

MEMORANDUM

To: File No. EO-2023-0212, *In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro's 2023 Integrated Resource Plan Annual Update Filing*

From: Lena M. Mantle, PE, Senior Analyst
Jordan Seaver, Policy Analyst

Date: August 31, 2023

Re: Comments of the Office of Public Counsel

Evergy Metro, Inc. ("Evergy Metro") made considerable changes to its 2022 preferred resource plan in this 2023 annual update. It reduced the amount of renewable resources that it intends to add over the 20 year planning horizon by 628 MW. Evergy Metro reduced the amount of wind resources that it plans on adding from 858 MW to 450 MW and solar additions from 828 MW to 600 MW. It also delayed the additions of the wind until later in the planning horizon.

Its preferred plan now includes more dispatchable, thermal additions (increased by 362 MW). Evergy Metro now plans to own 260 MW of three combined cycle plants ("CC") that are planned for 2037, 2038, and 2039 for a total of 780 MW of new dispatchable generation. Its 2022 preferred plan only included one CC being added in 2040.

It is also now planning to implement the RAP+ level of demand-side management programs.

A review of Evergy Metro's workpapers provided to support its filed plan reveals that Evergy Metro is **_____

_____ ** This memo includes information from Evergy Metro's workpapers that shows the amount of risk Evergy Metro is transferring to its customers.

In addition, OPC has the following concerns.

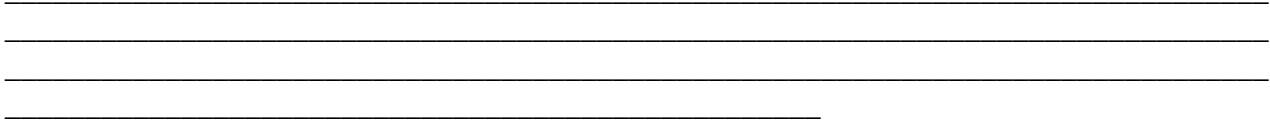
- It is unclear how Evergy Metro is planning for the addition of large customers its Schedule MRT was created to serve; and
- Evergy Metro's baseline projections for energy and demand growth are essentially flat, the cost of its demand-side management and demand response programs are extremely high with little annual reduction in energy usage and demand, further, the demand and energy savings of these programs will likely happen without them; therefore, for Evergy Metro's customers paying for the costs of those programs is not justified.

Evergy Metro Long-Term Plans to Meet Customers Energy Requirements

In its workpapers, Evergy Metro provided the results of its preferred plan modeling giving the average hourly load¹ and the average generation² of its plan resources in each year of the 20 year planning horizon. This information was provide in a graph in the workpapers reproduced below.

Graph 1³
Evergy Metro's Preferred Plan EAAA

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A comparison of the impact of dependence on the market to meet customers' energy needs is demonstrated in the cost difference of a utility that had ample supply (Evergy Metro) and a utility

¹ Total annual energy needed divided by the number of hours in the year.
² The total cost-effective generation for each resource divided by the number of hours in the year.
³ The data used to create this graph is provided as Confidential Attachment A. The graph in this memo is different from the graph on Attachment A in that all of the resources that are not included were removed from the legend and a label was added to the vertical axis.

that is dependent on the market for much of its energy supply (Evergy West, Inc.) for Storm Uri in February 2021.

Table 1
Storm Uri Costs

	Evergy Metro	Evergy West	Difference
Actual Net Energy Cost	**	**	\$332,278,224

Evergy Metro’s customers actually received a benefit from the excess generation they have been paying for. Evergy West’s customers will be paying the cost of Evergy West’s gamble of depending on the market to provide energy for twenty years.⁴

OPC is not against buying energy from the SPP market. However, **

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It is imprudent for Evergy Metro to *plan* on exposing its customers to the risk of availability and price of energy from the market.

Planning for the Addition of Large Customers

Evergy Metro requested, and the Commission approved, a Special High Load Factor Market rate Tariff (Schedule MKT) in response to multiple potential customers seeking to locate high load factor facilities in Evergy Metro’s service territories.⁶ Customers on this rate must have a monthly demand of 150 MW or greater. If two such customers with a demand of 150 MW take advantage of this rate they would take much of the excess capacity that Evergy Metro now has.

It is unclear how, or even if, Evergy Metro incorporated the potential for high demand customers in its 2023 preferred resource plan.

Evergy Metro states in the load forecasting section of its report that, for the industrial class forecast, “overall intensity and end-use intensity for industrial were largely unchanged.”

In contrast, in the section of the annual update describing changes from the 2021 triennial resource plan filing,⁷ Evergy Metro states that it:

⁴ See File No. EF-2022-0155, *In the Matter of the Application of Evergy Missouri West, Inc. d/b/a Evergy Missouri West for a Financing Order Authorizing the Financing of Extraordinary Storm Costs Through an Issuance of Securitized Utility Tariff Bonds*.

