

Exhibit No.: \_\_\_\_\_  
Issue(s): Asbury Retirement-Market  
Impacts; Marketing of Wind Energy  
Witness: Aaron J. Doll  
Type of Exhibit: Direct Testimony  
Sponsoring Party: The Empire District  
Electric Company  
Case No.: 21-EPDE-\_\_-RTS  
Date Testimony Prepared: May 27, 2021

**Before the State Corporation Commission  
of the State of Kansas**

**Direct Testimony**

**of**

**Aaron J. Doll**

**on behalf of**

**The Empire District Electric Company**

**May 27, 2021**



**\*\*DENOTES CONFIDENTIAL\*\***

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THE EMPIRE DISTRICT ELECTRIC COMPANY  
BEFORE THE STATE CORPORATION OF THE STATE OF KANSAS  
DOCKET NO. 21-EPDE-\_\_\_-RTS

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DIRECT TESTIMONY OF AARON J DOLL  
THE EMPIRE DISTRICT ELECTRIC COMPANY  
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1 **I. INTRODUCTION**

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

3 A. My name is Aaron J. Doll. My business address is 602 South Joplin Avenue, Joplin, Missouri  
4 64801.

5 **Q. By whom are you employed and in what capacity?**

6 A. I am employed by Liberty Utilities Service Corp. (“LUSC”) as Senior Director of  
7 Energy Strategy for the Liberty Central Region, which includes The Empire District  
8 Electric Company (“Empire” or the “Company”).

9 **Q. On whose behalf are you testifying in this proceeding?**

10 A. I am testifying on behalf of Empire.

11 **Q. Please describe your educational and professional background.**

12 A. I graduated from Missouri State University in 2003 with a Bachelor of Science degree  
13 in Psychology and a minor in Philosophy. I received my Master of Business  
14 Administration from Missouri State University in 2008.

15 I have worked for Empire for approximately 14 years. I worked in the Planning  
16 and Regulatory Department for six years as a Planning Analyst and was responsible for  
17 load forecasting, weather normalization, and sales and revenue variance analysis. In  
18 2012, I transferred to the Supply Management Department as the Market Risk Manager  
19 and eventually the Manager of Market Settlements and Systems. In this capacity, I  
20 worked to facilitate the migration of the daily power marketing activities from the  
21 Southwest Power Pool, Inc. (“SPP”) Energy Imbalance Market (“EIS”) to the SPP

1 Integrated Marketplace (“IM”) and oversaw the procurement of the Transmission  
2 Congestion Rights (“TCRs”). Additionally, I provided oversight of the meter  
3 management, market settlements, and market applications.

4 In 2020, I was promoted to my current position of Senior Director of Energy  
5 Strategy. In this role, I oversee the procurement of fuel for electrical generation, the  
6 day-to-day interfacing, systems, and settlements with SPP as it relates to the IM, the  
7 long-term and short-term load forecasting, and the production cost modeling. I also  
8 provide regulatory support relating to those responsibilities.

9 **Q. Have you previously testified before the Kansas Corporation Commission**  
10 **(“Commission”) or any other regulatory agency?**

11 A. Yes. I have testified on behalf of the Company before this Commission, the Oklahoma  
12 Corporation Commission, the Missouri Public Service Commission (“MPSC”), and the  
13 Arkansas Public Service Commission.

14 **Q. What is the purpose of your Direct Testimony in this proceeding?**

15 A. As the Senior Director of Energy Strategy, I am responsible for the overall strategy  
16 associated with generating revenues from the Company’s generation fleet, as well as  
17 advising on the long-term economics of that fleet. In that regard, my testimony  
18 addresses the market benefits of the retirement of the Asbury power plant (“Asbury”)  
19 given the deteriorating performance of Asbury in the SPP IM. I also discuss the net  
20 benefits gained by Empire’s customers through a combination of Asbury’s retirement  
21 and commissioning of the three new wind farms, Kings Point, Neosho Ridge and North  
22 Fork Ridge that are described in detail in Mr. Mooney and Mr. Rooney’s testimony  
23 (the “Wind Projects”). I explain how the Wind Projects are bid into the SPP IM, their  
24 impact on the Company’s energy clause adjustment (“ECA”), and finally affiliate

1           waivers that were granted by the Federal Energy Regulatory Commission allowing  
2           Empire to market energy generated by the Wind Projects.

