

Exhibit No.:

Issues: Time-Of-Use Rates for
Distributed Generation
Customers, Residential
Battery Storage Pilot,
Renewable Solutions
Program

Witness: James Owen

Sponsoring Party: Renew Missouri Advocates

Type of Exhibit: Direct Testimony

Case No.: ER-2024-0319

Testimony Filed: December 17, 2024

MISSOURI PUBLIC SERVICE COMMISSION

ER-2024-0319

DIRECT TESTIMONY

OF

JAMES OWEN

ON BEHALF OF

RENEW MISSOURI ADVOCATES

December 17, 2024

Table of Contents

Table of Contents

I.	INTRODUCTION	3
II.	TIME OF USE RATES & DISTRIBUTIVE GENERATION CUSTOMERS	6
III.	III. LOW INCOME COMMUNITY SOLAR	14
IV.	IV. RESIDENTIAL BATTERY STORAGE OPPORTUNITIES	17
V.	EXPANSION OF THE COMPANY’S RSP PROGRAM	23
VI.	CONCLUSION	34

1 **I. INTRODUCTION**

2 **Q: Please state your name, title, and business address.**

3 **A:** James Owen, Executive Director, Renew Missouri Advocates d/b/a Renew Missouri
4 ("Renew Missouri"), 915 East Ash, Columbia, MO 65201.

5 **Q: Please describe your current position, your education, and background.**

6 **A:** Renew Missouri is an advocacy group appearing before regulatory agencies such as the
7 Missouri Public Service Commission ("PSC" or the "Commission"), the Kentucky Public
8 Service Commission, and the Kansas Corporation Commission in the role as expert
9 witnesses on clean energy, energy efficiency, and transmission development policy. Our
10 work involves engaging as intervenors on utility rate cases, applications for certificates of
11 convenience and necessity ("CCNs"), mergers and acquisitions, Accounting Authority
12 Orders ("AAOs"), and energy efficiency investment portfolios. Renew Missouri also
13 routinely engages in workshops and rulemaking by providing comments. We have also lent
14 our expertise and knowledge on legislative matters in Missouri and Kansas as well as the
15 federal level on issues ranging from energy efficiency investments to securitization of debts
16 incurred from closing coal plants to helping rural electric cooperatives obtain financing for
17 clean energy projects. Additionally, I have testified before regulatory agencies on general
18 policy involving power generation, transmission, and distribution. Attached as Schedule
19 JO-1 is a list of my case participation.

20 Regarding my background, I was an attorney in private practice by trade. I was
21 appointed as an Associate Circuit Court Judge in Webster County, Missouri prior to my
22 experience in utility ratemaking. As far as my education goes, I obtained a law degree

1 from the University of Kansas in Lawrence, Kansas as well as a Bachelor of Arts in
2 Business and Political Science from Drury University in Springfield, Missouri.

3 **Q: What work does Renew Missouri conduct in the field of energy policy?**

4 **A:** In my role as Executive Director at Renew Missouri, I provide information and testimony
5 on pieces of proposed legislation that may impact how utility regulators approach energy
6 efficiency and renewable energy. Renew Missouri staff and I have developed and offered
7 educational programs on topics related to energy law and policy in Missouri on topics
8 including FERC Order 2222, the Inflation Reduction Act, and our year-end update
9 covering state and federal rulemakings, PSC appeals, and energy efficiency/renewable
10 energy updates. We have provided nearly one hundred hours of continuing legal education
11 credit over the past six years.

12 **Q: Please summarize your professional experience in the field of utility regulation.**

13 **A:** Before becoming Executive Director of Renew Missouri, I served as Missouri's Public
14 Counsel, a position charged with representing the public in all matters involving utility
15 companies regulated by the State of Missouri. While Public Counsel, I was involved in
16 several rate cases, CCN applications, mergers, and complaints as well as other filings. As
17 Public Counsel, I also answered legislators' inquiries regarding legislation impacting the
18 regulation of public utilities.

19 **Q: Have you been a member of, or participant in, any workgroups, committees,
20 or other groups that have addressed electric utility regulation and policy issues?**

21 **A:** Yes. In May 2016, I attended the National Association of Regulatory Utility
22 Commissioners ("NARUC") Utility Rate School. For the past several years, I attended the

1 Financial Research Institute’s Public Utility Symposium on safety, affordability, and
2 reliability. While I was Public Counsel, I was also a member of the National Association
3 of State Utility Consumer Advocates (“NASUCA”) and, in November 2017, the Consumer
4 Council of Missouri named me the 2017 Consumer Advocate of the Year.

5 More recently, I was appointed by then-Chairman Ryan Silvey to serve on the Net
6 Metering and Distributive Energy Resources Task Force formed by the Legislature in 2022.
7 The work of the Task Force spanned 2023 and included hearing testimony, reviewing
8 evidence, and drafting a report regarding the need for the State to provide a value of solar
9 study (“VOSS”) as a requisite part of developing new rates for customers who incorporate
10 net metering and/or DER into their distributive system.

11 **Q: What is the purpose of your testimony?**

12 A: The purpose of my testimony is on a number of topics involving Union Electric Company
13 d/b/a Ameren Missouri (“Ameren Missouri” or the “Company”) and issues that should be
14 addressed in the above-numbered case. First, I will make the argument for the Company
15 offering all residential customers the opportunity to enroll in any of its time-based rate
16 programs. Further, I will advocate for Ameren to create a residential battery storage pilot
17 and low-income community solar program similar to what’s being offered by Evergy
18 Metro and Evergy West in other parts of Missouri. Finally, I will argue Ameren should
19 increase its Renewable Solutions Program (“RSP”) to match the overwhelming demand
20 for such energy generation.

21 **Q: Could you please briefly summarize your testimony as well as your**
22 **recommendations?**

1 A: I begin by briefly summarizing the history of the Commission’s consideration of Time of
2 Use (“TOU”) rates for distributive generation (“DG”) by highlighting relevant cases,
3 reports, and previous statements from the Commission on the topic and then outline the
4 benefits of allowing these customers should be to participate. I then move on to discuss
5 comparable utilities who have introduced residential battery storage programs and low-
6 income community solar to explain why Ameren Missouri should offer similar programs.
7 Finally, I point to the language used by Ameren Missouri’s customers’ – as well as Ameren
8 Missouri itself – to explain why increase to the offerings of the RSP should be ordered.

9 **II. TIME OF USE RATES & DISTRIBUTIVE GENERATION CUSTOMERS**

10
11 **Q: Can you provide a brief overview of the history of the issue of Ameren Missouri’s**
12 **TOU rates and DG customers?**

13 A: Yes. The matter of the inclusion of DG customers in Ameren Missouri’s TOU rates first
14 emerged in Case No. ER-2019-0335, where Ameren Missouri introduced new TOU rate
15 options as part of its 2019 electric rate review. These TOU rate options aimed to give
16 customers greater control over their energy usage and costs by charging different rates
17 during on-peak and off-peak periods. However, DG customers were excluded from
18 participating in most TOU plans due to what Ameren Missouri described as “inherent
19 complexities” with reconciling the requirements of the Missouri Net Metering and Easy
20 Connection Act with TOU rate structures. These issues persisted into Ameren Missouri’s
21 2021 rate case (ER-2021-0240), where DG customers were primarily limited to Ameren
22 Missouri’s default TOU plan. At the time, Ameren Missouri argued that statutory

1 constraints prevented them from allowing DG customers full access to the TOU rates
2 available to non-DG customers.¹

3 In Ameren Missouri’s 2022 rate case, the issue of TOU rate availability for DG customers
4 was brought to the forefront again. In this proceeding, Renew Missouri and other parties
5 urged the Commission to require Ameren Missouri to conduct a study to explore how DG
6 customers could be fully integrated into TOU rates. Ultimately, the Commission directed
7 Ameren Missouri to conduct a study to evaluate the barriers to allowing DG customers to
8 participate in all TOU plans.²

9 **Q: Have other parties brought forth potential solutions to allow DG customers to**
10 **participate in any of the company’s TOU plans? If so, please describe them.**

11 A: Yes. For example, the Public Service Commission Staff (“Staff”) believes “straightforward
12 tariff revisions would eliminate any conflicts and make any reconfigured TOU rate plan
13 available to net metering customers.” Staff gives the example of changing the tariff so the
14 on-peak rate is \$0.40 and the off-peak rate is \$0.04; all energy could then be tariffed at a
15 rate of \$0.04 but an on-peak adder of \$0.36 could then be applied.³

16 **Q: What is Renew Missouri’s opinion of this recommendation?**

17 A: Critically, Staff points out via this recommendation that a simple tariff change would
18 accomplish the end goal of opening the same TOU plans to both DG and non-DG

¹ In the Matter of Union Electric Company d/b/a Ameren Missouri Missouri’s Tariffs to Adjust Its Revenues for Electric Service, File No. ER-2021-0240, *Direct Testimony of Steven M. Wills*, p. 38, l. 14- p. 39, l. 16.

