<u>Staff Alleged Deficiencies/Concerns</u>

Staff Deficiency 1 – Partially Resolved: 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 utilizing a different avoided capacity cost curve for demand-side resources and by adding renewable resources before a capacity need for reserve requirements.

Partial Resolution: Ameren Missouri explained that in the integration and risk analysis market-based capacity curve was used to evaluate all resources including demand-side, and renewable and non-renewable supply-side resources. Please refer to the resolution to Staff Deficiency 2 for further avoided capacity considerations.

Staff and Ameren Missouri was not able to come to a resolution on the addition of wind and solar resources before there is a capacity need for reserve requirements.

Staff Deficiency 2 - Resolved: Ameren Missouri did not use a consistent avoided capacity cost throughout its triennial compliance filing as required by 20 CSR 4240-22.050(5)(A)1.

Resolution: Parties agree to discuss solutions to address the development of avoided costs prior to, or as part of, the next Market Potential Study. Parties will file the agreed upon solution or ongoing disagreements prior to, or as part of, the next Market Potential Study.

The market price of capacity is used to evaluate the net capacity position of the portfolio, where each candidate portfolio is designed to meet resource adequacy targets. The market price of capacity is the appropriate cost curve to use under this assumption of resource adequacy. The market price of capacity represents the short run marginal financial cost of deviations from this resource adequacy target and assumption. Within this framework, the market price of capacity is used to consistently evaluate each resource within the integration-risk analysis.

In contrast, the avoided cost of capacity, measured as the Cost of New Entry (CONE), is not used in the integration and risk analysis as it pertains to the integrated resource plan. Parties continue to disagree on the appropriateness of the timing to move the avoided capacity cost to the CONE in 2029. Ameren Missouri agrees to provide additional analysis for any proposed DSM portfolio for which Ameren Missouri applies prior to the filing of the next triennial IRP. Said analysis should utilize market prices until the capacity shortfall build threshold for a Combustion Turbine (CT) is met within the IRP, absent the effects of DSM. Results will be used to prospectively identify areas of interest for future evaluation, measurement, and verification (EM&V) research, as well as to aid evaluation in other situations in which such analysis is relevant.

In general, a CONE curve may be used to represent the forward value of capacity when the resource adequacy condition is not met and new resources are required to be built. In that instance, the cost of the new resources is avoidable if customer demand can be reduced. This avoided cost of capacity represents the long-run marginal cost of acquiring these new resources. Alternatively, when such conditions are not met and a new resource is not required, the costs that would be avoided by a reduction in customer demand is the market price of capacity, as the Company would not be required to clear a large amount of load in the MISO capacity auction. The market-based capacity curve represents the short run marginal cost for a financial transaction within the MISO capacity market.

Ameren Missouri previously used the same capacity price curve for both the market price of capacity to assess the cost impacts of transient capacity shortfalls or surpluses and for the avoided cost of capacity. The reason for this was that the long-term expectation for the market price of capacity was that it would be reflective of the long-run marginal cost of capacity, commonly referred to as the cost of new entry or CONE. In reviewing and challenging its assumptions for this IRP, the Company reassessed this assumption. The Company determined that in a primarily vertically integrated market like MISO, the price of capacity would likely continue to represent only a residual price in the long term. That is, because the majority of load-serving entities in MISO are charged with ensuring sufficiency of long-term supply through IRP or other means, a market capacity shortfall that drives the price to CONE would never materialize, thus leaving capacity prices relatively low. As a result, the Company separated the market capacity price assumption used in integration from the avoided capacity cost used for assessing the cost effectiveness of demand-side programs.

Table 1: Summary of Avoided Costs by Planning and Implementation Step

Step	Purpose	Cost Curve	Notes
Pre-Planning 2020 IRP	Cost-Effectiveness Screening	2017 IRP Avoided Costs (Energy, T&D, Capacity)	Used during the 2020 Market Potential Study, initiated in March 2019. Used to screen cost effective measures for inclusion in the RAP and MAP portfolios as candidate resources in 2020 IRP.
Planning 2020 IRP	Integration and Risk Analysis	2020 IRP Energy and T&D Market-based Capacity	Used to assess the present value revenue requirement (PVRR) of multiple resource plans. Consistent curve used to evaluate all demand and supply side options. Used to select the preferred resource plan.

Staff Concern A - Resolved: Ameren Missouri's avoided capacity cost is overstated due to the premature move to CONE in 2029.

