]

Based on its analysis, the DPU recommends the PSC not approve any alternative configuration in this case. Rather, PacifiCorp should consider filing a downsized repowering program focused on sites with turbines requiring new gearbox equipment. The DPU claims the Seven Mile Hill I and II, Glenrock I and III, Dunlap Ranch, and Marengo I sites demonstrate better economics and may merit further consideration by PacifiCorp.

The OCS provides an analysis where capital revenue requirements are modeled using a non-levelized (nominal), declining capital revenue requirement stream. The OCS claims its

[15] *See* Response Testimony of Daniel Peaco (Confidential), filed April 2, 2018, at 24, Tables 4 and 5.

approach is similar to the way customers pay for revenue requirements through rates, and similar to the way that PacifiCorp now proposes to represent the PTC benefit stream.

The OCS's analysis shows that 11 of the 12 projects are cost beneficial, under both the medium gas/medium CO2 and low gas/low CO2 price-policy scenarios.[16] The OCS recommends the PSC only approve the Marengo I and II, Glenrock I, Dunlap Ranch, Seven Mile Hill I, and Goodnoe Hills projects, claiming these projects would result in significant capital cost savings without substantially reducing the total repowering benefits.

In addition, the OCS recommends that regardless of whether the PSC approves all or part of the wind repowering projects, the PSC should clearly specify the maximum dollar amount of the project costs for which Utah ratepayers would be responsible under pre-approval. In the event that stated benefits do not materialize, the OCS recommends that PacifiCorp should: 1) assume all responsibility for successful completion of PSC-authorized projects based on the schedule and the costs for those projects; 2) be limited to recovery of future capital expenditures and O&M costs consistent with the amounts included in its economic evaluation presented in its supplemental direct testimony; and 3) should guarantee that at least 95 percent of the PTC and energy benefits assumed in its supplemental direct filing analysis actually materialize.

UAE provides an analysis using PacifiCorp's original levelized PTC measurement methodology to forecast 20-year repowering benefits based on all of the same assumptions PacifiCorp used in its supplemental filing. On a project-by-project basis, UAE determines 6 of the 12 projects provide a net PaR stochastic mean PVRR(d) benefit, while one project "breaks even" under the medium gas/medium CO2 price-policy scenario. Under the low gas/zero CO2

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[16] *See* Response Testimony of Philip Hayet (Redacted), filed April 2, 2018 at 28, Table 5.

price-policy scenario, 3 of the 12 projects provide a net PaR stochastic mean PVRR(d) benefit, while one project breaks even.[17]

UAE also recalculated the 20-year SO and PaR PVRR(d) modeling results for the projects using nominal capital costs along with nominal PTC values and the assumptions PacifiCorp used in its supplemental filing. Under this approach, 11 of the 12 projects provide net PVRR(d) benefits assuming both the medium gas/medium CO2 and the low gas/low CO2 price-policy scenarios.[18]

UAE recommends that if the project is allowed to proceed, the Leaning Juniper project should be excluded, as this project fails to provide net benefits over a 20-year period even when measured using nominal PTCs and nominal capital costs in either the medium gas/medium CO2 or the low gas/zero CO2 price-policy scenarios. The PSC should also consider excluding Glenrock III, High Plains, McFadden Ridge, Dunlap Ranch, Rolling Hills, Marengo I, Marengo II, and Goodnoe Hills from pre-approval because, according to UAE, these projects, as well as Leaning Juniper, fail to provide net benefits over a 20-year period using the measurement metrics from the IRP, i.e., real levelized PTC values and costs.

UAE recommends PSC approval of any of the projects be conditioned on PacifiCorp's ability to demonstrate that: 1) construction costs come in at or below estimated costs; and 2) the energy (MWh) produced by the repowered facilities is equal to or greater than forecasted production. UAE also recommends the allowed return on common equity applicable to the undepreciated balances of retired plant be reduced by 200 basis points.

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[17] *See* Response Testimony and Exhibits of Kevin C. Higgins, filed April 2, 2018 at 32-33, Tables KCH-11-RE and KCH-12-RE.
[18] *See id.* at 35-36, Tables KCH-13-RE and KCH-14-RE.

