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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 DIRECT TESTIMONY OF

NANCY L. KELLY

ON BEHALF OF

WESTERN RESOURCE ADVOCATES

December 5, 2017

I INTRODUCTION AND SUMMARY

Q: Please state your name, employer, position and business address.

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. My business address is 9463 N. Swallow Rd., Pocatello, ID 83201.

Q: Please describe WRA.

A: WRA is a non-profit conservation organization dedicated to protecting the land, air and water of the Interior West. WRA's Clean Energy Program develops and advocates policies to advance a Western electricity system that provides affordable and reliable energy, reduces economic risks, and protects the environment with expanded use of energy efficiency, renewable energy resources, and other clean energy technologies. WRA has offices in Salt Lake City, Utah; Boulder, Colorado; Carson City, Nevada; and Santa Fe, New Mexico.

Q: Please describe your current duties, work experience, and educational background.

A: I provide policy analysis and regulatory support to WRA in electric-industry-related matters, including regional transmission-related initiatives. I have worked in the industry for nearly 20 years, and I have participated in regulatory dockets in Utah, Colorado, Nevada, and New Mexico. Before joining WRA in 2008, I worked with the Utah Office of Consumer Services as a consultant and Utility Economist; my primary areas of responsibility included interjurisdictional cost allocation, regional transmission initiatives, and integrated resource planning. I began my professional career as an

academic economist at Idaho State University where I spent three years as a faculty member in the Department of Economics and close to five years as the economist in the Center for Business Research and Services. I received a B.S. in economics from Idaho State University in1983, and completed my fieldwork toward a PhD in economics from the University of Utah in 1991. A more detailed description of my qualifications is attached as Exhibit A.

Q: Have you previously testified before the Public Service Commission of Utah ("Commission")?

A: Yes.

Q: On whose behalf are you testifying today?

A: I'm testifying on behalf of WRA.

Q: What is PacifiCorp requesting in this proceeding?

A: PacifiCorp, doing business as Rocky Mountain Power ("PacifiCorp" or "Company"), makes three specific requests. First, it requests the Commission approve the construction or procurement of 860 MW of new wind generation to be located in a transmission-constrained area of eastern Wyoming. The four facilities described in the application are termed the "Wind Projects." It seeks approval of the Wind Projects under Utah Code Ann. § 54-17-301.

Second, PacifiCorp requests the Commission approve its proposal to build a new 140 mile long 500 kV transmission line in Wyoming, connecting Aeolus with Bridger/Anticline, and to upgrade the existing 230 kV system. According to the

Company, the transmission additions would relieve the congestion and allow for the connection of up to 1240 MW of new wind. It would "stiffen" the transmission system, adding needed voltage support. The new line, its associated projects, and the network upgrade projects are termed "Transmission Projects." PacifiCorp voluntarily seeks pre-approval of this resource decision under Utah Code Ann. § 54-17-401.

Third, PacifiCorp requests approval of the establishment of a Resource Tracking Mechanism to align the costs of the "Combined Projects" with their benefits until the costs and benefits are reflected in base rates. The Company references Utah Code Ann. §§ 54-4-1, 54-4-23, 54-17-303, 54-17-402 and 403 in support of its proposal.

The Company describes the Combined Projects as "inextricably linked." The Transmission Projects make possible the interconnection of the Wind Projects, while the economic attributes of the Wind Projects support the cost of the transmission. The Wind Projects produce zero-fuel-cost energy, generate Production Tax Credits ("PTCs"), generate Renewable Energy Credits ("RECs") and can help decarbonize the Company's portfolio, mitigating the risk that future state and federal policies will regulate carbon emissions. The Transmission Projects relieve existing transmission congestion and add voltage support to the Wyoming system network. In addition to making possible the interconnection of additional wind generation, the strengthened grid facilitates PacifiCorp's ability to deliver energy from PacifiCorp's existing Wyoming generation resources. The economics of the Combined Projects rely on the PTC. Therefore, approval of the Combined Project is time sensitive, since the wind must be in commercial operation by the end of 2020 to achieve the full PTC benefit. PacifiCorp describes the

extension of the PTC at the end of 2015 to have created the unique, time-sensitive, economic opportunity considered in this proceeding. PacifiCorp further states that the Combined Projects were identified and selected through its IRP, which was filed with the Commission April 4, 2017.

