

**THE EMPIRE DISTRICT ELECTRIC COMPANY
("LIBERTY")**

2022

**ANNUAL RENEWABLE ENERGY STANDARD
COMPLIANCE REPORT**

Prepared in Compliance with 20 CSR 4240-20.100

****Indicates Highly Confidential****

Indicates Confidential



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2022 ANNUAL RENEWABLE ENERGY STANDARD

COMPLIANCE REPORT

INTRODUCTION

Pursuant to the Missouri Public Service Commission's (Commission) renewable energy standards (RES) rule, 20 CSR 4240-20.100(8), The Empire District Electric Company ("Liberty" or "Company"), a Kansas corporation, is filing the Annual Renewable Energy Standard Compliance Report (RES Report). The rule became effective in September 2010, and pursuant to the rule Liberty must file the 2022 RES Compliance Report on or before April 15 each year.

Liberty began to develop its wind renewable energy portfolio on December 10, 2004, when it entered into a 20-year contract with Elk River Windfarm, LLC (owned by Avangrid Renewables, LLC) to purchase all of the energy generated at the 150-megawatt Elk River Windfarm located in Butler County, Kansas. On June 19, 2007, Liberty enhanced its renewable energy portfolio when it entered into a 20-year purchased power agreement with Cloud County Wind Farm, LLC. EDP Renewables North America, LLC is an indirect parent company of Cloud County Wind Farm, LLC. Pursuant to the terms of the agreement, Liberty purchases all of the output from the 105-megawatt Phase 1 Meridian Way Wind Farm located in Cloud County, Kansas. In addition, the Ozark Beach Hydroelectric Project, owned by EDE, has produced renewable hydropower for many years.

Effective May 16, 2015, Liberty began offering rebates for Missouri customers for qualifying solar installations in accordance with the Missouri RES and Liberty's Solar Rebate Rider approved by the Commission, which continued in 2022.

At the end of 2020, construction of the North Fork Ridge Wind project was completed. This 149 MW facility is located in Missouri and started operation in December of 2020. In addition, the 300MW Neosho Ridge Wind project (located in Kansas), and the 149MW Kings Point Wind project (located in Missouri) reached commercial operation in 2021. These Commission approved resources were added to fulfill the Customer Savings Plan. Liberty also completed the addition of the 2.2MW Prosperity Solar Farm in 2021, however this facility is not utilized for RES compliance.

The following sections provide information required to indicate compliance with the rule.

SECTION (8) (A) 1 A, B: TOTAL MISSOURI RETAIL ELECTRIC SALES AND REVENUE

The following table represents the number of megawatt-hours (MWh) of electricity delivered in 2022 by Liberty to its Missouri retail customers, as reflected in the monthly billing statements. In addition, a column is provided capturing the revenue from total retail electric sales to Missouri customers:

Table 1: Missouri 2022 Total Retail Sales

Year	MWh	Revenue
2022	4,376,596	\$575,869,436

Data Source: Customers Kilowatt Hours Revenue Report

SECTION (8) (A) 1 C: TOTAL RETAIL ELECTRIC SALES SUPPLIED BY RENEWABLE ENERGY RESOURCES

The following table indicates the renewable generation sources used during 2022 and the MWhs that were supplied. (See ATTACHMENT 1)

Table 2: Total 2022 Retail Electric Sales Supplied by Renewable Energy

<u>Facility</u>	<u>Generation (MWh)</u>	<u>Percentage</u>	<u>Energy Supplied to MO Retail Customers (MWh)</u>
Elk River	307,985	88.90%	273,798
Meridian Way	199,398	88.90%	177,265
Ozark Beach	56,535	88.90%	50,259
North Fork Ridge	270,192	88.90%	240,200
Kings Point	299,176	88.90%	265,967
Neosho Ridge	299,485	88.90%	266,242
Prosperity Solar	3,199.86	100%	3,199.86
Total	1,435,970.86		

SECTION (8) (A) 1 D: CURRENT NUMBER AND VALUE OF RECS CREATED BY LIBERTY OWNED FACILITIES

Table 3: 2022 REC/SREC Produced and Locational Marginal Pricing (LMP)
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Facility	REC/SREC Produced	2022 Average LMP (\$/MWh)	REC / SREC Value (\$/Credit)
Ozark Beach			
North Fork Ridge Wind			
Kings Point Wind			
Neosho Ridge Wind			
Customer Generated Solar			
Prosperity Solar (Community Solar)			

*Market average for 2022 voluntary, non-Green-e SRECs

SECTION (8) (A) 1 E, F: SOURCE AND NUMBER OF RECS ACQUIRED, SOLD, TRANSFERRED, RETIRED

RECS ACQUIRED:

Liberty receives renewable energy from multiple sources: ownership of Ozark Beach; ownership of Kings Point, North Fork Ridge and Neosho Ridge Wind projects; ownership of Prosperity Solar Farm; two purchased power agreements (Elk River Windfarm and Meridian Way Wind Farm); and customer-generated solar. Liberty utilizes the NARR as recommended by Staff and approved by the Commission for tracking all RECs.

