

Response to Stakeholder Comments

Ameren Missouri – 2020 Integrated Resource Plan

Background

On September 27, 2020, Ameren Missouri filed its triennial Integrated Resource Plan (IRP) with the Missouri Public Service Commission (Commission). On or before March 31, 2021, the Commission Staff (Staff) and other stakeholders filed comments on Ameren Missouri’s IRP filing, identifying certain alleged deficiencies and concerns in accordance with 20 CSR 4240-22.080(7)&(8). Pursuant to 20 CSR 4240-22.080(9), Ameren Missouri, Staff and other stakeholders worked together to craft a joint agreement on a plan to remedy the identified deficiencies and concerns. That joint agreement, filed concurrent with this response, identified remedies for many of the alleged deficiencies and concerns. Remedies include:

1. Addressing development of avoided costs prior to the next demand-side management Market Potential Study and defining an alternative avoided capacity cost curve (e.g., moving to cost-of-new-entry (CONE) price in an alternative year).
2. Clarification of the use of generic assumptions in the IRP vs. more detailed information used during project implementation.
3. Evaluation of hybrid resources such as solar with battery storage.
4. Working to identify opportunities that benefit underserved communities through the deployment of renewable resources, efficient electrification, and energy savings programs.
5. Running new alternative plans with updated costs and federal tax incentives.

The remedies for specific alleged deficiencies and concerns are listed in the Joint Filing or in a separate settlement agreement filed on June 11, 2021, between Ameren Missouri and Sierra Club. Agreement could not be reached on remedies for certain alleged deficiencies and concerns. The unresolved alleged deficiencies and/or concerns are few and come from Staff’s and MIEC’s comments. Ameren Missouri’s response to those unresolved alleged deficiencies and concerns is provided in this Response.

Response to Unresolved Alleged Deficiencies and Concerns

Issue Identifier: MIEC Concern 1

Stakeholder Report Reference: MIEC Comments – Page 2

IRP Rule Reference: None

Description: MIEC is concerned that the preferred plan Ameren Missouri selected does not result in the ***

Response: The rules do not require that the plan***
Instead, the preferred plan selection is based upon a multitude of factors, at the discretion of Company management. Unless Ameren Missouri's selection is unreasonable, this is nothing more than an intervener preference. Ameren Missouri's management chose the preferred plan after evaluating the performance of alternative resource plans with respect to various planning objectives and measures, which included

*** Ameren Missouri will continue to evaluate and assess its assumptions in light of various conditions that define the planning environment, and will make any appropriate changes to its preferred plan while balancing competing objectives if and when any change is warranted.

Issue Identifier: MIEC Concern 2

Stakeholder Report Reference: MIEC Comments – Page 3

IRP Rule Reference: None

Description: MIEC supports Ameren Missouri's goal of advancing investments in renewable resources to meet customer interest, however is concerned that the 2020 IRP does not include any specific renewable program offerings.

Response: The IRP process is a long-term planning document and is not designed to go into program details. That work occurs in the individual tariff filings which will be made for specific programs. In this case, Ameren Missouri has included a 'Subscription Renewable' program in its preferred plan. While at the time of the IRP filing the specifics of the program were not known, Ameren Missouri has been working with customers to make a program available. Ameren Missouri met with MIEC and MIEC members to discuss specifics of this new program offering (as known at the time) on June 1, 2021, and provided information to the extent that it was able to do so. Ameren Missouri has filed a 60-day notice for this program.

Issue Identifier: Staff Deficiency 1

Stakeholder Report Reference: Staff Comments – Page 4

IRP Rule Reference: 20 CSR 4240-22.010(2)(A)

Description: Staff alleges that Ameren Missouri did not evaluate non-renewable supply-side resources on an equivalent basis as renewable supply-side resources and demand-side resources by adding renewable resources before a capacity need for reserve requirements.

Response: Staff asserts that Ameren Missouri has not considered and analyzed all resources on an equivalent basis. Staff's contention is two-fold. First, Staff asserts that the Company has used different capacity price curves to evaluate different resources. Staff's assertion is incorrect, as the same capacity price curve was used to evaluate all resources. Ameren Missouri explained that it used a market-based capacity curve in the integration and risk analysis and corrected

Staff's misinterpretation of how the Company considered capacity prices. Staff's alleged deficiencies and concerns regarding avoided capacity costs are addressed in the resolution described in the Joint Filing. Therefore, this portion of Staff Deficiency 1 has been resolved.

