Steven S. Michel
Western Resource Advocates
409 E. Palace Avenue, Unit 2
Santa Fe NM 87501
Telephone No. (505) 820-1590
Email: smichel@westernresources.org
Attorney for Western Resource Advocates

Jennifer Gardner (15503)
Western Resource Advocates
150 South 600 East, Suite 2A
Salt Lake City, UT 84102
Telephone No. (801) 487-9911
Email: jennifer.gardner@westernresources.org
Attorney for Western Resource Advocates

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

Application of Rocky Mountain Power for Approval of a Significant Resource Decision and Request to Construct Wind Resources and Transmission Facilities	Docket No. 17-035-40

PREFILED SURREBUTTAL TESTIMONY OF

NANCY L. KELLY

ON BEHALF OF

WESTERN RESOURCE ADVOCATES

March 16, 2018

I INTRODUCTION AND SUMMARY

Q: Please state your name, employer, and present position.

A: My name is Nancy L. Kelly. I am employed by Western Resource Advocates (WRA) in its Clean Energy Program as a Senior Policy Advisor.

Q: Have you previously filed testimony in this docket?

A: Yes. I filed direct testimony on December 5, 2017 on behalf of WRA.

Q: What is the purpose of your testimony?

A: The purpose of my testimony is to clarify my direct testimony and correct mischaracterizations raised in the rebuttal testimony of Mr. Phil Hayet, witness for the Office of Consumer Services,[1] and in the rebuttal testimony of Mr. Brad Mullins, witness for the Utah Association of Energy Users and the Utah Industrial Energy Consumers.[2]

Q: What issues do you address?

A: In the context of responding to Mr. Hayet, I discuss my analysis of PacifiCorp's natural gas price forecasts, my reasoning in concluding that the Combined Projects have a high likelihood of generating benefits in excess of those measured, my reasoning in identifying a reduction in Front Office Transactions (FOTs) as an added benefit of the Combined Projects, and why I believe my testimony provides unique insights that will be helpful to the Commission. In the context of responding to Mr. Mullins, I discuss how

[1] Rebuttal Testimony of Phillip Hayet for the Office of Consumer Services, January 16, 2018.
[2] Rebuttal Testimony of Bradley G. Mullins on behalf of the Utah Association of Energy Users and the Utah Industrial Energy Consumers, January 16, 2018.

the Combined Projects could benefit customers in the event that large, existing resources become uneconomic to operate, and I reiterate the hedging value of the Combined Projects.

II RESPONSE TO MR. HAYET

Q: Please summarize Mr. Hayet's characterization of your testimony.

A: Mr. Hayet attempts to characterize my testimony as light-weight apologetics for clean energy, implying that my testimony should therefore be disregarded by the Commission.[3] He erroneously criticizes my lack of independent analysis, misstates my analysis of the Company's natural gas prices and misstates my reasoning in concluding the Combined Projects have a high likelihood of generating benefits in excess of those measured.[4] He misunderstands my purpose in identifying the reduction in FOTs as a potential additional benefit of the Combined Projects that was not previously included in Company testimony.[5] Finally, he erroneously claims that I did not consider risks that could reduce or negate the economic benefits of the Combined Projects.[6] Significantly, neither he nor Mr. Mullins refute my evaluation that a carbon price is likely or my assessment that the Combined Projects represent a relatively robust resource decision – a decision that avoids unexpected, high-priced events and the shock of changing planning environments.

[3]Hayet Rebuttal, lines 10-15.
[4] Id., lines 69-83.
[5] Id., lines 95-106.
[6] Id., lines 110-111.

Natural Gas Prices

Q: What does Mr. Hayet say regarding your natural gas price analysis?

