BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro's 2024 Triennial Compliance Filing Pursuant to 20 CSR 4240-22	))))	**File No. EO-2024-0153**

STAFF REPORT AND RECOMMENDATION

COMES NOW the Staff of the Missouri Public Service Commission ("Staff"), by and through the undersigned counsel, states the following:

1. On April 1, 2024, Evergy Metro, Inc., d/b/a Evergy Missouri Metro ("Evergy Metro" or "Company"), filed its 2024 Integrated Resource Plan ("2024 IRP") triennial compliance filing ("Filing") in File No. EO-2024-0153, as required by 20 CSR 4240-22 Electric Utility Resource Planning.

2. Commission Rule 20 CSR 4240-22.080(7) states the following:

> **The staff shall conduct a limited review** of each triennial compliance filing required by this rule and shall file a report not later than one hundred fifty (150) days after each utility's scheduled triennial compliance filing date.
>
> **The report shall identify any deficiencies** in the electric utility's compliance with the provisions of this chapter, any major deficiencies in the methodologies or analyses required to be performed by this chapter, and any other deficiencies and **shall provide at least one (1) suggested remedy for each identified deficiency**.
>
> **Staff may also identify concerns** with the utility's triennial compliance filing, may identify concerns related to the substantive reasonableness of the preferred resource plan or resource acquisition strategy, and **shall provide at least one (1) suggested remedy for each identified concern**. (emphasis added.)

3. As a result of its limited review, and as more fully discussed in Staff's report ("Report"), Staff identified no deficiencies and five concerns regarding Evergy Metro's 2024 IRP Filing. Staff's concerns are related to the following:

Concern 1 — Evergy Metro's avoided capacity, energy, and transmission and distribution (T&D) costs, assumed supply-side deferral, budget and savings levels, third-party aggregation assumptions, and program design among others.

Concern 2 — Evergy Metro's capacity expansion modeling regarding but not limited to: (1) the size and timing of supply-side resources in the alternative resource plans continue to have several similarities; (2) the retirements are manually tested and have similar timing; and (3) a relatively small variety of demand-side management portfolios are manually tested.

Concern 3 — Evergy Metro's economic development load growth being factored into the requirements utilized for the development of alternative resource plans that are not included in the load forecasts of this *2024 IRP Filing*.

Concern 4 — Evergy Metro's shift toward renewable, non-dispatchable resources potentially exposes ratepayers to risks borne by the Company.

Concern 5 — The Company in recent years has been using the IRP as its primary justification in support of purchasing or building generation resources. As Staff has previously stated in testimony, the IRP rules can function as a roadmap in the sense that it points you in a general direction, but it should not be relied on for the determination of specific projects.[1]

Therefore, Staff's position for Certificate of Convenience and Necessity (CCN) applications continues to be that, the resource(s) being applied for in a CCN need to stand on their own and justify themselves as being necessary and in the public interest.

4. Staff's limited review addresses a number of concerns with the Company's 2024 IRP Filing. However, silence on a particular item in the Company's 2024 IRP Filing should not be construed as acceptance or agreement of that particular item.

[1] *Rebuttal Testimony of Brad J. Fortson,* Case No. EA-2023-0286, pg. 12.

5. Staff's report, attached hereto and incorporated by reference, addresses Staff's limited review, its concerns, and provides suggested remedies as required by Commission Rule 20 CSR 4240-22.

WHEREFORE, Staff respectfully submits its *Report* regarding Evergy Missouri Metro's 2024 Integrated Resource Plan triennial compliance filing, as required by Commission Rule 20 CSR 4240-22.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing have been mailed or hand-delivered, transmitted by facsimile or electronically mailed to all parties and/or counsel of record on this 29th day of August, 2024.

/s/ Eric Vandergriff

MISSOURI PUBLIC SERVICE COMMISSION

STAFF REPORT

EVERGY METRO, INC.,
d/b/a EVERGY MISSOURI METRO

ELECTRIC UTILITY RESOURCE PLANNING
COMPLIANCE FILING

FILE NO. EO-2024-0153

AUGUST 29, 2024

STAFF REPORT

FILE NO. EO-2024-0153

Executive Summary

On April 1, 2024, Evergy Metro, Inc., d/b/a Evergy Missouri Metro ("Evergy Metro" or "Company"), filed its 2024 Integrated Resource Plan ("IRP") triennial compliance filing ("Filing") in File No. EO-2024-0153, as required by 20 CSR 4240-22 Electric Utility Resource Planning.

Commission Rule 20 CSR 4240-22.080(7) provides that:

> (7) The staff shall conduct a limited review of each triennial compliance filing required by this rule and shall file a report not later than one hundred fifty (150) days after each utility's scheduled triennial compliance filing date. The report shall identify any deficiencies in the electric utility's compliance with the provisions of this chapter, any major deficiencies in the methodologies or analyses required to be performed by this chapter, and any other deficiencies and shall provide at least one (1) suggested remedy for each identified deficiency. Staff may also identify concerns with the utility's triennial compliance filing, may identify concerns related to the substantive reasonableness of the preferred resource plan or resource acquisition strategy, and shall provide at least one (1) suggested remedy for each identified concern.