Second, Staff asserts that adding renewables and demand-side resources without an immediate capacity need amounts to considering and analyzing these resources on a basis that is not equivalent to that used for evaluating non-renewable supply side resources. This is incorrect and ignores key considerations that the Company described in detail in its IRP filing. From a technical standpoint, Ameren Missouri has considered and analyzed all resources – renewable, non-renewable, and demand-side resources – through the same integration and risk analysis framework, using the same assumptions for power prices, natural gas prices, market capacity prices, and all other factors that may affect the performance of the various alternative resource plans of which these various resources are a part. It is important to note that Staff found no deficiencies or cause for concern in the analysis itself. All alternative resource plans also included a determination of the Company's capacity position – the balance of its resources with customer demand and reliability reserve margin requirements – using the same underlying base load assumptions (including high and low cases), which were run through the same models. Further, all alternative resource plans, regardless of their composition with respect to resources, were evaluated with the Company's alternative plans scorecard using the same objectives and measures.

Beyond the consistent use of the same analytical framework for consideration of all resources and alternative plans, the Company also described in detail key considerations that affected the timing of its deployment of renewable resources in its preferred plan and recognize key differences between the nature of renewable resources and that of other resources. Importantly, renewable resources like wind and solar are primarily energy resources, not capacity resources, although they do have some capacity benefits. While IRP analysis traditionally focuses on the need for capacity, the focus in this case is necessarily expanding beyond capacity as utilities transition to cleaner energy sources. Our IRP describes our consideration of energy needs in addition to capacity needs.

A detailed discussion of key considerations regarding the deployment of renewable resources in our preferred plan, found in Chapter 10 of the Company's 2020 IRP filing, is reproduced later in this document in its entirety for easy reference. In short, the Company's planned deployment of renewable resources addresses significant key risks involved in the transition of our resource portfolio. While certain risks may prove over time to be more significant than others, our approach addresses them collectively and in a manner that ensure flexibility to adjust to changing conditions so we can continue to ensure reliable and affordable electric service for our customers. The key risks are briefly described below and are discussed in greater detail in the IRP excerpt included later in this document.

- **Changes in Energy Policy** – The enactment of federal or state policies, such as Clean Energy Standards or changes to state Renewable Energy Standards, continues to receive serious attention. Such policies could further accelerate the need for renewable resources and challenge the supply chains for labor, equipment and other goods and services that are needed for the deployment of renewable resources. They could also necessitate consideration of further acceleration of the retirement of coal-fired resources and result in a need for new energy resources much sooner than we currently expect.
- **Carbon Pricing** – As is demonstrated in the Company's IRP filing, the economics of various resources are sensitive to assumptions for carbon prices and may drive consideration of changes to the timing of resource retirements and additions. This is particularly true for coal-fired resources, and while our preferred plan represents an appropriate balance of risks and benefits today, it is possible that may change.
- **Implementation Risks** – The potential challenges of deploying over 5,000 MW of wind and solar resources should not be underestimated, and such challenges have been evident in the Company's implementation of new wind resources already. Potential challenges are present in every stage of implementation, including project planning, siting, permitting, contract negotiation, construction, commissioning, testing and transmission interconnection. Waiting to begin the deployment of renewable resources allows such potential challenges to compound, particularly in the context of any nationwide clean energy policies that may be enacted. It is also important to note that deployment of over 5,000 MW of new wind and solar resources requires a particularly deep focus on integration and reliable operation of these new renewable generation resources to ensure we continue to provide the reliable energy supply that all our customers depend on. It is therefore vitally important to deploy new renewable generation in a continuous and balanced manner in order to operate new renewable resources over an extended period of time while existing coal-fired generation is available to provide reliability backup and through that deployment fully understand how to most optimally and reliably operate the renewable generation portfolio that will replace much of our current generation portfolio.

Our assessment of risk also included the evaluation of impacts to customer costs through our integration and risk analysis described in Chapter 9 of the IRP and supplemented in Chapter 10. That analysis showed that we expect customers to realize cost savings over the planning horizon as a result of the steady deployment of renewable resources. In that light, the deployment of renewable resources as represented in our preferred plan provides significant risk mitigation for customers that comes not only with no additional cost, but an expectation of savings.

