

**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)

Case No. EO-2024-0153

In the Matter of Evergy Missouri West,)
Inc. d/b/a Evergy Missouri West’s 2024)
Triennial Compliance Filing Pursuant)
to 20 CSR 4240-22)

Case No. EO-2024-0154

COMMENTS OF THE MISSOURI OFFICE OF THE PUBLIC COUNSEL

COMES NOW the Office of the Public Counsel (“OPC”) and for its comments, states as follows:

1. On April 1 2024, Evergy Metro, Inc. d/b/a Evergy Missouri Metro (“Evergy Metro”) and Evergy Missouri West, Inc. d/b/a Evergy Missouri West filed their triennial Integrated Resource Plans (“IRPs”) in compliance with Commission Rule 20 CSR 4240-22.080(2)(E).

2. Pursuant to Commission rule 20 CSR 4240-22.080(8), the OPC now presents its comments regarding Evergy Metro’s and Evergy West’s 2024 triennial IRP compliance filings.

3. The OPC’s comments are provided in the form of a memorandum prepared by the OPC’s expert witnesses, which is included as an attachment to this pleading and is incorporated herein by this reference.

MEMORANDUM

To: Missouri Public Service Commission Official Case File,
Case Nos. EO-2024-0153 (Evergy Metro) & EO-2024-0154 (Evergy West)

From: Lena Mantle, Senior Analyst
Geoff Marke, Chief Economist
Missouri Office of the Public Counsel

Re: Comments on Evergy's Triennial Integrated Resource Plans

Date: 8/29/2024

Introduction

Commission rule 20 CSR 4240-22.010(2) states that the objective of the resource planning process is 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 environmental policies.

The preferred resource plans of Evergy West and Evergy Metro as provided in these cases are unreasonable and will not provide safe, reliable, and efficient electric services, at just and reasonable rates for the following reasons:

- The preferred plans of Evergy West and Evergy Metro both show that Evergy West and Evergy Metro are planning to depend upon the Southwest Power Pool ("SPP") to meet a significant portion of the energy needs of their customers.
- The outputs of Evergy West and Evergy Metro's resource planning models show unrealistic results for estimated energy generation by Iatan 1 and Iatan 2 for certain consecutive years within the modeled 20-year planning horizon.
- The impacts of high load and high load-factor data center customers on Evergy West and Evergy Metro's capacity and energy requirements are neither modeled nor analyzed.
- Evergy West and Evergy Metro's modeled demand response estimates are unrealistic and not supported by their market potential studies.

We also have the following concerns with Evergy West and Evergy Metro's resource plan modeling:

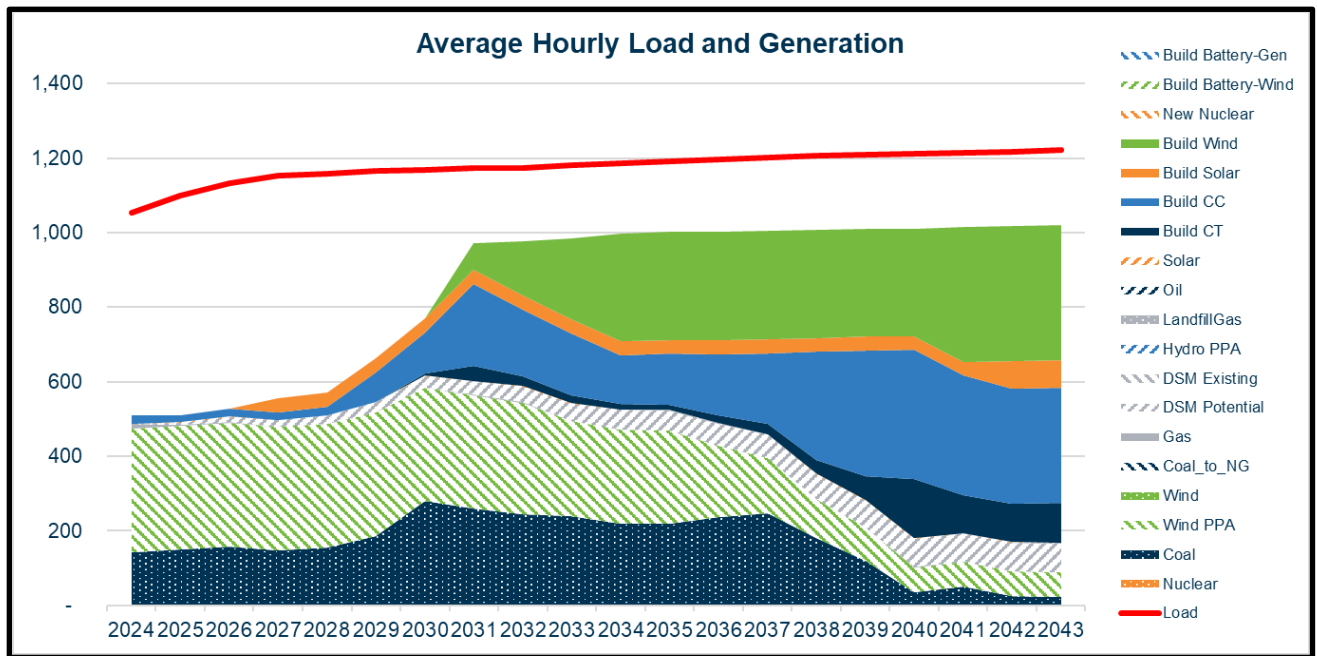
- Resource additions are limited by Evergy West and Evergy Metro's expected capital budget spending constraints.
 - Additional risk is placed on customers due to the restriction.
- Evergy, which includes Evergy West and Evergy Metro, has no thermal generation projects in the SPP interconnection queue.

The remainder of this memo sets out these bulleted points in greater detail.

The Preferred Plans are Unreasonable (Deficiency)

The capacity additions in Evergy West’s preferred plan meet the resource adequacy requirement of SPP as Evergy (the enterprise of which Evergy West and Evergy Metro are a part) understood those requirements to be during its resource planning for Evergy West. However, this does not mean that Evergy West’s preferred plan meets the energy requirements of Evergy West’s customers across time. It only means that Evergy West should be able to meet its annual peak hour loads. However, as shown in the graph below from Evergy West’s workpapers (Figure 1), Evergy West’s preferred plan does not include enough generation resources to provide the energy Evergy projects Evergy West’ customers will need. In other words, according to Evergy’s modeling, Evergy West’s preferred plan will expose its customers to SPP market prices for energy because Evergy West will not have sufficient generation resources. Instead, with sufficient generation resources customers would be exposed to the lower of SPP energy market prices or Evergy West’s cost to generate that energy.