As a result of its limited review, and as more fully discussed throughout Staff's report ("Report"), Staff identified no deficiencies and five concerns regarding Evergy Metro's 2024 IRP Filing:

List of Staff's Identified Concerns and Suggested Remedies

Concern 1 - Staff has a number of concerns as it relates to the IRP and the Company's MEEIA[1] applications. The Company's avoided capacity, energy, and T&D[2] costs, assumed supply-side deferral, budget and savings levels, third-party aggregation assumptions, and program design to name a few. However, on April 29, 2024, Evergy Metro filed its *Application to Approve DSIM Filing and Request for Variance* and associated direct testimony of Evergy Metro witnesses in Case No. EO-2023-0369, its MEEIA Cycle 4 case. Staff continues to have concerns, but believes the MEEIA Cycle 4 docket is the most appropriate case to address its MEEIA related concerns in.

[1] Missouri Energy Efficiency Investment Act (MEEIA).

[2] Transmission & Distribution (T&D).

Concern 2 – While Staff's prior concern with the Company's use of "hard-coded" resource additions in its modeling is lessened with the Company using its capacity expansion modeling to a fuller extent, certain concerns remain. Those concerns include, but are not limited to: (1) the type, size, and timing of supply-side resources in the alternative resource plans continue to have several similarities; (2) the retirements are manually tested and have similar timing; and (3) a relatively small variety of demand-side management portfolios are manually tested. Staff's suggested remedy is that the Company continue to work with Staff on better understanding the Company's capacity expansion modeling, assumptions, and process. Staff recommends, as an outcome in this filing, that Staff and the Company work to agree on a schedule for these discussions.

Concern 3 – Staff has concerns with economic development load growth being factored into the requirements utilized for the development of alternative resource plans, but not being included in the load forecasts of this 2024 IRP Filing. Staff's concern is heightened now that load growth is no longer considered a critical uncertain factor. Staff's suggested remedy is that the Company help Staff understand the process used to either include or exclude economic development load growth in its critical uncertain factors, load forecasts, and alternative resource plans. Staff recommends these discussions take place immediately after the filing of this Staff Report in order to attempt to resolve this concern as a part of the joint filing.

Concern 4 – Staff continues to have the concern it has expressed in the past with the risk potentially borne by ratepayers from the Company's shift toward renewable, non-dispatchable resources. This is further concerning with the addition of thermal units not until 2032, 2036, 2038, 2039, and 2041. Given recent concerns expressed at the federal and state level about resource adequacy and reliability, a part of the concern now shifts to whether holding off until 2032 to start adding thermal, dispatchable generation is reasonable. Staff's suggested remedy is that the Company meet with Staff and other interested stakeholders to discuss additional modeling scenarios that consider thermal, dispatchable resources prior to 2032. Staff recommends these discussions take place immediately after the filing of this Staff Report in order to attempt to resolve this concern as a part of the joint filing.

Concern 5 – As a general concern, the Company in recent years has been using the IRP as its primary justification in support of purchasing or building generation resources. As Staff has previously stated in testimony, the IRP rules can function as a roadmap in the sense that it points you in a general direction, but it should not be relied on for the determination of specific projects.[3] Therefore, Staff's position for CCN[4] applications continues to be that, the resource(s) being applied for in a CCN need to stand on their own and justify themselves as being necessary and in the public interest.

Staff's limited review addresses a number of concerns with the Company's 2024 IRP Filing. However, silence on a particular item in the Company's 2024 IRP Filing should not be construed as acceptance or agreement of that particular item.

20 CSR 4240-22.010 Policy Objectives

Summary

20 CSR 4240-22.010 Policy Objectives, has a stated purpose that "This rule states the public policy goal that this chapter is designed to achieve and identifies the objectives that the electric utility resource planning process must serve."

20 CSR 4240-22.010(1) and (2) state:

> (1) The commission's policy goal in promulgating this chapter is to set minimum standards to govern the scope and objectives of the resource planning process that is required of electric utilities subject to its jurisdiction in order to ensure that the public interest is adequately served. Compliance with these rules shall not be construed to result in commission approval of the utility's resource plans, resource acquisition strategies, or investment decisions.
>
> (2) The fundamental objective of the resource planning process at electric utilities shall be to provide the public with energy services that are safe, reliable, and efficient, at just and reasonable rates, in compliance with all legal mandates, and in a manner that serves the public interest and is consistent with state energy and environment policies…

It is important to note the use of the words "minimum standards" as mentioned in the rule language above. Evergy Metro uses a number of generic assumptions, or minimum standards, in

[3] *Rebuttal Testimony of Brad J. Fortson*, Case No. EA-2023-0286, pg. 12.
[4] Certificate of Convenience and Necessity ("CCN").

its resource planning modeling. Certain assumptions change between IRP Filings, sometimes annually. Reliance on a Company's IRP Filing for any specific project is inappropriate, as Staff views the function of the Chapter 22 rules as a roadmap in the sense that it points you in a general direction, but it should not be relied on for the determination of specific projects. Each individual project should stand on its own in demonstrating whether or not the project is necessary and in the public interest.