Resolution: Parties agree to define an alternative avoided capacity cost curve (e.g., moving to CONE in an alternative year), which will be used as a sensitivity in the 2022 Market Potential Study, as an input to the 2023 IRP. If an agreement cannot be reached prior to the Market Potential Study or the next MEEIA filing, Ameren will utilize multiple Avoided Capacity Cost Curves, including a curve as proposed by Staff. Potential curves should utilize market prices until the capacity shortfall build threshold for a Combustion Turbine (CT) is met within the IRP, absent the effects of DSM.

Prior to, or as part of, the Company's subsequent MEEIA filings prior to the next triennial IRP filing, Parties also agree to review portfolio cost effectiveness against the alternative avoided capacity cost(s) sensitivity defined above.; Results will be used to prospectively identify areas of interest for future evaluation, measurement, and verification (EM&V) research, as well as to aid evaluation in other situations in which such analysis is relevant.

Staff Concern B - Resolved: The 2020 Market Potential Study relied on the avoided costs developed as part of Ameren Missouri's 2017 IRP to complete the initial screening analysis and identify cost-effective measures to be included in each demand-side management portfolio of the 2020 IRP.

Resolution: Parties agree to discuss solutions to address the development of avoided costs prior to, or as part of, the next Market Potential Study. Parties will file the agreed upon solution or ongoing disagreements prior to the next Market Potential Study.

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

MIEC Concerns

MIEC Concern 1 - Unresolved: MIEC is concerned that *** ____________________ ____ ______________________________***.

MIEC Concern 2 - Unresolved: MIEC is concerned that the 2020 IRP does not include specific renewable program offerings for interested customers to pay for and receive the renewable attributes of specific Ameren Missouri owned or contracted renewable generation.

Renew Missouri Concerns

Renew Missouri Concern 1 – Resolved: Renew Missouri states that the Company should address the Commissions 2020 Special Contemporary H regarding value of solar.

Resolution: The Commission ordered Special Contemporary Issues in November 2020, after Ameren Missouri filed its 2020 IRP. Ameren Missouri will address this issue in its 2021 IRP Annual Update.

Renew Missouri Concern 2 – Resolved: Renew Missouri is concerned that if the Company accounted for geographic diversity of additional resources, it is possible that Plan Y, which includes Grain Belt Express would be the highest scoring plan as it would provide wind resources from Western Kansas.

Resolution: Ameren Missouri makes generic assumptions and does not generally specify locations in its IRP except when the options for potential sites is severely constrained. Its wind cost and operational characteristics assumptions are based on projects in Missouri and surrounding states. The implementation phase is where a specific project would be evaluated against other options, Ameren Missouri will consider geographic diversity as a part of that process.

Renew Missouri Concern 3 – Resolved: Renew Missouri is concerned that the Company should evaluate the cost/benefit and reliability impacts of additional resources on the distribution level compared to the transmission level.

Resolution: Parties agree that IRP focuses more on resource types rather than where a resource is connected and this does not preclude Ameren Missouri from implementing projects at distribution level. At project implementation Ameren Missouri will evaluate if there are better options at the distribution level and implement accordingly. Additionally, in its load forecast, Ameren Missouri included ~700MWs of customer-owned solar, which is assumed to be connected at the distribution level.

Renew Missouri Concern 4 – Resolved: Renew Missouri states that the Company should address Federal actions since the Company filed its IRP chapters – extension of tax credits and increased Social Cost of Carbon.

Resolution: The Company will address whether and to what extent these changes related to taxes and the cost of carbon might impact its preferred resource plan as part of its 2021 IRP Annual Update.

Renew Missouri Concern 5 – Resolved: Renew Missouri states that Ameren Missouri should evaluate expanding its demand side programs; a MAP-level portfolio would be a better long-term investment for the Company to build its plan upon.

Resolution: Ameren Missouri will work with stakeholders in its MEEIA application proceedings to assess the achievement of all cost-effective demand side resources.

Renew Missouri Concern 6 – Resolved: Renew Missouri is concerned that retirement of Labadie plant is not accelerated.

Resolution: Ameren Missouri will continue to consider alternative retirement dates as part of its ongoing resource planning activities.

Renew Missouri Recommendation: Ameren Missouri will work with Renew Missouri to investigate ways for further data collection in identifying disparities in energy burdens.

Clean Grid Alliance (CGA) Alleged Deficiencies

CGA Deficiency 1 - Resolved: CGA alleges that Plan Y should either be an equivalent to Preferred Plan V or be the contingency plan, instead of Plan P because the IRP undervalued aspects of Grain Belt Express. In its comments, CGA alleges that certain adjustments would have increased Plan Ys score and key facts were overlooked during selection of the Preferred Resource Plan.