² In the Matter of Union Electric Company d/b/a Ameren Missouri’s Tariffs to Adjust Its Revenues for Electric Service, Report and Order, p. 38.

³ *In the Matter of a Collaborative Workshop for Customer Education and Outreach Regarding the Introduction of Default Time-of-Use Rates by Evergy Metro, Inc. d/b/a Evergy Missouri Metro and Evergy Missouri West, Inc. d/b/a Evergy Missouri West*, File No. EW-2023-0199, “Staff Response to April 2, 2024, Presentation, Barriers to Net Metering and Time Of Use Rate Structures Final Report, and Requests for Additional Information.” (April 19, 2024). P.7.

1 customers. We appreciate Staff has done the heavy lifting for Ameren Missouri by
2 developing a simple solution to the problem.

3 **Q: Are there any other potential solutions that should be considered?**

4 A: Yes. Renew Missouri would like to propose the following arrangement for the parties to
5 consider: Ameren Missouri simply accounts for the time of day when excess solar
6 production is sent back onto the Company’s system by the DG customer. When excess
7 solar generation is sent back during an on-peak period, the customer will receive an "On-
8 Phase Credit"; when excess generation is sent back during the off-peak period, the
9 customer will receive an "Off-Phase Credit." If this simple arrangement were adopted, the
10 Company would always offset the DG customer’s kilowatt-hour contribution rather than
11 the price per watt. To put this into concrete terms, I will apply our proposal to Ameren
12 Missouri Missouri’s Residential Smart Saver Service pictured in the figure below.

13 Figure 1. Service Classification No. 1 - Residential Smart Saver Service⁴

A. Customer Charge (per month)	\$9.00
B. Energy Charge per Pricing Period (Per kWh)	
	<u>Summer Season</u>
On Peak	\$0.3562
Intermediate	\$0.1069
Off Peak	\$0.0674
	<u>Winter Season</u>
On Peak	\$0.1907
Intermediate	\$0.0684
Off Peak	\$0.0558

14
15 In the Summer Season, for example, a DG customer sending excess power to the Company
16 during the On-Peak hours (3-7 p.m.) would receive an “On-Phase Credit” of roughly \$0.35
17 per kWh, equivalent to the On-Peak per kWh price. A DG customer sending excess power

⁴Union Electric Company d/b/a Ameren Missouri Missouri. “Service Classification No. 1(M) Residential Smart Saver Service”. (2024). Accessed at: <https://www.Ameren Missouri.com/-/media/rates/files/missouri/uecsheet54rate1mres.ashx>

1 to the Company during the Intermediate hours would receive an “Intermediate Phase
2 Credit” of roughly \$.10 per kWh, equivalent to the Intermediate hours price. Finally, a DG
3 customer sending excess solar power to the Company during the Off-Peak hours would
4 receive an “Off-Phase Credit” of roughly \$0.06 per kWh, equivalent in turn to the Off-
5 Peak per kWh price. For the Winter Season, the pricing would be updated to match the
6 winter charges. The necessary changes to the tariff would involve amending the rate
7 availability to include DG customers and writing up the On-Phase, Intermediate, and Off-
8 Phase Credits scheme. This paradigm could be likewise updated to match the charges and
9 hours for any current or future TOU tariff. If the Company were to pursue our proposal,
10 then each TOU tariff would need to be amended accordingly.

11 Ultimately, however, we are more concerned that the Commission order Ameren Missouri
12 to reform netting so that DG customers can participate in any of the Company’s TOU rates
13 while directing the parties to work together to fine-tune how the tariff will work.

14 **Q: What is your understanding of the legal basis that grounds your position?**

15 A: My understanding is that the Missouri Net Metering and Easy Connection Act mandates
16 that utilities must credit DG customers on a one-to-one kWh basis for energy exported to
17 the grid, without any differentiation in the value of that energy based on when it is
18 produced. However, the statute does not explicitly prohibit utilities from adopting rate
19 structures that account for the timing of energy usage or generation as long as the one-to-
20 one kWh netting requirement is maintained. This is supported by past PSC Staff analyses,
21 which indicated that straightforward tariff adjustments could align TOU rates with the
22 statutory requirements. The Commission has the authority to require Ameren Missouri to
23 implement TOU rate structures inclusive of DG customers. The Commission has

1 emphasized its interest in ensuring equitable access to TOU rates for all customers in
2 previous cases, such as Evergy’s Solar Subscription Rider (ET-2024-0182), where it
3 explicitly encouraged solutions to bring DG customers into parity with non-DG customers
4 in accessing TOU plans.

5 **Q: Is there any precedent for time-based rates for net metering customers?**

6 A: Yes. Renew Missouri is aware of at least thirteen utility companies that make their TOU
7 rate options available to all residential customers, including customers with an on-site
8 distributed generation system. In 2016, the State of California even mandated TOU rates
9 for DG customers after successful programs had already been implemented. Particularly
10 pertinent here is that California-based companies Pacific Gas & Electric, Southern
11 California Edison, and San Diego Gas & Electric offer the same TOU plans to customers
12 with or without DG. Since noting these and other opportunities for DG customers to enroll
13 in TOU plans in 2022 rate cases at other regulated utilities (in Illinois, Massachusetts, New
14 York, Pennsylvania, South Carolina, and Virginia), Renew Missouri has become aware of
15 two additional utilities that offer the same TOU rate options to customers with and without
16 DG.⁵ Arizona Public Service (“APS”) offers the same residential TOU rates to all
17 residential customers, including those with solar.⁶ Likewise, Florida Power and Light
18 (“FPL”) does not exclude net metering customers from its TOU rate options. The net
19 metering customers are charged “in accordance with the Company’s normal billing

⁵ Case No. ER-2022-0129, *In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro’s Request for Authority to Implement A General Rate Increase for Electric Service* and Case No. ER-2022-0130, *In the Matter of Evergy Missouri West, Inc. d/b/a Evergy Missouri West’s Request for Authority to Implement A General Rate Increase for Electric Service*, Rebuttal Testimony of Mr. Owen. (July 13, 2022). See pp.8-11.