A: Mr. Hayet makes three claims. First, he claims that I believe PacifiCorp's natural gas prices are "understated."[7] Second, he finds fault with the fact that I did not undertake an assessment of which of the forecasts, low, medium, or high, I believe most likely.[8] Third, and contradictorily, he suggests that I believe gas prices in the medium to high price range and CO2 costs in the medium to high range are most likely, and he faults my testimony for not including supporting analysis.[9]

Q: In your direct testimony, did you "disagree" with PacifiCorp's natural gas price forecasts and argue that they are "understated"?[10]

A: No, I did not. I characterized them as "conservative" as compared with other industry forecasts of the same vintage, but I did not disagree with the forecasts. In my direct testimony, I observed that PacifiCorp's Official Forward Price Curve (OFPC), Adopted Low Price forecast, and Adopted High Price forecast are on the low side of the industry forecasts included with the Company's filing. This is particularly obvious when comparing EIA's natural gas price forecasts with PacifiCorp's. Notably, PacifiCorp's OFPC is lower than EIA's low.[11]

[7] Id., lines 71-72.
[8] Id., lines 75-77.
[9] Id., lines 80-82.
[10] Id., lines 71-72.
[11] Direct Testimony of Nancy L Kelly on Behalf of Western Resource Advocates, December 5, 2017 at lines 204-214.

Q: Did Mr. Hayet introduce lower industry forecasts?

A: No. He neither provided nor referenced lower natural gas price forecasts. He provided no support for his opinion "that the Company's low to medium natural gas/CO2 price range is the most likely projection of future fuel and CO2 costs" in testimony in this docket or in Docket No. 17-035-39, which he references.[12]

Q: Mr. Hayet critiques you for not providing an assessment of which natural gas price forecast, low, medium, or high, you believe most likely. He further critiques you for not providing supporting analysis for what he claims is your opinion that gas prices in the medium to high price range and CO2 costs in the medium to high range are most likely. How do you respond?

A: Mr. Hayet is correct that I did not explain whether I consider the low, medium, or high natural gas price forecast to be most likely. And he is correct that I did not provide analysis to support the position that natural gas prices and CO2 costs in the medium to high range are most likely, because I took no position on the likely future of natural gas prices – although I refuted the continuation of a zero-CO2 cost.

But not having taken a position on the likelihood of any one forecast is not synonymous with a lack of analysis. I did provide analysis. I framed the issue as the need for "robust resource selection" to mitigate the possibility that the planning environment itself will change unexpectedly, rendering all previous price forecasts inaccurate.[13]

[12] Confidential Direct Testimony of Philip Hayet for the Office of Consumer Services, December 5, 2017, lines 274-276.
[13] Kelly Direct, lines 282-307.

As I explained in my direct testimony, when contemplating long planning horizons, the planning environment itself will likely change significantly after resource decisions are made. Drivers of a changing planning environment include technological change, institutional change, political change, climate change, regulatory change, and other unknowns.

To illustrate the challenge of a rapidly shifting planning environment, I presented a graphic displaying twenty years of historical natural gas prices at Henry Hub.[14] Over this 20-year period, historical prices have varied significantly, fluctuating between $2/MMBtu and almost $14/MMBtu. Any 20-year price forecast generated at any one point in time would likely have deviated significantly from actual experience. All forecasts would have been wrong.[15]

As I explained in my direct testimony, to mitigate the possibility that the planning environment itself will change unexpectedly, we should strive to identify resources that perform well across multiple planning scenarios. Robust resource selections may not be least-cost across all planning scenarios, but they avoid unexpected, high-priced events and the shock of swiftly changing planning environments. Because the Combined Projects hedge against the potential for fluctuating and volatile natural gas price and wholesale market prices, as well as the likely imposition of carbon regulation, I believe they represent a robust resource selection.

[14] Id., line 295.
[15] I would expect that when prices are trending upward, actual prices will likely be higher than forecast, and when prices are trending downward, actual prices will likely be lower than forecast. The challenge is in correctly anticipating the reversal in trend.

Likelihood that Combined Projects will Result in Benefits

Q: Mr. Hayet says that because you believe PacifiCorp understated its natural gas price forecasts, you "concluded that the Company's 'analysis is conservative, and the projects have a high likelihood of generating benefits in excess of those measured.'"[16] Is this an accurate portrayal of your position?

