June 16, 2017

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**RE: Docket UE-160353, Comments of Renewable Northwest on Pacific Power and Light Company's 2017 Integrated Resource Plan.**

## I. INTRODUCTION

Renewable Northwest appreciates the opportunity to comment on Pacific Power and Light Company's ("PacifiCorp" or the "Company") 2017 Integrated Resource Plan ("IRP").[1] PacifiCorp's preferred portfolio ("FS-GW4") seeks to add 1,100 MW of new Wyoming wind resources by the end of 2020 connected to a new 140-mile, 500 kV transmission line from the Aeolus substation near Medicine Bow, Wyoming, to the Jim Bridger power plant.[2] The Company also seeks to repower 905 MW of existing wind resources by the end of 2020, including the Marengo project in Washington and the Leaning Juniper project in Oregon. Furthermore, the preferred portfolio envisions no further select catalytic reduction ("SCR") emission control investments in the Company's coal fleet,[3] and does not anticipate a new gas plant until 2029.[4] As discussed further in these comments, Renewable Northwest welcomes the Company's transition toward a clean energy future, and recommends that the Washington Utilities and Transportation Commission's ("Commission") acknowledge the 2017 IRP.

PacifiCorp's investments mostly focus on resources outside of the West Control Area ("WCA"), and therefore would not be captured by the Commission methodology for allocating the costs of PacifiCorp's multi-state system based on what is used and useful in providing service to Washington customers.[5] However, economic and political pressure continues to mount towards ending coal generation. While the majority of the resources in this IRP's Action Plan would be located outside the WCA, and therefore not be deemed used and useful by the Commission, potential future coal plant retirements may make resources outside the WCA more relevant to Washington.

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[1] Washington Utilities and Transportation *Commission, Notice of Opportunity to File Written Comments on Pacific Power and Light Company's 2017 Integrated Resource Plan (April 27, 2017)*
[2] PacifiCorp 2017 IRP, p2
[3] PacifiCorp 2017 IRP, p 195
[4] PacifiCorp 2017 IRP, p 218
[5] UE-152253, Petition For a Rate Increase Based on a Modified Commission Basis Report, Two-Year Rate Plan, and Decoupling Mechanism, Exhibit No. JBT-1T, p63

Renewable Northwest congratulated PacifiCorp on the high degree of stakeholder involvement and communication during its 2015 IRP.[6] While this was still generally the case throughout the 2017 IRP, the Company fell short of the high standard of communication stakeholders have come to expect. The Company "successfully executed WTG [wind turbine generation] equipment purchases in December 2016"[7]; however, IRP stakeholders were not made aware of this purchase until Public Input Meeting 8 on March 2–3, 2017.[8] Renewable Northwest understands the nature and magnitude of the time-limited opportunity that capturing 100% of the federal production tax credit ("PTC") represents, and we appreciate the Company's efforts to capture this value. Nonetheless, we are disappointed that stakeholders were not kept abreast, to the extent that was possible, of the Company's procurement plans and activities.

Renewable Northwest's comments focus on cataloging the nature of the time-limited PTC opportunity that the Company is pursuing. We then summarize and explain PacifiCorp's three-phase portfolio selection process. These comments are exclusively for the purposes of expressing Renewable Northwest's position on PacifiCorp's IRP, filed under UE-160353, and do not constitute legal or tax advice. Utilities should consult with their own tax advisor or attorney with regard to their company's tax situation.

## II. THE COMPANY DELAYED IN NOTIFYING IRP STAKEHOLDERS OF ITS DECEMBER, 2016 WIND TURBINE EQUIPMENT PURCHASE

The Company purchased wind turbine equipment in December 2016, but did not inform IRP stakeholders of its purchase until March 2017.

In its 2017 IRP, published April 4, 2017, PacifiCorp indicated that it had "executed wind-turbine-generator (WTG) equipment purchases in December 2016 to preserve the option to repower existing wind generation facilities and obtain PTC benefits for customers."[9] The Company added:

> These safe-harbor equipment purchases support repowering of the Wyoming wind fleet (Glenrock, Rolling Hills, Seven Mile Hill, High Plains, McFadden Ridge, and Dunlap), the Marengo project in Washington, and the Leaning Juniper project in Oregon by the end of 2020, enabling the projects to qualify for 100 percent of PTCs.

