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MISSOURI PUBLIC SERVICE COMMISSION

INDUSTRY ANALYSIS DIVISION

TARIFF/RATE DESIGN DEPARTMENT

REBUTTAL TESTIMONY

OF

J LUEBBERT

UNION ELECTRIC COMPANY, d/b/a AMEREN MISSOURI

CASE NO. EA-2023-0286

Jefferson City, Missouri
October 2023

** Denotes Confidential Information **

TABLE OF CONTENTS OF

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Q. Please state your name and business address.

A. My name is J Luebbert. My business address is P. O. Box 360, Suite 700, Jefferson City, MO 65102.

Q. By whom are you employed and in what capacity?

A. I am the Tariff/Rate Design Department Manager for the Missouri Public Service Commission ("Commission").

Q. Please describe your educational background and work experience.

A. I graduated from the University of Missouri in Columbia, Missouri, with a Bachelor of Science in Biological Engineering, in May 2012. My work experience prior to becoming of member of the Missouri Public Service Commission Staff includes three years of regulatory work for the Missouri Department of Natural Resources. Prior to holding my current position, I was employed as Case Manager of the Commission Staff Division and as an Associate Engineer in the Energy Resources and Engineering Analysis Departments of the Industry Analysis Division of Commission Staff.

Throughout my positions with Staff, I have experience in various aspects of utility functions including, but not limited to, resource planning, general rate cases, risk-sharing mechanisms, Certificate for Convenience and Necessity ("CCN") applications, and prudence reviews of electric investor-owned utilities ("IOU").

Q. Have you previously filed testimony before the Commission?

A. Yes, numerous times. Please refer to Schedule JL-r1, attached to this Rebuttal Testimony, for a list of the cases in which I have assisted and filed testimony with the Commission.

EXECUTIVE SUMMARY

Q. What is the purpose of your rebuttal testimony?

A. My testimony explains why it is not appropriate to grant the authority Ameren Missouri has requested based on its direct testimony filing, and why it would be imprudent for Ameren Missouri to move forward with the acquisitions/development of the solar projects.[1] [2] I will explain and provide additional context to several of Staff's concerns with the solar projects based on analysis of Ameren Missouri's testimony, underlying workpapers, and the integrated resource plans ("IRP") and preferred resource plans ("PRP") upon which Ameren Missouri relies. I will explain why the projects subject to this case introduce unnecessary and unjustified ratepayer risk to the benefit of Ameren Missouri shareholders. This introduction of ratepayer risk contradicts the testimony of Ameren Missouri's witnesses. My testimony also provides additional support for Staff's recommended conditions that mitigate some of the risks associated with potential approval of the projects and provides recommendations for potential IRP process and CCN application improvements.

Q. What recommendations are included within your testimony?

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[1] The four solar projects in this case are commonly referred to as the Bowling Green project, the Vandalia project, the Split Rail project, and the Cass County project.
[2] Throughout my testimony, I will refer to these as "the solar projects" unless a project is specifically identified.

A. To potentially improve the value of the Chapter 22 process so that certain modeling from that process could potentially also be used as evidence in a future CCN case, Staff recommends that the Commission order Ameren Missouri to commit in this docket to the following in future IRPs to partially address some of the problems raised in Staff rebuttal testimony in this case.

1. Remodel permutations around preferred plan:
    a. Consideration of alternative resource addition timelines. For example, if a resource plan performs well that includes implementing a combined cycle unit in 2025 and wind in 2030, perform a run in which the wind is included in 2025 and the combined cycle unit in 2030, based on discussion and feedback from Staff and other stakeholders,
    b. Optimizing the size of resource additions. For example, if a resource plan that includes a 100 MW CT performs well, perform a run in which a 90 MW or a 110 MW CT is considered, based on discussion and feedback from Staff and other stakeholders,
    c. More energy pricing, capacity pricing, load assumption, fuel assumption scenarios, based on discussion and feedback from Staff and other stakeholders,
    d. Replace generic with potential site assumptions. For example, if Ameren Missouri is considering a specific location and size of a solar facility to be operational in 2026, model capacity costs and capacity factors for that project, or other possible projects, as opposed to generic solar, based on discussion and feedback from Staff and other stakeholders,
2. Allow Staff/OPC to provide alternative fuel pricing for sensitivity runs,

3. Always include scenarios that minimally comply with legal mandates and MISO requirements,
4. Include contingency plans based on key input scenarios such as:
    a. Market price changes for key components by resource type
    b. Changes to tax incentives
    c. Load assumptions
    d. Ongoing litigation regarding existing resources

RELIANCE ON IRP TO JUSTIFY THE PROJECTS

Q. Does Staff's testimony address Ameren Missouri's September 26, 2023 IRP filing?

A. Except as specifically noted by applicable witnesses, no. As of the time of drafting testimony, Staff has not had a reasonable opportunity to conduct a full review of Ameren Missouri's 2023 IRP filing, and the filing has not been subject to the Chapter 22 review process.[3] This process is explained in the Rebuttal Testimony of Staff Expert Brad Fortson.[4]

Q. To what extent does Ameren Missouri rely on the 2020 IRP and its 2022 PRP to support its justification that the projects are improvements justifying the cost, and to claim need for these projects?

A. Almost entirely. Ameren Missouri's direct testimony in this case does not provide a meaningful discussion of the timing of capacity shortfalls, or discussion of means to

[3] Ameren Missouri filed the 2023 IRP on September 26, 2023, and underlying workpapers were received on October 2, 2023.
[4] Among other aspects, Mr. Fortson's testimony explains that the timeline for Staff's review of triennial compliance IRP filings extends well beyond the hearing dates set for this case.

address those shortfalls. Rather, Ameren Missouri alleges that the need for the projects for which authority is requested in this case is justified by the inclusion of solar projects in the 2020 IRP and the 2022 PRP.

I will address in my testimony the inapplicability of the prior IRP analysis to Ameren Missouri's obligation to provide evidence of need, economic feasibility, and public interest in this docket.[5] I will also identify key distinctions between the projects modeled in the prior IRPs and those proposed in this docket, as well as some of the shortfalls of the prior IRP analysis. Mr. Fortson will further discuss the Staff's and Commission's concerns with the prior IRP and PRP, and will also explain that in the 2023 IRP PRP these projects were simply input into the Ameren Missouri model, and not actually vetted through any analysis in the 2023 IRP whatsoever.

Inapplicability of IRP analysis to justify need, economic feasibility, and public interest

Q. Does Staff agree with Ameren Missouri's conclusion that

> The IRP demonstrates that the Company's generation transition plan is a cost-effective means of providing the energy and capacity resources needed to reliably serve customers over time, supporting the conclusion that the Solar Projects are economically feasible.[6]

A. No. The remainder of this section of my testimony provides necessary context about the IRP process that support my conclusion.

Q. Briefly describe the IRP process.

[5] These "Tartan Factors" are used to assist the Commission in its determination of whether the authority requested in this case would result in facilities that are of sufficient importance to warrant the expense of making it, or of such an improvement as to justify or warrant the expense of making the improvement; and that the projects are both important to the public convenience and desirable for the public welfare, or effectively a necessity because the lack of the service is such an inconvenience.

[6] Wills pg 15.