While there are never guarantees as to the market benefits of any of the resources in our portfolio (new or existing, renewable or non-renewable), we must plan to meet our customers' electric energy needs under the kind of uncertainty that is implicitly and explicitly recognized in the

planning framework embodied in Commission's IRP rules. One of the hallmarks of Ameren Missouri's approach to integrated resource planning is the priority placed on flexibility that allows us to adjust to changing conditions. Should we find that key assumptions that affect the performance of our portfolio or particular resources in our portfolio have significantly changed, we can consider appropriate adjustments to our plans. In the meantime, we have an obligation to our customers, investors and communities to proceed thoughtfully with our transition to cleaner sources of energy.

Ameren Missouri's Approach

Ameren Missouri's planned expansion of renewable resources is reasonable and necessary to ensure adequate and reliable service to customers over the planning horizon in light of both the broader shift toward cleaner energy sources and long-term risks faced by our existing portfolio of resources, most notably our fleet of coal-fired generation. Ameren Missouri has selected its preferred resource plan to balance the costs and risks to customers over the planning horizon, specifically accounting for real and potential challenges to execution of a large-scale buildout of clean, renewable generation resources. Chapter 10 of our IRP sets forth the rationale for our planned renewable expansion. That discussion is included later in this document for ease of reference and in support of the general points that follow. Below is an abbreviated overview of the thought process Ameren Missouri management and planning staff used to determine the appropriate pathway for the expansion of renewable resources.

1. **We began with the end in mind.** Ameren Missouri will need energy resources during the planning horizon to replace the energy produced by retiring coal and other resources and avoid over-reliance on a market that is expected to have a diminishing supply of surplus generation. See "Ameren Missouri's Need for Energy Resources" in the IRP Chapter 10 discussion reproduced later in this document.
2. **We considered the risks and challenges of a large renewable buildout.** A large buildout of renewable resources is unlikely to be successful in a very short period of time, so it is necessary to stage the investment in renewable resources to manage the inherent challenges and risks. These include project development and negotiation, permitting, regulatory approval, transmission interconnection, and availability of labor, materials and equipment at reasonable prices. Staging the renewable resource expansion also allows us to learn and gain operational experience from each project and apply the lessons to subsequent project acquisition, execution, and operation. The steady addition of renewable projects will allow us to better achieve operational excellence and extract the most value for customers from each project as it is added to our portfolio. In addition, a staged renewable build out allow us to continue to monetize federal tax benefits that are available for renewable generation to support affordability of the transition to a cleaner

energy portfolio. See "Practical Considerations for Large-Scale Renewable Expansion" in the IRP Chapter 10 discussion reproduced later in this document.

3. **We tested the economics of a staged renewable buildout.** To make a proper comparison of alternatives and assess the extent to which a staged buildout might be advantageous to customers in terms of cost, in addition to the other benefits of renewable energy, we included evaluation of a plan in which the renewable resources were added only when there was a need for capacity. We found that staging the renewable additions was expected to be less costly for customers, taking into account the risks associated with market price uncertainty. We also found that there may be challenges in terms of financing a large renewable buildout over a short period of time. It should be noted that while our analysis was based on the same resource cost assumptions regardless of the magnitude of resources additions in each year, it is entirely plausible and perhaps inevitable that costs could increase as the result of pursuing a large number of projects over a short period of time. See the results of our risk analysis in IRP Chapters 9 and 10 for more. Also see "Practical Considerations for Large-Scale Renewable Expansion" in the IRP Chapter 10 discussion reproduced later in this document for a discussion of financing considerations.
4. **We considered the risks that our existing fleet of resources continues to face.** While we stand by all the elements of our preferred resource plan, we also recognize that the planning environment is ever-changing and planning is never done. We must therefore consider possibilities that were not considered to be probable when we prepared our assumptions and conducted our analysis, but which may materialize as the planning landscape changes. Such possibilities include the potential for additional significant changes in energy and environmental policy, particularly those that could cause us to consider further accelerating the retirement of our coal generation. Because such decisions carry the potential for drastic and rapid changes to our portfolio, our need for replacement sources of energy is itself uncertain. Staging the addition of renewable resources provide Ameren Missouri, and ultimately its customers, with a measure of risk mitigation. See "Risk Mitigation Benefits of Renewable Expansion" in the IRP Chapter 10 discussion reproduced later in this document.
5. **We considered the growing demand for renewable resources, including increasing public support for policies that transition the nation to cleaner and more sustainable sources.** Customers are increasingly interested in getting their electricity from cleaner energy sources. At the same time, there is strong support for policies that promote the transition to cleaner energy sooner. Importantly, such policies are currently a major focus of efforts by the majority in both houses of Congress. While we cannot predict exactly when or in what form such policies might be passed into law, it is clear the desire for such policies is only growing. See "Customer and Policy Drivers of the Need for

Renewable Resources" in the IRP Chapter 10 discussion reproduced later in this document. Also see the below discussion regarding specific consideration of Clean Energy Standard policies currently under serious consideration at the federal level.

