

**REDACTED**

Docket No. 20000-520-EA-17

Witness: Rick A. Vail

BEFORE THE WYOMING PUBLIC SERVICE  
COMMISSION

ROCKY MOUNTAIN POWER

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**REDACTED**

Second Supplemental Direct Testimony of Rick A. Vail

February 2018

1 **Q. Are you the same Rick A. Vail who previously provided testimony in this case on**  
2 **behalf of PacifiCorp dba Rocky Mountain Power (the “Company”)?**

3 A. Yes.

4 **PURPOSE AND SUMMARY OF SECOND SUPPLEMENTAL DIRECT TESTIMONY**

5 **Q. What is the purpose of your second supplemental direct testimony in this**  
6 **proceeding?**

7 A. My testimony provides an update on the network upgrade costs associated with the TB  
8 Flats I and II, Cedar Springs, and Uinta projects, which are three of the four new wind  
9 resources (“Wind Projects”) included on the updated final shortlist of the 2017R  
10 Request for Proposals (“RFP”).

11 **Q. Please summarize your testimony.**

12 A. Since filing supplemental direct testimony on January 16, 2018, the Company’s  
13 transmission function finalized a broader open access transmission tariff (“OATT”)   
14 restudy process, which included producing system impact restudy (“SIS”) reports for  
15 the following three Wind Projects: TB Flats I and II, Cedar Springs, and Uinta. Based  
16 on the completed SIS reports, the network upgrade costs have increased to  
17 [REDACTED]. In addition, the Company’s updated studies indicate that with the  
18 construction of the Aeolus-to-Bridger/Anticline transmission line, the Company can  
19 interconnect 1,510 MW of new wind capacity behind the transmission constraint in  
20 southeastern Wyoming. Thus, the Company has confirmed that there is sufficient  
21 stiffness factor and transfer capability to interconnect the three Wind Projects located  
22 in southeast Wyoming (*i.e.*, TB Flats I and II, Cedar Springs, and Ekola Flats), as well  
23 as the fourth Wind Project located in western Wyoming (*i.e.*, Uinta).

1 **UPDATE ON NETWORK UPGRADE COSTS**

2 **Q. Why has the Company updated the network upgrade costs associated with the**  
3 **Wind Projects?**

4 A. The Company's transmission function updated the interconnection network upgrade  
5 costs associated with three of the four Wind Projects as part of a broader OATT restudy  
6 process. More specifically, after the Company announced its plan to construct the  
7 Energy Gateway Aeolus-to-Bridger/Anticline D.2 segment to come online by 2020, the  
8 Company's transmission function initiated an interconnection restudy process to ensure  
9 its interconnection studies reflected the most current long-term transmission plan  
10 assumptions. In accordance with its OATT, the Company's transmission function  
11 performed restudies in serial queue order to determine whether the acceleration of  
12 Energy Gateway segment D.2 would impact the cost or timing of interconnection of  
13 projects that had not yet executed interconnection agreements and that had previous  
14 studies depending on Energy Gateway West in its entirety. The Company's  
15 transmission function posted the SIS reports to OASIS on January 29, 2018, as well as  
16 certain updated reports on February 9, 2018, after the Company filed its January 16,  
17 2018, supplemental direct testimony. Three of the four Wind Projects (TB Flats I and  
18 II, Cedar Springs, and Uinta) were among the interconnection projects to receive  
19 restudies.

20 **Q. Did the Company restudy the McFadden Ridge II project's interconnection?**

21 A. No. Because of its position in the queue, the McFadden Ridge II project had not yet  
22 received even an initial SIS; therefore, it was not included in the projects that were  
23 restudied. McFadden Ridge II's queue position and location in the constrained area of

1 PacifiCorp's transmission system in eastern Wyoming indicate that its future SIS will  
2 require the construction of additional Energy Gateway segments beyond just the D.2  
3 segment to allow the project to interconnect, which Mr. Rick T. Link explains  
4 contributed to its removal from the final shortlist in his second supplemental direct  
5 testimony.

