BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION OF ROCKY MOUNTAIN POWER FOR AUTHORITY TO INCREASE ITS RATES AND CHARGES IN IDAHO AND APPROVAL OF PROPOSED ELECTRIC SERVICE SCHEDULES AND REGULATIONS	)))))))	**CASE NO. PAC-E-21-07** **Direct Testimony of Timothy J. Hemstreet** **REDACTED**

ROCKY MOUNTAIN POWER

CASE NO. PAC-E-21-07

May 2021

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ATTACHED EXHIBITS

I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name, business address, and present position with PacifiCorp.

A. My name is Timothy J. Hemstreet. My business address is 825 NE Multnomah Street, Suite 1800, Portland, Oregon 97232. My title is Managing Director of Renewable Energy Development for PacifiCorp. I am testifying for PacifiCorp d/b/a Rocky Mountain Power ("PacifiCorp" or the "Company").

Q. Briefly describe your education and professional experience.

A. I hold a Bachelor of Science degree in Civil Engineering from the University of Notre Dame in Indiana and a Master of Science degree in Civil Engineering from the University of Texas at Austin. I am also a Registered Professional Engineer in the state of Oregon. Before joining PacifiCorp in 2004, I held positions in engineering consulting at CH2M HILL (now Jacobs Engineering, Inc.) and environmental compliance at RR Donnelley Norwest, Inc. Since joining PacifiCorp, I have held positions in environmental policy and compliance, engineering, project management, and hydroelectric project licensing and program management. In 2016, I assumed a role in renewable energy development, focusing on PacifiCorp's wind repowering effort, and assumed my current role in June 2019, in which I oversee the development of renewable energy resources that enhance and complement PacifiCorp's existing renewable energy resource portfolio.

Q. Have you testified in previous regulatory proceedings?

A. Yes. I have previously sponsored testimony in California, Idaho, Oregon, Utah, Washington, and Wyoming.

II. PURPOSE OF TESTIMONY

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is two-fold. First, I provide an update on the construction progress and expenditures for the wind energy components of the Company's energy resource strategy, Energy Vision 2020. These two components include repowering the existing Company-owned wind fleet ("Repowering Projects") and constructing new wind facilities ("New Wind Projects"). I will refer to the Repowering Projects and New Wind Projects collectively as the "Energy Vision 2020 Projects." The Idaho Public Utilities Commission ("Commission") approved the New Wind Projects in Case No. PAC-E-17-07, along with a new transmission line and transmission network upgrades, which are discussed in the direct testimony of Mr. Richard A. Vail.[1] The Commission approved the Repowering Projects in Case No. PAC-E-17-06.[2]

In my testimony and exhibits, I provide an update on the construction status and expenditures for the New Wind Projects and Repowering Projects, describe changes in the cost and performance of the Repowering Projects since they were previously considered by the Commission, demonstrate that the Company has prudently managed the construction of the New Wind and Repowering Projects, all but one of which has been fully placed in service, and confirm that the remaining project will be placed in service on time to achieve the full value of the federal production tax credits ("PTCs"). The Company's costs as filed in this case for the New Wind Projects and Repowering

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[1] *In the Matter of the Application of Rocky Mountain Power for Certificates of Public Need and Necessity and Binding Ratemaking Treatment for Wind and Transmission Facilities*, Case No. PAC-E-17-07, Order No. 34104 (July 20, 2018).

[2] *In the Matter of the Application of Rocky Mountain Power for Binding Ratemaking Treatment for Wind Repowering,* Case No. PAC-E-17-06, Order No. 33954 (Dec. 28, 2017).

Projects are, in sum, less than the total project costs approved by the Commission. In total, the costs for the New Wind Projects and Repowering Projects are 0.7 percent below the forecast costs filed in the respective cases in which these projects were evaluated and approved, with the total costs of the New Wind Projects exceeding the pre-approved amounts and the Repowering Projects completed at total costs that are less than were approved by the Commission. My testimony demonstrates the reasonableness of the increases in the individual projects over the approved costs. Further, my testimony demonstrates that the Company has prudently managed the New Wind Projects and Repowering Projects and the total investment should be included in the Company's revenue requirement in this case.

Second, I demonstrate that PacifiCorp's upgrades to repower the Foote Creek I wind facility—which was not subject to the Commission's prior order on repowering—is prudent and in the public interest. My testimony provides the following information:

- The scope of the Foote Creek I repowering project;
- The financial benefits for customers of repowering resulting from the qualification for federal PTCs;
- The increased energy benefits following repowering;
- The reduced ongoing operating costs following repowering;
- The extension of the wind facility asset life after repowering;
- Project implementation status and construction schedule; and
- The disposition of removed equipment.

My testimony demonstrates that the Company's decision to repower the Foote Creek I facility is reasonable and prudent, and should be included in the Company's revenue requirement in this case.

III. SUMMARY OF TESTIMONY

Q. Please summarize your testimony.

A. The costs incurred for the acquisition and construction of the New Wind Projects are reasonable, align closely to the costs approved in the Commission's Order in Case No. PAC-E-17-07, and the construction projects have been prudently managed in the face of very challenging conditions presented by the coronavirus pandemic. The Ekola Flats and Cedar Springs II wind projects are now fully in service and serving customers and the final project, TB Flats, is partially in service with 383 megawatts ("MW") of the project now online. Due to construction impacts and delays resulting from the pandemic, it was not possible to complete construction of TB Flats in 2020 and the remainder of the TB Flats project will come online this summer. All New Wind Projects will qualify for the full value of PTCs given a one-year extension of the Internal Revenue Service's qualification deadline under the continuous efforts safe harbor for wind energy projects, which was issued in response to the extraordinary circumstances caused by the coronavirus pandemic on wind energy project construction.

The coronavirus pandemic created severe challenges for construction of the New Wind Projects and resulted in supply chain and logistics disruptions, equipment delivery delays, parts and labor shortages, and productivity impacts associated with adherence to worker safety protocols implemented in conformance with guidance issued by the U.S. Centers for Disease Control and Prevention and other public health

authorities. The Company worked diligently with its suppliers and contractors to protect public and worker safety, mitigate project impacts to the degree possible, and bring these beneficial projects online as soon as practicable while managing cost impacts associated with the extended construction schedules resulting from the disruptions caused by the coronavirus pandemic. To mitigate the impacts of construction delays on customer benefits derived from these beneficial projects, the Company placed the Ekola Flats and TB Flats projects in service in a phased approach. On the date that interconnection and transmission service was available to allow the energy to flow from the New Wind Projects to the transmission system, all wind turbine generators ("WTG") on electrical circuits that were ready to be placed in service were immediately brought into an operational status. In circumstances where not all WTGs were ready to be placed in service on such date, the remaining WTGs have been and will be placed in service on a circuit-by-circuit basis. This has allowed customers to obtain the energy and PTC benefits of the New Wind Projects as soon as possible.

The Company has updated its costs for the New Wind Projects to reflect costs associated with addressing the impacts of construction impacts caused by the pandemic, as well as other cost changes that were outside the Company's control. PacifiCorp continues to work with suppliers and contractors to complete construction efforts at the projects including completing punch list items, site revegetation and demobilization, and to implement revised schedules to complete the construction of the TB Flats project in the most cost-effective manner this summer. My testimony supports why the Commission should establish rates that will allow the Company to recover its costs for the New Wind Projects that exceed the amounts previously approved by the

Commission given the Company has prudently managed the projects and the cost increases were outside the Company's control.