Pursuant to the terms of the two 20-year windfarm agreements, Liberty purchases all of the output from the 150-megawatt Elk River Windfarm, and the 105-megawatt Meridian Way Wind Farm. In 2022, Elk River generated 307,985 MWhs and Meridian Way generated 199,398 MWhs. (See ATTACHMENT 2)

RECS SOLD/TRANSFERRED:

During 2022, 39,879 RECs from Meridian Way were sold through a purchased power agreement with Missouri Joint Municipal Electric Utility Commission and on the open market. Liberty was able to register and certify the new wind resources in 2022 and sold 468,918 RECs from Kings Point Wind, 417,707 from Neosho Ridge Wind, and 465,679 from North Fork Ridge. (See ATTACHMENT 3). These RECs were sold and transferred in the NARR.

RECS RETIRED:

During 2022, 56,589 2022 RECs from hydroelectric generation at Ozark Beach were retired to help fulfill the non-solar Missouri compliance obligation. In addition, 507,597 vintage 2021 and 2022 RECs from generation at the Elk River Windfarm, Meridian Way Wind Farm, Kings Point Wind, and North Fork Wind were retired for the non-solar RES obligation for 2022. Generation from Liberty owned wind resources was required for end-of-year compliance retirement.

In March of 2023, 11,825.6 vintage 2022 RECs from Ozark Beach, 28,575 from Kings Point Wind, and 13,340 from North Fork Wind were retired to complete the 2022 Missouri compliance obligation. RECs generated from Ozark Beach, Kings Point Wind and North Fork Wind are entitled to the 1.25 multiplying factor as they represent Missouri based generation.

In addition, 44,198 SRECs generated from Liberty customers (Liberty Solar Aggregate Assets 1 – 44) in 2021 were utilized and were retired in December of 2022. Any remaining SRECs will be banked for future use. SRECs from customer installed net metered systems are entitled to the 1.25 compliance multiplying factor as they represent Missouri based generation.

In total, 592,761 RECs and 44,198 SRECs were retired to fulfill the 2022 Missouri compliance obligation. (See ATTACHMENT 4). Prosperity Community Solar Project retired 3,199.84 SRECs generated in 2022 on behalf of subscribing customers.

Table 4: Total 2022 RECs Sold, Carried Forward or Used for Compliance

<u>Facility</u>	<u>2022 Generation (MWh)</u>	<u>RECS Sold in 2022</u>	<u>RECS Carried Forward</u>	<u>RECs retired in 2022 for Compliance</u>	<u>RECs retired in 2023 for 2022 Compliance</u>
Elk River	307,985	0	74,006	279,486	0
Meridian Way	199,398	39,879	37,760	136,475	0
Ozark Beach	56,535	0	0	44,763	11,826
North Fork Ridge	270,192	465,679	0	49,721	13,340
Kings Point	299,176	310,011	2,381	28,575	28,575
Neosho Ridge	299,485	417,707	20,000	0	0
EDE Solar Aggregates 1-44	65,386	0	21,188	44,198	0
Prosperity Community Solar (Not for MoRES Compliance)	3,200	0	0	0	0
Total	1,501,357	1,233,276	134,147	586,418	53,741

*North Fork Ridge and Neosho Ridge sales include some generation from 2021.

**Prosperity Solar retirement is not associated with the MORES Standard.

SECTION (8) (A) 1 G: IDENTIFICATION OF RECS CARRIED FORWARD

RECS CARRIED FORWARD:

RECs and SRECs generated by renewable energy resources were carried forward at the end of 2022 as indicated in Table 3. The majority of the RECs were used for compliance or sold during the first quarter of 2023. Any remaining RECs or SRECs will be held for future compliance or sale benefitting customers through the fuel adjustment clause. (See ATTACHMENT 5)

SECTION (8) (A) 1 H: GAINS AND LOSSES FROM SALE OR PURCHASE

The sale of excess REC's not needed for compliance of any sort of renewable energy standards, will attempt to be monetized through sales to third parties and the revenue received from any sales of excess REC's will be distributed back to retail customers through the appropriate tracker mechanisms for each jurisdiction. The revenue generated from REC's will be distributed back to customers for generation and REC creation after the associated investments are reflected in actual rates.