⁵ Page 3.

⁶ EO-2023-0022, *In the Matter of the Application of Evergy Metro, Inc. d/b/a Evergy Missouri Metro for Approval of a Special High Load Factor Market Rate Tariff*, Application.

⁷ Page 62.

Updated load forecasts including large new customers in both Missouri and Kansas, and considerations for future large customer growth based on existing economic development pipeline

Later in its annual report, Evergy Metro states that it included a buffer of 60-100 MW above its current SPP capacity requirement to account for the potential addition of large customers that could exceed this requirement to mitigate the risk of the impact of new large customers coming into its service territory.⁸

I did not find in my review of Evergy Metro’s workpapers any clarity on how Evergy Metro analyzed the impacts of adding large customers in its service territory.

Evergy Metro acknowledges the potential impacts of adding large customers, but does not seem to have used a well thought out way of analyzing the impacts in its resource planning process. Being “unknown” is not a good rationale for not being included in a systematic manner in the resource planning process. Most inputs in a resource planning process are unknowns. One of the purposes of resource planning is to be prepared for the unknown.

Evergy Metro needs to develop a good methodology for forecasting the impact on its resource plans of the large customers that are in its economic development pipeline.

Demand Side Management and Demand Response Projections

The DSM/DR Market Potential Study for Evergy Metro shows that the baseline projections for demand and energy increase by only a small amount over the period from 2023-2043. The costs for the DSM and DR programs are extremely high and reduce demand and energy by very little annually. Because the baseline projections for energy and demand are basically flat, these programs do not provide customers with benefits that would justify the high costs. Furthermore, the analysis of the savings show that they would likely happen without these programs, and thus the proposed DSM and DR programs are merely a way for the Company to recover costs for shareholders at ratepayers’ expense while not properly planning to meet capacity and energy needs.

Evergy Services, Inc. employed Applied Energy Group (“AEG”) to model the energy and demand savings projections for future Demand Side Management (“DSM”) and Demand Response (“DR”) programs in the Evergy Metro service territory. Part of this modeling process was determining a baseline projection for the demand of Evergy Metro customers. By projecting the demand, AEG can see how much generation (in MW) will be needed for the years modeled in the projection. This projection serves as a way to measure demand savings from DSM and DR. These DSM and DR savings show Evergy Metro how much generation can be avoided by implementing future DSM and DR programs.

⁸ Page 100.

The study conducted by AEG looked at different potential demand and energy savings projections based on different assumptions. These are the technical potential, the economic potential, and the maximum and realistic achievable potentials (“RAP”). Because Evergy Metro chose one of the RAPs, we will focus on that one alone. The “Realistic Achievable Potential...reflects expected program participation given barriers to customer acceptance, non-ideal implementation conditions, and limited program budgets.”⁹ In short, the RAP scenario takes into account realistic conditions that would affect idealizations about energy and demand savings that assume no restrictions. The RAP scenario is further broken down into RAP+ and RAP-, which assume greater and lesser, respectively, levels of acceptance of program measures. Evergy Metro chose the RAP+ scenario as the best option for IRP purposes. Like the RAP scenario, RAP+ assumes 50% standard TOU rate retention and a 4-year customer learning curve for TOU rates. The only change from the RAP scenario is that RAP+ has an assumed participation adjustment 10% higher than the base RAP scenario.

The baseline demand projection, developed by AEG from Evergy data, is basically flat from 2023 to 2043 (see figures 1 and 2 below). Figure 1 shows that over a 10-year period from 2023-2033, AEG does not see a year over year demand increase that goes above 1.5% (for any of the select years in the chart). During that same 10-year period, the percent change from the first year to the last is 2.4%¹⁰. This projection shows that Evergy Metro’s forecasted demand will be close to what it is at the present. This is corroborated by Evergy Metro workpapers showing peak monthly demand projections for the same 10-year period, and for the full 20-year projection from 2023-2043.

Figure 1

Table 2-19 Cumulative DR/DSR Potential, Select Years (Summer MW @ Generator) – Evergy Metro

	2024	2025	2026	2029	2033
Baseline Projection (MW)	1,841	1,845	1,848	1,864	1,885
Achievable Potential (MW)					
RAP	89	115	135	144	147
MAP	117	135	150	152	155
Achievable Potential (% of Baseline)					
RAP	5%	6%	7%	8%	8%
MAP	6%	7%	8%	8%	8%

Figure 2-9 DR/DSR Summer Potential by Scenario – Evergy Metro

⁹ Evergy 2023 DSM Market Potential Study, Applied Energy Group, Inc., p. 6.