III. DISCUSSION, FINDINGS, AND CONCLUSIONS

As noted above, we are required to determine whether the individual projects contained within the Repowering Project are in the public interest, taking into consideration: (i) whether they will most likely result in the acquisition, production, and delivery of utility services at the lowest reasonable cost to the retail customers of an energy utility located in this state; (ii) long-term and short-term impacts; (iii) risk; (iv) reliability; (v) financial impacts on the energy utility; and (vi) other factors determined by the commission to be relevant. Additionally, we are required to show findings as to the approved projected costs and show the basis upon which such findings were made. We examine these requirements in the context of issues contested by parties in this case: 1) PacifiCorp's need for the Repowering Project and concerns about its related economic justification; 2) parties' concerns about the proposed RTM; and 3) PacifiCorp's proposed recovery of costs associated with retired wind generation assets.

a. Project Need and Economic Analysis

i. Discussion

In general, parties other than PacifiCorp claim the Repowering Project is not needed to meet utility service and reliability requirements. The DPU and UAE assert PacifiCorp is pursuing the Repowering Project primarily as an opportunity to take advantage of PTC benefits before the program expires, for the purpose of lowering costs to customers. The DPU argues that "[i]n the absence of a need, the economic risk of making large investment decisions based on numerous assumptions and projections decades into the future, is too high."[19] The DPU claims PacifiCorp has not adequately demonstrated: 1) the wisdom of removing relatively new

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[19] Response Testimony of Dr. Joni S. Zenger, filed April 2, 2018 at 3, lines 53-55.

equipment from operation while continuing to recover costs for this equipment in rates; and 2) that the project will likely result in the delivery of utility services at the lowest reasonable cost to customers. The DPU also claims the record in this case does not support a conclusion that the Repowering Projects are prudent or in the public interest.

The DPU argues PacifiCorp's economic analysis does not recognize that repowering some turbines may provide more benefit than others, particularly those facilities with known issues such as defective gearboxes or higher-than-usual blade replacement rates. The DPU contends PacifiCorp's economic analysis contains problems that make the results unreliable and leave considerable uncertainty regarding the actual value that the Repowering Projects could provide to ratepayers.

In general, the DPU asserts: 1) the benefit-cost margins of the Repowering Project are not sufficient to assure a high likelihood of benefits to ratepayers; 2) there are questions as to whether PacifiCorp's modeling analysis over the 20-year period is sound and provides an accurate representation of the economic benefits of the project; 3) while the DPU agrees with PacifiCorp's view that the focus of analysis should be over a 30-year period, PacifiCorp's 30-year analysis does not appropriately reflect changes in revenue requirement; 4) PacifiCorp's alternative Palo Verde methodology is flawed because of concerns about applying Palo Verde prices to all projects and that these prices are higher than comparable forecasts because they are based on excessive implied market heat rates; and 5) ratepayers bear significant economic risks associated with uncertainty about project costs and production output estimates, and assumptions regarding project life.

The OCS asserts PacifiCorp has not complied with the requirements of Utah Code Ann. § 54-17-402, arguing PacifiCorp has not demonstrated that the project will result in the acquisition, production, and delivery of energy at the lowest cost in consideration of risk. The OCS contends that PacifiCorp's 20-year results do not demonstrate conclusively that the least-cost, least-risk portfolio of resources has been identified, and expresses concerns that customers will face risks of higher costs. The OCS also argues PacifiCorp's long-term analysis is flawed because PacifiCorp's extrapolation method overstates the replacement energy benefits between 2037 and 2050. The OCS asserts PacifiCorp should have used its SO and PaR models to derive optimal expansion plans and produce energy-related benefits. The OCS also asserts that there is a high probability that natural gas and CO2 costs will be in the low to medium price forecast range and argues it is quite possible there will be no CO2 costs, particularly in the 2017 to 2036 study horizon.

Like the DPU, the OCS expresses concern that PacifiCorp's alternative Palo Verde methodology also overstates replacement energy benefits, arguing that without performing proper modeling analyses, it would be speculative to even consider the 70 percent of Palo Verde case results reasonable. Finally, the OCS contends PacifiCorp has not evaluated all resource alternatives to the Repowering Project, and the possibility exists that other more economic resources such as solar could be part of PacifiCorp's least-cost, least-risk resource plan, noting that PacifiCorp has not updated its solar resource cost assumptions based on more current information.

Parties generally express concern that PacifiCorp's modeling analysis now applies federal PTC benefits on a nominal rather than levelized basis. The parties contend that this approach:

1) distorts the 20-year results and does not provide a reasonable estimate of project benefits; 2) is inconsistent with the IRP process; 3) does not allow a comparison of benefit results that PacifiCorp provided in its direct and rebuttal filings; and 4) is not supported by any new evidence or new analyses.

