TORMOEN HICKEY LLC
Lisa Tormoen Hickey, Colo. Reg. #15046
P.O. Box 7920
Colorado Springs, CO 80933
Telephone: (719) 302-2142
E-mail: lisahickey@newlawgroup.com

BEFORE THE PUBLIC UTILITIES COMMISSION OF UTAH

In the Matter of Rocky Mountain Power's 2019 Integrated Resource Plan	)))	Docket No. 19-035-02

INITIAL COMMENTS OF THE INTERWEST ENERGY ALLIANCE

TABLE OF CONTENTS

I. INTRODUCTION

The Interwest Energy Alliance ("Interwest") was granted leave to intervene in this docket related to the PacifiCorp 2019 Integrated Resource Plan ("2019 IRP") on January 2, 2019. Interwest is a 501 (c)(6) nonprofit trade association bringing together the nation's leading solar, wind, geothermal and storage developers with the nongovernmental environmental community to expand renewable energy around the Intermountain West, including Utah as well as Wyoming, Colorado, New Mexico, Arizona, and Nevada. Interwest has been actively engaged in public input processes hosted by PacifiCorp to develop its integrated resource plans in recent years and in regulatory dockets to implement the plans in Utah and Wyoming, including the Energy Vision arising out of the 2017 IRP. Interwest plans to be engaged when the 2019 IRP is implemented through a request for proposals ("RFP") for expansion of PacifiCorp's renewable energy resource portfolio.

Interwest recommends PacifiCorp's 2019 Integrated Resource Plan ("2019 IRP") be acknowledged, conditioned on resolving the interconnection queue revisions anticipated in its separate interconnection queue reform stakeholder process, and further contingent on its issuance of a fair and predictable request for proposals with commitment to acquire renewable energy and storage facilities to fulfill the Preferred Portfolio. Interwest recommends the transmission expansion plans be approved, but it should be approved only with assurances that the utility will allow for interconnection of the anticipated renewable energy facilities discussed in the action plan.

A. PacifiCorp's 2019 IRP appropriately responds to unyielding economic realities – aging coal units have become expensive to operate compared to efficient advanced renewable technologies.

PacifiCorp's 2019 IRP filed on October 18, 2019 signals a new direction for the utility, which will include dramatic reductions in greenhouse gas emissions. PacifiCorp announced a "bold vision with our customers for a future where energy is delivered affordably, reliably and without greenhouse gas emissions."[1] The additional renewable energy acquisitions planned by PacifiCorp will bring fuel cost savings and other cost reductions, which exceed the cost of the new transmission which will tap into Utah's rich renewable energy resources. Interwest supports the coal plant retirements and new renewable energy acquisitions contained in the action plan, as well as the commitment to achieve these goals without new gas within the action plan period. Interwest makes several recommendations which should be considered essential to fulfilment of the IRP goals, including competitive acquisition of the new renewable and storage facilities.

PacifiCorp's selection of the 2019 IRP Preferred Portfolio is supported by data analysis and an extensive stakeholder input-process, described in in its report filed in this docket. This portfolio was developed by modeling after a number of public stakeholder meetings, attended by Commission and consumer advocate staff as well as other stakeholders, including the Interwest Energy Alliance. Interwest submitted written comments advocating for higher levels of renewable energy based on lower costs than that modeled by PacifiCorp, and discouraging subsidization or preferences for other more costly fossil fuel-driven resources.

PacifiCorp's Preferred Portfolio continues investments in new wind, transmission, and demand side management (DSM), while adding significant solar and battery resources. By 2025, the Preferred Portfolio includes nearly 3,000 megawatts (MW) of new solar resources, more than

[1] PacifiCorp 2019 IRP, p.1.