⁶ Arizona Public Service. “Rates, Schedules and Adjustors”. (2024). Note that APS offers net billing instead of net metering (e.g., compensates DG customers for only a portion of the excess solar energy produced by the customer) so it is not a perfect comparison. Accessed at: <https://www.aps.com/en/Utility/Regulatory-and-Legal/Rates-Schedules-and-Adjustors>

1 practices.” Electric use exceeding that generated by the customer’s equipment is charged
2 to the customer, while excess generation is credited to that customer according to FPL’s
3 usual billing practices.⁷

4 **Q: What is the public policy argument favoring TOU rates?**

5 A: There are several reasons why TOU rates are beneficial from a public policy perspective.
6 Such rates have the potential to naturally incentivize efficiency, which leads to demand
7 savings.⁸ System-wide demand savings ultimately protect ratepayers from subsidizing a
8 utility’s investments in new generating facilities or at least help to delay that investment.
9 TOU can help utilities achieve demand response goals by encouraging customers to
10 moderate their usage so less electricity is used during the on-peak period, thereby reducing
11 coincident peak demand and lowering the risk of grid congestion. This also improves the
12 overall function of the system. If Ameren Missouri is serious about reducing demand (as
13 the Company’s 2024 Integrated Resource Plan⁹ and Missouri Energy Efficiency
14 Investment Act Cycle IV¹⁰ applications indicate), the utility should *also* be serious about
15 enabling every customer to support that goal. There is also a strong argument for why
16 customer-owned distributed energy resources (“DERs”) are a complement to TOU
17 programs. On-peak and off-peak pricing differentials can encourage such customers to
18 adapt their energy usage to times of the day that are most cost-effective for them. Pairing

⁷ Florida Power & Light. “Electric Tariff, Sixty-Fifth Revised Sheet No. 8.010.” (May 1, 2024). Accessed at: <https://www.fpl.com/content/dam/fplgp/us/en/rates/pdf/electric-tariff-section8.pdf>

⁸ National Bureau of Economic Research. “Electricity Retail Rate Design in a Decarbonized Economy: An Analysis of Time-Of-Use and Critical Peak Pricing.” (October 2022). Accessed at: <https://www.nber.org/papers/w30560>

⁹ In the Matter of Union Electric Company d/b/a Ameren Missouri Missouri 2023 Utility Resource Filing Pursuant to 20 CSR 4240-Chapter 22, File No. EO-2024-0020.

¹⁰ In the Matter of Union Electric Company d/b/a Ameren Missouri Missouri’s 4th Filing to Implement Regulatory Changes in Furtherance of Energy Efficiency as Allowed by MEEIA, File No. EO-2023-0136, AMENDED AND SUPPLEMENTED APPLICATION TO APPROVE DSIM AND DEMAND-SIDE MANAGEMENT PORTFOLIO AND PLAN, AND REQUEST FOR VARIANCES.

1 the rate with a variety of customer-owned DERs (e.g., solar, battery energy storage, electric
2 vehicles paired with EV charging equipment, smart meters) is a comprehensive approach
3 for full utilization of the best available technology to achieve demand savings at both the
4 household and system levels.

5 Our reasoning for encouraging Ameren Missouri to include DG customers in all TOU rate
6 plans is the same as when Renew Missouri advocated for this program design in the 2022
7 Ameren Missouri rate case:

8 Beyond the language of the statute, there are valid policy reasons to offer customer-
9 generators the same rate options as other customers. This would encourage the
10 installation of DG technologies on the grid, including rooftop PV solar, battery
11 storage, and electric vehicle (EV) adoption and charger installation, among others.
12 These technologies – when paired with AMI meter deployment – can be used to
13 reduce peak demand across the grid, shift usage to lower demand times, and offer
14 customers greater ability to reduce their electric bills. These are some of the same
15 goals TOU rates seek to accomplish. If Ameren Missouri could eventually offer all
16 TOU rates to its DG customers, it would allow the full toolbox of distributed
17 resources to be used for lowering peak demand and providing grid resilience. More
18 importantly, developing distributed resources is indispensable for meeting the
19 Missouri renewable energy standard (“RES”) and achieving the Company’s goal of
20 renewable energy transformation, considering the current technical challenges that
21 centralized renewable resources face.¹¹

22 Not fully committing to a robust and inclusive TOU program hinders the demand savings
23 goals put forward by the Company in its MEEIA application and 2024 IRP update and
24 prevents the Company from realizing the full value of customer-owned DG. As a final note
25 of caution to Ameren Missouri, preventing DG customers from participating in any of the
26 TOU rates is discriminatory to those customers, who should be given equal opportunity to
27 benefit from cost savings. This is where the actual threat of legal action against the

¹¹ In the Matter of Union Electric Company d/b/a Ameren Missouri Missouri's Tariffs to Adjust Its Revenues for Electric Service, File No. ER-2022-0337, Rebuttal Testimony of James Owen, p. 6, l. 11 – p. 7, l. 2.

1 Company lies, given that the Net Metering and Easy Connection Act requires that DG
2 customers be given the same rates and rate structures as other customers.¹²

3 **Q: What is your recommendation in this matter?**

4 A: I recommend that the Commission order Ameren Missouri to reform its netting practices
5 and allow all customers, including DG customers, to participate in any TOU rate option
6 currently being offered. I have reviewed the relevant statutory and regulatory frameworks,
7 and it is my legal opinion that no changes to Missouri’s Net Metering and Easy Connection
8 Act are necessary to provide DG customers access to TOU rates. The statute requires that
9 net usage and generation within a billing period be fully netted and that zero or negative
10 net usage results in a zero-energy charge. However, these requirements do not preclude
11 Ameren Missouri from developing billing practices that accommodate TOU pricing while
12 adhering to the statute.

13 The Staff, in *In the Matter of a Collaborative Workshop for Customer Education and*
14 *Outreach Regarding the Introduction of Default Time-of-Use Rates by Evergy Metro, Inc.*
15 *d/b/a Evergy Missouri Metro and Evergy Missouri West, Inc. d/b/a Evergy Missouri West*¹³
16 *and In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro’s and Evergy*
17 *Missouri West, Inc. d/b/a Evergy Missouri West’s Solar Subscription Rider Tariff Filings*¹⁴
18 has expressed a similar legal interpretation, that utilities can provide TOU rates to DG
19 customers without requiring statutory amendments.

¹² § 386.890.3 RSMo.: “A retail electric supplier shall: ... (2) Offer to the customer-generator a tariff or contract that is identical in electrical energy rates, rate structure, and monthly charges to the contract or tariff that the customer would be assigned if the customer were not an eligible customer-generator ...”

¹³ File No. EW-2023-0199.

¹⁴ File No. ET-2024-0182.

1 Renew Missouri believes the Commission has the authority to direct Ameren Missouri to
2 adopt rate structures and implement billing practices ensuring access to TOU rates for all
3 customers, including those with net-metered solar systems. This would bring Ameren
4 Missouri in line with Evergy Missouri West who, as a part of the settlement of its 2024 rate
5 case, agreed to implement tariff changes to allow for net-metered customers to participate
6 in all TOU rates.¹⁵ The Commission approved this Unanimous Stipulation and Agreement
7 in its Report and Order, issued on December 4, 2024.

8 III. III. LOW INCOME COMMUNITY SOLAR

9 Q. Does Ameren currently offer a community solar program for low-income customers?

10 A. No. The current community solar (“CS”) rate is above the standard rate structure and will
11 result in a higher bill total for participants. The CS rate is significantly higher than the
12 summer and winter rates, requiring program participants to pay at a premium. While this
13 is accessible for renters, it is not an accessible pathway for low-income renters or owners.
14 Solar access in Missouri is not equitable and is only available for self-generation for
15 property owners that can afford a net metered system. For renters, the program is only
16 accessible for those that can afford to pay the premium but are not getting an actual
17 economic benefit for participation in the program.

18 This type of program design is less favorable than net metering for Missourians but has
19 still been supported by Renew Missouri in the past as another pathway for solar access.

20 However, this is not adequately serving all Ameren Missouri customers due to the inability
21 to benefit all customers and in essence is pricing out low-income customers from engaging

¹⁵ *In the Matter of Evergy Missouri West, Inc. d/b/a Evergy Missouri West’s Request for Authority to Implement A General Rate Increase for Electric Service*, File No. ER-2024-0189, Unanimous Stipulation and Agreement, p. 7-8.