3   **II.   ASBURY RETIREMENT – MARKET IMPACTS**

4   **Q.   Please describe Asbury’s primary operating characteristics at the beginning of the**  
5   **SPP IM.**

6   A.   Asbury was a 200-megawatt (MW) coal plant with a 10,638 average heat rate  
7       (Btu/kWh), 16-hour start-up time, 96-hour minimum run-time, and 48-hour minimum  
8       down-time.

9   **Q.   Explain what is meant by average heat rate, start-up time, minimum run-time,**  
10   **and minimum down-time.**

11   A.   Average heat rate is a metric of efficiency that is calculated as the amount of energy  
12       used to generate 1 kilowatt hour (kWh). Incremental heat rates, or heat rates along an  
13       output curve supplied by power plant testing, can be multiplied by fuel costs to provide  
14       the fuel-related cost curve of an entity’s energy offer into the SPP IM. As heat rate  
15       increases, efficiencies decrease.

16               Start-up Time, as defined by the SPP IM, is the time required to start a resource  
17       and reach the Minimum Economic Capacity Operating Limit following receipt of a  
18       start-up order from SPP. Asbury began participation in the SPP IM with a 16-hour  
19       Start-Up Time.

20               Minimum Run Time is the length of time a Resource must run from the time the  
21       Resource is put online to the time the Resource is shut down. Asbury began  
22       participation in the market with a 96-hour Minimum Run Time.

23               Minimum Down Time is the minimum length of time required following  
24       desynchronization that a Resource must remain off-line prior to a subsequent

1           synchronization. Asbury began participation in the SPP IM with a Minimum Down  
2           Time of 48 hours.

3   **Q.   Describe Asbury’s first few years of participation in the SPP IM?**

4   A.   From March 2014 until October 2016, Asbury was offered in the SPP IM with a Day-  
5       Ahead (“DA”) market status of “Self.” The “Self” status communicates to SPP that  
6       the Market Participant, Empire in this case, is committing the Resource and SPP should  
7       include it as committed in either the DA Market and/or Reliability Unit Commitment  
8       (“RUC”) as specified. As a result of Asbury’s “Self” status, Empire could be sure that  
9       the unit would be online the following day which prevents unit cycling from an SPP  
10      de-commitment instruction and also helps manage fuel inventory.

11 **Q.   What is unit cycling and why was Empire seeking to avoid it?**

12 A.   Unit cycling is the continual starting up and shutting down of a unit. In the SPP IM,  
13      cycling is caused by economic signals that do not support the continuous operation of  
14      a generating unit. Empire attempted to avoid cycling out of concern for daily energy  
15      pricing to serve load, start-up risk, and fuel inventory management.

16 **Q.   Please describe each of the aforementioned risks that Empire was attempting to**  
17 **mitigate.**

18 A.   **(1) Daily Energy Pricing to Serve Load:** If Asbury was de-committed from the IM,  
19      the unit would only receive a start-up instruction in instances where DA prices could  
20      support both start-up costs (which are not insignificant for baseload coal units) and the  
21      energy offer which is comprised of a no-load offer and incremental energy offer. If the  
22      prices didn’t justify the Start-Up and energy offer of the unit, Asbury would not be  
23      selected, even if its marginal energy costs were in the money. This creates a situation  
24      in which units that may not be as economical as Asbury on an energy-only basis are

1 being called on more frequently, simply due to Asbury's start-up cost, thereby raising  
2 the cost of energy and negatively impacting Empire's customers. Avoiding cycling of  
3 the unit mitigated this risk, as it took the start-up costs out of the equation and allowed  
4 dispatch of the unit based solely on incremental energy costs.

5 **(2) Start-up Risk:** Cycling introduces a fair amount of risk in that every start-up there  
6 is a possibility that the unit is unable to start-up when receiving a commitment  
7 instruction from the market. Coal plants are designed for base load generation and are  
8 not made for continuous starts and stops and often exhibit problems when asked to  
9 cycle. If a unit receives a Day-Ahead commitment instruction in the SPP IM, it has  
10 created a financial position relating to the sale of energy to serve a portion of SPP load.  
11 If the generating unit is unable to meet its obligation to provide the energy that has  
12 already been sold in the Day-Ahead market, then the Market Participant that is offering  
13 the unit is forced to purchase back the energy that it was unable to deliver in the Real-  
14 Time Balancing Market ("RTBM"). Often, the generation purchased back in the  
15 RTBM is at a higher cost than what it was sold for in the DA, because a less efficient  
16 unit would need to be called on to replace the generation that failed to make it online.  
17 The spread between what the energy was sold for in the DA and what it was purchased  
18 back for in the RT, often called the DART spread, creates a financial position for the  
19 market participant which can often result in dollars owed for power that was sold but  
20 that was not delivered. Keeping Asbury from cycling served to mitigate the risk  
21 associated with the failure to provide energy when committed. In his Direct Testimony,  
22 Empire witness Shaen Rooney discusses in more detail the negative impacts on power  
23 plants like Asbury when asked to continuously start and stop.

