

THE EMPIRE DISTRICT ELECTRIC COMPANY

2019 ANNUAL RENEWABLE ENERGY STANDARD COMPLIANCE PLAN

Prepared in Compliance with 4 CSR 240-20.100

April 2019



Table of Contents

INTRODUCTION	3
SECTION (8) (B) 1 A: PLANNED RES COMPLIANCE	4
SECTION (8) (B) 1 B: LIST OF EXECUTED CONTRACTS	6
SECTION (8) (B) 1 C: PROJECTED TOTAL RETAIL SALES	7
SECTION (8) (B) 1 D: COMPARISON TO PREFERRED RESOURCE PLAN.....	8
SECTION (8) (B) 1 E: RES COMPLIANCE PLAN COST	8
SECTION (8) (B) 1 F: RES RETAIL RATE IMPACT.....	8
SECTION (8) (B) 1 G: COMPLIANCE WITH AIR, WATER, OR LAND USE REQUIREMENTS	9

ATTACHMENT 1: WIND GENERATION ALLOCATION FOR MO RETAIL CUSTOMERS

ATTACHMENT 2: REC REPORT

ATTACHMENT 3: RETAIL RATE CALCULATIONS (SUPPLEMENT WILL BE FILED AT A
LATER DATE)

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INTRODUCTION

Pursuant to the Missouri Public Service Commission's (Commission) renewable energy standards rule, 4 CSR 240-20.100(8), The Empire District Electric Company (EDE or Empire), a Kansas corporation, is filing the Annual Renewable Energy Standard (RES) Compliance Plan. The rule became effective in September 2010, and pursuant to the rule EDE must file the RES Compliance Plan on or before April 15, 2019 for the current year and subsequent two calendar years.

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) to purchase all of the energy generated at the 150-megawatt (MW) 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 MW 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. Through purchased power agreements or owned generation, EDE's wind and hydro renewable energy resources have provided adequate renewable energy to comply with the RES in the past and for the future.

The solar component of the RES requires compliance which can only be met with Solar Renewable Energy Credits (SRECs) or energy from solar generation resources. EDE will meet

the solar RES compliance obligation through customer-generated SRECs. 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. This requirement will continue to be in place for future compliance obligations.

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

SECTION (8) (B) 1 A: PLANNED RES COMPLIANCE

Non-solar Compliance

4 CSR 240-20 provides the procedure by which utilities must meet statutory obligations for renewable energy. Missouri law required that by 2011, electric companies must either generate, purchase energy, or purchase renewable energy credits (RECs) equal to at least 2 percent of the electricity they sell to retail customers from renewable sources. That percentage increased to 5 percent in 2014, 10 percent by 2018, and 15 percent by 2021. The regulation also requires the utilization of a commission designated third-party registry for REC accounting, and the North American Renewable Registry (NARR) is utilized for tracking EDE retirements for Missouri compliance.

This year and in the subsequent two years, EDE plans to comply with the non-solar portion of the RES through contracts with Elk River Windfarm, LLC and/or generation from its Ozark Beach Hydroelectric facility. In fact, EDE currently could meet the 2021 requirement through its renewable energy purchase power agreements and owned generation if it chose not to sell any RECs generated from these facilities. EDE is currently evaluating the feasibility of constructing and operating utility scale wind generation.

EDE owns the Ozark Beach Hydroelectric Project (Ozark Beach) which generates approximately 54,000 megawatt-hours (MWh) each year. Since the facility is located in

Missouri, EDE is allowed to claim the amount of MWhs generated plus an additional twenty-five hundredths (0.25) credits, as authorized by subsection (3)(G) of this rule. Consequently, Ozark Beach generation counts as one and twenty-five hundredths (1.25) RECs for purposes of compliance with this rule as allowed by 4 CSR 240-20.100 (3) (G).

The table below represents EDE’s expected Missouri retail sales and the non-solar percentage requirements of Missouri retail electric sales that must be achieved by EDE either through the purchase of RECs or the production of energy, and the total expected potential of qualifying RECs that could be used for compliance. EDE expects to sell all or a portion of its remaining RECs after all current or future state and/or federal mandates have been met.

Table 1: Projected Non Solar Compliance

Time Period	RES Requirement Percent	Mo Retail Sales (MWh)	Non Solar Resources				Total Non-Solar Requirement	Total RES Requirement ³
			Elk River ¹	Meridian Way ¹	Ozark Beach ¹	Total Potential ²		
2019	10%	4,192,914	530,000	330,000	67,500	927,500	410,906	419,291
2020	10%	4,236,972	530,000	330,000	67,500	927,500	415,223	423,697
2021	15%	4,256,191	530,000	330,000	67,500	927,500	625,660	638,429

¹Expected average operation; Ozark Beach number includes additional 0.25 credit

²Total expected eligible RECs not including potential 3rd party sales or other RES requirements.