1 with solar energy. The Company has the unilateral ability to remedy this inequity by adding
2 a low-income community solar program to their suite of programs to allow for all
3 customers, regardless of circumstance, to have a pathway to solar power. Community solar
4 is only legally authorized in Missouri to be provided through utility providers. Without a
5 legislative change, there is no alternative pathway for an equitable community solar
6 program offering. With the passage of the Inflation Reduction Act (“IRA”) and its many
7 authorized clean energy programs, there are multiple pathways available to Ameren
8 Missouri to make a low-income community solar program offering achievable.

9 **Q. What are the funding opportunities available from the Inflation Reduction Act to**
10 **improve low-income community solar program offerings?**

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

20 **Q. How could Solar For All be integrated with a low-income community solar program**
21 **offering?**

22 A. Based on EIERA’s program narrative submitted, the forgivable loan terms are structured
23 to ensure 20% or greater savings are passed onto each community solar participant. To

1 ensure maximum savings, EIERA recommends each utility allow participants to enroll in
2 the shared solar system up to 100% offset of their electricity. There is also language
3 including a forgivable loan component available to utilities if the 20% energy savings target
4 can be met and this forgivable component could be used to pass through the reduced capital
5 costs to low-income customers to reach the 20% savings target.

6 **Q. How could Missouri participate in the DOE Clean Energy Connector program?**

7 A. The Low Income Home Energy Assistance Program (“LIHEAP”) Community Solar
8 Program Coordination through the DOE Clean Energy Connector program still has a pilot
9 phase open through 2025 for interested states. The Connector is designed to address
10 barriers to community solar adoption by income-qualified households to enable equitable
11 access to community solar by ensuring strong consumer protections for community solar
12 participants from enrollment through the life of the program, safeguarding consumer data,
13 and providing customers with comprehensive and clear communication and disclosures
14 about the community solar and their program. Further this program should be considered
15 to lower electric bills and high energy burdens for LIHEAP-eligible households over the
16 long-term through enrollment in community solar programs with guaranteed program
17 savings to create long term bill relief. LIHEAP funding could also be used to reduce
18 subscriber acquisition and management costs through the connector directing eligible
19 recipients to community solar developers or in this case the utility.

20 For Missouri to be eligible to pilot the Connector Missouri, active community solar
21 programs with specific measures to ensure access for low-to-moderate income customers
22 would be required within the next year. The program design must enable minimum savings
23 requirements for customers and include specific consumer protections. The program would

1 also support for the Connector from both the state community solar and state LIHEAP
2 administering agencies. The agencies must agree to collaborate and commit staff resources
3 to pilot the Connector.

4 While it is unlikely that Missouri will meet the Connector requirements as part of this case
5 or as a state prior to the yet to be determined 2025 deadline for participation, it would be
6 worthwhile to start thinking about how a low-income community solar program could work
7 and how to best utilize the Clean Energy Connector and other IRA opportunities detailed
8 above. Renew Missouri requests the Commission to require the Company to evaluate how
9 available funding through the ITC/PTC and Solar For All program can be used to launch
10 an energy saving low-income community solar offering to customers prior to the expiration
11 of Solar For All in 2029, and propose in either its next rate case or next community solar
12 expansion, a pilot low-income community solar program.

13 **IV. IV. RESIDENTIAL BATTERY STORAGE OPPORTUNITIES**

14 **Q. How are regional transmission organizations (“RTOs”) in the region planning to**
15 **integrate battery storage with large renewable projects in the interconnection queue?**

16 A. As reported by S&P Global, Western capacity queues (i.e., CAISO, the non-ISO West, and
17 ERCOT) are dominated by interconnection requests of hybrid systems that pair grid-scale
18 storage with wind and/or solar. Notably, the non-ISO West and CAISO are seeing 87%
19 and 98% of proposed solar projects include storage, respectively.¹⁶ By contrast, only about
20 23% of planned solar in the Southwest Power Pool (“SPP”) includes storage (for a total

16 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

1 capacity contribution of 12 GW) and only 23 GW of stand-alone storage is in the queue.¹⁷

2 In the Midwest Independent System Operator (“MISO”) region, less than 10% of solar in
3 the queue includes storage and less than 2 GW of stand-alone storage is in the queue.¹⁸

4 **Q. Has Ameren Missouri proposed integrating battery scale storage with any renewable
5 energy projects?**

6 A. No. For its part, the Company has not included grid-scale storage as a component of its
7 solar facilities that have been granted CCNs over the past couple of year. To begin a path
8 forward to integrate more battery resources, Renew Missouri suggests the Commission
9 order Ameren Missouri offer a residential battery storage pilot program as part of its next
10 general rate case. It may be worthwhile for the Company to look at Evergy Metro and
11 Evergy West’s Residential Battery Storage Pilot program and work towards offering a
12 similar pilot program to get more experience integrating battery storage with renewable
13 energy. The Evergy pilot specifically targeted fifty program participants that were enrolled
14 in TOU rates, have rooftop solar, or own an EV or other smart home devices. It is important
15 for Ameren Missouri to look at offering a similar program for residential customers, and
16 Evergy’s approved tariffs are attached for consideration, as Schedule JO-2.

17 **Q. What benefits could a residential battery storage pilot provide to Ameren Missouri?**

18 A. As explained by Evergy in File No. ER-2022-0129 and ER-2022-0130,¹⁹ benefits of a
19 residential battery storage pilot include:

20 Battery energy storage systems can be used to reduce the demand on Evergy’s electrical
21 grid during peak periods. One of the conditions for participation by customers in the pilot,
22 for example, is to allow Evergy to utilize a portion of the stored energy in the battery to
23 support demand-side management programs, such as reductions in peak power purchases

¹⁷ Id.

¹⁸ MISO Energy. Interactive Queue. Accessed at: <https://www.misoenergy.org/planning/resource-utilization/GI-Queue/gi-interactive-queue/#>

1 and managing localized distribution system constraints. Batteries have very fast response
2 times and can also be used to help maintain distribution system power quality issues and
3 support grid reliability. The pilot will also provide opportunities to explore customer
4 interest in “resilience,” since batteries can be used as a source of back-up power during
5 short-term power outages.

6 Operational benefits include:

- 7 • Ability to use battery energy storage resources for peak demand reduction
- 8 • Ability to use battery energy storage to support self-consumption of renewable energy
9 which can minimize distribution grid impacts and increase hosting capacity of the
10 existing distribution systems
- 11 • Improvement in utility grid operations through the use of battery energy resources to
12 help maintain power quality and reliability of the distribution grid and to address
13 localized distribution constraints

14 Customer benefits include:

- 15 • Opportunities to create retail savings for customers on TOU rates
- 16 • Ability to integrate storage technology platform with renewable energy or smart
17 technologies to optimize home energy use
- 18 • Potential to provide a source of back-up power for customers during grid outages²⁰

19
20 **Q. Could a residential battery storage pilot program be beneficial for Ameren Missouri**
21 **for future grid and resource planning purposes?**

22 A. Yes. A properly designed pilot program would give Ameren Missouri valuable information
23 on residential attitudes and use of battery storage, impacts of battery storage of the grid,
24 which can be applied more widely to distributed energy resources generally, as well as
25 more overall operational and system experience with battery storage systems.

26 To ensure a properly designed pilot program will result in useful information for Ameren
27 Missouri and other stakeholders, Renew Missouri suggest Ameren Missouri design a pilot
28 to study the following objectives and maintain a similar procedural process, agreed upon
29 by parties and approved by the Commission in the 2022 Evergy rate case:

30 The Company will do the following:

- 31 1. The Company will file in this case a statement outlining all learning objectives for the
32 pilot, including all hypotheses the Company seeks to test, identified on a Company

²⁰ In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro’s Request for Authority to Implement A General Rate Increase for Electric Service, and In the Matter of Evergy Missouri West, Inc. d/b/a Evergy Missouri West’s Request for Authority to Implement A General Rate Increase for Electric Service, Direct Testimony of Kimberly Winslow, p. 43, l. 13- p. 44, l. 9.

