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BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of the Application of Rocky Mountain Power for Approval of a Significant Energy Resource Decision and Request to Construct Wind Resource and Transmission Facilities	**DOCKET NO. 17-035-40**

REBUTTAL TESTIMONY OF KATE BOWMAN

ON BEHALF OF

UTAH CLEAN ENERGY

DATED this 16th day of January, 2018

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Sophie Hayes
Attorney for Utah Clean Energy

Q. Please state your name and business address.

A. My name is Kate Bowman. My business address is 1014 2nd Ave, Salt Lake City, Utah 84103.

Q. Are you the same Kate Bowman that provided direct testimony in this docket?

A. Yes

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Utah Clean Energy.

Q. What is the purpose of your rebuttal testimony?

A. I will respond to a statement by Mr. Daniel Peaco on behalf of the Division of Public Utilities (the Division) regarding the Company's treatment of carbon price risk. Mr. Peaco states, "… I think it is important to recognize that there is currently no policy imposing a price on carbon emissions. Therefore, similar to the discussion on the natural gas forecasts, *given the information available today*, the scenarios with zero carbon price correspond with the current policy and near-term outlook on such policies" (lines 766 – 769, emphasis added). Mr. Peaco goes on to state, "Based on the forgoing discussion, taken together, the price-policy scenario that most closely reflects expectations of future market conditions given the information available today is the Low Gas, Zero CO_2 scenario." (lines 775-777).

Q. Do you agree with Mr. Peaco's assessment?

A. No. Although the scenarios with zero carbon price may correspond with today's federal policy, given the widespread, consensus scientific information available today it is unreasonable to assume that there will be a zero carbon price in the future or to assume that "future market conditions" will include no cost for carbon. Mr. Peaco does

acknowledge that the Low Gas, Zero CO_2 scenario is "not necessarily the most likely scenario;" (line 779). In fact, a zero CO_2 scenario is unlikely to continue throughout the duration of the lifetime of the proposed wind projects.

Q. Why do you say that it is unlikely that a zero CO_2 price scenario will last through the lifetime of the proposed wind projects?

A. The risks and costs associated with climate change will compel prudent policymakers to curtail future carbon emissions. Weather and climate disasters caused $306 billion in costs in the United States in 2017, making this past year both the third warmest year on record as well as the costliest. [1] The mounting costs of climate disasters will necessitate policies to reduce emissions and address costs resulting from climate change. As described in my direct testimony, there is clear scientific consensus that "…human activities, especially emissions of greenhouse gases, are the dominant cause of the observed warming since the mid-20th century."[2] The electricity industry, through the combustion of fossil fuels, is the largest single source of CO_2 emissions in the US.[3] In order to limit global annual average temperature rise to 3.6°F (2°C) or less, net global carbon dioxide emissions will need to be reduced substantially by 2040 and will need to

[1] National Oceanic and Atmospheric Administration, "2017 was 3rd warmest year on record for U.S." http://www.noaa.gov/news/2017-was-3rd-warmest-year-on-record-for-us

[2] USGCRP, 2017: Climate Science Special Report: Fourth National Climate Assessment, Volume I [Wuebbles, D.J., D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 470 pp, doi: 10.7930/J0J964J6. https://science2017.globalchange.gov/
See Executive Summary P3.

"Extremely likely" is defined as having a 95-100% likelihood. See Executive Summary P 26.

[3] U.S. Environmental Protection Agency, "Overview of Greenhouse Gas Emissions". https://www.epa.gov/ghgemissions/overview-greenhouse-gases#carbon-dioxide.

become zero or negative later in the century.[4] 195 countries have signed the Paris Climate Accord, which aims to limit global temperature rise this century to less than 2°C. 14 states and Puerto Rico, representing more than 36% of the population of the United States, remain committed to meeting their share of the U.S. targets under the Paris Agreements.[5] Although current conditions do not include policies limiting carbon dioxide emissions in the U.S., it is unrealistic to assume there will be no price on carbon for the duration of the lifetime of the proposed wind projects. Furthermore, given the scientific consensus, it should not be necessary for there to be a price on carbon in order to consider the impacts and costs of climate change in decision making. Prudent decision making requires that we understand and address the mounting costs of climate change.

Q. What other information is available today that may indicate a trend toward carbon pricing?

A. Forty countries or jurisdictions have developed or plan to start markets for pricing carbon dioxide emissions. China, the world's largest emitter of greenhouse gases, just announced a cap-and-trade program intended to reduce carbon dioxide emissions in the electricity sector.[6] The U.S. is increasingly alone on a shrinking list of developed countries that do not have national policies in place to limit greenhouse gas emissions.

Q. Are there reasons to consider the impacts of climate change, absent policies regulating carbon emissions?

[4] Climate Science Special Report: Fourth National Climate Assessment, Volume I. Executive Summary, P4**.** *Ibid*. P22

[5] U.S. Climate Alliance, https://www.usclimatealliance.org/

[6] Bloomberg, "Why China's Big Step on Carbon Isn't Bigger Still." https://www.bloomberg.com/news/articles/2017-12-25/why-china-s-big-step-on-carbon-isn-t-bigger-still-quicktake-q-a

A. Yes. The risks and costs to society of failure to curtail carbon emissions sufficiently to avoid the worst impacts of climate change are enormous. Risks include higher temperatures, more severe heat events, and increased forest fires in the western United States, all of which will impact the Company's ability to provide reliable and affordable electricity. As discussed in my direct testimony, climate change will impact the company's ability to provide reliable and affordable electricity, resulting in costs borne directly by Rocky Mountain Power ratepayers – for example, longer and more severe heat waves require increased investment in costly peaking generation, and more forest fires will increase the cost of maintaining reliable power infrastructure. The risks and costs of climate change also impact all citizens across the country, including Utahns. For some perspective, the $306 billion in losses due to weather and climate disasters in 2017 can be expressed as approximately $950 per resident of the United States. In both cases, increased investments in carbon-free resources are necessary to avoid a more costly future for Utah ratepayers.

Q. Does that conclude your testimony?

A. Yes.