It is also very important to note the rule language above that states that "Compliance with these rules shall not be construed to result in commission approval of the utility's resource plans, resource acquisition strategies, or investment decisions." For new Company-owned resources, the Company has to file with the Commission a Certificate of Convenience and Necessity ("CCN"). CCNs require Commission approval. The CCN shall include facts showing that granting the application is necessary or convenient for the public service.[5] The Company has recently heavily relied on its IRP Filings as justification for specific projects in its CCN filings. However, while the Commission must determine whether the resource planning filing complies with the Chapter 22 rules, the Commission's finding of compliance does not constitute any kind of approval of the resource plans set out in IRP Filings or of any specific project within the utility's preferred plan.

Further, per 20 CSR 4240-22.080(7), a Staff report that finds an IRP Filing is in compliance with Chapter 22 shall not be construed as acceptance or agreement with the substantive findings, determinations, or analysis contained in the electric utility's filing.

Staff performed its review of Evergy Metro's 2024 IRP Filing using the Commission's policy goal in promulgating this chapter and the fundamental objective of the resource planning process as the foundation of its review.

Staff Expert Witness: Brad J. Fortson

20 CSR 4240-22.030 Load Analysis and Forecasting

Summary

Section 20 CSR 4240-22.030, Load Analysis and Load Forecasting, has a stated purpose of setting:

> . . . minimum standards for the maintenance and updating of historical data, the level of detail required in analyzing loads, and the purposes to be

[5] 20 CSR 4240-20.045(3)(A).

> accomplished by load analysis and by load forecast models. The load analysis discussed in this rule is intended to support both demand-side management efforts of 20 CSR 4240-22.050 and the load forecast models of this rule. This rule also sets the minimum standards for the documentation of the inputs, components, and methods used to derive the load forecasts.

Thorough analysis and forecasting of electricity demand enable utilities to accurately predict future electricity consumption, strategically plan the purchase and generation of electric power, renewable energy integration, and infrastructure development, thereby, optimizing operational efficiency, preventing shortages or excess capacity, minimizing costs, and ensuring grid stability. Load analysis and forecasting also empowers utilities to optimize resource management through demand response programs, encouraging energy conservation during peak periods, and promoting efficient utilization of resources.

Subsection 22.030(1) requires the utility to "describe and document its intended purposes for load analysis methods, why the selected load analysis methods best fulfill those purposes, and how the load analysis methods are consistent with one another and with the end-use consumption data used in the demand-side analysis as described in 20 CSR 4240-22.050." This rule allows utilities to use various analytical methods at their discretion to perform load analysis and develop forecasts, ensuring they can achieve the rule's stated purpose. Evergy Metro used different methods to model the effect of weather for normalization and for forecasting, primarily because the sample period required for weather normalization needed to span the entirety of available historical data while forecasting models often requires a recent shorter sample period since the focus is on calibrating an end-use forecast to recent data. Further, conforming to subsection 22.030(2)(A), Evergy Metro utilizes MetrixND files to maintain data on the actual historical pattern of energy usage within its service territory for each of the major customer classes, and maintains this data for at least ten years. These files also contain the models used to forecast the number of customers and weather-normalize and forecast monthly energy sales.

Evergy Metro's weather normalization models of monthly sales accounts for how temperature variations affect energy consumption across the various customer classes[6]. By incorporating variables like heating degree days ("HDD") and cooling degree days ("CDD"), Evergy Metro adjusts data to isolate the underlying patterns in energy usage that are not solely

[6] 20 CSR 4240-22.030(2)(C)3.

influenced by changes in weather conditions. The weather normalization models, developed in MetrixND, shows that most of the explanatory variables, estimated using the Ordinary Least Square regression, are statistically significant at 5% level of significance indicating the reliability of the model's parameters. The direction and magnitude of the coefficients aligns with expected economic behaviors; for example, the notably positive coefficient for the HDD 55-degree breakpoint across customer classes indicates that colder temperatures significantly elevate heating demand, thereby leading to increased sales. The weather normalization model for industrial sales includes binary variables for different months to statistically analyze the impact of time of year on sales. These results underscore the models' robustness.