1 specific basis along with a current literature review. This filing should include, but not
2 be limited to:

- 3 a. Costs/savings to participants and non-participants
- 4 b. Costs/savings to Company
- 5 c. Effects on peak demand
- 6 d. Reliability improvements provided to grid/customer
- 7 e. Effect on participant usage/behavior
- 8 f. Tracking of charging/discharging times
- 9 g. Tracking of maintenance issues and costs
- 10 h. Participant satisfaction surveys

- 11 2. The Company will provide stakeholders an update on the pilot and the current data
12 collected on a semi-annual basis through the end of 2025. This update will include what
13 the Company has learned so far regarding its learning objectives.
- 14 3. The Company will file a report at the end of the first quarter of 2026 that outlines the
15 results of the pilot and directly addresses the learning objectives that were initially
16 identified.²¹

17 **Q. Are there any concrete ways that Ameren Missouri could leverage insight gained**
18 **from a residential battery storage pilot for future grid and resource planning**
19 **purposes?**

20 A. Yes. The Company could use insight learned from a residential battery storage program in
21 many ways. However, two scaled-up next steps could be undertaken by Ameren Missouri
22 to use information gained during a residential battery storage pilot to benefit customers.
23 First, it could introduce a similar program for commercial and industrial customers. This
24 program would have the potential to tie into other offerings from Ameren Missouri and
25 create an amplifying effect. For instance, battery storage options could be used to further
26 demand response efforts offered under the Company's MEEIA portfolio. Secondly,
27 Ameren Missouri could also either pair battery storage with renewable generation or
28 develop standalone utility scale battery storage systems. Pairing battery storage with

²¹ In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro's Request for Authority to Implement A General Rate Increase for Electric Service, and In the Matter of Evergy Missouri West, Inc. d/b/a Evergy Missouri West's Request for Authority to Implement A General Rate Increase for Electric Service, Stipulation and Agreement Regarding Programs and Electric Vehicle Charging Tariffs, p. 4-5.

1 renewable generation has the bonus of allowing Ameren Missouri to study how utility scale
2 renewable energy projects can better meet capacity needs with the addition of battery
3 storage. Furthermore, as explained later in Renew Missouri’s testimony, there is demand
4 for Ameren Missouri’s Renewable Solutions program from large customers that currently
5 is not being met due to lack of available capacity.²² Adding storage to the Company’s
6 energy fleet could help meet these large customers’ demands for renewable energy sources
7 and will likely have related capacity benefits for the company in the future through MISO.

8 **Q. Are there additional considerations that support Ameren Missouri taking steps**
9 **towards bringing battery storage systems online?**

10 A. Yes. Grid-scale energy storage costs are generally decreasing, due to greater availability of
11 raw materials and increased market interest. Ameren Missouri could take advantage of the
12 ITC for energy storage, which is available in full through 2033 but steps down in 2034 and
13 again in 2035, expiring thereafter.²³ In the fourth quarter of 2023, lithium carbonate spot
14 prices were at their lowest in two years and were forecast to correlate with decreased prices
15 for lithium-ion storage systems going forward, a key market trend given that lithium-ion
16 based batteries are common candidates for storage systems.²⁴ The U.S. Energy Information
17 Administration predicts, furthermore, that grid-scale energy storage deployment will

²² See 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. Missouri PSC Docket No. EA-2022-0286, Report and Order, p.22. (Apr. 12, 2023)

²³ 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.

²⁴ See Wood Mackenzie Power & Renewables/American Clean Power Association. “U.S. Energy Storage Monitor: Q4 2023 Executive Summary.”

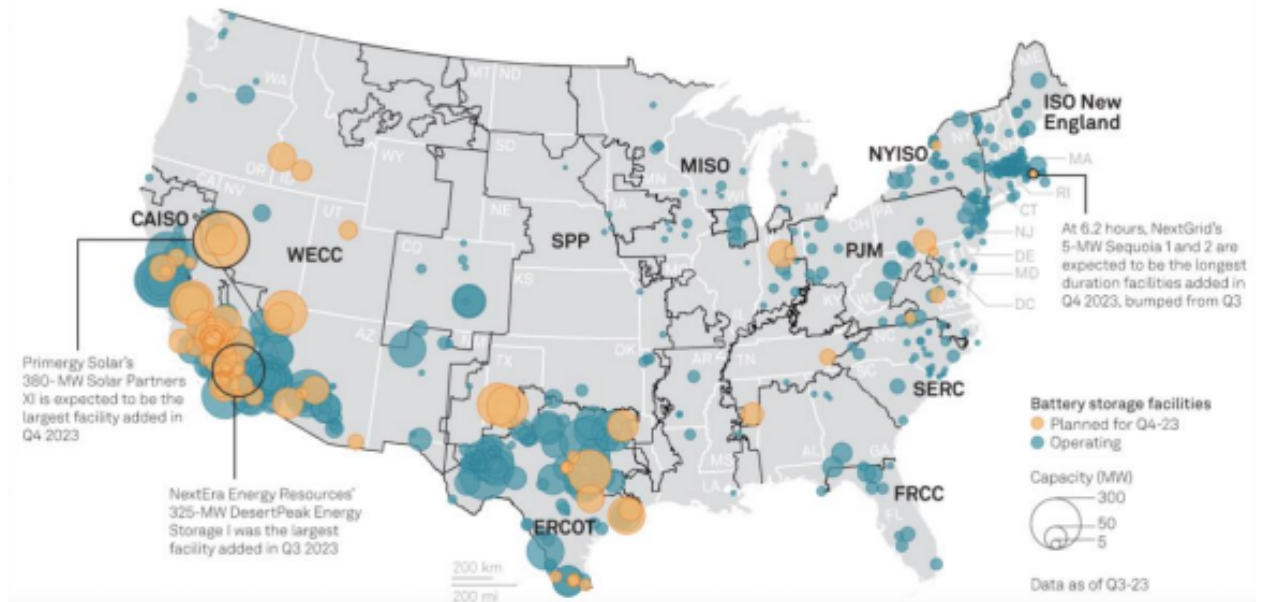
1 double by 2026, which could lower prices further.²⁵ In order for the Companies to develop
2 least-cost energy storage resources, Ameren Missouri should seek the full ITC for energy
3 storage, a plan which hinges on three factors: when the grid-scale energy storage facilities
4 are placed in service, where the facilities are located, and whether the projects meet
5 prevailing wage and apprenticeship criteria. As with the ITC for other clean energy
6 resources [see Section III(d)], the ITC for energy storage can be stacked with up to ten
7 percent in additional tax credits each for projects located in “energy communities” as well
8 as for projects paired with eligible wind or solar facilities and located in low-income
9 communities, and that are less than 5 MW total capacity. Further, it will apply to projects
10 greater than 1 MW that meet domestic content requirements.²⁶ Renew Missouri encourages
11 the Company to creatively site and size energy storage facilities to obtain the maximum
12 ITC bonus and adders available. Importantly, storage projects that are less than 1 MW are
13 automatically eligible for the maximum ITC bonus rate (which is 30% through 2033), and
14 eligible for fast-tracked interconnection per FERC Order No. 792 [see Section III(e)
15 “Transmission”, pp.9-10].²⁷ Such qualifying projects could conceivably be distributed in
16 low-income communities and paired with community solar projects, thus making them
17 eligible for the ITC low-income community adder and Solar For All provisions.

²⁵ 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

²⁶ (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.