ATTACHMENTS 1 and 3 include the amount of wind generation allocated for Missouri retail

customers by each wind farm and the REC report indicating sales of 2022 Kings Point Wind, Meridian Way, Neosho Ridge Wind, and North Fork Ridge Wind RECs. Any gains from sale or purchase were returned to the customers through the fuel adjustment.

SECTION (8) (A) 1 I: ACQUISITION OF RENEWABLE ENERGY

Non-Solar renewable energy is purchased for Liberty from the following non-utility owned facilities:

Elk River Wind (Resource)
Avangrid Renewables (Owner) 14980 SE 190th Rd.
Latham, KS 67072

Meridian Way I (Cloud County) Wind (Resource)
EDP Renewables North America LLC (Owner) 1409 Iron Road
Concordia, KS 66901

All energy was derived from eligible renewable energy technology (wind, hydro and solar).

SECTION (8) (A) 1 J: ACQUISITION OF ELECTRICAL ENERGY AND/OR RECS FROM CUSTOMER GENERATORS

ATTACHMENT 7 shows the system operational dates and estimated amounts of SRECs generated from customer generators using the Commission–approved estimation method, PVWatts. The SRECS were acquired by Liberty as a condition of receiving the solar rebate instituted in May of 2015 and extending through 2022.

SECTION (8) (A) 1 K: CUSTOMERS RECEIVING SOLAR REBATE

For the calendar year 2022, the annual number of customers that applied and received a solar rebate in accordance with section (4) of the Rule was a total of 697 Missouri solar net metering customers.

SECTION (8) (A) 1 L: CUSTOMERS DENIED SOLAR REBATE

Liberty makes every effort to award the solar rebate to every applicant. Applications have been delayed due to failure to comply or submit to the requirements of the rebate, but no applications have been denied.

SECTION (8) (A) 1 M: FUNDS EXPENDED BY LIBERTY FOR SOLAR REBATES

Annual funds expended by Liberty for 2022 solar rebates totaled \$2,158,333.70. Since the

beginning of the rebate program over \$22 million has been expended for solar rebates.

SECTION (8) (A) 1 N: ANNUAL COMPLIANCE WITH RES COMPLIANCE PLAN

See Affidavit of Compliance with 2022 Compliance Plan, ATTACHMENT 8.

SECTION (8) (A) 1 O: NON-COMPLIANCE WITH RES COMPLIANCE PLAN

Liberty has made every effort to comply and believes it has achieved compliance with the Missouri RES Compliance Plan for the 2022 compliance period.

SECTION (8) (A) 1 P: CALCULATION OF ACTUAL CALENDAR YEAR RETAIL RATE IMPACT

See ATTACHMENT 9. The calculations in ATTACHMENT 9 are based on total company not Missouri jurisdictional.

The 2022 retail rate impact is 0.3% calculated using the total 2021 compliance cost of \$1,154,213 and the 2022 revenue requirement of \$724,060,740¹. Costs incurred for 2022 compliance totaled \$48,096.61 for the registration, retirement, and associated costs of REC and SREC management and reporting. The total rebates paid to our customers for customer generated solar in 2022 totaled \$2,158,333.70. The total compliance cost for 2022 was \$2,206,430.31.

The retail rate impact (RRI) shall be calculated pursuant to Missouri statute and regulation and shall be calculated annually on an incremental basis for each planning year based on procurement or development of renewable energy resources averaged over the succeeding ten-year period. The modeling indicates this amount may be exceeded with the addition of the new renewable energy resources to fulfill the Customer Savings Plan, which were not specifically constructed for RES compliance. The table below indicates adequate generation to meet the total RES Requirement using North Fork Ridge Wind, Kings Point Wind and Neosho Ridge Wind, Elk River, Meridian Way and Ozark Beach, when the generation from customer-generated solar is also considered.

¹ This number is the Company's Surrebuttal Position in docket ER-2021-0312 which was ultimately resolved by a black box revenue requirement settlement agreement.

Table 5: Projected Non-Solar Compliance

Time Period	RES Requirement Percent	Mo Retail Sales (MWh)	Non-Solar Resources ¹							Total Non-Solar Requirement	Total RES Requirements
			Elk River	Meridian Way	Ozark Beach	North Fork Ridge Wind	Kings Point Wind	Neosho Ridge Wind	Total Potential ²		
2022	15%	4,308,795	282,000	277,000	67,500	718,750	750,000	1,325,000	3,420,250	633,393	646,319
2023	15%	4,338,622	282,000	277,000	67,500	718,750	750,000	1,325,000	3,420,250	637,777	650,793
2024	15%	4,365,882	282,000	277,000	67,500	718,750	750,000	1,325,000	3,420,250	641,785	654,882