Q: What is the purpose of your testimony?

A: My testimony provides WRA's assessment of PacifiCorp's request for approval of its proposed Wind Projects under Utah Code Ann. § 54-17-301 and its voluntary request for approval of the proposed Transmission Projects under Utah Code Ann. § 54-17-401.

Q: Please summarize your testimony.

A: WRA supports approval of the Combined Projects. The addition of up to 1240 MW of carbon-free, wind energy displaces fossil-fuel-based energy and reduces carbon emissions. The zero-fuel-cost energy combined with the production of PTCs provide customers with cost-effective energy that reduces PacifiCorp's reliance on Front Office Transactions ("FOTs") and may position it to be able to retire coal facilities that are no longer economic to operate. In addition, the economics of the Wind Projects provide a unique opportunity to strengthen PacifiCorp's transmission system. WRA appreciates PacifiCorp's acumen in positioning itself through its energy vision to address the current and future challenges facing it and its customers.

My testimony makes the following two points:

- The Combined Projects are effective in reducing carbon emissions, and

- The economics of the Combined Projects are reasonable in light of the ability of the Combined Projects to hedge future risks.

Q: What do you recommend?

A: I recommend the Commission approve PacifiCorp's request to construct or acquire 860 MW of new wind generation under Utah Code Ann.§ 54-17-301 and approve PacifiCorp's request to build a new 140 mile long 500 kV transmission line in Wyoming, connecting Aeolus with Bridger/Anticline, and to upgrade the existing 230 kV system under Utah Code Ann. § 54-17-401. This recommendation is contingent upon the updated economic case, to be to be filed in mid-January, remaining reasonable.

II DISCUSSION

Combined Projects Effectively Reduce Carbon Emissions – Wind Energy Displaces Coal-fired Generation

Q: Please explain WRA's interest in participating in this proceeding.

A: As described in my introduction, WRA is a conservation organization that advocates for an electric system that provides affordable and reliable energy, reduces economic risks, and protects the environment with expanded use of energy efficiency, renewable energy, and other clean energy technologies. The potential addition of up to 1240 MW of carbon-free, wind energy that can displace fossil-fuel-based energy and reduce carbon emissions is central to our interests.

However, this case has a twist. In addition to adding 1240 MW of new wind generation, the additional transmission needed to integrate the wind also unlocks trapped coal-fired

generation in Eastern Wyoming.[1] WRA supports the addition of 1240 MW of new wind generation, if cost effective, but only if the environmental gains are real.

A central question is whether the new wind generation, in combination with the additional transmission, effectively reduces emissions from coal-fired power plants or whether the potential environmental benefit of the new wind is offset by additional generation from the Wyodak and Dave Johnston plants.

A second and related question is whether the early retirement of the Dave Johnston plant could free-up transmission with the added benefit of further reducing emissions, and without the additional expense posed by the Transmission Projects. Put another way, could early retirement combined with new wind be a better outcome for customers and the environment?

Q: Did you investigate these issues?

A: I did. In response to WRA 2.1 Supplemental, PacifiCorp provided PaR dispatch results for PacifiCorp's Colorado, Montana, Utah, and Wyoming coal-fired units with, and without, the Combined Projects.[2] The difference between the two simulations reflects the effect of the Combined Projects on system dispatch.

As reported by Company witness, Mr. Rick Link, during the October 11, 2017 Technical Conference, generation at Wyodak and Dave Johnston does increase, but the declines in

[1] During the October 11, 2017 Technical Conference conducted by the Commission, Mr. Rick Link explained to conference participants that in the hours when the wind is not blowing, the additional transmission capability is available to transport previously-trapped energy from PacifiCorp's lower-cost, coal-fired plants, and, as a result the dispatch from PacifiCorp's Wyodak and Dave Johnston plants increase while the dispatch from PacifiCorp's higher-cost Bridger plant declines.
[2]Both cases assume Wind Repowering.

coal-fired energy from Bridger, Hunter, Huntington, Colstrip, Craig, and Hayden, more than compensate for the increases. Coal-fired energy declines in all years beginning with the completion of the projects. Over the 20-year planning period, the reductions are substantial.