Figure 1: Evergy West Preferred Plan¹



In this graph, the top line is the average annual load (MWh/hr or MW), *i.e.*, the total annual load (MWh) divided by the number of hours (hr) in the year. Below that line is the total annual energy (MWh) that Evergy West expects its generation resources to provide by the different resources shown on the side of the graph divided by the number of hours in the year.² The gap between the average hourly load and the average hourly generation shows the amount of energy that Evergy

¹ Evergy West work paper “MOW CAAA Plan,” tab “GenLoadbalance.”

² The data for this graph is found attached as Attachment A-EW.

West’s resources cannot meet. This difference is also shown in the Average Hourly Net Sales graph from that same workpaper and tab that is duplicated below in Figure 2.³

Figure 2: Evergy West Average Hourly Net Sales

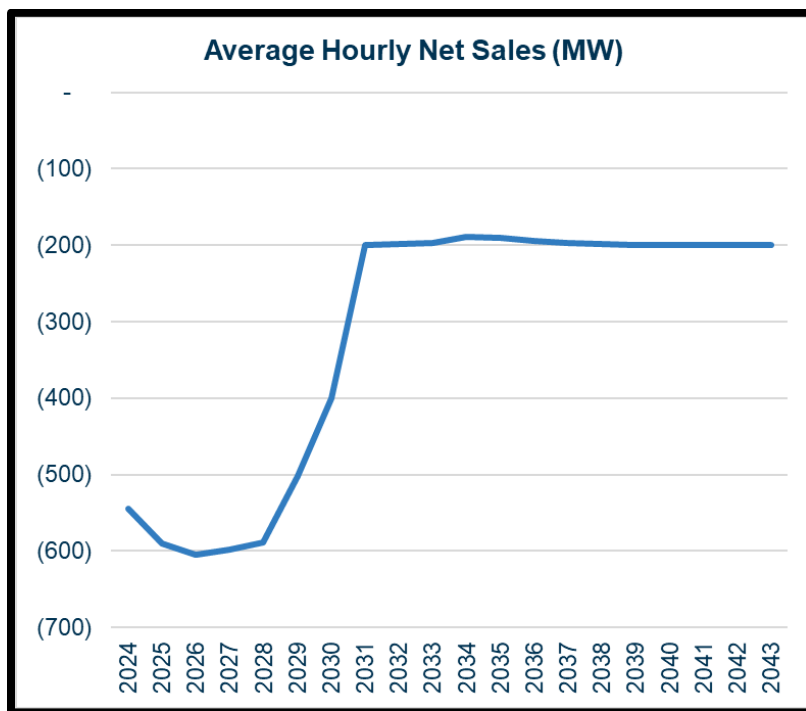


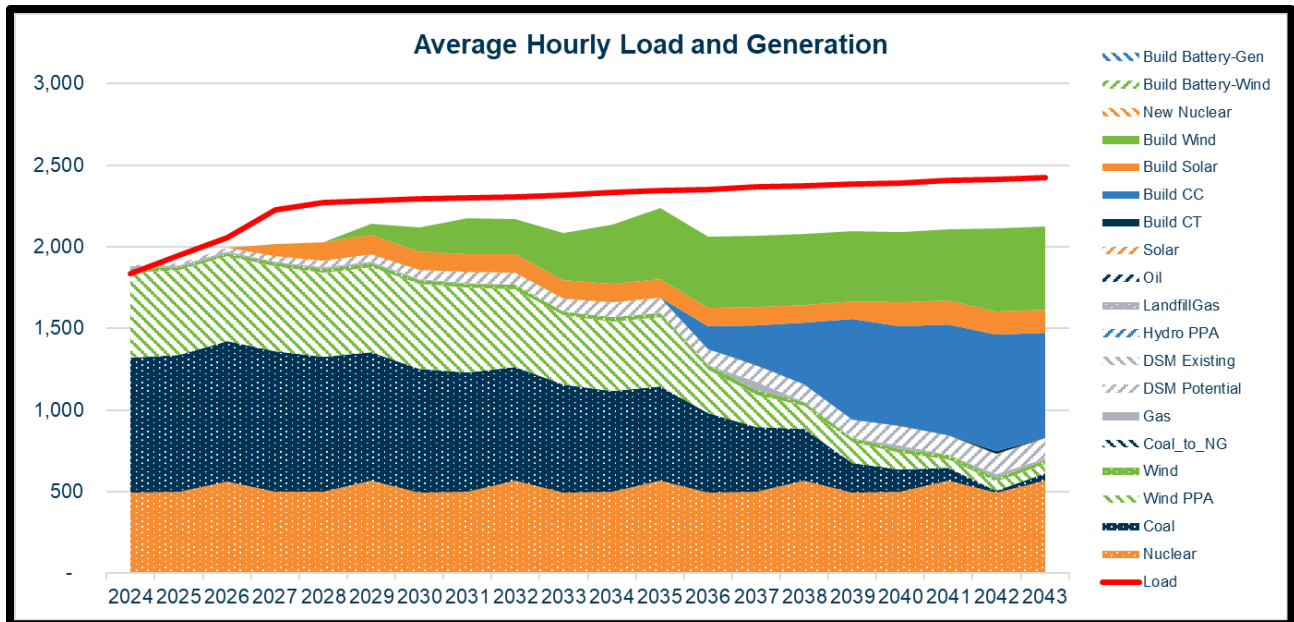
Figure 2 shows that Evergy West expects its generation resources to provide less energy (MWh) in 2025 through 2028 than it does currently and that it is planning, over the long term, to not have enough generation to meet its customers’ energy requirements. While that does not mean that Evergy West’s customers will not have electricity when they need it, it does mean that Evergy West’s plan is to depend on the SPP energy market to meet its customers’ energy requirements, *i.e.*, loads.

Evergy Metro also meets the SPP resource adequacy requirement for capacity that was known at the time of the analysis. But Evergy Metro too is planning to depend on the SPP energy markets during much of the planning horizon to meet its customers’ energy needs. Like Figure 1 for Evergy West, Figure 3 is a graph from Evergy Metro’s workpapers which illustrates Evergy Metro’s preferred plan average hourly load and generation.⁴

³ In this graph, “sales” refers to MWh. Average hourly net sales is the sales in MWh divided by the number of hours in the year.

⁴ The data for this graph is found attached as Attachment A-EM.