[6] UE-140546, PacifiCorp 2015 IRP, May 18, 2015
[7] PacifiCorp 2017 IRP, p 204
[8] PacifiCorp, 2017 IRP, Public Input Meeting 8, March 2–3, 2017, slide 5. www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2017_IRP/PacifiCorp_2017_IRP_PIM08_03-01-17_Final_Presentation.pdf
[9] PacifiCorp 2017 IRP, Executive Summary, p3

> Repowering of other projects in PacifiCorp's fleet may be feasible (i.e., Foote Creek and Goodnoe Hills).[10]

Repowering typically involves installing a newer nacelle and rotor on a wind turbine's existing tower and foundation.[11] Purchasing the equipment by the end of 2016 ensured that any wind projects that utilized the equipment would be eligible for generating the PTC at the 100% level ($23/MWh) for 10 years.[12]

PacifiCorp held a 2017 IRP stakeholder call before the WTG purchases on November 17, 2016. PacifiCorp held its next IRP stakeholder meeting on January 26–27, 2017, followed by the final stakeholder meeting on March 2–3, 2017. The 2017 IRP was ultimately filed on April 4, 2017. However, PacifiCorp did not discuss "repowering" or PTCs at the November 17, 2016, stakeholder call[13] or at the January 26–27, 2017, stakeholder meeting.[14]

PacifiCorp presented draft preferred portfolio highlights at the stakeholder meeting on March 6–7, 2017. Only then did PacifiCorp indicate to stakeholders that it was considering repowering 905 MW of existing wind resources, as well as procuring "[a]n additional 428 MW of incremental low-cost wind resources", by the end of 2020.[15] The Company also indicated at the March meeting that it would be further exploring "a time limited opportunity to align development of Energy Gateway sub-segment D2 with wind projects that can qualify for the full value of the PTCs".[16]

The Company's 10-K annual tax filing, accepted by the Securities and Exchange Commission ("SEC") on February 24, 2017, included the following historical and forecasted capital expenditures:

> Wind investments totaling $110 million in 2016 for the purposes of repowering certain existing wind-powered generating facilities and the construction of a new wind-powered generating facility. The repowering projects entail the replacement of significant components of older turbines. Planned spending for the repowering and new

[10] PacifiCorp 2017 IRP, p 205
[11] Vestas, PTC Renewal—Does it pencil out for you assets?, p 4 www.vestas.com/ptcrenewal
[12] Vestas, PTC Renewal—Does it pencil out for you assets?, p 5 www.vestas.com/ptcrenewal
[13] PacifiCorp, 2017 IRP, Public Input Meeting 6, November 17, 2016 http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2017_IRP/PacifiCorp_2017_IRP_PIM05_11-17-2016.pdf
[14] PacifiCorp, 2017 IRP, Public Input Meeting 7, January 26–27, 2017 www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2017_IRP/PacifiCorp_2017_IRP_PIM07_1-26-17_Presentation.pdf
[15] PacifiCorp, 2017 IRP, Public Input Meeting 8, March 2–3, 2017, slide 5. www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2017_IRP/PacifiCorp_2017_IRP_PIM08_03-01-17_Final_Presentation.pdf
[16] PacifiCorp, 2017 IRP, Public Input Meeting 8, March 2–3, 2017, slide 43. www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2017_IRP/PacifiCorp_2017_IRP_PIM08_03-01-17_Final_Presentation.pdf

> wind-powered generating facilities totals $31 million in 2017, $181 million in 2018 and $740 million in 2019. The energy production from the repowered and new wind-powered generating facilities is expected to qualify for 100% of the federal renewable electricity production tax credit available for 10 years once the equipment is placed in-service.[17]

Our understanding is that the Company's 10-K filing was the first publically available opportunity to learn about PacifiCorp's plans. Renewable Northwest is disappointed that PacifiCorp did not inform IRP stakeholders of the WTG equipment purchases before its March IRP stakeholder meeting. However, as we explain below, we understand that the Company made its December 2016 purchases to respond quickly to a time limited opportunity that arose on December 15, 2016.[18]

## III. THE COMPANY BECAME AWARE OF, AND ACTED UPON, A TIME-LIMITED OPPORTUNITY

The IRS released Notice 2017–04 on December 15, 2016, after the IRP stakeholder call of November 17, 2016, but before the next scheduled IRP meeting on January 26–27. In Notice 2017-04, the IRS clarified that wind facilities would have four years after construction began—whether significant physical work or the five percent safe harbor—to come into service in order to be eligible for the PTC (set at a level based on the year in which production began). Specifically, the IRS Notice 2017–04 modified and clarified three key issues for wind energy facilities electing the PTC:

1) the continuity safe harbor provision;
2) the ability to select the start of construction method; and
3) application of the safe harbor provision when retrofitting facilities.