¹⁰ *Ibid.*, p. 32.

Figure 2

Table 2-15 Cumulative Energy Efficiency Potential, Select Years (GWh) – Evergy Metro

	2024	2025	2026	2029	2033
Baseline Projection (GWh)	8,645	8,664	8,670	8,677	8,666
Cumulative Savings (GWh)					
Realistic Achievable Potential	26	53	81	164	275
Maximum Achievable Potential	43	88	134	265	430
Economic Potential	79	161	246	479	759
Technical Potential	179	356	531	1,001	1,532
Cumulative as % of Baseline					
Realistic Achievable Potential	0.3%	0.6%	0.9%	1.9%	3.2%
Maximum Achievable Potential	0.5%	1.0%	1.5%	3.1%	5.0%
Economic Potential	0.9%	1.9%	2.8%	5.5%	8.8%
Technical Potential	2.1%	4.1%	6.1%	11.5%	17.7%

Figure 2 shows the same flat trajectory for energy (GWh) baseline projection for Evergy Metro. The year over year percentage change in energy never goes above 1%, and the percentage change from the first year to the last is .24%.

Figures 3 and 4 below show more clearly just how flat the projected demand and energy projections for Evergy Metro are. Figure 3 is a graph that plots the forecasted energy sales in GWh over time (from 2023-2043), and Figure 4 is a graph that plots the summer energy in MW over time (from 2024-2043). The forecasts that we are concerned with here are the baseline forecasts for each, because they show very little change in either energy or demand for Evergy Metro through 2043.

Figure 3

Figure 2-6 Annual Forecasted Sales by Energy Efficiency Case – Evergy Metro

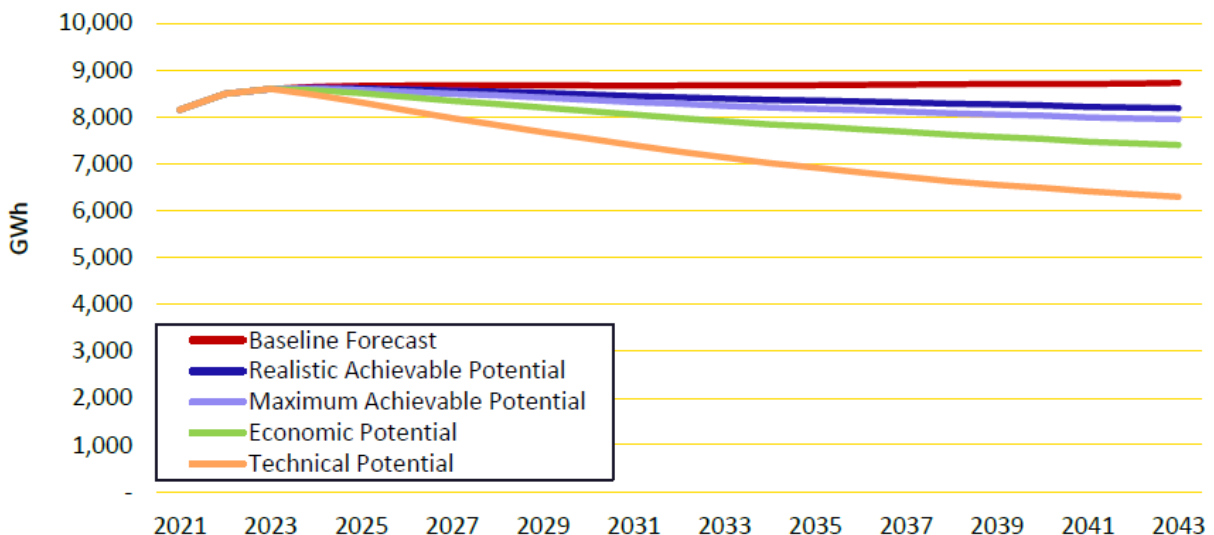
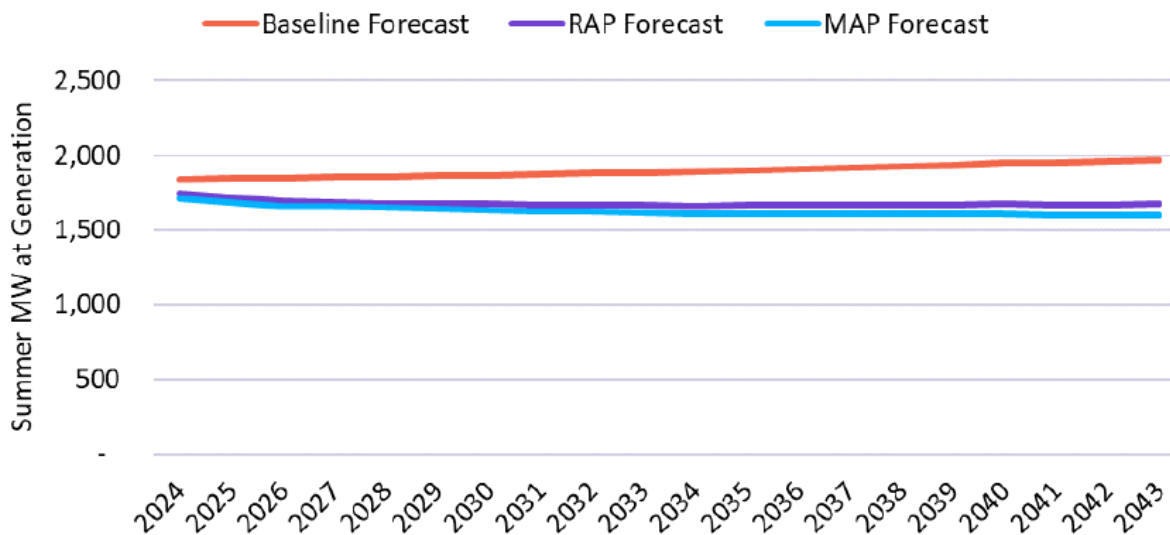