²⁷ 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>

1 Additionally, such projects could even be located in areas of Ameren Missouri Missouri's
 2 footprint where energy resiliency is of more concern – and energy storage therefore of
 3 greater value – including where critical infrastructure (e.g., hospitals, emergency response)
 4 is located, especially if it is being deployed solely for pilot purposes. As the map in Figure
 5 1 below shows, there is currently very little energy storage operating in the MISO footprint
 6 of Missouri, meaning there is an important opportunity for Ameren Missouri to contribute
 7 to both the adoption of the technology and to greater energy resiliency in the region. To
 8 take advantage of the benefits of battery storage as well as incentives in siting battery
 9 storage in Missouri and in MISO, we request the Commission order Ameren to propose a
 10 Residential Battery Storage pilot program in their next rate case.



11
 12 Figure 1. US battery storage capacity and additions in Q3, 2023. Source: S&P Global Commodity Insights, US
 13 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>
 14
 15
 16

17 **V. EXPANSION OF THE COMPANY'S RSP PROGRAM**

18 **Q: What is Ameren Missouri's Renewable Solutions Program ("RSP")?**

1 A: The Renewable Solutions Program (“RSP”) is a subscription-based renewable energy
2 “purchasing program for large commercial and industrial customers and government
3 accounts. Phase 1 of the program [was] supported by the Boomtown Solar Project.”²⁸ Phase
4 2 expanded the program to include the Cass solar facility.²⁹ Both facilities are expected to
5 be online by the end of 2024.³⁰

6 **Q: Why would commercial, industrial, or government customers want to participate in**
7 **the RSP?**

8 A: According to Ameren Missouri’s Phase 2 presentation materials, participating in the RSP
9 supports “sustainability goals; reduce[s] your carbon footprint; lower[s] local emissions,
10 support[s] the renewable energy market;” contributes towards being “good stewards of the
11 Missouri environment; [and] shows you use clean energy to your shareholders, customers,
12 community and employees.”³¹ Furthermore, the RSP “offer[s] Ameren Missouri
13 commercial and industrial customers and communities a pathway to meet their
14 sustainability goals with local renewable energy while reducing cost and risk for all
15 Ameren Missouri customers.”³²

16 **Q: What is the status of RSP expansion?**

²⁸ 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

²⁹ https://www.ameren.com/-/media/missouri-site/files/environment/irp/2024/2024_ameren_irp_annual_update.ashx, p. 19

³⁰ https://www.ameren.com/-/media/missouri-site/files/environment/irp/2024/2024_ameren_irp_annual_update.ashx, p. 19

³¹ <https://www.ameren.com/-/media/missouri-site/files/cleanenergycustomerprograms/renewable-solutions/renewable-solutions-phase-2.ashx>, p. 6

³² https://www.ameren.com/-/media/missouri-site/files/environment/irp/2024/2024_ameren_irp_annual_update.ashx, p. 19

1 A: “Construction of the [Phase 2 Cass] facility is underway and the resource will be in service
2 by the end of 2024.”³³ It will have a 150 MW capacity.³⁴ **“(b) (5) - ACP”

3 (b) (5) - ACP
4 (b) (5) - ACP
5 (b) (5) - ACP
6 (b) (5) - ACP
7 (b) (5) - ACP

8 (b) (5) - ACP **35

9 **Q: Is the Phase 2 Cass facility expansion on track to be in service by the end of 2024?**

10 A: Ameren Missouri’s website, 2024 Integrated Resource Plan (“IRP”) Annual Update, and
11 Phase 2 presentation all state the Phase 2 Cass facility “will be in service by the end of
12 2024.”³⁶

13 **Q: Is the Cass facility expansion fully subscribed?**

14 A: Ameren Missouri’s 2024 IRP Update states the Phase 2 Cass facility was fully subscribed
15 in May 2024, by eight customers.³⁷

16 **Q: Are there future phases planned for the RSP?**

³³ <https://www.ameren.com/missouri/business/clean-energy-customer-programs/renewable-solutions;https://www.ameren.com/-/media/missouri-site/files/cleanenergycustomerprograms/renewable-solutions/renewable-solutions-phase-2.ashx>, p. 7

³⁴ Response to Renew Missouri Data Request (DR)2 - RSP - Questions and Answers Log Version_Post Launch_Initial List 3.13.24, p. 3

³⁵ Response to Renew Missouri DR 6.

³⁶ https://www.ameren.com/missouri/business/clean-energy-customer-programs/renewable-solutions;https://www.ameren.com/-/media/missouri-site/files/environment/irp/2024/2024_ameren_irp_annual_update.ashx, p. 19; <https://www.ameren.com/-/media/missouri-site/files/cleanenergycustomerprograms/renewable-solutions/renewable-solutions-phase-2.ashx>, p. 7

³⁷ https://www.ameren.com/-/media/missouri-site/files/environment/irp/2024/2024_ameren_irp_annual_update.ashx, p. 19; Response to Renew Missouri DR 3.

1 A: Yes. The initial RSP proposal included “multiple phases and multiple resource types” and
2 in their 2024 Phase 2 presentation, Ameren Missouri stated “future resources would be
3 sized to meet subscriber demand.”³⁸ Ameren Missouri states construction has begun on
4 two 50 MW facilities that will be used for Phase 3 RSP; enrollment for these facilities will
5 take place in Q1 2025.³⁹ Ameren Missouri did not indicate there were any further phases
6 planned.

7 **Q: How many subscribers does Ameren Missouri have to its RSP?**

8 A: There were ten initial subscribers to the Phase 1 Boomtown RSP, including SSM Health,
9 Walmart, World Wide Technology, Donald Danforth Plant Science Center, Mastercard,
10 bioMerieux, and Air Products.⁴⁰ Eight customers have subscribed to the full production of
11 the Phase 2 Cass facility.⁴¹ Further subscriber data has not been released.

12 **Q: Is there a waitlist to participate in the RSP?**

13 A: The RSP does not maintain a waitlist.⁴² However, 98 customers expressed interest in the
14 RSP for the Cass Phase 2 facility⁴³ and 100% of the project was subscribed to by only eight
15 customers, indicating there is high demand for future phases of the RSP. Both Phase 1 and
16 2 RSP facilities were fully subscribed by May 2024.⁴⁴ At least one subscriber, SSM Health,

³⁸ [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;
<https://www.ameren.com/-/media/missouri-site/files/cleanenergycustomerprograms/renewable-solutions/renewable-solutions-phase-2.ashx>, p. 7

³⁹ Response to Renew Missouri’s DR 6.

⁴⁰ https://s21.q4cdn.com/448935352/files/doc_downloads/2024/05/2024_ameren_sustainability_report.pdf;
<https://www.ssmhealth.com/newsroom/blogs/ssm-health-matters/june-2024/ssm-healths-commitment-to-solar-energy-surges>

⁴¹ Response to Renew Missouri’s DR 3.

⁴² Response to Renew Missouri’s DR 1.

⁴³ Response to Renew Missouri’s DR 3.

⁴⁴ https://www.ameren.com/-/media/missouri-site/files/environment/irp/2024/2024_ameren_irp_annual_update.ashx, p. 19.

1 has publicly stated they will increase their participation as the program expands.⁴⁵ World
2 Wide Technology’s website states they “support the continued development and expansion
3 of renewable energy sources.”⁴⁶ The fact that 90 customers expressed interest in Phase 2
4 Cass subscriptions but were unable to subscribe as it reached full subscription capacity
5 with only eight bidders, indicates high demand for further phases of RSP development.

