Witness OCS-2 RR

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of the Voluntary Request	**)**	**Docket No. 17-035-39**
Of Rocky Mountain Power for Approval	**)**	
Of Resource Decision to Repower	**)**	
Wind Facilities	**)**	

REDACTED REBUTTAL TO RESPONSE TESTIMONY

PHILIP HAYET

FOR THE

OFFICE OF CONSUMER SERVICES

APRIL 23, 2018

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, TITLE AND COMPANY.

A. My name is Philip Hayet. My business address is 570 Colonial Park Drive, Suite 305, Roswell, Georgia, 30075. I am Vice President of J. Kennedy and Associates, Inc. ("Kennedy and Associates").

Q. PLEASE STATE ON WHOSE BEHALF YOU ARE TESTIFYING.

A. I am testifying on behalf of the Office of Consumer Services ("Office").

Q. DID YOU PREVIOUSLY FILE TESTIMONY IN THIS DOCKET?

A. Yes, I filed direct testimony on September 20, 2017, surrebuttal testimony on November 15, 2017, and response testimony on April 2, 2018.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. I respond in this testimony to the response testimony that was filed on April 2, 2018 by the Division of Public Utilities ("Division") witness, Mr. Daniel Peaco, and Utah Association of Energy Users ("UAE") witness, Mr. Kevin Higgins.

Q. PLEASE SUMMARIZE THE ISSUES THAT YOU ADDRESS.

A. Mr. Peaco, Mr. Higgins, and I all address PacifiCorp's economic evaluation results, and we all reached the same fundamental conclusion that PacifiCorp's repowering application to repower existing wind power projects should be rejected because its economic analysis is flawed, unreliable, and not likely to lead to the least cost/least risk resource plan for the Company, particularly in light of the large capital investment required (over $1.3 billion). Notwithstanding this agreement in our primary conclusion, there are some differences in other recommendations that we each make, which I discuss in this testimony.

Q. HAVE ANY OF YOUR RECOMMENDATIONS CHANGED BASED ON YOUR REVIEW OF PARTIES APRIL 2, 2018 RESPONSE TESTIMONY?

A. No, they have not. I continue to strongly recommend that the Commission reject the Company's repowering proposal. My secondary recommendation is that should the Commission decide to approve repowering, I recommend that it consider approving a limited set of repowering projects, as well as, impose ratepayer protections. In my response testimony, I identified a portfolio of six wind projects that I determined would be more cost-effective than the portfolio of projects the Company proposed to repower and would result in a significant savings in capital costs, without substantially reducing the total repowering benefits should they occur. The ratepayer protections that I recommend were discussed beginning at line 749 in my April 2, 2018 response testimony.

Q. WHAT ARE THE DIFFERENCES IN RECOMMENDATIONS THAT THE OFFICE, DIVISION, AND UAE PROPOSED?

A. As I mentioned, Mr. Peaco, Mr. Higgins and I all made a primary recommendation that the Commission should reject the Company's repowering proposal. Each of us also recommended that if the Commission should decide to approve repowering, it should only consider approving a limited set of projects.[1] Both Mr. Peaco and I identified six projects that we recommended should be excluded from being repowered, and Mr. Higgins recommended that the Commission should definitely exclude one project, and it should consider excluding eight others as well.

Q. PLEASE PROVIDE A TABLE THAT COMPARES THE PROJECTS THAT THE OFFICE, DIVISION, AND UAE EACH ACCEPTED AND REJECTED.

[1] See Mr. Peaco's response testimony at lines 670-690, and Mr. Higgin's response testimony at lines 86-96.

A. The following table compares the projects that we each accepted and rejected. A "blank" in a box indicates that the project was accepted and an "X" indicates the project was rejected or should at least be given further consideration for being rejected.

Table 1
Comparison of Wind Resources Accepted and Rejected for Repowering

	Office	**Division**	**UAE**
Seven Mile Hill 1			
Glenrock 1			
Dunlap Ranch			X
Marengo 1			X
Marengo 2		X	X
Goodnoe Hills		X	X
Seven Mile Hill 2	X		
Glenrock 3	X		X
Rolling Hills	X	X	X
McFadden Ridge	X	X	X
High Plains	X	X	X
Leaning Juniper	X	X	X

Each party arrived at different projects to accept and reject by using different evaluation ranking objectives and scoring methods. The decisions that had to be made about how to structure and rank repowering projects in the evaluations was similar to the decision the Company had to make in structuring its ranking approach to identify winning bids in its 2017R and 2017S RFP processes. In its RFP processes, the Company developed an approach to rank bids for its initial shortlist that included both a net benefit and a benefit/cost calculation. In order to rank wind projects for this analysis, UAE and the Office used a net benefit calculation approach, and the Division used a benefit/cost calculation approach.