1           **(3) Fuel Delivery Contract Management:** Empire, not unlike many coal plant owners,  
2           had coal delivery contracts that have required amounts of delivery. If Asbury was left  
3           offline for extended periods of time, the amount of delivered coal on the ground could  
4           present both environmental and safety issues. These issues include bulldozer safety,  
5           permitted coal pile size, water discharge, required packing to prevent spontaneous  
6           combustion, etc. Keeping Asbury from cycling was an effective mitigant to prevent  
7           excess coal inventory problems.

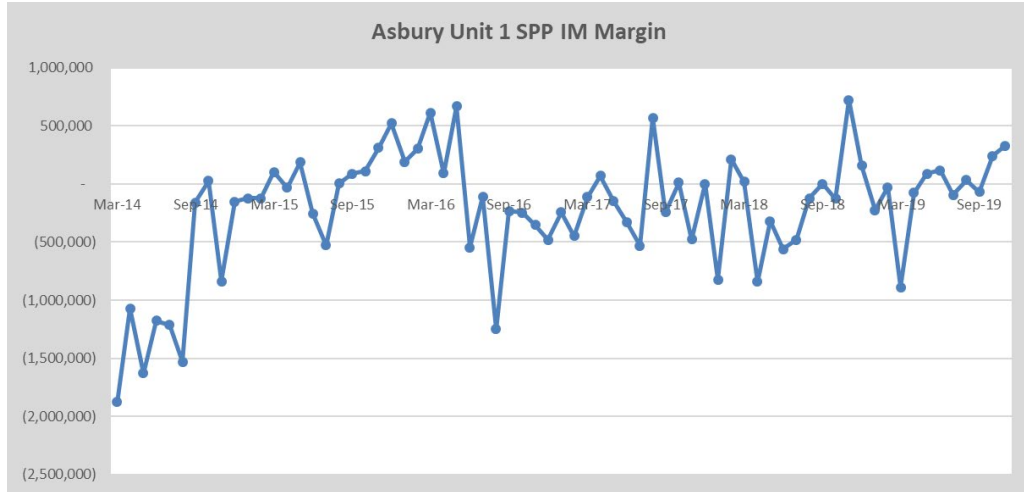
8           **Q. Did Empire cease Self-Committing Asbury in October of 2016?**

9           A. Right around that time, Empire ceased self-committing Asbury for the reasons  
10          mentioned below. The only self-commitment of Asbury on a forward-going basis  
11          would be discrete scenarios similar to other plants in the Company's generation fleet  
12          such as testing.

13          **Q. Why did Empire not continue self-committing the unit if it avoided costly and**  
14          **damaging cycling, mitigated start/stop risk, and helped manage fuel inventory, as**  
15          **described above?**

16          A. Empire believed the initial decisions to self-commit Asbury were justified based on the  
17          supporting locational marginal prices ("LMP") which, when netted with fuel costs,  
18          resulted in favorable net operating margins. In essence, our customers were still  
19          receiving net revenues that were offsetting the cost to purchase generation. However,  
20          the margins began to diminish in 2015 and by the summer of 2015, the unit began to  
21          exhibit negative net operating margins for 10 consecutive months.





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**\*Negative values in the image above indicate favorable margins (unit costs – SPP IM revenues) and positive values represent unfavorable margins**

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4

In the 2015 State of the Market (“ASOM”), the SPP Market Monitoring Unit (“MMU”) stated:

5

6

In 2014, coal, combined cycle, and combustion turbine technologies were able to support their ongoing maintenance costs with that year’s prices. However...while 2015 prices did support the ongoing maintenance cost of combined cycle and combustion turbine units, they did not support the cost of scrubbed coal units.

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The report went on to describe that the “MMU expects the market to signal the retirement of inefficient generation.” The MMU provided more details on its long run price signals including the table below.

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Technology	AVG Marginal Cost (\$/MWh)	Net Revenue from SPP Market (\$/MW Yr)	Annual Revenue Requirement (\$/MW Yr)	Able to Recover New Entry Cost	Annual Fixed O & M Cost (\$/MW Yr)	Able to Recover Avoidable Cost
Scrubbed Coal	23.74	20,626	421,684	NO	31,160	NO
Gas Combined Cycle	19.22	36,122	151,525	NO	15,370	YES
Combustion Turbine	34.55	9,533	284,437	NO	7,040	YES

16

1 The 2016 and 2017 MMU ASOM found consistent results with the 2015 ASOM, in  
2 that prices did not support the cost of scrubbed coal units.