Q: What do you conclude from this?

A: The addition of the Combined Projects effectively displaces coal-fired generation and reduces emissions.

Q: What did you learn regarding the early retirement of DJ as an alternative to the Transmission Projects?

A: PacifiCorp presented information related to this question at a September 14, 2017 Public Utility Commission of Oregon workshop. The presentation materials indicate that the transmission upgrades necessary to address the voltage issues resulting from the new wind and a DJ retirement would cost more than the Transmission Projects, would not provide as much transfer capacity, and would eliminate the option of upgrading to 500 kV in the permitted right of way.

Further studies are underway. In response to WRA Data Request 2.2, PacifiCorp states that the study findings will be available for release by the end of the year.

Q: Given current information, do you consider retirement of DJ in 2021 to be a viable alternative to the Transmission Projects?

A: Given the information provided to the Oregon PUC, from a purely economic standpoint that does not consider environmental costs, it does not appear to be.

Economic Case for the Combined Projects is Reasonable

Q: Please summarize the economic case supporting the Combined Projects.

A: The economic case for the Combined Projects is provided in the testimony of Mr. Link. Mr. Link testifies that PacifiCorp used its two IRP modeling tools, System Optimizer ("SO") and Planning and Risk ("PaR"), to evaluate the Combined Projects.

System Optimizer is a capacity expansion model that determines the optimal type, timing, and location of resource additions given a set of system parameters and specific economic assumptions. PaR is an hourly production cost model that is used to evaluate the stochastic risk associated with a given resource portfolio.

The Present Value Revenue Requirement ("PVRR") is a cost metric. The PVRR generated by the SO model is a deterministic measure. It is determined by the underlying assumptions. The PaR Stochastic Mean PVRR reflects the expected cost of a resource portfolio when taking into the account the stochastic risk associated with five key economic variables: natural gas prices, wholesale market prices, load, hydro generation, and thermal plant outages. The PaR Risk-Adjusted PVRR incorporates into the metric the cost of low-probability, high-cost events.

Customer benefits are calculated as the difference in the cost between two system simulations, one with the Combined Projects in the optimization and one without. This cost difference is termed PVRR(d). If the system PVRR is lower with the Combined Projects than without the Projects, customers benefit – PVRR(d) is negative. Conversely, customers would face increased costs if the PVRR with the Combined Projects is higher than it is without – PVRR(d) is positive.

PacifiCorp ran simulations of its system using the SO and PaR models to estimate customer benefits over a 20-year planning period. It further examined the effect of extending the analysis through 2050 to reflect a thirty year life of the wind facilities.

Nine scenarios, reflecting different combinations of low, medium, and high natural gas prices with forecasts of low, medium, and high carbon prices, were evaluated.

The results of these simulations are shown in Table One below which combines information from Tables 2 and 3 of Mr. Link's testimony.

Table 1: Nominal Revenue Requirement PVRR(d)
(Benefit)/Cost of the Combined Projects ($ million)

	Twenty Year			Through 2050
Price Policy Scenario	**SO Model PVRR (d)**	**PaR Stochastic Mean PVRR(d)**	**PaR Risk-Adjusted PVRR(d)**	**Annual Revenue Requirement PVRR(d)**
Low Gas, Zero CO2	$121.00	$77.00	$74.00	$174.00
Low Gas, Medium CO2	$73.00	$32.00	$26.00	$93.00
Low Gas, High CO2	($84.00)	($133.00)	($147.00)	($194.00)
Medium Gas, Zero CO2	($19.00)	($57.00)	($66.00)	($53.00)
Medium Gas, Medium CO2	($85.00)	($111.00)	($124.00)	($137.00)
Medium Gas, High CO2	($156.00)	($224.00)	($242.00)	($317.00)
High Gas, Zero CO2	($304.00)	($260.00)	($280.00)	($341.00)
High Gas, Medium CO2	($318.00)	($272.00)	($293.00)	($351.00)
High Gas, High CO2	($396.00)	($409.00)	($437.00)	($595.00)

A clear pattern can be seen in the results displayed in the table. As the price of natural gas and CO2 costs rise, so do the benefits to customers measured in reduced revenue requirement. When natural gas prices are low and CO2 costs are zero or medium, the costs of the Combined Projects exceed their benefits in lowering revenue requirement.