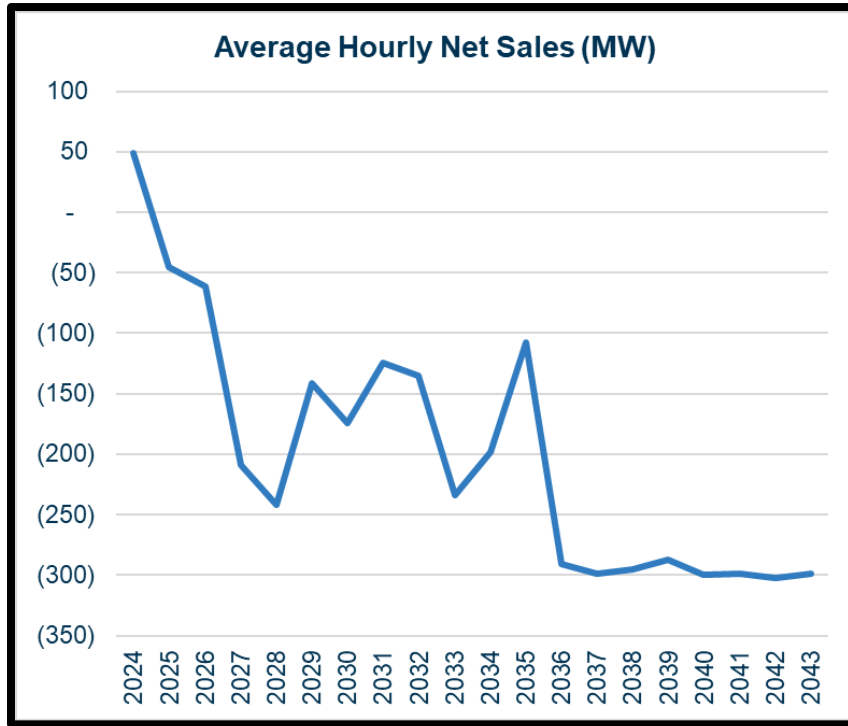
Figure 3: Every Metro’s Preferred Plan⁵



Like Figure 1 for Evergy West, the top line of the graph that is Figure 3 is the average annual load (MWh/hr or MW), *i.e.*, the total annual load (MWh) divided by the number of hours (hr) in the year. Below that line is the total annual energy (MWh) that Evergy Metro expects its generation resources to provide by the different resources shown on the side of the graph divided by the number of hours in the year. The gap between the average hourly load and the average hourly generation shows the amount of energy that Evergy Metro’s resources cannot meet. This difference also is provided below in Figure 4.

⁵ Evergy Metro work paper “MET CAAB Plan,” tab “GenLoadbalance.”

Figure 4: Evergy West Average Hourly Net Sales



From 2036 to 2043, combined Evergy West and Evergy Metro are expecting to take from the SPP energy market, on average, 500 MWh every hour.

As data centers continue to materialize across the SPP footprint there is an increased chance that Evergy’s continued and projected reliance on the SPP wholesale market will become more volatile moving forward as demand increases and dispatchable generation continues to retire. As seen in Figure 5-7 from SPP’s presentation at the MO PSC “Power MO” conference earlier this month.