Similarly, the construction of the Repowering Projects has been prudently managed by the Company. The Company was able to complete the majority of the repowering work in 2019 at all but one of the Repowering Projects – Dunlap – before the coronavirus pandemic began to disrupt construction efforts in 2020. And at the Dunlap project, equipment pre-deliveries were completed in January 2020, which eased subsequent construction efforts during 2020 since equipment supply chain and logistics impacts experienced elsewhere did not affect the project. The construction costs for the Repowering Projects have been prudently managed with the total project costs 6 percent less than the costs approved in Commission Order No. 33954 in Case No. PAC-E-17-06.

Following their review and approval by the Commission, the Repowering Projects were subsequently enhanced with larger blades and higher capacity generators at some facilities. This resulted in the incremental generation from the Repowering Projects increasing from 19 percent to 26 percent – increasing the energy and PTC benefits of the projects. Additionally, the Company negotiated full-service agreements with the turbine suppliers that create greater certainty regarding ongoing operations costs and provide equipment availability guarantees. Through its wind repowering efforts, PacifiCorp has leveraged past investments in its wind fleet to enhance the future value of these resources for the benefit of its customers.

Since the order in Case No. PAC-E-17-06, the Company's repowering efforts expanded to include all of its owned wind resources, including the Foote Creek I facility

that was not subject to the Commission's order related to repowering. Foote Creek I is the oldest resource in the Company's wind fleet and the Company was able to complete the necessary commercial arrangements and obtain approval from the Wyoming Public Service Commission for a certificate of public convenience and necessity ("CPCN") to take advantage of the unique opportunity to repower this facility so customers will benefit from the site for many more years. Through its wind repowering efforts, the Company has been able to deliver its customers efficiency and reliability improvements in wind generation technology and return the entirety of its wind fleet to like-new condition, all while enhancing performance, reducing ongoing maintenance expenditures, reducing customer costs, and extending the lives of the facilities by at least 10 years.

Finally, my testimony supports why the Commission should establish rates that will allow the Company to recover the costs for the Repowering Projects approved in Case No. PAC-E-17-06. Further, the Commission should approve as prudent the investment in, and allow cost recovery for, the repowering of the Foote Creek I wind facility, which will deliver customer benefits similar to the Repowering Projects previously approved by the Commission.

IV. ENERGY VISION 2020 NEW WIND PROJECTS OVERVIEW AND CONSTRUCTION STATUS

Q. Please provide a brief overview of the projects that are included in Energy Vision 2020.

A. As I explain above, the Energy Vision 2020 Projects consist of New Wind and Repowering Projects, along with new transmission projects addressed by Mr. Vail. In

Case No. PAC-E-17-07, the Company received resource approvals for the New Wind Projects, consisting of the following:

- Ekola Flats Wind Project - a nominal 250 MW wind facility located in Carbon County, Wyoming and associated infrastructure;
- TB Flats Wind Project - a nominal 500 MW wind facility located in Carbon and Albany County, Wyoming and associated infrastructure; and
- Cedar Springs Wind Project - a nominal 400 MW wind facility located in Converse County, Wyoming and associated infrastructure, of which a nominal 200 MW ("Cedar Springs II") is owned and operated by the Company and 200 MW ("Cedar Springs I") is being delivered to the Company under a power purchase agreement ("PPA").

Q. Did the Company seek approval from the Commission in advance of proceeding with the New Wind Projects?

A. Yes. On June 30, 2017, the Company sought CPCNs and approval for the New Wind Projects under Idaho's binding ratemaking treatment in accordance with Idaho Code § 61-541. In its application that initiated Case No. PAC-E-17-07, the Company sought approval for the New Wind and transmission facilities. In support of the application, the Company filed extensive testimony and economic analysis to demonstrate that the resource decisions were in the public interest. The Company also included detailed, project-by-project cost estimates.

Q. Please discuss the applicable requirements for the new wind projects to qualify for PTCs?

A. In Internal Revenue Code section 45, the Internal Revenue Service ("IRS") provides

for PTCs at the 2021 full rate of 2.5 cents per kilowatt-hour of electrical energy production by a wind facility. The PTCs are available for a 10-year period that begins when the facility is placed in service. The Protecting Americans from Tax Hikes Act of 2015 (the "PATH Act") extended the availability of the PTCs for wind facilities under construction before January 1, 2020. The PATH Act extension, however, also provides for a phase-out of the PTCs. Wind facilities that began construction before January 1, 2017, per IRS rules, will realize the full PTC credit, which is the case for the Energy Vision 2020 wind projects. If a wind facility began construction in 2017, the PTCs were reduced by 20 percent. The PTCs were reduced by 40 percent if construction began in 2018, and by 60 percent if construction began in 2019. Under the PATH Act, PTCs are not available for wind facilities that began construction after December 31, 2019.

The facilities must be placed into commercial operation by the end of the fourth calendar year following the year in which construction began or otherwise meet specific IRS requirements for demonstrating the "continuity requirement" throughout the implementation timeline. To ensure customers receive the full value of PTCs the new wind facilities included in Energy Vision 2020 began construction before January 1, 2017, with a plan to be placed in-service by year-end 2020, barring any changes to the law or qualification under other IRS guidance.

Q. Have there been changes to these qualification requirements relevant to the New Wind and Repowering Projects since the PATH Act was enacted?

A. Yes. In recognition of the impact of the coronavirus pandemic on wind energy projects across the United States, the Internal Revenue Service issued a notice (Notice 2020-

41) providing for a one-year extension in the Continuity Safe Harbor such that wind projects such as PacifiCorp's that began construction in 2016 must be in-service prior to January 1, 2022, in order to qualify for the full value of PTCs.

Q. Did the Commission approve the Company's request for resource approval in Case No. PAC-E-17-07?

A. Yes. On July 20, 2018, the Commission issued its Order No. 34104 ("New Wind and Transmission Order") approving the Company's request for approval of the resource decisions that comprise the New Wind Projects and the transmission projects addressed in the testimony of Mr. Vail.[3] The New Wind and Transmission Order included approval of a stipulation between the Company and Commission Staff that resolved all issues except whether there would be a cap on costs that may be recovered in rates ("New Wind and Transmission Stipulation").[4]

Q. In approving the New Wind Projects, did the Commission find that they were in the public interest?

A. Yes. The Commission found that the New Wind and Transmission Stipulation was just, fair and reasonable, in the public interest, and in accordance with the law and regulatory policy of this state. The Commission approved the requested CPCN pursuant to the terms of the New Wind and Transmission Stipulation, and imposed an overall cost cap as condition of the approval.

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[3] *In the Matter of the Application of Rocky Mountain Power for a Certificate of Public Convenience and Necessity and Binding Ratemaking Treatment for New Wind and Transmission Facilities*, Case No. PAC-E-17-07, Order No. 34104 (Jul. 20, 2018).

[3] *In the Matter of the Application of Rocky Mountain Power for a Certificate of Public Convenience and Necessity and Binding Ratemaking Treatment for New Wind and Transmission Facilities,* Case No. PAC-E-17-07, Order No. 34139 (Sep. 6, 2018), at p. 1.

Q. Did the Commission make findings as to the projected costs for the New Wind and Transmission Order?

A. Yes. The Commission approved $[redacted] in total projected capital costs for the New Wind and transmission projects. This total projected capital cost for the New Wind Projects was comprised of the individual projects as set forth in Confidential Exhibit No. 20.