*1) Safe harbor provision*
The IRS provided revised continuity safe harbor provisions, indicating that safe harbor could be achieved for facilities that came into service up to four years after construction began:

> […] if a taxpayer places a facility in service by the later of (1) a calendar year that is no more that four calendar years after the calendar year during which

[17] US Securities and Exchange Commission, Form 10–K, Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Commission Act of 1934, For the fiscal year ended December 31, 2016, PACIFICORP (with BERKSHIRE HATHAWAY ENERGY COMPANY) www.berkshirehathawayenergyco.com/assets/upload/financial-filing/BHE%2012.31.16%20Form%2010-K_FINAL.pdf

[18] On December 15, 2016, the U.S. Department of the Treasury issued Notice 2017-04 offering guidance on the use of the PTC in retrofitted facilities as well as expanding the continuity safe harbor.

construction of the facility began or (2) December 31, 2018, the facility will be considered to satisfy the Continuity Safe Harbor.[19]

*<u>2) Selecting the activity that indicates start of construction</u>*

In terms of defining when construction begins, a facility can elect either the "Physical Work Test" or the "Five Percent Safe Harbor".[20] Notice 2017–04 clarifies that construction starts according to which of these two options occurs first after June 6, 2016.[21] The "Physical Work Test" requires that "physical work of a significant nature" is begun, which for a wind facility could include "excavation for the foundation, the setting of anchor bolts into the ground, or the pouring of the concrete pads of the foundation".[22] The "Five Percent Safe Harbor" requires "five percent or more of the total cost of the facility" be incurred and, thereafter, "continuous efforts to advance towards completion of the facility".[23]

*<u>3) Application of safe harbor provision to retrofitting</u>*

In terms of how the five percent safe harbor would apply to retrofitted or repowered facilities, prior IRS guidance provided that a facility could qualify as "originally placed in service." Under prior IRS guidance, "even though it contains some used property, provided the fair market value of the used property is not more than 20 percent of the facility's total value (the cost of the new property plus the value of the used property) (80/20 Rule)".[24] IRS Notice 2017–04 clarified that "all costs properly included in the depreciable basis of the facility are taken into account",[25] "thereby including indirect costs that may be capitalized into the tax basis of the new facility".[26]

## IV. A SUMMARY AND EXPLANATION OF PACIFICORP's THREE-PHASE PORTFOLIO SELECTION PROCESS

This section summarizes PacifiCorp's preferred portfolio selection process. PacifiCorp's preferred portfolio selection process went through three phases: (1) "Regional Haze case screening"; (2) "eligible case screening"; and (3) "final screening for preferred portfolio selection".[27] For each phase, the Company evaluated portfolio performance, including a determination of the present value

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[19] IRS Notice 2017–4, Section 3. Extension and Modification of the Continuity Safe Harbor www.irs.gov/irb/2017-04_IRB/ar10.html

[20] IRS Notice 2016-31, Section 4. Additional Issues Regarding the Continuity Requirement, June 6, 2016 https://www.irs.gov/irb/2016-23_IRB/ar07.html#d0e709

[21] IRS Notice 2017–4, Section 4. Prohibition Against Combining Methods by which to Satisfy the Beginning of Construction Requirement www.irs.gov/irb/2017-04_IRB/ar10.html

[22] IRS Notice 2016-31, Section 5. Physical Work Test, June 6, 2016 https://www.irs.gov/irb/2016-

[23] IRS Notice 2013-20, Section 5. Safe Harbor, May 13, 2013 www.irs.gov/irb/2013-20_IRB/ar09.html#d0e2324

[24] IRS Notice 2013-20

[25] IRS Notice 2017–4, Section 4. Prohibition Against Combining Methods by which to Satisfy the Beginning of Construction Requirement www.irs.gov/irb/2017-04_IRB/ar10.html

[26] Baker Botts, IRS Clarifies Earlier Guidance on Production Tax Credit Safe Harbors, January 5, 2017

[27] PacifiCorp 2017 IRP, p 180

revenue requirement ("PVRR"), both using System Optimizer ("SO") and, stochastically, through Planning and Risk ("PaR") studies.[28]

*Phase 1*

Phase One screened Regional Haze ("RH") scenarios in order to select a coal fleet portfolio upon which all other portfolios would be constructed. PacifiCorp described how each RH scenario "considers the timing and magnitude of run-rate capital and operations and maintenance costs for individual coal units"[29] in order to comply with the Environmental Protection Agency's rule that "requires states to develop and implement plans to improve visibility in certain national park and wilderness areas."[30] Table 1 shows the risk-adjusted PVRR among the RH scenarios.

