

**Ameren Missouri**

**Renewable Energy Standard  
Compliance Plan  
2024-2026**

**Prepared in Compliance with 20 CSR 4240-20.100**

**April 15, 2024**



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## Introduction

The Missouri Renewable Energy Standard (RES) began as a public initiative and was placed on the Missouri ballot during the November 4, 2008 election. Labeled as Proposition C, it required Ameren Missouri to acquire renewable energy resources as a percentage of total retail sales.

As part of the statute and rulemaking, Section (8) (A) required investor-owned utilities to file a report demonstrating how compliance was met in the previous calendar year, and Section (8) (B) requires investor-owned utilities to file a plan that covers their intended compliance measures for the current year plus the following 2 years.

Compliance with RES can be achieved using RECs from qualified renewable generation resources (wind, hydro, biomass, solar etc.) certified by the Missouri Department of Natural Resources (MoDNR). The MoDNR Division of Energy is responsible for providing renewable certification. The RES requires a percentage of RECs come from designated solar resources or (S-RECs).

The RES allows for two methods to achieve compliance. The first is based on providing enough RECs to meet the requirement, and the other is related to the 1% rate cap calculation. A utility will be in compliance with the RES if the cost of compliance is equal to or greater than the 1% rate cap calculation. Thus, a utility could fall short of meeting the RECs requirement, but if the 1% calculation is met, then the utility is in full compliance.

The following table details the renewables percentage requirements of retail electric sales for the non-solar and solar RES:

<u>Time Period</u>	<u>Total Renewable Requirement</u>	<u>Solar*</u>
2011-2013	2%	2%
2014-2017	5%	2%
2018-2020	10%	2%
2021-forward	15%	2%

\*Solar percentages are applied to the Total Renewable Requirement RES amounts

As referenced above, the MoDNR is responsible for certifying all eligible renewable resources that can be utilized to meet the RES requirement. MoDNR rule 10 CSR 140-8.010 (2), contains the list of renewable resources eligible to achieve RES compliance.

Ameren Missouri's compliance with the RES, as demonstrated in this report, adheres to the use of only those renewable resources as currently defined by the above referenced rule.

In addition, the RES rules allow for the banking of RECs for up to a three-year time period. This will allow for the use of eligible RECs generated from January 1, 2020 to the end of 2023 in meeting the RES requirements for calendar year 2023. Any generation and/or

RECs from a Missouri renewable resource are entitled to a factor of 1.25 applied to each MWh or REC.

The following information in this report demonstrates the specific means by which Ameren Missouri intends to meet its obligations under both the non-solar and solar RES for the calendar years 2024-2026.

## **Section (8) (B) 1 A: Planned Actions to Comply**

### **Non-Solar RES**

Ameren Missouri currently operates or has contracted for generation with the following eligible renewable resources:

- Keokuk Hydro-Electric Generation Station
- Horizon (EDPR) Pioneer Prairie I Wind Farm
- Maryland Heights Renewable Energy Center (Landfill Gas)
- High Prairie Renewable Energy Center (Wind)
- Atchison County Renewable Energy Center (Wind)

The Ameren Missouri Keokuk Hydro-Electric Generation Station is located on the Mississippi River in Keokuk, Iowa. The station consists of 15 separate generators. The individual nameplate ratings range from 7.2 to 8.8 megawatts (MWs). This generation facility is wholly owned by Ameren Missouri and has been operational since 1913. Due to fluctuations in river flows, generation can range from approximately 738,833 to 1,017,277 MWh annually.

In June 2009, Ameren Missouri and Pioneer Prairie Wind Farm I LLC entered into a 15-year power purchase agreement. Ameren Missouri is purchasing 102.3 MWs of generation from the Pioneer Prairie Wind Farm consisting of 65 turbines located in Northeast Iowa. The facility site covers approximately 10,000 acres of land located in Mitchell County, Iowa in Wayne and Stacyville Townships. Over the last five years, the facility has produced 256,824 MWhs on average annually. The Pioneer Prairie power purchase agreement will expire on August 31, 2024.

