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 Integrated Compliance Filing Pursuant to 20 CSR 4240-22	)	File No. EO-2024-0153
In the Matter of Evergy Missouri West, Inc. d/b/a Evergy Missouri West's 2024 Triennial Integrated Compliance Filing Pursuant to 20 CSR 4240-22	)	File No. EO-2024-0154

SIERRA CLUB'S COMMENTS ON
EVERGY'S 2024 INTEGRATED RESOURCE PLAN

PUBLIC VERSION

Pursuant to 20 CSR 4240-22.080, Sierra Club respectfully submits these comments on the 2024 Triennial Integrated Resource Plan ("IRP") filed by Evergy Metro, Inc. and Evergy Missouri West, Inc. (together, "Evergy" or the "Company"). Sierra Club respectfully requests that the Company agree to prepare, or the Commission order the Company to prepare in its 2025 IRP Annual Update, a filing that corrects the deficiencies identified herein.

The United States is in the midst of a monumental shift in energy production, which compels a concomitant shift in utility planning. Evergy's Triennial 2024 IRP does not meet that standard, nor the plain language of the IRP regulations, as the filing does not comply with the law and includes overly optimistic assumptions regarding Evergy's generating units. Utility planning is not a box-checking exercise; using more realistic, data-driven assumptions will lead to better outcomes for all stakeholders, especially ratepayers. Regrettably, Evergy used several unsupportable assumptions in its modeling, similar to its 2023 and 2022 IRP Annual Updates, which again puts a thumb on the scale in favor of expensive fossil-fired generation. If this pattern continues, ratepayers can likely expect to face incessantly rising rates caused by stranded assets

and inefficient generation that could be curtailed by more realistic planning. The Commission has an opportunity to compel Evergy to course correct, and it should do so in this proceeding.

TABLE OF CONTENTS

LIST OF EXHIBITS

I. Evergy did not conduct a full and new economic assessment of its coal units.

We are pleased that Evergy is using capacity expansion modeling, but as in past comments we remain concerned that the setup of the modeling and the assumptions used in that model bias the results towards keeping coal units online and building new gas plants when resources are needed. In this section, we discuss how the modeling is biased towards keeping coal units on-line through two deficiencies:

- **Deficiency 1:** The Company has only tested a limited amount of coal retirements, and heavily favored plans that keep the units on-line longer.
- **Deficiency 2:** The Company has ignored the massive compliance costs that these units would require to meet EPA's greenhouse gas limits.

In the next section, we discuss our concerns with the methodology and assumptions leading to unfair selection of new gas builds over cleaner resource options.

A. Deficiency 1: The Company has only tested a limited amount of coal retirements, and heavily favored plans that keep the units on-line longer.

Although the Company is conducting capacity expansion modeling to select new resource builds, the coal retirement dates are still pre-determined and the options modeled are quite limited. Table 1 and Table 2 show the retirement years selected in each of Evergy's plans for its MO West and Metro service territories, respectively. The preferred plans modeled by Evergy are shown in the orange rows of each table, with other plans that vary retirement dates from the preferred plan.[1] These preferred plans for Evergy's MO West (Plan CAAA) and Metro (Plan CAAB) service territories include the following for its coal units:

[1] Evergy MO West 2024 IRP, Vol 6, pp. 21-24; Evergy Metro 2024 IRP, Vol 6, pp. 21-24

- Retirement of Jeffrey 1 in 2039 and units 2 and 3 in 2030;
- Retirement of LaCygne 1 in 2032 and unit 2 in 2039;
- Retirement of Iatan 1 in 2039; and
- No planned retirement for Hawthorn 5 or Iatan 2.

Table 1: Evergy MO West Coal Retirement Plans from lowest to highest cost[2]

Plan	Jeffrey 1	Jeffery 2	Jeffrey 3	Iatan 1	Iatan 2	PVRR ($M)
CBAA	2039	2030	2030	2030	-	$11,067
CCAA	2039	2039	2030	2039	-	$11,076
CAAA	2039	2030	2030	2039	-	$11,086
CDAA	2030	2030	2030	2039	-	$11,163
CFAA	2039	2030	2030	2039	-	$11,208
CEAA	2030	2030	2030	2030	2030	$11,271

Table 2: Evergy Metro Coal Retirement Plans from lowest to highest cost[3]

Plan	LaCygne 1	LaCygne 2	Hawthorn 5	Iatan 1	Iatan 2	PVRR ($M)
CAAB	2032	2039	-	2039	-	$23,144
CCAB	2032	2032	-	2039	-	$23,217
CBAB	2032	2039	-	2030	-	$23,307
CDAB	2032	2039	2027	2039	-	$23,881
CEAB	2032	2032	2027	2030	2030	$25,029

The coal retirements in the Company's preferred portfolios are exactly the same as those from its 2023 IRP update, as the Company looked at largely the same set of retirement dates—as shown below in Table 3.[4] Indeed, in the previous triennial IRP in 2021, the Company looked at a much larger set of retirement options. But this latest triennial IRP lacks a more comprehensive assessment.

