BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Ameren Missouri's 2024 Integrated Resource Plan Annual Update Report.	)))	**File No. EO-2025-0123**

COMMENTS OF RENEW MISSOURI ADVOCATES ON AMEREN MISSOURI'S 2024 UPDATE

COMES NOW, Renew Missouri Advocates d/b/a Renew Missouri ("Renew Missouri") and offers the below comments in response to the 2024 Integrated Resource Plan ("IRP") Annual Update Report ("Update") and workshop ("Workshop") of Union Electric Company d/b/a Ameren Missouri (herein referred to as "Ameren Missouri" or "the Company," respectively).

The below comments were prepared by Renew Missouri Staff and reflect our organization's reactions to and opinions on the Company's most recent IRP Annual Update Report and Workshop.

All communications and inquiries regarding the below comments, and any other communications to Renew Missouri relevant to this case, should be directed to the following individuals:

James Owen
Executive Director
Renew Missouri
915 East Ash St.
Columbia, MO 65201
Tel: (417) 496-1924
james@renewmo.org

Nicole Mers
General Counsel
Renew Missouri
915 East Ash St.
Columbia, MO 65201
Tel: (314) 308-2729
nicole@renewmo.org

Renew Missouri appreciates the opportunity to share these comments and welcomes further discussion.

WHEREFORE, Renew Missouri respectfully requests that the Commission accepts these comments, and orders any further relief the Commission deems proper.

Respectfully,

/s/ Nicole Mers
Nicole Mers, Bar No. 66766
915 E Ash Street
Columbia, MO 65201
T:314-308-2729
nicole@renewmo.org

GENERAL COUNSEL FOR RENEW MISSOURI ADVOCATES

Certificate of Service

I hereby certify that copies of the foregoing have been emailed to all counsel of record this 16th day of December 2024.

/s/ Nicole Mers

Renew Missouri offers comments regarding four items, low-income solar, battery storage, expansion of the renewable solution program, and evaluation of large load additions, it would like to see included in Ameren Missouri's next IRP. Renew Missouri's comments also echo recommends it is making in its testimony in Ameren Missouri's current rate case, File No. ER-2024-0319. Renew Missouri also echoes and supports the comments filed by the Clean Grid Alliance and New Energy Economics in this docket.

LOW INCOME COMMUNITY SOLAR

Ameren Missouri does not currently have a low-income solar program, nor does the IRP update contemplate one. The current community solar ("CS") rate is above the standard rate structure and will result in a higher bill total for participants. The CS rate is significantly higher than the summer and winter rates, requiring program participants to pay at a premium. While this is accessible for renters, it is not an accessible pathway for low-income renters or owners. Solar access in Missouri is not equitable and is only available for self-generation for property owners that can afford a net metered system. For renters, the program is only accessible for those that can afford to pay the premium but are not getting an actual economic benefit for participation in the program. This type of program design is less favorable than net metering for Missourians but has still been supported by Renew Missouri in the past as another pathway for solar access. However, this is not adequately serving all Ameren Missouri customers due to the inability to benefit all customers and in essence is pricing out low-income customers from engaging with solar energy. The Company has the unilateral ability to remedy this inequity by adding a low-income community solar program to their suite of programs to allow for all customers, regardless of circumstance, to have a pathway to solar power. Community solar is only legally authorized in Missouri to be provided through utility providers. Without a legislative change, there is no alternative pathway for an equitable

community solar program offering. With the passage of the Inflation Reduction Act ("IRA") and its many authorized clean energy programs, there are multiple pathways available to Ameren Missouri to make a low-income community solar program offering achievable.

There are three IRA pathways that could provide funding assistance for the Company to use towards creating a low-income solar program offering for income-qualified customers. The first program to look at is Solar For All being administered for Missouri by the Environmental Improvement Energy Resources Authority ("EIERA"). The next pathway available is through the direct pay tax credits and to specifically look at the low-income provisions of the investment tax credit ("ITC") or production tax credit ("PTC") for solar projects. The final pathway is Department of Energy ("DOE")'s Clean Energy Connector pilot program. Of the three options, DOE's pilot would take more effort and would require broad collaboration among state agencies and the Company.

Recommendation: Renew Missouri requests the Commission to require the Company to include a discussion and evaluation of how available funding through the 1.) ITC/PTC, 2.) DOE Clean Energy Connector pilot program and 3.) Solar For All program can be used to launch an energy saving low-income community solar offering to customers prior to the expiration of Solar For All in 2029. Ameren Missouri should include discussion of feasibility, cost/benefit analysis, and implementation timelines under each scenario.