³ Both Non solar and Solar will make up the total RES requirement

Solar Compliance

EDE filed a tariff to establish solar rebate payment procedures and to revise its net metering tariffs to accommodate the payment of solar rebates which became effective on May 16, 2015. Under the terms of the tariff, EDE buys SRECs from its electric customers who

installed or are installing net metered solar facilities at their homes and/or businesses according to the solar rebate tariff and net metering requirements.

For 2019 compliance, EDE expects to obtain SRECs transferred from qualified customer-generator’s operational solar electric systems as a condition of receiving the solar rebate. SRECs produced from these solar electric systems will be transferred to EDE for a period of 10 years. Generation from these customer-owned facilities would be eligible for application of the 1.25 factor as these facilities are located in Missouri.

In the future, (2019-2021) Empire will use customer-generated SRECs or banked SRECs. EDE will also evaluate and monitor the feasibility and economics of constructing and operating utility scale solar generation.

Table 2: Projected Solar Compliance

Time Period	RES Requirement Solar %	MO Retail Sales (MWh)	Solar RES Requirement	Customer Generated Solar ¹
2019	0.2%	4,192,914	8,386	23,483
2020	0.2%	4,236,972	8,474	23,483
2021	0.3%	4,256,191	12,769	23,483

¹Future Projections based on 2018 Total MO PV online.

SECTION (8) (B) 1 B: LIST OF EXECUTED CONTRACTS

EDE’s executed renewable energy contracts include a 20-year contract with Elk River Windfarm, LLC to purchase all of the energy generated at the 150 MW Elk River Windfarm located in Butler County, Kansas. In addition, EDE entered into a 20-year purchased power agreement with Cloud County Wind Farm. Pursuant to the terms of that agreement, EDE will purchase all of the output from the 105 MW Phase 1 Meridian Way Wind Farm located in Cloud

County, Kansas. Empire anticipates generation of approximately 530,000 MWhs for Elk River and approximately 330,000 MWhs for Meridian Way.

The effective date of the Elk River agreement was December 10, 2004 and the effective date of the Meridian Way agreement was on June 19, 2007. Unless otherwise terminated in accordance with contract stipulations each of those agreements will remain in full force for a term ending at midnight local time on the 20th anniversary of each facility’s respective completion date. ATTACHMENT 1 indicates the wind generation allocation for Missouri retail customers. Additional information on the wind energy purchases and sales can be found in ATTACHMENT 2.

In 2018, Empire executed payment for 572 additional solar customer generated rebates. Empire expects to annually execute payment for customer generated rebates during the 2019-2021 timeframe.

SECTION (8) (B) 1 C: PROJECTED TOTAL RETAIL SALES

The following table represents EDE’s projected Missouri retail sales for each year of the Annual Compliance Plan period. These MWhs are the sales numbers that each non-solar and solar requirement is multiplied by in order to calculate EDE’s RES requirements.

Table 3: EDE Projected Retail Sales and RES Requirements*

Time Period	Projected Retail Electric Sales (MWh)	Non-solar Requirement (MWh)	Solar Requirement (MWh)
2019	4,192,914	410,906	8,386
2020	4,236,972	415,223	8,474
2021	4,256,191	625,660	12,769

**Source: 2019-2024 Revenue Budget*

SECTION (8) (B) 1 D: COMPARISON TO PREFERRED RESOURCE PLAN

EDE will fully meet the RES compliance requirements for 2019, 2020 and 2021 with its current purchased power contracts, hydroelectric facility, and customer-generated solar energy. Therefore, there is no difference between the RES Compliance Plan and the 2016 filing of the Integrated Resource Plan (IRP). EDE continues to include a section in the 2019 IRP which discusses the impact potential or proposed changes to Renewable Energy Standards would have on EDE. Regardless of the outcome of proposed changes, in the future, EDE will continue to retain a sufficient amount of RECs and SRECs to meet any current or future RES.

SECTION (8) (B) 1 E: RES COMPLIANCE PLAN COST

EDE currently meets the Missouri non-solar RES compliance requirements on a total percentage basis with hydro and wind resources for the plan period. Analysis of the IRP indicates the use of energy provided by EDE-owned hydro generation and long-term wind purchased power agreements is the least cost, most prudent methodology to achieve compliance with the RES.

To comply with the solar-specific compliance, the purchase of SRECs through an industry broker is currently the least expensive alternative. However, EDE expects to utilize SRECs transferred from qualified customer-generator's systems for the compliance obligation.

SECTION (8) (B) 1 F: RES RETAIL RATE IMPACT

SECTION (8) (B) 1 G: COMPLIANCE WITH AIR, WATER, OR LAND USE REQUIREMENTS

Pursuant to Section 393.1030.4 RSMo, any renewable energy facility located in the state of Missouri shall not cause undue adverse air, water or land use impacts.

All generating facilities utilized by EDE to meet the requirements of the Missouri RES have, to EDE's knowledge, received all necessary environmental and operational permits and are in compliance with any necessary federal, state and/or local requirements related to air, water and land use. All generating facilities have received Certification as a Renewable Energy Generation Facility by the Missouri Department of Economic Development, Division of Energy.