[2] Evergy MO West 2024 IRP, Vol 6, pp. 21-24. The CFAA plan has the same coal retirements as CAAA but the former assumes that the Crossroads transmission contract expires in 2028 while the latter does not.

[3] Evergy Metro 2024 IRP, Vol 6, pp. 21-24.

[4] Evergy Response to Sierra Club Data Request 2-1.

Table 3: Evergy Coal Retirement Dates[5]

Resource	2021 Triennial	2022 Update	2023 Update	2024 Triennial
Lawrence 4	2023 2030	2024	2024 2028	2028
Lawrence 5	2023 2030	2024	2023 2028	2028
Jeffrey 1	2023 2026 2030 2034 2039	2039	2030 2039	2030 2039 > 20 years
Jeffrey 2	2023 2026 2029 2030 2039	2030 2039	2030 2039	2030 2039 > 20 years
Jeffrey 3	2023 2026 2029 2030 2039	2030 2039	2030 2039	2030 2039 > 20 years
La Cygne 1	2023 2032	2032	2030 2032	2032 > 20 years
La Cygne 2	2023 2029 2039	2029 2039	2030 2032 2039	2032 2039 > 20 years
Iatan 1	2023 2039	2029 2039	2030 2039	2030 2039 > 20 years
Iatan 2	> 20 years	> 20 years	2030 > 20 years	2030 > 20 years
Hawthorn 5	2024 2034 2039 > 20 years	2029 > 20 years	2025 2027 > 20 years	2027 > 20 years

Taken at face value, Evergy's modeling results show that retiring Jeffrey units 2 and 3 in 2030 is the lowest-cost plan, but the Company did not model a pre-2030 date for any of the Jeffrey units. Thus, we do not have any information on whether a pre-2030 retirement would

[5] *Id.*

provide additional cost savings for any of the Jeffrey units. In contrast, in its 2021 triennial IRP, the Company had evaluated 2026 and 2029 retirement dates for Jeffrey 2 and 3, and 2026 for Jeffrey 1. The Company's omission of similar earlier retirement date evaluations in the present IRP is particularly troubling because the Jeffrey units have operated at low levels in recent years—as shown below in Table 4. Most notably, Jeffrey unit 3 did not operate for over a year from October 2, 2022 through December 30, 2023 as it was forced off-line by a fire.[6] That unit also had high forced outage rates in January and February of this year, 33 and 55 percent of the hours, respectively.[7] Unit 1 was forced out 67 and 31 percent of the time in the same months.[8] The three Jeffrey units have each operated for less than a third of the time so far this year, with Jeffrey 1 and 2 operating at capacity factors of 9 and 18 percent, respectively. Given that these coal units are essentially acting as peakers (and some are unreliable in the wintertime), they should clearly be considered for pre-2030 retirement. LaCygne 1 has operated at less than a third of the time in 2024 so far, yet the earliest Evergy has considered the retirement of the unit is 2032. This unit should be considered for retirement prior to that date.

[6] EPA Clean Air Markets Program Data. Hourly Gross Load, available at: https://campd.epa.gov/data; Sarah Motter, "Fire at Jeffrey Energy Center knocks unit offline," WIBW, (Oct. 3, 2022), available at: https://www.wibw.com/2022/10/03/fire-jeffrey-energy-center-knocks-unit-offline/.

[7] Evergy Response to Sierra Club Data Request 2-5, QSC-2-5_Coal Unit FOR_POF_EAF 2019-2024.

[8] *Id*.