A: Not entirely. My reasoning was more comprehensive, although my assessment that PacifiCorp's natural gas price forecasts are conservative did play a role. My assessment included a number of factors:

- the conservative nature of natural gas price forecasts as compared with the forecasts of other industry experts – PacifiCorp's "Adopted Low" is the lowest of the low forecasts of that vintage;[17]
- the likelihood and timing of carbon regulation;[18]
- factors quantified by PacifiCorp but not directly included in the estimate of benefits;[19]
- factors included in my direct testimony that I identified as potential benefits that were not included in PacifiCorp's filing and not quantified in the estimate of benefits; [20]

[16] Hayet Rebuttal, lines 72-74.
[17] Kelly Direct, lines 202-214.
[18] Id., lines 215-232.
[19] Id., lines 233-254.
[20] Id., lines 259-275.

- my assessment that the Combined Projects are "robust" and well-suited to the possibility of disruptive change.[21]

Benefit of Reducing Front Office Transactions

Q: In your direct testimony, you identified a reduction in FOTs as a benefit that was not explicitly considered in Company testimony.[22] Mr. Hayet disagrees. Please explain Mr. Hayet's reasoning and summarize his criticism of your testimony.

A: Mr. Hayet frames the benefit of reducing short-term market exposure as one of reliability and then disputes the reliability benefit to be gained by adding new wind. He claims that I did not explain whether intermittent wind resources "would provide a greater reliability benefit than purchasing from neighboring utilities," and that I "did not evaluate whether the Company is currently over-relying on FOTs." Because wind energy is variable, he does not "believe that wind resources would necessarily provide an improvement in reliability versus FOTs."[23]

Q: Is Mr. Hayet correct in framing the benefit you identified as one of reliability?

A: Physical reliability was not what I had contemplated, although if an extreme market shortage were to arise, Mr. Hayet is correct in recognizing that physical reliability could become an issue. However, given PacifiCorp's and other western utilities' obligation to serve, threats to operational reliability would likely appear only after significant increases in wholesale market prices, as utilities seek to locate scarce supplies. Protection against

[21] Id., lines 276-307.
[22] Id., lines 259-265.
[23] Hayet Rebuttal, lines 95-106.

this loss of market liquidity and the associated cost consequences to ratepayers (100% of these costs flow directly through the EBA) is the benefit I had contemplated. While I had not contemplated a threat to PacifiCorp's ability to reliably serve load, I believe Mr. Hayet is correct in raising this issue, which may arise in extreme situations.

Q: Please address Mr. Hayet's point that because wind is variable, it will not necessarily provide more reliability than purchasing from neighbors."[24]

A: If the benefit I had contemplated had been an improvement in physical reliability, then Mr. Hayet's point would be valid. Wind power may not be available when physically needed to avoid load loss and, therefore, would not necessarily provide an improvement in reliability over purchasing from neighboring utilities, assuming they have available power to share.

The benefit I had contemplated was in mitigating extended high-priced events wherein zero-cost wind energy would in fact be highly beneficial. While wind is given a fairly low capacity contribution in recognition that not all of the wind will be available in the hour of system peak, the wind resource in Wyoming is nevertheless quite strong – with expected capacity factors averaging almost 40%.[25] So, if the wholesale market were to be disrupted over a sustained period, the energy produced by the Wind Projects would not only offset purchases in the hours in which PacifiCorp otherwise would have to buy to meet its load obligations, it could also be available for sale in the hours that PacifiCorp did not need the extra energy. This would offset the cost of PacifiCorp's purchases,

[24] Id., lines 105-106.
[25] Second Supplemental Direct Testimony of Rick T. Link, February 16, 2018, line 80.

reducing the cost of these types of events to PacifiCorp customers, and to Utah ratepayers specifically.

Q: Why do you claim that the reduction in market exposure is a benefit that was not incorporated in the Company's analysis? Isn't the risk of market disruption already captured by PacifiCorp's stochastic risk analysis and reflected in the PAR results?

A: The purpose of stochastic analysis is to quantify the potential for key variables to differ from their base forecasts, but within limits defined by recent history.[26] Since stochastic analysis limits the evaluation of risk to the recent past, shifts in the planning environment that would render all forecasts inaccurate tend to remain unexamined in PacifiCorp's analysis. This is the issue of risk versus uncertainty that I discussed in my direct testimony.[27]

Q: Please describe PacifiCorp's current and forecast load and resource balance and its use of short-term purchases to meet its peak obligations.