6 **Q: Is Ameren Missouri working towards net zero carbon emissions?**

7 A: Yes. As outlined in the 2022 and 2023 IRPs and reiterated in their 2024 Sustainability
8 Report, Ameren Missouri’s goal is “net zero carbon emissions by 2045, with reductions in
9 carbon emissions of at least 60% by 2030 and 85% by 2040, compared to 2005 levels.”⁴⁷

10 **Q: Does solar generation, like that produced at the RSP Boomtown and Cass facilities,
11 produce emissions of carbon dioxide?**

12 A: “Solar generation produces no emissions of carbon dioxide.”⁴⁸

13 **Q: Would expanding the RSP contribute towards Ameren Missouri reaching their 2030,
14 2040, and 2045 carbon emission goals?**

15 A: Yes. The RSP “support[s] Ameren Missouri’s plan to transition its generation fleet from
16 aging coal-fired generation to clean energy resources, with significantly greater reliance of
17 renewable energy resources.”⁴⁹ Furthermore, Ameren Missouri’s 2024 Sustainability

⁴⁵ <https://www.chausa.org/publications/catholic-health-world/archive/article/april-2024/ssm-health-looks-to-the-sun-as-it-works-toward-climate-goals>

⁴⁶ <https://www.wwt.com/about/environmental-management>

⁴⁷ 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. 17; EA-2022-0245 Ex. 3, *Direct Testimony of Matt Michels*, p. 3.; <https://www.ameren.com/missouri/company/environment-and-sustainability/integrated-resource-plan>; https://s21.q4cdn.com/448935352/files/doc_downloads/2024/05/2024_ameren_sustainability_report.pdf, p. 5

⁴⁸ *Id.*

⁴⁹ 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

1 Report includes plans “for accelerated deployment of renewable energy generation and
2 investment in new on-demand energy sources to ensure the long-term stability of the
3 energy grid,” aiming for 31% of energy coming from renewable sources by 2030
4 (compared to only 10% in 2022).⁵⁰ In order to meet this goal, Ameren Missouri must
5 expand their RSP.

6 **Q: Do any of Ameren Missouri’s customers have similar net zero emissions goals?**

7 A: Yes. “Many of the Company’s large customers have similar goals.”⁵¹ RSP subscriber

8 ** [REDACTED] **

9 and Emerson both have 100% renewable electricity targets by 2030.⁵² Walmart, another
10 confirmed RSP subscriber, has a goal to use 100% renewable energy by 2035; as of
11 December 2024, they are only using 36% renewable energy.⁵³ RSP subscriber Mastercard

12 ** [REDACTED] ** and has “committed to reach net-zero
13 emissions by 2040.”⁵⁴ SSM Health and Bayer, both RSP subscribers, have made

Authorization to Establish Tracking Mechanism File No. EA-2022-0245 Report and Order, p. 11; Ex.1, *Direct Testimony of Ajay Arora*, p. 3.

⁵⁰ https://s21.q4cdn.com/448935352/files/doc_downloads/2024/05/2024_amerensustainabilityreport.pdf, p. 7.

⁵¹ 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. 17; Ex. 400, Teague Rebuttal Testimony, p. 3; Ex. 300, Brubaker Rebuttal Testimony, p. 3.

⁵² <https://amerensustainability.com/investors/financial-releases/financial-releases-details/2023/Ameren-Missouri-receives-approval-to-acquire-new-solar-facility-to-supply-local-organizations-with-up-to-100-renewable-energy/default.aspx>;

Response to Renew Missouri’s DR 5.

<https://www.emerson.com/en-us/news/corporate/emerson-joins-re100-targeting-100-renewable-electricity-by-2030>;
<https://www.gm.com/stories/renewable-energy-sustainable-strategy>

⁵³ https://corporate.walmart.com/content/corporate/en_us/purpose/sustainability.html/;
<https://amerensustainability.com/investors/financial-releases/financial-releases-details/2023/Ameren-Missouri-receives-approval-to-acquire-new-solar-facility-to-supply-local-organizations-with-up-to-100-renewable-energy/default.aspx>;

⁵⁴ Response to Renew Missouri’s DR 5.

<https://amerensustainability.com/investors/financial-releases/financial-releases-details/2023/Ameren-Missouri-receives-approval-to-acquire-new-solar-facility-to-supply-local-organizations-with-up-to-100-renewable-energy/default.aspx>; <https://www.mastercard.us/en-us/vision/our->

1 commitments to be carbon neutral by 2050.⁵⁵ ** [REDACTED]

2 [REDACTED] ** I would reiterate that, in April of 2024, SSM Health stated they will

3 subscribe to more as the program expands.⁵⁶ RSP Subscriber Air Products “will quadruple

4 the amount of renewable electricity used to make our products by 2030 compared to a 2023

5 baseline,” and has an overall “new goal of reaching net zero emissions from our operations

6 by 2050.”⁵⁷ ** [REDACTED]

7 [REDACTED]⁵⁸ ** World Wide Technology, also an RSP

8 subscriber, ** [REDACTED] ** and “has established an

9 objective to reduce energy consumption and greenhouse gas emissions by 25 percent by

10 the year 2030.”⁵⁹ They also state they “support the continued development and expansion

11 of renewable energy sources.”⁶⁰

[impact/planet.html#:~:text=At%20Mastercard%2C%20we%20are%20reducing,and%20consumers%20in%20climate%20action](https://www.biomerieux.com/us/en/our-responsibility/planet/climate-change.html#:~:text=At%20Mastercard%2C%20we%20are%20reducing,and%20consumers%20in%20climate%20action).

⁵⁵ Response to Renew Missouri’s DR 5.

<https://www.bayer.com/en/sustainability/targets#:~:text=We%20have%20set%20ourselves%20a,1%20and%202020by%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>

⁵⁶

<https://www.bayer.com/en/sustainability/targets#:~:text=We%20have%20set%20ourselves%20a,1%20and%202020by%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>

⁵⁷ <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>.

⁵⁸ <https://amerensustainability.com/investors/financial-releases/financial-releases-details/2023/Ameren-Missouri-receives-approval-to-acquire-new-solar-facility-to-supply-local-organizations-with-up-to-100-renewable-energy/default.aspx>;

Response to Renew Missouri’s DR 5.

<https://www.biomerieux.com/us/en/our-responsibility/planet/climate-change.html>

<https://www.biomerieux.com/us/en/our-responsibility/planet.html>

⁵⁹ Response to Renew Missouri’s DR 5.

<https://www.wwt.com/about/environmental-management>

⁶⁰

1 **Q: Is current RSP demand higher than current RSP capacity?**

2 A: Yes, as stated, subscriptions already fully account for current RSP capacity, and
3 companies, such as SSM Health, have stated their intent to increase subscriptions as
4 available RSP capacity increases. Again, there were 90 additional customers who
5 expressed interest in subscribing to the Phase 2 Cass RSP, while only eight customers will
6 consume full capacity of the Phase 2 Cass RSP.⁶¹ Furthermore, many large companies in
7 the Ameren Missouri service area have renewable energy goals that will only be attainable
8 by further expanding the RSP program.

9 **Q: Has Ameren Missouri promised customers it will increase RSP capacity to fill current**
10 **demand for the RSP?**

11 A: Yes, on Ameren Missouri’s website, they explicitly state, “Ameren Missouri will build
12 renewable energy facilities on the MISO grid to match demand from subscribing
13 customers.”⁶² They reiterated this sentiment in 2024 RSP Phase 2 presentation materials.⁶³

14 **Q: Would expanding the RSP raise costs for all Ameren Missouri customers?**

15 A: No. Ameren Missouri has stated in previous testimony, “the RSP’s fixed charge structure
16 eliminates the uncertainty on the total amount subscribers will pay into the program, and

<https://amerensustainability.com/investors/financial-releases/financial-releases-details/2023/Ameren-Missouri-receives-approval-to-acquire-new-solar-facility-to-supply-local-organizations-with-up-to-100-renewable-energy/default.aspx>;
<https://www.wwt.com/about/environmental-management>

⁶¹ Response to Renew Missouri’s DR 3.