3,500 MW of new wind resources, nearly 600 MW of battery storage capacity (all of which is combined with new solar resources), 860 MW of incremental energy efficiency resources and new direct load control capacity. Over the 20-year planning horizon, the Preferred Portfolio includes more than 4,600 MW of new wind resources, more than 6,300 MW of new solar resources, more than 2,800 MW of battery storage by 2038 (nearly 1,400 MW of which are stand-alone storage resources starting in 2028), and more than 1,890 MW of incremental energy efficiency resources and new direct load control capacity. The Preferred Portfolio also contemplates the construction of a 400-mile transmission line known as Gateway South connecting southeastern Wyoming and northern Utah, which is essential to bringing on some of the renewable projects and should be a required condition for acknowledging the IRP and Preferred Portfolio, along with issuance of a fair and predictable RFP and acquisition of the renewable projects. This Preferred Portfolio represents a significant step forward for PacifiCorp, bringing long term savings for its customers.

Recent trends show that wind, solar and battery storage can likely be acquired at even lower cost and greater efficiency than modeled by PacifiCorp.[2] The bids which will be submitted in the RFP will provide accurate information about current costs. These bids will create the actual final Preferred Portfolio and should be relied upon as resource cost assumptions in the next IRP, assuming acquisitions on a level playing field with a balanced ownership mix. Importantly, PacifiCorp should not be allowed to build the transmission described in the action plan, Gateway South, and then have the option of choosing not to acquire a full slate of resources to complete the Preferred Portfolio from the RFP. Rather, the approved scenario should be established and then the utility should be required to fulfil it through a fair and predictable RFP. This type of acquisition

[2] The projected costs included in Table 6.1 are somewhat higher than the costs recognized by other utilities in recent acquisitions.

process tied to the resource plan is followed in other states and should be considered best regulatory practice. Interwest includes in its recommendations in these initial comments conditions of acknowledgement and approval of the 2019 IRP and action plan items.

Western states such as New Mexico and Nevada have raised the bar much higher for new clean energy goals through legislative action in 2019, which will require additional of substantial new renewable energy to the grid.[3] Washington has increased its long term goal to 100% carbon-neutral electricity sales by 2045, which is a jump up from the previous standard of 15% sales from renewable energy by 2020.[4] PacifiCorp fairly easily meets the Utah 2025 state target to supply 20 percent of adjusted retail sales with eligible renewable resources with existing owned and contracted resources and new renewable resources and transmission in the 2019 IRP Preferred Portfolio.[5] PacifiCorp should continue to strive to meet the higher levels of clean energy to match these trends rather than falling behind the curve so that through steady pattern of acquisitions it can meet these rising goals without having to play catch-up, which is expensive for both the utilities and independent power producers, and ultimately for electricity consumers.

PacifiCorp's 2019 IRP includes energy storage for the first time, because the IRP modeling assumptions have been revised to become more aligned with industry standards as to cost and functionality. Other utilities around the Western Interconnect are already acquiring energy storage to support their renewable acquisitions and provide reliable service. Battery storage coupled with a renewable resource can replace a baseload power unit. Baseload power units are resources that operate continuously to meet the lower bound of power demand. Historically, coal units, such as those owned and operated by PacifiCorp, provided baseload power given what were then low-marginal costs,

[3] "Four states updated their renewable portfolio standards in the first half of 2019", EIA, June 24, 2019, https://www.eia.gov/todayinenergy/detail.php?id=39953.
[4] Ibid.
[5] 2019 IRP, Vol. 1, p. 15.

as there was limited deployment of zero-marginal cost resources like wind and solar. However, these coal units have significant operational constraints including limited ramping capabilities, minimum up/down times, and minimum generation levels. These constraints introduce significant inertia to the system, which operationally restricts the rest of the generating fleet, thus increasing the system cost of serving load. Utility-scale battery storage coupled with utility-scale renewable resources can replace baseload units by providing firm energy and capacity throughout the day without inertia. This eliminates the thermal operating constraints of the system and provides it significant flexibility as a result.

Renewable energy paired with battery storage can replace a peaking power unit, supplying electricity only during times of peak demand. Technically, these units, which are typically fueled by natural gas like the one proposed in PacifiCorp's Preferred Portfolio, are flexible and capable of fast ramping. However, these units have low utilizations because their high-marginal costs limit their dispatch and operation. Thus, these facilities provide little additional value in terms of energy or other grid services during the year beyond peak capacity during critical hours. Renewable energy paired with battery storage units, on the other hand, are setup for high utilizations across the year (not only during peak load hours) due to their low-marginal costs. Renewable energy paired with battery storage units, given their capability to ramp even faster than traditional peaking units, are technically superior for meeting unexpected generation shortfalls or demand surges.