Resolution: Parties agree that Ameren Missouri makes generic assumptions in its IRP and rarely does it model specific projects, such as what it did for Plan Y. Moreover, the determination that Plan Y is neither the Preferred nor Contingent Resource Plan in this IRP does not prevent Ameren Missouri from considering it as a potential supply-side resource in future IRPs or in future transaction structures.

CGA Deficiency 2 - Resolved: CGA states that hybrid resources (solar+battery, solar+wind, wind+battery) need to be better evaluated in future IRPs so they can be properly considered as new supply-side resources.

Resolution: Ameren Missouri has been and will continue to evaluate (as appropriate) the incorporation and value of hybrid resources. In coordination/furtherance of that effort, the parties agree to work in good faith on reasonable approaches to the evaluation of hybrid resources in future annual and triennial compliance filings. This resolution does not prohibit CGA from raising any of the four remedies it proposed for this alleged deficiency in the future discussions.

CGA Deficiencies 3 and 4 – Resolved: CGA states that the levelized cost of wind and solar resources (Deficiency 3) and hybrid resources (Deficiency 4) calculated by Ameren Missouri are higher than prices of similar resources available in the market.

Resolution: The parties agree that Ameren Missouri has been actively investigating and evaluating wind, solar and hybrid generation and will evaluate and consider potential price differences between utility-owned and IPP-owned wind, solar and hybrid generation in future annual and triennial compliance filings.

Missouri NAACP, DSCC and NNMBP Alleged Deficiencies / Concerns

MO NAACP et al. Deficiency 1 - Resolved: MO NAACP et al**.** allege that IRP lacks a RAP+ portfolio.

Resolution: Ameren Missouri will work with NAACP et al. to continue to identify opportunities that benefit underserved communities through the deployment of renewable resources, efficient electrification, and energy savings programs. This collaboration will include consideration of the potential for direct savings, demand reduction measures and other benefits within these communities, such as:

- Building envelope efficiency measures for tenants
- Tree planting programs
- Job training services and other relief measures
- Marketing of any additional direct investment projects targeting low-income minority customers,
- Solar opportunities for low-income communities with workforce development options.

Ameren Missouri will designate a single point of contact to ensure effective communication and coordination with NAACP et al.

MO NAACP et al. Deficiency 2 - Resolved: MO NAACP et al**.** allege that Ameren Missouri has not treated demand-side rates as required by 22.050(4) and (6) but only as sensitivities to the base case.

Resolution: Please see the resolution to NAACP et al. Deficiency 1.

MO NAACP et al. Deficiency 3 - Resolved: MO NAACP et al**.** allege that Ameren Missouri did not screen electric vehicle charging infrastructure as a candidate resource option as required by special contemporary issue J in File No. EO-2020-0047.

Resolution: Please see the resolution to NAACP et al. Deficiency 1.

MO NAACP et al. Deficiency 4 - Resolved: MO NAACP et al**.** state that Ameren Missouri has discussed a variety of plans and programs without including them as candidate resource options.

Resolution: Please see the resolution to NAACP et al. Deficiency 1.

MO NAACP et al. Deficiency 5 - Resolved: MO NAACP et al**.** allege that Ameren Missouri has over-estimated the reasonable life span of its coal-fired power plants

Resolution: Please see the resolution to NAACP et al. Deficiency 1.

MO NAACP et al. Deficiency 6 - Resolved: MO NAACP et al**.** allege that Ameren Missouri has failed to quantify the probable environmental costs of its non-renewable power sources, especially its coal-fired power plants, and incorporate those costs into its supply-side ranking and risk analysis.

Resolution: Please see the resolution to NAACP et al. Deficiency 1.

MO NAACP et al. Deficiency 7 - Resolved: MO NAACP et al**.** state that the Plan places too great of reliance on nonrenewable forms of power.

Resolution: Please see the resolution to NAACP et al. Deficiency 1.

MO NAACP et al. Concern 1 - Resolved: MO NAACP et al**.** state that Ameren Missouri should explore and document the use of heat pumps as a replacement for natural gas furnaces.

Resolution: Please see the resolution to NAACP et al. Deficiency 1.

MO NAACP et al. Concern 2 - Resolved: MO NAACP et al**.** state that Ameren Missouri could better serve the community and environmental justice concerns by being more forthcoming about its renewable energy pilot programs.

Resolution: Please see the resolution to NAACP et al. Deficiency 1.

MO NAACP et al. Concern 3 - Resolved: MO NAACP et al**.** are concerned that the Plan offers insufficient investment in renewable projects in low-income minority communities in the City of St. Louis.

Resolution: Please see the resolution to NAACP et al. Deficiency 1.

<u>Sierra Club Alleged Deficiencies</u>

All Sierra Club alleged deficiencies are resolved through the Stipulation and Agreement dated June 11, 2021.