A: Based on information contained in the 2017 IRP, without short-term market purchases to meet its capacity requirements, PacifiCorp was short 527 MW in 2017. This deficit was forecast to grow to 1,223 MW by 2026.[28] Over the twenty-year planning period,

[26] Load, wholesale electricity prices, natural gas prices, thermal unit outages, and hydro generation are the variables subjected to a Monte Carlo sampling. Four years of historical data are used to develop the parameters in which load, wholesale electricity prices, natural gas prices, and thermal unit outages are allowed to vary. Five years of historical data are used to develop the variance for hydro. Source: IRP 2017, Vol 1, p. 156; IRP 2017 Vol 2, Appendix J, p.
[27] Kelly Direct, lines 282-290.
[28] Public Service Commission of Utah, PacifiCorp's 2017 Integrated Resource Plan, Report and Order, Docket No. 17-035-16, March 2, 2018, p. 2.

PacifiCorp is in the short-term market for an average of more than 1500 MW, amounting to roughly 19% of the Preferred Portfolio's resource selection.[29]

Q: Is sufficient power available to meet this level of market activity?

A: According to the most recent WECC Power Supply Assessment issued in December 2016, the capacity margin in the West is sufficient to meet load obligations through 2026.[30] The western interconnection as a whole needs a reserve margin of 15.4% to meet summer demand. Anticipated resource margins in the western interconnection fall from 23.6% in 2018 to 15.5% in 2026.[31] To the extent this snapshot represents a true picture of the planning period, sufficient capacity appears available.

Q: Given the apparent resource sufficiency, why do you claim reducing FOTs could be beneficial?

A: The WECC Power Supply Assessment captures a lagged snapshot in time reflecting resource conditions as of December 31, 2015[32] and demand conditions as of March 2016.[33] Resource sufficiency can change rapidly as a result of unexpected retirements, extreme temperatures, and severe drought conditions.

[29] Id., p. 4.
[30] WECC 2016 Power Supply Assessment, December, 2016, p. 9. https://www.wecc.biz/Reliability/2016PSA_Final.pdf .
[31] PacifiCorp's loads are located in the Northwest Power Pool subregion of the Western Interconnection. Its resources are spread across three subregions. To meet summer conditions in the Northwest Power Pool the required reserve margin is 15.2%. The anticipated resource reserve margin is 26.5% in 2018 and declines to 18.9% in 2026. (Id., p. 11)
[32] Id., p. 5.
[33] Id., p. 7.

Q: Does the WECC PSA account for hot weather and drought conditions?

A: Yes. The needed reserve margin estimated for each WECC sub-region assumes one-in-ten temperatures, and the hydro generation assumed available reflects the drought conditions experienced in 2002 for California and 2003 for the Pacific Northwest.[34] However, the Power Supply Assessment does not account for temperatures and drought conditions that exceed these parameters, such as might occur every 20 years, or even once a century.

Q: Do you think temperatures in excess of one-in-ten, or hydro conditions more severe than those in 2002 and 2003 are possible?

A: Given the recent trend towards extreme weather events, I believe that planning using one-in-ten temperatures and the adverse hydro conditions of 2002 and 2003 may be insufficient to capture the potential for extreme weather to disrupt wholesale markets for an extended period.

Q: Does the WECC PSA account for all recently announced plant retirements?

A: No, it does not. I reviewed the data set underlying the 2016 Power Supply Assessment and discovered a number of coal-fired generating units included as existing resources that are already closed or have been announced to close. Specifically, more than 9,300 MW of name-plate, coal-fired generation already closed or announced to close by the end of

[34] WECC Loads and Resources Methods and Assumptions, p. 6. https://www.wecc.biz/Reliability/2015LAR_MethodsAssumptions.pdf

2025 was identified as existing and this capacity was included in the analysis in all years of the assessment period.[35]

Q: Can you provide an example of a rapidly changing resource sufficiency condition in any other interconnection?

