

Exhibit No.: \_\_\_\_\_  
Issues: Wind Projects and Asbury  
Witness: Shaen T. Rooney  
Type of Exhibit: Surrebuttal Testimony  
Sponsoring Party: The Empire District  
Electric Company  
Case No.: ER-2021-0312  
Date Testimony Prepared: January 2022

**Before the Public Service Commission  
of the State of Missouri**

**Surrebuttal Testimony**

**of**

**Shaen T. Rooney**

**on behalf of**

**The Empire District Electric Company**

**January 2022**



**\*\*DENOTES CONFIDENTIAL\*\***  
20 CSR 4240-2.135(2)(A)3,4

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THE EMPIRE DISTRICT ELECTRIC COMPANY  
BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION  
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SURREBUTTAL TESTIMONY OF SHAEN T. ROONEY  
THE EMPIRE DISTRICT ELECTRIC COMPANY  
BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION  
CASE NO. ER-2021-0321

1 **I. INTRODUCTION**

2 **Q. Please state your name and business address.**

3 A. My name is Shaen T. Rooney, and my address is 602 Joplin Street, Joplin, Missouri,  
4 64801.

5 **Q. Are you the same Shaen T. Rooney who provided Direct and Rebuttal Testimony**  
6 **in this matter on behalf of The Empire District Electric Company (“Empire” or**  
7 **the “Company”)?**

8 A. Yes.

9 **Q. What is the purpose of your Surrebuttal Testimony in this proceeding before the**  
10 **Missouri Public Service Commission (“Commission”)?**

11 A. The purpose of my surrebuttal testimony is to respond to the rebuttal testimony of  
12 Office of the Public Counsel (“OPC”) witnesses Lena Mantle and John Robinett. My  
13 testimony is specifically in response to Ms. Mantle’s testimony regarding the  
14 performance of Empire’s new wind resources and Mr. Robinett’s testimony regarding  
15 changes to Asbury’s operation mode and heat rate.

16 **II. WIND PROJECT PERFORMANCE**

17 **Q. On page 20, lines 11-13, of her Rebuttal Testimony, Ms. Mantle states that a**  
18 **spreadsheet provided by Empire in response to OPC data request 8055, “showed**  
19 **the Kings Point availability at \*\* [REDACTED] \*\* from the beginning of February through**  
20 **\*\* [REDACTED] \*\* indicating that it was not available during Storm**  
21 **Uri.” She further states on page 20, lines 15-17, of her Rebuttal Testimony that,**

1           **“Empire’s response to OPC data request 8035 showed that even though the Kings**  
2           **Point wind project was \*\*** [REDACTED]

3            [REDACTED] **\*\* Was Kings Point “not**  
4            **available” during Storm Uri?**

5            A.    No, this is a mischaracterization. Kings Point turbines that had achieved commissioning  
6            completion produced energy during the February 1-20, 2021, time period (which  
7            included Storm Uri).

8            **Q.    Please explain.**

9            A.    The data provided in response to OPC data request 8055 were based on derates  
10           submitted in SPP’s Control Room Operation Window (CROW). A “derate” exists  
11           whenever a unit is limited to a power level that is less than the unit’s net maximum  
12           capacity. Because Kings Point was still under construction and performing  
13           commissioning activities, the Company and SPP agreed that the Company would derate  
14           Kings Point to 0 MW to allow turbines to be started and stopped as needed for testing  
15           until the Company received confirmation from Kings Point that a sufficient number of  
16           turbines were online and had been successfully tested. The Company updated the  
17           project’s dependable availability periodically by submitting CROW tickets to reduce  
18           the amount of derating. Derating the unit to 0 MW did not prevent Kings Point from  
19           generating electricity. On February 1, 2021, nine turbines at Kings Point had achieved  
20           commissioning completion, and that number increased to thirteen prior to February 20,  
21           2021. Thus, those turbines that had achieved commissioning completion did produce  
22           energy during the February 1-20, 2021, period.

23           **Q.    On page 20, lines 25-27, and continuing to page 21, lines 1-2, of her Rebuttal**  
24           **Testimony, Ms. Mantle compares the amount of energy each project generated in**

1           **February 2021 to what it would have generated at full nameplate capacity in every**  
2           **hour of that month. Is this comparison a useful demonstration of how the wind**  
3           **projects performed during that period?**

4    A.    No. Even Ms. Mantle states on page 21, line 5, of her Rebuttal Testimony that the  
5           assumption that every wind turbine at each wind project would be available in every  
6           hour of February 2021 is not rational. It is especially misleading to make this  
7           comparison with respect to Kings Point and Neosho Ridge, which were still erecting  
8           and commissioning turbines. For instance, just 13% of the turbines at Kings Point had  
9           achieved commissioning completion by February 1, and approximately 19% had  
10          achieved that same milestone by the end of February. If one assumes that 19% of Kings  
11          Point’s capacity had been available during the entire month of February, the 9,510  
12          MWh generated would represent a capacity factor of 50.3%, as opposed to the 9%  
13          capacity factor shown in Table 4 of Ms. Mantle’s Rebuttal Testimony, which was based  
14          on OPC’s admittedly irrational assumption. The capacity factor would be even greater  
15          than 50.3% if one were to consider that less than 19% of Kings Point’s capacity was  
16          available at the beginning of the month.