| Case | Risk Adjusted[1] | | | ENS Scenario Average | | | ENS Upper Tail Average | | | $CO_2$ Emissions | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PVRR ($m) | Change from Lowest Cost Portfolio ($m) | Rank | Average Annual ENS, 2017-2036 (GWh) | Change from Lowest ENS Portfolio | Rank | Average Annual ENS, 2017-2036 (GWh) | Change from Lowest ENS Portfolio | Rank | Total CO2 Emissions, 2017-2036 (Thousand Tons) | Change from Lowest Emission Portfolio | Rank |
| Ref | 26,395 | $1,146 | 7 | 14.1 | 2.6 | 7 | 33.7 | 3.3 | 6 | 786,334 | 27,895 | 4 |
| RH1 | 25,249 | $0 | 1 | 11.9 | 0.4 | 4 | 31.5 | 1.1 | 5 | 789,172 | 30,732 | 6 |
| RH2 | 25,544 | $295 | 4 | 12.2 | 0.7 | 5 | 34.7 | 4.2 | 7 | 758,440 | 0 | 1 |
| RH3 | 25,414 | $165 | 3 | 11.5 | 0.0 | 1 | 30.6 | 0.1 | 2 | 778,734 | 20,294 | 3 |
| RH4 | 25,757 | $508 | 5 | 11.9 | 0.4 | 3 | 30.6 | 0.2 | 3 | 790,896 | 32,456 | 7 |
| RH5 | 25,307 | $58 | 2 | 11.7 | 0.3 | 2 | 30.4 | 0.0 | 1 | 773,115 | 14,676 | 2 |
| RH6 | 26,111 | $862 | 6 | 12.4 | 1.0 | 6 | 31.1 | 0.7 | 4 | 787,410 | 28,971 | 5 |

[1] Based on average of 6 price-emissions scenarios

**Table 1—Risk-adjusted PVRR among Top Performing Portfolios, Phase One (Regional Haze portfolio screening)** [31]

The Company identified RH-5 as the top-performing Phase One portfolio based on a variety of SO and PaR observations, including its consistently high ranking (as can be seen in Table 1).[32] At stakeholders' request, the Company performed an additional sensitivity "to examine the impact of a Naughton Unit 3 retirement at year-end 2017 and a Craig 1 retirement at year end 2025".[33] This sensitivity analysis highlighted the benefits of such a scenario, and led to case RH-5a, which was a variant of RH-5, in which Naughton Unit 3 ceases operation at the end of 2018 (under the original RH-5, Naughton Unit 3 was "assumed to cease coal-fired operation in 2017, convert to natural gas in 2019, and retire at the end of 2029"[34]). PacifiCorp observed that case RH-5a "yields lower costs relative to case RH-5 in all price emissions scenarios" with cost reductions "most significant with high natural gas price assumptions".[35]

[28] PacifiCorp 2017 IRP, p 179–80
[29] PacifiCorp 2017 IRP, p 180
[30] PacifiCorp 2017 IRP, p 35
[31] PacifiCorp 2017 IRP, Table 8.1, p 193
[32] PacifiCorp 2017 IRP, p 193
[33] PacifiCorp 2017 IRP, p 194
[34] PacifiCorp 2017 IRP, p 194
[35] PacifiCorp2017 IRP, p 195

RH-5a was selected from Phase One to form the foundational case upon which subsequent portfolios would be constructed.[36] The Company summarizes the RH compliance assumptions in this case as follows:

> · No incremental selective catalytic reduction (SCR) emission control installations.
> · Assumed coal unit retirements (there are no natural gas conversions):
> · Naughton Unit 3 (Retired 2018)
> · Cholla Unit 4 (Retired 2020)
> · Craig Unit 1 (Retired 2025)
> · Dave Johnston Plant (Retired 2027, end-of-life)
> · Jim Bridger Unit 1 (Retired 2028)
> · Naughton Units 1 & 2 (Retired 2029, end-of-life)
> · Hayden Units 1 & 2 (Retired 2030, end-of-life)
> · Jim Bridger Unit 2 (Retired 2032)
> · Craig Unit 2 (Retired 2034, end-of-life)
> · Huntington Plant (Retired 2036, end-of-life). [37]

*Phase 2*

Phase Two, or "Eligible Portfolio Screening" built portfolios "deemed eligible to be considered for preferred portfolio selection" using RH-5a's RH compliance assumptions (referred to as case optimized portfolio "OP-NT3" during Phase Two).[38] Table 2 shows the risk-adjusted PVRR among portfolios for Phase Two.