Q: Why do the benefits increase as natural gas prices and CO2 costs rise?

A: By providing a zero-fuel-cost source of energy with no emissions, wind energy hedges against thermal fuel prices and carbon emission costs. The higher the price of natural gas, the greater the fuel price difference and therefore the greater the benefit to customers from generating with wind. Analogously, as the potential price on carbon emissions rises, the greater will be the economic benefit of emissions-free energy. When natural gas prices and the price on carbon emissions is low, wind does not provide as strong of a price hedge.

This relationship between prices and risk minimization can be seen in Table One above. The difference between the PaR Stochastic Mean PVRR(d) and the PaR Risk-Adjusted PVRR(d) is a measure of the ability of the Combined Projects to reduce risk in the current planning environment. In the low-gas-zero-CO2 scenario, there is no measured hedging benefit. However, in higher priced scenarios, the hedging benefit appears. With high natural gas prices and high CO2 the hedging benefit increases to $18 million.[3]

Q: Did you review PacifiCorp's natural gas price forecasts in relation to other industry forecasts?

A: Yes. Exhibit RMP_(RTL-2) provides a table of natural gas price forecasts that include PacifiCorp's April 26, 2017 Official Forward Price Curve ("OFPC") and forecasts from two vendors plus EIA. PacifiCorp's OFPC is a blend of observed forward market prices and Vendor Two's Base forecast. In developing its OFPC, PacifiCorp uses 72 months of

[3] $595 million minus $437 million equals $18 million.

observed forward market prices, incorporates a twelve month transition, and then uses Vendor Two's Base forecast. This information is recreated in Table Two below.

Table 2. Henry Hub Natural Gas Price Forecasts ($/MMBtu)

	April 26, 2017 OFPC	Adopted Medium (Vendor 2 Base)	Adopted High (Vendor 2 High-Adjusted)	Adopted Low (Vendor Low)	Vendor 1 Base	Vendor 1 High	Vendor 2 High	EIA Low Price	EIA High Price	Vendor 2 Low
2018	$3.14	$2.80	$3.92	$2.39	$3.21	$4.71	$3.41	$3.29	$3.89	$2.85
2019	$2.92	$2.77	$3.89	$2.79	$4.00	$4.97	$3.49	$3.82	$4.77	$2.98
2020	$2.92	$3.08	$4.32	$2.83	$3.99	$4.98	$4.51	$3.94	$5.98	$3.12
2021	$2.94	$3.38	$4.74	$2.60	$3.86	$5.41	$5.16	$3.71	$6.54	$3.28
2022	$2.97	$3.48	$4.89	$2.54	$3.72	$5.43	$6.69	$3.66	$7.35	$3.31
2023	$3.35	$3.69	$5.18	$2.72	$3.98	$5.93	$8.13	$3.84	$7.86	$3.51
2024	$3.92	$4.06	$5.69	$2.89	$4.22	$6.39	$7.92	$4.10	$8.33	$3.53
2025	$4.16	$4.16	$5.88	$3.05	$4.45	$6.80	$7.26	$4.31	$8.92	$3.60
2026	$4.18	$4.18	$5.90	$3.20	$4.68	$7.16	$4.46	$4.57	$9.58	$3.75
2027	$4.33	$4.33	$6.11	$3.37	$4.93	$7.33	$4.27	$4.84	$10.04	$3.90
2028	$4.52	$4.52	$6.38	$3.54	$5.16	$7.49	$4.33	$5.20	$10.50	$4.04
2029	$4.81	$4.81	$6.79	$3.68	$5.39	$7.77	$5.61	$5.34	$10.94	$4.32
2030	$5.12	$5.12	$7.23	$3.81	$5.59	$8.05	$7.27	$5.30	$11.28	$4.42
2031	$5.28	$5.28	$7.46	$3.94	$5.78	$8.26	$8.75	$5.17	$12.21	$4.51
2032	$5.46	$5.46	$7.71	$4.06	$5.95	$8.50	$9.31	$5.20	$12.83	$4.50
2033	$5.79	$5.79	$8.17	$4.17	$6.11	$8.77	$9.58	$5.30	$13.16	$4.64
2034	$6.05	$6.05	$8.54	$4.27	$6.28	$9.11	$9.07	$5.43	$13.48	$4.94
2035	$6.34	$6.34	$8.95	$4.37	$6.46	$9.61	$6.68	$5.56	$13.84	$5.08
2036	$6.82	$6.82	$9.63	$4.48	$6.76	$9.86	$7.66	$5.66	$14.78	$4.97
Average	$4.47	$4.53	$6.39	$3.41	$4.97	$7.19	$6.50	$4.64	$9.80	$3.96