BATTERY STORAGE OPPORTUNITIES

As reported by S&P Global, Western capacity queues (i.e., CAISO, the non-ISO West, and ERCOT) are dominated by interconnection requests of hybrid systems that pair grid-scale storage with wind and/or solar. Notably, the non-ISO West and CAISO are seeing 87% and 98% of

proposed solar projects include storage, respectively.[1] By contrast, only about 23% of planned solar in the Southwest Power Pool ("SPP") includes storage (for a total capacity contribution of 12 GW) and only 23 GW of stand-alone storage is in the queue.[2] In the Midwest Independent System Operator ("MISO") region, less than 10% of solar in the queue includes storage and less than 2 GW of stand-alone storage is in the queue.[3] For its part, the Company has not included grid-scale storage as a component of its solar facilities that have been granted CCNs over the past couple of year. However, in the settlement agreement approved by the Commission in Case No. EA-2024-0237 the Company agreed to seek Commission approval to build 200 MW of battery storage by the end of 2027.[4] However, this agreement was not included in the Update, due to timing issues. However, Ameren Missouri did state its intention to deploy 800 MWs of battery storage by 2035 in its Update.[5] Renew Missouri applauds Ameren Missouri's commitment to integrating more battery storage systems but believes Ameren Missouri could further leverage existing incentives to incorporate more battery storage systems on the grid.

Grid-scale energy storage costs are generally decreasing, due to greater availability of raw materials and increased market interest. Ameren Missouri could take advantage of the ITC for energy storage, which is available in full through 2033 but steps down in 2034 and again in 2035,

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1 S&P Global. "Q1'24 Power Forecast webinar: The growing role of hybrid battery storage in the energy transition". (May 16, 2024). Accessed at: https://pages.marketintelligence.spglobal.com/Q124-Power-Forecast-Webinar-Thegrowing-role-of-hybrid-battery-storage-in-the-energy-transition-Register-May-2024.html?utm_medium=email&utm_source=marketo&utm_campaign=WLG-240516-PC-NA-EN-CBL-CIQPropower-forecast-Q1-24-1944247&utm_content=email1

[2] Id.

[3] MISO Energy. Interactive Queue. Accessed at: https://www.misoenergy.org/planning/resource-utilization/GI_Queue/gi-interactive-queue/#

[4] Case No. EA-2024-0237. In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and Certificates of Public Convenience and Necessity Authorizing it to Construct a Simple Cycle Natural Gas Generation Facility. "Order Approving Stipulation and Agreement and Granting CCN". (October 30, 2024).

[5] See Case No. EO-2025-0123, "2024 IRP Update", p. 1.

expiring thereafter.[6] In the fourth quarter of 2023, lithium carbonate spot prices were at their lowest in two years and were forecast to correlate with decreased prices for lithium-ion storage systems going forward, a key market trend given that lithium-ion based batteries are common candidates for storage systems.[7] The U.S. Energy Information Administration predicts, furthermore, that grid-scale energy storage deployment will double by 2026, which could lower prices further.[8] In order for the Companies to develop least-cost energy storage resources, Ameren Missouri should seek the full ITC for energy storage, a plan which hinges on three factors: when the grid-scale energy storage facilities are placed in service, where the facilities are located, and whether the projects meet prevailing wage and apprenticeship criteria. As with the ITC for other clean energy resources [see Section III(d)], the ITC for energy storage can be stacked with up to ten percent in additional tax credits each for projects located in "energy communities" as well as for projects paired with eligible wind or solar facilities and located in low-income communities, and that are less than 5 MW total capacity. Further, it will apply to projects greater than 1 MW that meet domestic content requirements.[9] Renew Missouri encourages the Company to creatively site and size energy storage facilities to obtain the maximum ITC bonus and adders available. Importantly, storage projects

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[6] 2022 Inflation Reduction Act. Section 48 created an ITC for standalone energy storage projects that begin construction by January 1, 2025. The base rate of the ITC is 6% and the bonus rate of the ITC is 30% (if certain prevailing wage and domestic content criteria are met). The IRA also established the new section 48E ITC, which applies to energy storage projects placed in service after December 1, 2024. Section 48E follows the same base/bonus rate structure as Section 48. The maximum bonus will drop to a credit of 22.5% in 2034 and to a credit of only 15% in 2035. Projects will only qualify for the bonus rate if (a) the prevailing wage and apprenticeship criteria are met, or (b) they are less than 1 MW.

[7] See Wood Mackenzie Power & Renewables/American Clean Power Association. "U.S. Energy Storage Monitor: Q4 2023 Executive Summary."