A: Yes. In May of 2017, the Electric Reliability Council of Texas (ERCOT) predicted a 2018 summer planning reserve margin of 18.9%. On December 18, 2017, just seven months later, it released an updated analysis that lowered the expected summer planning reserve margin to 9.3%, a decline of over 50%. ERCOT attributed the drop to recently announced retirements, project delays, and other factors that overwhelmed a reduced load forecast combined with the confirmed addition of almost 3800 MW of new generation. In all, ERCOT expects a reduction in generation capacity of 7200 MW.[36] How the tightening resource margin will impact the wholesale electricity market is yet to be seen.

Q: Please summarize your view regarding the potential benefit of reducing FOTs.

A: As long as the recent past is predictive of the future, there is little benefit to be had by reducing FOTs. However, I believe market disruption is a credible threat not captured by PacifiCorp's stochastic risk analysis or WECC's analysis of resource sufficiency. Disruptive change can occur, and if markets are disrupted, the significant additional

[35] San Juan Unit 2 (369 MW) and San Juan Unit 3(555 MW) closed in 2017; Navajo Unit 1 (803 MW) will close in 2019; Navajo Unit 2 (803 MW) and Centralia Unit 1 (730 MW) will close in 2020; Navajo Unit 3 (803 MW) will close in 2021; San Juan Units 1 & 4 (924 MW), the Nucla Generating Station (114 MW), Craig Unit 1 (446.4 MW), and Colstrip Units 1 & 2 (614 MW) will close in 2022. Comanche Unit 1 (382.5 MW) is proposed to close in 2023; the Intermountain Power Plant (820) will close in 2024; Cholla Units 1, 3, & 4 (840 MW) is scheduled to close in April of 2025, although Units 3 and 4 (712 MW) can convert to natural gas; and Comanche 2 (396) MW and Centralia 2 (730 MW) are slated for closure in 2025.

[36] ERCOT News Release, December 18. http://www.ercot.com/news/releases/show/144305

energy provided by the Wind Projects would help mitigate wholesale market exposure. Therefore, in my opinion, reducing FOTs is a real but unquantified benefit of the Combined Projects and an element in my having stated that I think the projects have a high likelihood of generating benefits in excess of those measured.

Evaluation of Risk

Q: Mr. Hayet claims you did not consider the risk of the Combined Projects to ratepayers. He claims you ignored the potential impact of tax law changes, the possibility of low fuel and CO2 costs, the chance of construction delays, and the possibility the Combined Projects will not produce all of the promised energy and PTC benefits.[37] Is this criticism accurate?

A: No, it is not. Just because I did not raise an issue does not mean that I neglected to consider it.

First, I did address the possibility that the after-tax value of PTCs could fall with the passage of tax legislation. At the time that I submitted my direct testimony, two different versions of a tax bill had passed the House and Senate and were waiting to be reconciled. In my testimony I explained the issue, acknowledged that the Projects might not remain economic, and called upon PacifiCorp to include the potential impact of then-pending legislation in its January update.[38]

Second, I did consider the possibility of low fuel and CO2 prices. As I have already discussed, I evaluated PacifiCorp's natural gas price forecasts, observed that PacifiCorp's

[37] Hayet Rebuttal, lines110-114.
[38] Kelly Direct, lines 308-332.

OFPC was lower than EIA's low forecast and that its Adopted Low was the lowest of all forecasts. I concluded that the natural gas price forecasts appeared reasonable in light of current information.[39] Whether or not they will appear reasonable from a future vantage point is yet to be determined and, in my view, is unknowable today.

Third, I did consider construction delays and rejected them as a serious enough concern to reject the Combined Projects or address the issue in my testimony. To come to that conclusion, I reviewed testimony and related data responses, and I participated in the October 11, 2017 Technical Conference where the issue was discussed at length. I was satisfied that PacifiCorp is effectively managing its construction schedule and building protections into its contracts. In any event, this concern would not be a reason to reject the Combined Projects, but rather to condition approval such that if things go seriously awry, PacifiCorp's shareholders, not its customers, would bear the cost consequence.