Figure 4

Figure 2-10 Annual DR/DSR Potential – Evergy Metro



This flat demand and energy trajectory is corroborated by Evergy Metro workpapers showing peak monthly demand projections for the same 10-year period, and for the full 20-year projection from 2023-2043. The same trend is corroborated even though the numbers and percent changes differ between AEG’s projections and Evergy Metro’s.

The reductions in demand and energy projected by AEG are listed in the Evergy Missouri Metro IRP 2023 Annual Update. Based on the data presented, the RAP+ scenario would have an annual average demand savings of **_____**, with the high end being **_____** in 2043. The RAP+ scenario projected annual energy savings would be **_____**, with the high end being **_____** in 2043. The annual average cost of the Evergy Metro DSM/DR programs is **_____**. The total program costs for the 20-year period are **_____**.¹¹

These costs are extraordinarily high for a modest reduction in demand and energy per year and over the 20-year period. Because all the projections of demand and energy by both AEG and Evergy Metro show very little increase, there is no clear reason for incurring huge annual costs over 20 years for DSM and DR. In the Market Potential Study Results for Metro, in the Energy Efficiency Potential Analysis¹² we are shown that HVAC measures cause most of the savings with thermostats and building shell improvements following close behind. This means that the demand and energy savings in the residential class is driven by HVAC upgrades, insulation and roof improvements, and the programming of smart thermostats.

¹¹ Evergy Missouri Metro IRP 2023 Annual Update. Cumulative demand savings are found on p. 57, cumulative energy savings are found on p. 56, and program costs are found on p. 58.

¹² Evergy 2023 DSM Market Potential Study. This is pdf pp. 180-185, but document pp. 9-14.

HVAC upgrades will continue to be done by customers voluntarily throughout the 20-year period, and will be mostly driven in the next 5 years by federal funds for energy efficiency and electrification. The building shell improvements are already something that is being done by utilities but also by the Missouri Department of Energy and federal assistance programs as well. Furthermore, this section shows that the baseline projection for energy in the residential class mirrors the flat trajectory for Evergy Metro as a whole. We can see this flat trajectory in baseline projections for the Commercial and Industrial revenue classes in the same document, as well as the majority of savings being driven by HVAC and building upgrades in both the Commercial and the Industrial classes.¹³

Comparing these findings with the above comments regarding the planned shortfall of capacity and energy, it appears that the apparent need for DSM and DR is artificially created, and not much needed anyway. If the Company were to build a combined cycle single shaft, combustion turbine H class, it would receive a net output of roughly 420 MW at an estimated capital cost of roughly \$455,000,000.¹⁴ That is **_____** less than the total cost of DSM and DR programs for 20 years. Such a plant would also provide **_____** more than the annual average of **_____** from DSM and DR programs.

Adding to the problems, it is unclear why the data concerning DSM savings and the data for baseline projections used for the DSM analysis do not match the data in the workpapers for Evergy Metro. Projections of DSM demand savings in the Evergy Metro workpapers¹⁵ do not match those shown in the AEG DSM Analysis. The baseline projections used by AEG also do not match those used in these workpapers. Without knowing where the errors are, it is hard to know if the projected savings are accurate.

¹³ *Ibid.* The Commercial section is pdf pp. 187-191 and document pp. 16-20. The Industrial section is pdf pp. 193-197 and document pp. 22-26.

¹⁴ See Attachment B, pdf pp. 86-92.

¹⁵ Metro NSI_Peak Monthly_Annual, Base tab, in the Evergy Metro workpapers.