This thorough and deliberate thought process has led us to conclude that a long-term sustained buildout of renewable resources is in the best interests of our customers, the environment, and the communities we serve.

Consideration of Federal Clean Energy Standard Legislation

Since the filing of our 2020 IRP, a number of proposals have been introduced in the current Congress that are focused on the transition of the power sector to address risks of climate change. Among these, several are based on a clean energy standard (CES) approach which requires greater and greater levels of clean energy production as a share of retail electric sales. In that respect, a CES is very much like a renewable energy standard (RES) of the kind passed by Missouri voters in 2008. The proposals for a federal CES target a high percentage of clean energy (wind, solar, hydro, nuclear, and natural gas to different extents depending on the specific proposal) at some time in the future, with the most prominent proposals seeking to reach 100 percent clean energy by as early as 2035. Whether such proposals will pass in the current Congress remains to be seen. However, overall CES policies enjoy broad support from environmental advocacy groups and businesses alike, including many utility companies.

Ameren Missouri's 2020 IRP: Chapter 10 – Strategy Selection (Pages 12-19)

The remainder of our response to Staff Deficiency 1 is an excerpt from Ameren Missouri's 2020 IRP – Chapter 10. It describes in detail the Company's consideration of the addition of renewable resources to its portfolio in accordance with the approach described above and referenced in our responses to Staff's Deficiency 1 and Concern 1.

One of the key conclusions from our evaluation of alternative resource plans is that the inclusion of a sustained long-term expansion of renewable energy resources is beneficial across all of our planning objectives. It steadily transforms our portfolio to one that is cleaner and more diverse while enhancing customer affordability and providing much needed clean energy jobs for our communities and the state of Missouri. It also does something to help ensure our ability to accomplish these goals – it mitigates risks inherent in our existing portfolio as we manage the transition away from fossil fuels while relying on the reliability and economic benefits they continue to provide.

Resource planning has traditionally focused on the balance of generating capacity with customer demand and reserve margin requirements. While that remains important, transforming our generation portfolio requires that we carefully consider all the implications of how we effectuate that transformation. This includes the following considerations, which are discussed in more detail in this section:

- 1. Ameren Missouri will need energy resources as coal-fired generation is retired even as capacity resources remain sufficient to meet demand and reserve margin requirements.**
- 2. The large-scale expansion of renewable resources provides significant risk mitigation to Ameren Missouri's portfolio, particularly with respect to changes in climate policy.**
- 3. Ameren Missouri's coal-fired fleet continues to provide value to customers in order to provide reliable, affordable energy even as it faces significant risks to long-term operations.**
- 4. There is a growing need for renewable resources in both the near term and the long term and potential that the need could be further spurred by changes in energy policy.**
- 5. A large expansion of renewable generation must include consideration of practical limitations, including the potential for financing constraints.**
- 6. Initiating renewable resource builds in the nearer term provides the opportunity to realize tax incentives for customers.**

Ameren Missouri's Need for Energy Resources

Ameren Missouri's existing generation fleet has a total net capability of 10,142 MW. Of this, half is coal, 12% is nuclear, 8% is hydroelectric and other renewables, and 30% is gas or oil fired peaking generation. In contrast, coal currently provides approximately 70% of the energy produced by our fleet, with nuclear providing roughly 25% and renewables providing another 5%. Gas and oil fired resources provide less than 1% of the energy produced by our existing fleet. As coal-fired resources are retired or as their level of production decreases as a result of changes in operating efficiencies, CO₂ prices, other market conditions, regulatory constraints, or other factors, new energy resources will be needed to supplement the remaining generation. While the peaking generation will continue to provide capacity to meet peak demand and reserve margin needs, it will not be able to make up for the loss of coal-fired energy on its own. In fact, it is likely the production levels from these coal-fired energy assets will remain relatively low as they are dispatched in the Midcontinent Independent System Operator ("MISO") market and

as they are operated in compliance with environmental permit constraints. The continued availability of these affordable coal-fired energy assets does allow Ameren Missouri to maintain reliability as increasing amounts of renewable energy are integrated into the system to meet customer needs.