Q. Since the New Wind and Transmission Order, have there been any adverse changes in circumstances that materially affect the scope or economics of the New Wind Projects or the Repowering Projects?

A. No. To date, there are no material changes in circumstances. As discussed below, an issue did arise related to U.S. tariff impacts and other unfavorable market conditions, which negatively impacted previously established WTG equipment supply pricing for the New Wind Projects. The Company was able to manage the WTG equipment supply pricing issue, however, in a way that minimized the negative impact on customer net benefits. In addition, impacts from the coronavirus pandemic resulted in construction delays, reduced productivity, and increased costs as a result of the longer than anticipated construction durations and construction activities being pushed into periods with less favorable conditions. Despite the challenging conditions, the Company has diligently managed construction of the New Wind Projects to minimize cost impacts associated with the coronavirus pandemic and bring the projects into service as soon as possible so they can begin providing benefits to customers.

Q. Have there been any changes to the Company's projected costs for the New Wind Projects from those approved in the Commission's Order?

A. Yes. On a total-Company basis, the costs as filed in this case are $[redacted], an increase of approximately $[redacted], or [redacted], over the approved New Wind Project costs. The individual project costs and variances from Case No. PAC-E-17-07 are shown in Confidential Exhibit No. 20.

Q. Is the Company seeking recovery for the costs in excess of the approved project costs in this case?

A. Yes. These costs were beyond the Company's control, the increases are relatively small, and they do not materially change the net benefits associated with the New Wind Projects. Additionally, the Company's 2019 Integrated Resource Plan ("IRP") demonstrates a need for these projects on the basis of providing safe and reliable service more clearly than when the project costs were initially approved by the Commission. The Commission's approval was on the basis of the economic opportunity alone. Mr. Link's testimony discusses the new information from the 2019 IRP that demonstrates that there is a need for the projects on the basis of safe and reliable service in greater detail. An update on the status of each project component follows below, along with an explanation of the cost increases and why they are reasonable.

Q. Before proceeding, did the Company obtain other state regulatory approvals for the New Wind Projects?

A. Yes. To capture the substantial customer benefits resulting from this time-limited opportunity and in accordance with applicable state regulatory statutes, the Company also received CPCNs from the Wyoming Public Service Commission and regulatory

approval from the Public Service Commission of Utah.[5]

Q. Did the capital costs for TB Flats and Ekola Flats increase over the costs approved in the Order because of the WTG issue?

A. Yes. An issue did arise related to U.S. tariff impacts and other unfavorable market conditions, which negatively impacted previously established WTG equipment supply pricing. Vestas-American Wind Technology, Inc. ("Vestas") was originally competitively selected in the third quarter of 2017 as the follow-on WTG supplier for the Ekola Flats and TB Flats wind facilities. In the fall of 2018, Vestas communicated that it was unable to hold pricing for the WTGs due to new U.S. tariff impacts that affected: (1) steel pricing risk; (2) tariffs on Chinese goods; and (3) increased transportation costs. In response, the Company initiated a competitive market request for proposal updates with all originally shortlisted WTG suppliers beginning on November 15, 2018. The shortlisted suppliers from this update were asked to confirm their positions on WTG pricing and availability, run rate operations and maintenance ("O&M") costs, and equipment performance information in conformity with permit conditions and constraints.

Final firm price proposals were received on January 21, 2019. The Company completed an assessment of life cycle costs associated with the updated proposals. Both

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[4] *In the Matter of the Amended Application of Rocky Mountain Power for Certificates of Public Convenience and Necessity and Nontraditional Ratemaking for Wind and Transmission Facilities,* Wyoming Public Service Commission, Docket No. 20000-520-EA-17 (Record No. 14781), Memorandum Opinion, Finding, and Order Approving Stipulation (Oct. 8, 2018); *Application of Rocky Mountain Power for Approval of a Significant Energy Resource Decision and Voluntary Request for Approval of Resource Decision,* Utah Public Service Commission, Docket No. 17-035-40, Order (June 22, 2018).

2.* MW and 4.* MW[6] WTG platform options from multiple WTG suppliers were compared. Ultimately, the assessment concluded that the Ekola Flats and TB Flats initial capital cost estimates for WTG supply would exceed the estimates included in the Company's original filing. However, when considered in conjunction with updated run rate O&M cost reductions included in the new proposals and remaining New Wind Project contingencies, customer benefits remained intact even with the increased capital costs. The Company compared the updated information to the originally assessed life-cycle cost and benefit information, which confirmed that the competitive market update and reassessment resulted in a slight increase in customer benefits when compared to the Company's final economic analysis (i.e., February 2018 economic analysis, as adjusted to remove the Uinta project). Updated analysis of the Energy Vision 2020 project economics based on the as-filed capital cost of the New Wind Projects is presented in Mr. Link's direct testimony.

Q. What has been the effect of the WTG supply issue and the impacts of the coronavirus pandemic on construction timing and costs for Ekola Flats and TB Flats?

A. WTG component deliveries for all of the new wind facilities included in the Energy Vision 2020 Projects began in spring 2020, but impacts from the pandemic on the global wind turbine supply chain, transportation logistics, and production capacity stretched out the equipment delivery period and resulted in inefficient delivery of wind turbine components as they became available. This, coupled with delays to construction

[5] The asterisk used in 2.* MW and 4.* MW is a common industry wildcard designation when referring to a range of available WTGs capacities within turbine design platforms of various original equipment manufacturers.

productivity as a result of adherence to worker safety plans adopted to address recommendations from public health authorities in response to the pandemic, pushed construction efforts later into the year and into periods with less favorable wind conditions for efficient construction. Coupled with the WTG supply issue, the net result is that the costs of both projects now exceed the amounts pre-approved by the Commission, as shown in Confidential Exhibit No. 20. The costs shown in this exhibit reflect the current estimate of the project costs when all construction activities are completed, all WTGs are in service, and costs associated with addressing the impacts of the pandemic on the projects are resolved. While the TB Flats project is not yet complete, and construction activities remain this summer, I believe the forecasted costs for the project accurately reflect the remaining work given the better understanding we now have of construction productivity and costs with completion of the project in the present challenging circumstances.

Q. Have there been any non-material changes to the TB Flats and Ekola Flats wind facilities since they were reviewed and approved by the Commission?

A. Yes. As a result of the re-assessment of WTG supply options considered in response to increased turbine supply costs in early 2019, the number of WTGs at each project was slightly reduced. At TB Flats, the number of WTGs was reduced by two, so the total number of WTGs at the project was reduced from 134 to 132. At Ekola Flats the number of WTGs was reduced by one, so the total number of WTGs at the project was reduced from 64 to 63. This reduction in WTGs was possible due to an increase in the nameplate capacity of the follow-on WTGs from 4.2 MW to 4.3 MW. The reduction in turbine numbers in combination with increased capacity maintained the planned capacity of

the projects and reduced construction capital costs and ongoing operations and maintenance costs while not materially impacting the annual energy production from the facilities.

Q. Are the costs for Cedar Springs II consistent with the costs approved in the Order?

A. Yes. Costs for Cedar Springs II included in this filing are $[redacted], as shown in Confidential Exhibit No. 20, which is less than the amount approved by the Commission.

Q. Have there been any non-material changes to the Cedar Springs II facility since the project was reviewed by the Commission?