On June 16, 2012, the Maryland Heights Renewable Energy Center (MHREC) became commercially operational. This facility burns methane gas produced by the IESI Landfill in Maryland Heights, Missouri in three Solar 4.9 MW Mercury 50 gas turbines to produce electricity. In recent years, the generation has ranged from 34,495 to 67,284 MWh annually. In accordance with RSMo 393.1030, a factor of 1.25 is applied to the in-state generation from this facility such that the expected generation counts as 43,119 to 84,105 MWh towards the compliance requirements.

On December 23, 2020, the 400 MW High Prairie Renewable Energy Center (HPRC) became commercially operational. This wind farm is in Adair and Schuyler counties, Missouri and consists of 175 wind turbines covering about 50,000 acres. The estimated generational output is approximately 945,033 MWh to 1,351,200 MWh annually, weather dependent. In accordance with RSMo 393.1030, a factor of 1.25 is applied to the in-state generation from this facility such that the expected generation counts as 1,181,291 to 1,689,000 MWh towards the compliance requirements.

On March 2, 2021, the Atchison County Renewable Energy Center (AREC) became operational at a reduced capacity of 120.0 MW and by December 22, 2021 reached its full operational capacity of 298.6 MW. This wind farm is located in Atchison County Missouri and consists of 91 turbines covering about 30,000 acres. The estimated generational output is approximately 866,400 MWh to 1,099,600 MWh annually, weather dependent. In accordance with RSMo 393.1030, a factor of 1.25 is applied to the in-state generation from this facility such that the expected generation counts as 1,083,000 to 1,374,500 MWh towards the compliance requirements.

### **Solar RES**

In late 2010, Ameren Missouri completed the installation of approximately 100 kilowatts (kW) of solar generation capacity at its headquarters facility located in St. Louis. Generation from this facility will be utilized to help meet the solar requirements of the RES.

In addition, Ameren Missouri filed a Standard Offer Contract (SOC) tariff with the PSC in November 2011. This tariff became effective on January 1, 2012. Under the terms of the tariff, Ameren Missouri bought S-RECs from its electric customers who installed or are installing net metered solar facilities (100 kW or less) at their homes and/or businesses. The price per S-REC was \$50 per S-REC and the program was funded to a total of \$2.0 million. The program was fully subscribed in 2012.

Based on the success of the program, a revised tariff was filed in November 2012 with additional funding of \$1.0 million to continue the purchase of S-RECs from customers during the 2013 calendar year. Due to various factors influencing pricing for installations, the price per S-REC was reduced to \$5 per S-REC. For systems 10 kW or larger installed prior to January 1, 2013, a five-year contract was used but an additional meter was required, and customers are paid based on actual production. For systems 10 kW or larger installed after January 1, 2013 and before August 28, 2013, the contract term was extended to 10 years. Due to the implementation of the provisions associated with House Bill 142 (HB 142), systems greater than 10 kW that are installed after August 28, 2013 no longer require a second meter and their generational output is determined in the same fashion as systems less than 10 kW, utilizing the PV Watts formula.

However, on August 28, 2013, due to the passage of HB 142, the RES law was amended. That amendment provided that if a customer accepts a solar rebate from the utility, the S-RECs transfer to the utility.

In 2018, Senate Bill 564 (SB 564) became law. One of the provisions of this law is that up to \$28 million in solar rebates be made available to customers that install solar generation on their property between 2019-2023. Ameren Missouri expects to receive the S-RECs from these customer-owned resources pursuant to the provisions of SB 564.

Ameren Missouri estimates that in 2024 approximately 200,000 S-RECs will be acquired from customers, and from 2025-2026 approximately 100,000 S-RECs per year will be acquired from customer generators. In accordance with RSMo 393.1030, a factor of 1.25 is applied to the in-state generation from these facilities such that the expected generation counts as 125,000 to 250,000 S-RECs annually towards the compliance requirements. Solar rebate costs have been included as a RES compliance cost and are accounted for in the Company's 1% calculation. The Solar Rebate 2019-2023 program ended December 31, 2023 with a total cost of approximately \$21,760,000.

