

Docket No. 20000-__-EA-18
Witness: Timothy J. Hemstreet

BEFORE THE WYOMING PUBLIC SERVICE
COMMISSION

ROCKY MOUNTAIN POWER

Direct Testimony of Timothy J. Hemstreet

September 2018

1 **Q. Please state your name, business address, and position with PacifiCorp d/b/a**
2 **Rocky Mountain Power (the “Company”).**

3 My name is Timothy J. Hemstreet. My business address is 825 NE Multnomah Street,
4 Suite 1500, Portland, Oregon 97232. My present position is Director of Renewable
5 Energy Development.

6 **QUALIFICATIONS**

7 **Q. Briefly describe your education and professional experience.**

8 A. I hold a Bachelor of Science degree in Civil Engineering from the University of Notre
9 Dame in Indiana and a Master of Science degree in Civil Engineering from the
10 University of Texas at Austin. I am also a Registered Professional Engineer in the state
11 of Oregon. Before joining the Company in 2004, I held positions in engineering
12 consulting and environmental compliance. Since joining the Company, I have held
13 positions in environmental policy, engineering, project management, and hydroelectric
14 project licensing and program management. In 2016, I assumed the role of Director of
15 Renewable Energy Development, in which I oversee the development of renewable
16 energy resources.

17 **Q. Please explain your responsibilities as Director of Renewable Energy**
18 **Development.**

19 A. The renewable energy development group is responsible for identifying and developing
20 Company-owned renewable generation resource options and efficiency
21 improvements—including wind, solar, and hydroelectric resources—to enhance or
22 improve the efficiency of the Company’s renewable resources portfolio.

1 **PURPOSE OF TESTIMONY**

2 **Q. What is the purpose of your testimony?**

3 A. My testimony:

- 4 • Provides an overview of the Company’s recommended depreciable lives for its
5 renewable generating resources. The Company reviewed its hydro and wind
6 resource generating assets and performed an evaluation of depreciable lives in
7 support of this filing. Based on this assessment, the Company proposes certain
8 changes to the depreciable lives established in the previous depreciation study filed
9 in 2013.¹
- 10 • Describes how the Company developed estimated plant economic lives for its wind
11 and hydro generation resources included in the Company’s new depreciation study
12 submitted with Company witness Mr. John J. Spanos’s testimony as Exhibit
13 RMP__(JJS-2) (the “Depreciation Study”) in this filing. My testimony also
14 summarizes the proposed changes in the depreciable plant lives of the renewable
15 resources and the basis for including updated information regarding new and
16 anticipated hydroelectric operating licenses, the repowering of the Company’s
17 existing wind fleet, as well as the assumed depreciation lives for new wind
18 resources that will be brought online in 2020.

19 **Q. Have you provided the Company’s estimated plant economic lives for its**
20 **renewable generation assets?**

21 A. Yes. Exhibit RMP__(TJH-1) attached to my testimony contains a complete list of the
22 Company’s renewable generation plants and their recommended depreciable lives.

¹ In The Matter Of Rocky Power’s Application For An Order Authorizing A Change In Depreciation Rates Applicable To Electric Property, Docket 20000-427-EA-13, Record No. 13436.

1 **DEPRECIABLE LIVES FOR HYDROELECTRIC GENERATION RESOURCES**

2 **Q. What is the Company’s general approach for developing the depreciable lives of**
3 **its hydroelectric generating facilities?**

4 A. The Company’s approach as reflected in the Depreciation Study is primarily based on
5 Federal Energy Regulatory Commission (“FERC”) hydroelectric plant license
6 expiration dates. The vast majority of the facilities (comprising 99 percent of the
7 Company’s installed hydroelectric generating capacity) require a FERC license to
8 operate. The terms of the FERC license requirements largely determine the capital
9 expenditures required to make necessary improvements to the hydroelectric plant
10 during the license period to implement protection, mitigation and enhancement
11 measures. It is therefore appropriate for the term of the FERC license to set the
12 depreciable life of the hydroelectric generation resource.

13 The status of the FERC relicensing processes for the Company’s licensed
14 hydroelectric facilities was reviewed to determine any changes required by new
15 licensing information. These changes are due to either recent license issuances or the
16 Company’s expectations of the term of new licenses based upon the scope of likely or
17 proposed protection, mitigation, and enhancement measures that will be required
18 during a new license term, which FERC uses to assess the appropriate new license term
19 in a licensing order.