A. Yes. In working with the project developer and the U.S. Fish and Wildlife Service to consider and reduce potential avian risks associated with the facility, the Company was able to identify the opportunity to similarly increase the nameplate capacity of the follow-on WTGs that will be used at the facility, allowing WTGs that were sited in areas of higher avian risk to be dropped from the site plan. The nameplate capacity of the follow-on WTGs was increased from 2.52 MW to 2.82 MW, allowing a reduction of 8 WTGs from the site plan so the project now consists of 72 total WTGs. This reduction in WTGs also had no material impact to the overall energy production from the facility, while reducing the cost of the project and the future cost of operating and maintaining the project.

Q. What is the current construction status of the TB Flats wind facility?

A. For the TB Flats wind facility, 104 of the 132 WTGs comprising total generation capacity of 382.8 MW have been erected, commissioned, and are now serving customers. Due to the turbine equipment delivery delays associated with the pandemic,

28 WTGs were unable to be delivered to the site during the construction season in time to allow for their erection in 2020 prior to the onset of winter weather conditions and high wind speeds that preclude efficient delivery, construction, commissioning, and maintenance activities. As a result, construction activities at the project were halted during the winter so they could resume when weather conditions were more favorable. Delivery of the remaining 28 turbines to the site is now underway and is anticipated to be completed by May 15, 2021, barring unforeseen weather conditions. Erection of the remaining 28 WTGs will begin shortly following completion of deliveries.

Q. What is the current construction status of the Ekola Flats wind facility?

A. All WTGs at the Ekola Flats wind facility were placed in-service on December 30, 2020, and the project has been producing energy and associated PTC benefits for customers since that time. At this time, contractor punch list items, including site restoration work, continues and will be completed this spring.

Q. What is the current construction status of the Cedar Springs II wind facility?

A. All WTGs at the Cedar Springs II wind facility were placed in service on December 8, 2020. At this time, contractor punch list items, including site restoration work, continues and will be completed this spring.

Q. Is the Company confident that construction at TB Flats will be completed by year-end 2021?

A. Yes. I currently anticipate that construction efforts at TB Flats will be completed by mid-summer, well in advance of the high wind speed period that can slow construction and well ahead of the extended year-end deadline. With the revised construction schedule for the project we are no longer impacted by equipment delivery delays and

WTG deliveries to the site are ongoing. With equipment standing by and logistics schedules firmly in place, and with the knowledge and experience the construction contractors now have with worker safety protocols and changed practices necessary during the pandemic, I am confident that the TB Flats project will be completed by mid-summer.

V. WIND REPOWERING PROJECT OVERVIEW AND PROJECT SCOPE

Q. Please briefly describe what repowering a wind facility entails.

A. Repowering broadly describes the upgrade of an existing, operating wind facility with new WTG equipment that can increase a facility's generating capacity and the amount of electrical generation produced from the facility. Specifically, PacifiCorp's repowering effort involved replacing the nacelle, hub, and rotor of the WTG at all facilities, except the Foote Creek I facility, where repowering involved replacement of the existing WTGs, including the foundations and towers, which were unable to be re-used. Exhibit No. 21 includes a depiction of a wind turbine and its various components.

Q. Which facilities have been repowered?

A. PacifiCorp has repowered the facilities known as Dunlap, Foote Creek I, Glenrock I, Glenrock III, Goodnoe Hills, High Plains, Leaning Juniper, Marengo I, Marengo II, McFadden Ridge, Rolling Hills, Seven Mile Hill I, and Seven Mile Hill II. Repowering activities are complete at each of these facilities and the repowered facilities are now in commercial operation and serving customers.

Q. What repowering costs are the Company seeking to recover in this filing?

A. The Company is seeking to recover costs associated with the Repowering Projects previously approved by the Commission to repower, as well as the costs related to the

repowering of the Foote Creek I facility, which included costs to acquire full ownership of the project and purchase the wind energy lease rights for the project, and the costs of repowering the facility. Similar to the treatment of replaced assets associated with the Repowering Projects, the Company is seeking recovery of the replaced assets associated with repowering Foote Creek I as part of rate base.

Q. How many MW of installed wind capacity has PacifiCorp repowered?

A. PacifiCorp has repowered all of its 13 wind facilities, representing approximately 1,040 MW of installed wind capacity prior to repowering. After repowering, the capacity of the repowered facilities has increased to approximately 1,066 MW due to increased transmission interconnection capacity at the Marengo I and Marengo II facilities, full utilization of the 41.4 MW interconnection capacity at Foote Creek I, and minor increases at the Glenrock I and Rolling Hills projects. Detailed information about the wind facilities that have been repowered is included in Confidential Exhibit No. 22.

Q. Please explain why repowering is feasible for these wind facilities.

A. The wind facilities PacifiCorp has repowered began commercial operation between 1999 and 2010. Aside from the Foote Creek I facility, the facilities in PacifiCorp's wind fleet were able to be economically repowered, or upgraded, with new technology that will improve their efficiency and increase their generation output, without incurring the cost to replace the existing towers, foundations, and energy collection systems, which are of sufficient design to accommodate more modern equipment now available. The existing foundations and towers, although more than 10 years old in some instances, are adequately designed to accommodate larger, more modern WTG equipment and

still have a sufficient remaining useful life to economically justify the associated investment.

Q. Did the Company seek Commission approval in advance of proceeding with the Repowering Projects?

A. Yes. On June 30, 2017, the Company filed Case No. PAC-E-17-06 requesting approval for the Repowering Projects. In support of the application, the Company filed extensive testimony and economic analysis to demonstrate that the resource decisions were in the public interest. The Company also included detailed, project-by-project cost estimates. Because PacifiCorp was unsure whether repowering could occur at the Foote Creek I facility given the multiple entities involved in the previously co-owned project, Foote Creek I was not included in the Company's application.

Q. Did the Commission approve the Company's request to repower the wind facilities in Case No. PAC-E-17-06?

A. Yes. On December 28, 2017, the Commission issued its Order No. 33954 approving an all-party stipulation ("Repowering Stipulation") in support of the Repowering Projects, which included Dunlap, Glenrock I, Glenrock III, Goodnoe Hills, High Plains, Leaning Juniper, Marengo I, Marengo II, McFadden Ridge, Rolling Hills, Seven Mile Hill I, and Seven Mile Hill II. In its order, the Commission determined that the repowering projects, estimated to cost $[redacted], were fair, just, reasonable, and in the public interest, approved the Resource Tracking Mechanism described in the Repowering Stipulation, and approved continued rate recovery of and on the replaced assets associated with the wind repowering project. I will discuss the status of the approved projects later in my testimony.

Q. Did the Company continue to refine the Repowering Projects following their approval by the Commission?

A. Yes. The Company worked with turbine suppliers and its engineering consultant, Black & Veatch, to refine the designs for the Repowering Projects and increase value for customers by increasing equipment performance, reducing project costs, and gaining greater certainty with respect to future operating costs of the projects. Most of the Repowering Projects were able to incorporate equipment with improved performance specifications relative to the assumptions contained in the Company's application to the Commission. At the projects built with General Electric turbines, a repowering turbine with a higher nameplate capacity and a larger 91-meter rotor was able to be applied to the projects, increasing their generation benefits, while overall repowering costs were reduced. At the Marengo I and II projects, the generation interconnection limit was able to be increased by 23.4 MW, allowing additional generation from the higher capacity turbines to be delivered to customers. In addition, the Company was able to negotiate long-term full-service agreements for all of the Repowering Projects that provide greater cost certainty with respect to ongoing operations and maintenance costs of the projects, while providing project availability guarantees that ensure the project will attain high levels of availability following repowering, with liquidated damages payable if contractual availability targets are not attained.