In compliance with subsection 22.030(3)(A), Evergy Metro, described and documented its analysis of the relationship between the number of units and the explanatory variables that affect the number of units for each major class, as indicated by statistical models in the MetrixND files. The models for residential customers were tested using both households and population as drivers and the result revealed that the number of households in the metro area had the strongest correlation to the number of residential customers. Similarly, Small General Service customers were predominantly influenced by the number of residential customers. Conversely, for the Big (Large General Service and Large Power) commercial customers, the log of population had the best fit and was chosen as the primary driver.

Evergy Metro uses the Statistically Adjusted End-use ("SAE") method to forecast energy sales and demand for all classes except lighting and sales for resale. These forecasts provide an analytical basis for testing and refining the assumptions used in the development of the potential demand-side resource portfolios[7]. While Econometric models are strong for capturing economic trends that influence future outcomes, they can miss out on crucial details like changes in efficiency or consumer behavior. This is where forecasting using SAE method becomes relevant. The SAE modeling framework combines the strength of econometric models with end use information such as appliance saturation (the number of appliances already owned) and efficiency trends (improvements in energy usage by appliances), to provide more accurate forecasts of electricity demand.). This combined approach gives a more nuanced forecast, particularly in Evergy Metro, where both economic conditions and appliance usage affect demand.

[7] 20 CSR 4240-22.030(1)(A).

The SAE method creates a forecast of sales at the end-use level and then for each class aggregates the forecasts into base, heating and cooling energy and then calibrates these loads to monthly billed sales using statistical regressions. The end use forecasts are developed using both primary data collected by Evergy Metro and secondary data and projections produced by the U.S. Department of Energy ("DOE") for the West North Central region of the U.S. The projections used in the model include DOE's projections of saturations for household appliances and equipment used in commercial buildings and projections of efficiencies for appliances, buildings and equipment. The projections are designed to account for changes in consumer preferences, technology and building design practices. Pursuant to subsection 22.030(5)(A), Evergy Metro in its forecasting models incorporates the most important drivers of energy use. These drivers are energy standards, building standards, trends in saturations and equipment efficiency, economic growth at the sector level, and existing company energy efficiency and demand-side management ("DSM") programs.

In the models of residential use per customer, the independent variables were appliance saturation, appliance unit energy consumption ("UEC"), real price of electricity, real per capita income, and persons per household. These independent variables were used to construct an end-use forecast of residential use per customer for three major end-uses: heating, cooling and other, and these were then calibrated to monthly billed sales per customer in a linear regression. Residential forecast models use real per capita income and persons per household produced by Moody's analytics as economic variables. The SAE model, analyzed based on historical data of electricity consumption adjusted for normal weather conditions reflects the sensitivity of energy consumption to various specific uses with the respective standard errors and test statistics indicating the precision and significance of these estimates. The residential model, which was re-estimated by Staff using MetrixND, relying on the data provided by Evergy Metro, shows significant positive coefficients for the end uses, indicating that energy usage is highly sensitive to temperature changes (as the weather becomes more severe, conditioning the home to a comfortable level requires increased energy), suggesting the potential benefits of energy efficiency programs or incentives to households to reduce consumption during extreme weather.

In the models of commercial sales and use per customer, the independent variables were equipment saturations, energy use per square foot ("EUI"), the real price of electricity,

and economic variables. Economic variables were non-manufacturing employment or non-manufacturing gross-metro product ("GMP"). These independent variables were employed to develop an end-use forecast of commercial use for three major end-uses: heating, cooling and other. Subsequently, these forecasts were then calibrated to monthly billed sales or sales per customer in a linear regression. The model, which was re-estimated by Staff using MetrixND based on the information supplied by Evergy Metro, provides insights into factors driving energy consumption in commercial settings. For Small General Service commercial sales and use per customer, of all the end use, heating has the highest coefficient (1.283), implying significant sensitivity to temperature changes, suggesting areas where efficiency improvements by Evergy Metro could be most beneficial. The cooling (0.820) and other use component (0.869) coefficients also show significant sensitivity to temperature changes, indicating that commercial energy usage is highly responsive to seasonal variations. For big General Service Commercial sales (MGS, LGS and LP) and use per customer, the large coefficients indicate that energy usage in big commercial sectors is highly sensitive to temperature changes, making it important to account for seasonal variations in energy demand planning.

In the models of industrial sales, the independent variables were EUIs on an industry and employment basis, the real price of electricity, and economic variables. Economic variables were manufacturing employment or manufacturing GMP. The model which was re-estimated by Staff using MetrixND relying on the information supplied by Evergy Metro, provides insights into factors driving energy consumption in industrial settings and leverages historical sales data and current economic indicators to make informed predictions. The t-statistics and p-values indicate the statistical significance of each variable, identifying the most impactful variables. The cooling (12798.654) and other use component (11733.571) coefficients show strong positive correlation with higher sales. The model also considers monthly variations through binary indicators to capture seasonal effects. Availability of end-use data for the Industry class would be a valuable tool in achieving a more robust prediction scenario, which would therefore be crucial for demand-side management. This is because the development of energy models depends heavily on weather, end-use, and economic trends.