20 For its unlicensed hydroelectric facilities, the Company assessed the
21 depreciation lives based on the current operating conditions of the facilities as observed
22 since the last depreciation study and the estimated remaining life of the physical assets
23 as determined by the Company’s hydro resources engineering staff.

1 **Q. What major changes did the Company make regarding the depreciable lives of its**
2 **hydroelectric generating resources?**

3 A. The major changes the Company made are driven primarily by changes in expected
4 license terms for FERC regulated projects that have either been recently issued a new
5 license or that the Company intends to relicense in the near future. FERC issued a new
6 40-year license for the Wallowa Falls project in Oregon in January 2017 so the
7 Company extended the depreciable life of that project to 2057 to match the new license
8 term. Additionally, the Company expects FERC to issue a new 40-year license for the
9 Prospect No. 3 project in Oregon in late 2018 so the Company proposes extending the
10 depreciable life of the Prospect No. 3 facility to 2058.² The Company also expects that
11 FERC will issue new 40-year licenses for the Weber and Cutler facilities in Utah when
12 their existing licenses expire in 2020 and 2024, respectively. Exhibit RMP___(TJH-1),
13 “Existing and Proposed Depreciable Lives for Renewable Resources” lists the
14 estimated retirement dates of the Company’s hydro and wind generating resources and
15 the proposed changes to the existing depreciable lives.

16 **Q. Why does the Company assume that the facilities it intends to relicense will be**
17 **issued 40-year licenses?**

18 A. The Company’s recent experience with new license terms for projects with moderate
19 changes or for which construction is required to comply with new license requirements,
20 like the Wallowa Falls project, is that FERC will issue a 40-year license unless unique
21 conditions are met. This is consistent with FERC’s recent “Policy Statement on

² The new license for Prospect No. 3 is available at <https://www.ferc.gov/industries/hydropower/gen-info/licensing/active-licenses/P-308.pdf>.

1 Establishing License Terms for Hydroelectric Projects,” issued in October 2017.³ In the
2 policy statement, FERC adopted a default 40-year license term for licensed hydro-
3 power projects at non-federal dams. FERC also articulated that projects with limited
4 new improvements or construction that are required under a new license could justify
5 a shorter license term of not less than 30 years. The Company estimates that moderate
6 infrastructure improvements will be necessary during new license terms for its
7 hydroelectric projects; thus, a 40-year depreciable life was viewed as appropriate.

8 **Q. Did the Company extend the depreciable life of any of its other hydro facilities for**
9 **reasons other than new or anticipated license terms?**

10 A. Yes. The Company made slight adjustments to extend the depreciable lives of several
11 small hydro facilities with less than three megawatt capacity that are not licensed by
12 FERC. Small extensions of between four to eight years are proposed for the Paris,
13 Gunlock, Santa Clara, Veyo, Last Chance, and Granite facilities to reflect their
14 continuing operational status and the estimated remaining life of their physical assets.
15 The Company also extended the depreciable lives for the Bend and Eagle Point
16 facilities of 14 and 15 years, respectively, because these facilities will not be
17 decommissioned in the near-term and will continue to provide service to customers for
18 the new proposed depreciable life.

19 **Q. Did the Company reduce the depreciable life of any of its hydro facilities?**

20 A. Yes. The depreciable life of the Viva Naughton hydroelectric facility—a small
21 0.74 megawatt capacity hydroelectric facility located at the cooling water storage
22 reservoir for the Naughton steam generating facility in Wyoming—was reduced by

³ FERC’s policy statement is available at <https://www.ferc.gov/whats-new/comm-meet/2017/101917/H-1.pdf>.

1 11 years, from 2040 to 2029, to reflect the planned retirement date of the Naughton
2 steam generating station.

3 **Q. Has the Company proposed any changes to the estimated retirement date of its**
4 **Klamath hydroelectric assets?**

5 A. No. The Company's estimated retirement dates for the Klamath hydroelectric facilities
6 are unchanged from the 2013 depreciation study and remain consistent with the timing
7 of decommissioning anticipated by the Klamath Hydroelectric Settlement Agreement.