Figure 10.3 Energy Comparison for Selected Plans – Low CO₂ Price
Generation vs Load (MWh)

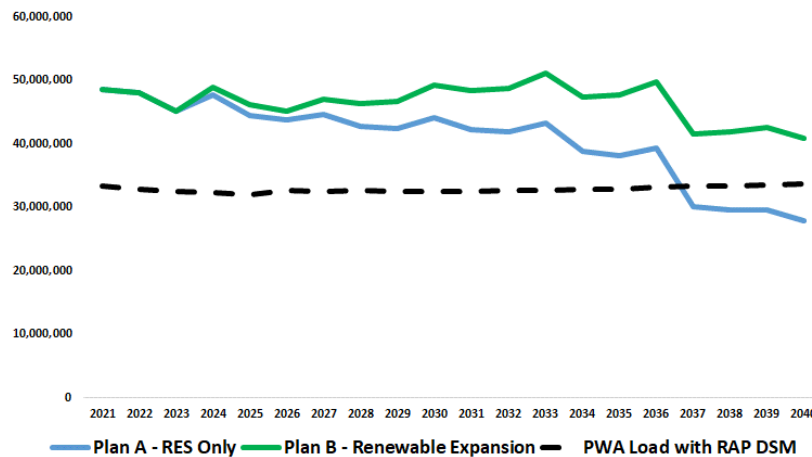
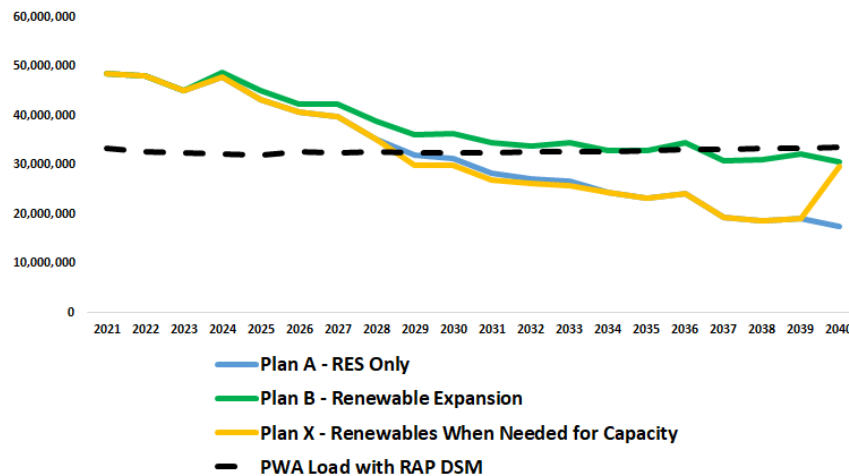


Figure 10.3 shows a comparison of the energy production from several of our alternative plans under our Low CO₂ price scenario. Figure 10.4 shows a similar comparison of energy production for several alternative plans under our High CO₂ price scenario, which results in reduced levels of generation from coal resources (and also gas to a much lesser extent) compared to the levels of production under the Low CO₂ price scenario. The chart shows that for Plan 2 (RAP – RES Compliance), which does not include a large renewable buildout, Ameren Missouri would be generating less energy than its customers use by 2030 and that this shortfall would grow to over one-third of total load by 2040. Any acceleration of coal energy center retirements further exacerbates this issue.

Taken together, the charts in Figures 10.3 and 10.4 highlight a key consideration in the approach to our renewable resource expansion. There is significant uncertainty regarding the level of production from our existing fleet of resources. Differences in future CO₂ prices is only one source of this uncertainty, but it helps to highlight the broader issue. Other sources of uncertainty include natural gas prices, power prices, environmental regulation, and potential changes in climate policy. All of these and perhaps others could impact coal-fired resources and result in a much earlier need for new energy generation. Waiting until such needs are certain may result in suboptimal solutions and potential higher costs to customers. It could also result in an unintended but necessary reliance on

fossil-fueled generation like natural gas combined cycle, deferring or displacing some renewable resource additions.

Figure 10.4 Energy Comparison for Selected Plans – High CO₂ Price
Generation vs Load (MWh)