UAE argues that the 20-year benefit results should either be measured using the original IRP levelization framework, or, if the IRP treatment of PTCs is to be abandoned, through a consistent pairing of nominal PTCs and nominal capital costs. UAE asserts that by changing the method for valuing PTCs without also changing the method of valuing capital costs, PacifiCorp is effectively "cherry picking" the combination of valuation methods that achieves the most favorable outcome.

PacifiCorp argues DPU's benefit-cost analysis is a high-level, simplified representation of PacifiCorp's more detailed and accurate analysis that validates that PacifiCorp's economic analysis is reasonable and shows that even in the most extreme scenario (low natural gas, zero CO2 price) 11 of 12 facilities are expected to generate net benefits. PacifiCorp also argues the OCS's and UAE's alternative analyses are flawed because they calculate present-value capital revenue requirement costs on a nominal basis over a period, i.e., 20 years, that is shorter than the life of the asset (30 years). PacifiCorp contends it is only appropriate to include capital revenue requirement on a nominal basis in present-value calculations when those calculations cover the full depreciable life of the repowered facilities.

PacifiCorp asserts it is appropriate to consider nominal PTC benefits in the 20-year IRP analysis because these benefits will be realized within the 20-year time frame, and claims the 20-

year IRP analysis appropriately weights PTC values as front-end loaded benefits without disproportionately weighting capital costs in the present-value calculations.

In addition, in response to UAE's concern that PacifiCorp's analysis in its supplemental filing is a departure from the IRP approach, PacifiCorp argues the present-value results from IRP modeling assess the relative difference in system costs among different resource portfolios over a 20-year planning time frame and are not configured to forecast annual rate impacts between these portfolios.

ii. Findings and Conclusions

We find the evidence demonstrates 11 out of the 12 Repowering Projects will most likely result in net customer benefits, under both the low gas/zero CO2 and the medium gas/medium CO2 price-policy scenarios. Indeed all parties provide analyses that support this finding. We find that it is more appropriate to focus on results over the longer-term (i.e., 30 year) useful life of the Repowering Project. We also find that the results of the long-term analyses provided by all parties show there is a higher likelihood that benefits will materialize under all price-policy scenarios.

No party has provided a reasonable basis for us to disregard the higher customer benefits associated with the potential occurrence of high gas or high CO2 prices or the potential for enhanced reliability benefits on the transmission system.[20] Moreover, no party disputes that there may be potential future benefits associated with the value of incremental renewable energy

[20] Although PacifiCorp has not yet modeled the potential benefits related to enhanced reliability, PacifiCorp testifies regarding the enhanced ability of the repowering turbines to provide voltage and inertial support to the transmission system in Wyoming. PacifiCorp also provided studies to parties through discovery indicating a need for additional reactive power on PacifiCorp's transmission system that will be provided by the Repowering Projects. *See* Supplemental Rebuttal Testimony of Hemstreet at 24, lines 505-512.

credits (RECs) that will be produced by the repowered wind facilities, and the potential salvage values that may be realized for the equipment replaced.[21] Similarly, no party explores in detail the potential values associated with capacity or the additional zero-cost energy benefits after the PTCs expire. While parties argue that future gas prices are likely to align more closely with PacifiCorp's low natural gas price forecast, no party disputes PacifiCorp's assertion at hearing that the medium natural gas price forecast, based on PacifiCorp's December 2017 OFPC, is reasonable and is aligned with other major third-party natural gas price forecasts.

We find that: 1) the DPU's limited proposal to evaluate six of the projects in a new application would heighten PacifiCorp's risk of failing to qualify for full PTC benefits; 2) the OCS's analysis and recommendations do not adequately address the ratio of benefits to costs when the OCS recommends excluding at least one project because of a perceived low benefit without a comparison to the individual project cost; and 3) the wind facilities the OCS proposes to be excluded are expected to generate net benefits to ratepayers even in the lowest gross-benefit scenario, i.e., low natural gas and zero CO2 price assumptions. We find that to either deny approval of all projects and require a new application, or to approve six projects while denying six others, would carry a significant risk of denying Utah ratepayers a benefit that has been established as likely to occur through elaborate sensitivity modeling.