Q. What is the construction status of the Repowering Projects that were approved by the Commission in Case No. PAC-E-17-06?

A. All of the projects are now in commercial operation and serving customers. Except for the Dunlap project, substantial construction at the projects was completed in late 2019

and the projects were online in the late 2019 or early 2020. The Dunlap project was always planned to be completed in 2020 to allow as much of the existing PTCs from the original project to be realized prior to repowering.

Q. Was construction at the Dunlap project impacted by the coronavirus pandemic?

A. Although construction occurred in 2020, the Dunlap project was spared many of the impacts that affected and delayed construction activities at the New Wind Projects and at the Foote Creek I repowering project. General Electric elected to pre-deliver equipment for the Dunlap project in late 2019 and early 2020 in order to minimize equipment supply and logistics constraints in 2020. This proved fortuitous and the project benefitted by not being impacted by equipment delivery delays or parts delays. In addition, General Electric's repowering crew came to the project after having already had experience at another repowering project in the southern United States working under coronavirus safety precautions. Thus, when work began at the Dunlap project in June 2020 there were few unexpected delays associated with implementing coronavirus worker safety practices and different work procedures.

Q. What is the budget status for the Repowering Projects that were approved by the Commission?

A. The Company was able to complete construction of the Repowering Projects at costs below the $[redacted] amount approved by the Commission in Case No. PAC-E-17-06. Final construction costs for the projects are $[redacted], or $[redacted] less than originally estimated. On a project-by-project basis, 11 of the 12 projects were completed at costs that are less than the capital costs estimated by the Company at time of Commission approval. Please refer to Confidential Exhibit No. 20 for a comparison

between the cost of the Repowering Projects estimated in Case No. PAC-17-06 and the Company's capital costs by project as filed in this proceeding.

Q. Do any of the projects have capital costs that exceed amounts presented in Case No. PAC-E-17-06?

A. Yes. Capital costs at the Goodnoe Hills project exceeded the estimated amount for the project presented in the Repowering Projects application. The costs for all other projects were less than costs presented in the application.

Q. What are the reasons for the cost increases at the Goodnoe Hills facility?

A. At the Goodnoe Hills project, the Company's cost estimate presented in its application was developed based on estimated construction costs at the time of filing. Subsequent engineering design of the project after Commission review resulted in changes to the project that drove cost increases. Engineering analysis determined that the final turbine design required an upgrade in the foundations at the project to meet the required design load of the larger turbine rotors. These costs had not been included in the Company's original estimate. Additionally, the design and cost of tower adapters was refined, resulting in larger cranes needed to install the equipment, which increased construction costs, and cultural resources surveys indicated the presence of cultural resources that limited crane travel paths on the site, increasing construction costs due to more crane breakdowns required to move cranes between work locations.

Q. Did these cost increases at the Goodnoe Hills project significantly impact the economic benefits of the project?

A. No. The need for foundation retrofits was factored into the project economics before the Company initiated construction of the project. In the end, Goodnoe Hills project

costs ended up exceeding the Company's final estimated amount for the project by $[redacted], which doesn't materially impact the favorable economics of the project.

VI. FOOTE CREEK I REPOWERING PROJECT COSTS AND BENEFITS

Q. You mentioned earlier that the scope of repowering at Foote Creek I is different than repowering at the Company's other wind facilities. Can you provide additional background on the Company's decision to repower Foote Creek I?

A. Foote Creek I, the Company's oldest wind facility, began commercial operation in April 1999. The facility served as a demonstration project to evaluate the feasibility of utility-scale wind energy. The facility was developed in partnership with the Eugene Water & Electric Board ("EWEB") and the Bonneville Power Administration ("BPA"). As developed, Foote Creek I was co-owned by EWEB (21.21 percent ownership) and PacifiCorp (78.79 percent ownership), with BPA taking 37 percent of the facility's output through a 25-year cost-based PPA. As the first utility-scale wind energy project in Wyoming, Foote Creek I was sited at one of the most favorable wind sites in the United States and enjoys the highest wind speeds of any of the Company's wind projects. Unlike the remainder of the facilities the Company has repowered, the Foote Creek I project is unique in that it was co-owned and also had a third-party PPA associated with the resource.

Prior to repowering, the Foote Creek I facility consisted of 68 turbines, each with a 600-kilowatt generating capacity, a rotor diameter of 42 meters, and towers that supported a 40-meter hub height. Although employing the latest technology when originally installed, the existing turbines had become costly to operate and maintain relative to the Company's more modern turbines that have much higher nameplate

capacities, larger rotor diameters, and taller towers. Accordingly, the operation and maintenance costs of the Foote Creek I facility were the highest of the Company-owned wind resources on a per-MW basis since the maintenance requirements for these smaller turbines are similar to those of larger turbines, but the capacity of the Foote Creek I turbines was much less.

The costs associated with continued operation of the existing turbines at Foote Creek I for both the Company and EWEB were anticipated to increase after the expiration of the BPA PPA in April 2024 since 37 percent of these ongoing costs would no longer be covered through the cost-based PPA. Similarly, BPA would have been required to take higher cost energy from the project until the PPA expired. For these reasons, PacifiCorp, EWEB, and BPA were all motivated to explore whether the existing Foote Creek I project could be unwound in order to achieve an outcome more favorable to customers as compared to continuing to operate the facility through its planned 30-year asset life. Repowering the facility presented the opportunity to realize this outcome for all customers.

Q. Please explain what repowering at the Foote Creek I wind facility involved.

A. The WTG equipment at Foote Creek I had a low generating capacity (600 kilowatts) per turbine and the towers and foundations supporting the nacelle and rotor did not have the necessary height or design strength to accommodate the installation of modern larger nacelles and rotors capable of generating a much greater amount of electricity per WTG.

Due to the limitations of the older facility, repowering Foote Creek I required complete removal and replacement of the old wind turbine equipment. The towers,

foundations and energy collection system were replaced with new foundations to support the larger towers and appropriately sized energy-collector circuits. Repowering the Foote Creek I facility resulted in the replacement of the current 68 small-capacity wind turbines at the site with 13 modern wind turbines. Given the improvements in wind turbine technology since the construction of the project more than 20 years ago, the project site is able to produce nearly 60 percent more energy with 80 percent fewer turbines. A site plan for the Foote Creek I project showing the original and new repowering turbines is shown in Exhibit No. 23.

Q. What was necessary for the Company to repower the project?

A. Because of the very favorable wind conditions at the site, the Company was interested in repowering the facility so that customers could benefit from the low-cost energy that could be generated at the site with modern wind turbine equipment qualified at 100 percent of the value of the PTCs. To achieve that, however, it was necessary for the Company to acquire EWEB's ownership share of the facility and to terminate the existing PPA with BPA. The Company negotiated a PPA termination agreement with EWEB and BPA, and a purchase and sale agreement with EWEB for its interests in the facility. The termination of the PPA was negotiated to be effective upon PacifiCorp's acquisition of EWEB's interest in the project, and the closing of the purchase and sale agreement with EWEB was contingent upon the Company obtaining necessary regulatory and permitting approvals related to repowering as well as satisfactory commercial arrangements for turbine supply and construction that ensured repowering could occur.