A. 20 CSR 4240 Chapter 22 – Electric Utility Resource Planning requires investor owned utilities to conduct integrated resource planning no less than triennially. As discussed in much greater detail in Mr. Fortson's rebuttal testimony, Chapter 22 includes minimum standards to govern the scope of the IRP process. However, each utility retains an immense amount of discretion in the planning process, including nearly all of the assumptions that will be included in the analyses based on the opinion of utility management. These assumptions drive the outcomes of the various metrics reported within the IOU's IRP report. Assumptions within an IRP include, but are not limited to:

- load growth;
- load shape;
- the capital costs of various resource types;
- timing and size of resource additions;
- timing of resource retirements;
- tax benefits;
- fuel prices;
- energy prices;
- capacity prices;
- operations and maintenance expense;
- the capital cost of environmental compliance upgrades;
- costs associated with regulatory requirements;
- depreciation rates including net salvage assumptions;
- and many more.

Many of the assumptions are variable by resource type, scenario, and year within the planning horizon.[7] Utilities also have discretion for planning objectives utilized to rank alternative resource plans. While the IRP includes checks on process implementation, the assumptions and planning parameters are entirely subject to utility discretion.

Q. Were the assumptions and planning parameters of Ameren Missouri's IRP vetted for reasonableness by Staff or the Commission prior to the IOU's selection of its preferred resource plan?

A. No.

Q. Even if assumptions were reasonable at the time modeled, could the reasonableness of those modeling assumptions lessen in real time?

A. Yes. Among other things, changes to policies at the state and federal level as well as changes to various market conditions can have a dramatic impact on the validity of the assumptions used within an IRP. Justifying large capital investments based on the results of IRP analyses that include assumptions that are no longer valid due to changes in federal policy[8] and market conditions[9] is unreasonable and introduces large amounts of unnecessary ratepayer risk.

Q. In his direct testimony, Mr. Wills describes Ameren Missouri's selection of the preferred resource plan ("PRP"), stating:

> In selecting the PRP, the primary selection criterion is minimization of the net present value of revenue requirement – essentially this means that the PRP is selected based on assessment of the "least cost" portfolio available to meet customers' energy and capacity needs, consistent with other secondary planning objectives and risk assessments.

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[7] The IRP planning horizon includes a period of time of at least twenty years.
[8] One example is the passage of the Inflation Reduction Act of 2022, as discussed more thoroughly later in my testimony.
[9] One example is the substantial increase in solar project costs.

How accurate is this statement?

A. Ameren Missouri utilizes scorecards to rank alternative resource plans, using the ranking of net present value of revenue requirements ("NPVRR") as the primary selection criterion for the PRP among the alternative resource plans. Staff witness Sarah Lange provides perspective to the limitations of NPVRR as a metric to demonstrate that an improvement is justified by its cost or is economically feasible. In short, the IRP results indicate that, of the manual inputs and scenarios selected by Ameren Missouri management to develop as plans to test, the PRP was the least-*worst* option on a NPVRR basis, based upon the modeling assumptions chosen by Ameren Missouri management.

Q. Could you provide a non-utility example of the IRP as a tool to select the least-cost means to meet customers' energy and capacity needs?

A. Yes. Consider a young family of four who requires transportation. If the family applied the constraint that the transportation had to be available on the lot at a Mercedes Benz dealership, it is likely that a Mercedes Benz van would be the least cost means of meeting those needs. But, if the only constraints applied were that the transportation had to adequately seat four, it is probable that a new economy car or used SUV would be found to be the least cost means of meeting their needs. It could even be that the use of public transportation or a rideshare program would be adequate for their needs, and would be the least cost option, if all factors are considered. In short, finding a Mercedes Benz van to be the least cost vehicle on the Mercedes Benz lot and calling that result least cost is the equivalent of calling the PRP the least cost solution to needs identified in an IRP.

Q. In this case, what is the equivalent of the Mercedes Benz constraint?

A. In its 2020 IRP, Ameren Missouri included timing constraints based on then-effective tax law, and limited the majority of its alternative plans to those that had renewable generation additions within that certain timeframe. . Given these constraints, Ameren Missouri's

2020 IRP and 2022 PRP are not the product of a robust investigation although that is the implication of Ameren Missouri's witnesses in this docket. Staff witness Brad Fortson explains in his testimony how Ameren Missouri's resource plans are pre-determined prior to being evaluated in the IRP.

Q. Do you agree with Mr. Wills' representation, quoted above, that the PRP is the least cost means to meet customers' energy and capacity needs?

A. I do not agree with Mr. Wills' representation for several reasons. The IRP alternative resource plans do not include a limitation of generation additions "to meet customers' energy and capacity needs". The PRP is selected from among only those alternative resource plans that Ameren Missouri compared. Ameren Missouri's IRP process does not optimize the amount of generation resource additions, the type of generation resource addition, nor the timing of those additions, and the candidate plans can be driven by the utility desire to pursue one or more secondary planning objective. The 2020 IRP and the 2022 PRP update did not include constraints upon the additions of generation resources to be included in the alternative resource plans,[10] meaning that many of the plans included certain generation additions beyond the needs of ratepayers. The comparisons between alternative resource plans should not be construed as a demonstration of "least-cost" planning due to various flaws in the

[10] Ameren Missouri response to Staff data request 0124.

analyses.[11] Finally, the IRP analyses ignore key aspects that are nearly certain to impact the costs borne by ratepayers as a result of the solar projects subject to this case.[12]

Q. Does Ameren Missouri's PRP indicate that the projects requested in this case are needed to continue to serve the load of ratepayers?

A. No. The PRP is Ameren Missouri's business plan. Ameren Missouri has discretion to test alternative resource plans that are designed to optimize shareholder investment opportunities. Ameren Missouri also has discretion to fail to include alternative resource plans that do not provide what it considers adequate shareholder investment opportunities. For example, Ameren Missouri did not consider use of PPAs for its solar resource additions. Even if the Commission accepts Ameren Missouri's position that solar resources are needed and economically justified through the IRP analyses, it is possible that a PPA could provide substantially similar energy and accredited capacity attributes at a lower cost and potentially less ratepayer risk than the solar projects subject to this case, but Ameren Missouri did not consider PPAs as part of its request for proposals for solar resources.[13] If a solar PPA opportunity existed consistent with Ameren Missouri's pricing assumptions for the 2020 IRP or the 2022 Updated preferred plan,[14] the PPA would have represented a substantial cost savings compared to the projects subject to this case. The timing of resource additions and the factors that influence the projected costs and benefits of resources

[11] These issues are discussed further in my testimony and the rebuttal testimonies of Brad Fortson, Sarah Lange, and Dr. Hari Poudel.
[12] Ms. Lange's rebuttal testimony includes several factors that should be accounted for by Ameren Missouri to test economic impacts specific to the projects subject to this application.
[13] Ameren Missouri's response to Staff data request 0170 states, in part:

> "2. PPAs were not explicitly considered in the IRP. For IRP purposes, generic resource assumptions are used. The costs for a generic PPA would not be expected to be any different since such an agreement would be effectively cost-based.
> 3. No RFPs were sought for PPAs to meet the planned solar generation identified in either the 2022 PRP update or the 2023 IRP."

[14] As stated in Ameren Missouri's response to Staff data request 0170.

are at the sole discretion of Ameren Missouri's management. As I will discuss below,[15] some of those modeling assumptions are already inaccurate and the results should no longer be relied upon.

