BEFORE THE PUBLIC SERVICE COMMISSION OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri's 2024 IRP Annual Update Report Pursuant to 20 CSR 4240 – Chapter 22	)))	Case No. EO-2025-0123

COMMENTS OF CLEAN GRID ALLIANCE ON THE 2024 IRP ANNUAL UPDATE OF AMEREN MISSOURI

Dated: December 16, 2024

Introduction

Clean Grid Alliance ("CGA") appreciates the opportunity to file comments with the Missouri Public Service Commission ("the Commission") regarding Case No. EO-2025-0123, the 2024 Integrated Resource Plan ("IRP") Update Report and Post-Workshop Summary Report of Ameren Missouri ("the Company").[1] CGA is a membership-based nonprofit organization that advocates for clean energy development and deployment before state regulatory agencies and legislatures across the MISO-North region.

While CGA did not comment on the Company's 2023 IRP (Case No. EO-2024-002), CGA was an intervenor in that case and has actively participated in the Company's annual IRP update stakeholder process in this docket by submitting a series of questions for the Company to address during the workshop, which CGA also attended. Based on the Company's response to our questions, we felt compelled to file these comments addressing Ameren Missouri's planned investment in 400 MW of battery energy storage systems ("BESS") between now and 2030 as well as the Company's Renewable Solutions Program ("RSP"). CGA supports the Company's proposed utilization of BESS but recommends certain details regarding its deployment be formalized, as described below. CGA also recommends that the Company actively pursue an expansion of the RSP given the level of customer interest and unmet demand. Finally, CGA submits technology recommendations and modeling suggestions related to BESS integration for the Company to consider as preparation of the 2026 IRP commences.

I. Regarding planned investment in BESS.

[1] Case No. EO-2025-0123. *In the Matter of Ameren Missouri's 2024 Integrated Resource Plan Annual Update Report.* (October 1, 2024).

Background. The Company's 2024 IRP Annual Update Report ("the Update") includes the deployment of 800 MW of BESS by 2035.[2] To finance these and other renewable energy investments, the Company is seeking low-cost financing from the Department of Energy ("DOE") via the Energy Infrastructure Reinvestment Program ("EIR"), included under the Title 12 Clean Energy Financing Program, Section 1706.[3] The EIR Program expressly funds projects that "retool, repower, repurpose, or replace energy infrastructure that has ceased operations or enable operating energy infrastructure to avoid, reduce, utilize or sequester air pollutants or greenhouse gas emissions".[4] In seeking this financing stream, the Company signals it is at least considering locating the planned BESS at existing power plant sites. In fact, Ameren Missouri's 2023 IRP explicitly states that BESS could be located at the site of the Meramec Energy Center (now the Castle Bluff Energy Center) or at the recently-retired Rush Island Energy Center.[5] Furthermore, in the settlement agreement approved by the Commission in Case No. EA-2024-0237 ("the Castle Bluff Case"), the Company agreed to seek Commission approval to build 200 MW of BESS by the end of 2027, and to locate at least a portion of this capacity at the site of the Castle Bluff Energy Center.[6] Unfortunately, given the overlapping timelines of this Update and that case, the Update was filed before the settlement agreement was approved, meaning that the Company's commitment to seek a Certificate of Convenience and Necessity ("CCN") for those

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[2] *See* Case No. EO-2025-0123, "2024 IRP Update", p. 1.
[3] *See* Case No. EO-2025-0123, "2024 IRP Update", p. 19. *Also see* U.S. Department of Energy, "Energy Infrastructure Reinvestment". (2024). Accessed at: https://www.energy.gov/lpo/energy-infrastructure-reinvestment
[4] *Ibid.*
[5] *See* Case No. EA-2024-0020. *In the Matter of Union Electric Company d/b/a Ameren Missouri 2023 Utility Resource Filing Pursuant to 20 CSR 4240-Chapter 22*. (September 26, 2023). Ch. 9, p. 8: "Ameren Missouri assumes some of these batteries would be placed at retiring energy centers; the rest can be stand alone or placed with wind or solar additions …" More specifics are found in Ch. 10, Appendix D, pp. 3-4. The Company's Preferred Plan includes modeling for 200 MW storage facilities (the "likely size" for storage that could be located at Meramec or Rush Island) and includes a scenario where these would qualify for the ITC energy community adder.
[6] 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).

200 MW of storage is not reflected in this report. Additionally, during the Update workshop and in response to CGA's query about other plans for storage investment, the Company stated it would pursue deployment of an additional 200 MW of BESS by 2030. However, as with the formal commitment in the Castle Bluff Case, the stated intent of the Company in the Update workshop is not reflected in the Update itself.

CGA supports the proposed investment in BESS and of the Company's apparent intent to locate at least a portion of the planned BESS capacity at former and/or existing power plant sites. Doing so could unlock low-cost federal financing, avoid issues with siting and local permitting for the BESS infrastructure, and enable the Company to achieve faster interconnection via the shortened timeline of MISO's Generator Replacement tariff.[7] Deployed thus, BESS would play an important role in quickly coming online to meet resource adequacy needs and reduce the risk of a zonal capacity shortfall.