[8] U.S. Energy Information Administration. "Short-Term Energy Outlook." (January 9, 2024). Accessed at: https://www.eia.gov/outlooks/steo/report/elec_coal_renew.php

[9] (1) Regarding "energy communities", these are defined as those that include (i) a brownfield site; (ii) a census tract or any adjoining tract in which a coal mine closed after Dec. 31, 1999, or a coal-fired electric power plant was retired after Dec. 31, 2009; and (iii) an area that has (or, at any time during the period beginning after Dec. 31, 1999, had) significant employment or local tax revenue related to the extraction, processing, transport or storage of coal, oil or natural gas. (2) Regarding the credit for storage paired with wind and/or solar facilities in low-income communities, the total project capacity must be less than 5 MW to qualify. (3) Regarding the credit for domestic content, the credit increases through 2026 to account for greater availability of domestic materials in future units.

that are less than 1 MW are automatically eligible for the maximum ITC bonus rate (which is 30% through 2033), and eligible for fast-tracked interconnection per FERC Order No. 792 [see Section III(e) "Transmission", pp.9-10].[10] Such qualifying projects could conceivably be distributed in low-income communities and paired with community solar projects, thus making them eligible for the ITC low-income community adder and Solar For All provisions. Additionally, such projects could even be located in areas of Ameren Missouri Missouri's footprint where energy resiliency is of more concern – and energy storage therefore of greater value – including where critical infrastructure (e.g., hospitals, emergency response) is located, especially if it is being deployed solely for pilot purposes. As the map in Figure 1 below shows, there is currently very little energy storage operating in the MISO footprint of Missouri, meaning there is an important opportunity for Ameren Missouri to contribute to both the adoption of the technology and to greater energy resiliency in the region. To take advantage of the benefits of battery storage as well as incentives in siting battery storage in Missouri and in MISO, we request the Commission order Ameren to

[10] Federal Energy Regulatory Commission. Final Rule. Small Generator Interconnection Agreements and Procedures. Order No. 792. Issued November 12, 2013. Accessed at: https://www.ferc.gov/electrictransmission/generator-interconnection/standard-interconnection-agreements-and-procedures

propose a Residential Battery Storage pilot program in their next rate case.

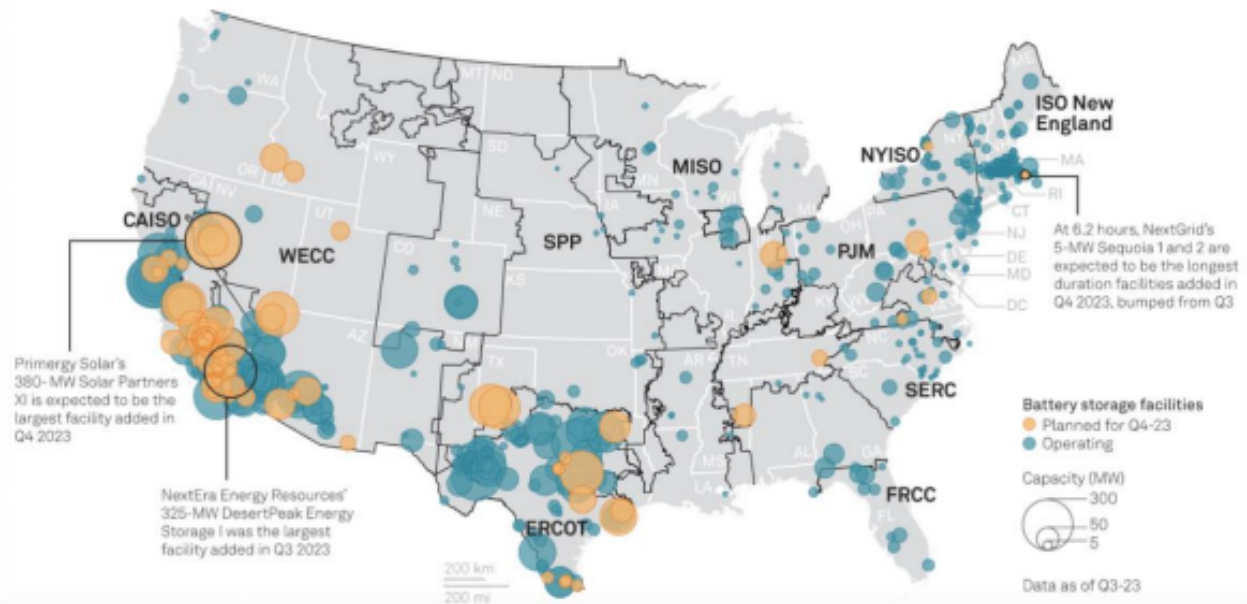

Figure 1. US battery storage capacity and additions in Q3, 2023. Source: S&P Global Commodity Insights, US government filings. 2023. Accessed at: https://www.spglobal.com/commodityinsights/en/market-insights/latestnews/electric-power/111423-us-battery-storage-capacity-surpasses-146-gw-in-q3-35-gw-planned-in-q4

Recommendation: Renew Missouri recommends the Company evaluate the potential for offerings a commercial and industrial battery storage pilot program in its next IRP. Renew Missouri suggests Ameren Missouri consider, as part of evaluation, how such battery storage options could be used to further demand response efforts offered under the Company's Missouri Energy Efficiency Investment Act portfolio.