Q. Are there other issues with comparing NPVRR results of the various alternative resource plans?

A. Yes. Variations within the assumptions included in the modeling of each alternative resource plans makes direct comparisons of plans difficult. For example, two plans could have identical resource additions and retirements in early years, but include differences in strategy in the later years of the planning horizon. Those plans will have different NPVRRs.[16] There is no requirement that the alternative plans considered are reasonable permutations of one another to enable reasonable comparison of various fleet configurations. And, as further illustrated in the testimony of Staff witness Brad Fortson, there's no requirement that the alternative plans contain meaningfully different fleet configurations.

Q. Have the solar projects subject to this case been vetted through Ameren Missouri's IRP process and selection of the PRP?

A. No. Ameren Missouri selected a PRP featuring generic solar projects as the lowest NPVRR plan of the options it was willing to consider in its IRP analysis, which are based entirely on the assumptions of Ameren Missouri management. That is the sum and extent of what its IRP analysis demonstrates with regard to the generic solar projects. This is no more reasonable than concluding that a Mercedes van is the least cost and best option to

[15] See subsection titled "Shortfalls of Prior IRP Analysis".
[16] As described in Ms. Lange's rebuttal testimony, changing the timing of benefits or costs can have a large impact on the NPVRR results even if it is not indicative of the impact to ratepayers.

meet the needs of a young family on the basis that it was the cheapest vehicle on the Mercedes Benz lot.

Q. Is Ameren Missouri bound to the results of the IRP and the selection of its PRP?

A. No. Ameren Missouri retains the right to change its preferred plan prior to Chapter 22 triennial compliance filings and annual updates if conditions change or the business plan changes. Ameren Missouri faces limited consequences if it chooses not to execute on its PRP, and the PRP does not obligate the Commission to issue any given CCN to Ameren Missouri.

Q. Is this a reasonable feature of the IRP process?

A. Absolutely. It would be unreasonable to force a utility to strictly follow the results of an IRP due to the ever changing factors that impact the market. Utilities should have the flexibility to alter plans as the time approaches to execute to ensure that ratepayers are protected from unwarranted costs.

Shortfalls of Prior IRP Analysis

Benefits of Tax Credits

Q. How did Ameren Missouri account for tax credits attributed to solar projects in the 2020 IRP and 2022 Updated Preferred Plan?

A. Ameren Missouri's 2020 IRP and 2022 Updated Preferred Plan considered only Investment Tax Credits ("ITCs") as an option for solar resources completed in the early 2020s. The tax benefit assumptions were modeled such that the benefit was uniformly applied over the life of the project.

Q. Are those assumptions still appropriate after the passage of the Inflation Reduction Act of 2022 ("IRA")?

A. No. The IRA changed several provisions of the tax credits associated with solar projects as described in more detail in Staff witness Jane Dhority. Specifically, the IRA extended the eligibility for projects to receive the full tax credit (up to 30%) for projects placed in service by December 31, 2032. After 2032, the credit will step down at the same rate as before the IRA. The chart below shows the ITC rates before and after the IRA.[17]

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Credit Prior to IRA	26%	22%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Credit Under IRA	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	26%	22%	0%

The IRA also provides an opportunity for solar projects to be eligible for Production Tax Credits ("PTC"), which may be more beneficial for ratepayers in certain circumstances. The IRA also introduces potential credit transferability to third parties.[18]

Q. Why does extension of the ITC eligibility and introduction of PTCs undermine Ameren Missouri's selection of a PRP when its analysis assumed a reduction in tax benefits?

A. First, Ameren Missouri's 2020 IRP and the 2022 Preferred Plan Update do not account for the possibility of PTCs for solar projects at any point in the planning horizon, meaning that plans with later solar additions may be better than modeled. Second, the changes in tax credit eligibility make the comparison of alternative resource plans in Ameren Missouri's past IRP analyses unreliable for purposes of justifying the projects subject to this case. The past IRP analyses included a step-down of ITC eligibility in the 2020s, which is no longer accurate due to the IRA passage. Ameren Missouri compares the Net Present Value of

[17] Chart from Solar Energy Industries Association (SEIA) website. https://www.seia.org/initiatives/solar-investment-tax-credit-itc
[18] ITC transfers are included in Mr. Michels' workpapers in this case regarding revenue requirement impacts of the four projects assuming ITC election.

Revenue Requirement ("NPVRR") of selected Alternative Resource Plans that vary the amount of generation additions as well as the timing of those additions. Solar projects that are added in future years within Ameren Missouri's past IRP analyses are effectively penalized with substantially lower tax credit values and zero ITC value for projects added in the late 2020s, making comparisons of plans that vary timing of renewable resource additions not reflective of reality. For example, projects added in the 2028 timeframe received no tax credit benefits in the Ameren Missouri IRP analyses, but those same projects are eligible for the full tax credit amounts due to the passage of the IRA. The failure to consider the current tax benefit landscape in the planning process creates a false sense of urgency to add large amounts of renewable resources earlier in the planning horizon. The extension of tax credits and the extension of PTC eligibility to solar projects may be a great benefit for Ameren Missouri ratepayers in the form of flexibility in the timing of additions and a greater supply of projects that are eligible or the full tax credits. However, those facts were simply not included in the Ameren IRP analyses referred to by Ameren Missouri witnesses' direct testimony as justification for these projects. Therefore, it is unreasonable to assume that these particular projects must be acquired, and at this time, to achieve the lowest NPVRR.

Q. Are there other aspects of tax benefits for solar projects included within Ameren Missouri's IRP analyses that do not align with Ameren Missouri's plans?

A. Yes. Ameren Missouri's IRP analyses account for the tax credits for solar projects assuming the ITC will be utilized and normalized over the life of the facility.[19] At this point, given the possibility of credit transfers, introduction of PTC eligibility, the existence of Ameren Missouri's IRA tracker, and tax credit normalization requirements, it is not clear if

[19] Ameren Missouri response to Staff data request 0129.

such treatment will match how those credits will be booked and subsequently realized by ratepayers.[20] The result of this assumption skews the impact on future revenue requirements of the assets and, subsequently, the NPVRR results of alternative resource plans.

Estimated Costs versus Updated Expected Costs

Q. Please explain the difference between Ameren Missouri's estimated costs of solar additions and the expected costs of these projects.

A. Within the context of Ameren Missouri's IRP analyses, an estimated cost of solar facilities is utilized for the NPVRR analysis. In contrast, Ameren Missouri has provided testimony regarding the updated expected costs of each specific project within the context of this case, which are not final but nevertheless more certain than the estimated costs included in the IRP analyses.[21]

Q. Why are the differences between the Ameren Missouri IRP assumptions for solar projects and the updated expected costs of the projects subject to this case important?

A. The updated expected cost of these projects has increased at least *** [redacted] *** compared to the assumed costs included in the Ameren Missouri 2022 Updated Preferred Plan and represent an even greater increase from the Ameren Missouri 2020 IRP solar cost assumptions. The costs of assets, tax benefits, and the assumed revenue from those assets are major drivers in the resulting NPVRR for a given alternative plan in an IRP. Ultimately, those three components are also likely to be the largest drivers in terms of actual rate increases realized by ratepayers if these projects are included in rates.