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[36] PacifiCorp2017 IRP, p 195,
[37] PacifiCorp 2017 IRP, p 195
[38] PacifiCorp 2017 IRP, p 196

| | Risk Adjusted[1] | | | ENS Scenario Average | | | ENS Upper Tail Average | | | $CO_2$ Emissions | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Case | PVRR ($m) | Change from Lowest Cost Portfolio ($m) | Rank | Average Annual ENS, 2017-2036 (GWh) | Change from Lowest ENS Portfolio | Rank | Average Annual ENS, 2017-2036 (GWh) | Change from Lowest ENS Portfolio | Rank | Total CO2 Emissions, 2017-2036 (Thousand Tons) | Change from Lowest Emission Portfolio | Rank |
| OP-NT3 | 25,167 | $461 | 4 | 12.5 | 9.5 | 10 | 31.4 | 23.1 | 10 | 770,651 | 13,323 | 10 |
| OP-REP | 24,706 | $0 | 1 | 11.3 | 8.4 | 2 | 31.0 | 22.7 | 8 | 771,283 | 13,956 | 11 |
| OP-GW4 | 24,857 | $150 | 2 | 11.5 | 8.5 | 5 | 30.5 | 22.2 | 3 | 757,327 | 0 | 1 |
| FR-1 | 25,695 | $988 | 9 | 12.7 | 9.7 | 11 | 31.5 | 23.2 | 11 | 766,344 | 9,017 | 6 |
| FR-2 | 26,358 | $1,652 | 11 | 3.0 | 0.0 | 1 | 8.3 | 0.0 | 1 | 774,577 | 17,250 | 12 |
| RE-1c | 25,189 | $483 | 5 | 11.5 | 8.5 | 6 | 30.5 | 22.3 | 6 | 766,154 | 8,827 | 5 |
| RE-2 | 25,148 | $441 | 3 | 11.5 | 8.5 | 7 | 30.3 | 22.0 | 2 | 769,738 | 12,411 | 9 |
| DLC1 | 25,215 | $509 | 6 | 13.2 | 10.2 | 12 | 32.1 | 23.9 | 12 | 761,095 | 3,768 | 4 |
| GW1 | 25,575 | $869 | 8 | 11.6 | 8.6 | 8 | 30.5 | 22.2 | 4 | 766,789 | 9,461 | 7 |
| GW2 | 25,941 | $1,234 | 10 | 12.0 | 9.0 | 9 | 30.9 | 22.6 | 7 | 767,825 | 10,498 | 8 |
| GW3 | 26,388 | $1,681 | 12 | 11.4 | 8.4 | 3 | 30.5 | 22.2 | 5 | 757,806 | 479 | 2 |
| GW4 | 25,259 | $553 | 7 | 11.4 | 8.4 | 4 | 31.2 | 22.9 | 9 | 759,964 | 2,636 | 3 |

[1]Based on average of 6 emissions/price scenarios

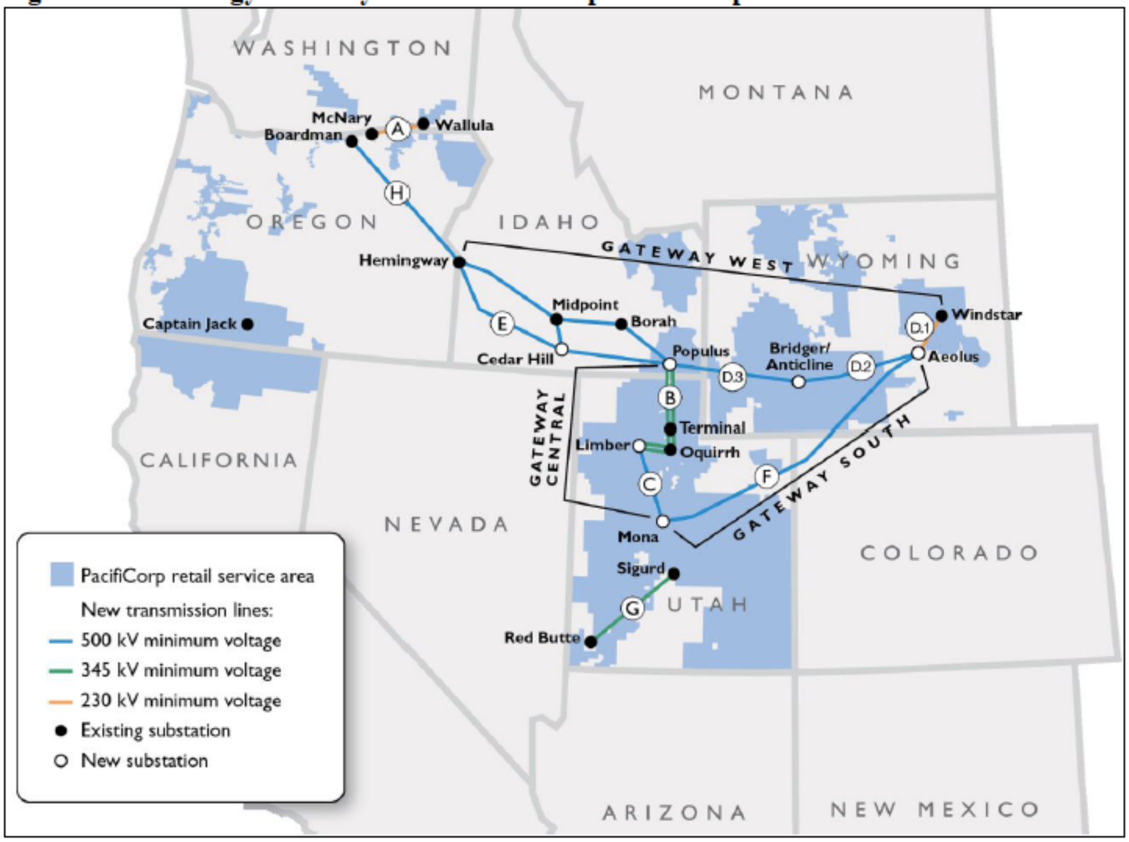
**Table 2—Risk-adjusted PVRR among Top Performing Portfolios, Phase Two (Eligible Portfolio Screening)** [39]

