

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In The Matter of Union Electric Company d/b/a)
Ameren Missouri’s 2020 Utility Resource) File No. EO-2021-0021
Filing Pursuant to 20 CSR 4240 – Chapter 22)

**RENEW MISSOURI’S COMMENTS REGARDING
AMEREN MISSOURI’S 2020 INTEGRATED RESOURCE PLAN**

I. Introduction

1. Renew Missouri is encouraged that Ameren Missouri’s preferred Integrated Resource Plan (“IRP”) includes energy efficiency and demand response programs as well as adding 5,400 MW of additional wind and solar generation by 2040 in addition to several coal unit retirements. Even though this IRP marks a significant movement towards a least-cost carbon-free generation fleet, Renew Missouri continues to advocate Ameren Missouri do everything it can to deliver these benefits to its customers as soon as possible. Renew Missouri offers these comments to identify additional concerns the Company should address that are meant to aid the company in developing a resource acquisition strategy that fulfils the objectives of Chapter 22. In addition, Renew Missouri also provides a description of Equity and Environmental Justice opportunities it has identified with its partners in the Missouri Energy Efficiency For All (MO EEFA) coalition.

II. Concerns Identified

2. The Commission’s regulation at 20 CSR 4240-22.020(6) defines “Concern” to mean “concerns with the electric utility’s compliance with the provisions of this chapter, any major concerns with the methodologies or analyses required to be performed by this chapter, and anything that, while not rising to the level of a deficiency, may prevent the electric utility’s resource acquisition strategy from effectively fulfilling the objectives of Chapter 22.”

3. Renew Missouri identifies several concerns on issues that, left unaddressed, will negatively impact the Company's future resource acquisition strategy and compliance with the Chapter 22 regulations.

a. Addressing Special Contemporary Issues Ordered in November 2020

4. In November 2020, the Commission issued its list of Special Contemporary Resource Planning Issues for Ameren Missouri to consider in its annual IRP report. In Chapter 11.4 of its IRP, the Company only addresses the Special Contemporary Issues from December 2019. As the resource planning process moves forward in this case with several delays requested by various intervenors, Ameren Missouri should begin examining the issues ordered in November 2020.

5. In particular, Renew Missouri is interested in the Company beginning to incorporate analysis regarding 2020 Special Contemporary Issue "H" regarding solar resources stating the company must:

(1) Assess the value of a solar tariff that encourages distributed solar installers to optimize the direction that solar panels face to provide more kWh during the utility's peak and provide maximum benefits for all utility customers

(2) Conduct a Value of Solar study to inform efforts relating to integrated resource planning. A Value of Solar study is a comprehensive analysis of the cost avoided and benefits created for the grid, electricity customers, and society as result of the generation of solar energy. Because solar energy is often interconnected at the distribution level of the grid, such a study, done correctly, will capture distribution level benefits and costs that cannot be captured by wholesale level avoided cost estimates. The immediate benefit of such a study is to understand the contributions and costs related to distributed solar generation beyond simplistic and subjective

allegations of cross subsidies. The utility's Value of Solar study should consider the National Association of Regulatory Utility Commission's Distributed Energy Resources Rate Design and Compensation manual, National Renewable Energy Laboratory's Value of Solar: Program Design and Implementation Considerations, and the National Energy Screening Project's National Standard Practice Manual for Distributed Energy Resources among any other industry guidance on value of solar study development and implementation.¹

6. In Chapter 6, Ameren Missouri discusses company-owned solar assets including Community Solar Pilot Program expansion, the Neighborhood Solar Program, and multiple Solar + Storage projects. While planning for these projects is important, the Company must continue examining the planning impacts from customer-owned solar that may impact the placement and scope of additional utility-owned solar connected to its distribution system.

7. As a proposed resolution of this concern, Renew Missouri proposes the Company begin addressing the 2020 Special Contemporary Issue "H" within this docket and planning period.

b. Evaluating the Geographic Diversity of Additional resources

8. Ameren Missouri's planning objectives and measures detailed in Chapter 10.1 include evaluating "resource diversity" of its generation under the heading Portfolio Transition. This is shown in Table 10.1 of Chapter 10:

¹ Order, Case No. EO-2021-0069.