6 **Q. How does McFadden Ridge II's queue position and location indicate its future SIS**  
7 **will require construction of additional Energy Gateway segments?**

8 A. PacifiCorp transmission can never guarantee the result of a future SIS because of the  
9 many factors that can affect it (*e.g.*, changes to the queue, as I discussed above). Here,  
10 however, there is a specific point in the interconnection queue where projects located  
11 in the constrained area of PacifiCorp's eastern Wyoming transmission system will  
12 require more than just the D.2 segment to interconnect, and that point in the queue is  
13 before McFadden Ridge II's queue position. More specifically, the restudy reports  
14 incorporating the updated assumption regarding the staging of Energy Gateway West  
15 showed that interconnection projects located in eastern Wyoming with an  
16 interconnection queue position greater than Q0712 trigger the need for Energy Gateway  
17 South, which is not planned to be placed in-service by the end of 2020. All other bids  
18 originally selected to the final shortlist can secure interconnection either because they  
19 hold an interconnection queue position that does not require Energy Gateway South  
20 (Ekola Flats, TB Flats I and II, and Cedar Springs); or because their project location is  
21 not in the constrained area of the Company's eastern Wyoming transmission system  
22 (Uinta).

1 **Q. Why can Uinta interconnect with just the D.2 segment even though it has an**  
2 **interconnection-queue position higher than Q0712?**

3 A. Uinta is located in western Wyoming where it (and other projects in the same area) can  
4 secure interconnection without triggering additional Energy Gateway segments.

5 **Q. Why did the Company not restudy the interconnection for the Ekola Flats**  
6 **project?**

7 A. Ekola Flats executed a Large Generator Interconnection Agreement (“LGIA”) in  
8 November 2017 and therefore did not require restudy.

9 **Q. Why did the Company not complete these interconnection studies earlier so they**  
10 **could be analyzed earlier in the 2017R RFP process?**

11 A. The Company’s transmission function did not perform the restudies in conjunction with  
12 the 2017R RFP process. Rather, as noted above, the Company’s transmission function  
13 followed its OATT process to perform a broader restudy of the interconnection queue  
14 to assess whether and to what extent the cost or timing of certain interconnection  
15 projects was impacted by the Company’s change to its long-term transmission plan,  
16 *i.e.*, the staging of the Energy Gateway West project.

17 In addition, and as discussed by Mr. Link, at the request of the Utah independent  
18 evaluator, the 2017R RFP did not require that bidders have a completed SIS when bids  
19 were submitted. This allowed bidders to participate in the 2017R RFP regardless of  
20 their position in the interconnection queue—a queue that can change over time as  
21 generator-interconnection customers change project details, request commercial  
22 operation date extensions or suspension, or withdraw from the queue altogether. As a  
23 result, while the restudies were performed independent of the 2017R RFP process,

1 performing restudies to reflect an updated long-term transmission plan assumption  
 2 close-in-time to the selection of the final shortlist allowed the Company’s transmission  
 3 function to incorporate the most current queue-based assumptions into the restudies as  
 4 well.

5 **Q. Based on the SIS reports, what are the updated costs for the network upgrades?**

6 A. Confidential Table 1 summarizes the updated costs for the network upgrades:

7 **CONFIDENTIAL TABLE 1**

230kV & 138kV Network Upgrades	
ITEM	VALUE
Transmission Line	[REDACTED]
Substation	[REDACTED]
Engineering	[REDACTED]
Right of Way Acquisition	[REDACTED]
PM/Environmental/Support	[REDACTED]
Indirects	[REDACTED]
TOTAL	[REDACTED]

8 In addition, Exhibit RMP\_\_\_(RAV-1SS) provides greater detail on the network  
 9 upgrades required for each of the Wind Projects and the SIS for each Wind Project is  
 10 included as Exhibit RMP\_\_\_(RAV-2SS), Exhibit RMP\_\_\_(RAV-3SS), Exhibit  
 11 RMP\_\_\_(RAV-4SS), Exhibit RMP\_\_\_(RAV-5SS).