[20] See Staff witness Jane Dhority's rebuttal testimony.

[21] The rebuttal testimony of Staff witness Hari Poudel provides a comparison of the differences in solar costs for the solar projects in this case versus for solar resources in Ameren Missouri's IRP analyses, capacity factor assumptions utilized in the workpapers provided in support of Ameren Missouri witness Matt Michels' direct testimony in this case, and the expected capacity factors for the individual projects subject to this case.

Q. What effect does the substantial increase in costs for solar projects have on Ameren Missouri's decision to move forward with its preferred plan?

A. None. Ameren Missouri has continued with the acquisition of these projects despite the substantial cost increases. In fact, the cost increases inure to the benefit of shareholders, considering the expectation that shareholders receive recovery of, and a return on, the investment.

Q. Is the decision to continue to pursue these projects justified by the existence of Ameren Missouri's 2022 updated preferred plan?

A. No. Ameren did not account for those cost increases in either the 2020 IRP or the 2022 updated preferred plan despite the fact that the increases, among other substantial changes, will fundamentally change the results of the analyses.

Capacity Factors

Q. Do the expected capacity factors[22] of the projects subject to Ameren Missouri's application differ from the assumptions included in Ameren Missouri's IRP analyses?

A. Yes.[23] Furthermore, the analyses underlying Ameren Missouri's estimates of NPVRR for each project in this case do not account for the differences between the annual energy production expectations of each facility.[24] Utilizing specific capacity factors for each project changes the energy production within Ameren Missouri's modeling in this case, especially in lower production scenarios. By failing to account for these differences,

[22] Capacity factor is a measure of the amount of electricity generated in a given period relative to how much electricity could have been generated if the generator was operating at full capacity for the entire period.
[23] The rebuttal testimony of Staff witness Hari Poudel provides a comparison of the capacity factor assumptions for solar resources in Ameren Missouri's IRP analyses, capacity factor assumptions utilized in the workpapers provided in support of Ameren Missouri witness Matt Michels' direct testimony in this case, and the expected capacity factors for the individual projects subject to this case.
[24] As discussed more thoroughly in the rebuttal testimony of Staff Witness Brad Fortson, the IRP includes generic assumptions for solar resource additions that are not necessarily applicable to these specific projects.

Ameren Missouri's analyses mask a differential in the potential economic outcomes of the four projects subject to this case.

MISO Capacity Revenues in IRP

Q. What are the anticipated capacity accreditation values for MISO that Ameren Missouri modeled in EO-2022-0021 and EO-2022-0362?

A. The anticipated capacity values for MISO that Ameren Missouri modeled in Case No. EO-2022-0021 assumed a 50% capacity credit for solar.[25] These values are utilized to determine a revenue estimate for solar projects in the context of the IRP analyses in conjunction with forecasted capacity prices. Solar projects modeled in EO-2022-0362 assumed a 50% capacity accreditation value from MISO in the summer and 11% in the winter.[26] However, MISO's seasonal capacity construct had not been finalized at the time of Ameren Missouri's filing of the 2022 Updated preferred plan, nor had the results of the most recent MISO Planning Reserve Auction ("PRA") been published, so presumably Ameren Missouri did not account for differences in capacity prices or revenues from that capacity across seasons.[27] The result is an overstated estimate of the amount of capacity that can be monetized through the MISO PRA and inaccurate estimates of potential streams of revenue for solar projects in the Ameren Missouri IRP analyses.

Carbon dioxide pricing effects on market price assumptions

Q. In his rebuttal testimony, Mr. Lange discusses Staff's concern with Ameren Missouri's approach to modeling a carbon dioxide emission price. How does Staff's

[25] DR 129 in EA-2023-0286, item 11.
[26] Ibid.
[27] Page 29 of Ameren Missouri's Notification of Change in Preferred Resource Plan report states: "Ameren Missouri modeled its updated Preferred Resource Plan using the same model setup used for its 2020 IRP with updated assumptions as described in this report." Updated capacity costs were not reflected in the aforementioned Ameren Missouri report.

concern regarding Ameren Missouri's approach to modeling carbon dioxide emissions reductions relate specifically to the results of the IRP?

A. Ameren Missouri's assumption of carbon dioxide emissions pricing can have a substantial impact on the results of the IRP analyses and ultimately the selection of the preferred resource plan. As Mr. Lange discusses in more detail, carbon dioxide pricing tends to raise market prices[28] whereas an assumption of carbon dioxide emissions limits can result in lower assumed market prices over time. These effects on market prices would result in differences in the level of generation for existing and future resource additions, MISO revenues from generating resources included in the model, and the results of the analyses for all alternative resource plans reviewed.

Q. Did Ameren Missouri's IRP test the effects of carbon dioxide pricing versus carbon dioxide emissions limits on alternative resource plans or the selection of its preferred resource plan?

A. No.

Existing IRP Analyses as Support to Move Forward is Inappropriate

Q. Would a reasonable person move forward with such a capital intensive investment without accounting for the changes to tax benefits,[29] substantial differences in project costs,[30] differences in accredited capacity by season, and capacity factors[31] on the economic outlooks for the preferred plan as well as alternative plans?

[28] Ameren Missouri acknowledged the effects of carbon pricing in Case No. EO-2024-0020 Chapter 10 Pg. 13, stating: "The higher the CO2 price, the higher the power price. Wind and solar generation, along with other non-carbon-emitting generating sources like hydro and nuclear, therefore see a benefit from CO2 prices through the revenue they receive in the market."
[29] See rebuttal testimony of Staff Witness Jane Dhority.
[30] See rebuttal testimony of Staff Witness Hari Poudel.
[31] See rebuttal testimony of Staff Witness Hari Poudel.

A. If the person carried the risk of uneconomic outcomes of the decision, no. If Ameren Missouri receives approval of the CCN application and the assets are fully included in rates, ratepayers will be expected to bear the burden of uneconomic outcomes resulting from the decision to move forward with the projects while Ameren Missouri shareholders reap the benefit of a return on the investments.[32] This result is unreasonable for many reasons, but Ameren Missouri's failure to provide appropriate justification for these specific projects and account for changes to the major drivers in past IRPs are some of the most concerning to Staff.

Ameren Missouri's IRP analyses are based on generic assumptions with different costs, different projected annual energy generation, different tax benefit availability and treatment, and different regulatory treatments from those projects for which it seeks permission to construct and operate in this docket. Many of the assumptions included in the IRP analyses are critically flawed or are not applicable to the projects subject to this case. The IRP analyses compared a narrow set of alternative resource plans, and the comparisons of the results for each alternative plans are not reliable based, in part, on the changes to potential tax benefits, project costs, and revenue assumptions included within the modeling. Moving forward with the solar projects subject to this case based on IRP results, which are not reliable nor applicable to the projects, as justification for the projects is unreasonable.