Q: How would you characterize PacifiCorp's OFPC, Low, and High natural gas price forecasts as compared with other industry forecasts?

A: PacifiCorp's forecasts are on the low side of the industry forecasts provided.

- PacifiCorp's OFPC is lower than Vendor Two's Base with which it is blended; it is lower than Vendor One's Base, and it is lower than EIA's Low.
- PacifiCorp's Adopted Low, is the lowest of all the natural gas price forecasts.
- PacifiCorp's Adopted High is lower than the Vendor High from which it is derived, is lower than Vendor One's High and is significantly lower than the EIA High.

Q: What is the effect of using a lower range of forecasts over a higher range?

A: With a lower range, the measured benefit will not appear as great as it would with a higher range. It is a more conservative approach.

Q: Do the natural gas price forecasts appear reasonable to you?

A: Yes, they do. In fact, they appear conservative.

Q: Please discuss how likely you believe a zero CO2 price forecast to be over the 20 and 30 year time horizons considered by the economic analysis?

A: Given the increasing number of climate-related events, their growing costs, and the increasing costs of climate adaptation, I think no action on climate and CO2 emissions is unlikely.

Climate change is a risk that Moody's Investor Service considers when assigning ratings to state and local governments. Just last week, on November 28, 2017, Moody's Investor Service announced a new report titled "Environmental Risks – Evaluating the impact of climate change on US state and local issuers." Moody's states, that the "growing effects of climate change, including climbing global temperatures, and rising sea levels, are forecast to have an increasing economic impact on US state and local issuers. This will be a growing negative credit factor for issuers without sufficient adaptations and mitigation strategies." The announcement is attached as Exhibit B.

Q: Does a 2025 CO2 cost implementation date seem reasonable to you?

A: It doesn't seem unreasonable. While climate legislation appears highly unlikely in the current political environment, the political environment can change quickly. Given the

increasing climate-related costs and growing public awareness, evaluating a 2025 implementation date makes sense.

Q: Did PacifiCorp undertake sensitivity analysis?

A: Yes. PacifiCorp conducted two sensitivities using the medium-natural-gas and medium-CO2 price-policy assumptions. In the first, it extended the assumed life of the wind projects by ten years to 40 years. In the second, it assumed the Wind Repowering Project was in place (requested in Docket No. 17-035-39).

The results of the sensitivities show the following:

- A 40-year life increases benefits by $21 million. (Link Table 4.) This is the case when the extended life was assessed using either the SO or PaR models.
- When the Combined Projects are analyzed in combination with the Wind Repowering project using the SO model, benefits increase by $29 million. When assessed using the PaR model, they decline by $8 million.

Q: How were REC sales treated in the economic analysis?

A: PacifiCorp made the conservative assumption that it received no revenues from REC sales. However, Mr. Link does provide a method for considering potential benefits from REC sales. According to Mr. Link, when the analysis is extended through 2050, "for each $ assigned to the incremental RECs that will be generated by the Wind projects, present-value benefits would improve for all scenarios by an additional $34 million. In the 20-year analysis, each dollar assigned to the incremental RECs from the Wind Projects would increase benefits by $26. (Link, lines 83-90). Of course, one needs to also

consider that relinquishing RECs can increase the environmental and regulatory risks that the Company faces, because it would not be able to claim the environmental attributes of wind energy stripped of the associated REC.