Table 10.1 Planning Objectives and Measures³

Planning Objective Categories	Measures	Weighting
Cost	Present Value of Revenue Requirements	30%
Customer Satisfaction	Customer Preferences, Levelized Rates	20%
Portfolio Transition	Resource Diversity, CO ₂ Emissions, Probable Environmental Costs	20%
Financial/Regulatory	Free Cash Flow, Financial Ratios, Stranded Cost Risk, Transaction Risk, Cost Recovery Risk	20%
Economic Development	Direct Job Growth (FTE-years)	10%

9. Renew Missouri supports the Company transitioning to a greater reliance on wind and solar generation but is concerned the analysis inadequately evaluates geographic diversity of additional generation. This is a concern that may have impacted the Company’s choice for a preferred plan, given the relatively close scoring between plans V and Y in Chapter 10’s Table 10.5²:

² Although this Table shows the “***” indicating HC content, this is the redacted table reproduced from the Company’s Public filing.

Table 10.5 Alternative Resource Plan Scoring Results^{8*}**

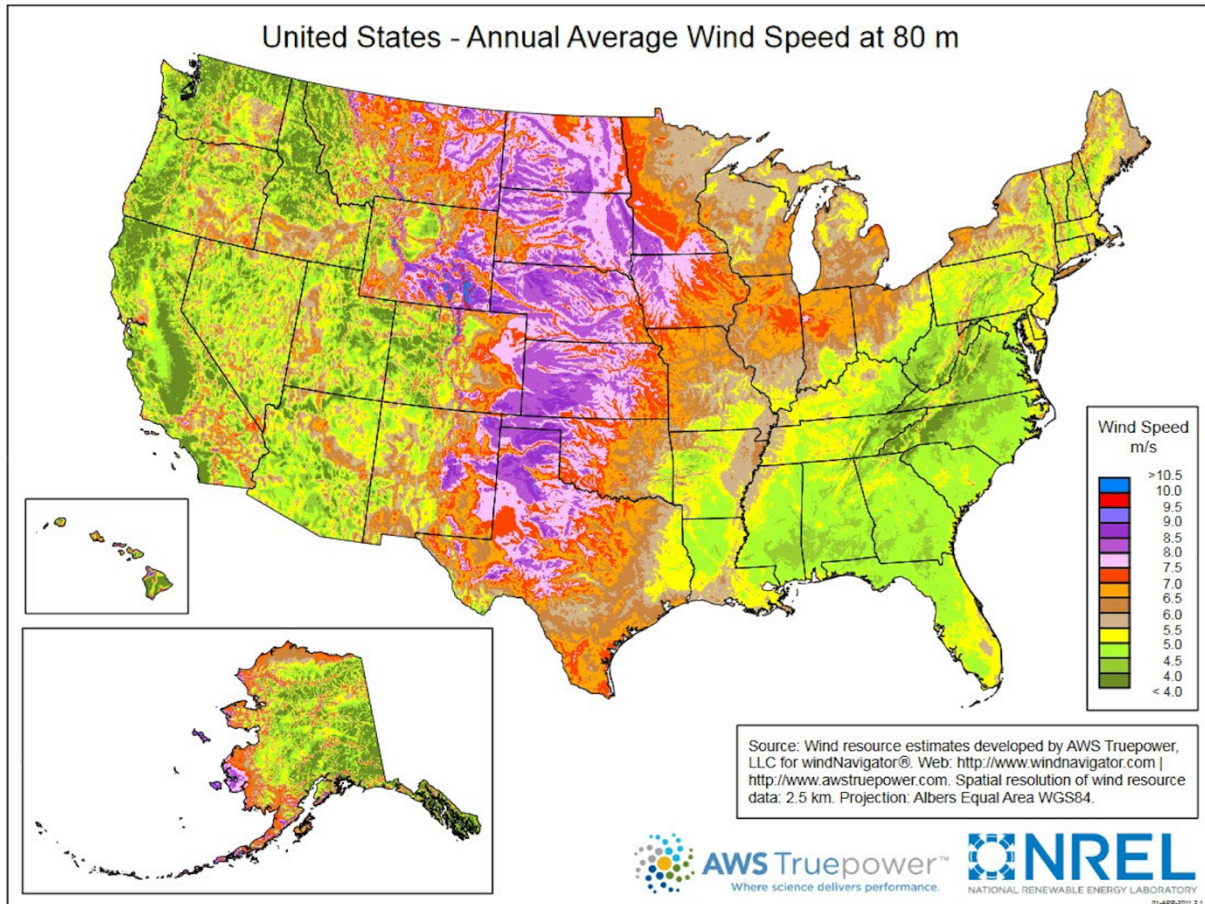
Plan	Description	Composite Score [#]
V	Sioux-Rush Early Retirement - Renewable Subscription	4.90
Y	Sioux-Rush Early Retirement - Grain Belt Express	4.70
P	Sioux-Rush Early Retirement	4.50
M	Labadie Early Retirement - 2 units	4.30
N	Sioux Early Retirement	4.30
O	Rush Early Retirement	4.20
Q	Sioux-Rush Early Retirement - No CCs	4.20
X	Sioux-Rush Early Retirement - Renewables when needed	3.90
BB	Sioux-Rush Early Retirement - MAP	3.80
L	Labadie Early Retirement - 4 units	3.80
B	Renewable Expansion	3.70
Z	Sioux-Rush Early Retirement - DOPE 1	3.50
AA	Sioux-Rush Early Retirement - DOPE 2	3.40
W	Sioux-Rush Early Retirement - No DSM - Renewable Subscription	3.20
H	MAP DSM - Renewable Expansion	3.00
J	DOPE1 DSM	2.90
K	DOPE2 DSM	2.80
A	RAP DSM - RES Compliance	2.70
I	MAP DSM - RES Compliance	2.50
D	No New DSM - All Solar	2.20
E	No New DSM - Pumped Hydro Storage	2.20
G	No New DSM - Simple Cycle Gas	1.80
C	No New DSM - Combined Cycle Gas	1.70
F	No New DSM - AP1000 Nuclear	1.60