Stand-alone battery storage facilities have additional planning benefits. It can help smooth the "lumpiness" of resource acquisitions, reducing costs. Since incremental battery storage can be built quickly and on an as-needed basis, due to the modular nature of the technology, resource portfolios with battery storage can reduce the amount of reserve margin necessary to reliably serve load. The ability to construct resource portfolios with more, smaller units increases the number of resource portfolio options possible to precisely adapt the uncertainty in load forecasts. Thus, battery storage increases the optionality inherent in the resource portfolio. Recent analysis by the Rocky Mountain

Institute reveals that batteries are becoming a lower cost option when compared to natural gas resources.[6] PacifiCorp has seen the potential for new gas plants to become stranded in the near future, and therefore appropriately is delaying any new gas acquisitions until after the action plan period (2026 or later) so there will be further consideration in future IRPs.[7]

Other utilities are benefitting from renewables paired with storage to replace coal units, so PacifiCorp is not in uncharted territory. In November 2019, Salt River Project ("SRP") announced two new solar-paired battery storage resources that will help replace the energy and capacity removed from its system by the shutdown of the Navajo Generating Station (after an unsuccessful two-year search for a buyer for the coal plant). In January 2020, SRP announced another RFP for up to 400 MW of solar.[8] Previously, in May 2018, SRP had entered a 20-year contract for a 10 MW, four-hour duration battery to provide peaking capacity during periods of high demand. Consistent with this trend, Portland General Electric ("PGE") announced that it finds wind, combined with solar and battery storage on the same site to be a cost-effective zero emission resource, as part of its portfolio of replacement power for the Boardman coal-powered plant. The new facility consists of 300 MW wind, 50 MW solar, and a 30MW, four-hour battery; construction on the solar and battery components is planned for 2021.[9]

---

[6] Tyson, Madeline, Charlie Bloch. Breakthrough Batteries: Powering the Era of Clean Electrification. Rocky Mountain Institute, 2019. http://www.rmi.org/breakthrough-batteries.

[7] 2019 IRP, p. 12.

[8] "SRP solar expansion announcement: Cutting emissions through major solar + battery energy purchase", Jan. 15, 2020, https://blog.srpnet.com/srp-solar/. The new resources include the Sonoran Energy Center, an approximately 250 MW system with the solar array charging a 1 GWh battery, and the Storey Energy Center, an approximately 88 MW solar and storage system. According to SRP, the coupled systems will help SRP to continue meeting its summer peak demand while also reducing carbon emissions, and will provide a "significant economic boost," including new jobs and millions in additional tax revenue.

[9] "PGE and NextEra to Build Nation's First Facility to Combine Wind, Solar, and Storage", T&D World.Com, Feb. 20, 2019, https://www.tdworld.com/renewables/article/20972236/pge-and-nextera-to-build-nations-first-facility-to-combine-wind-solar-and-storage.

NV Energy issued its Fall 2018 Renewable Energy RFP on October 16, 2018, soliciting up to 350 MW of renewable energy resources and any additional energy storage systems paired with the renewable energy. The RFP resulted in three solar-paired battery storage projects, which were approved by the Public Utilities Commission of Nevada on December 5, 2019.[10] Since those approvals, NV Energy has announced an additional 690 MW solar with 380 MW storage facility which was approved by the BLM to be built on public lands, continuing approvals which included the 80 MW solar project located on BLM lands in Wyoming, which created numerous construction jobs.[11]

Public Service Company of Colorado has already obtained approval to retire 660 MW of coal generation and replace them with 1,100 megawatts of wind, 700 megawatts of solar, and 275 megawatts of battery storage. Xcel estimated that the plan will save its customers more than $200 million and create an estimated 2,000 new jobs, including construction jobs.[12]