Evergy Metro conducted a Load Forecast Sensitivity Analysis[8] using the revenue classes; Residential, Commercial, and Industrial, with monthly data available from 2001 to 2023. The explanatory variables were standardized to allow for direct comparison and show the relative importance of each independent variables. Among the driving variables, the largest standardized coefficient was cooling degree days' variable for Residential, Commercial and Industrial customers. Evergy Metro also estimated the sensitivity of system peak load forecast to extreme conditions[9] using the base case economic scenario and weather from the four warmest years (1980, 1988, 2006 and 2012).

Evergy Metro excepts energy consumption and peak demand to increase by 0.6% and 0.4% annually from 2023-2043 respectively. Residential energy consumption is expected to provide the highest growth over the next two decades, assuming a yearly customer growth rate of 0.1% from 2023-2043. Key forecast uncertainties include the impact of rising prices, technological advancement in renewable energy sector, adoption of new consumer products, and energy efficiency.

Staff has not identified any deficiencies based on its limited review of Evergy Metro's load analysis and energy and demand forecasts. While the accuracy of the information provided cannot be definitively confirmed, there is no indication of any shortcomings at this time. In Staff's opinion, the Integrated Resource analysis filing meets the Load Analysis and Load Forecasting requirements of 20 CSR 4240-22.030. However, as further discussed in the 20 CSR 4240-22.060 and 22.070 sections, Staff has concerns with economic development load growth being factored into the requirements utilized for the development of alternative resource plans, but not being included in the load forecasts of this 2024 IRP Filing.

Staff Expert Witness: Obianuju S. Ezenwanne

[8] 20 CSR 4240-22.030(8).
[9] 20 CSR 4240-22.030(8)(B).

20 CSR 4240-22.040 Supply-Side Resource Analysis

Summary

Rule 20 CSR 4240-22.040 Supply-Side Resource Analysis requires Evergy Metro to review existing resources for opportunities to upgrade or retire existing resources and also review a wide variety of supply-side resource options to determine cost estimates for each type of resource.

Resource options are to be ranked based upon their relative levelized annual costs,[10] including installed capital costs, fixed and variable operation and maintenance costs, and probable environmental costs levelized over the useful life of the potential supply-side resource option using the utility discount rate.[11] Resources which do not have significant disadvantages and pass the pre-screening process are to be included in the integrated resource analysis process used to select a preferred resource plan.

The energy market forecasts for SPP[12] over the next 20 years consider resource transitions, natural gas price changes, and carbon dioxide emissions restrictions. Resource adequacy and capacity needs are expected to rise due to weather risks and changes in the resource mix. Evergy Missouri Metro has been improving power plant efficiency and plans further projects. Existing generation resources are being evaluated for environmental retrofits and maintenance. New resource candidates, including solar, wind, and battery storage, were identified in a 2023 RFP and are eligible for tax credits. Combined-cycle and combustion-turbine resources are self-build options for firm-dispatchable resources, while nuclear Small Modular Reactor (SMR) and combined cycle with carbon capture are considered for high carbon dioxide restriction scenarios.

Staff has not identified any deficiencies or concerns related to Evergy Metro's supply-side resource analysis.

Staff Expert Witness: Jordan T. Hull

[10] 20 CSR 4240-22.020(29) Levelized cost means the dollar amount of a fixed annual payment for which a stream of those payments over a specified period of time is equal to a specified present value based on a specified rate of interest.
[11] 20 CSR 4240-22.040(2)(A).
[12] Southwest Power Pool (SPP).

20 CSR 4240-22.045 Transmission and Distribution Analysis

Summary

Rule 20 CSR 4240-22.045 Transmission and Distribution Analysis specifies minimum standards for the scope and level of detail required for transmission and distribution network analysis and reporting. Rule 20 CSR 4240-22.045 does not prescribe how analyses are to be done, but rather allows a utility to conduct its own analysis or adopt the regional transmission operator ("RTO") or Independent Transmission System Operator ("ISO") transmission plans. Rule 20 CSR 4240-22.045 requires analysis and documentation of the RTO/ISO transmission projects and requires the electric utility to review transmission and distribution for the reduction of power losses, interconnection of new generation facilities, facilitation of sales and purchases, and incorporation of advance technologies for the optimization of investment in transmission and distribution resources.

Staff has not identified any deficiencies or concerns related to Evergy Metro's transmission and distribution analysis.

Staff Expert Witness: Jordan T. Hull

20 CSR 4240-22.050 Demand-Side Resource Analysis

Summary

20 CSR 4240-22.050, Demand-Side Resource Analysis, specifies the principles by which potential demand-side resource options shall be developed and analyzed for cost-effectiveness, with the goal of achieving all cost-effective demand-side savings. It also requires the selection of demand-side candidate resource options that are passed on to integrated resource analysis.