[#] Results for Plans R-U were redacted from this table.

10. If the Company accounted for geographic diversity, it is possible that plan Y (which pairs Sioux – Rush early retirement with the addition of Grain Belt Express) would be the highest scoring plan as the Grain Belt Express provides geographic diversity through the ability to reach least-cost, renewable wind resources from Western Kansas. In its informal comments, Renew Missouri pointed out wind facilities in Kansas are much more productive than wind in surrounding states.³ This is illustrated by the wind resource map below:⁴

³ <https://www.awea.org/Awea/media/Resources/Publications%20and%20Reports/White%20Papers/Grid-Vision-The-Electric-Highway-to-a-21st-Century-Economy.pdf>

⁴ Available at <https://windexchange.energy.gov/maps-data/43>

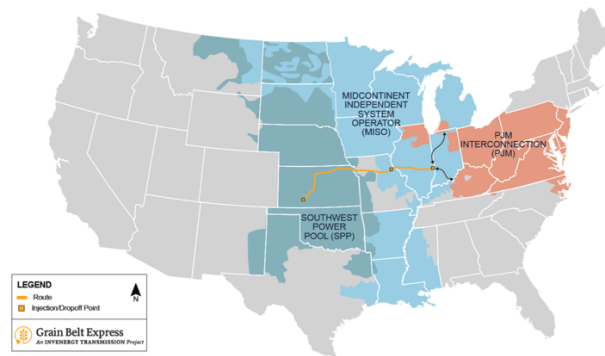


11. Not only does the Grain Belt Express provide geographic diversity by tapping resources in Kansas, it also accesses “better” wind with different generating profiles and capacity factors.

12. A final point about geographic diversity in generation is the additional reliability (and potential revenue) that could be provided between geographic regions during extreme weather events. As investigations continue, the energy crisis that unfolded in Texas this February revealed the geographic diversity paired with sufficient transmission capabilities are an essential consideration for reliability. The energy shortage affected SPP members that provide electricity to Missouri. The Kansas Corporation Commission has opened a series of investigations related to supply and demand imbalances in the SPP Integrated Market, and what steps can be taken to make

sure utilities are better prepared for future extreme weather events.⁵ Renew Missouri believes the Commission in this state should do the same.