Other than the gas conversion for Naughton 3, PacifiCorp's Preferred Portfolio includes no new gas resources during the Action Plan period. This is a worthy step which avoids potentially stranded investments. Recent trends show renewable energy prices continue to fall, even lower than projected by PacifiCorp. Energy storage prices are falling to make it cost effective when all of its services are properly valued.[13] Financing and other metrics will continue to be squeezed

---

[10] Nevada regulators approve NV Energy plan for 1,190 MW solar, 590 MW storage, Walton, R., UtilityDive, Dec. 9, 2019, https://www.utilitydive.com/news/nevada-regulators-approve-nv-energy-plan-for-1190-mw-of-new-solar-resource/568659/.

[11] Trump administration set to approve NV Energy's 1.5 GWh storage, 690 MW solar project, Morehouse, C., Jan. 2, 2020, https://www.utilitydive.com/news/trump-administration-set-to-approve-nv-energys-690-mw-solar-farm-largest/569676/.

[12] Colorado Energy Plan, Xcel Energy, 2019. https://www.xcelenergy.com/staticfiles/xe-responsive/Company/Rates%20&%20Regulations/Resource%20Plans/CO-Energy-Plan-Fact-Sheet.pdf.

[13] Burns McDonnell, "CAPEX Cost Forecast By Renewable Resource", IRP Vol. II, App. P, Renewable Resources Assessment, App. E, Declining Cost Curves (2018), p. 308; See also "Renewable energy prices keep falling: When do they bottom out?", Mai, HJ, UtilityDive, May

while the costs of equipment becomes more variable.[14] Many states have modified their commission and resource planning rules to promote battery storage and help ensure that its full value is realized and compensated.[15] PacifiCorp's Energy Storage Potential Evaluation is a good step towards recognizing these benefits in its modeling and resource planning.[16]

PacifiCorp's cost assumptions for solar resources continue to be too high, especially related to operations and maintenance costs ("O&M"). The Supply Side Resource table contained in the IRP includes an assumption that solar resources will face fixed O&M costs in the range of roughly $21/kW/year to $23/kW/year.[17] This range falls much higher than the O&M costs for projects today.[18]

Additional renewable resources will help attract commercial and industrial customers because of their low costs and long-term stable prices.[19] Utah's recent adoption of HB 411 and associated collaboration between municipalities reveals the intense interest among local governments and large commercial customers such as the ski industry in acquiring emissions-free

---

30, 2019, https://www.utilitydive.com/news/renewable-energy-prices-keep-falling-when-do-they-bottom-out/555822/.

[14] Ibid.

[15] In many states (AZ, CA, CO, HI, MA, MI, MN, NJ, NM, OR, VT, VA, WA), regulators have adapted regulatory processes to incorporate the flexibility and value of energy storage into their proceedings, requiring utilities to include it in their resource planning processes and updating procurement evaluation methods. Twitchell, June 2019, A Review of State-Level Policies on Electrical Energy Storage https://doi.org/10.1007/s40518-019-00128-1.

[16] 2019 IRP, App. Q, p. 311/348.

[17] 2019 IRP, Vol. I, Table 6.1, "Supply Side Resources", p. 133.

[18] For example, Lazard's latest analysis estimates utility-scale solar fixed O&M costs to be between $9 and $12 per kW-year. Lazard, "Lazard's Levelized Cost of Energy Analysis – Version 13.0", p. 16 (Nov. 2019); https://www.lazard.com/perspective/lcoe2019. See also NREL, Annual Tech Baseline: Utility-Scale PV (2019)(costs for O&M approx. $13/kW/year, declining over time); https://atb nrel.gov/electricity/2019/index.html?t=su.; See also "US Solar maintenance costs plummet as tech gains multiply", Feb. 6, 2019, https://analysis.newenergyupdate.com/pv-insider/us-solar-maintenance-costs-plummet-tech-gains-multiply.