Evergy Metro documented and described the demand-side management ("DSM") portfolios it included as a part of its IRP. The DSM portfolios passed on for further integrated analysis are based on its 2023 DSM market potential study ("2023 DSM MPS"). Each DSM portfolio includes energy efficiency programs, demand response programs, and demand-side rate potential.

Evergy Metro engaged Applied Energy Group ("AEG") to conduct the 2023 MPS. The 2023 DSM MPS encompassed the Evergy Metro and Evergy West service territories and was

delivered to the Company in May 2023. The 2023 DSM MPS was used as the basis for the scenarios evaluated in its IRP analysis.

AEG identified Evergy Metro's market segments (Residential, Commercial, and Industrial) by categorizing billing and customer data, residential and non-residential customer surveys, and secondary sources to allocate energy use and customers to the various sectors and segments such that the total customer count, energy consumption, and peak demand matched the Evergy system totals from the billing data.

Based on the maximum achievable potential ("MAP") and realistically achievable potential ("RAP") scenario results from the 2023 DSM MPS, AEG developed four portfolios. The program bundle design scenarios included:

- RAP-: 75% of RAP levels; Incentives 50% of incremental cost (except low-income which is 100%).
- RAP: Incremental purchases from RAP scenario in MPS; Incentives 50% of incremental cost (except low-income which is 100%).
- RAP+: Median levels between RAP and MAP; Incentives 50% of incremental cost (except low-income with is 100%).
- MAP: Incremental purchases from MAP scenario in MPS; Incentives 100% of incremental cost.

Based on its limited review, Staff has a number of concerns as it relates to the IRP and the Company's MEEIA application. The Company's avoided capacity, energy, and T&D costs, assumed supply-side deferral, budget and savings levels, third-party aggregation assumptions, and program design to name a few. 393.1075.3. states in part that "It shall be the policy of the state to value demand-side investments equal to traditional investments in supply and delivery infrastructure and allow recovery of all reasonable and prudent costs of delivering cost-effective demand-side programs…" 393.1075.4 further states in part that "…Recovery for such programs shall not be permitted unless the programs are approved by the commission, result in energy or demand savings and are beneficial to all customers in the customer class in which the programs are proposed, regardless of whether the programs are utilized by all customers…" Staff's concerns tie directly to this statutory language and whether the Company is compliant with the language. However, on April 29, 2024, Evergy Metro filed its *Application to Approve DSIM Filing and*

Request for Variance and associated direct testimony of Evergy Metro witnesses in Case No. EO-2023-0369, its MEEIA Cycle 4 case. Staff continues to have concerns, but believes the MEEIA Cycle 4 docket is the most appropriate case to address its MEEIA related concerns in.
Staff Expert Witness: Brad J. Fortson

20 CSR 4240-22.060 Integrated Resource Analysis

Summary

This Rule requires the utility to design alternative resource plans to meet the planning objectives identified in Rule 20 CSR 4240-22.010(2), and sets minimum standards for the scope and level of detail required in resource plan analysis and for the logically consistent and economically equivalent analysis of alternative resource plans. The utility is to identify the critical uncertain factors that affect the performance of alternative resource plans and establishes minimum standards for the methods used to assess the risks associated with these uncertainties.

Critical uncertain factors are any uncertain factors that are likely to materially affect the outcome of the resource planning decision. Evergy Metro analyzed future uncertain factors to determine which uncertainties are critical to the performance of a resource plan. Evergy Metro identified natural gas prices, carbon dioxide restrictions, and construction costs (including build and interconnection costs) as the three critical uncertain factors.

20 CSR 4240-22.060(3) sets a goal to develop a set of alternative plans based on substantively different mixes of supply-side resources and demand-side resources and variations in the timing of resource acquisition to assess their relative performance under expected future conditions as well as their robustness under a broad range of future conditions.

Evergy Metro developed twenty-five alternative resource plans for integrated resource analysis. Minimization of net present value of revenue requirements ("NPVRR") with probable environmental costs were used as the primary criteria for determining the ordinal preference of a particular plan. Risks associated with critical uncertain factors, and those associated with new or more stringent legal mandates, are included in the integrated analysis of the resource planning process. Rate increases associated with the alternative resource plans are determined in the analysis as well.

Evergy Metro developed its alternative resource plans through capacity expansion planning. Evergy Metro stated in its 2024 IRP Filing that "no supply-side resource additions were "hard-coded"[13] into pre-made resource plans for the purpose of arriving at Evergy Metro's Preferred Plan."[14] This is an issue Staff has raised in the past. However, plant retirements and demand-side management portfolio additions were manually tested in its alternative resource plans.