12 **Q. How do the updated network upgrade costs compare to the estimate included in  
 13 your supplemental direct testimony of January 16, 2018?**

14 A. Network upgrade costs have increased by approximately [REDACTED].  
 15 This increase is due primarily to the fact that the completed SIS reports indicate  
 16 additional facilities are required to interconnect some of the Wind Projects.

1 **Q. How have the network upgrades changed since those identified in your**  
2 **supplemental direct testimony of January 16, 2018?**

3 A. The Cedar Springs project no longer requires the rebuild of a 56-mile portion of the  
4 Dave Johnston-Amasa-Difficulty-Shirley Basin 230-kV line. The rebuild can be  
5 deferred because another interconnection project (Q0409) will not be online by 2020.  
6 The Cedar Springs project will require a rebuild of the Standpipe-Freezeout-Aeolus  
7 230 kV line with a larger conductor, approximately 15 miles, and a rebuild of the  
8 existing Aeolus-Shirley Basin #1 line, approximately 16 miles. Both of these upgrades  
9 were identified as network upgrades in previous testimony.

10 In addition, the Uinta project no longer requires the reconductoring of  
11 approximately 13.7 miles of the Q0715-Railroad 138-kV line because the most recent  
12 line ratings, which are continually upgraded as new information is available, does not  
13 indicate exceedance of the emergency rating on the line. The Uinta project will,  
14 however, need to eliminate the credible N-2 outage of the Ben Lomond-Birch Creek  
15 and Ben Lomond-Naughton 230 kV transmission lines, which share common structures  
16 for approximately eight miles as they exit Ben Lomond substation. This will require  
17 the construction of a 230 kV single circuit transmission line beginning approximately  
18 one mile outside of Ben Lomond substation and continuing to structure 525 for the Ben  
19 Lomond-Naughton #1 line (located in Utah). This line segment will replace the current  
20 Ben Lomond-Naughton #1 circuit, which resides on the north side of the 7-mile-long  
21 lattice tower double circuit with the Ben Lomond-Birch Creek 230 kV transmission  
22 line.

23 The facilities identified for TB Flats I and II remain the same.

1 **Q. Has the Company performed any additional technical studies since the filing of**  
2 **supplemental direct testimony on January 16, 2018?**

3 A. Yes. The Company's updated studies indicate that it can interconnect 1,510 MW of  
4 incremental wind generation behind the TOT4A/TOT4B constraint. With the addition  
5 of the Ekola Flats project to the final shortlist, the Wind Projects will utilize 1,150 MW  
6 of the incremental capacity, which will leave 360 MW for other projects, including a  
7 240 MW qualifying facility ("QF") that has an executed interconnection agreement that  
8 does not require the construction of Energy Gateway West and South to accommodate  
9 the QF's interconnection.

10 **Q. Does this conclude your second supplemental direct testimony?**

11 A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION OF WYOMING

IN THE MATTER OF THE )  
APPLICATION OF ROCKY MOUNTAIN )  
POWER FOR CERTIFICATES OF )  
PUBLIC CONVENIENCE AND )  
NECESSITY AND NONTRADITIONAL )  
RATEMAKING FOR WIND AND )  
TRANSMISSION FACILITIES )

DOCKET NO. 20000-520-EA-17  
(RECORD NO. 14781)

AFFIDAVIT, OATH AND VERIFICATION

Richard Vail (Affiant) being of lawful age and being first duly sworn, hereby deposes and says that:

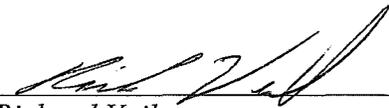
Affiant is the *Vice President, Transmission* for PacifiCorp, which is a party in this matter.

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 *Vice President, Transmission*.

Further Affiant Sayeth Not.

Dated this 14 day of February, 2018

  
Richard Vail  
Vice President, Transmission  
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Portland, OR 97232  
503-813-6938

STATE OF Oregon )  
 ) SS:  
COUNTY OF Multnomah )

The foregoing was acknowledged before me by *Richard Vail* on this 14<sup>th</sup> day of February 2018. Witness my hand and official seal.

  
Notary Public

My Commission Expires: March 19, 2019