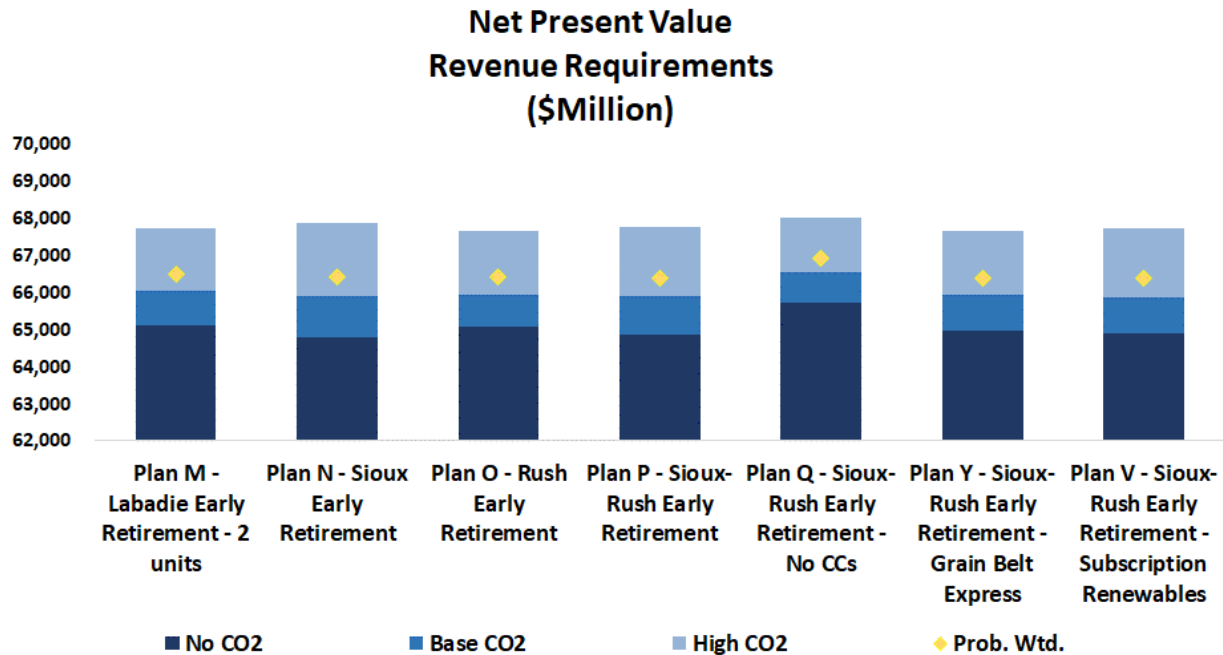
Risk Mitigation Benefits of Renewable Expansion

Our analysis shows that higher CO₂ prices have a beneficial impact on the economics of renewable resources and a detrimental effect on the economics of coal-fired resources. The impact on coal is somewhat obvious in that the CO₂ prices impose a cost directly on the energy production from coal generators. It is this cost imposed on coal and gas generators that also manifests itself in power market prices, as illustrated in Chapter 2. 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. In contrast, the absence of a CO₂ price results in maximal benefits to coal-fired generation and minimal benefits to renewables, nuclear and hydro.

By expanding the share of renewable resources in our portfolio, we increase the balance of resources that from an economic perspective perform better as CO₂ prices rise and resources whose performance diminishes as CO₂ prices rise. This is not unlike the diversification of personal investments like those many hold in retirement funds like a 401(k) plan. By investing in a variety of resources, each of which perform well under different conditions, the overall risk of the portfolio can be mitigated. To illustrate this effect in the context of resource planning, we can simply examine how various alternative resource plans perform under different levels of CO₂ price. Figure 10.5 shows the PVRR

results for several plans with different levels of renewable energy resources under the three different scenarios for CO₂ price used in our risk analysis.

Figure 10.5 PVRR Results for Selected Plans by CO₂ Price Scenario



As the chart in Figure 10.5 shows, the steady addition of wind and solar resources provides risk mitigation around the range of CO₂ prices used for risk analysis, with costs to customers under the No CO₂ price scenario being slightly higher than without the steady buildout and significantly lower under the high CO₂ price scenario. This is in addition to the risk mitigation highlighted by the discussion of energy needs above. Specifically, the steady addition of renewable resources mitigates risk with respect to numerous factors that could impact the production of coal-fired resources, including market prices for energy, environmental regulations and other energy policies.

Continuing Value of Ameren Missouri's Coal-fired Fleet

Ameren Missouri's coal-fired generators are among the most efficient and cost-effective in MISO. They, along with our nuclear and hydro resources, provide around-the-clock capability that serves as a foundation for reliable energy supply to our customers. While the challenges associated with coal-fired generation continue to increase, Ameren Missouri has found innovative ways to maintain affordability of reliable operations while meeting or exceeding current environmental standards. Our alternative resource plan demonstrates the ongoing viability of our Labadie and Rush Island Energy Centers as we prepare to manage our Meramec and Sioux Energy Centers to the ends of their useful lives during this decade.