17    **Q.    On page 23, lines 8-9 of her Rebuttal Testimony, Ms. Mantle states that, “despite**  
18           **the wind turbines being available on February 8 through February 10, during**  
19           **Storm Uri, none of the wind turbines provided electricity on those days.” Is this**  
20           **statement indicative of the performance of Empire’s wind projects during Storm**  
21           **Uri?**

22    A.    No. As a matter of fact, I am not aware of any commonly accepted definition of Storm  
23           Uri that includes the date range selected by Ms. Mantle. Except for Kings Point, each  
24           of the projects produced energy on each of the days for which SPP had an energy

1 emergency alert (EEA) in effect (February 14-19, 2021). Kings Point produced energy  
2 from February 14-17, 2021. However, it was unavailable beginning at approximately  
3 11:00 p.m. on February 17, due to a substation component failure. SPP lifted the final  
4 EEA of the event at 9:20 a.m. on February 19.

5 **Q. Contrary to the characterizations in Ms. Mantle’s Rebuttal Testimony, how did**  
6 **the wind projects perform during Storm Uri?**

7 A. Overall, the projects performed well, especially when one considers that two of the three  
8 facilities were still under construction. During an energy emergency in which demand  
9 outstripped supply, all three facilities supplied energy without consuming any fuel.  
10 Throughout this emergency, fuel availability was a substantial challenge, and fuel  
11 prices reached historic highs. The cold weather packages that are installed on the  
12 turbines in all three projects allowed the units to start and run in conditions that proved  
13 challenging for generators of all kinds.

14 **III. CHANGES TO ASBURY’S OPERATION MODE AND HEAT RATE**

15 **Q. On page 8 of his Rebuttal Testimony, OPC witness Robinett, when discussing the**  
16 **effort to improve Asbury’s market performance said that “one important factor**  
17 **would not be a part of this effort, that being the efficiency of the unit or its heat**  
18 **rate.” What is the “efficiency of the unit or heat rate”?**

19 A. The efficiency of a power plant is the ratio of useful work output to heat input. A  
20 common measure of power plant efficiency is the heat rate, which inverts this ratio. In  
21 the U.S., this ratio is typically expressed in terms of Btu/kWh, indicating the heat input  
22 per unit of useful electrical energy produced.

1 **Q. Is Mr. Robinett’s characterization of the Company’s efforts regarding unit**  
2 **efficiency and improving Asbury’s market performance accurate?**

3 A. No. The statement referred to by Mr. Robinett in his testimony came from my Direct  
4 Testimony and has been separated from important context provided in the very same  
5 sentence. On page 13, lines 23 – 24, of my Direct Testimony, I stated that, “Because  
6 Empire continually seeks to improve unit heat rates, it was assumed that heat rate  
7 improvement would not be a component of this effort.” In other words, including heat  
8 rate improvement in this effort would be duplicative of then ongoing efforts of plant  
9 management, engineering, operations, and maintenance personnel.

10 **Q. On page 9, lines 12-14, of his Rebuttal Testimony, Mr. Robinett states that when**  
11 **monthly heat rate data is plotted for Unit 1, “it becomes evident from the graph**  
12 **that starting in 2018 the Asbury unit’s efficiency begins to vary and decrease as**  
13 **its heat rates fluctuated more and increased in value.” On page 11, lines 3-4, Mr.**  
14 **Robinett further states that Asbury, “only became less efficient as Liberty decided**  
15 **efficiency no longer mattered for the unit.” Did changes to Asbury’s mode of**  
16 **operating result in a marked degradation in Asbury’s performance?**

17 A. It did not. This is another mischaracterization by OPC. Mr. Robinett is correct that the  
18 variability of the unit’s monthly heat rate increased, but looking at a short-term measure  
19 of a single metric is not a good ruler to judge overall unit performance. The changes  
20 made to Asbury’s mode of operations did not preclude the unit from operating as it had  
21 previously, but instead enabled it to also operate under market conditions where it had  
22 not been competitive previously. When market conditions supported it, Asbury  
23 continued to operate much as it had historically. These longer duration generating runs  
24 helped to moderate the impact on heat rate that was sometimes observed in months

1 where significant cycling duty was called for. This can be seen in Table 1, which shows  
2 the annual heat rate and unit starts for Asbury Unit 1 from 2015 to 2019.

3 Table 1. Asbury Unit 1 Heat Rate and Unit Starts by Year

Year	2015	2016	2017	2018	2019
Heat Rate (Btu/kWh)	10,524	10,165	10,903	10,733	11,042
Unit Starts	11	10	11	34	26

4

5 **Q. What is shown by this data?**

6 A. In contrast to what Mr. Robinett alleges, a review of the annual heat rate data  
7 demonstrates that Asbury operated more efficiently in 2018 than it did in 2017. And  
8 while the heat rate in 2019 was higher than in previous years, the increase of 1.27%  
9 over the 2017 (pre-cycling) heat rate while the number of annual starts more than  
10 doubled was less than the 7.26% increase between 2016 and 2017, when the number  
11 of annual starts was virtually unchanged. This exhibits that changes made to make the  
12 unit more competitive in a wider range of market conditions did not result in a decrease  
13 in efficiency outside of the range of normal variations in the heat rate when calculated  
14 on an annual basis.

15 **Q. Does this conclude your Surrebuttal Testimony?**

16 A. Yes, it does.



**VERIFICATION**

I, Shaen T. Rooney, under penalty of perjury, on this 20th day of January, 2022, declare that the foregoing is true and correct to the best of my knowledge and belief.

/s/Shaen T. Rooney