⁶² <https://www.ameren.com/missouri/business/clean-energy-customer-programs/renewable-solutions>

⁶³ <https://www.ameren.com/-/media/missouri-site/files/cleanenergycustomerprograms/renewable-solutions/renewable-solutions-phase-2.ashx>

1 thereby creates a higher likelihood that program costs will be covered by subscribers.”⁶⁴

2 This sentiment was reiterated in Ameren Missouri’s 2024 IRP Update.⁶⁵

3 **Q: Would expanding the RSP contribute to keeping rates low for Ameren Missouri**
4 **customers?**

5 A: Yes. “Ameren Missouri has determined that new renewable generation is the most
6 affordable energy resource to replace retiring coal-fired generation plants,” which in
7 previous testimony, Ameren Missouri’s 2023 IRP, and the 2024 Sustainability Report,
8 Ameren Missouri indicates they are working towards.⁶⁶ Furthermore, “renewable
9 generating resources, such as the [RSP facilities], are insulated from the price volatility
10 risks associated with fossil-fuel generation because they do not require any fuel to operate.
11 Once installed, these resources rely on free solar or wind resources to produce
12 electricity.”⁶⁷

13 **Q: Would expanding the RSP help mitigate production risks and price fluctuation for**
14 **Ameren Missouri customers?**

⁶⁴ 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. 21; Ex. 11, Wills Direct Testimony, p. 10-11.

⁶⁵ https://www.ameren.com/-/media/missouri-site/files/environment/irp/2024/2024_ameren_irp_annual_update.ashx, p. 19.

⁶⁶ 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. 1; Ex.1, Arora Direct Testimony, p. 5.; <https://www.ameren.com/missouri/company/environment-and-sustainability/integrated-resource-plan>, https://s21.q4cdn.com/448935352/files/doc_downloads/2024/05/2024_ameren_sustainability_report.pdf, p. 7

⁶⁷ 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. 17; Ex. 2, Arora Surrebuttal Testimony, p. 15; Tr. 1, p. 175 (Forsberg).

1 A: Yes. In previous testimony, Ameren Missouri stated “the large-scale expansion of
2 renewable resources, such as the [RSP], provides significant risk mitigation to Ameren
3 Missouri’s generation portfolio, particularly with respect to the potential for additional
4 environmental regulations, changes in climate policy and carbon dioxide prices, and other
5 factors that may significantly affect the operating costs and benefits of the Company’s
6 existing coal-fired resources.”⁶⁸

7 **Q: Is there an urgency for Ameren Missouri to expand their RSP program?**

8 A: Yes. Ameren Missouri needs to immediately develop the next phase of expansion for their
9 RSP program. In addition to approximately 90 interested customers wanting to participate
10 or increase their participation in the program, “waiting to add renewable resources could
11 result in Ameren Missouri falling short of meeting energy needs or requiring the rapid
12 deployment of less beneficial resources, particularly if viable renewable energy projects
13 are limited, transmission constraints cause delays or higher costs, or financing rates are
14 higher in the future when transitioning from fossil-fuel generation.”⁶⁹

15 **Q: Are there regional economic benefits to expanding the RSP now?**

16 A: Yes. “Access to renewable energy generation is increasingly vital to a region’s competitive
17 economic development. Offering its larger customers an option to purchase renewable
18 energy is one way for Ameren Missouri to help prevent these customers from leaving, or
19 seeking to expand outside, the Ameren Missouri service territory.”⁷⁰ Additionally,
20 “surveys in the latest edition of a prominent economic development trade publication
21 showed that 74% of corporate respondents indicated that access to renewable resources

⁶⁸ *Id.* Report and Order, p. 17; Ex. 3, Michels Direct Testimony, p. 3.

⁶⁹ *Id.* Report and Order, p. 12; Ex. 4, Michels Surrebuttal Testimony, p. 39.

⁷⁰ *Id.* Report and Order, p. 16; Ex. 6, Dixon Surrebuttal Testimony, p. 12.; Ex. 7, Forsberg Direct Testimony, p. 6.

1 was either very or somewhat important to their company, and 91% of site consultant
2 respondents indicated that access to renewable energy resources was either very or
3 somewhat important to their clients' location decisions. Real business investment decisions
4 are being made based on renewable energy access, and states that can provide access to
5 renewables are succeeding in some of the largest economic development opportunities in
6 the country.”⁷¹

7 **Q: How does the Environmental Protection Agency (EPA) measure emission mitigation**
8 **efforts and activities?**

9 A: The EPA uses Offsets and Renewable Energy Certificates (RECs) to measure emission
10 mitigation efforts and activities.⁷²

11 **Q: What are Offsets and RECs?**

12 A: An Offset is a specific activity, such as an efficiency or forestry project, that results in
13 verified emission reductions; each Offset equals one metric ton of CO₂e reductions.⁷³ A
14 REC is the legal instrument to account for the production of 1 MWh of zero emissions
15 energy.⁷⁴

16 **Q: If Ameren Missouri had not been granted a timing variance by the Commission in**
17 **Case No. EE-2024-00376, how much money would Ameren Missouri have had to**
18 **spend to purchase the necessary RECs?**

19 A: Ameren Missouri would have had to purchase \$2.5 million in RECs.⁷⁵

⁷¹ *Id.* Report and Order, p. 16; Ex. 6, Dixon Surrebuttal Testimony, pp. 12-13; Ex. 6, Dixon Surrebuttal Testimony, p. 14

⁷² <https://www.epa.gov/green-power-markets/renewable-energy-certificates-recs>

⁷³ https://www.epa.gov/sites/default/files/2018-03/documents/gpp_guide_recs_offsets.pdf, p. 3.

⁷⁴ https://www.epa.gov/sites/default/files/2018-03/documents/gpp_guide_recs_offsets.pdf, p. 4.

⁷⁵ In the Matter of Union Electric Company d/b/a Ameren Missouri's Request for a Variance Regarding its Renewable Energy Standard Compliance, File No. EE-2024-0376, Request for Variance, p. 2.

1 Q: **If an expansion of the RSP were built but not fully subscribed, would Ameren**
2 **Missouri own the RECs resulting from the unsubscribed energy produced?**

3 A: Yes, Ameren Missouri would own the RECs.

4 Q: **If an expansion of the RSP were built but not fully subscribed, would this harm**
5 **Ameren Missouri’s financial standing?**

6 A: No, as shown in EE-2024-0376, Ameren Missouri nearly had to purchase \$2.5 million in
7 RECs in order to meet emissions goals in a timely manner.⁷⁶ Thus, any surplus of
8 unsubscribed RSP RECs Ameren Missouri might produce by expanding the RSP would
9 result in a reduction in need for purchased RECs. The surplus RECs would counterbalance
10 the need to purchase RECs. In short, customers will not be losing out.

11 Q: **What action does Ameren Missouri need to take in order to meet their emission**
12 **reduction goals and help their customers meet their emissions goals?**

13 A: Ameren Missouri needs to immediately begin planning and constructing a Phase 4 facility
14 in order to further expand the RSP. In doing so, they will allow their customers to increase
15 their renewable energy subscriptions and potentially reduce the number of RECs Ameren
16 Missouri may have to purchase in future years.

17 VI. CONCLUSION

18 Q. **Please summarize your recommendations in this case.**

19 A. I recommend the Commission direct Ameren Missouri to adopt rate structures and
20 implement billing practices ensuring access to TOU rates for all customers, including those
21 with net-metered solar systems. I also recommend the Commission order Ameren Missouri to
22 take advantage of the numerous incentives surrounding low-income solar and battery storage

⁷⁶ *Id.*

1 and propose a low-income solar program as part of their next rate case or expansion of their
2 residential community solar facility, as well as a residential battery storage pilot program.
3 These programs will facilitate Ameren Missouri bringing the multitude of benefits that solar
4 resources and battery storage technologies can offer to the grid and to Ameren Missouri
5 customers. Finally, due to the success of the Renewable Solutions Program, I recommend that
6 Ameren Missouri be ordered to file an expansion plan to meet customer demand for the
7 Renewable Solutions Program in its next rate case, along with an outline for Phase 4 of the
8 project, including a date by which a certificate of convenience and necessity will be requested
9 to expand the facility.

10 **Q: Does this conclude your testimony?**

11 **A: Yes, it does.**