Fourth, I also considered the possibility that the Wind Projects may not produce the forecast energy and associated PTCs that underlie the economic analysis. I reviewed testimony and data responses pertaining to capacity factor derivation and was satisfied that the methods used to forecast the wind capacity factors appeared sound. I further considered whether the risk was symmetrical or might be biased in one direction or another. I concluded that the risk was likely to be symmetrical, so, while an individual wind resource may under-produce in certain years, it will likely over-produce in others.[40]

[39] Id., at 202-214.
[40] Climate Change might slow wind speeds over time. As reported in Chapter 11 of the Wyoming Climate Atlas produced by the University of Wyoming in 2004, with "global warming, one would expect to see a decreasing average wind speed trend as the thermal gradient between the poles and the equator lessen." This trend was found to be statistically significant at only one station. http://www.wrds.uwyo.edu/sco/climateatlas/title_page.html

However, if the Commission finds reason for concern, conditioning approval of the Combined Projects with performance guarantees appears to be a better alternative than rejecting the projects altogether.

Q: Do you have additional comments regarding the potential risk to customers?

A: Yes. I have two. First, I am sympathetic to Mr. Hayet's concerns that the worst combination of scenarios could unfold such that investment costs exceed net power cost benefits, resulting in a net cost to ratepayers. This would be particularly troubling since, as proposed, PacifiCorp would earn a return on a sizable investment no matter how the future unfolds.

Second, while, as I stated in my direct testimony, I appreciate the Company's acumen in pursuing these projects,[41] I also believe PacifiCorp did not manage the regulatory outreach for these projects well, and has unnecessarily caused alarm and suspicion by keeping its strategic planning hidden from view and misaligning the IRP and strategic business planning processes.[42] During the year-long timeframe in which the Company was evaluating how to best capitalize on the potential benefits of the PTC extension, and was taking steps to procure the necessary equipment to meet the PTC's safe-harbor requirements, it was also conducting its 2017 IRP Public Input Process with no hint of the Company's strategic direction. PacifiCorp's decision to wait to introduce the Combined

[41] Kelly Direct, lines 80-82.

[42] The misalignment of IRP and strategic business planning has been an issue causing PacifiCorp stakeholders and the Commission concern over many years, and the Commission has provided guidance to the Company on the proper alignment of IRP and strategic business planning in multiple orders. The Commission's guidance to the Company is overviewed in the June 29, 2016 "Response of Western Resource Advocates to Rocky Mountain Power's Request to Waive Business Plan Requirement" in Docket No. 15-035-04, and the October 11, 2013 Reply Comments of Western Resource request in Docket No. 13-2035-01.

Projects until it filed the 2017 IRP in early April of 2017, without their evaluation in the year-long process that preceded the filing, compromised the IRP process and the Commission's responsibility to "engage in long-range planning regarding public utility regulatory policy in order to facilitate the well-planned development and conservation of utility resources."[43]

Q: Has the Commission issued an Order acknowledging the 2017 IRP?

A: Yes. The Commission issued an order on March 2, 2018. The Commission acknowledged the IRP as "substantially" complying with the IRP Standards and Guidelines, but it specifically concluded that with respect to Energy Vision 2020, PacifiCorp did not comply with Guideline 3 that requires "ample opportunity for public involvement and the exchange of information during the development" of the IRP. The Commission stated in its order:

> We understand the time-limited nature of the PTC opportunities. However, nothing about those time limitations prevented PacifiCorp from completing its analysis earlier (or from informing the parties when it began the analysis), and making that analysis available to parties during the development of the IRP. In other words, while the PTC opportunities are time limited, they were not new or unknown earlier in the IRP development process. The deadlines for the PTC opportunities were extended by Congress in December 2015, well in advance of the filing of the 2017 IRP.
>
> PacifiCorp has represented that it made its analysis with respect to Energy Vision 2020 available to parties when it was completed. PacifiCorp has not indicated why it did not perform that analysis sooner, since the PTC opportunities and the associated expiration dates have been public information since December 2015. Consequently, we find that PacifiCorp's late introduction of Energy Vision 2020 information and analysis during the 2017 IRP process prevented parties from having ample

[43] Utah Code Ann. § 54-1-10.

opportunity to evaluate the relevant material, and did not the meet the requirements of Guideline 3.[44]

The Commission says it views the Energy Vison 2020 outcomes to be less credible then other aspects of the IRP and intends for their reasonableness and prudence to be determined in other dockets and evaluated independently based on the evidence in those dockets.[45]

Q: Do you believe conditioning approval is appropriate under these circumstances?

