

LIBERTY UTILITIES
EMPIRE DISTRICT ELECTRIC COMPANY

2020

ANNUAL RENEWABLE ENERGY STANDARD
COMPLIANCE REPORT

Prepared in Compliance with 20 CSR 4240-20.100

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****Indicates Highly Confidential****

Indicates Confidential



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2020 ANNUAL RENEWABLE ENERGY STANDARD COMPLIANCE REPORT

INTRODUCTION

Pursuant to the Missouri Public Service Commission's (Commission) renewable energy standards rule, 20 CSR 4240-20.100(8), The Empire District Electric Company (EDE or Empire), a Kansas corporation, is filing the Annual Renewable Energy Standard (RES) Compliance Report. The rule became effective in September 2010, and pursuant to the rule EDE must file the 2020 RES Compliance Report on or before April 15, 2021.

EDE 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, EDE 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, EDE 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. The RES rules allow for the banking of Renewable Energy Credits (REC) for up to a three-year time period. In the past, this has allowed the use of

eligible Ozark Beach and Elk River Windfarm RECs generated in earlier years. In 2020, RECs generated in 2019 and 2020 were used for the RES requirement.

Effective May 16, 2015, Empire began offering rebates for Missouri customers for qualifying solar installations in accordance with the Missouri RES and Empire's Solar Rebate Rider approved by the Commission, which continued in 2020.

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 generating RECs in December of 2020. In addition to this project, the 300-MW Neosho Ridge Wind project (located in Kansas), and the 149-MW Kings Point Wind project (located in Missouri) will reach commercial operation in 2021. Empire will also complete the addition of the 2.2-MW Prosperity Solar Farm in 2021.

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 2020 by EDE 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 2020 Total Retail Sales

Year	MWh	Revenue
2020	3,975,902	\$453,846,321

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 2020 and the MWhs that were supplied.

Table 2: Total 2020 Retail Electric Sales supplied by Renewable Energy

Facility	Generation (MWh)	Percentage	Energy Supplied to MO Retail Customers (MWH)
Elk River	349,453	88.5%	309,266
Cloud County Meridian Way	251,115	88.5%	222,237
Ozark Beach	29,297	88.5%	25,928
TOTAL			557,431

SECTION (8) (A) 1 D: CURRENT NUMBER AND VALUE OF RECS CREATED BY EDE OWNED FACILITY.

In 2020, EDE-owned Ozark Beach generated energy which allowed for the creation of 29,297 RECs. Using the provision of the Missouri RES allowing for additional credit of 0.25, the resultant RECs available for compliance totaled 36,621 RECs (29,297 x 1.25). The RECs generated from the EDE-owned source are utilized first to meet compliance as additional costs are not incurred to the rate payer in order to acquire RECs. The value of the energy generated by Ozark Beach for calendar year 2020 was \$* */MWh as determined by the locational marginal pricing through the Southwest Power Pool (SPP).

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

EDE receives renewable energy from four sources: ownership of Ozark Beach; two purchased power agreements (one with the Elk River Windfarm and the other with the Cloud County Meridian Way Wind Farm); and customer-generated solar. (See ATTACHMENT 1)

Pursuant to the terms of the two 20-year windfarm agreements, EDE purchases all of the output from the 150-megawatt Elk River Windfarm, and 105-megawatts from the Cloud County Meridian Way Wind Farm. EDE anticipates annual generation of approximately 378,000 MWhs from Elk River and approximately 292,000 MWhs from Meridian Way. In 2020, actual generation was lower than these amounts due to economic curtailment.

During 2020, 10,771 vintage 2020 RECs from hydroelectric generation at Ozark Beach were retired to help fulfill the non-solar Missouri compliance obligation. In addition, 353,483 vintage 2019 and 2020 RECs from generation at the Elk River Windfarm were retired for the non-solar RES obligation for 2020.