RISK OF THE PROJECTS

Q. Which entity bears the risk that the solar projects are ultimately uneconomic?

A. Once the costs of the projects are included in rates, ratepayers bear the risk that the projects are uneconomic. Ameren Missouri has been granted monopoly status for its service

[32] The next section my testimony provides more thorough explanations of the economic risks of these projects from the perspective of ratepayers and Ameren Missouri.

territory. The ratepayers are captive because they do not generally have a choice of their electric provider and are required to pay the Commission approved tariffed rates for use of the service. In return, Ameren Missouri is tasked with building and maintaining generation that is sufficient to serve the needs of the ratepayers. Ameren Missouri will ultimately seek recovery of, and a return on, the initial investment for solar projects. A majority of these costs will be borne by its captive ratepayers who do not have a say in the generation procurement plans of the company. Due to its status as a monopoly, once the solar plant is included in Ameren Missouri's rates, shareholders will be insulated from the risk that the projects are uneconomic. That risk is borne by the captive ratepayers.

Comparison to IPP Risk

Q. How do the economic risks of Ameren Missouri compare to an independent power producer ("IPP")[33] when deciding to add generating facilities?

A. One of the fundamental differences between investments in supply-side resources owned by an IOU and an IPP is the assumption of risk. When an IPP makes a decision to purchase or build a resource, the IPP investors carry the risk that the investment decision is uneconomic, and the IPP investors bear the full cost of the project to the extent that it does not perform when or how it was assumed to perform when the IPP made the decision to move forward with the project. The IPP is subject to competition and does not have a captive set of ratepayers from which to recover the investment. The IPP relies solely on revenues generated by the plant through market sales or contractual agreements to recover the costs of the project and a receive a return on the investment. The economic risk acts as an upper limit on the amount

[33] Independent power producers own/operate electric generating units with the intention to sell the electricity produced to utilities, end-users, or within RTO integrated markets.

of investment that an IPP is willing to assume. The assumption of risk of an IPP also acts as an incentive for the investors to maximize profits through cost reductions, efficiencies, and revenue maximization.

On the other hand, due to the expectation of cost recovery from its captive ratepayers, Ameren Missouri shareholders do not carry the same risks as an IPP nor the same incentives to maximize profitability of the projects. Given the monopoly status of the utility, Ameren Missouri has a perverse incentive to increase rate base additions beyond ratepayers' needs, or in an inefficient manner, so long as it can expect to receive recovery of those costs. A key role of the Commission is to mitigate this incentive through exercise of its statutory obligations.

Q. Why is the comparison of risk from the perspective of an IPP versus an IOU with captive ratepayers relevant to this case?

A. It is important to note that Ameren Missouri, through its participation in MISO, is effectively competing with IPPs within various MISO markets. The IPPs in MISO are not incented to assume unreasonable risks. The shareholders of Ameren Missouri are not subject to the same market pressures of an IPP, but Ameren Missouri is obligated to provide safe and adequate service to ratepayers. This dynamic, along with others, makes the role of the Commission to determine that the specific projects subject to a CCN application are necessary or convenient to the public service of utmost importance. Ameren Missouri ratepayers should not be burdened with the costs of projects that are not effectively justified as necessary or convenient to the public service, nor should the justification for projects be based upon outdated assumptions and analyses that are no longer reliable.

Q. Would it be reasonable for an IPP move forward with the projects based on the projections included in Mr. Michels' workpapers or Ameren Missouri's past IRP analyses?

A. In both instances, no. Mr. Michels' modeling in this case indicates that the projects are not expected to be cost effective. As I discussed earlier in my testimony, the analyses underpinning Ameren Missouri's past IRPs are critically flawed and, therefore, unreliable. Furthermore, Ameren Missouri expects[34] the capital costs of solar projects to decrease over the next several years. These are risks that an IPP is unlikely to assume. Similarly, ratepayers should not be expected to bear the expectation of uneconomic outcomes for these projects absent appropriate justification. Staff's recommendation regarding risk sharing[35] provides some ratepayer protections.

Ameren Missouri's Expectation

Q. Related to the discussion of ratepayer risk, in Case No. EA-2022-0245, your testimony included the following:[36]

> If the assumptions relied upon to make the decision to build or purchase the resource prove to be incorrect or inaccurate, ratepayers will continue to pay for the resource throughout the life of the asset through Commission approved rates while shareholders are shielded from the negative consequences of management's decision.

Is that statement applicable to the projects subject to this case?

A. The situation in this case is worse for ratepayers. Based on Ameren Missouri's evidence the projects will result in net costs to ratepayers, without any ratepayer savings, and with the potential for greater ratepayer losses. Ameren Missouri witnesses make allusions to past IRP

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[34] Dr. Hari Poudel provides additional context for the potential decreases of capital costs of solar projects in his rebuttal testimony.
[35] Staff's recommendation is provided in the section "Risk Sharing / Levelized Revenue Requirement Mechanism," included in Ms. Lange's rebuttal testimony.
[36] Page 9 lines14-17 of the rebuttal testimony of J Luebbert in Case No. EA-2022-0245.

analyses and the "minimization of NPVRR" as the primary metric for the selection of the preferred plans, but ignore the fact that those analyses fail to reflect the realities present for the projects subject to this case. If approved and included in Ameren Missouri rates, the costs realized by ratepayers will far exceed the benefits realized over the life of the assets.[37] This is not an arguable risk; it is Ameren Missouri's actual expectation. Indeed, Ameren Missouri is expressly telling the Commission that the ratepayers will not get a reasonable return in value for the rates they pay and then asking the Commission to approve of that. The allusions by Ameren Missouri witnesses to IRP analyses are irrelevant to the economics of these projects because the projects do not align with the assumptions made in those analyses. The output of the IRP analyses cannot be relied upon when the key cost drivers are so clearly inaccurate.

Justification of Ratepayer Risk

Q. How does the demonstration of need relate to the economic risks of the IOUs and its ratepayers?

A. When any utility is building or purchasing an electric generating asset, there are risks inherent in the decision. When the asset addition is necessary to serve the load of ratepayers, there is a risk that costs exceed the revenues from the asset. Once the utility clearly establishes that the resource addition is necessary to meet the needs of ratepayers, a decision must be made by the IOU to ensure that the utility can continue to serve the customer's load. Then the economic efficiency of the decision and promotion of the public interest of the

[37] The rebuttal testimony of Staff witness Sarah Lange provides much more detail on the costs and benefits of the projects from a ratepayer perspective.

decision to build or purchase a specific asset is necessary to ensure that the choice of asset is sound.

Q. How does adding generating assets in an inefficient manner introduce unnecessary ratepayer risk?

A. When an asset is not an economically efficient solution to the identified need, ratepayers carry the risk of paying for multiple assets to meet the same identified need. But regardless, in these instances, those who have chosen to invest in the utility still benefit from the additional rate base. This potential outcome is one-sided and should be avoided if possible.

Q. Is it economically efficient to add generation assets that are poorly suited to meet identified ratepayer needs?

A. No. As an initial matter, Ameren Missouri has not identified specific ratepayer needs in this case, outside of an amorphous "energy need." As discussed in the rebuttal testimony of Shawn E. Lange, PE, solar resources are not expected to provide materially significant accredited capacity during the winter season system peak, which appears to be Ameren Missouri's most pressing need.[38]

Each resource type has benefits and drawbacks, both physical and financial, which should be carefully considered prior to resource selection by the utility and approval of the CCN by the Commission. Without a clearly identified need for a given project, the economic efficiency, and, thus, the promotion of the public interest, of a given solution cannot be reasonably evaluated or established.

[38] MISO appears to be most concerned about the ability of the regional generation fleet to respond to conditions in peak net load hours. Ameren Missouri did not evaluate these hours as a priority in any modeling of which Staff is aware.