Q: What is your opinion of the economic case undertaken by the Company in support of its Combined Projects?

A: I think the analysis is conservative, and the projects have a high likelihood of generating benefits in excess of those measured.

Q: In your opinion, do the Wind Projects provide benefits that were not explicitly identified in Company testimony?

A: Yes. There are several. First, the Wind Projects reduce PacifiCorp's reliance on short-term market transactions to meet capacity requirements by about 175 MW. Without the purchase of FOTs, PacifiCorp is currently capacity short, and this deficit increases through time. Over-reliance on market purchases to meet capacity needs has been a concern in the Utah community for many years.

Second, the additional energy generated by the facilities provides the opportunity to replace coal-fired generation cost-effectively, in the event that PacifiCorp determines certain of its coal units are uneconomic to operate and should be retired earlier than currently planned.

Third, the Wind Projects provide a hedge against the asymmetric risks of high natural gas and wholesale power prices. While natural gas prices and wholesale market prices are relatively low today, prices can rise much higher than they can fall.

Fourth as I explained above, wind energy provides a hedge against potential costs stemming from climate change policies. These hedging benefits increase with the likelihood of carbon policy enactment.

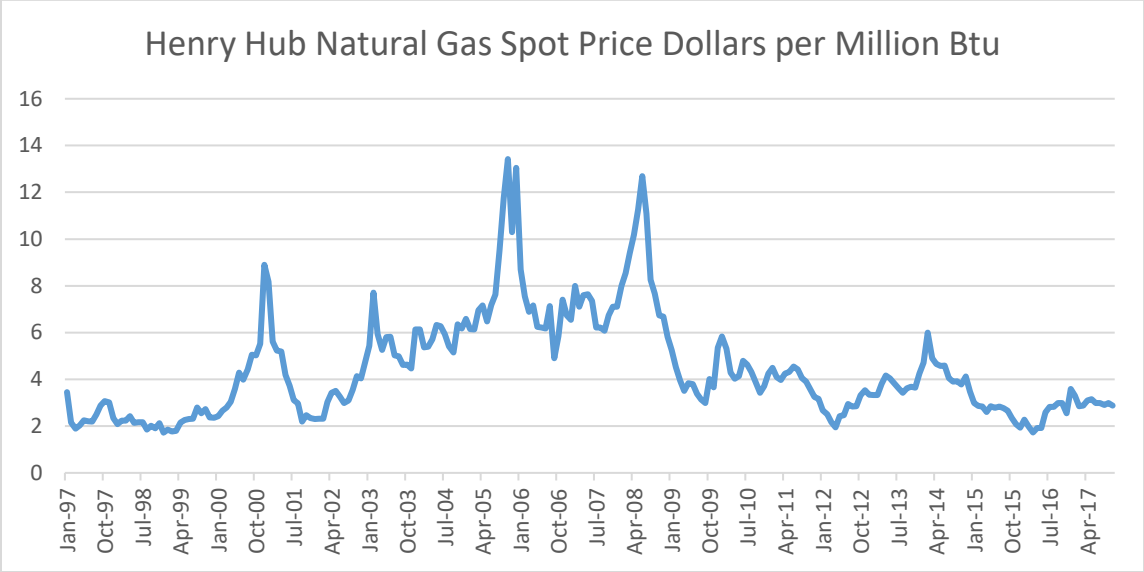
Q: Given the current planning environment, aren't these "hedging benefits" likely to be small?

A: In a low-cost planning environment, measured hedging benefits are smaller than in a high-cost environment. However, emissions-free, renewable resources with zero-cost-energy hedges against the possibility that the planning environment itself will change unexpectedly.

Economists make a distinction between risk and uncertainty. Risk refers to situations in which the outcome is not certain, but where the probabilities of the alternative outcomes can be estimated. Risky variables behave erratically, but within parameters that are predicted by past experience.