Figure 5: SPP's Evolving Energy Mix

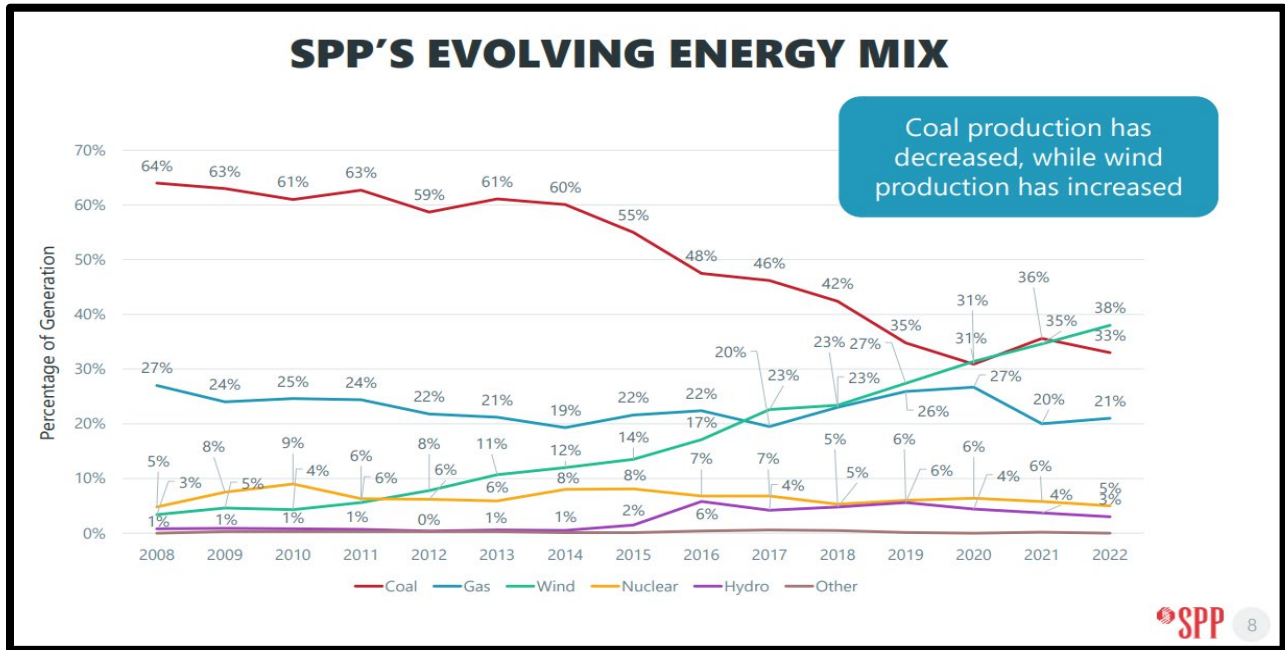


Figure 6 SPP's Peak Load Trends

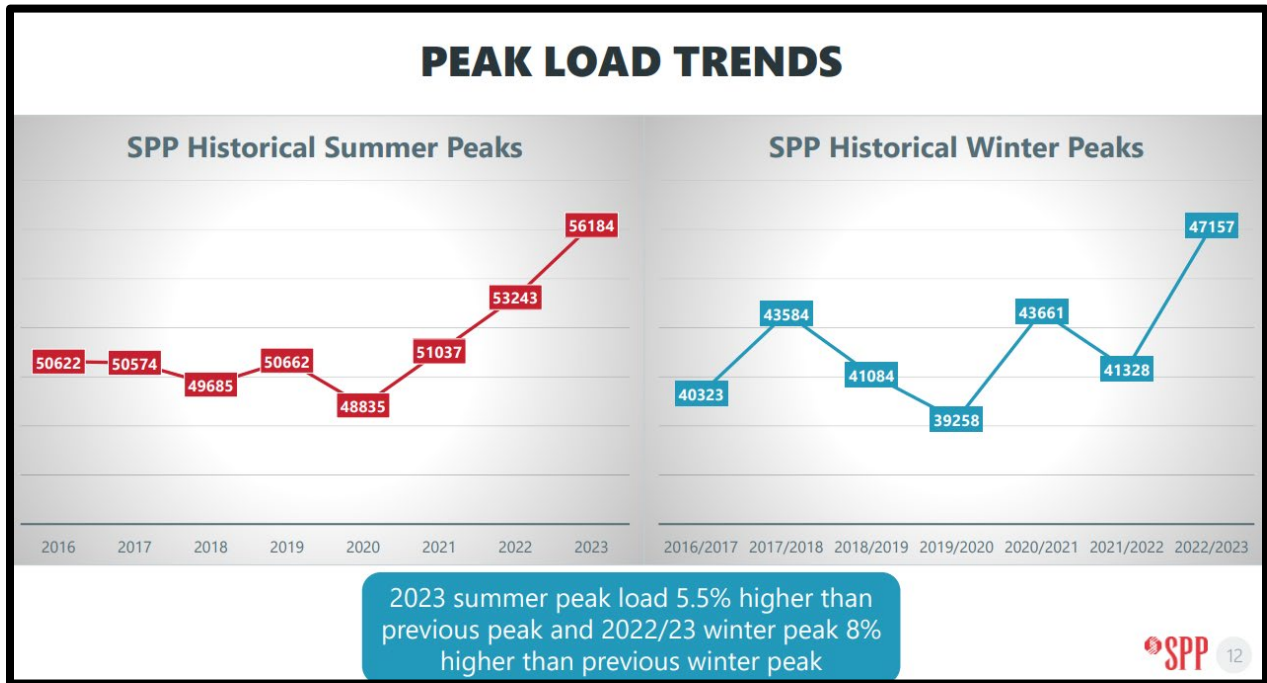
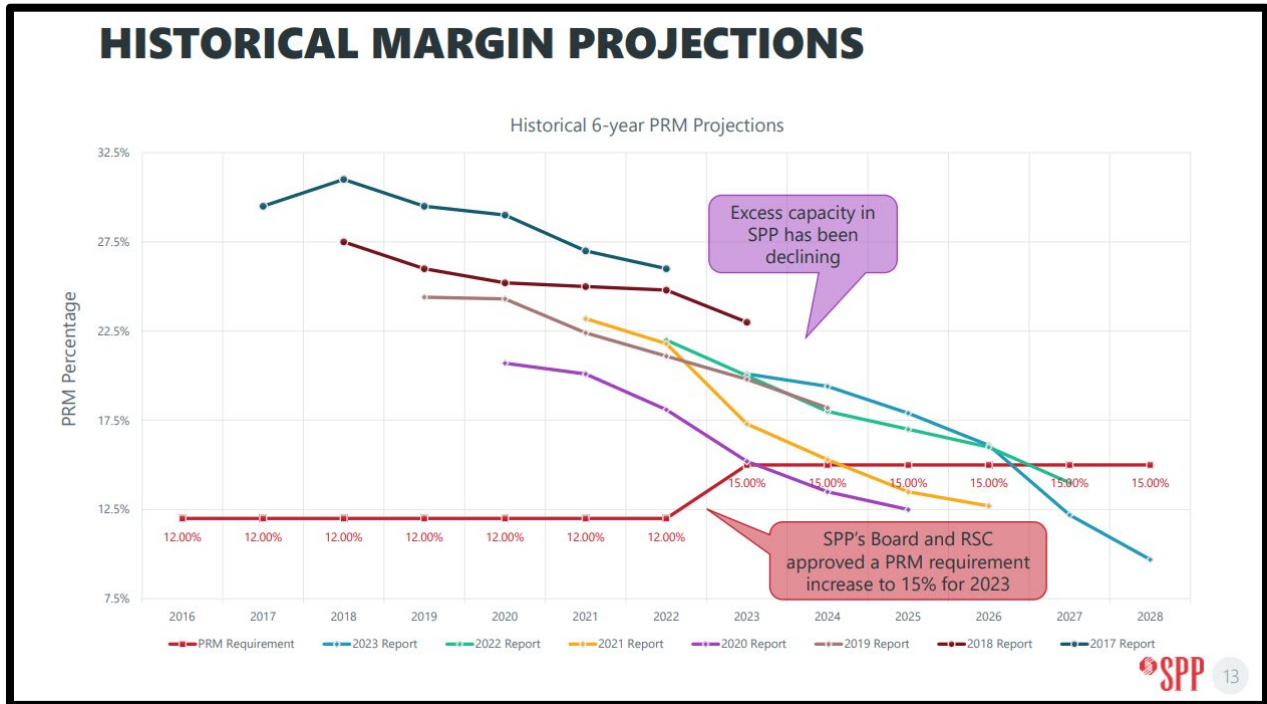


Figure 7: SPP's Historical Margin Projections



Absent tangible actions (e.g., building dispatchable generation) that results in enough resource adequacy to minimize market exposure, the overall cost-of-service will needlessly increase for ratepayers and the greater Kansas City, Missouri area will necessarily experience a loss of economic efficiency.