3 **Q. Did Empire stop self-committing Asbury immediately following the reduction in**  
4 **prices?**

5 A. No. Empire still had must-take coal delivery challenges to navigate. However, in  
6 October 2016, Empire was able to renegotiate its coal delivery contract to avoid must-  
7 take scenarios, which would allow the Company to manage its coal pile without having  
8 to self-commit Asbury to keep inventory levels manageable. From November 2016  
9 forward, Asbury was almost exclusively offered in “market” status in which case SPP  
10 would commit the unit based on sufficient pricing.

11 **Q. What was the result of allowing Asbury to be offered in “Market” status?**

12 A. Although the unit would now only be committed and dispatched when it was  
13 considered “in-the-money,” which sought to improve its net operating margins, Asbury  
14 began operating less and less. Below is a table with Asbury’s Net Capacity Factor  
15 (“NCF”):

Asbury Unit 1	
Year	NCF
2010	76.42%
2011	70.72%
2012	70.32%
2013	78.17%
2014	64.05%
2015	63.50%
2016	62.69%
2017	56.92%
2018	48.01%
2019	46.97%

16  
17 **Q. What is a Net Capacity Factor (“NCF”)?**

18 A. A Net Capacity Factor is an industry standard used to assess how much a unit generates  
19 over a period of time compared with how much it could generate if it ran at the top of

1 its net capacity during that same time. For example, a 200 MW net capacity unit is  
2 capable of generating 1,752,000 MWh annually (200 MW \* 8,760 hours [assuming a  
3 non-leap year]). If the unit actually generates 1,314,000 MWh over the same 8,760  
4 hours, it would have a NCF of 75% (1,314,000MWh /1,752,000 MWh).

5 **Q. What do the NCF figures in the table above say about the operation of Asbury?**

6 A. The NCF figures show that the unit was running lower and lower annually when  
7 compared to what it was capable of running (assuming 100% availability). The NCF  
8 is used to make an apples-to-apples comparison of a unit's amount of generation  
9 compared to what it is capable of generating over a fixed period of time. Over time, a  
10 unit's capacity may fluctuate based on degradation or investment in that unit, but an  
11 NCF takes that information into account to isolate its generation performance compared  
12 to its respective capabilities.

13 **Q. As Asbury's NCF began to decline, what did Empire do to try and improve its  
14 performance in the SPP IM?**

15 A. As Asbury's NCF continued to decline, plant personnel worked on various aspects of  
16 its operating characteristics to make it more amenable to market commitments,  
17 therefore improving its NCF.

18 **Q. What aspects of Asbury's operating characteristics were modified?**

19 A. During 2018, plant personnel worked on getting the unit to be more flexible with the  
20 hope that improvements in its market-operating agility would increase its NCF.  
21 Around February 2018, Empire decreased Asbury's Minimum Run Time from 96 hours  
22 to 48 hours. Additionally, plant personnel were able to successfully operate the plant  
23 with a new Minimum Down Time of 6 hours compared to its previous Minimum Down

1 Time of 48 hours. Please see the Direct Testimony of Empire witness Shaen Rooney  
2 for a discussion of how these changes were made and the effects they had on the unit.

3 **Q. How did these new operating parameters change Asbury's operation?**

4 A. Asbury could now cycle down for a short period of time, often during low price periods,  
5 and come back online as needed by SPP. With the operating parameters of Asbury  
6 closer to those of a combined cycle generator, Asbury was able to maximize its ability  
7 to offer into the IM unencumbered by its lack of market-operating agility and the result  
8 was a record number of starts in its last 2 years of operation.

Asbury Unit 1	
Year	Starts
2010	10
2011	9
2012	7
2013	2
2014	8
2015	11
2016	10
2017	11
2018	34
2019	26

9  
10 **Q. Did this greater number of starts impact the NCF trend?**

11 A. No. As you can see above, the NCF continued to fall, even with the greater number of  
12 starts.

13 **Q. Ultimately, what happened with Asbury?**

14 A. Empire notified SPP of Asbury's coming retirement in August 2019, and Asbury was  
15 officially de-designated as a network resource on March 1, 2020.