A: Yes. I think conditional approval is warranted by the Company's lack of transparency, its poorly managed process, and, in my view, misalignment of integrated resource planning and strategic business planning. That said, the recourse should not be to disapprove the Combined Projects, which I believe well position the Company to meet the challenges of the future and are in the public interest. I continue to support the acquisition of the projects and to recommend the Commission approve PacifiCorp's request.

Q: Do you have any specific conditions to recommend?

A: Conditions that hedge the risks identified by ratepayer groups appear to be an appropriate place to begin. I expect these conditions to become more fully developed over the next several rounds of testimony.

---

[44] Report and Order, 2017 IRP, pp. 21-22
[45] Id., p. 45.

Contribution to the Record

Q: Mr. Hayet appears to have attempted to cast you as an insubstantial apologist for clean energy and to imply your testimony should therefore be disregarded by this Commission. How do you respond?

A: This mischaracterization does not accurately reflect my testimony. While Mr. Hayet is correct that these large investments align with my organization's goals, he is incorrect in stating that my analysis is one-sided, did little more than consider the potential benefits of the project, did not provide independent analysis, and did not consider the risk to ratepayers.[46] At least three particular elements of my testimony should be helpful to the Commission: (1) raising the apparent conservative nature of the Company's natural gas price forecasts for the given vintage; (2) identifying additional benefits not included in the Company's filing, including the market-hedging benefit of reducing FOTs, and (3) underscoring the importance of selecting resources that perform well across a variety of future scenarios, since the future will most assuredly unfold differently from what any forecaster expects at the time a resource selection is made, given the ever-changing planning environment.

III RESPONSE TO MR. MULLINS

Q: What aspects of your testimony does Mr. Mullins address?

A: Mr. Mullins addresses my analysis of coal-fired dispatch and my conclusion that the Combined Projects hedge the uncertainty of an uncertain future.

[46] Hayet Rebuttal, lines 10-18.

Q: How does Mr. Mullins attempt to diminish the impact of your testimony?

A: Mr. Mullins reframes my testimony, develops hypotheticals that I did not claim, and then rebuts positions I never took.

Coal-fired Generation

Q: With respect to coal-fired generation, what issues did you raise in your direct testimony?

A: I raised two. First I evaluated the impact of the Combined Projects on PacifiCorp's coal-fired generation dispatch. The question I explored was whether the new wind generation in combination with new transmission would effectively reduce fossil-fuel emissions, or whether the potential environmental benefit of the new wind would be offset by unlocking trapped generation at the Wyodak and Dave Johnston coal plants. I concluded that the environmental benefit of the Combined Projects was real and not simply a means to rate base unnecessary new transmission.[47]

My second point had to do with the confidential analysis undertaken by Synapse Energy Economics on behalf of the Sierra Club that was submitted in comments in Docket No. 17-035-16. The analysis demonstrated that certain of PacifiCorp's coal-fired plants are currently uneconomic to operate when compared against PacifiCorp's market price forecasts.[48] The Oregon Public Utility Commission has directed PacifiCorp to undertake a unit-by-unit analysis of its coal-fired fleet to determine whether the units are economic

[47] Kelly Direct, lines 95-123.
[48] Sierra Club Comments [Confidential], In the Matter of PacifiCorp's 2017 Integrated Resource Plan, Docket No 17-035-16, October 24, 2017, p. 16.

or should be retired earlier than currently scheduled. That analysis is due June 30, 2018. My point was related to replacement power. "In the event that PacifiCorp determines certain of its coal units are uneconomic to operate and should be retired earlier than currently planned" the Combined Projects would constitute cost-effective replacement power.[49]

Q: How does Mr. Mullins address your coal dispatch analysis?