Renew Missouri also recommends that Ameren Missouri evaluate pairing battery storage with renewable generation. As part of this evaluation, Renew Missouri suggests Ameren Missouri evaluates how pairing battery storage with renewable generation has the bonus of allowing Ameren Missouri to study how utility scale renewable energy projects can better meet capacity needs with

the pairing of battery storage, as well as how battery storage can transform renewable generating facilities into dispatchable generating facilities.

EXPANSION OF THE COMPANY'S RSP PROGRAM

The Renewable Solutions Program ("RSP") is a subscription-based renewable energy "purchasing program for large commercial and industrial customers and government accounts. Phase 1 of the program [was] supported by the Boomtown Solar Project."[11] Phase 2 expanded the program to include the Cass solar facility.[12] Both facilities are expected to be online by the end of 2024.[13] Both Phase 1 and 2 RSP facilities were fully subscribed by May 2024.[14] Many current subscribers have expressed interest in expanding their subscriptions.[15], [16].

Recommendation: Renew Missouri recommends that Ameren Missouri immediately begin planning and constructing a Phase 4 facility to further expand the RSP. Ameren Missouri should make note of sizing such a facility appropriately, as economies of scale support building one larger project at one time, then smaller separately facilities. As part of Ameren Missouri's evaluation,

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[11] In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for a Certificate of Convenience and Necessity for a Solar Facility, Approval of a Subscription-Based Renewable Energy Program, and Authorization to Establish Tracking Mechanism File No. EA-2022-0245, *Report and Order*, p. 18

[12] https://www.ameren.com/-/media/missouri-site/files/environment/irp/2024/2024_ameren_irp_annual_update.ashx, p. 19

[13] https://www.ameren.com/-/media/missouri-site/files/environment/irp/2024/2024_ameren_irp_annual_update.ashx, p. 19

[14] https://www.ameren.com/-/media/missouri-site/files/environment/irp/2024/2024_ameren_irp_annual_update.ashx, p. 19.

[15] https://www.bayer.com/en/sustainability/targets#:~:text=We%20have%20set%20ourselves%20a,1%20and%202)%20by%202030;https://www.ssmhealth.com/newsroom/blogs/ssm-health-matters/june-2024/ssm-healths-commitment-to-solar-energy-surges; https://www.chausa.org/publications/catholic-health-world/archive/article/april-2024/ssm-health-looks-to-the-sun-as-it-works-toward-climate-goals

[16] https://www.ssmhealth.com/newsroom/blogs/ssm-health-matters/june-2024/ssm-healths-commitment-to-solar-energy-surges; https://www.airproducts.com/company/sustainability/sustainability-commitments#:~:text=Renewable%20Electricity%20Goal,compared%20to%20a%202023%20baseline.

Ameren Missouri should specifically note if land options would support expansion of the facility, which could reduce capital costs.

EVALUATION OF LARGE LOAD ADDITIONS ON LOAD GROWTH

Ameren Missouri has stated it is engaging with Charles River Associates to determine if load growth assumptions need to be modified to account for data centers in its load assumption.[17] However, at many public facing events, including the PSC's Resource Adequacy Conference held in August 2024, and MEPS's Economic Development Conference, held on December 12, 2024, Ameren Missouri, along with other stakeholders, have expressed concerns about what AI, onshoring of large load, and data centers will do to growth and reliability. For instance, at the December 12 conference, Steve Wills stated a one GW data center would be a 25% increase in load to Ameren Missouri, and that such an input to an IRP really impacts results. Statements were also made that Ameren Missouri was already entering a build cycle to retire and replenish generation, as well as respond with environmental regulations, and customer preferences for renewables, which makes adding this much load on top of those changes in a generation fleet very challenging.

Recommendation: Renew Missouri recommends that evaluation of large load be a priority for Ameren Missouri in its next IRP update. Renew Missouri recommends Ameren Missouri evaluate the generation requirements necessary for adding large load customers, transmission and distribution impacts from adding large load customers, and impacts to other customers when adding large load customers. Ameren Missouri should also evaluate how offering special tariff rates will impact the other customers, and if the need for generation, transmission, and distribution upgrades can be mitigated with clean transition tariffs or dedicated renewable purchase power

[17] See Case No. EO-2025-0123, "2024 IRP Update", p. 1.

agreements, and how siting considerations are evaluated, including but not limited to how impacts on congestion, locational marginal pricing, grid upgrades, and other locational dependent variables are evaluated.