In addition to solar rebate payments, SB 564 requires Ameren Missouri to invest at least \$14 million in additional utility-owned solar generation. The \$14 million will be utilized to support community-based projects through Ameren Missouri's Neighborhood Solar Program. On July 21, 2021 the South St. Louis Renewable Energy Center (REC) became commercially operational – the first solar facility supported by the Neighborhood Solar Program. On July 20, 2022, the Cape Girardeau Renewable Energy Center (REC) became commercially operational. On July April 18, 2023 the Fee Fee Renewable Energy Center (REC) became commercially operational. On April 28, 2023, the North Metro Renewable Energy Center (REC) became commercially operational. On July 28, 2023, the Delmar Renewable Energy Center (REC) became commercially operational. On September 7, 2023, the House Springs Renewable Energy Center (REC) became commercially operational – the final solar facility supported by the Neighborhood Solar Program. The estimated combined generational output is approximately 3,984 kWh annually, weather dependent. In accordance with RSMo 393.1030, a factor of 1.25 is applied to the in-state generation from these facilities such that the expected generation counts as 4,980 MWh towards the compliance requirements.

Ameren Missouri completed construction on its first utility-scale solar generation project, the O'Fallon Renewable Energy Center (OREC) in November 2014. This 5.7 MW (DC) facility is located at the site of the Ameren Missouri O'Fallon substation in O'Fallon, Missouri. The expected annual output for 2024-2026 is approximately 5,597 MWh based on the last five years of historical performance data. In accordance with RSMo 393.1030, a factor of 1.25 is applied to the in-state generation from this facility such that the generation counts as 6,997 MWh towards the compliance requirements.

On September 16, 2019, the BJC Solar Facility became commercially operational. This facility is 1.8 MW (DC) PV project located on the top of an existing parking garage at Barnes Jewish Hospital in St. Louis, MO. The total generational output of this facility during CY 2023 was 1,403 MWh and is assumed to remain at a similar level for years 2024-2026. In accordance with RSMo 393.1030, a factor of 1.25 is applied to the in-state generation from this facility such that the expected generation counts as 1,754 MWh towards the compliance requirements.

## Planned Actions

For the 2024-2026 compliance years, Ameren Missouri will continue to utilize the generational output from the Keokuk, MHREC, Pioneer Prairie, HPREC, and AREC facilities to meet non-solar RES compliance. Ameren Missouri will continue to place RECs associated with the actual generation from these facilities into the North American Renewable Registry (NAR) account.

For the 2024-2026 compliance years, Ameren Missouri will continue to use the generational output from OREC, BJC Solar, Neighborhood Solar facilities, and the S-RECs received from Ameren Missouri customer generators to meet solar RES compliance. Ameren Missouri will continue to place RECs associated with the actual generation from these facilities into the NAR account. In addition, on February 8, 2023, Ameren Missouri was issued a certificate of convenience and necessity to construct and own the Huck Finn Solar Project, a 200 MW solar resource located in Audrain and Ralls County, MO. The Huck Finn Solar Project will be utilized to meet RES compliance as soon as the facility comes online, which is expected in late 2024. The estimated generational output for Huck Finn Solar is approximately 411,979 MWh to 466,207 MWh annually, weather dependent. In accordance with RSMo 393.1030, a factor of 1.25 is applied to the in-state generation from this facility such that the expected generation counts as 514,974 to 582,759 MWh towards the compliance requirements.

Existing solar resources are expected to be sufficient to fulfill the solar RES requirement in each year from 2024-2026. Excess S-RECs can then be utilized to meet non-solar compliance in each period. However, even after the addition of Huck Finn Solar a shortfall in non-solar compliance is expected in all years (2023-2025). As noted above, the annual renewable generation for solar, wind, and hydroelectric resources is subject to significant year over year variation based on weather. To account for this variation, Ameren Missouri assesses multiple production levels for RES compliance facilities by modeling expected renewable generation output at higher probability of exceedance levels, to ensure compliance will be met on an annual basis.<sup>1</sup> To that end, Tables 2-4 reflect estimated generational output at approximately a P-90 production level for Ameren Missouri's largest compliance assets: High Prairie REC, Atchison REC, Keokuk, and Huck Finn Solar.