The Company identified OP-REP as the top-performing portfolio of Phase Two.[40] The OP-REP sensitivity builds upon OP-NT3, but "assumes 905 MW of existing wind resources are repowered by the end of 2020 (Glenrock, Rolling Hills, Seven Mile Hill, High Plains, McFadden Ridge, Dunlap, Marengo, and Leaning Juniper)."[41] Table 2 shows that all the portfolios produced low levels of energy not served ("ENS") and had similar levels of CO2 emissions. PacifiCorp observed that case OP-REP "produces the lowest risk-adjusted PVRR in four out of six price scenarios" and "produces a low PVRR relative to other eligible cases based on the PVRR from SO".[42]

The Company also noted that cases "OP-REP and OP-GW4 are very close when evaluating the PVRR from SO, but case OP-GW4 only exhibits the lowest risk-adjusted PVRR in the high natural gas price scenarios when evaluated in PaR."[43] The OP-GW4 case was initially added as a sensitivity to "study the cumulative impacts of layering the most favorable Energy Gateway scenario on top of the Wind Repower case".[44] The case OP-GW4 combined the "most favorable" Energy Gateway Scenario, segment D2 (see Figure 1).[45]

[39] PacifiCorp 2017 IRP, Table 8.13, p 218
[40] PacifiCorp 2017 IRP, p 218
[41] PacifiCorp 2017 IRP, p 205
[42] PacifiCorp 2017 IRP, p 218
[43] PacifiCorp 2017 IRP, p 218
[44] PacifiCorp 2017 IRP, p204
[45] PacifiCorp 2017 IRP, p204

**Figure 8.33 – Energy Gateway Transmission Expansion Map**




This map is for general reference only and reflects current plans.
It may not reflect the final routes, construction sequence or exact line configuration.

**Figure 1—Energy Gateway Transmission Expansion Map[46]**

*Phase 3*

During Phase Three, "Final Portfolio Screening", PacifiCorp "conducted additional studies informed by the analysis performed during the prior screening stage".[47] The Company described how in this final stage, it had "quantified additional benefits reasonably expected from the new transmission line [Gateway West segment D2], assessed how more current near-term assumptions for project capital costs and wind capacity factors affect the analysis, and completed power flow and dynamic stability analysis to refine transmission assumptions."[48] "Table 3—Risk-adjusted PVRR among Top Performing Portfolios, Phase Three (Final Portfolio Screening)" lists the risk-adjusted PVRR among the final four portfolios in Phase Three. The Company observed that "FS-R2 ranks first in the risk adjusted PVRR metric, while FS-R1c ranks first in average ENS, and FS-GW4 ranks first in upper tail ENS" while noting "[t]he rankings, while indicative of order, tend to obscure how close some of the outcomes are in terms of raw measures."[49]