[19] See, e.g. PacifiCorp's acquisitions for Facebook and several communities, 2019 IRP, Exec. Sum., p. 4.

electricity sources. Several states within the PacifiCorp service territory will suffer losses due to coal unit retirements, so incentives and forward-looking policies to attract new commercial and industrial investments remains a priority. Support for this IRP and a robust renewable portfolio will help provide a stable policy backdrop which is recognized by a number of these concerns, and which will stimulate additional commercial and industrial interest in Utah.

PacifiCorp's action plan is a dramatic shift in its approach, driving by increasing costs of operating coal units and regulatory compliance related to operation of these aging thermal units. Advanced technologies bring substantial cost savings and allow for the transition to means to produce reliable electricity supply while reducing greenhouse gas emissions over the next 10 years. Additional groundwork should be laid to further reduce greenhouse gas emissions and pollution from fossil fuel driven generators. Utilities are now starting to remove self-scheduling of coal units,[20] a policy that PacifiCorp should also adopt for its remaining coal units as a step towards the transition away from substantial reliance on coal as base load resources.

B. The transition will require efficient, predictable and transparent interconnection queue processes, coordinated transmission expansion, and competitive resource acquisitions.

i. The interconnection queue process is not functioning properly.

The interconnection queue process requires revisions, and timing of the completion of this important process remains uncertain, as does the timing of PacifiCorp's FERC filing to request approval of a revised interconnection tariff which is discussed below. These processes should be coordinated so that the tariff revisions *are in place prior to the RFP bids being due*, all within the

[20] At least one utility has dropped self-scheduling for its coal units. B. Storrow, ÉENews Climatewire, "Many utilities have a "must-run" policy. One broke the rule", Jan. 14, 2020, https://www.eenews.net/stories/1062072877/print.

time period which still allows the eligibility for the higher levels of the federal investment tax credit ("ITC") as well as the extended federal production tax credit ("PTC").[21]

PacifiCorp's interconnection queue has been clogged and interconnection studies have been stalled for over two years, preventing new efficient renewable energy projects from advancing through the queue in a timely fashion. This Commission is aware of the transmission planning/resource acquisition disconnect from the "Energy Vision 2020" acquisitions following the 2017 IRP and decision-making process.[22] PacifiCorp describes this series of mishaps and its impact on the request for proposals in its interconnection queue stakeholder process as follows:

> In addition to the concerns raised by the development community, PacifiCorp's experience during the Energy Vision 2020 procurement efforts provides another reason to align the timeframes. Specifically, PacifiCorp learned that state commissions and certain stakeholders were generally unfamiliar with and frustrated by the perceived negative impact of the OATT's serial interconnection requirements on PacifiCorp's competitive solicitation process. Some state regulators expressed doubt that PacifiCorp's RFP results were truly competitive and could maximize the economic value of generation to PacifiCorp's customers. These states and stakeholders felt the serial interconnection requirement disqualified otherwise economic projects, and thus resulted in sub-optimal RFP results. In addition to the example of the OR commission, which refused to acknowledge the 2017 IRP in large part because of the RFP concerns, the Utah Commission expressed its own concerns. The IE retained by the Public Service Commission of Utah to oversee the RFP on its behalf expressed similar concerns, noting in his report that both IEs "expressed some frustration that the bid selection process ended up being limited to selection of only those projects with favorable queue positions," and that "all other proposals submitted were behind the interconnection queue constraint and would have no chance of being selected."[23]

[21] The PTC was recently extended by Congress to give the opportunity for a 40% tax credit through 2020. WPED Staff, "Wind production tax credit extended by one year", Dec. 17, 2019; https://www.windpowerengineering.com/ptc-extended-by-one-year/.

[22] https://energyvision2020.com/

[23] The foregoing and the following were included in PacifiCorp Generator Interconnection Procedure Reform, Revised Straw Proposal, issued Nov. 29, 2019, Interconnection Queue Reform 2019, https://www.oasis.oati.com/ppw/index.html.