To meet the compliance obligation, 34,042 SRECs generated from EDE customers in 2019 were utilized. In total, 24,271 SRECs were retired in December of 2020. In April of 2021, 9771 SRECs were retired to complete the Missouri compliance obligation. Any remaining SRECs will be banked for future use. RECs from Ozark Beach and SRECs from

customer installed net metered systems are entitled to the 1.25 multiplying factor as they represent Missouri based generation.

The value of the customer generated solar energy was \$51.70/SREC. This value is determined using the rebate amount of \$21,009,846 paid in solar rebates divided by 40,638 (the amount of SRECs received). The rebate entitles EDE to receive SRECs from these systems for 10 years.

EDE utilizes the North American Renewable Registry (NARR) as recommended by Staff and approved by the Commission for tracking all RECs. In total, 364,254 RECs and 34,042 SRECs were retired to fulfill the 2020 Missouri compliance obligation. (See ATTACHMENT 2). In 2020 a total of 170,662 Meridian Way 2019 and 2020 wind RECs were sold. (See ATTACHMENT 4). A portion of the Elk River RECs (25,547) were retired for compliance with the Kansas voluntary RES.

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

As indicated earlier, RECs and SRECs generated by Ozark Beach, Elk River Windfarm, and EDE Solar Aggregates 1 through 35 which were used for compliance are registered with the NARR. Registration of additional EDE Solar Aggregates 36-39 has been approved by the NARR for 2020. ATTACHMENT 3 included with this report indicates by source and serial number RECs registered with the NARR that have been carried forward for future use. Carried forward are additional 2020 Elk River RECs totaling 73,325, and 2020 Ozark Beach RECs totaling 18,526. The majority of the remaining RECs are sold after all compliance obligations are met or held for future compliance. A portion of the Elk River RECs (25,547) were retired for compliance with the Kansas voluntary RES. Customer-generated solar SRECS totaling 40,638 will be carried forward for use in future compliance.

The Meridian Way Wind Farm was added to the registry in 2018. The RECs from

Meridian Way are not being used for Missouri compliance. 2020 Meridian Way RECs totaling 131,444 were carried forward and have been sold (See ATTACHMENT 4: REC REPORT). Although Meridian Way RECs are eligible for use, EDE does not anticipate utilizing RECs from the Meridian Way Wind Farm for compliance throughout the entirety of the RES compliance period specified in Section 393.1030, RSMo.

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

EDE utilized wind RECs from the Elk River Windfarm purchased power agreement in order to comply with the Missouri non-solar RES. SRECs from customer generation were utilized in order to comply with the solar portion of the Missouri RES.

ATTACHMENTS 4 and 5 include a REC report indicating sales of 170,662 Meridian Way (2019 and 2020) RECs, and the amount of wind generation allocated for Missouri retail customers by each wind farm. 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 EDE 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). ATTACHMENT 6 includes information to certify that the renewable energy attributes of the energy from Elk River Windfarm and the Cloud County Meridian Way Wind Farm, have not been used to meet the requirements of any other local or state mandate.

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 EDE as a condition of receiving the solar rebate instituted in May of 2015 and extending through 2020.

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

For the calendar year 2020, the annual number of customers that applied and received a solar rebate by December 31, 2020 in accordance with section (4) of the Rule was 351. A total of 2,938 Missouri solar net metering customers have been connected to the Empire system as of that date.

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

EDE 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 EDE FOR SOLAR REBATES

Annual funds expended by EDE for 2020 solar rebates totaled \$1,145,488. Since the beginning of the rebate program over \$21 million has been expended for solar rebates.

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

See Affidavit of Compliance with 2020 Compliance Plan, ATTACHMENT 8.

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

EDE has made every effort to comply and believes it has achieved compliance with the Missouri RES Compliance Plan for the 2020 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 2020 retail rate impact is 0.26% calculated using the total 2020 compliance cost of \$1,172,920 and the 2020 revenue requirement of \$453,846,321. Costs incurred for 2020 compliance totaled \$27,432 for the registration, retirement, and associated costs of REC and SREC management and reporting. Solar costs incurred for 2020 solar rebates paid totaled \$1,145,488. The total compliance cost for 2020 was \$1,172,920.