16 **Q. What were the considerations underlying Empire's analysis to retire Asbury?**

17 A. Not unlike the aforementioned ASOM's prediction based on long term price signals,  
18 market fundamentals eventually signaled the need for the retirement of Asbury. The  
19 evaluation of Asbury's ongoing useful life given market conditions, the lower cost of

1 wind, and the avoidance of additional environmental compliance-related investment in  
2 Asbury, was first conducted by Charles River Associates (“CRA”) in the Generation  
3 Fleet Savings Analysis (“GFSA”). The GFSA found that the lowest cost way for  
4 Empire to serve its load obligations over the next twenty to thirty years was to  
5 undertake a near-term strategy that builds up to 800 MW of strategically located wind  
6 in or near Empire’s service territory and retires Asbury.<sup>1</sup> In particular, Asbury’s  
7 selection for retirement was provoked by coal combustion residual rules that required  
8 significant investment in a bottom ash conveyance system and coal pond enclosure,  
9 along with its actual performance in the SPP IM. Based on these factors, as well as the  
10 ability to add wind generation before the production tax credits began to phase out at  
11 100%, the Company determined that it was prudent to retire Asbury. Mr. James  
12 McMahon, of CRA, provides testimony and schedules relating to Empire’s GFSA  
13 evaluation and study.

14 **Q. Was this analysis confirmed in Empire’s 2019 Integrated Resource Plan (“IRP”)**  
15 **filing?**

16 A. Yes. Based on the 2019 IRP, retiring Asbury results in savings of approximately \$93  
17 million on a 20-year expected value basis. From a risk perspective, retiring Asbury  
18 also demonstrated significant savings. Under a stochastic analysis conducted by CRA  
19 looking at 54 different scenarios, retiring Asbury resulted in savings over maintaining  
20 Asbury until end of life 94% of the time, on a probability-weighted basis. Savings range  
21 from \$18 million to \$144 million. Only under limited combinations of high capital  
22 costs, high gas and power prices, and no carbon price did retiring Asbury not reduce

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<sup>1</sup> The modeling assessment assumed for the GFSA had Asbury retiring at the end of 2018. Asbury was retired March 1, 2020.

1 costs. Mr. McMahon also provides testimony and schedules relating to Empire’s 2019  
2 IRP evaluation and study.

3 **Q. Does Empire’s analyses of cost savings relating to the retirement of Asbury take**  
4 **into account Empire’s request in this proceeding for customers to continue to pay**  
5 **the pre-tax return on the retired investment?**

6 A. Yes. As explained by both Mr. McMahon in his testimony and in the testimony  
7 sponsored by Mr. Frank Graves in this case, the customer savings calculated in the  
8 GFSA and 2019 IRP assumed that customers would pay the remaining outstanding  
9 balance on Asbury over 30 years, the cost of the capital, and decommissioning costs.  
10 The cost of the capital reflects the cost of debt and the allowed return on equity,  
11 calculated on a pre-tax basis.

12 **Q. Are there other benefits to retiring Asbury?**

13 A. Yes. The wind generation would provide cost savings to Empire’s customers over the  
14 next 20-30 years, would serve as a replacement of Asbury’s capacity, and would enable  
15 Empire to meet the Renewable Portfolio Standards (“RPS”) of Missouri when the Elk  
16 River Wind Farm and Meridian Way Wind Farm purchase power agreements expire in  
17 2025 and 2028. Additionally, risk associated with costs for further emissions controls  
18 investment or potential carbon tax are reduced by the retirement of Asbury.

19 **Q. Was the decision to retire Asbury reasonable and prudent?**

20 A. Yes. The below table reiterates the reasons why the retirement of Asbury was  
21 reasonable and prudent:

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**Reasons to Retire Asbury**

1. Market economics don't support operation
2. Avoid continual investment/expense due to unit cycling
3. Mitigate market risk associated with unit failures due to frequent starts
4. Avoid additional investment in bottom ash conveyance system
5. Mitigate risk of further costs associated with emissions in the future

**III. MARKETING ENERGY FROM WIND PROJECTS**

**Q. Explain how Empire is marketing the energy generated from the Wind Projects into the SPP IM in accordance with applicable SPP IM rules and in a manner that is not detrimental to Empire’s customers.**

A. The Wind Projects are registered as dispatchable variable energy resources (“DVER”) in the SPP IM and the offering strategy is very similar to the strategy utilized by the Elk River and Meridian Way wind farms. During their first 10 years of operation, the energy from both of these wind farms, which were subject to purchased power agreements (“PPA”) between Empire and the third party owners of those wind farms, were offered into the SPP IM at a negative offer calculated to reflect the lost production tax credit. After 10 years under each contract, the offer into the SPP was then reduced to nearly a \$0/MWh offer to reflect the ten-year expiration of the production tax credit. Empire will be offering the energy generated by the Wind Projects in at a negative offer reflective of a lost production tax credit if the market chooses to curtail. In my experience, this is consistent with how most of the renewable generation is offered into the SPP IM and is permitted by documents governing participation in the SPP IM. Additionally, as indicated below, Empire, as the Service Provider, is restricted from any scheduling activities that are not in accordance with the SPP Market Protocols