[21] PacifiCorp estimates that benefits for all price-policy scenarios would improve by approximately $12 million for every dollar assigned to the incremental RECs that will be generated from the wind repowering project through 2050. Additionally, PacifiCorp's updated CO2 price assumptions used in the updated economic analysis were inadvertently modeled in 2012 real dollars instead of nominal dollars, thus making the net benefit estimates more conservative. *See* Supplemental Direct Testimony (Redacted) of Link, at 23-24, lines 401-413. PacifiCorp states it will pass through any salvage value it realizes through the reuse or sale of the existing equipment. *See* Direct Testimony (Redacted) of Hemstreet, filed June 30, 2017, at 27, lines 605-607.

With these findings and conclusions, we find that eleven of the individual proposed repowering projects in the proposed resource decision, excluding the Leaning Juniper project, are in the public interest. In making this finding, we have considered the factors required by Utah Code Ann. § 54-17-402(3)(b). With respect to the first factor, providing electricity "at the lowest reasonable cost to the retail customers," our discussion above demonstrates that each individual project, excluding the Leaning Juniper project, meets that standard. All parties presented various modeling with various inputs. For the reasons we have articulated in our discussion of those modeling inputs and outputs, we find that the totality of the modeling supports a cost-based approval of the eleven individual projects we are approving.

This evaluation requires some subjectivity as we consider the various modeling sensitivities. We conclude that the purpose of sensitivity modeling is to consider as broad a range as possible of future scenarios, evaluate them based on information that is available at the time, and make a reasoned decision based on that modeling. Considering those concepts, we find that eleven individual projects, excluding the Leaning Juniper project, are most likely to benefit ratepayers from a cost perspective when considering all of the modeling sensitivities presented in this docket. This finding is further supported by the potential benefits from REC values, increased capacity, salvage values and enhanced reliability of the transmission system that the eleven projects will produce.

On the issue of the cost benefit for each individual project, the Leaning Juniper project requires a closer evaluation than the other eleven projects, all of which enjoy much broader net-positive modeling sensitivity. The Leaning Juniper project yields less positive modeling results, particularly during the 20-year evaluation period. Considering the high capital costs of Leaning

Juniper and the decline in the forecasted incremental energy output, we find that the Leaning Juniper project carries a materially higher risk than the other eleven projects and that it will not be cost effective if energy production falls short of forecasts. We also find that the Leaning Juniper project carries more risk than the other eleven projects under a low-gas/zero CO2 scenario. While we have already articulated that we do not intend to give more weight to that particular scenario than to other future scenarios, that factor along with the other higher risks for the Leaning Juniper project lead us to be unable to find that the Leaning Juniper project is likely to provide a cost benefit to ratepayers.

We decline to approve the voluntary request for resource decision for the Leaning Juniper project. This decision does not mean PacifiCorp may not still pursue that project. It means that the Leaning Juniper repowering project will not have the protections afforded by Utah Code Title 54, Chapter 17, Part 4. If PacifiCorp chooses to implement the project, the project will be subject to a standard prudence review in future general rate cases. Our order declining to approve the project in this docket may not be interpreted to pre-judge that issue in any way.

Our findings with respect to the eleven projects we have approved address the other statutorily required considerations, and we find that all of the factors favor approval. One consideration is long-term and short-term impacts of the individual repowering projects. We have an extensive record that includes evaluation of costs and benefits and modeling sensitivities over various time durations. Our approval of these projects has appropriately assessed another consideration, the risks, and holds PacifiCorp accountable for risks that are within the utility's control. The remaining statutory factors are reliability and financial impacts on PacifiCorp. No party to this proceeding has sufficiently refuted PacifiCorp's assertion that the Repowering

Projects have the potential to enhance reliability of the transmission system. Furthermore, no party to this proceeding has contested PacifiCorp's claim that the Repowering Projects are likely to make the existing wind facilities more reliable over the long term with a reduced need for maintenance and repairs, and no party has argued that the Repowering Projects are likely to have negative financial impacts on PacifiCorp beyond the risks for which PacifiCorp has agreed to be accountable.

Based on our findings, we approve, on a project-by-project basis, the capital costs estimated for eleven projects, excluding the Leaning Juniper project, as presented in PacifiCorp's Confidential Exhibit RMP_TJH-1SD, page 1 of 3, column 8, (Supplemental Filing Energy and Cost Estimates), pursuant to Utah Code Ann. § 54-17-402(7).[22] PacifiCorp will bear the risks related to construction cost overruns for each individual project. Any amount for an individual project above the individual project capital cost amounts listed in column 8 of PacifiCorp's Supplemental Filing Energy and Cost Estimates is not approved. Pursuant to Utah Code Ann. § 54-17-403(b), any increase from the projected costs specified above for each individual project shall be subject to PSC review.