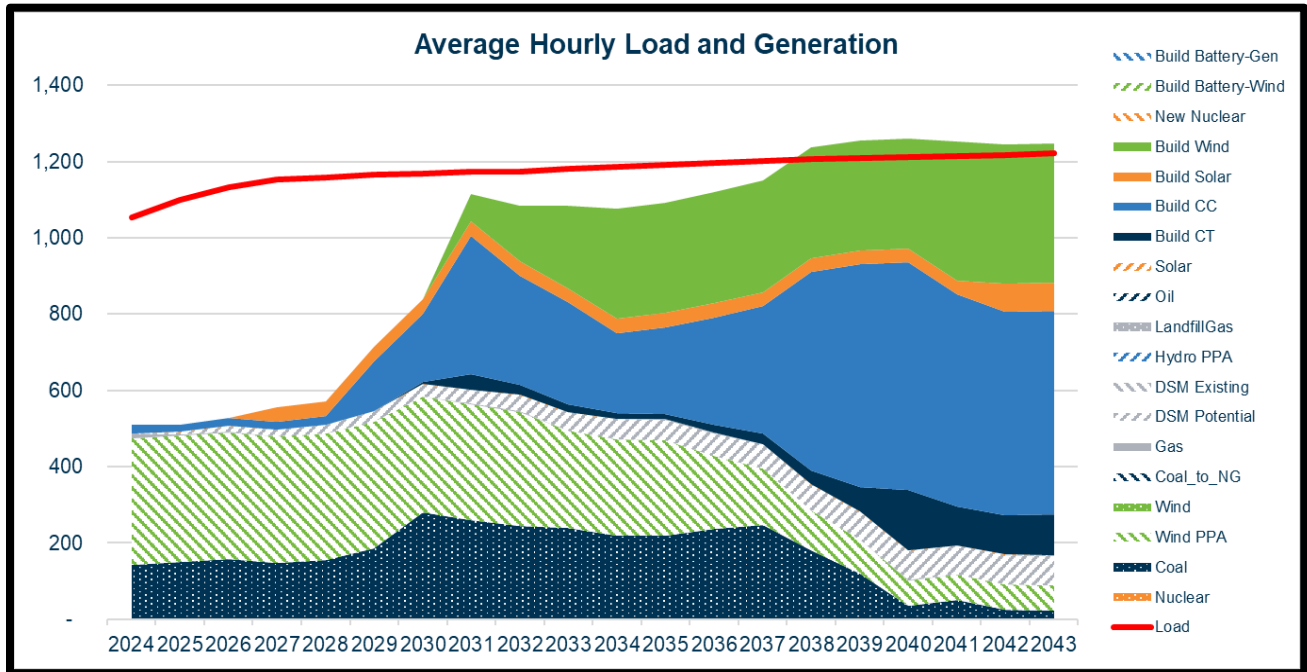
The SPP energy markets should be resources Evergy uses for meeting its Evergy West and Evergy Metro customers energy requirements when those markets are more cost effective than using their generation resources. However, a dependency on the SPP energy markets without having generation resources as a price hedge (customers pay the lower of the cost of generation or market prices) subjects customers to SPP market price risk which can be very costly to them as demonstrated by the Storm Uri costs Evergy West securitized. Evergy West and Evergy Metro should have sufficient generation resources to meet their customers' load requirements to hedge against exposing their customers to the volatility of the SPP energy markets which can be extreme. These graphs show that both Evergy West and Evergy Metro intend to depend upon the SPP markets in the future for meeting their customers' energy requirements, a future where there is less dispatchable thermal generation and less energy available from other generators. With their fuel adjustment clauses, and securitization and accounting authority orders for extreme events, Evergy is planning to shift more fuel and purchased power cost risk to their customers.

Remedy: The remedy for this is that Evergy should add thermal resources for Evergy West and Evergy Metro. The current lead time required to plan, permit, and build a new thermal plant in the current circumstances where much of the United States is experiencing large amounts of increasing

expected demand will necessarily mean that project completion time is an uncertain factor. As such, OPC has adopted 2029 as the target date that new thermal generation would be operational.⁶

Evergy’s current plan is to bring on a 650 MW combined cycle natural gas plant in 2029. This plant is to be split between Evergy West and Evergy Kansas Central. OPC’s remedy is that 325 MW of this plant be assigned to Evergy Metro and a standalone 650 MW combined cycle be added to Evergy West’s generation portfolio. The average hourly load and generation graphs for Evergy West and Evergy Metro with this remedy are provided below in Figures 8 and 9:

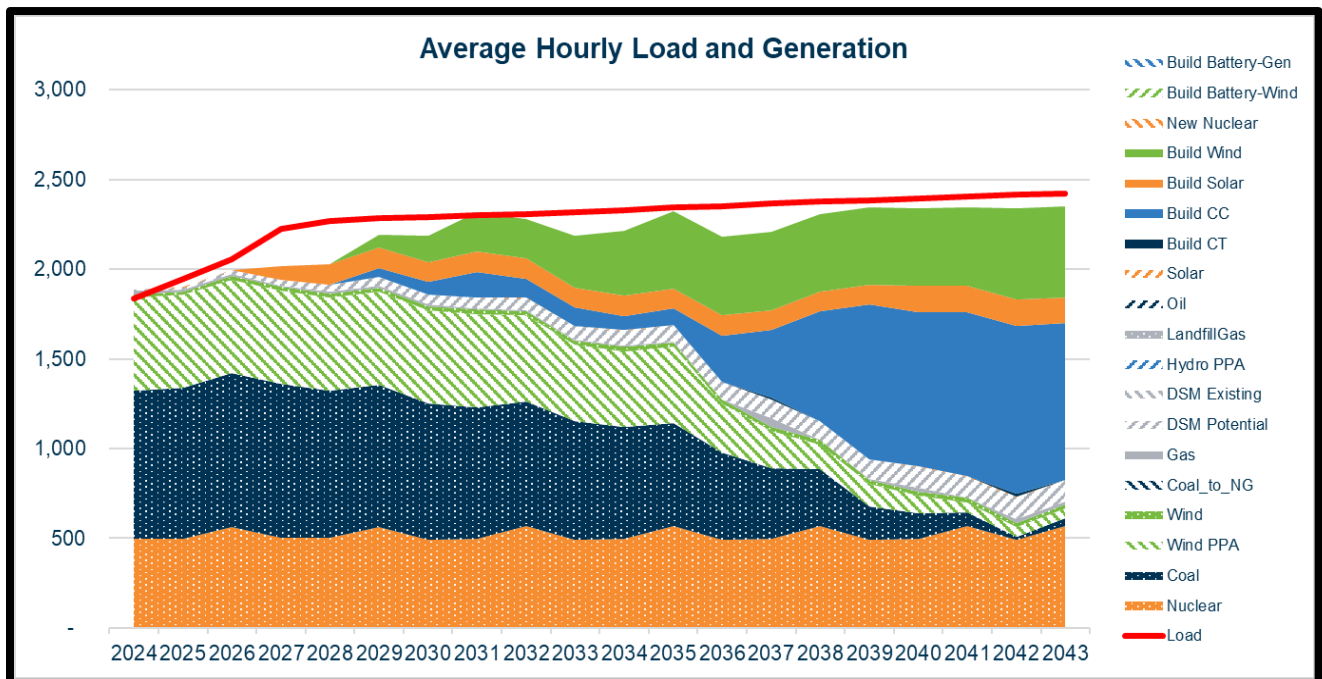
Figure 8: OPC Remedy to Evergy West Shortfall⁷



⁶ This is an assumption largely based on inferences Evergy has made in its planning process, but is not verified.

⁷ The energy generated by the new half of a combined cycle in Evergy West’s plan was doubled.

Figure 9: OPC Remedy to Evergy Metro Shortfall ⁸



While the addition of the combined cycle plants would not result in cost effective generation that meets all of Evergy West’s energy requirements across the planning horizon and does not resolve all of the dependence of Evergy Metro on the SPP energy market, it greatly reduces their dependence on the energy markets. It will increase the net present value revenue requirement (“NPVRR”) of the plans, but it would also greatly reduce the risk to Evergy West and Evergy Metro customers of both rising SPP market prices and volatility in those prices.