Q. How much did the Company pay EWEB for its interests in the facility?

A. PacifiCorp paid EWEB approximately [redacted] for its interests in the facility.

Q. Did the Company incur costs to terminate the Foote Creek I PPA with BPA?

A. No. Under the termination agreement, BPA paid an early termination payment for the facility in the amount of [redacted], of which [redacted]—the Company's 78.79 percent ownership share of the facility—was paid to the Company. This payment to the Company and EWEB reflected the fact that BPA realizes savings by terminating the PPA early and replacing the power with lower cost energy resources.

Q. Were these amounts consistent with the Company's expectations?

A. Yes. These payments were consistent with the Company's economic analysis of the Foote Creek I repowering project, which is described by Mr. Link.

Q. Did the Company enter other commercial arrangements related to repowering at Foote Creek I?

A. Yes. The Company executed a turbine supply agreement with Vestas and executed a balance of plant construction contract with Thorstad Companies, Inc. Both contracts were awarded following competitive solicitation processes. When these contracts were finalized, the Company proceeded to close on the purchase of EWEB's interest in the project and terminate the PPA. The Company also purchased the wind energy lease rights for the Foote Creek I facility.

Q. Why did the Company purchase the wind energy lease rights for Foote Creek I?

A. The Company was operating the Foote Creek I facility under land rights that were subleased from Chandar Energy Land Associates, Inc. ("CELA"), which held the master wind energy lease rights with the ultimate property owners upon whose land the

Foote Creek I turbines are located. Taking into account the high-value wind energy resource at the site, the wind energy production-based lease payments owed to CELA under the sublease were still more costly than what the Company pays for similar production-based wind energy leases. The Company was able to negotiate the purchase of the master wind energy leases from CELA at a cost that improved the economics of the Foote Creek I repowering project relative to continuing to operate under the existing sublease. Additionally, the master wind energy lease rights can be renewed for a total term of up to 99 years, providing potential future customer benefits beyond the asset life of the repowered Foote Creek I facility.

Q. Were there unique permitting requirements related to Foote Creek I as compared to the other repowering projects?

A. Yes. It was necessary for the Company to obtain approval of a new CPCN from the Wyoming Public Service Commission related to repowering the facility and a new Conditional Use Permit from Carbon County, Wyoming. The Company also had to obtain concurrence from the Bureau of Land Management ("BLM") that repowering was consistent with the existing right of way grant from BLM for the facility, and the Company worked with the U.S. Fish and Wildlife Service to review the locations of the new turbines on the existing project footprint to evaluate and minimize potential avian impacts associated with the new turbine layout.

Q. When did the Company finally approve repowering the Foote Creek I facility?

A. The Company approved repowering the facility on June 25, 2019. The Company then closed on the purchase of EWEB's interest in the facility on July 24, 2019, after commercial arrangements to repower the facility were finalized. Following approval of

the repowering project, the Company was able to negotiate the purchase of the master wind leases and incorporated this change into the project scope. The Company subsequently closed on the purchase of the master wind energy lease rights from CELA on August 8, 2019.

Q. What benefits will customers realize from repowering Foote Creek I?

A. Repowering Foote Creek I re-qualifies it for PTCs, which are benefits that are passed through to customers. Additionally, repowering increases the amount of zero fuel cost energy produced from the repowered facilities given the much larger energy production capability of the new turbines. Further, by replacing older WTG equipment, which is subject to more failure and maintenance issues than newer equipment, repowering will reduce PacifiCorp's ongoing operating costs. Finally, repowering the wind facilities with new WTG equipment will extend the useful lives of the facilities by up to 21 years, creating substantial energy and capacity benefits for customers in the future when this wind facility would otherwise have been retired from service.

Q. With the repowering of Foote Creek I added to the Company's repowering efforts, what are the estimated generation benefits of repowering across the Company's repowered wind fleet?

A. The Company's repowering effort has incorporated recent technical advances that allow for installation of longer blades and nacelles with higher capacity generators, and, with the recently completed repowering of Foote Creek I, is expected, on average, to deliver an additional 814 additional gigawatt-hours ("GWh") of low-cost energy for customers, or an increase of 27 percent across the entire wind fleet.

VII. REQUALIFICATION FOR PTCS

Q. How do the Repowering Projects qualify for the PTC extension enacted in 2015?

A. The IRS guidance, which I discussed above in relation to the New Wind Projects, establishes a "safe harbor" for taxpayers to demonstrate the year a facility will be deemed to "begin construction," thereby setting the value of the PTC. If at least five percent of the total project costs were incurred in 2016, then the facility qualifies under the IRS safe harbor for the full value of the PTC, provided the taxpayer can demonstrate "continuous efforts" to complete construction. The IRS guidance on the now five calendar year "safe harbor" with respect to the continuous-efforts standard that I discussed in relation to the New Wind Projects also applies to the Repowering Projects. Thus, as with the New Wind Projects, the Repowering Projects must be in service no later than December 31, 2021, to satisfy the continuous-efforts safe-harbor provisions – given the one-year extension of the safe-harbor described earlier. If the New Wind or Repowering Projects are not placed in service by December 31, 2021, the projects must satisfy the potentially more challenging IRS requirements that continuous efforts were expended to repower the facilities.

Q. Is the full value of the PTC for the Repowering Projects the same as those for the New Wind Projects?

A. Yes. During the 10-year period after the wind facility begins commercial operation, the Repowering Projects will receive the same 2.5 cents per kilowatt-hour or $25 per megawatt-hour, adjusted annually for inflation as the New Wind Projects.

Q. Do all of the Company's Repowering Projects, and the Foote Creek I repowering project, qualify for the full value of the PTC under these rules?

A. Yes. Consistent with IRS guidance, a facility owner can demonstrate that construction of a facility has begun in the year in which at least five percent of the applicable project costs are incurred. If wind turbine equipment is purchased and delivered in 2016, and the equipment comprises at least five percent of the applicable project costs, a PTC "safe harbor" is created for the wind facilities subsequently constructed. To meet this requirement, PacifiCorp executed safe harbor equipment purchases with General Electric International, Inc. and Vestas in December 2016, and took delivery of equipment with a value sufficient to give the Company the ability to repower its entire wind fleet and qualify the repowered wind facilities for 100 percent of the PTC value. For the Foote Creek I facility, PacifiCorp used safe harbor equipment obtained from Berkshire Hathaway Energy Renewables, a Berkshire Hathaway Energy subsidiary, which made safe harbor equipment purchases from Vestas in December 2016 that have been used to qualify the Foote Creek I project for 100 percent of the PTC value.

Q. What other requirements must repowered projects satisfy to qualify for the PTCs?

A. On May 5, 2016, the IRS issued Notice 2016-31, which provides guidance on various aspects of qualifying for the PTCs and whether new tax credits can be claimed when wind turbines are repowered or retrofitted. Notice 2016-31 generally provides that the repowering costs must equal at least four times the fair market value of the equipment that the owner retains from the original facility for the repowered turbines to qualify for new PTCs. Thus, 80 percent of the fair market value of the repowered WTG must result from repowering project costs while the value of the retained components cannot

exceed 20 percent of the fair market value of the new facility. This "80/20" test is applied on a turbine-by-turbine basis. Each wind turbine-composed of a foundation, tower, and machine head (including nacelle, hub, and rotor), is considered a separate facility.