13. The Grain Belt Express, evaluated in Ameren Missouri’s plan Y, could provide geographic diversity and reliability to Ameren Missouri, and potentially, from Ameren Missouri to SPP members during weather emergencies. Grain Belt Express will be bi-directional, meaning that – while it’s designed to bring least cost renewable energy from Kansas to Missouri – it could provide substantial amounts of excess capacity from as far away as the PJM marketplace if needed. This map below shows the geographic reach that the transmission line could provide:⁶



14. Given the outages experienced in the SPP, geographic reliability should be considered in IRP analysis. As a resolution of this concern, Renew Missouri proposes the Company identify and incorporate geographic diversity in its Chapter 10 planning objectives and measures when evaluating resource plans.

c. Evaluating the cost/benefit and reliability impacts of additional resources on the Distribution level compared to the Transmission level

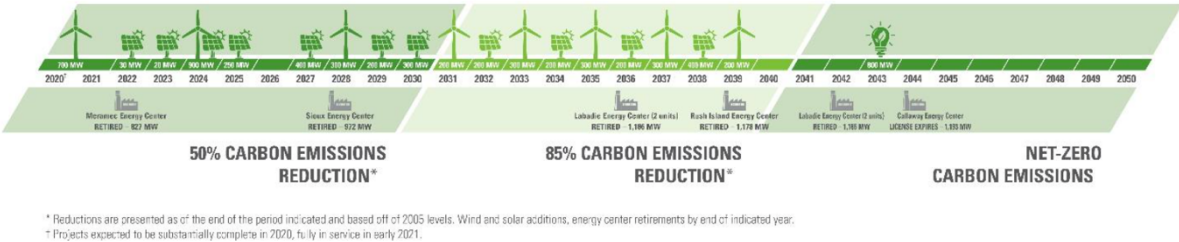
15. Ameren Missouri’s preferred plan – plan V – includes the addition of 5,400 MW of additional wind and solar generation by 2040. Within the chapters, there is some discussion of the

⁵ <https://kcc.ks.gov/news-3-9-21>

⁶ Available at: <https://grainbeltexpress.com/reliability.html>

Company’s plans for distribution level generation paired with storage, but that discussion does not impact a large portion of the preferred plan’s additional renewable generation.

Figure 10.8 Preferred Resource Plan



16. When the Company is evaluating and planning for these new generation projects, Renew Missouri raises as a concern that Ameren Missouri should also continue examine the cost/benefit and reliability impact comparing generation added at the distribution level compared to the transmission level.

17. For example, within the preferred resource plan the Company identifies an addition of 250 MW of solar generation. Renew Missouri supports adding solar and wind resources, but believes the transmission versus distribution interconnection should be evaluated as a part of the planning process. Comparing the economies of scale from a 250+ MW project (or geographic diversity of the site) to opportunities for multiple projects connected at the distribution level would aid the stakeholders and Company in evaluating costs and benefits from a plan and may contribute to an “all of the above” approach towards de-carbonization, reliability, and least-cost power.

18. To resolve this concern, Renew Missouri proposes the Company identify and evaluate the costs and benefits, including reliability, for incorporating its identified generation additions on the transmission level, distribution level, or a combination of the system. Ameren Missouri has established its intention to meet certain target dates to add additional generation and, given the potential for project delays due to current and increasing queue congestion in MISO. Evaluating

and adding diversity between distribution and transmission level projects will help ensure that the Company is able to meet its target dates.

d. Federal actions since the Company filed its IRP chapters

19. Since Ameren Missouri filed its Plan, several significant changes have been made to federal policy and law that should be addressed by the Company in its plan. First, Congress passed the Consolidated Appropriations Act, 2021 which included provisions impacting and extending the Production Tax Credits (“PTC”) and Investment Tax Credits (“ITC”).⁷ For the ITC, Congress extended the applicability of the 26% credit for two years until January 1, 2023 and the applicability of the 22% credit for another year until January 1, 2024.⁸ The PTC for large wind facilities has been extended for one year, permitting wind facilities that begin construction before January 1, 2022 to qualify at 60% of the statutory rate, which rate adjusts for inflation.⁹ These tax changes may impact the procurement plans identified in the preferred resource plans.