Another important difference in modeling related to how each party represented capital costs and PTCs in their analyses. This issue had to be considered in the context of the Company's multiple filings with revised modeling assumptions, such as the change in PTC modeling approach that PacifiCorp introduced midstream. Had PacifiCorp not modified its PTC modeling approach between filing rebuttal and supplemental direct testimony, the Company's own analysis would likely have resulted in projects being uneconomic in many of its studies.

Q. WHAT ARE THE DIFFERENCES IN THE WAY EACH PARTY DETERMINED PROJECTS TO REPOWER?

A. One difference concerns the way capital revenue requirements and PTC benefits were modeled in the economic analyses. The Office and Division both used non-levelized PTC and capital cost revenue requirement representations in their analyses. UAE determined that because Leaning Juniper was uneconomic under every analysis performed, it should be excluded from being repowered. In addition, UAE used levelized PTC and capital cost revenue requirement representations in the analysis that led it to recommend that the Commission should consider excluding eight other projects from being repowered. Other differences in the approaches used included the methods and study length that each party relied on to calculate energy benefits. UAE and the Office both relied on SO/PaR to-2036 analysis results, and the Division relied on a Palo Verde to-2050 market-based valuation approach to derive energy benefits.

Q. PLEASE INTERPRET THE RESULTS OF TABLE 1 ABOVE.

A. Table 1 indicates there were some consistencies and differences in the projects each party recommended to be accepted and rejected. All three parties identified that the same four projects should be rejected, Rolling Hills, McFadden Ridge, High Plains, and Leaning Juniper. Also, all three parties determined that Seven Mile Hill 1 and Glenrock 1 are potentially acceptable. Of the remaining six projects, Dunlap Ranch, Marengo 1 and 2, Goodnoe Hills, Seven Mile Hill 2, and Glenrock 3, each party identified different ones that should be rejected or accepted.

It is not surprising that UAE identified the most projects that should be considered for rejection because it evaluated the projects using a levelized cost representation for both capital cost revenue requirements and PTCs. UAE did this to remain consistent with the assumptions PacifiCorp had initially relied on earlier in this proceeding, as well as in the 2017 IRP and prior IRPs. Mr. Higgin's Tables KCH-11-RE and KCH-12-RE, as well as Tables 2 and 3 from my April 2 response testimony, demonstrate that had PacifiCorp not changed its PTC representation midstream, most of its projects would have been found to be either uneconomic or marginally economic on a net benefit basis. If the Commission believes that consistency should have been maintained, and would prefer a low capital cost alternative, then UAE's set of three projects would be a reasonable repowering portfolio. However, since the benefit of repowering just three projects would be relatively low, the Commission should still consider rejecting repowering entirely, which is the primary recommendation that all three parties support.

Q. HOW DO YOU INTERPRET THE DIVISION'S RESULTS?

A. The Division attempted to address several issues in its analysis. First, it used non-levelized capital cost revenue requirements and PTC benefits in its to-2050 analysis, which was in fact consistent with what PacifiCorp used in its to-2050 studies. Second, it addressed concerns it had with PacifiCorp's SO/PaR models and PacifiCorp's extrapolation process that the Company used to derive energy benefits in the 2037 to 2050 period. Instead of relying on the Company's derivation of energy benefits, the Division used a market-based valuation approach to derive energy benefits over the entire 2020 – 2050 study period, in which wind energy sales were priced using a forecast of Palo Verde market prices. Finally, the Division ranked the repowered wind projects based on benefit-to-cost ratios, which is an efficiency-based ranking approach. In other words, this approach ranks projects higher that provide the most benefits for the least cost. In comparison, the method that Mr. Higgins and I used was an impact-based approach, which ranks projects higher based on the absolute size of the net benefit (benefit – cost). Both approaches are reasonable, and as mentioned earlier, PacifiCorp uses both approaches in determining the initial short list when it performs a competitive solicitation process such as the 2017R and 2017S RFPs.