Q. Has Ameren Missouri provided justification that these projects are an economically efficient manner to meet identified ratepayer needs?

A. No. As I described earlier, Ameren Missouri's analyses include critical assumption flaws, and the projects subject to this case are not expected to provide ratepayer value commensurate with the costs of the projects. In the 2022 PRP, Ameren Missouri chose to first add solar projects, then a natural gas combined-cycle unit ("combined-cycle"). A review of the projected capacity needs indicates that if the combined-cycle addition was modeled as added first, there would be little to no "need" for solar, even under Ameren Missouri's base modeling assumptions. As discussed in Mr. Fortson's rebuttal testimony, the expectation of a combined-cycle addition in later years has been included in several Ameren Missouri IRPs. If a combined-cycle addition is ultimately necessary to ensure reliability and comply with MISO resource adequacy requirements, then it may be more economically efficient to add a combined-cycle prior to a substantial buildout of renewable assets. However, Ameren Missouri shareholders are incentivized to maximize capital investments and the associated returns on the investments, and no such alternatives were included in the IRP analyses.

Q. Once the need is established and the project is determined to solve the established need in an economically efficient manner and to promote the public interest based upon the best information available at the time, is it reasonable for the ratepayers to assume the risk that the project selected is uneconomic?

A. Yes.[39] Assuming the utility is prudent in its construction, operation, and maintenance of the project, this assumption of risk is justified because absent the load of the ratepayers, the utility would not be obligated to invest in additional resources. It is also justified, because the converse risk of not acquiring a project necessary to meet a determined essential need could also impact ratepayers through reduced reliability, higher prices, financial penalties, and failure of the utility to comply with rules or regulations. Note, as discussed by Staff expert Jane Dhority, this case includes additional risks of imprudent utility decision-making related to tax benefit election and utilization.

Q. Does that same principle hold when a given project is either not necessary to serve the needs of ratepayers, is poorly justified, is not an economically efficient use of resources, or is not in the public interest?

A. No. Captive ratepayers should not be expected to shoulder the risk that an electric generating plant that is poorly justified, built beyond the energy and capacity needs of the ratepayers being served, or is not an economically efficient use of resources, is uneconomic.

Q. Does the justification provided by Ameren Missouri's witnesses in this case warrant that assumption of risk on behalf of ratepayers because the assumption of risk is justified on behalf of ratepayers?

A. No. My testimony has explained numerous introductions of unnecessary ratepayer risks. Ratepayer risk for the addition of a generating asset can be justified, but the evidence presented in Ameren Missouri's direct case does warrant this assumption of risk on

[39] Staff recognizes that circumstances may arise that warrant disallowances based upon imprudent actions of the utility.

behalf of ratepayers without substantial protections in place. Stated another way, the thing that introduces ratepayer risk in this case is the addition of the solar plants, not the absence of them.

Q. Are there solutions to avoid this unnecessary risk to ratepayers?

A. Yes. The Commission's role as the regulator of the monopoly is a key protection against the introduction of unnecessary risk, by utility management, on behalf of ratepayers. As discussed in Ms. Lange's testimony, if the Commission does grant permission for Ameren Missouri to invest in any of these projects, it would be appropriate for shareholders and ratepayers to share risk in the underperformance of the project economics, and it is also appropriate for the exposure of shareholders overtime to those risks to be levelized.

Q. In the hearing for Case No. EA-2022-0245, when asked if Ameren Missouri would move forward with the project if the risk that costs exceed revenues were shared among shareholders and ratepayers, Mr. Wills stated in part:[40]

> No, we would not. There's really no economic litmus test for a needed project in terms of it paying for itself. I mean, with anything that we need to provide service. So for example, the transformer hanging out outside of my house, the transformer hanging out outside of your house, it doesn't provide revenues but it's needed to provide service. The costs of that are reflected in the revenue requirements that are used to set rates.

Are these solar projects analogous to an essential transformer?

A. Absolutely not. Mr. Wills' transformer discussion is related to equipment that is essential for the provision of electricity service to a set of customers. In other words, his example regards a piece of equipment that is indispensable for the provision of service. That is not the case for these projects, as admitted by Ameren Missouri's witnesses.

[40] Pages 213 and 214 of the Hearing Transcript Volume 1 in Case No. EA-2022-0245.

Ms. Lange discusses the comparison of ratepayer value applicable to the projects for which Ameren Missouri requests permission in these dockets.

Risk of Reliance on IRP Results as Primary Justification

Q. Would reliance on IRP results as the primary justification for approval of a CCN application introduce additional ratepayer risk?

A. Yes. Ameren Missouri's planning process, including nearly all of the assumptions that will be included in the analyses, is based solely on the opinion of utility management. These assumptions drive the outcomes of the various metrics reported within the IOU's IRP report and are based on generic resource additions as opposed to project specific details. Ameren Missouri's management team has a fiduciary duty to maximize shareholder returns on investment. If the Commission relies upon the IRP analyses as the primary justification for individual projects, then the IRP process becomes a self-approving capital investment plan for the utility. This outcome would not ensure that projects are necessary or convenient for the public service, nearly guarantees massive shareholder returns, and introduces immense risk for ratepayers that the system is built beyond their needs, inefficiently, or both.

Q. Given Ameren Missouri's PRP inclusion of significant renewable generation, if the Commission accepts Ameren Missouri's testimony in this case as sufficient to justify the permission Ameren Missouri has requested, is there any reason for Ameren Missouri to pursue the least-cost means of meeting customer needs in future CCNs?

A. No. Ameren Missouri will be incentivized to pursue high cost resources, so long as they are renewable, regardless of the cost or expected value to ratepayers. However, it will always remain the Commission's responsibility to ensure that all capital projects are prudent and result in just and reasonable rates for consumers.

Q. Does Staff have recommendations to potentially improve the value of the Chapter 22 process so that certain modeling from that process could potentially also be used as evidence in a future CCN case?

A. Yes. Staff recommends that Commission order Ameren Missouri to commit in this docket to the following in future IRPs to partially address some of the problems raised in Staff rebuttal testimony in this case.

1. Remodel permutations around preferred plan:
   a. Consideration of alternative resource addition timelines
   b. Optimizing the size of resource additions
   c. More energy pricing, capacity pricing, load assumption, fuel assumption scenarios
   d. Replace generic with potential site assumptions
2. Allow Staff/OPC to provide alternative fuel pricing for sensitivity runs
3. Always include scenarios that minimally comply with legal mandates and MISO requirements
4. Include contingency plans based on key input scenarios such as:
   a. Market price changes for key components by resource type
   b. Changes to tax incentives
   c. Load assumptions
   d. Ongoing litigation regarding existing resources

FLEXIBILITY IN PLANNING

Q. Ameren Missouri witnesses Michels and Arora discuss the importance of maintaining flexibility in Ameren Missouri's planning process in their respective direct testimonies and schedules in this case. Does Staff agree that Ameren Missouri maintains flexibility in the planning process?