[46] PacifiCorp 2017 IRP, p204
[47] PacifiCorp 2017 IRP, p219
[48] PacifiCorp 2017 IRP, p219
[49] PacifiCorp 2017 IRP, p 231

| Case | Risk Adjusted[1] PVRR ($m) | Risk Adjusted[1] Change from Lowest Cost Portfolio ($m) | Risk Adjusted[1] Rank | ENS Scenario Average Average Annual ENS, 2017-2036 (GWh) | ENS Scenario Average Change from Lowest ENS Portfolio | ENS Scenario Average Rank | ENS Upper Tail Average Average Annual ENS, 2017-2036 (GWh) | ENS Upper Tail Average Change from Lowest ENS Portfolio | ENS Upper Tail Average Rank | $CO_2$ Emissions Total CO2 Emissions, 2017-2036 (Thousand Tons) | $CO_2$ Emissions Change from Lowest Emission Portfolio | $CO_2$ Emissions Rank |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FS_REP | 23,939 | $150 | 4 | 11.8 | 0.4 | 4 | 30.6 | 0.3 | 4 | 770,886 | 12,720 | 4 |
| FS_GW4 | 23,808 | $18 | 2 | 11.7 | 0.3 | 3 | 30.3 | 0.0 | 1 | 758,774 | 607 | 3 |
| FS_R1c | 23,810 | $20 | 3 | 11.4 | 0.0 | 1 | 30.3 | 0.0 | 2 | 758,167 | 0 | 1 |
| FS_R2 | 23,790 | $0 | 1 | 11.6 | 0.2 | 2 | 30.4 | 0.2 | 3 | 758,361 | 194 | 2 |

[1] Based on average of 6 emissions/price scenarios

**Table 3—Risk-adjusted PVRR among Top Performing Portfolios, Phase Three (Final Portfolio Screening)[50]**

Figure 2 shows a comparison of the cumulative capacity of resources in the Phase Three portfolios. PacifiCorp explained that the "difference in new wind additions in 2021 in the FS-R1c case (57 MW of additional west-side wind) is driven by the Washington RPS program [footnote: under FS-R1c and FS-R2, system renewable resources in the portfolio eliminate any need for incremental renewable resources in the front ten years of the planning period]." In the FS-R2 case "an additional 61 MW of Idaho wind is added to the portfolio to offset a potential Oregon RPS shortfall that would otherwise occur beyond 2034".[51]

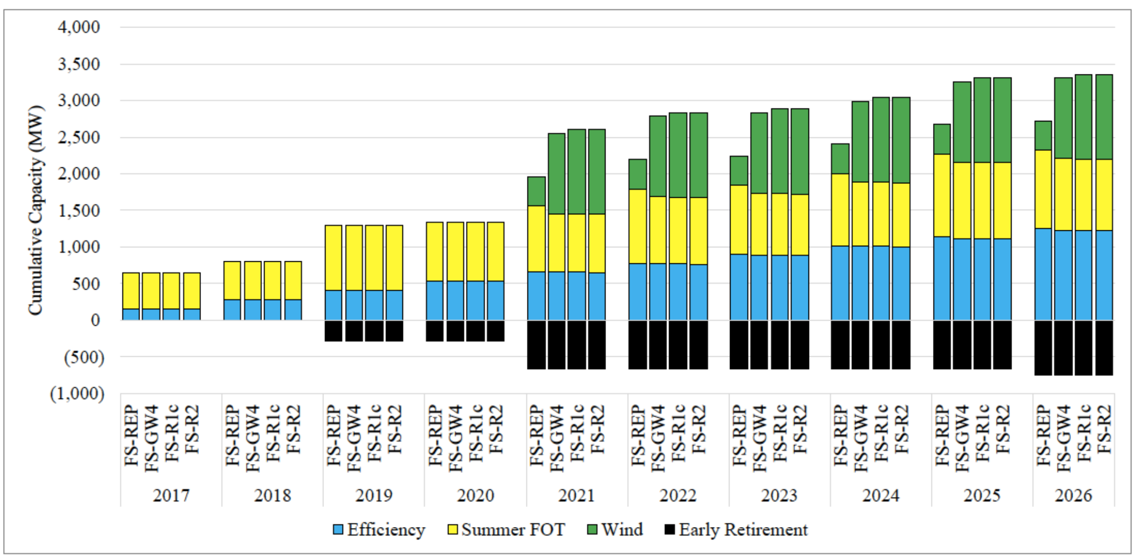



**Figure 2—Comparison of Resources in the Eligible Resource Portfolios[52]**

[50] PacifiCorp 2017 IRP, Table 8.15, p 231
[51] PacifiCorp 2017 IRP, p 232
[52] PacifiCorp 2017 IRP, Figure 8.61, p 243

