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BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION) CASE NO. PAC-E-18-08
OF ROCKY MOUNTAIN POWER FOR)
AUTHORIZATION TO CHANGE) DIRECT TESTIMONY
DERECIATION RATES APPLICABLE TO) OF TIMOTHY J. HEMSTREET
ELECTRIC PROPERTY)
)
)

ROCKY MOUNTAIN POWER

CASE NO. PAC-E-18-08

SEPTEMBER 11, 2018

1 **Q. Please state your name, business address, and present position.**

2 A. My name is Timothy J. Hemstreet. My business address is 825 NE Multnomah Street,
3 Suite 1500, Portland, Oregon 97232. My present position is Director of Renewable
4 Energy Development. I am testifying on behalf of Rocky Mountain Power (the
5 “Company”), a division of PacifiCorp.

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 improvements
21 —including wind, solar, and hydroelectric resources—to enhance or improve the
22 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 No. 2
13 (the "Depreciation Study") in this filing. My testimony also summarizes the
14 proposed changes in the depreciable plant lives of the renewable resources and the
15 basis therefor, including updated information regarding new and anticipated
16 hydroelectric operating licenses, the repowering of the Company's existing wind
17 fleet, as well as the assumed depreciation lives for new wind resources that will be
18 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 No. 7 contains a complete list of the Company's renewable generation
22 plants and their recommended depreciable lives.

¹ In The Matter of Rocky Mountain Power's Application For An Order Authorizing Changes In Depreciation Rates Applicable To Electric Property, Case No. PAC-E-13-02.

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 – 33 out of 44 – facilities comprising 99 percent
7 of the Company's installed hydroelectric generating capacity – require a FERC license
8 to 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 during
18 a new license term, which FERC uses to assess the appropriate new license term in a
19 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 license² 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. 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 No. 7, “PacifiCorp
13 Estimated Plant Retirement, Lives – Renewable Resources” lists the estimated
14 retirement dates of the Company's hydro and wind generating resources and the
15 proposed changes to the existing depreciable lives.

16 **Q. Why does the Company assume that facilities it intends to relicense will be issued**
17 **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 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 0.74
21 megawatt capacity hydroelectric facility located at the cooling water storage reservoir
22 for the Naughton steam generating facility in Wyoming—was reduced by 11 years,

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

1 from 2040 to 2029, to reflect the planned retirement date of the Naughton steam
2 generating station shown in Exhibit No. 5.

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

1 the Company's hydroelectric assets will be adjusted accordingly in a future
2 depreciation study.

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

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

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

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

19 A. The Company is currently developing 950 megawatts of new wind facilities in
20 Wyoming associated with Energy Vision 2020 that are expected to be commercially
21 operational in 2020. The Company proposes a 30-year asset life for these new facilities,
22 consistent with the 30-year asset life for the Company's existing wind facilities that
23 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, the Company assumed a 30-year asset life for
4 new Company-owned wind assets as part of the new wind resources' economic
5 evaluation.

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, which
10 was constructed between 2006 and 2010, resulting in the replacement of the nacelles
11 and rotors with more modern equipment that includes longer blades and higher capacity
12 generators⁴.

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
21 depreciable lives of the Company's existing wind facilities by 10 to 21 years, depending

⁴ 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 on the facility. The Company's proposed depreciable lives for its wind facilities are
2 shown in Exhibit No. 7.

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

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

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

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

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

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