Q. HOW DID THE OFFICE'S RESULTS COMPARE TO THE DIVISION'S RESULTS?

A. Even though different modeling approaches were used, the Office and Division both concluded that the same four projects should be rejected, Rolling Hills, McFadden Ridge, High Plains, and Leaning Juniper. Furthermore, the Office and Division both concluded that the same four projects are potentially acceptable, Seven Mile Hill 1, Glenrock 1, Dunlap Ranch, and Marengo 1. However, the Office and Division differed on the other four wind projects. The Office selected the Marengo 2 and Goodnoe Hills projects, and the Division selected the Seven Mile Hill 2 and Glenrock 3 projects to be repowered. Thus, even though different modeling approaches were used, the ultimate resources selected and rejected were not significantly different.

Q. HAVE YOU PERFORMED AN ANALYSIS TO COMPARE ALL THREE PORTFOLIOS?

A. Yes, Table 2 compares results based on the different projects that each party accepted for potential repowering.

Table 2
PaR Stochastic Mean PVRR(d)
(Benefit)/Cost of Wind Repowering
PTC and Capital Revenue Requirements Non-Levelized
($ million)

[Begin Confidential]

	Investment Cost[2] (Redacted)	**Low Gas Zero CO2**		**Med Gas Med CO2**	
		To-2036	**To-2050**	**To-2036**	**To-2050**
PacifiCorp	[redacted]	**(110)**	**(170)**	**(142)**	**(282)**
Office	[redacted]	(96)	(144)	(115)	(208)
	[redacted]	87%	85%	81%	74%
Division	[redacted]	(87)	(130)	(101)	(184)
	[redacted]	79%	77%	71%	65%
UAE	[redacted]	(46)	(79)	(47)	(84)
	[redacted]	42%	46%	34%	30%

[End Confidential]

The table contains the investment cost for each portfolio and compares those costs to the Company's total repowering proposal investment cost. Since, UAE proposes the fewest projects, its proposed portfolio cost is just 23% of the total cost the Company proposed. The Division identified six projects to repower, and its portfolio cost is 51% of PacifiCorp's portfolio cost. The Office also identified six projects, and the cost of the Office's portfolio is 61% of PacifiCorp's portfolio cost. The to-2036 net benefit results in

[2] The investment cost in this analysis reflects the project costs without the additional [Begin Confidential] [redacted] [End Confidential] million in Transmission upgrades associated with modified Large Generator Interconnection Agreements. The results would change slightly if those costs were accounted for.

the table were computed for each portfolio based on the approach that I presented in my response testimony, in which non-levelized PTC and capital revenue requirement costs representations were used. The tradeoff between these portfolios is that the less capital is invested, the smaller the net benefits will be, assuming benefits will actually materialize given the risks that may reasonably be expected.

Q. WOULD YOU BE OPPOSED TO RELYING ON UAE'S OR THE DIVISION'S PROPOSED PORTFOLIOS?

A. No, I would not. As I mentioned previously, my first recommendation would be for the Commission to reject PacifiCorp's repowering proposal entirely. However, if the Commission decides to approve a limited set of wind resources to repower, I would not be opposed to the Commission considering an alternative limited set of projects other than the portfolio the Office proposed. This could include the set of three projects UAE identified based on its methodology that was consistent with the IRP, or the set of six projects the Division identified. UAE's portfolio, while including the fewest projects and resulting in the least potential benefits, provides for a significant reduction in capital expenditures, and therefore much less risk. The Division's portfolio includes the same number of projects to be repowered as the Office proposed, but at a lower potential cost. I would also not be opposed to an alternative portfolio consisting of only the two consensus projects that all three parties agreed upon, which includes Seven Mile Hill 1 and Glenrock 1 (see Table 1 above).

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS.

A. I continue to strongly recommend that the Commission reject the Company's repowering proposal. I believe that the Company has not identified an optimal resource portfolio, nor proven that the repowering projects meet the requirements of the statute. However, should the Commission decide to approve repowering, I recommend that it consider approving a limited set of repowering projects, as well as, impose the ratepayer protections that I discussed in my response testimony. In that event, I believe that the Office has provided a reasonable portfolio that could be repowered, but for reasons I previously discussed, I would also not be opposed to the Commission allowing PacifiCorp to repower either the Division's or UAE's proposed portfolios, or the two overlapping projects that all three parties agreed upon as a consensus portfolio.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.