8 **Q. Could environmental issues affect the estimated plant economic life of hydro**
9 **resources in the future?**

10 A. Yes. While no new significant environmental compliance issues have emerged since
11 the 2013 depreciation study, the dynamic nature of evolving environmental stewardship
12 requirements and FERC licensing requirements, coupled with asset specific attributes
13 will continue to impact the Company's ability to economically achieve license
14 extensions or economically operate unlicensed hydro facilities for the benefit of
15 customers. For instance, assets that must mitigate project effects on species listed under
16 the Endangered Species Act may be subject to unique environmental stewardship
17 requirements, which can change based upon the status of the listed species. On the other
18 hand, long-term investments the Company is making to comply with its current license
19 requirements—such as the installation of fish passage measures at many of its newly
20 relicensed hydroelectric facilities—may positively influence the ability to relicense
21 these facilities in the future and continue economic operation. If conditions change as
22 a result of evolving requirements or unforeseen circumstances, the depreciable lives of
23 the Company's hydroelectric assets will be adjusted accordingly in a future

1 depreciation study.

2 **DEPRECIABLE LIVES FOR NEW WIND GENERATING RESOURCES**

3 **Q. Please describe the process the Company used to assess the depreciable lives of its**
4 **wind resources.**

5 A. In the Company's 2013 depreciation study, the Company recommended, and the
6 Commission adopted, extending the previously assumed 25-year depreciable life for its
7 wind-powered generation resources to 30 years. The Company has assessed this
8 depreciable life against current industry trends for wind generation facilities and
9 continues to believe that a 30-year depreciable life is appropriate for such facilities
10 whose wind turbine generators are designed to meet industry standards and that are
11 maintained consistent with manufacturer recommendations. New wind projects require
12 a greater investment per turbine due to the larger wind turbine size as compared to
13 earlier turbine technologies. Thus, some new utility-owned wind assets, for which
14 ongoing generation offtake and maintenance funding is more certain, have been
15 considered for longer asset lives of up to 40 years.

16 **Q. What asset life is the Company proposing for the new wind facilities that are**
17 **currently being developed and expected to enter service in 2020?**

18 A. The Company is currently developing 950 megawatts of new wind facilities in
19 Wyoming associated with its Energy Vision 2020 project that are expected to
20 commercially operate in 2020. The Company proposes a 30-year asset life for these
21 new facilities, consistent with the 30-year asset life for the Company's existing wind
22 facilities that was approved in the 2013 depreciation study.

1 **Q. Is a 30-year asset life consistent with how the Company evaluated proposed new**
2 **wind projects as part of its Energy Vision 2020 proposal?**

3 A. Yes, in the Energy Vision 2020 cases and in the Company's Integrated Resource Plan,
4 the Company assumed a 30-year asset life for new Company-owned wind assets as part
5 of such new wind resources' economic evaluation.⁴

6 **DEPRECIABLE LIVES FOR REPOWERING WIND GENERATING RESOURCES**

7 **Q. Is the Company proposing changes to the depreciable lives of its existing wind**
8 **resources?**

9 A. Yes. The Company is currently repowering the majority of its existing wind fleet,
10 which, for its wind facilities constructed between 2006 and 2010, will result in the
11 replacement of the existing nacelles and rotors at the facilities with more modern
12 equipment that includes longer blades and higher capacity generators.⁵

13 Repowering of the Company's wind fleet will benefit customers by requalifying
14 the repowered facilities for the full value of available production tax credits when
15 brought online by the end of 2020, increasing zero-fuel cost generation from the
16 existing wind fleet by an average of approximately 26 percent, and extending the asset
17 lives of the repowered facilities. The Company plans to repower its existing wind
18 facilities in 2019 and 2020. The Company therefore recommends extending the
19 depreciable lives of the repowered facilities to provide for a 30-year asset life after the
20 repowering equipment upgrades are installed. This results in an extension of the

⁴ The Energy Vision 2020 cases are resource pre-approval proceedings in Idaho (Case No. PAC-E-17-07), Utah (Docket No. 17-035-40), and Wyoming (Docket No. 20000-520-EA-17) related to new wind resources and transmission infrastructure.

⁵ The Company is also evaluating repowering its Foote Creek I facility, which would involve the replacement of the existing wind turbine generators installed in 1999 with new, modern equipment. The Company anticipates that this facility will be repowered in 2020 if satisfactory arrangements are obtained and permits are received that would allow this facility to be repowered and provide benefits to customers as compared to the status quo.