We conclude that for the projects we have approved, PacifiCorp will be held accountable for meeting PTC eligibility requirements. We further conclude that it is appropriate to hold PacifiCorp accountable for prudently managing risks that are within its control under the "new information or changed circumstances" doctrine of Utah Code Ann. § 54-17-403(2)(a). We affirmatively reject, though, the concept that PacifiCorp should bear risks that are not within its

[22] As noted above, PacifiCorp's current cost estimate is $1.101 billion for the entire Repowering Project (*see* Supplemental Rebuttal Testimony (Redacted) of Hemstreet, filed April 23, 2018, at 6, lines 125-136). This amount conforms to the total amount listed in Confidential Exhibit RMP_TJH-1SD, page 1 of 3, column 8.

control. While both PacifiCorp and the PSC have an obligation to consider those risks as part of our evaluation of a voluntary request for resource decision, it would violate that statute, general ratemaking principles, and good public policy to hold a utility accountable in the future for risks that are outside of the utility's control.

We therefore conclude that PacifiCorp must honor its commitment that PacifiCorp will bear the risks related to any portion of the Repowering Project that does not qualify for the maximum PTCs available unless the failure to qualify for PTCs is a result of either: 1) a change in law; or 2) an event that is beyond the reasonable control of PacifiCorp and the entities with whom PacifiCorp has contracted for services including contractors, vendors, and suppliers.

To the extent any repowered project fails to qualify for PTCs, in whole or in part, due to an issue that was within the control of PacifiCorp or the entities with whom PacifiCorp has contracted, we expect to evaluate the issue pursuant to Utah Code Ann. § 54-17-403(2)(a). Depending on the factual scenario, that evaluation might result in PTCs being imputed to each such project based on that project's actual wind output for equipment placed in service and included in rate base at full revenue value (i.e., including full gross up for federal and other applicable taxes).

Regarding performance of equipment installed as part of the Repowering Project, we direct that any liquidated damages[23] received by PacifiCorp under contractual agreements with vendors will be passed on to customers.

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[23] Liquidated damages include, but are not limited to, liquidated damages received due to the equipment not meeting specified availability and performance.

b. RTM

i. Discussion

Parties other than PacifiCorp recommend the PSC reject PacifiCorp's proposed RTM. The DPU, the OCS, and UAE all contend that if the PSC approves the repowering project, PacifiCorp should simply file a general rate case to address associated ratemaking issues. Both the OCS and the UAE contend the proposed RTM adds unnecessary complexity to the regulatory process and reduces PacifiCorp's incentive to control project costs. The OCS argues the RTM shifts risks to ratepayers, lacks specificity regarding amounts included in base rates, and may improperly include certain costs and ignore property tax reduction impacts. UAE claims the RTM represents a departure from conventional ratemaking and raises issues about the efficacy of identifying costs and setting rates in isolation and shares the OCS's concern that it does not account for expected property tax reductions on existing plant.

As an alternative to the RTM, the DPU recommends the PSC consider approving deferred accounting treatment structured similar to the RTM where PTCs, costs (including capital investment costs), depreciation, and other related costs are matched and would remain in a deferred account until a general rate case. The DPU suggests that incremental energy costs would flow through the EBA.

Before implementing the RTM, UAE recommends the PSC should determine whether the recoverable costs are: 1) volatile; 2) beyond PacifiCorp's control; and 3) significant enough to materially impact PacifiCorp's revenue requirement and financial health between general rate cases if they were to go unrecovered. However, UAE argues Repowering Project costs do not appear to be subject to significant volatility and are now less uncertain as the project's contract negotiations and technical studies are nearing completion. In addition, UAE claims PacifiCorp's earnings are reasonably healthy and PTC variability does not warrant special ratemaking treatment.

If the PSC approves the RTM, UAE recommends it be modified to remove the proposed long-term PTC tracking mechanism, arguing PTCs are not currently tracked in the manner proposed by PacifiCorp and that it is not necessary to track PTCs going forward to ensure just and reasonable rates. UAE also recommends PacifiCorp's original proposal to cap the surcharge at the amount of incremental NPC benefits should be retained with no deferral of costs exceeding the cap. Further, UAE recommends the treatment of property tax expense should be modified to account for the expected reduction in property tax on existing plant that would occur as the Repowering Project is implemented and existing plant is retired.