Under conditions of uncertainty a fundamental change occurs such that the past no longer predicts the future. The future is simply unknowable. Technological change, climate change, institutional change, political change, and other unknowns, can all have uncertain effects on the planning environment and therefore on the costs and benefits of different resource alternatives.

The graphic below, copied from the EIA website, displays twenty years of Henry Hub Natural Gas Spot Prices and documents the extent and rapidity with which the planning environment can change. While prices in the current planning environment are relatively low, this relative stability may or may not remain over the next 20 years.



Testimony submitted in a 1999 case is illustrative of how rapidly the planning environment can change. In January of 2000, in the proceeding addressing PacifiCorp's request to sell the Centralia plant and mine (Docket No. 99-2035-03), a PacifiCorp witness submitted as an exhibit an article titled: "My Two Cents Worth - Or the Sustainable Price of Power" written by Morgan Stanley analysts in which the authors argued two cent power indefinitely.[4] Their argument was based on their understanding of natural gas market fundamentals. Five months later, western market prices exploded.

Sound planning identifies resources that are "robust." While not always the least-cost, across all planning scenarios, robust resources avoid unexpected, high priced events and the shock of changing planning environments. Given the potential for disruptive change, it is my opinion that the Combined Projects represent a relatively robust resource decision.

[4] The pertinent issue was how high the price of replacement power might rise. PacifiCorp argued the risk of replacement power was low; intervenors argued it was high.

Q: Are there aspects of the economic case that concern you?

A: Yes. The economics of the Combined Projects rely on PTCs, and given recent congressional activity, the value of PTCs to PacifiCorp may be reduced – an example of economic uncertainty at play.

Both the House and Senate have passed legislation reducing the corporate tax rate to 20%, and the House version of the bill removes the PTC inflation adjustment. Both would reduce the value of the PTC to PacifiCorp and the PTC offset to its customers. Thus, whether the Combined Projects will remain economic if Congress successfully passes a bill reconciling the differences in the two pieces of tax legislation is not yet known.

PacifiCorp has committed to update its economic case in supplemental testimony to be filed January 16. PacifiCorp's updated analysis should include the potential impact of pending legislation in addition to incorporating the results of the RFP 2017R and the solar RFP.

Q: What is the Commission required to consider in its decision to approve PacifiCorp's request to construct or acquire 860 MW of new wind generation under Utah Code Ann. § 54-17-301 and PacifiCorp's request to build a new 140 mile long 500 kV transmission line in Wyoming, connecting Aeolus with Bridger/Anticline, and to upgrade the existing 230 kV system under Utah Code Ann. § 54-17-401?

A: Both sections of the Utah Code require the Commission to determine whether the request is in the public interest when taking into consideration:

- Whether it will most likely result in the acquisition, production and delivery of utility services at the lowest reasonable cost to the retail customers of the utility;
- Long-term and short-term impacts;
- Risk;
- Reliability;
- Financial impacts on the utility;
- Other factors determined by the Commission to be relevant.

Q: In your opinion, is approval of the Combined Projects in the public interest?

A: Yes. As filed, the economic analysis demonstrates that the Combined Projects have a high probability of delivering benefits to customers at a reasonable cost. The Wind Projects hedge against market price risk, hedge against the impact of carbon emission regulations, reduce the risk of over reliance on FOTs, and provide the opportunity to replace coal-fired generation cost-effectively, in the event that PacifiCorp or regulators determine additional units should be retired earlier than currently planned. The Transmission Projects facilitate the interconnection of the Wind Projects, provide necessary voltage support, and improve grid reliability.

III RECOMMENDATIONS

Q: What do you recommend?

A: I recommend the Commission approve PacifiCorp's request to construct or acquire 860 MW of new wind generation under Utah Code Ann.§ 54-17-301 and approve PacifiCorp's request to build a new 140 mile long 500 kV transmission line in Wyoming, connecting Aeolus with Bridger/Anticline, and to upgrade the existing 230 kV system

under Utah Code Ann. § 54-17-401. This recommendation is contingent upon the updated economic case, to be to be filed in mid-January, remaining reasonable.

Q: Does this conclude your testimony?

A: It does.