Actual retail load can also fluctuate annually, potentially causing a higher or lower required compliance level than forecasted. Ameren Missouri will continue to utilize spot market REC purchases in the short term (2024-2026) to meet compliance and will add the Huck Finn Solar Project to its generation portfolio in late 2024. In the attached model, *10 yr MO Compliance Model 2024\_33*, Huck Finn Solar is modeled to come on-line January 1, 2025, and helps offset the loss of the Pioneer Prairie I Wind power purchase agreement which expires in 2024. To manage the projected shortfall beyond the addition of Huck Finn Solar,

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<sup>1</sup> Probability of exceedance levels ("p-levels") refer to the likelihood that the output of the resource will be above a specified level of MWh in any given year. A P-75 value indicates that in 75% of performance years, the output is expected to be above a specified level. Likewise, a P-90 value indicates that in 90% of performance years, resource output will be above the specified value. Therefore, an increase in the exceedance probability decreases the expected output.



Ameren Missouri anticipates utilizing the available RECs from the recently approved Vandalia, Bowling Green, and Split Rail non-RES/non-RSP solar projects, which have been modeled to begin producing RECs in 2026 and 2027. Ameren Missouri will continue to monitor the compliance position to determine if it is appropriate to add additional renewable resources to meet compliance over the coming years.

*Table 1. Compliance Requirements*

	<u>2024</u>	<u>2025</u>	<u>2026</u>
Projected Retail Electric Load (MWh)	30,299,723	30,188,113	30,229,394
Renewable Requirement (%)	15%	15%	15%
Non-Solar	14.7%	14.7%	14.7%
Solar	0.3%	0.3%	0.3%
RES Requirement (MWh)	4,544,958	4,528,217	4,534,409
Non-Solar	4,454,059	4,437,653	4,443,721
Solar	90,899	90,564	90,688

*\*\*Table 2. Non-Solar Compliance Resources\*\**

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*Table 3. Solar Compliance Resources*

<i>Resource Output (MWh)</i>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O'Fallon REC*	6,997	6,962	6,927
AMO Headquarters Solar*	105	104	104
BJC Solar*	1,745	1,736	1,728
Neighborhood Solar*	2,378	2,366	2,354
Huck Finn Solar*		545,418	542,691
Customer-Owned Solar*	253,309	148,839	127,460
Vandalia Solar*			142,275
Solar REC Bank Rollover*			
<b>TOTAL Solar</b>	264,533	705,425	823,538

*\*Includes 1.25 MO adjustment*

Table 4. Compliance Position Over/(Under)

	2024	2025	2026
Non-Solar	(399,603)	(915,102)	(921,171)
Solar	173,634	614,861	732,850
<b>Total Compliance Position</b> (P-90 production level)	<b>(225,969)</b>	<b>(300,242)</b>	<b>(188,321)</b>

### Section (8) (B) 1 B: List of Executed Contracts

Table 5. List of Executed Contracts, 2023-2025

Contracting Party	Resource Type	Contract Type	Contract Duration	Time Period	Expected RECs	Contract Term
Horizon Pioneer Prairie I	Wind	Energy and RECs	15 years	2024	** _____ **	Contract will expire on 8/31/2024
Various Residential & Commercial Customers <sup>2</sup>	Solar	S-REC only	10 years	2024	148,839	
				2025	127,460	
				2026	125,999	

Ameren Missouri has executed only one third-party contract (2009) associated with the purchase and delivery of renewable energy to the Ameren Missouri system that is being used to meet the non-solar RES compliance provisions. This is a 15-year power purchase agreement between Ameren Missouri and Horizon’s Pioneer Prairie Wind Farm.

Through the time period ending August 28, 2013, Ameren Missouri executed 1,965 agreements with its customers who have installed small scale solar net metered systems and have chosen to accept the terms and conditions of the Standard Offer Contract (SOC). The last remaining SOC agreements expired during 2023 and are no longer included in the 2024-2026 Plan.

### Section (8) (B) 1 C: Projected Retail Sales by Year

Please see Table 1 for Ameren Missouri's projected retail sales by year.

### Section (8) (B) 1 D: Comparison to Preferred Resource Plan

The RES Compliance Plan detailed in this report is consistent with the Change in Preferred Resource Plan filed with Integrated Resource Plan by Ameren Missouri September 26, 2023.