PacifiCorp claims that without the RTM, or a modification to exclude NPC benefits from the EBA, customers would receive benefits without paying for the costs necessary to achieve those benefits. PacifiCorp also asserts that UAE's three-part test does not consider that there is a need to match costs and benefits, one of the fundamental reasons that PacifiCorp has requested the RTM.

ii. Findings and Conclusions

We find that adequate means exist to allow PacifiCorp to seek recovery of Repowering Project costs without our implementation of a new rate mechanism. The evidence before us shows that PacifiCorp has taken steps to control recoverable costs and to minimize risks that may impact revenue requirement and PacifiCorp's financial health between general rate cases.

We conclude that PacifiCorp can effectively seek recovery of Repowering Project costs and benefits through available ratemaking mechanisms such as general rate cases, requests for deferred accounting treatment, and/or the EBA. We therefore decline to adopt PacifiCorp's proposed RTM.

c. Recovery of Retired Wind Assets

i. Discussion

The DPU maintains that PacifiCorp's proposal to recover costs for and earn a rate of return on removed "legacy" turbine equipment that is no longer used and useful for a period of 30 years is unprecedented. The DPU claims future ratepayers who would receive no PTC benefits or those who would receive inadequate PTC benefits could continue to pay for the legacy equipment for its remaining amortizable value for 20 years or more. To minimize potential intergenerational equity issues, the DPU recommends reducing the legacy plant amortization period to match the period where PTC benefits are realized, i.e., approximately 10 years.

UAE is concerned that if the PSC were to lock in to a 10-year amortization period, as proposed by the DPU, this would have implications for customers in the near term that have not been fully vetted. Further, UAE contends that should the Repowering Project be approved, customers in the last 10 years of the 30-year Repowering Project life would "have a 'bequest' given to them by the customers of today, by investing in a plant today that is likely to be providing benefits 21 years from now, and obviating the need for new investments 21 years from now."[24] Both PacifiCorp and UAE assert the most reasonable course of action is to consider all such questions in the context of the forthcoming depreciation study.

ii. Findings and Conclusion

We find that the DPU's proposal may have customer impacts that need to be explored in greater detail. We conclude that determining the appropriate amortization period for those assets would be better addressed as part of the new depreciation study to be filed by PacifiCorp later this year. Similarly, we reserve for consideration in an appropriate future ratemaking proceeding the degree, if any, to which the rate of return on those assets should be adjusted.

IV. ORDER

1. We approve the projects, and the estimated capital costs, for eleven of the projects, excluding the Leaning Juniper project, as presented in PacifiCorp's Confidential Exhibit RMP_TJH-1SD, page 1 of 3, column 8 (Supplemental Filing Energy and Cost Estimates), pursuant to Utah Code Ann. § 54-17-402 and the conditions listed herein.
2. When each of the projects we have approved in this order are completed, we direct PacifiCorp to file in this docket an accounting of each project's final costs.
3. We decline to approve the Leaning Juniper project, or its individual project cost estimate. If PacifiCorp chooses to implement the Leaning Juniper project, the prudence of that action will be considered in a future

[24] Hearing Transcript 434926-A, May 4, 2018, at 174, lines 2-6.

general rate case, and this order may not be interpreted to pre-judge that issue in any way.

4. We decline to approve the RTM.

DATED at Salt Lake City, Utah, May 25, 2018.

/s/ Thad LeVar, Chair

/s/ David R. Clark, Commissioner

/s/ Jordan A. White, Commissioner

Attest:

/s/ Gary L. Widerburg
PSC Secretary
DW#302401

Notice of Opportunity for Agency Review or Rehearing

Pursuant to §§ 63G-4-301 and 54-7-15 of the Utah Code, an aggrieved party may request agency review or rehearing of this Order by filing a written request with the PSC within 30 days after the issuance of this Order. Responses to a request for agency review or rehearing must be filed within 15 days of the filing of the request for review or rehearing. If the PSC does not grant a request for review or rehearing within 20 days after the filing of the request, it is deemed denied. Judicial review of the PSC's final agency action may be obtained by filing a petition for review with the Utah Supreme Court within 30 days after final agency action. Any petition for review must comply with the requirements of §§ 63G-4-401 and 63G-4-403 of the Utah Code and Utah Rules of Appellate Procedure.

CERTIFICATE OF SERVICE

I CERTIFY that on May 25, 2018, a true and correct copy of the foregoing was served upon the following as indicated below:

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