20. A second federal action since the Company filed its chapters is President Biden’s Executive Order 13990 of January 20, 2021¹⁰ that contained a Technical Support Document on the “Social Cost” of Carbon, Methane, and Nitrous Oxide which would implement an increase to the social cost of carbon as follows:¹¹

⁷ <https://www.congress.gov/bill/116th-congress/house-bill/133/text>

⁸ https://www.jdsupra.com/legalnews/congress-extends-renewable-energy-tax-98223/#_ftn1

⁹ Id.

¹⁰ <https://www.federalregister.gov/documents/2021/01/25/2021-01765/protecting-public-health-and-the-environment-and-restoring-science-to-tackle-the-climate-crisis>

¹¹ Full document available at: https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf

Table ES-1: Social Cost of CO₂, 2020 – 2050 (in 2020 dollars per metric ton of CO₂)³

Emissions Year	Discount Rate and Statistic			
	5% Average	3% Average	2.5% Average	3% 95 th Percentile
2020	14	51	76	152
2025	17	56	83	169
2030	19	62	89	187
2035	22	67	96	206
2040	25	73	103	225
2045	28	79	110	242
2050	32	85	116	260

This increased social cost of carbon may have an impact on the renewable procurement plans for Ameren Missouri as well as retirement plans for its coal fleet. Since these proposed costs replace Trump Administration’s calculation of the Social Cost of Carbon, which included values as low as \$1, the impact may be significant.¹²

x. As a way to resolve this concern, Renew Missouri proposes the Company address how these Federal changes related to taxes and the Cost of Carbon will impact (or not impact) its choice of a resource plan.

e. Ameren Missouri should evaluate expanding its demand side programs

21. Ameren Missouri’s preferred plan includes RAP energy efficiency, distributed energy resource, and demand response programs. Energy efficiency programs under its current MEEIA plan run through 2022. The modeled program spending for the 20-year planning horizon (after the current cycle of MEEIA programs) is over \$2.5 billion. Cumulative peak demand reductions exceeding 1,900 MW by 2040 (not including planning reserve margin), and cumulative energy savings (at the customer meter) total 50 million MWh.¹³

¹² <https://www.crowell.com/NewsEvents/AlertsNewsletters/all/Biden-Administration-Publishes-Interim-Social-Cost-of-Carbon-Values>

¹³ Chapter 10, p. 26.

22. These are significant figures, but Renew Missouri raises a concern that a MAP-level portfolio would be a better long-term investment for the Company to build its plan upon. The Company's most recent MEEIA filing and the subsequent resolution(s) of that docket lay the groundwork for the company to "go bigger" with its efficiency programs.

23. Ameren's Missouri's MEEIA plan was approved for the 2019-2021 cycle (and was later extended). The initial plan targeted over 794 GWh of cumulative portfolio energy savings and over 361 MW of cumulative demand savings, with a total budget of \$195.5 million. The plan is forecast to generate \$324 million in lifetime net benefits. Ameren's plan also includes a six-year commitment to significantly grow and expand low-income programs, with \$50 million targeted specifically to these customers.

24. On August 5, 2020, Ameren entered a unanimous agreement and stipulation in File No. EO-2018-0211 to extend its 2019-2021 cycle into 2022. Notable changes in the extension include: 1) a PAYS program, with \$5 million and \$10 million in new financing available in 2021 and 2022, respectively and 2) an increase in the proportion of dollars allocated to low-income programs from 10% to 18% of the portfolio.

25. The Company's analysis in its 2020 IRP compared the energy and demand savings of a MAP and a RAP portfolio with these cumulative results taken from Chapter 8 of the plan:

Figure 8.5: Cumulative Annual RAP/MAP Energy Efficiency Savings (MWh)