While Staff's prior concern with the Company's use of "hard-coded" resource additions in its modeling is lessened with the Company using its capacity expansion modeling to a fuller extent, certain concerns remain. Those concerns include, but are not limited to: (1) the size and timing of supply-side resources in the alternative resource plans continue to have several similarities; (2) the retirements are manually tested and have similar timing; and (3) a relatively small variety of demand-side management portfolios are manually tested. Staff's suggested remedy is that the Company continue to work with Staff on better understanding the Company's capacity expansion modeling, assumptions, and process. Staff recommends, as an outcome in this filing, that Staff and the Company work to agree on a schedule for these discussions.

Evergy Metro states in its 2024 IRP Filing that:

> Evergy Metro is now forecasting significant load growth over the next few years due to economic development. This load growth has been driven by economic development which in not yet included in the load forecasts described in Volume 3. Due to the maturity of the economic development activity, the forecasted impact on Evergy Metro's capacity and energy needs was factored into the requirements utilized for the development of alternative resource plans and this results in capacity being needed earlier to meet customer needs.[15]

Due to workload and limited time, Staff was unable to send data requests or discuss with the Company to reconcile this statement. Therefore, Staff has concerns with economic development load growth being factored into the requirements utilized for the development of alternative resource plans, but not being included in the load forecasts of this 2024 IRP Filing. Staff's concern is heightened now that load growth is no longer considered a critical uncertain

[13] "Hard-coded" here means that the type, size, and timing of a supply-side resource is fixed into the modeling as opposed to letting the capacity expansion model optimize the type, size, and timing of a supply-side resource.

[14] *2024 Volume 6 – Evergy Metro Integrated Resource Plan and Risk Analysis,* pg. 18.

[15] *2024 Volume 6 – Evergy Metro Integrated Resource Plan and Risk Analysis,* pgs. 6 – 7.

factor. Staff's suggested remedy is that the Company help Staff understand the process used to either include or exclude economic development load growth in its critical uncertain factors, load forecasts, and alternative resource plans. Staff recommends these discussions take place immediately after the filing of this Staff Report in order to attempt to resolve this concern as a part of the joint filing.[16]

Staff Expert Witness: Brad J. Fortson

20 CSR 4240-22.070 Risk Analysis and Strategy Selection

Summary

Rule 20 CSR 4240-22.070, Risk Analysis and Strategy Selection, requires the utility to select a preferred resource plan, develop an implementation plan, and officially adopt a resource acquisition strategy. The rule also requires the utility to prepare contingency plans and evaluate the demand-side resources that are included in the resource acquisition strategy. Resource acquisition strategy means a preferred resource plan, an implementation plan, a set of contingency resource plans, and the events or circumstances that would result in the utility moving to each contingency resource plan.

Evergy Metro's 2024 IRP Filing preferred plan accelerates resource additions compared to the 2023 preferred plan. The largest driver is a higher level of forecasted load growth as a result of economic development.[17] The preferred plan includes the following resource additions:

Solar:

- 300 MW – 2027
- 150 MW – 2028
- 150 MW – 2040

[16] 20 CSR 4240-22.080(9) If the staff, public counsel, or any intervenor finds deficiencies in or concerns with a triennial compliance filing, it shall work with the electric utility and the other parties to reach, within sixty (60) days of the date that the report or comments were submitted, a joint agreement on a plan to remedy the identified deficiencies and concerns. If full agreement cannot be reached, this should be reported to the commission through a joint filing as soon as possible but no later than sixty (60) days after the date on which the report or comments were submitted. The joint filing should set out in a brief narrative description those areas on which agreement cannot be reached. The resolution of any deficiencies and concerns shall also be noted in the joint filing.

[17] 2024 Volume 7 – Evergy Metro Resource Acquisition Strategy, pg. 3.

Wind:

- 150 MW – 2029
- 150 MW – 2030
- 150 MW – 2031
- 150 MW – 2033
- 150 MW – 2034
- 150 MW – 2035
- 150 MW – 2042

Thermal:

- 415 MW – 2032
- 325 MW – 2036
- 325 MW – 2038
- 325 MW – 2039
- 325 MW – 2041

In the second half of 2024, the Company expects to apply for a Certificate of Convenience and Necessity ("CCN") for large-scale solar projects.[18] The Company claims that to meet the 2027 in-service timeline detailed in the preferred plan, the Company needs to receive regulatory approval by mid-2025 and the project developer needs to complete construction, testing, and commissioning by November 2026.