A. Yes. Ameren Missouri maintains a great deal of flexibility and discretion within the IRP planning process. Mr. Fortson's rebuttal testimony describes the discretion that Ameren Missouri has in the IRP process in much greater detail. In his direct testimony, Mr. Michels states: [41]

> That we cannot say for sure exactly how much we will eventually need, and when we will need it, simply highlights the importance of the flexibility that Ameren Missouri maintains as part of its IRP process. As conditions change – technology development, policy changes, market changes – the Company can adjust and refine its planning. Changing conditions will also likely include changes in the resource plans and implementation of other market participants, both in MISO and in neighboring regions.
>
> Rather than wait for such conditions to settle (and they never will), it is important that the Company continue to execute the transition of its portfolio based on the best information available, the consideration of risk and uncertainty, and the need to continue to maintain flexibility.
>
> A sustained transition provides flexibility for making adjustments as conditions change and recognizes the implementation risks associated with a rapid large buildout of new resources.

Q. Has Ameren Missouri demonstrated the flexibility in the recent implementation of solar resource additions consistent with the proclamations of flexibility in direct testimony in this case and past IRPs?

[41] Pages 32 and 66 of the direct testimony of Ameren Missouri witness Matt Michels.

A. No. Ameren Missouri has continued forward with the "preferred plan" despite fundamental changes to cost and benefit drivers that underlie the analyses that the Company depends on as justification for the projects.

Q. Do the differences between the assumptions utilized in the IRP analyses and the expected costs for these projects, in addition to changes in potential tax benefits for future resource additions, provide good reasons to exercise the flexibility in the Ameren Missouri's preferred generation transition?

A. Yes. The IRP analyses from 2020 and 2022 assumed much lower capital costs for solar projects, and, therefore, the results of those analyses should not be considered justification for these projects. Furthermore, those analyses skewed results toward solar additions in the near term, which makes comparisons of alternative plans nearly useless based on the schedule of tax benefits as they exist today compared to the assumptions in those analyses. The passage of the IRA diminishes the urgency for acquisition of projects based on waning tax benefit eligibility. Ameren Missouri's projections for the capital cost of solar projects going forward indicates that Ameren Missouri expects the costs to decrease over the next several years.[42] Similar projects with reduced capital costs and similar benefits are likely to provide ratepayers better value. The policy changes tied to the passage of the IRA[43] and the significant cost increases of solar projects compared to those included in Ameren Missouri's planning process warrant additional scrutiny and justification for moving forward with the proposed projects.

[42] As discussed in the rebuttal testimony of Dr. Hari Poudel.
[43] Namely the extension of ITC eligibility, PTC eligibility for solar projects, and PTC benefit extensions.

Q. Is Ameren Missouri incentivized to utilize the flexibility described by the direct testimonies of Mr. Michels and Mr. Arora?

A. No. On the contrary, Ameren Missouri and its witnesses are incentivized to move forward with these projects despite the changes in tax structure, increased costs, and other deficiencies in the justification for these projects. First, projects with higher capital costs increase the return on the investment for shareholders if the projects are included in rate base. Staff witness Cedric Cunigan's rebuttal testimony describes Ameren Missouri's scoring of the Request for Proposals indicating ** [redacted] .** Finally, Ms. Lange's rebuttal testimony explains the incentives of Ameren Missouri's witnesses in this case ** [redacted] . **

Q. Does the testimony of Ameren Missouri witnesses related to planning flexibility contradict with the responses to Staff data requests and the decision to move forward with the projects subject to this case?

A. Yes. Mr. Michels describes the importance of the ability of Ameren Missouri to "adjust and refine its planning" to account for technology development, policy changes, and market changes, yet Ameren Missouri fails to account for these changes in the analyses relied upon by the Company to justify the projects. Despite Mr. Michels' statements regarding flexibility, Ameren Missouri has not "adjusted and refined its planning", to account for changes in policy (i.e. tax benefits resulting from the passage of the IRA) nor market changes.[44]

[44] Indicated by the substantial increase in costs associated with the solar projects and the assumptions in Ameren Missouri's planning process.

The Company has rigidly moved forward with "the preferred plan" without appropriate consideration of "the best information available".

Staff propounded several data requests to Ameren Missouri in this case to understand the rationale for moving forward with these solar projects based on potential cost increases. Ameren Missouri's response to Staff data request 0092 states, in part:

> As discussed in the response to DR MPSC 0088, **there is no preset cost threshold for any of the four projects that is known today and that would automatically trigger abandonment**. Company witness Matt Michels' direct testimony does present economic results for various scenarios by project, including scenarios that include a risk-adjusted project cost for each project. While Ameren Missouri will need to determine the market competitiveness of each project **if the cost of a given project were to exceed the risk-adjusted estimate, Ameren Missouri's position is that given its need, each project should be constructed/acquired up to the risk-adjusted estimate without any further need to assess the market and alternatives for meeting its needs.** However, if one or more of the projects were to cost materially more than its risk-adjusted estimate, such a market assessment and consideration of alternatives would be appropriate before making a proceed versus abandon decision on such a project. **(emphasis added)**

The solar projects subject to this case include fundamental differences from the assumptions included within the context of Ameren Missouri's IRP. Most importantly in this instance are the substantial increases in the cost of solar projects subject to this case compared to the estimated costs of solar projects in the IRP. The "risk-adjusted estimates" referenced in Mr. Michels modeling in this case are factually distinct from the IRP analyses that Ameren Missouri relies upon in an attempt to justify the need, feasibility, and public interest for the projects subject to this case. The "risk-adjusted estimates" are also not rooted in the premise of ratepayer value or economic feasibility of the projects. The costs of a resource are a fundamental aspect of any IRP analysis,[45] just as the project costs are a fundamental consideration of whether a project is such an improvement as to justify or warrant the expense of making the improvement in the context of a CCN case.

Ameren Missouri's responses to Staff's data requests and the decision to move forward with the project subject to this case also directly contradict statements included in Ameren Missouri's 2022 Updated Preferred Plan and Mr. Arora's direct testimony:

> **One of the hallmarks of Ameren Missouri's planning process is maintaining flexibility and developing prudent long-term plans** to mitigate energy supply and reliability risks. This often ensures preferred plan provisions that reduce risk to customers and investors alike. The portfolio transition represented by **the new Preferred Resource Plan is designed to maintain flexibility and mitigate risks that could otherwise result in increased costs to customers**, particularly if the addition of renewable resources were delayed until a specific need for capacity was imminent.[46] **(emphasis added)**

> By pursuing a steady buildout of wind and solar generation, we **maintain flexibility to be selective and opportunistic with respect to projects for a host of reasons**, including costs for necessary transmission system upgrades.[47] **(emphasis added)**

> **Challenges in the supply chain can lead to** project delays, **cost increases,** or ultimately an inability to construct a project at all. Since supply chain problems can meaningfully disrupt the timing and costs of renewable energy projects, **it is important to have a long implementation timeframe to maintain flexibility in the generation transition**.[48] **(emphasis added)**

Substantial increases in project costs and fundamental changes in tax benefit policies are straightforward reasons to consider implementing the flexibility and selectivity described by Mr. Michels and Mr. Arora. The IRA extends the timeframe and improves the flexibility of

[45] Ameren Missouri conducts screening analysis of various generic resource types prior to inclusion in alternative resource plans. The cost assumptions for each resource type clearly has an impact on the screening analysis results in addition to the results of the IRP analyses.
[46] Page 6 of Schedule MM-d2 attached to the direct testimony of Ameren Witness Matt Michels.
[47] Page 18 of Schedule MM-d4 attached to the direct testimony of Ameren Witness Matt Michels.
[48] Page 29 of the direct testimony of Ameren Missouri witness Ajay Arora.

adding renewable resources for years to come. Ameren Missouri's expectation that costs of solar projects will decline going forward are another reason to implement flexibility in the acquisition strategy. Moving forward with the projects based on flawed analyses introduces ratepayer risk with the expectation of cost increases to ratepayers as opposed to mitigating risks of potentially increased costs.