1 and the SPP Open Access Transmission Tariff (“OATT”). Essentially, the interests of  
2 both Empire, on behalf of its customers, and the tax equity partners, are aligned and  
3 policies are in place to ensure adherence to the guidelines set forth in the SPP IM.

4 **Q. Is this bidding strategy consistent with the protections that were included in the**  
5 **MPSC’s Order that granted Empire certificates of public convenience and**  
6 **necessity relating to the three Wind Projects in Case No. EA-2019-0010 (“MPSC**  
7 **CCN Order”)?**

8 A. Yes. Section 6(b) of the MPSC CCN Order requires that “[t]he Wind Project(s) shall  
9 be operated in accordance with applicable SPP Integrated Marketplace rules and in a  
10 manner that is not detrimental to Empire’s customers.” The bidding strategy that I  
11 describe above comports with this requirement.

12 **Q. Is Empire marketing the energy from the Wind Projects in the SPP IM now?**

13 A. Yes. Empire began offering the North Fork Ridge Wind Farm in the SPP IM in October  
14 2020; the Kings Point Wind Farm in March 2021; and the Neosho Ridge Wind Farm  
15 in November 2020. Empire is the acting Market Participant (“MP”) for all three  
16 projects which allows the Company to claim the capacity for resource adequacy  
17 requirements and obligate the marketing activities for the projects.

18 **Q. Are Empire’s responsibilities regarding marketing of the energy from the Wind**  
19 **Projects memorialized in any agreements?**

20 A. Yes. Empire entered into an Energy Management Service Agreement (“EMSA”) with  
21 each of the three Wind Project companies, Neosho Ridge Wind, LLC, North Fork  
22 Ridge Wind, LLC, and Kings Point Wind, LLC. In each of the EMSAs, Empire agrees  
23 to provide services for the dispatch and scheduling of energy and ancillary services  
24 from the Wind Farms into the SPP IM. The agreement specifically provides the



1 granular level of responsibilities that are to be performed by the scheduling entity  
2 (Empire), in accordance with SPP Market Protocols and the SPP OATT and what rate  
3 will be charged for those responsibilities. Furthermore, the EMSA outlines the  
4 requirements for both the Project Company (the wind farm LLCs) and the Service  
5 Provider (Empire), in regard to the data collection and communication from the facility  
6 via Remote Terminal Units (“RTU”) and the Supervisory Control and Data Acquisition  
7 (“SCADA”). The EMSAs are attached as schedules to Mr. Todd Mooney’s direct  
8 testimony.

9 **Q. Is Empire being compensated for the services for which it provides to each of the**  
10 **Wind Project Companies (the Wind Project LLCs)?**

11 A. Yes. Each EMSA provides a Services Fee for the annual provision of services outlined  
12 in the document.

13 **Q. What are the amounts of the Service Fees and how were those determined?**

14 A. The service fees are market assessments based upon what a third party would charge  
15 to perform similar activities. The annual EMSA service fees are: \*\* [REDACTED]  
16 [REDACTED] \*\*

17 **IV. WIND IMPACT ON THE ECA**

18 **Q. Will the sales of the generation from the Wind Projects have any impact on the**  
19 **ECA?**

20 A. Yes. We anticipate that sales of energy from the Wind Projects will lower fuel costs  
21 by an estimated \$56,000,000 <sup>2</sup>on an annual basis. This would amount to approximately  
22 \$2.8 million for Kansas customers or approximately \$149 per year for a customer using  
23 1,000 kWh per month.

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<sup>2</sup> Total Company figure

1 **Q. How are you proposing that the market revenue from the Wind Projects be**  
2 **calculated?**

3 A. Market revenue is simply the revenue received by Empire for generation and any other  
4 products sold into the SPP IM, net of any market charges that are typically assessed to  
5 generators as distribution payments. The market revenue generated from each Wind  
6 Project should be treated exactly as Empire treats the revenue from the rest of its  
7 generation assets. Empire also proposes to include the following additional sources of  
8 revenue and expense received in the “market revenue” calculation: Paygo, Tax Equity  
9 Distributions, RECs, and PTCs.