The Company has stated that the largest driver is a higher level of forecasted load growth as a result of economic development. As previously stated in 20 CSR 4240-22.060, Staff has concerns with economic development load growth being factored into the requirements utilized for the development of alternative resource plans, but not being included in the load forecasts of this 2024 IRP Filing. Staff's concern is heightened now that load growth is no longer considered a critical uncertain factor. Staff's suggested remedy is that the Company help Staff understand the process used to either include or exclude economic development load growth in its critical

[18] On April 5, 2024, Evergy West filed its *Notice of Intended Case Filing* giving notice that it intends to file an application for CCN(s) for solar generation. On August 15, 2024, Evergy West filed its *Amended Notice of Intended Case Filing* to include as a part of its CCN(s) to file a new tariff and testimony regarding a proposed subscription-based renewable energy program which will sell renewable energy credits from the solar generation to interested customers.

uncertain factors, load forecasts, and alternative resource plans. Staff recommends these discussions take place immediately after the filing of this Staff Report in order to attempt to resolve this concern as a part of the joint filing.

Staff continues to have the concern it has expressed in the past with the risk potentially borne by ratepayers from the Company's shift toward renewable, non-dispatchable resources. This is further concerning with the addition of thermal units not until 2032, 2036, 2038, 2039, and 2041. Given recent concerns expressed at the federal and state level about resource adequacy and reliability, a part of the concern now shifts to whether holding off until 2032 to start adding thermal, dispatchable generation is reasonable. Staff's suggested remedy is that the Company meet with Staff and other interested stakeholders to discuss additional modeling scenarios that consider thermal, dispatchable resources in a year sooner than 2032. Staff recommends these discussions take place immediately after the filing of this Staff Report in order to attempt to resolve this concern as a part of the joint filing.

Lastly, as a general concern, the Company in recent years has been using the IRP as its primary justification in support of purchasing or building generation resources. As Staff has previously stated in testimony, the IRP rules can function as a roadmap in the sense that it points you in a general direction, but it should not be relied on for the determination of specific projects.[19] Therefore, Staff continues to be of the position that for CCN applications, the resource(s) being applied for in a CCN need to stand on their own and justify themselves as being necessary and in the public interest.

Staff Expert Witness: Brad J. Fortson

20 CSR 4240-22.080 Filing Schedule and Requirements

Summary

This Rule specifies the requirements for electric utility filings to demonstrate compliance with the provisions of Chapter 22. The purpose of the compliance review required by Chapter 22 is not Commission approval of the substantive findings, determinations, or analyses contained in the filing. The purpose of the compliance review required by Chapter 22 is to determine whether the utility's resource acquisition strategy meets the requirements of Chapter 22. However, if the

[19] *Rebuttal Testimony of Brad J. Fortson*, Case No. EA-2023-0286, pg. 12.

Commission determines that the filing substantially meets these requirements, the Commission may further acknowledge that the preferred resource plan or resource acquisition strategy is reasonable in whole, or in part, at the time of the finding. This Rule also establishes a mechanism for the utility to solicit and receive stakeholder input to its resource planning process.

The Filing Schedule, Filing Requirements, and Stakeholder Process Rule establish a filing deadline for all electric utilities on April 1 of each year. A triennial compliance filing is due every third year with more informal annual update filings during the years between the full triennial compliance filings. The annual updates are coupled with a stakeholder workshop to communicate changing conditions and utility plans and to seek comments and suggestions from stakeholders during the planning process. Preliminary plans are reviewed with stakeholders to receive input regarding potential concerns and deficiencies. However, once plans are filed, stakeholders again have the opportunity to identify potential concerns and deficiencies. The Commission, with input from stakeholders, will identify special contemporary issues each year for each utility to analyze during its planning process. To make the resource planning process more meaningful, the Rule requires action from the utility if its business plan or acquisition strategy becomes inconsistent with the latest adopted preferred resource plan filed by the utility. The Rule also requires certification that any request of action from the Commission is consistent with the utility's adopted preferred resource plan.

Staff has not identified any deficiencies or concerns related to 20 CSR 4240-22.080 Filing Schedule and Requirements.

Staff Expert Witness: Brad J. Fortson

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro's 2024 Triennial Compliance Filing Pursuant to 20 CSR 4240-22	))))	**File No. EO-2024-0153**

AFFIDAVIT OF OBIANUJU S. EZENWANNE

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW, OBIANUJU E. EZENWANNE, and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing *Staff Report;* and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

OBIANUJU S. EZENWANNE

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 28th day of August 2024.

Notary Public

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2027
Commission Number: 15207377

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro's 2024 Triennial Compliance Filing Pursuant to 20 CSR 4240-22	))))	**File No. EO-2024-0153**

AFFIDAVIT OF BRAD J. FORTSON

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW BRAD J. FORTSON, and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Staff Report;* and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

BRAD J. FORTSON

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 28th day of August 2024.

Notary Public

DIANNA L. VAUGHT
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In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro's 2024 Triennial Compliance Filing Pursuant to 20 CSR 4240-22	))))	**File No. EO-2024-0153**

AFFIDAVIT OF JORDAN T. HULL

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW JORDAN T. HULL, and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Staff Report;* and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

JORDAN T. HULL

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 28th day of August 2024.

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