Recommendation. Ameren Missouri should include in its 2025 IRP Annual Update:

a) The plan to seek a CCN for 200 MW BESS (as agreed-to in the Castle Bluff Case) and a report on progress towards that goal;

b) An update on whether EIR financing was secured and whether the EIR program or other federal funding mechanisms will support the Company's plan to locate BESS at the site of former and/or existing power plants; and

c) A comparison of the additional 200 MW lithium-ion BESS planned for development by 2030 (as noted by the Company in the Update workshop) to other commercially available

[7] MISO. "FERC Electric Tariffs: Attachment X, Generator Interconnection Procedures". The Generator Replacement process provides for an interconnection timeline of 240 days compared to 373 days for conventional interconnection. Accessed at: https://www.misoenergy.org/globalassets/planning/gi-pages/attachment_x_-_generator_interconnection_procedures_gip.pdf

BESS technologies, including the cost/MWh, life-cycle performance, round-trip efficiency, unique supply-chain and/or permitting challenges, and any other relevant factors the Company deems appropriate.

II. Regarding the RSP.

Background. Endeavoring to cater to commercial customers with environmental sustainability interests or goals, the Company offers the RSP specifically to provide clean energy to those businesses.[8] The Company reported in the Update that the 150 MW Cass County solar project was added to the RSP, having been granted its CCN in 2024.[9] However, even with the addition of the 150 MW Cass County solar project to the RSP in 2024, the Company disclosed in its Update report summary that recent demand for the RSP was unmet in its latest auction, which left five customers and 82 MW unserved by the RSP.[10] Given the Company's projection of economic development additions approximating 40 MW in 2025 and 220 MW by 2031,[11] as well as the likelihood that at least a portion of these new businesses will have sustainability commitments or goals, CGA recommends the Company proactively work on increasing the size of the RSP.

Recommendation. Ameren Missouri should include in its 2025 IRP Annual Update:

a) A discussion of how the Company engaged with new and existing commercial customers regarding potential interest in the RSP since subscriptions to the Cass County solar project were confirmed, and

b) A plan to develop new capacity for the RSP that meets any additional potential demand from eligible customers identified through the aforementioned discussions.

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[8] Ameren Missouri. "Clean Energy for Business: Renewable Solutions". (2024). Accessed at: https://www.ameren.com/missouri/business/clean-energy-customer-programs/renewable-solutions

[9] *See* Case No. EO-2025-0123, "2024 IRP Update", p. 8.

[10] *See* Case No. EO-2025-0123, "Annual Update Post-Workshop Summary Report". (November 15, 2024). Pp. 2-3.

[11] *See* "2024 IRP Update", p. 34.

III. Regarding BESS considerations for the Company's next Triennial IRP.

Background. The Company's 2023 IRP considered a limited representation of commercially available BESS by including only 4- and 8-hour duration lithium-ion storage options.[12] However, energy storage is a diverse resource class with many durations and technologies available to support a range of grid needs. Many utility and industry studies have shown that a diverse portfolio of energy storage resources—including a mix of short, long, and multi-day energy storage resources—can lower overall portfolio costs, reduce new resource needs, and strengthen grid reliability.[13] To accurately value BESS in grids with high levels of renewable energy generation requires improved modeling approaches and more robust representation of weather variability. Given concerns in Missouri and MISO about maintaining resource adequacy during an era of load growth and a generation fleet evolution, we encourage the Company to begin stakeholder efforts in early 2025 to significantly improve its modeling approaches so that the 2026 IRP is well-prepared to consider BESS as a solution to growing reliability risks.

Recommendation. Ameren Missouri should begin working with stakeholders in early 2025 to make several improvements to its IRP modeling, to be reflected in the 2026 IRP. Specifically:

a) Technology assumptions should include diverse long-duration and multi-day BESS as options in the IRP, with accurate specifications for emerging technologies provided through engagement with technology providers and developers.

b) Modeling tools methods should ensure that IRP is conducted with a capacity expansion optimization model so that portfolios are least cost; this capacity expansion model should

[12] *See* Case No. EA-2024-0020, Ch. 6, Appendix 3.

[13] *See* U.S. Department of Energy. "Pathways to Commercial Liftoff: Long Duration Energy Storage". (2023). This report discusses the benefits of inter-day and multi-day long-duration energy storage, and discusses a range of technologies in these resource classes. Accessed at: https://liftoff.energy.gov/wp-content/uploads/2023/10/Pathways-to-Commercial-Liftoff-LDES-May-5_UPDATED-v10.pdf

optimize resource needs over 8,760-hours of annual grid operations and accurately represent storage state of charge between days, in order to accurately represent weather- and generation- variability and the ability of long-duration and multi-day BESS to shift energy over days, weeks, and seasons.

c) Weather variability should be evaluated to ensure a portfolio that is both least-cost and reliable, by examining least-cost resource needs over a wide range of weather years and scenarios that include tail-risk events, ensure that hourly demand and generation profiles are based on the same underlying weather years and data, and when possible, co-optimize resource needs over multiple weather years.

d) High retirement scenarios should be evaluated, so the long-term potential for substantial retirements of existing, aging thermal resources can inform the development of optimal portfolios of new, non-carbon emitting resources (including BESS) to address associated risks. This information can help Ameren Missouri proactively plan for emerging long-term reliability risks and ultimately protect customers from exposure to price shocks due to regional capacity shortfalls and volatile fuel prices.

This concludes our comments on the Company's 2024 IRP Annual Update.

Respectfully submitted,

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