10 **Q. Why would Paygo be included in Empire’s calculation of market revenues?**

11 A. Paygo, which as more completely described in the Direct Testimony of Empire witness  
12 Todd Mooney, is a variable amount of revenue received from the tax equity (“TE”)  
13 partners for generation beyond what was originally calculated as part of the  
14 contribution to the project. Since this component is variable and is directly related to  
15 generation levels that are subject to the IM, it is appropriate to include them into the  
16 ECA as an immediate source of revenue to customers for generation greater than that  
17 which was calculated for the original contribution to the project.

18 **Q. Why would Empire include distributions from Tax Equity (“TE”) be included in**  
19 **its calculation of market revenues?**

20 A. TE distributions, as more fully described in Mr. Mooney’s Direct Testimony, is a  
21 necessary component of the TE structure and allows the TE partner to invest an amount  
22 of approximately 45%-60% of the project costs, in exchange for 99% of the PTC,  
23 accelerated depreciation, and a cash distribution of market revenues estimated to be  
24 between 25%-50% for years 6-10. Without these components, the amount of

1 contribution to the projects would be reduced, therefore increasing the costs to Empire  
2 customers.

3 **Q. Why should Renewable Energy Credits (“RECs”) be included in the calculation**  
4 **of market revenues?**

5 A. Each of the Wind Projects will generate RECs. These RECs will be purchased by  
6 Empire as the “buyer” from Neosho Ridge, LLC, North Fork Ridge, LLC, and Kings  
7 Points, LLC as the “sellers” for \*\* [REDACTED] \*\*. The three Wind Project LLCs are  
8 100% owned by Empire Wind Holdings, LLC of which The Empire District Electric  
9 Company is a Class B member representing approximately 50% of the ownership, with  
10 the other 50% owned by TE as the Class A member. This REC purchase price and  
11 process are outlined and memorialized in the Non-Energy Products Agreement for each  
12 respective Wind Project. After Empire takes ownership of the RECs, any sales of  
13 excess REC’s, beyond what is required to meet renewable standards, will generate  
14 revenue which will be refunded to the customer through the ECA.

15 **Q. Should the revenues from PTCs also be included as market revenues?**

16 A. Yes. Each of the Wind Projects will also be eligible for PTCs based on the amount of  
17 wind generated and sold into the SPP IM. Empire will retain approximately 1% of the  
18 PTCs and, thus, the tax credit from these PTCs should also flow through the ECA as  
19 an immediate refund of an offsetting tax liability that is reflected in customer’s rates.  
20 Since the PTCs are variable and based on generation, it would be appropriate to include  
21 them in fuel and return their value to customers as quickly as possible.

22 **Q. Will any adjustments to the ECA be necessary to accommodate the net wind**  
23 **revenues as described above?**

1 A. Yes. Empire has proposed to adjust the language in the ECA to reflect the net wind  
2 revenues received from the components described above. The new language is  
3 included in Section 18 schedules, which are being sponsored by Ms. Tisha Sanderson.

4 **Q. Is the Company opposed to the inclusion of the above in base rates or a different**  
5 **mechanism?**

6 A. No. Empire's goal is to ensure that customers receive the benefit of the wind energy as  
7 soon as possible. The Company is receptive to other mechanisms that would allow a  
8 return of net wind revenues so long as the mechanism is transparent, and the  
9 distributions are timely to its customers. For example, if the Commission chooses to  
10 utilize the Fixed Price Purchase Power Agreement ("FPP") further discussed in Mrs.  
11 Sanderson's testimony, a percentage of the variable operating and maintenance cost  
12 (VOM), and PTC's are proposed to flow through the levelized cost of energy included  
13 in base rates versus through the ECA.

14 **V. AFFILIATE WAIVERS**

15 **Q. Please describe the affiliate waivers Empire obtained from the Federal Energy**  
16 **Regulatory Commission ("FERC") in regard to the Wind Projects.**

17 A. Empire obtained waivers from FERC from Title 18 of the Code of Federal Regulations  
18 ("CFR") relating to three affiliate related restrictions. In particular, Empire sought and  
19 received a waiver from (1) affiliate restrictions between franchised public utilities with  
20 captive customers and market-regulated power sales affiliates, 18 CFR §35.39 (2019);  
21 and (2) cross subsidization rules, 18 CFR §35.44 (2019). Specifically, the waivers  
22 addressed sections 35.39(c)(2), 35.39(d)(1), 35.39(e), and 35.39(f), which would allow  
23 Empire employees to schedule and market the energy from the Wind Projects which  
24 are market-regulated power sales affiliates.