Q. Do all of the Company's Repowering Projects pass this 80/20 test?

A. Yes. All of the Repowering Projects pass this test.

Q. Is the Foote Creek I facility subject to this 80/20 test?

A. No. The Foote Creek I facility was repowered without using any retained wind turbine components. The tower and foundations of the existing turbines at the site were not reused, unlike at PacifiCorp's other repowering projects. Because the Foote Creek I project did not incorporate any retained wind turbine components, it is not subject to the 80/20 test. In other words, 100 percent of the fair market value of the Foote Creek I turbines is the result of repowering costs.

Q. Have recent changes to federal tax laws impacted the ability to qualify the Company's repowered facilities for PTCs?

A. No. Neither the Tax Cuts and Jobs Act, enacted into law in December 2017, nor the Tax Extender and Disaster Relief Act of 2019 changed the qualification requirements that allow all of the Company's repowered wind facilities to receive the full value of PTCs.

Q. Have all of the Repowering Projects as well as the Foote Creek I repowering project met the requirements described above in order to qualify for the full value of PTCs?

A. Yes.

VIII. INCREASED ENERGY BENEFITS FOLLOWING REPOWERING

Q. Once repowered, how do the energy benefits of the Foote Creek I wind facility increase?

A. The Foote Creek I facility will employ entirely new wind turbines with new foundations and taller towers. The new nacelles have generators with greater nameplate generating capacity than the removed equipment. As a result of repowering, Foote Creek I, the new turbines installed at the site will have generator nameplate ratings of 2.0 MW and 4.2 MW, replacing existing turbines with a 0.6 MW nameplate rating. Details regarding the proposed wind turbine upgrades, in-service dates, and resulting energy benefits are shown in Confidential Exhibit No. 22.

In addition to the larger generators in the new turbines, the new turbines also include larger blades, which will increase the rotor-swept area of the wind turbines. A larger rotor-swept area allows more of the wind energy flowing past the wind turbine to be captured and converted by the wind turbine into electricity. The new turbines that will be used at Foote Creek I also have a higher hub height than the existing smaller turbines at the site—ranging from 80 to 82 meters—as compared to the existing turbines with a 40-meter hub height.

Finally, the Foote Creek I repowering project—with the acquisition of 100 percent ownership of the facility—will result in all of the facility's output serving the Company's customers as compared to approximately 47 percent under the earlier co-ownership and PPA structure. With the entire output of Foote Creek I directed to the Company's customers, and with the increased generation from the more efficient

turbines, the amount of zero-fuel-cost energy provided to customers by the facility will increase by more than [redacted] percent.

Q. Will the larger blades installed with repowering increase the potential for avian impacts at the wind facilities?

A. Not necessarily. Although the larger blades will increase the overall risk zone (rotor-swept area) of the repowered wind turbines, this does not necessarily correlate with an increased risk of avian impacts at existing turbine sites. PacifiCorp performs monthly monitoring at all of its wind facilities and reports all findings to state wildlife agencies and the U.S. Fish and Wildlife Service. PacifiCorp will continue this monthly monitoring to determine if the new turbine blades cause additional impacts to avian species and will engage with the appropriate agency to discuss and, if prudent and practicable, implement additional avoidance, minimization, or mitigation measures.

Q. Are there other ways that the Company has worked to minimize avian impacts?

A. Yes. At the Foote Creek I facility, the significant reduction in the number of turbines possible with site repowering means that less of the overall project site area will be covered by wind turbines. This has allowed the Company to adjust the layout of the wind turbines at the project site to avoid areas of higher avian use, such as the edges of Foote Creek Rim, minimizing potential avian impacts.

Q. How did PacifiCorp determine the amount of additional generation that will be produced from the repowered wind turbines at Foote Creek I?

A. At the Foote Creek I facility, the Company's consultant Black & Veatch evaluated historical project generation and availability data from the existing Foote Creek I turbines, local and project-specific meteorological information, and the new proposed

turbine layout to model the anticipated energy output of the repowered wind project, similar to the approach used by the Company to estimate the energy output from its new wind projects now under construction.

Q. Why was this approach most suitable for Foote Creek I?

A. This approach was most suitable because the turbine locations are changing at Foote Creek I, as discussed above, and also because the turbine hub heights are increasing from 40 meters to 80 meters. Due to the different location of turbines and turbine hub heights, the wind speed, turbulence intensity, and wind inflow angle experienced by the existing turbines may not be representative of what the new turbines will experience. For these reasons, wind modeling was relied upon to develop the energy estimate for Foote Creek I.

Q. What are the major power production advantages of the new equipment that will be used at Foote Creek I?

A. The larger rotor size and improvements in blade design of the new equipment generate more power at all ranges of wind speeds. Additionally, the new turbines begin producing power at a lower wind speed than the existing equipment; thus, the turbines can produce energy during lower wind conditions in which the current equipment may sit idle. Additionally, the new 4.2 MW capacity wind turbines have a higher cut-out wind speed than the existing turbines, meaning they can continue producing power at higher wind speeds in which the existing equipment at the site would shut down. Because the new turbines will have an increased generator capacity, the turbines will also produce more energy when wind speeds are high and the turbines are at their

maximum output, allowing the facility to produce equivalent capacity with far fewer turbines.

Q. How much additional energy will the repowered wind facilities produce?

A. As shown in Confidential Exhibit No. 22, across the wind fleet, the repowered wind facilities are estimated to increase generation by 814 GWh per year, an increase of 27.2 percent. With the enhancement to the Repowering Projects made since the time of their review by the Commission, incremental generation from those projects has increased from 19.2 percent to 25.8 percent.

IX. REDUCED ONGOING OPERATIONAL COSTS FOLLOWING REPOWERING

Q. Aside from increased generation and the associated PTC benefits, what other benefits will be realized with the Foote Creek I repowering project?

A. The repowering project will lower the ongoing capital costs of operating the Foote Creek I facility. PacifiCorp's turbine-supply contract for repowering, consistent with wind industry standards for new equipment, includes a two-year warranty on the new equipment. This will reduce capital costs associated with replacing or refurbishing turbine components currently in service.

The repowering project will also result in more certainty related to ongoing O&M costs of the facility. PacifiCorp will operate the repowered facility under a full service agreement with the turbine equipment supplier who will be responsible for operating and maintaining the new turbines for a fixed cost while attaining a guaranteed availability of the turbines. Under this agreement, failure to meet the guaranteed availability, if not the result of an excusable event defined in the contract, will result in

the payment of liquidated damages to the Company. Customers will benefit by having operation and maintenance costs fixed for the term of the agreement. Thus, there is greater cost certainty related to the run-rate capital expenditures and operation and maintenance costs as compared to continued operation of older turbines that are near the end of their useful life.

Q. Does the new equipment address any other operational issues?

A. Yes. In addition to the reduced costs of operating the new equipment, repowering addresses the issue of gearbox failures at the Foote Creek I facility, which have experienced high failure rates relative to other gearboxes in the wind fleet. However, the impact to the Company of these failures has been mitigated by an agreement that was set to expire in 2024, at which point the cost of addressing failed gearboxes would be borne entirely by the Company and EWEB. With just 5 years of operational life remaining for the project after 2024, turbines that experienced a failed gearbox after that time could not be economically returned to service given the limited remaining generation anticipated from the existing turbines and the estimated cost to replace a failed gearbox. Thus, repowering also addresses the likelihood of diminished generation from the Foote Creek I facility after 2024.