Planning Models Show Unrealistic Energy Generation (Deficiency)

A close review of Evergy West’s average hourly load and generation graph shows a large jump in coal generation in 2030. However, the preferred plan does not include the addition of any coal plants. A close examination of the results of the Evergy West planning model for the Iatan coal plants around 2030 reveals that the generation capacity amounts assigned to Evergy West stay the same, but the capacity factor⁹ doubles, which means that the model shows that the plants ran more than twice as much starting 2030 as they do early in the planning horizon. This accounts for this large jump in generation.

⁸ The energy generated by the new half of a combined cycle as estimated in Evergy West’s plan was added to Evergy Metro’s preferred plan.

⁹ Capacity factor of electricity generation is a measure (expressed as a percentage) of how often an electricity generator operates during a specific period of time using a ratio of the actual output to the maximum possible output during that time period.

<https://www.eia.gov/tools/faqs/faq.php?id=101&t=3#:~:text=Capacity%20factor%20of%20electricity%20generation,output%20during%20that%20time%20period.>

However, a review of the same two plants in the Evergy Metro model shows a drop in the capacity factor for Iatan 1 over the planning horizon and a fairly constant capacity factor for Iatan 2.

Iatan 1 and Iatan 2 are the same two plants in both models. Evergy West owns 126 MW of Iatan 1; Evergy Metro owns 492 MW. Evergy West owns 161 MW of Iatan 2; Evergy Metro owns 491 MW. It is unreasonable for Evergy to have two different generating capacity factors for the same plants for the same 20-year planning horizons of the models Evergy used for Evergy West and Evergy Metro.

In addition to the difference in capacity factors, there is a large difference in the generation costs per MW between the models used for Evergy West and Evergy Metro.

If the capacity factors from the Evergy Metro model are correct, then the difference between load and generation for Evergy West is even greater than what is shown in Figure 1 above. That would make Evergy West's preferred plan even more unreasonable.

Remedy: While it should not be expected that all of the outputs of the Evergy West and Evergy Metro planning models would be exactly the same, the outputs for Iatan 1 and Iatan 2 should be consistent between them. To remedy this issue, Evergy will need to recalibrate the models it uses for Evergy West and Evergy Metro until they provide realistic results for Iatan 1 and 2 for both Evergy West and Evergy Metro. The alternative plans will then need to be re-evaluated to determine whether their preferred plans should be changed.

No modeling of data center load growth (Deficiency)

Evergy management has been aware of large amounts of potential demand from data centers coming online in its Missouri service areas since at least 2021.¹⁰ As such, it is concerning that Evergy's Triennial IRP modeling has not properly accounted for the long-term load growth projections driven from the proliferation of data centers not only within its Missouri service territories but in the SPP market as a whole. To be clear, Evergy West does not have enough generation to meet its energy load today and Evergy Metro will not have enough in the foreseeable future.

Neither Evergy West nor Evergy Metro formally included an analysis of the potential impact of even one data center on its forecasted energy or peak demand. Instead Evergy included a **_____** in its integration analysis despite knowing that the data center potential was over **_____** for Evergy Metro.

Remedy: Evergy West and Evergy Metro will include the potential for data center growth in its energy and peak forecast and re-evaluate its preferred plan. It will conduct risk analysis on the preferred plan of additional data center load coming into the SPP footprint and its impact on the integrated market price assumptions the Company has elected to depend on to cover its resource needs.

¹⁰ See Notice of Intended Case Filing 8/30/2021 for Approval of a Special High Load Factor Market Rate for a Data Center Facility in Kansas City, Missouri in Case No. EO-2022-0061.

Unsupported Demand Response Assumptions (Deficiency)

Table 2 and Figure 10 include Evergy Metro's preferred plan breakdown from its executive summary and the assumed demand response potential from Evergy's market potential study. Table 3 and Figure 11 include Evergy West's plan breakdown from its executive summary and the assumed demand response potential from Evergy's market potential study.

The assumed demand response savings supporting Evergy Metro's and West's preferred plans are not aligned with Evergy's third-party study. Importantly, the third-party potential study savings are predicated on aggressive TOU deferential and adoption as well as demand side savings from energy efficiency adoption. Neither of which are likely to materialize given Evergy Metro's and West's roll-out of present TOU rates and their filed MEEIA applications.

Table 2: Evergy Metro Preferred Plan with DSM emphasized

Year	Wind (MW)	Solar (MW)	Battery (MW)	Thermal (MW)	Capacity Only (Summer MW)	DSM (Summer MW)	Retirements (MW)
2024	0	0	0	0	0	65	0
2025	0	0	0	0	0	130	0
2026	0	0	0	0	126	181	0
2027	0	300	0	0	34	231	0
2028	0	150	0	0	26	272	0
2029	150	0	0	0	0	294	0
2030	150	0	0	0	0	326	0
2031	150	0	0	0	0	355	0
2032	0	0	0	415	0	375	0
2033	150	0	0	0	0	395	375
2034	150	0	0	0	0	417	0
2035	150	0	0	0	0	435	0
2036	0	0	0	325	10	451	0
2037	0	0	0	0	0	464	0
2038	0	0	0	325	0	476	0
2039	0	0	0	325	0	491	0
2040	0	150	0	0	34	508	832
2041	0	0	0	325	47	524	0
2042	150	0	0	0	0	539	0
2043	0	0	0	0	0	552	0

Figure 10: Market Potential Study: Evergy Metro Cumulative DR Potential (Summer MW)