A: He reframes my analysis by posing the question, "Do you agree that the Combined Projects might result in [the] early retirement of coal plants?" – which he then proceeds to answer. In his response he makes the statement, "[i]f one concludes that investing in [the] Combined Projects will result in environmental benefits through the early retirement of coal plants, one must also consider the large ratepayer costs that would ensue as a result of the early retirements."[50]

Q: Did you claim the addition of the Combined Projects might result in the early retirement of any of PacifiCorp's existing coal units?

A: No. I did not.

[49] Kelly Direct, line 50.
[50] Mullins Rebuttal, lines166-167.

Q: In your view, would "the large ratepayer costs that would ensue as a result of the early retirements" referenced by Mr. Mullins be caused by the addition of the Combined Projects?

A: No. Current market conditions and fuel supply issues are the cause for certain units becoming uneconomic to operate.

Q: Could the change in dispatch you identified in your direct testimony hasten the retirement of any of PacifiCorp's existing coal units?

A: It's possible, but not necessary. Vertically-integrated, regulated utilities sometimes hold in reserve units that may not be economic to operate in most economic conditions, but could ameliorate high prices under conditions of scarcity. Keeping the units functional but operating them only sporadically can avoid the cost of new resources that would otherwise need to be developed.

Q: Please restate your key points with respect to coal-fired generation.

A: First, the Combined Projects would provide cost-effective replacement power in the event that particular coal-fired units become uneconomic to operate. Second, the environmental benefits of the Wind Projects in combination with the Transmission Projects are real; the Combined Projects effectively reduce emissions and their associated costs and risks. Third, by producing emission-free energy that can displace fossil-fuel based energy, the Combined Projects reduce the potential impact of carbon regulation, should regulations be imposed sometime during the planning period.

Hedging Value of Combined Projects

Q: Please summarize Mr. Mullins' testimony regarding the hedging value of the Combined Projects.

A: Mr. Mullins characterizes the Wind Projects as "must take" resources with costs that are predominately fixed and states that "from that perspective the Wind Projects may be considered a long-term hedge against increasing market prices." As a hedge, he characterizes them as a "fixed-for-float position against electric market prices over an extraordinarily long period of time." He indicates that long-term hedges are inconsistent with PacifiCorp's hedging policy and can be "disastrous" for ratepayers. As an illustration, he references the exception in PacifiCorp's natural gas hedging program that allowed for longer-term contracts (ten years). He concludes by stating that "there should be little expectation that there will be different results if the Combined Projects were constructed on the basis that they constitute a hedge." [51]

Q: How do you respond?

A: Mr. Mullins' critique is misguided and confuses physical resource acquisition with contractual market price and fuel price hedging strategies. If one were to accept Mr. Mullins' critique, PacifiCorp would never acquire another resource. Instead it would use short-term instruments to meet long-term load obligations indefinitely. In my opinion, this makes no sense and ignores PacifiCorp's obligation to serve. If all utilities were to take the approach Mr. Mullins appears to recommend, resource insufficiency would

[51] Mullins Rebuttal, lines 169-186.

become a given, and the result would indeed be disastrous for ratepayers. Mr. Mullins' critique of my testimony amounts to little more than obfuscation and misguided fearmongering that ignores the actual hedging value I presented in my direct testimony.

Q: Please restate your view of the hedging value provided by the Combined Projects.

A: In my view, the Combined Projects hedge against the potential for fluctuating and volatile natural gas prices and wholesale market prices, as well as the likely imposition of carbon regulations. My analysis demonstrates that the Combined Projects represent a relatively robust resource decision – a decision that avoids unexpected, high-priced events and the shock of changing planning environments.

IV CONCLUSION

Q: Has Mr. Hayet's or Mr. Mullins' critique of your testimony caused you to reconsider your support for the Combined Projects?

A: No. Rather, their critique has assisted me in crystalizing my own thinking and has enhanced my support for the Projects. I continue to recommend the Commission approve PacifiCorp's request.

Q: Does this conclude your testimony?

A: Yes. It does.