Q. What is the current asset life of the wind facilities?

A. All of the Company's existing wind facilities are currently being depreciated assuming a 30-year asset life. Given the 1999 commercial operation date of Foote Creek I, the depreciable life approved by the Commission for Foote Creek I is 2029. In anticipation of repowering the facilities the Company proposed in the 2018 depreciation study, Case No. PAC-E-18-08, a new 30-year depreciable life following repowering that would

extend the asset life of Foote Creek I by 21 years to 2050, similar to the other facilities that have undergone repowering.[7]

X. PROJECT PERMITTING, CONSTRUCTION AND BUDGET STATUS

Q. What permits related to the Foote Creek I repowering project were necessary?

A. PacifiCorp received approval from the Federal Aviation Administration for the new turbine locations in April 2018, indicating the new turbine locations and heights would not pose a hazard to air navigation. Carbon County, Wyoming issued a new Conditional Use Permit for the repowered project in April 2019. The BLM, upon whose land approximately half of the turbines are located, accepted the Company's revised plan of development for the project in June 2019, reflecting the repowered project.

Q. Did the Company proceed with the project after receiving these necessary permits?

A. Yes. Immediately after receiving these authorizations, PacifiCorp, in July 2019, executed contracts with Vestas for turbine supply and service and maintenance of the new turbines and a construction contract with Thorstad Companies, Inc. for construction of the project.

Q. Is construction complete at the Foote Creek I repowering project?

A. Yes. Major construction is complete and the 13 new turbines at the site were placed in commercial operation on March 24, 2021.

Q. Did the pandemic impact construction at the Foote Creek I project?

A. Yes. Similar to the New Wind Project, repowering efforts at Foote Creek I also were

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[7] *In the Matter of the Application of Rocky Mountain Power for Authorization to Change Depreciation Rates Applicable to Electric Property*, Case No. PAC-E-18-08, Order No. 34754 (Aug. 18, 2020).

impacted by the coronavirus pandemic, with construction progress set back by turbine equipment and parts delivery delays, logistics issues, and impacts to the labor force and construction productivity as a result of adherence to coronavirus worker safety precautions. The project was originally forecast to achieve commercial operation in November 1, 2020, but the project was not ultimately able to reach commercial operation until March 24, 2021, due to the many impacts of the pandemic on contractor availability, parts availability, and worker productivity.

Q. Did these impacts from the pandemic and the extended construction schedule result in increased project costs?

A. Yes. The project was approved at a total cost of $[redacted], but total project costs have risen to $[redacted].

Q. Do these increased costs significantly impact the economic benefits of the project?

A. No. The economics of the Foote Creek I repowering project, as Mr. Link describes in his testimony, are very robust and the project will produce significant customer benefits even with costs at their current level.

XI. DISPOSITION OF REPLACED EQUIPMENT REPORT

Q. Did the Company agree to file a report on the disposition of replaced equipment from the Repowering Projects?

A. Yes. The Company committed to file a report on the disposition of the assets replaced by repowering and the salvage value or other customer benefits realized at the time of the Company's first general rate case after repowering, or its application for approval of the Energy Cost Adjustment Mechanism filed in 2021.

Q. Given the uncertainty of the market for the removed equipment either for redeployment or as spare parts, what was assumed in the economic analysis for the salvage value of the repowered equipment?

A. The Company did not assume any salvage value for the removed equipment in its economic analysis.

Q. How did PacifiCorp seek to obtain the highest salvage value from the existing equipment that was removed from the repowered facilities?

A. In 2018, PacifiCorp issued a request for proposals related to the disposition of the existing equipment in which the Company sought proposals for the purchase or removal of the equipment that will be replaced as part of repowering the entirety of its wind fleet. A number of wind industry participants involved in the operation and maintenance of turbines of the type that were removed responded to the request for proposals. In general, proposals received from this solicitation were not favorable as compared to the equipment removal proposals offered by the construction contractors that installed the new equipment.

Q. Did PacifiCorp make efforts to maximize the salvage value of the equipment being replaced at the repowered facilities?

A. Yes. In addition to the broad request for proposals that was issued for all of the equipment removed with repowering, the Company also pursued inquiries from parties that were interested in very specific equipment that was being removed. Unfortunately, a significant number of turbines of all makes and models are currently being repowered by PacifiCorp and other companies. This will likely continue to be the case before the sunset of the PTCs available for wind energy projects in 2024. As a result, there is very

little market for used turbines and the salvage value of the equipment is very low given the large number of repowered turbines and associated spare parts that have become available as a result of the significant repowering effort that the wind industry is now undertaking. Some individual turbine component sales have resulted from PacifiCorp's efforts to obtain the highest salvage value from the removed equipment at other repowered projects, but this has been a de minimus amount, with the salvage values realized credited to the respective Repowering Projects. Except for just these few sales, the lowest cost alternative for the disposition of the old equipment was to allow the construction contractors to retain the equipment so the scrap value offset their equipment removal, handling, and transportation costs. That has also been the case at Foote Creek I, where no used equipment sales have occurred. Given the relative inefficiency of the replaced equipment compared to new equipment, it has not made economic sense to redeploy the replaced equipment at other potential wind sites.

Q. Does the Company's inability to achieve a salvage value for the replaced equipment impact the Company's economic analysis of the Foote Creek I repowering project?

A. No. Similar to the Repowering Projects, PacifiCorp did not assume any salvage value for the replaced equipment in its economic analysis of the project. Thus, project economics are not impacted by the fact that the old equipment was not able to be re-sold by the Company after it was removed.

XII. CONCLUSION

Q. Please summarize your recommendations.

A. The Company has prudently managed the implementation and costs of the New Wind

Projects. Consistent with Commission Order No. 34104 in Case No. PAC-E-17-07, given that these projects will still deliver substantial customer net benefits, and that the 2019 IRP more clearly demonstrates a need for the resources beyond just those economic benefits, the Commission should allow full recovery of the costs of these projects, including the addition of two additional turbines to the TB Flats project, which will increase generation and benefit customers. Recovery of the full costs of these projects is appropriate in light of the fact that increased costs have been driven by factors outside the control of the Company and the extraordinary circumstances of the coronavirus pandemic which resulted in very difficult construction conditions, delayed project schedules and increased costs. Understanding that the TB Flats project remains in construction, and final work to conclude the projects remains, the Company will update, if necessary, the costs of the TB Flats project in rebuttal testimony.

The Company's wind repowering efforts leverage past investments in PacifiCorp's wind fleet to enhance the future value of these resources for the benefit of its customers. By taking advantage of the unique opportunity to repower these facilities, the Company has been able to deliver its customers efficiency and reliability improvements in wind generation technology, extend their life by returning the wind fleet to like-new condition, all while enhancing performance, reducing ongoing costs, and re-qualifying these facilities for PTCs—all of which reduces customers' rates. The Company has prudently managed the implementation and costs of the Repowering Projects and costs in total are below the costs reviewed by the Commission in Case No. PAC-E-17-06 and the energy and PTC benefits of the projects are greater. I recommend that the Commission allow the Company to recover the costs incurred for all

repowering projects. Finally, I recommend that the Commission determine that the Foote Creek I repowering project, and associated acquisition of the lease rights for the facility, provides benefits to Idaho customers and is therefore prudent and in the public interest, and that the Company be allowed to include the revenue requirement of this project in rates approved in this case.

Q. Does this conclude your direct testimony?

A. Yes.