PacifiCorp filed its application for tariff revisions to accomplish its queue reform proposal on January 31, 2020.[24] Whether this application is likely to receive prompt FERC approval is yet to be seen. If not approved on a timely basis, a large number of potentially lower-cost resources will again be negatively impacted with delays and uncertainty which may impede participation due to lack of transmission upgrade cost projections. This creates a situation where PacifiCorp holds an unintended and yet unworkable advantage in an RFP bid review process, tilting the playing field in favor of projects higher in the queue, regardless of their relative overall cost. The need for a prompt approval creates compressed timing which now places industry representatives in a situation where objections to the FERC filing will potentially delay a positive outcome, no matter how legitimate the concerns, and time draws short before investment tax credits for solar energy step down again. Careful scrutiny by the Commission and Commission staff with stakeholder input may help reduce the potential impacts on competitive nature of an RFP issued under these circumstances in a separate RFP-review docket.

ii. Transmission planning and resource planning should leverage cost effective transmission expansion.

The acquisitions which are vital to the 2019 IRP are dependent on several targeted transmission upgrades to relieve deliverability constraints in southern Utah and the addition of a 400-mile transmission line known as Gateway South, planned to come online by the end of 2023, that will connect southeastern Wyoming and northern Utah.[25] Utah, and southern Utah specifically, hosts the greatest solar resource in PacifiCorp's territory due to high solar insolation and competitive land opportunities. Several targeted transmission upgrades identified in the 2019

[24] FERC docket no. ER20-924, https://elibrary.ferc.gov/idmws/docket_sheet.asp?docket=ER20-924&Subdocket=000.
[25] 2019 IRP, p. 7.

IRP are required to leverage Utah's natural resource and to support in-state economic development. The Gateway South line was determined to be cost-effective because of the additional PTC-compliant wind it would bring online. However, PacifiCorp does not tie the transmission line approval and construction process to the RFP or renewable acquisitions. This disconnect may be acceptable only if it does not tilt the bid review process in the RFP to unduly limit qualified projects. Therefore, time is of the essence for completion of this line.

iii. The RFP for new generation should be reviewed and approved in advance.

The RFP should be approved in advance by the Utah Commission, pursuant to Utah's well-developed competitive bidding rules, to ensure a level playing field. Special attention and required disclosures shall be required from PacifiCorp related to transmission interconnection requirements so that bidders are not surprised by restrictions and as many cost-effective bids as can be developed can compete.

The RFP should be preceded by approval of the process with a level playing field established for all resources as to ownership by IPPs and the utility, as further discussed below. A balanced mix of ownership reduces risks and costs to ratepayers. The RFP and bid review process should be carefully scrutinized for any inherent bias. Balancing utility ownership and independent power producer ownership of all resources acquired on a level playing field will produce the least cost-least risk resource mix.

Eventually, it would be appropriate to require that PacifiCorp's resource planning process be integrated with an RFP as is required in some states such as Colorado. In Colorado the Commission approves various scenarios based on the initial modeling submitted by the utility, based on market research. Once the scenarios are approved, the utility is required to go to the market with a fair and competitive RFP to acquire the resources to meet the demand through

various portfolio options compliant with the approved scenarios. The Commission then approves the final portfolio, effectively ratifying the fairness of the overall bid review process and ensuring a predictable acquisition pattern which attracts a large number of industry competitors, guaranteeing the lowest costs available on the market. This effective link between the resource planning and acquisitions of the most cost-effective portfolio helps maintains best practices for utility acquisitions.[26]

C. PacifiCorp's 2019 IRP includes an expensive and unnecessary 500 MW added "reserve requirement".

PacifiCorp's IRP includes a "buffer" of 500 MW which is not required for reliability purposes and overstates costs to electricity customers, increasing actual costs by skewing the portfolio towards less cost-effective resource mix. PacifiCorp conducted a Flexible Reserve Study ("FRS") to estimate the amount of reserves needed "to manage variations in load, variable energy resources ("VER"s), and resources that are not VERs" in each of its balancing authority areas.[27] PacifiCorp's PaR modeling applied portfolio-specific hourly reserves requirements determined by the FRS to cover "the combined deviations of the load, wind, solar and Non-VERs on PacifiCorp's system."[28] PacifiCorp also constrained its own model to account for resource capacity limitations in the Northwest.[29] However, without sufficient explanation, it also arbitrarily added a 500 MW expensive reserve requirement "buffer". This buffer will effectively require additional baseload type resources without good foundation in engineering best practices related to resource planning.