1 **Q. What would otherwise be required by those sections?**

2 A. Section 35.39(c)(2) states that “(t)o the maximum extent practical, the employees of a  
3 market-regulated power sales affiliate must operate separately from the employees of  
4 any affiliated franchised public utility with captive customers.” FERC conditionally  
5 supported this request for waiver with reliance on Empire’s “representations that  
6 scheduling and related activities to maximize efficiencies, coordinate scheduling,  
7 perform forecasting, and other sharing of information will be used to the benefit of the  
8 captive customer.”

9 Section 35.39(d)(1) states that “(a) franchised public utility with captive  
10 customers may not share market information with a market-regulated power sales  
11 affiliate if the sharing could be used to the detriment of captive customers, unless  
12 simultaneously disclosed to the public.” FERC granted this requested waiver on  
13 Empire’s representation and commitment that any information shared will be not used  
14 to the detriment of the captive customer and the captive customer will not be harmed.

15 Sections 35.39(e)(1) and 35.44(b)(1) state that “(u)nless otherwise permitted  
16 by Commission rule or order, sales of any non-power goods or services by a franchised  
17 public utility with captive customers, to a market-regulated power sales affiliate must  
18 be at the higher of cost or market price” and “(u)nless otherwise permitted  
19 by Commission rule or order, and except as permitted by paragraph (b)(4) of this  
20 section, sales of any non-power goods or services by a franchised public utility that has  
21 captive customers or that owns or provides transmission service over  
22 jurisdictional transmission facilities, including sales made to or through its affiliated  
23 exempt wholesale generators or qualifying facilities, to a market-regulated power sales

1 affiliate or non-utility affiliate must be at the higher of cost or market price,”  
2 respectively.

3 Finally, sections 35.39(f)(i) and 35.39(f)(ii) state that “(t)he market-regulated  
4 power sales affiliate must offer the franchised public utility's power first” and “(t)he  
5 arrangement between the market-regulated power sales affiliate and the franchised  
6 public utility must be non-exclusive,” respectively. FERC granted this waiver based  
7 on Empire’s commitment that any brokering activities would be at cost and that the  
8 waiver will not be used to harm or be used to the detriment of the captive customers.

9 **Q. What was the purpose of the waivers?**

10 A. The purpose of the waivers obtained by Empire was for the existing Empire power  
11 marketing staff and their responsibilities, which I currently oversee, to offer energy  
12 from the new Wind Projects into SPP IM. Since the Wind Projects are not directly  
13 owned by Empire, but rather are directly owned by Empire Wind Holdings, LLC, of  
14 which Empire owns Class B membership shares, Empire needed a waiver to perform  
15 the same power marketing duties it would normally perform if the assets were owned  
16 directly.

17 **Q. Please describe the process used by Empire to obtain the waivers from FERC.**

18 A. Empire staff met with FERC staff on April 25, 2019, to discuss the affiliate waivers  
19 that were to be filed and answer any questions they may have about the proposed  
20 waivers. Empire filed its application for waiver on November 20, 2019, creating  
21 Docket No. ER20-432. Empire filed a Supplement and Amendment to its original  
22 application on April 9, 2020 and a second Supplement and Amendment to its  
23 application on May 1, 2020, before receiving a Commission Order on May 29, 2020,  
24 with a retroactive effective date of May 1, 2020. Additionally, FERC requested that

1 Empire revise the limitations of exemptions of Empire's market-based rate tariffs as  
2 discussed in the order.

3 **VI. CONCLUSION**

4 **Q. Does this conclude your Direct Testimony at this time?**

5 **A. Yes.**

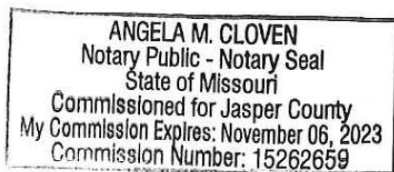
**AFFIDAVIT OF AARON J. DOLL**

STATE OF MISSOURI )  
                                  ) ss  
COUNTY OF JASPER )

On the   19   day of May, 2021, before me appeared Aaron J. Doll, to me personally known, who, being by me first duly sworn, states that he is the Senior Director Energy Strategy of The Empire District Electric Company – Liberty Utilities Central and acknowledges that he has read the above and foregoing document and believes that the statements therein are true and correct to the best of his information, knowledge and belief.

  
\_\_\_\_\_  
Aaron J. Doll

Subscribed and sworn to before me this   19   day of May, 2021.



  
\_\_\_\_\_  
Notary Public

My commission expires:   November 06, 2023  .