	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

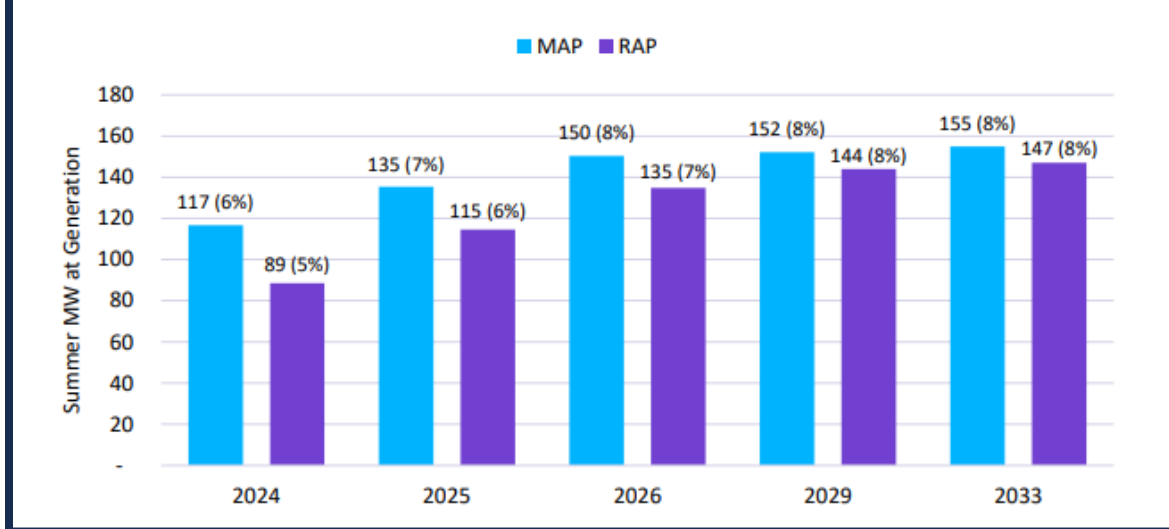
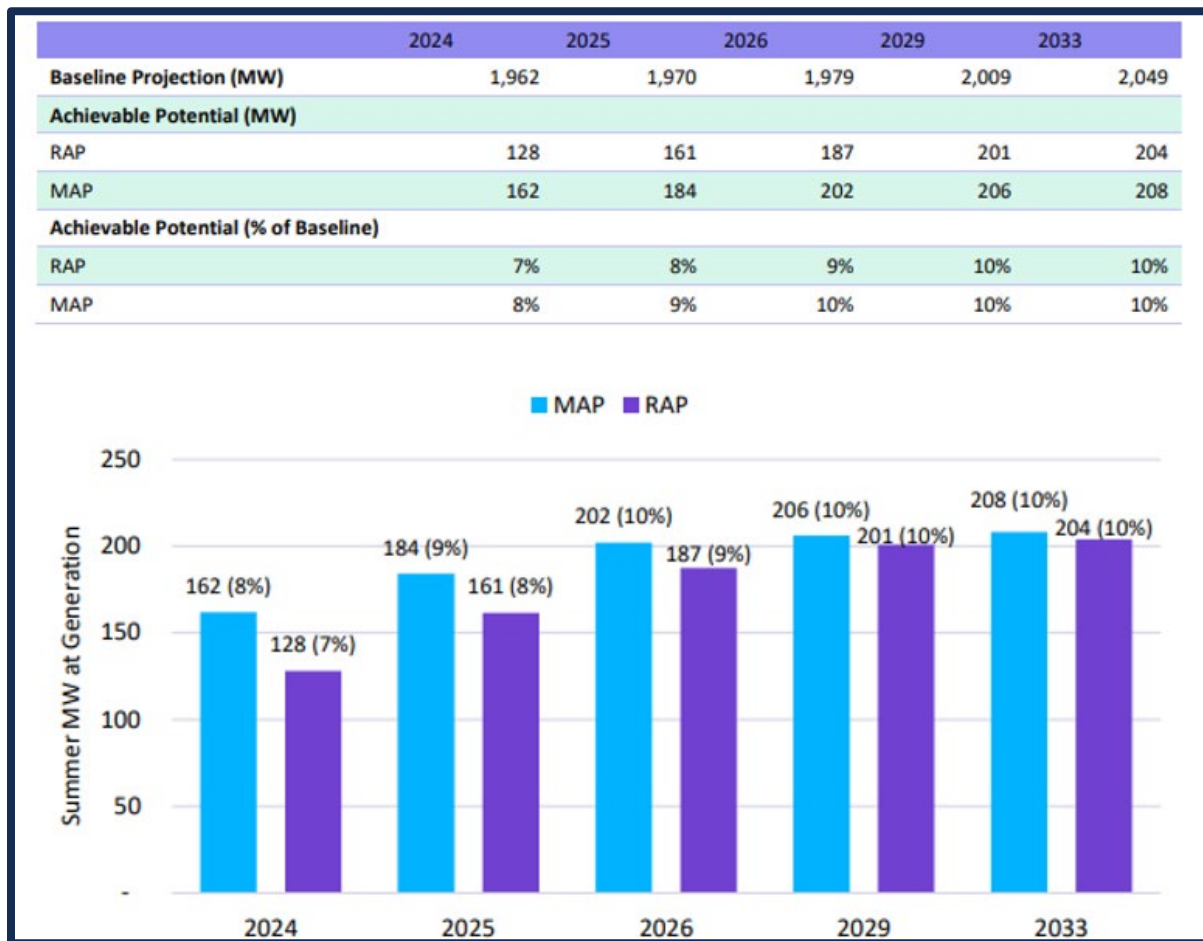


Table 3: Evergy West Preferred Plan with DSM emphasized

Year	Wind (MW)	Solar (MW)	Battery (MW)	Thermal (MW)	Capacity Only (Summer MW)	DSM (Summer MW)	Retirements (MW)
2024	0	0	0	143	0	91	0
2025	0	0	0	0	0	140	0
2026	0	0	0	0	28	180	0
2027	0	150	0	0	0	211	0
2028	0	0	0	0	0	225	0
2029	0	0	0	325	0	240	0
2030	0	0	0	415	0	254	0
2031	150	0	0	0	0	268	212
2032	150	0	0	0	0	283	0
2033	150	0	0	0	0	295	0
2034	150	0	0	0	0	312	0
2035	0	0	0	0	0	325	0
2036	0	0	0	0	0	338	0
2037	0	0	0	0	0	352	0
2038	0	0	0	0	0	362	0
2039	0	0	0	0	0	377	0
2040	0	0	0	0	0	388	187
2041	150	0	0	0	0	399	0
2042	0	150	0	0	0	408	0
2043	0	0	0	0	0	417	0

Figure 11: Market Potential Study: Evergy Metro Cumulative DR Potential (Summer MW)



OPC believes Evergy is overstating the demand response capabilities it is able to rely on in Evergy West's and Evergy Metro's Missouri service areas to meet its projected load and planned retirements. As such, this constitutes a deficiency regarding the substantive reasonableness of Evergy West's and Evergy Metro's preferred resource plans. The Missouri Public Service Commission Staff ("Staff) appears to have similar concerns given its data discovery 0006 issued to Evergy. Staff's request and Evergy's response follow.

Staff Question 0006:

Please re-run Evergy Metro's preferred resource plan (CAAB) with the only exception being its proposed MEEIA Cycle 4 is included and no additional DSM included after. Please provide the new ARP (re-ran PRP) description and analysis the same as was done for all other ARPs in the 2024 IRP, including but not limited to, the NPVRR, the Table 6: Alternative Resource Plan Descriptions, the capacity balance sheet, and all workpapers with formulas intact. If this exact analysis has already been done and provided as part of the 2024 IRP, please provide the documentation and workpapers the information is located in.