The primary factor in our analysis influencing the long-term viability of Labadie and Rush Island is CO₂ prices. While high CO₂ prices would negatively affect the economics of these units, we are able to monitor climate policy developments and adjust our plans accordingly as future policies become clearer. In the meantime, we can continue to rely on these units to provide reliable energy in order to integrate increasing amounts of renewable energy, as well as to provide the resultant economic benefits to customers. As a result, we have an opportunity to build out a significant portfolio of cleaner and more diverse renewable resources that enhance customer affordability, mitigate the risks of CO₂ prices, and mitigate the risks of a potential urgent need for capacity that might otherwise need to be satisfied by gas-fired resources.

Customer and Policy Drivers of the Need for Renewable Resources

Customers are expressing an increasing preference for energy supplied by renewable resources. One way to meet this growing demand is to offer programs that allow customers to increase the share of their energy needs that is supplied by renewable resources. In addition to such programs, there has also been a growing sentiment that greater levels of renewable generation should be available to all customers. This is the sentiment that drove the adoption of Missouri's RES in 2008. Ameren Missouri will soon have the resources necessary to comply with the full requirement of the RES upon completion of 700 MW of wind generation projects in Missouri.^[1]

Because of the success of Missouri's RES and the still growing demand for renewable energy resources, policymakers and advocates are continuing to push for energy policies to promote clean and renewable energy resources. This includes the potential for a federal Clean Energy Standard ("CES") and an increase in the requirements for the Missouri RES in future years. Both policies could drive a further expansion of renewable resources.

¹ Since the time of the Company's 2020 IRP filing, the need for renewable resources for RES compliance has been reassessed, resulting in changes to the timing of need for solar resources as reflected in the Company's RES compliance plan and supporting workpapers filed April 15, 2021 (File No. EO-2021-0352).

Figure 10.6 Percentage of Retail Sales Served by Renewable Energy

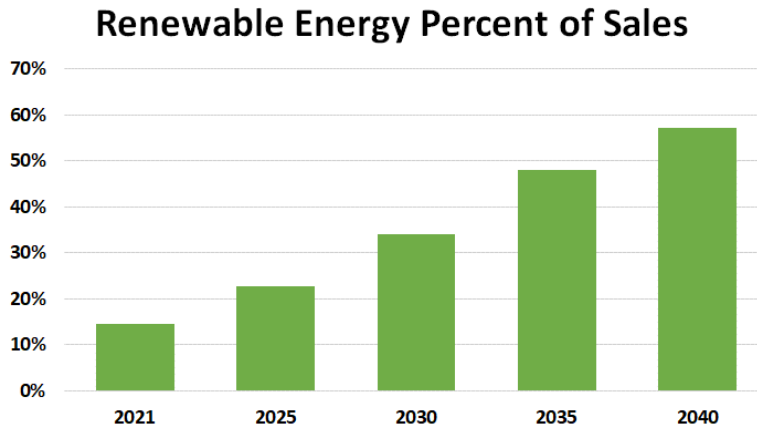


Figure 10.6 shows the percentage of customer sales generated by renewable resources with our Renewable Expansion portfolio. Should explicit policies requiring greater percentages of renewable resources than the current RES requires be enacted, this portfolio would better position Ameren Missouri to meet such requirements.

Practical Considerations for Large-Scale Renewable Expansion

It is one thing to set forth a plan to meet customer energy needs for the next twenty years. It is quite another thing to execute plans and construct the renewable energy resources to serve those needs. So while we have some time to build out the entire renewable resource portfolio, there are practical considerations that must be taken into account when embarking on the kind of portfolio transformation that Ameren Missouri believes is necessary to best meet our customers' future energy needs. These include practical limitations on project permitting, development and construction, environmental studies, the need for new transmission infrastructure to deliver renewable energy, and the ability to finance project construction. By spreading out the build of renewable resources, we mitigate practical project construction risks associated with the beneficial transformation of the generation portfolio and preserve flexibility to address these and possibly other potential roadblocks that may hamper resource acquisition.

As we have seen in recent years, the development, approval, and construction of renewable resources presents unique challenges. These include complications associated with permitting requirements, acquisition of land leases, and securing necessary regulatory approvals. Spreading out the addition of renewable resources allows us to maintain flexibility, reliability, and affordability in our acquisition and integration of those resources without the pressure of a clear and imminent capacity need.