1 depreciable lives of the Company's existing wind facilities by 10 to 21 years,
2 depending on the facility. The Company's proposed depreciable lives for its wind
3 facilities are shown in Exhibit RMP___(TJH-1).

4 **Q. What are the current asset lives of the wind facilities to be repowered?**

5 A. All of the existing wind facilities are currently being depreciated assuming a 30-year
6 asset life. The facilities the Company plans to repower or is evaluating for repowering
7 are currently scheduled to be retired between 2029 and 2040. The retired assets from
8 repowering are treated as an interim retirement for accounting purposes and transferred
9 to the wind plant depreciation reserve.

10 **Q. Will repowering the wind facilities extend their useful operating lives beyond the**
11 **currently planned retirement dates?**

12 A. Yes. The Company believes that repowering the wind facilities will extend their
13 operation 30 years from the repowering date, extending their useful lives by at least
14 10 years.

15 **Q. How will repowering extend the useful life for 30 years from the repowering date?**

16 A. The repowering projects are being designed by the turbine equipment suppliers to meet
17 the same design requirements that apply to complete wind turbine generators used in
18 new wind facility construction. The wind turbine equipment suppliers will have their
19 wind turbine designs for the repowering projects certified by an independent third party
20 to ensure that they meet or exceed applicable International Electrotechnical
21 Commission design standards used in the wind turbine industry. These design standards
22 are intended to ensure that the equipment is appropriate for the site conditions and will
23 perform satisfactorily over the standard design life.

1 **Q. What factors are independently reviewed to assess and certify the design of the**
2 **repowered wind facilities?**

3 A. The third-party design assessment evaluates the site-specific load assumptions based
4 upon the climactic conditions at each facility and will assess the control and protection
5 systems for the wind turbine and their ability to meet the site design conditions. It will
6 also assess the electric components, the rotor blades, hub, machine components (i.e.,
7 drivetrain, main bearing, and gearbox), and the suitability of the existing tower upon
8 which the new wind turbine equipment will be installed to meet the new design loads.

9 **Q. Does the Company have land rights that allow its repowered wind facilities to**
10 **operate for 30 years after repowering?**

11 A. The Company reviewed its existing land rights for its existing wind generation facilities
12 and determined that nearly all projects have land rights that will allow the facilities to
13 operate for 30 years after repowering is completed. The Company will seek to prudently
14 extend lease terms beyond the initial period, as required, to support the longer
15 depreciable lives of its repowered wind resources.

16 **Q. Does this conclude your direct testimony?**

17 A. Yes.

BEFORE THE WYOMING PUBLIC SERVICE COMMISSION

IN THE MATTER OF ROCKY MOUNTAIN POWER'S APPLICATION FOR AN ORDER AUTHORIZING A CHANGE IN DEPRECIATION RATES APPLICABLE TO ELECTRIC PROPERTY

DOCKET NO. 20000-__-EA-18 (RECORD NO. ____)

AFFIDAVIT, OATH AND VERIFICATION

Timothy J. Hemstreet (Affiant) being of lawful age and being first duly sworn, hereby deposes and says that:

Affiant is the Director of Renewable Energy Development for PacifiCorp, which is a party in this matter.

Affiant prepared and caused to be filed the foregoing testimony. Affiant has, by all necessary action, been duly authorized to file this testimony and make this Oath and Verification.

Affiant hereby verifies that, based on Affiant's knowledge, all statements and information contained within the testimony and all of its associated attachments are true and complete and constitute the recommendations of the Affiant in his official capacity as Director of Renewable Energy Development.

Further Affiant Sayeth Not.

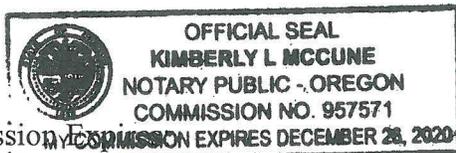
Dated this 31st day of August, 2018

Handwritten signature of Timothy J. Hemstreet

Timothy J. Hemstreet Director, Renewable Energy Development 825 NE Multnomah, Suite 1800 Portland, OR 97232 (503) 813-6170

STATE OF Oregon)) SS: COUNTY OF Multnomah

The foregoing was acknowledged before me by Timothy J. Hemstreet on this 31 day of August, 2018. Witness my hand and official seal.



Handwritten signature of Notary Public Kimberly L. McCune

My Commission Expires December 26, 2020

12-26-2020