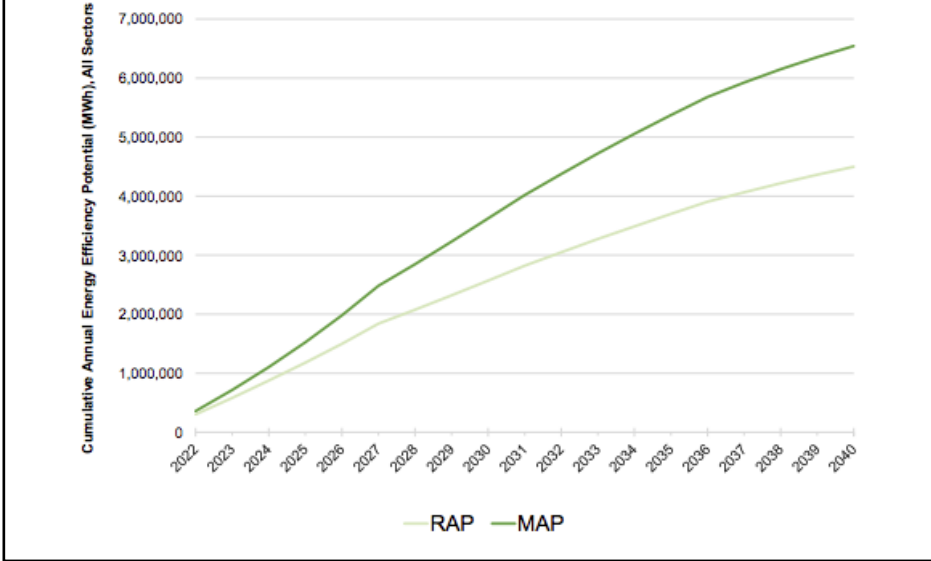
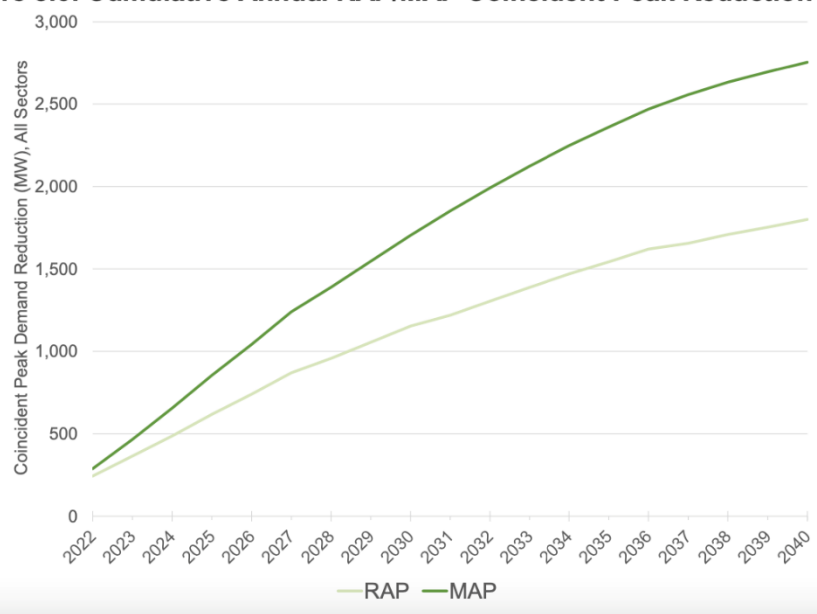


Figure 8.6: Cumulative Annual RAP/MAP Coincident Peak Reduction (MW)



26. Ameren Missouri should pursue all cost-effective energy potential, and that is the MAP portfolio for greatest energy and demand savings. The MAP plan presents higher energy reduction potential, despite a requiring a higher budget, and has far larger cumulative energy efficiency savings (MWh) than the RAP plan. The difference in energy efficiency savings between MAP and RAP only increases over time, making the MAP plan more cost-effective over time.

27. In addition, the impact of the social cost of carbon will only increase the cost-effectiveness of energy efficiency and demand response programs. As the IRP executive summary states: “the cleanest and cheapest form of energy is the energy you do not have to produce in the first place.”

28. As a proposed resolution, Ameren Missouri should evaluate the impact of the federal social carbon price on the cost effectiveness of its MAP and RAP scenarios. While Renew Missouri recognizes the difficulties in achieving all cost-effective DSM, we are supportive of the goal and interested in working together with Ameren Missouri, Staff, Public Counsel, and other stakeholders to make the MAP scenario an achievable reality.