[26] See Colorado's resource planning rules, https://www.colorado.gov/pacific/dora/electricrules.
[27] IRP, Vol. II, App. F, p. 77.
[28] Ibid, p. 78.
[29] Ibid, p. 155. This accounts for what PacifiCorp could predict as to market resource constraints.

At a minimum, this modeling adder should be rejected unless and until PacifiCorp produces a peer-reviewed and published study which warrants the redundant and expensive buffer.

Other operational changes will also bring savings, due to lower reserve requirements, some of which are not yet reflected in the modeling for this IRP. The increase in renewable energy and storage can enhance reliability on the PacifiCorp system. Wind and solar together can provide high capacity values for meeting peak demand, even at high penetrations.[30] Wind, solar, and storage resources also complement each other in that adding one of those resources tends to increase the capacity value of the others. Wind and solar resources tend to exhibit opposite output profiles on both a daily and seasonal basis, so the resources complement each other. Solar and to a lesser extent wind can increase the capacity value of storage. Renewable energy can provide load-following services without storage.[31] Energy storage is bringing flexibility advantages as battery facilities are brought online by other utilities around the West. Studies are beginning to show that energy storage is generally available at full capacity value even at increasing penetrations.

D. Increasing regional grid coordination will reduce costs and increase reliability, enabling PacifiCorp to better serve its customers, including in Utah and Wyoming.

Transmission expansion described in the action plan will enable the renewable acquisitions and will bring cost savings, and lower curtailments.[32] Interwest applauds PacifiCorp's addition of

[30] See, for example, the summary and citations included here: Michael Goggin, "Renewable Energy Builds a More Reliable and Resilient Electricity Mix," (May 2017); https://www.ourenergypolicy.org/wp-content/uploads/2017/05/AWEA-Renewable-Energy-Builds-a-More-Reliable-and-Resilient-Electricity-Mix.pdf.

[31] Investigating the Economic Value of Flexible Solar Power Plant Operation. First Solar and E3, (2018); https://www.ethree.com/wp-content/uploads/2018/10/Investigating-the-Economic-Value-of-Flexible-Solar-Power-Plant-Operation.pdf.

[32] See "Western Flexibility Assessment", Western Interstate Energy Board, Dec. 10, 2019 "WIEB Flexibility Study"; https://westernenergyboard.org/2019/12/western-flexibility-assessment/. Data

the endogenous transmission planning analysis from System Optimizer in this IRP, which is an improvement over past IRPs.[33] These modeling improvements can better reflect the overall long-term cost savings from transmission expansion that taps into fuel cost saving renewables.

In order to achieve the greatest potential use and benefits from the existing and expanded grid, additional market coordination will be warranted in the near future. The Western Energy Imbalance ("EIM") will continue to provide increasing benefits as more utilities join,[34] as will the enhanced day ahead market ("EDAM") construct if adopted. Since states served by PacifiCorp have rich renewable resources, they will be well-served to develop them for export purposes if not to serve PacifiCorp's native load.

PacifiCorp has been a leader in advancing regional grid coordination by joining the Western EIM as a founding member. Further steps will enhance the array of options and improve renewable energy integration, with efficient use of the existing grid. PacifiCorp notes in its IRP report as follows:

> The benefits of access to an integrated wholesale market have grown with the increased penetration of intermittent generation such as solar and wind. Intermittent generation tends to come online and go offline abruptly in congruence with changing weather conditions. Federal and state (where applicable) tax credits, declining capital costs, and improved technology performance have put wind and solar "in the money" in areas of high potential. As such, wind and solar will dominate U.S. capacity additions for the next decade. To better integrate these resources into the larger grid requires more flexible generation, transmission, new storage technologies, and market design changes.[35]

---

was included from Oregon and Washington as well as states within the WECC located outside of PacifiCorp's service territory. WEIB Flexibility Study, p. 34.