Evergy Response:

Evergy has not conducted specific Cycle 4 IRP analysis and does not have responsive documents.¹¹

Instead, Evergy has studied DSM in the context of long-term integrated planning throughout the full 20-year planning horizon. This is done in order to treat demand-side resources economically-equivalently to supply-side resources, as mandated in the Commission's Rule at 20 CSR 4240-22.060(4). In analyzing Metro's Preferred Plan (CAAB) versus the IRP's No DSM alternative resource plan (EAAB) Evergy has identified specific resources that were avoided within the MEEIA Cycle 4 period (2025-2028). The higher level of DSM included in plan CAAB allowed for a 150 MW battery to be avoided in 2026 and 150 MW of solar to be avoided in 2028.

Remedy: Evergy should update the assumed DSM contributions to its preferred planning analyses for Evergy West and Evergy Metro to reflect the reality of low Missouri customer adoption of their high differential TOU offerings as well as the inherent limitations in available demand response Evergy West and Evergy Metro can reasonably rely on for peak shaving events. This will necessarily impact the rest of Evergy Metro and West's preferred plans and change the cost assumptions associated with them.

Capital Budget Spending Constraints (Deficiency)

No matter what customers' energy requirements are in a given year of the planning horizon, Evergy limits the amount of resource additions "to respect expected capital budget spending considerations." Evergy's highest priority is balance sheet stability and financial metrics, not

¹¹ See Attachment B.

optimizing the balance between providing reliable adequate service to its customers and minimizing the cost of that service.

It is obvious that Evergy West needs a full combined cycle plant as soon as it can be built. But its sister companies, Evergy Kansas Central and Evergy Metro, also need the energy from a combined cycle plant. However, due to Evergy's self-imposed limit on capital budget spending, Evergy is limiting the additions to one combined cycle plant to be split between Evergy West and Evergy Kansas Central—the two of its utilities with the greatest needs; however, this limit will leave Evergy Metro to depend on the SPP energy markets to meet the energy requirements of its customers.

New generation capital budget expenditures should be based on meeting customers' needs and the SPP resource adequacy requirements at least cost. OPC and Staff have worked with Evergy Metro (then Kansas City Power and Light Company) and the Empire District Electric Company in the past to develop regulatory plans that limited the impact of large expenditures on the financial metrics of the companies. However, the advent of the SPP energy market, Evergy's ability to depend on that market, and recover market costs through fuel adjustment clauses and securitization allows Evergy's financial metrics to be its highest priority. Meeting customers' needs through owned resources to reduce the risks to customers of overreliance on the SPP energy markets is not an Evergy priority, even though Storm Uri and Storm Elliot demonstrated the exposure of these customers to that high-cost risk.

Remedy: Develop an Evergy resource plan that allows enough capacity to be built to meet Evergy West and Evergy Metro customers' energy needs with minimal dependence on the SPP energy markets. Provide a comparison of the capital budget for this plan and the preferred plans filed. In addition, develop and compare annual balance sheets and financial metrics of the Evergy generation resource plan that will meet the energy needs with Evergy West and Evergy Metro preferred plans in these dockets.

Southwest Power Pool Generation Interconnection Queue (Concern)

As of August 29, 2024, the Southwest Power Pool Generation Interconnection queue dashboard shows that there are 419 projects currently awaiting approval that constitute 85.4 GW of potential nameplate generation. More than 90% of that capacity is renewable sources.

For its part, Evergy has 3,880 MW of generation type currently sitting in the SPP queue.

None of that 3,880 MW is thermal generation.

On August 23, 2024, SPP filed for a one-time waiver from part of its Open Access Transmission Tariff at the Federal Energy Regulatory Commission (FERC). In its filing, SPP requests postponing the processing of 2024 interconnection requests and holding off on accepting new ones until the grid operator can catch up on previous applications. Blaming integration complexities

and resource limitations, SPP suggests the waiver is necessary to focus on existing interconnection requests and provide the interconnection request applicants with more reliable study results.¹²

Stated differently, SPP needs to catch-up with its backlog of interconnection requests before it can address the interconnections of new projects. This is a concern in and of itself. However, this fact is compounded by the reality that Evergy has made no filings to date with SPP for potential thermal generation interconnections.

Remedy: Evergy, for Evergy West and Evergy Metro, should address this specific concern and explain to the Commission:

- Why it has not submitted a dispatchable thermal generation application(s) despite its generation shortfall, expected load growth, and known delays to the SPP interconnection queue process;
- What its inaction will mean regarding potential approval delays;
- When it plans on submitting thermal generation applications to SPP;
- Where it plans on building its thermal generation unit(s);
- How long the SPP generation interconnection approval process will reasonably be given the current backlog of projects; and
- What the expected interconnection costs will be for its planned generation fuel types.

Future Evergy West and Evergy Metro IRP modeling assumptions should be adjusted to account for these variables.

¹² See SPP's Request for Waiver of Tariff Provisions and Expedited Consideration under ER24-2860 at https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20240823-5164&optimized=false


**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

AFFIDAVIT OF LENA M. MANTLE

STATE OF MISSOURI)
) SS.
COUNTY OF COLE)

COMES NOW LENA M. MANTLE and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing *Memorandum* and that the same is true and correct according to her best knowledge and belief.

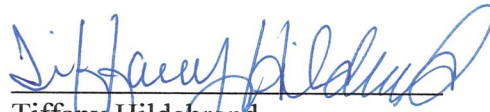
Further the Affiant sayeth not.


Lena M. Mantle
Senior Analyst

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.

TIFFANY HILDEBRAND NOTARY PUBLIC - NOTARY SEAL STATE OF MISSOURI MY COMMISSION EXPIRES AUGUST 8, 2027 COLE COUNTY COMMISSION #15637121


Tiffany Hildebrand
Notary Public

My Commission expires August 8, 2027.

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

AFFIDAVIT OF GEOFF MARKE

STATE OF MISSOURI)
) SS.
COUNTY OF COLE)

COMES NOW GEOFF MARKE and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Memorandum* and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

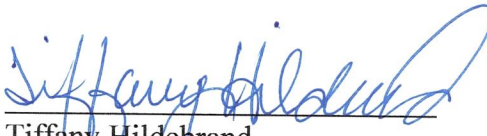


Geoff Marke
Chief Economist

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.

TIFFANY HILDEBRAND NOTARY PUBLIC - NOTARY SEAL STATE OF MISSOURI MY COMMISSION EXPIRES AUGUST 8, 2027 COLE COUNTY COMMISSION #15637121



Tiffany Hildebrand
Notary Public

My Commission expires August 8, 2027.