III. Equity and Environmental Justice Concerns

29. For the past seven years, Renew Missouri has engaged in key venues, such as Public Service Commission dockets, Missouri Energy Efficiency for All (“MO EEFA”) spaces, and the MEEAC Low-Income Work Group, on conversations around economic and racial equity related to energy- and housing decision-making, especially as relates to renters and multifamily affordable housing. The below comments reflect those aspects of our work relating to the impacts of the IRP on low-income communities and communities of color.

30. Renew Missouri is committed to repairing historic racial inequities around energy and housing and to pursuing racial justice through all aspects of its work statewide.

a. New Supply Side Resources

31. Renew Missouri commends Ameren Missouri for its planned additions of 3,100 MW of wind and solar capacity by 2030, and for another 2,300 MW of wind and solar additions thereafter. We also commend Ameren for its commitment to reach net-zero carbon dioxide emissions by 2050. These are important steps toward making Ameren Missouri a cleaner and more equitable utility that is more responsive to the desires of its customers.

32. Adding 3,100 MW of renewable energy by 2030 will only get Ameren Missouri to roughly 25% of its total energy production from renewable sources. Sierra Club has recently called on Ameren Missouri to reach 100% clean energy to improve public health, to use its clean energy transition to help address systemic racism in the region, and to avert the worst impacts of the climate crisis. We join in this call and encourages a faster transition to 100% clean energy than currently planned in Ameren's IRP.

b. Plant Retirements

33. Renew Missouri echoes Sierra Club's call for the faster retirement of Ameren Missouri's coal fleet. Ameren Missouri should be commended for the accelerated retirement scheduled for its Sioux and Rush Island coal plants, both of which have had their retirement dates moved up by five years. This will significantly improve the future health of surrounding environmental justice communities. However, there has been no corresponding accelerated retirement for the Labadie plant. Labadie is the largest coal plant in the country without modern pollution controls, scheduled to be open until 2042. In order to make meaningful strides to respond to the climate crisis, Ameren Missouri must pursue scenarios that retire its entire coal fleet earlier than current plans. In addition, Labadie's lack of pollution controls puts nearby residents – particularly low-income communities and communities of color – in continued danger of adverse health impacts.

c. Demand-Side Resources

34. Ameren Missouri’s 2020 Market Potential Study (found in Chapter 8 of the IRP) indicates enormous potential for energy efficiency and demand-side programs. Based on former program performance and data from other jurisdictions, Renew Missouri continues to consider the Maximum Achievable Potential (MAP) scenario rather than the Realistic Achievable Potential (RAP) scenario as the more accurate picture of achievable savings. For thorough discussion of the insufficiencies in the MAP and RAP scenario modeling, refer to the comments of the Natural Resources Defense Council (NRDC) in File No. EO-2018-0038. Ameren’s Integrated Resource Plan must fully exploit low-cost, zero emission demand-side potential, rather than artificially limit the size of this resource to its RAP scenario.

35. In addition, we commend Ameren Missouri for its specific focus on the income-eligible and multifamily sectors as current and future areas of DSM investment. We view Ameren Missouri as committed partners in bringing energy efficiency solutions to these communities that have high energy burdens and that are often overlooked. As the largest utility in the state, Ameren Missouri can be a leader in solving the “split incentive” challenge and ensuring that renters and multifamily building owners have as much access to energy saving technology as home owners.

36. In 2015, Optimal Energy authored a potential study that identified a high degree of achievable potential savings in the affordable multifamily sector within the territories of Missouri’s largest utilities.¹⁴ Even after three years of Ameren Missouri’s Cycle II Income-Eligible Multifamily program and two years of its Cycle III program, there remains significant potential in the sector. The study found a cumulative energy savings potential of 146 GWh from 2015-2034 in Ameren Missouri within the affordable multifamily sector. This leaves well over 100 GWh of

¹⁴ Optimal Energy, “The Significant Potential for Energy Savings in Missouri’s Affordable Multifamily Housing,” Energy Efficiency for All (2015). The study can be found here: <https://www.energyefficiencyforall.org/resources/the-significant-potential-for-energy-savings-in-missouris-affordable-multifamily-housing/>

cumulative potential in the sector between 2022-2034. We encourage Ameren Missouri to prioritize investment in DSM in the affordable multifamily sector as well as the affordable single-family sector, and to remain open to increasing incentives and program budgets if participation exceeds expectations.