<sup>2</sup> All S-RECs procured from customers are entitled to the additional in-state factor of 1.25 and the figures in this table reflect the total including the 1.25 factor.

## **Section (8) (B) 1 E: RES Compliance Plan Cost**

The ability to utilize renewable resources that currently exist in rate base places Ameren Missouri and its customers in a unique position regarding compliance cost. As provided in the RES statute and rule, though the megawatt hours from these renewable resources can be utilized to meet the compliance requirements, some costs were incurred prior to the compliance requirements and are already included in the current rate base. Consequently, these particular renewable resources will have no cost applicable to RES compliance and therefore will result in no cost impact to the plan or the rate cap limitation of 1%.

The cost of the RES Compliance Plan for the 2024-2026 Compliance Plan periods is comprised of the following items:

- Cost to register RECs with the North American Renewable Registry
- Fixed, Fuel and O&M associated with the MHREC
- Fixed and O&M costs associated with the Ameren Headquarters Solar, Huck Finn Solar, OREC, HPREC, and AREC
- Purchase of RECs

### REC Registration Fees

In accordance with 20 CSR 4240-20.100 Section (3) (F), utilities are to use a commission designated common central third-party registry for REC accounting of the RES requirements. The North Ameren Renewable Registry (NAR) was selected by the Commission for this purpose. Tracking and registration fees are charged by NAR for all RECs deposited and then retired from the utilities' accounts.

## **Section (8) (B) 1 F: RES Retail Rate Impact**

The *10 Year MO RES Compliance Model 2024\_33* (provided to Staff and others as a work paper to this filing) calculates the retail rate impact, as required by 20 CSR 4240-20.100(5). The "Report" tab of the model sets forth the size and timing of the new renewable resources that would be needed in the next ten years to fully meet the unconstrained Renewable Energy Standard (RES) requirements along with the size and timing of those renewable resources that can be built while meeting the 1% retail rate impact limitation. The model includes the projection of generation, costs and benefits from existing resources including Keokuk, Maryland Heights REC, Ameren Missouri's headquarters solar, Pioneer Prairie Wind, O'Fallon REC, BJC Solar, High Prairie REC, Atchison REC, and the solar investments required by SB 564. A detailed projection of the S-REC purchases from customer-owned solar projects is shown in the "Cust Solar" tab. Additionally, many assumptions needed to develop RES compliance projections, including Ameren Missouri's projected revenue requirements (adjusted for exclusion of costs for existing renewable energy resources), market values for capacity and energy and costs for new wind and solar resources, are also included.

The “Mgmt Build” tab in the spreadsheet is where a ten-year sum of Ameren Missouri’s annual costs for compliance are summarized to provide a framework to determine the amount of renewables that can be built to meet RES compliance and yet stay within the 1% rate impact limitation. This tab summarizes annual ongoing costs, including administrative, solar rebate, REC and existing renewable generation resource costs. The tab also includes an interactive section that allows for assumed wind and solar projects in each of the ten years to determine the impact of adding additional renewable resources in the plan based on assumptions identified in the plan. This interactive section allows Ameren Missouri to input a compliance plan that shows the dollar impact to the rate impact limitation.

With this information, it is possible to develop an annual projection of the amount of wind and solar renewable energy resources that can be built to meet the planning needs of the utility and yet remain within the rate impact limits of the renewable energy standard if so needed. In addition, there is a tab labeled “Test” that provides an overall view of year-by-year targets, how they are determined and how they will be met for both the solar and non-solar REC requirements. These tabs are also repeated in the model for an unconstrained view of the amount of wind and solar generation that would be built to fully meet the RES if there were no rate cap limitations imposed. This model is used to provide a view of RES compliance and the amount of additional generation needed for both an unconstrained and constrained view of compliance.

### **Section (8) (B) 1 G: Compliance with Air, Water or Land Use Requirements**

All generating facilities utilized by Ameren Missouri to meet the requirements of the Missouri Renewable Energy Standard have been certified by the Missouri Department of Economic Development in accordance with 393.1030.4, RSMo.