Likewise, the need for transmission infrastructure can present unique and project-specific challenges that flexibility can help to overcome. As we saw with the planned Brickyard Hills wind project, the costs for transmission network upgrades associated with new

projects can change dramatically depending on the capacity of the existing transmission network to accommodate additional wind generation and the amount of wind generating capacity seeking interconnection through the queue in a given Regional Transmission Organization ("RTO"). This could easily be true for large-scale solar projects as well, which are likely necessary to achieve the level of solar resources called for in our plan. 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.

Another key consideration is Ameren Missouri's ability to raise the necessary capital to fund project construction. Ameren Missouri seeks to maintain sufficient credit metrics to ensure access to capital markets to fund not only renewable resource acquisition but also grid modernization and a number of other investments necessary to ensure safe, reliable and affordable service to our customers. We have evaluated the performance all of our alternative resource plans with respect to these credit metrics and have included the results in Chapter 9. We also included consideration of these credit metrics in our scorecard assessment of alternative resource plans as part of our Financial/Regulatory planning objective.

Table 10.6 Credit Metrics for Selected Plans vs. Target Metrics

| Plan Description | | FFO/Debt | FFO Interest Coverage |
|------------------|------------------------------------------------------|----------|-----------------------|
| | Target Credit Metrics | 25.0% | 6.30 |
| P | Sioux-Rush Early Retirement | 23.9% | 6.91 |
| V | Sioux-Rush Early Retirement - Renewable Subscription | 23.9% | 6.89 |
| X | Sioux-Rush Early Retirement - Renewables when needed | 19.3% | 6.46 |

Table 10.6 shows the credit metrics for three plans compared to our target credit metrics. These represent the minimum results for the period 2030-2040 for funds from operations ("FFO") to total debt and FFO to interest expense. As the table shows, the credit metrics for Plan X, in which renewable additions are included only when needed for capacity are significantly lower than those for Plans P and V, in which renewable additions are added throughout the planning horizon. Most notably, the FFO/Debt metric for Plan X is well below our target for this metric. While metrics for individual years during the 20-year planning horizon may not indicate a credit challenge, the degree to which the metrics vary from other plans provides an indication that such challenges may be more likely.

Capturing the Value of Available Tax Credits

Current tax law includes production tax credits ("PTC") for wind generation and additional investment tax credits ("ITC") for solar generation. Ameren Missouri has captured significant value for customers with the wind projects currently nearing completion through the PTC. Continuing our buildout of renewable energy projects allows us the opportunity to capture significantly more value from PTC and ITC for wind and solar projects in the next several years.

Weighing the Considerations Together

In accounting for the foregoing considerations and in conjunction with our rigorous risk analysis of alternative resource plans, we conclude that a continued buildout of renewable wind and solar resources throughout the planning horizon yields significant real and potential benefits for our customers with limited downside. It provide us with valuable risk mitigation regarding CO₂ prices and other factors, and valuable flexibility in managing the transformation of our generation portfolio.

Issue Identifier: Staff Concern C

Stakeholder Report Reference: Staff Comments – Page 18

IRP Rule Reference: None

Description: Staff is concerned Ameren Missouri's unprecedented shift toward renewable generation may place an undue level of risk on ratepayers.

Response: Staff appears to want the Company to perform additional analysis of the risks to customers and shareholders of the renewable buildout. However additional analysis is not necessary to assess the risk to customers or to understand the Company's consideration of business risk given the information already available in the filed IRP documents and accompanying workpapers. The risk analysis required by the IRP rules is intended to evaluate risks from a customer perspective. It includes consideration of a full range of probability for key drivers, called critical uncertain factors, and how those affect customer costs and rates. Again, Staff found no deficiencies or cause for concern with our integration and risk analysis.

Regarding the consideration of risks to shareholders, this is seldom, if ever, quantified in an IRP analysis. It is important to recognize from both a customer and a shareholder perspective that the kind of renewable buildout represented in Ameren Missouri's preferred plan reflects inherent risk mitigation value, as previously described. This risk mitigation comes primarily in the form of the flexibility gained by spreading the buildout over many years. This is discussed in prior sections of this response. It is also worth noting that the percentage of renewable energy in our generation portfolio is less than most other regions of the country. Depending on what may

change in terms of federal climate policy, this fact can cause us to be forced to deploy a large amount of new renewable generation in a short period of time under a one size fits all clean energy standard, thereby adversely impacting reliable and affordable energy supply to our customers. In short, we believe our planned buildout of renewable resources represents a thoughtful and reasonable approach to portfolio transition that provides flexibility to manage risks and uncertainty while making significant and visible progress toward a sustainable energy future.