37. Renew Missouri recommends that Ameren Missouri extend its recently launched Pay As You Save (PAYS) program to all residential buildings, including multifamily buildings. PAYS can be most effectively used as a way to achieve deeper savings (beyond direct install measures) in residential buildings, and IRP modeling should reflect PAYS' potential to increase savings from residential DSM programs. PAYS may not be the ideal solution for income-eligible building owners and renters; for example, it may not make sense for building owners to compel low-income renters to pay for unit upgrades. However, PAYS may be a good solution for master-metered buildings, or for non-low-income renters in some cases. However, in no instances should the availability of PAYS result in a decrease in income-eligible program budgets or in the size income-eligible incentives. Renew Missouri is willing to work with Ameren's PAYS team to figure out how extending PAYS to rental properties could work.

38. Renew Missouri also recommends that Ameren Missouri integrate air source heat pumps into its portfolio wherever the opportunity arises, for example, in its Income-Eligible Multifamily program. The cost of air source heat pumps has dramatically fallen while their efficiency has increased in recent years, creating the potential to overturn the long-standing assumption that gas heating is more affordable than electric heating. Air source heat pumps could be a huge source of savings for customers in the coming years. Moreover, as Ameren Missouri's renewable generation increases and its fossil fuel generation decreases, electric heating can contribute to overall carbon reductions. Specifically, Ameren Missouri's next MEEIA plan should integrate air source heat

pumps (via a pilot if necessary) that target low-income multifamily buildings currently using electric resistance heating. The Company could fund installations of heat pumps (either ductless or ducted, as appropriate) to serve as the primary heating system in all such buildings, with electric resistance heating serving as backup. Ideally, these types of offerings would be paired with a focus on maximizing building shell measures. Our coalition looks forward to working with Ameren in this area.

39. Finally, Renew Missouri recommends that Ameren Missouri's low-income bill assistance program be paired with energy efficiency. Energy efficiency has the potential to permanently (or for an extended time) decrease a customer's need for bill assistance. Ideally, all customers receiving bill assistance would be connected with an Ameren representative, who would offer them free direct install measures and a building energy evaluation to pursue deeper measures. Where the customer is a renter, effort should be made to contact the property manager or building owner to enroll them in the Income-Eligible Multifamily program or other applicable offerings. In this way, bill assistance programs function as lead generation mechanism for DSM programs, and help to decrease reliance on bill assistance over time.

d. Collecting Data Regarding Environmental and Energy Justice

40. Renew Missouri would like to partner with Ameren in identifying disparities in energy burdens and uptake of bill assistance and energy efficiency services. The first step in identifying and quantifying such disparities is a robust effort to collect and publicly report geographic and demographic information about participants across programs (energy assistance, energy efficiency, weatherization, etc.). This effort should of course be done while respecting the confidentiality of individual customers. Collection of demographic and geographic data of current

and former program participants could be used to better identify needs within communities and to better target programs.

41. Data should be collected and summarized either by zip code or by census tract, and should include:

- Number of Income-Qualified buildings in which energy efficiency measures were installed and number of apartments in those treated buildings;
- Number of Income-Qualified buildings in which major measures (building envelop and/or HVAC mechanicals) were installed and number of apartments in those treated buildings, by zip code;
- Any existing data on participating building owners' racial or ethnic affiliations and those of their tenants;

Any existing data on the square footage, age, and building type of buildings receiving measures installed as a result of utility programs.

42. Renew Missouri and the MO EEFA coalition can work with Ameren Missouri on this effort to ensure that participant data is collected properly respecting customer privacy, and to ensure that data usefully informs future energy efficiency and other programs.

WHEREFORE, Renew Missouri submits these Comments outlining its concerns with Ameren Missouri's 2020 Integrated Resource Plan.

Respectfully,

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Certificate of Service

I hereby certify that copies of the foregoing have been mailed, emailed or hand-delivered to all counsel of record this 31st day of March 2021:

/s/ Tim Opitz