[33] 2019 IRP, Vol. 1, p. 18.

[34] C. Zichella, "Western EIM Expands, Electricity Markets Outlook Brightens", Sept. 24, 2019, https://www.nrdc.org/experts/carl-zichella/western-eim-expands-electricity-markets-outlook-brightens; See CAISO, "Benefits, Western Energy Imbalance Market", last accessed Feb. 3, 2020, https://www.westerneim.com/Pages/About/QuarterlyBenefits.aspx.

[35] 2019 IRP, p. 36.

Market design changes will enable PacifiCorp's suppliers to generate electricity in a reliable and cost-effective manner to achieve its goals for its customers throughout its service territory from a variety of generating sources, including renewable energy from rural areas around the West.

PacifiCorp likely understates the reduction in reserve requirements enabled by its participation in the Western Energy Imbalance Market. Each additional participant will likely bring increased reductions, even if the incremental rate of change flattens with each new utility.

Finally, PacifiCorp failed to account for the likely reduction in reserve requirements to be brought through the enhanced day ahead market, which is currently under review by CAISO. While these savings are, as et, unquantifiable, the EDAM will not be approved without anticipated savings, so Interwest recommends the Utah Commission calls for a sensitivity to project these savings in the next IRP.

II. CONCLUSION

Interwest supports the plans to retire outdated coal units along the timelines included in the action plan, and to the renewable energy acquisitions through a fair and predictable request for proposals. PacifiCorp should be required to promptly and in a transparent fashion eliminate the backlog in its clogged interconnection queue study process. The costs and operational potential for renewable energy and battery storage projects in the next IRP should be derived from the RFP, and modeling assumptions should be adjusted as recommended in these comments. Interwest supports the transmission expansion projects outlined in the action plan and anticipates further discussions about how to better integration transmission and generation resource planning.

Respectfully submitted this 4th day of February, 2020.

/s/ Lisa Tormoen Hickey
Lisa Tormoen Hickey, Colo. Reg. #15046
TORMOEN HICKEY LLC
P.O. Box 7920
Colorado Springs, CO 80933
Telephone: 719-302-2142
E-mail: lisahickey@newlawgroup.com

On Behalf of Interwest Energy Alliance

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing was electronically filed and served by email this 4th day of February, 2020, as follows:

psc@utah.gov, Utah Public Service Commission

ROCKY MOUNTAIN POWER Yvonne Hogle Yvonne Hogle (yvonne.hogle@pacificorp.com) Data Request Response Center (datarequest@pacificorp.com) Utah Dockets Utahdockets@pacificorp.com Jana Saba Jana.saba@pacificorp.com Joelle Steward Joelle.Steward@pacificorp.com	DIVISION OF PUBLIC UTILITIES Erika Tedder (etedder@utah.gov) ASSISTANT UTAH ATTORNEYS GENERAL Patricia Schmid (pschmid@agutah.gov) Justin Jetter (jjetter@agutah.gov) Chris Parker (chrisparker@utah.gov) William Powell wpowell@utah.gov dpudatarequest@utah.gov	OFFICE OF CONSUMER SERVICES Office of Consumer Services Robert Moore rmoore@agutah.gov Steven Snarr stevensnarr@agutah.gov Michele Beck (mbeck@utah.gov) Cheryl Murray (cmurray@utah.gov) Bela Vastag (bvastag@utah.gov) Madison Galt (mgalt@utah.gov)
UTAH ASSOCIATION OF ENERGY USERS Gary Dodge (gdodge@hjdlaw.com) Phillip J. Russell (prussell@hjdlaw.com	UTAH CLEAN ENERGY hunter@utahcleanenergy.org kate@utahcleanenergy.org sarah@utahcleanenergy.org	Western Resource Advocates sophie.hayes@westernresources.org Nancy.kelly@westernresource.org smichel@westernresources.org

/s/*Lisa Tormoen Hickey*
Lisa Tormoen Hickey