CONCLUSION

Q. Has Ameren Missouri provided reasonable justification for the solar projects subject to this case?

A. No. Ameren Missouri alleges that the need for the projects for which authority is requested in this case is justified by the inclusion of solar projects in the 2020 IRP and the 2022 PRP. The IRP alternative resource plans do not include a limitation of generation additions to meet customers' energy and capacity needs. The failure to consider the current tax benefit landscape in the planning process creates a false sense of urgency to add large amounts of renewable resources earlier in the planning horizon. The assumed costs of assets, assumed tax benefits, and the assumed revenue from those assets are major drivers in the resulting NPVRR for a given alternative plan in an IRP. Ultimately, those three components are also likely to be the largest drivers in terms of actual rate increases realized by ratepayers if these projects are included in rates.

Justifying large capital investments based on the results of IRP analyses that include assumptions that are no longer valid due to changes in federal policy and market conditions is unreasonable and introduces large amounts of unnecessary ratepayer risk. The costs of a resource are a fundamental aspect of any IRP analysis, just as the project costs are a fundamental consideration of whether a project is such an improvement as to justify or warrant the expense of making the improvement in the context of a CCN case.

If approved and included in Ameren Missouri rates, the costs realized by ratepayers will far exceed the benefits realized over the life of the assets. This is not an arguable risk; it is Ameren Missouri's actual expectation. Indeed, Ameren Missouri is expressly telling the Commission that the ratepayers will not get a reasonable return in value for the rates they pay and then asking the Commission to approve of that. The allusions by Ameren Missouri witnesses to IRP analyses are irrelevant to the economics of these projects because the projects do not align with the assumptions made in those analyses. The output of the IRP analyses cannot be relied upon when the key cost drivers are so clearly inaccurate.

If the Commission relies upon the IRP analyses as the primary justification for individual projects, then the IRP process becomes a self-approving capital investment plan for the utility. This outcome would not ensure that projects are necessary or convenient for the public service, nearly guarantees massive shareholder returns, and introduces immense risk for ratepayers that the system is built beyond their needs, inefficiently, or both.

Q. What is your recommendation in this case?

A. I recommend that the Commission direct Ameren Missouri to include the refinements and opportunities for Staff input in the IRP process that I describe above. Ameren Missouri has not articulated a need for these projects to justify the extent to which the cost of the projects to ratepayers exceeds the value these projects could provide to ratepayers as operating assets. Specifically, I recommend the Commission recognize that the IRP results referenced by Ameren Missouri in its direct testimony in this case fails to establish that the projects for which permission is requested in this case are needed, economically feasible, or in the public interest, despite Ameren Missouri's claims and implications to the contrary. As discussed by Mr. Busch, it is possible that some of the projects could provide adequate value that the Commission could determine that permission is appropriate, but that information has not been presented to date by Ameren Missouri, and it would be inappropriate for that information to be introduced into the record without adequate opportunity for Staff and other parties to review that information, conduct discovery, and respond in prefiled testimony.

Q. Does this conclude your Rebuttal testimony?

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and Certificates of Public Convenience and Necessity Authorizing it to Construct Renewable Generation Facilities	)))))	Case No. EA-2023-0286

AFFIDAVIT OF J LUEBBERT

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW J LUEBBERT and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Rebuttal Testimony of J Luebbert*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

J Luebbert

J LUEBBERT

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 10th day of October 2023.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: April 04, 2025
Commission Number: 12412070

D Suzie Mankin

Notary Public

Case Participation of
J Luebbert

Case Number	Company	Issues
EO-2015-0055	Ameren Missouri	Evaluation, Measurement, and Verification
EO-2016-0223	Empire District Electric Company	Integrated Resource Planning Requirements
EO-2016-0228	Ameren Missouri	Utilization of Generation Capacity, Plant Outages, and Demand Response Program
ER-2016-0179	Ameren Missouri	Heat Rate Testing
ER-2016-0285	Kansas City Power & Light Company	Heat Rate Testing
EO-2017-0065	Empire District Electric Company	Utilization of Generation Capacity and Station Outages
EO-2017-0231	Kansas City Power & Light Company	Utilization of Generation Capacity, Heat Rates, and Plant Outages
EO-2017-0232	KCP&L Greater Missouri Operations Company	Utilization of Generation Capacity, Heat Rates, and Plant Outages
EO-2018-0038	Ameren Missouri	Integrated Resource Planning Requirements
EO-2018-0067	Ameren Missouri	Utilization of Generation Capacity, Heat Rates, and Plant Outages
EO-2018-0211	Ameren Missouri	Avoided Costs and Demand Response Programs
EA-2019-0010	Empire District Electric Company	Market Protection Provision
GO-2019-0115	Spire East	Policy
GO-2019-0116	Spire West	Policy
EO-2019-0132	Kansas City Power & Light Company	Avoided Cost, SPP resource adequacy requirements, and Demand Response Programs
ER-2019-0335	Ameren Missouri	Unregulated Competition Waivers and Class Cost Of Service
ER-2019-0374	Empire District Electric Company	SPP resource adequacy
EO-2020-0227	Evergy Missouri Metro	Demand Response programs
EO-2020-0228	Evergy Missouri West	Demand Response programs
EO-2020-0262	Evergy Missouri Metro	Demand Response programs
EO-2020-0263	Evergy Missouri West	Demand Response programs
EO-2020-0280	Evergy Missouri Metro	Integrated Resource Planning Requirements

Case Number	Company	Issues
EO-2020-0281	Evergy Missouri West	Integrated Resource Planning Requirements
EO-2021-0021	Ameren Missouri	Integrated Resource Planning Requirements
EO-2021-0032	Evergy	Renewable Generation and Retirements
GR-2021-0108	Spire Missouri	Metering and Combined Heat and Power
ET-2021-0151	Evergy	Capacity costs
ER-2021-0240	Ameren Missouri	Market Prices, Construction Audit, Smart Energy Plan, AMI
ER-2021-0312	Empire District Electric Company	Construction Audit, Market Price Protection, PISA Reporting
EO-2022-0193	Empire District Electric Company	Retirement of Asbury
ER-2022-0129	Evergy Missouri Metro	MEEIA annualization
ER-2022-0130	Evergy Missouri West	MEEA annualization, Schedule SIL revenue and incremental costs
EF-2022-0155	Evergy Missouri West	Customer event balancing
EC-2022-0315	Evergy Missouri West	Compliance with Stipulation and Agreement, Commission Order, and Schedule SIL
GR-2022-0179	Spire Missouri	Compressed Natural Gas
EA-2022-0244	Ameren Missouri	Huck Finn Solar CCN
EA-2022-0245	Ameren Missouri	Boomtown Solar CCN
EA-2022-0328	Evergy Missouri West	Persimmon Creek CCN
ER-2022-0337	Ameren Missouri	Billing determinant adjustments