*Final Portfolio Selection*
Based on the cumulative analysis of portfolio selection Phases One through Three, PacifiCorp selected case FS-GW4 as the preferred portfolio for its 2017 IRP.[53] All of the Phase 3, final screening, portfolios include repowering, but only FS_REP does not include Gateway 4.[54] As Table 3 shows, the addition of Gateway 4 reduces a portfolio's risk-adjusted PVRR. Indeed, the addition of segment D2 of Gateway West allows the utility "to fully achieve the benefits of federal wind production tax credits […] providing significant economic benefits for PacifiCorp's customers".[55] Renewable Northwest welcomes the preferred portfolio selection as an indication of the Company's transition toward a clean energy future. The Company's preferred portfolio, FS-GW4, seeks to add "1,100 MW of new Wyoming wind resources by the end of 2020 […] connect[ed] to a new 140-mile, 500 kV transmission line from the Aeolus substation near Medicine Bow, Wyoming, to the Jim Bridger power plant. The preferred portfolio envisions no incremental select catalytic reduction ("SCR") emission control systems,[56] and does not anticipate a new gas plant until 2029.[57]

This time-sensitive opportunity requires that the new wind and transmission assets achieve commercial operation by the end of 2020 to maximize PTC benefits."[58] However, the Company noted that "[c]ompletion of the new transmission segment will allow the addition of up to 1,270 MWs of additional wind resources (depending on re-dispatch)".[59] This comports with PacifiCorp's proposed request for proposals ("RFP") seeking "1,270 MW of wind resources that can achieve a commercial operation date of no later than December 31, 2020".[60]

## V. CONCLUSION

The Company seeks to add 1,100 MW of new Wyoming wind resources by the end of 2020,[61] and has indicated that its RFP will be seeking up 1,270 MW.[62] These resources are expected to connect to a new 140-mile, 500 kV transmission line from the Aeolus substation near Medicine Bow, Wyoming, to the Jim Bridger plant.[63] In

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53 PacifiCorp 2017 IRP, p 232
54 PacifiCorp 2017 IRP, Table 8.13, p 219
55 PacifiCorp 2017 IRP, p2
56 PacifiCorp 2017 IRP, p 195
57 PacifiCorp 2017 IRP, p 218
58 PacifiCorp 2017 IRP, p 234
59 PacifiCorp 2017 IRP, p 62
60 PacifiCorp 2017R Request for Proposals, Pre-Issuance Bidder's Conference, May 31, 2017 www.pacificorp.com/content/dam/pacificorp/doc/Suppliers/RFPs/2017R_RFP/2017R_RFP_Pre-Issuance_Bidders_Conference_May_31_2017.pdf
61 PacifiCorp 2017 IRP, p2
62 PacifiCorp 2017R Request for Proposals, Pre-Issuance Bidder's Conference, May 31, 2017 www.pacificorp.com/content/dam/pacificorp/doc/Suppliers/RFPs/2017R_RFP/2017R_RFP_Pre-Issuance_Bidders_Conference_May_31_2017.pdf
63 PacifiCorp 2017 IRP, p2

addition, the Company is seeking to repower 905 MW of existing wind resources by the end of 2020, including the Marengo project in Washington and the Leaning Juniper project in Oregon.[64] While the majority of these resources would be located outside the WCA, and therefore not be deemed used and useful by the Commission, potential future coal plant retirements may make resources outside the WCA more relevant to Washington.

Stakeholders were not aware that the company was seeking such a significant procurement until Public Input Meeting 8 on March 2–3, 2017.[65] While Renewable Northwest regrets that stakeholders were not kept abreast of equipment purchases closer to when they occurred, we understand the nature and magnitude of the time-limited opportunity that the Company was pursuing in order to secure the PTC at the 100% level, and we appreciate the Company's efforts to capture this value.

The final portfolio was selected after a rigorous three-phrase selection process. In addition to supporting the benefits afforded by the renewable and transmission components, we also appreciate that the preferred portfolio envisions no further SCR emission control investments in the Company's coal fleet,[66] and does not anticipate a new gas plant until 2029.[67] Overall, the selection of the preferred portfolio reflects a positive step in the transition toward a clean energy future.

Renewable Northwest appreciates the opportunity to comment on PacifiCorp's 2017 IRP and we recommend that the Commission acknowledge this IRP.

Sincerely,

*/s/ Michael H O'Brien*
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[64] PacifiCorp 2017 IRP, p 205
[65] PacifiCorp, 2017 IRP, Public Input Meeting 8, March 2–3, 2017, slide 5. www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2017_IRP/PacifiCorp_2017_IRP_PIM08_03-01-17_Final_Presentation.pdf
[66] PacifiCorp 2017 IRP, p 195
[67] PacifiCorp 2017 IRP, p 218