Table 4: Capacity Factors of Evergy's Coal Units (%)[9]

Capacity Factor	2018	2019	2020	2021	2022	2023	2024
LaCygne 1	34%	40%	37%	43%	50%	56%	30%
LaCygne 2	55%	54%	61%	61%	56%	49%	49%
Jeffrey 1	66%	32%	36%	52%	63%	46%	9%
Jeffrey 2	57%	37%	34%	49%	54%	54%	18%
Jeffrey 3	40%	43%	43%	41%	37%	0%	28%
Iatan 1	65%	42%	34%	50%	29%	35%	13%
Iatan 2	48%	76%	63%	60%	52%	35%	14%
Hawthorn 5	57%	59%	41%	53%	64%	45%	39%

The cycling of Evergy's units, due to their infrequent operation, appears to be taking a toll on their efficiency. The heat rate is a measure of the efficiency of a unit, measuring the amount of heat required to produce a unit of energy—usually presented in terms of MMBtu per MWh or Btu per kWh. The lower the heat rate, the more efficient the unit, as it needs less fuel (and related costs) to produce a unit of energy. Table 5 below shows the heat rate performance of the Evergy coal units in recent years.

Table 5: Heat Rate of Evergy's Coal Units (MMBtu/MWh)[10]

Heat Rate	2018	2019	2020	2021	2022	2023	2024
LaCygne 1	10.17	10.68	10.76	10.86	10.84	10.85	11.32
LaCygne 2	10.87	10.75	10.91	10.90	10.90	10.88	11.57
Jeffrey 1	10.93	11.79	11.98	11.23	11.16	11.30	12.48
Jeffrey 2	11.09	11.93	12.11	11.69	11.43	11.38	11.65
Jeffrey 3	11.50	11.90	11.96	11.91	11.28	*N/A*	12.34
Iatan 1	10.04	10.33	10.54	10.48	11.14	10.77	12.38
Iatan 2	9.55	9.13	9.26	9.02	9.46	9.59	11.02
Hawthorn 5	10.16	10.35	10.79	10.62	10.66	10.61	10.83

[9] EIA Forms 860 and 923 data for summer capacity (MW) and net generation (MWh), available at: https://www.eia.gov/electricity/data/eia860/ and https://www.eia.gov/electricity/data/eia923/.

[10] EIA Form 923 data for fuel usage (MMBtu) and net generation (MWh), available at: https://www.eia.gov/electricity/data/eia923/.

Most of Evergy's fleet is losing efficiency, which increases the cost of energy production (i.e., the cost per MWh increases) and makes them less economic to operate.

In addition to the limited options for retirement, Evergy also limited modeling of its own earlier retirement dates to a small subset of plans—instead relying more heavily on evaluating plans that kept the units on-line for a longer period. For instance, Iatan 1 was tested for retirement in 2030 but only in 3 of the 25 Evergy Metro plans and in 3 of the 24 Evergy MO West plans.[11] Iatan 2 was tested for 2030 retirement in only 2 of the Evergy MO West and Metro plans, respectively.[12] Yet, as shown above, these two units operated less than 15 percent of the time so far this year. Given the economic and regulatory pressure on its units, such as the greenhouse gas standard from the U.S. Environmental Protection Agency ("EPA") (which we discuss further below), Evergy should have considered more early retirement options in its modeling, and conducted more than a small fraction of its modeling using earlier retirement options. Instead, the Company has focused on the status quo from its previous IRP updates and thus failed to present a full and new evaluation in this triennial IRP.

Evergy's failure to robustly study more retirement options for its generating units is a deficiency under the IRP rules. Specifically, Evergy's capacity expansion biases and repeated resistance to using more realistic assumptions fails to meet the IRP's objective of meeting customer requirements through cost minimization because Evergy's approach has shielded possible lower-cost paths from study.[13] And, 20 CSR 4240-22.060(3)(C) states that the "utility shall include in its development of alternative resource plans the impact of – (1) [t]he potential

[11] Evergy MO West 2024 IRP, Vol 6, pp. 21-23; Evergy Metro 2024 IRP, Vol 6, pp. 21-23

[12] *Id.*

[13] 20 CSR 4240-22.010(2)(B).

retirement or life extension of existing generation plants; [and] (2) [t]he addition of equipment and other retrofits on generation plants to meet environmental requirements." This is discussed in more detail next.

B. Deficiency 2: The Company has ignored the massive compliance costs that these units would require to meet EPA's greenhouse gas limits.

Evergy's modeling of its coal units also does not account for the costs of complying with the U.S. Environmental Protection Agency ("EPA") final rule for carbon pollution standards. In other words, Evergy's IRP was outdated the moment it was filed because it does not comply with the law. Under the final carbon rule, coal units that Evergy intends to operate beyond 2040, such as Iatan 2, would have to install carbon capture and storage ("CCS") technology by 2030; coal units that Evergy commits to retire by 2040, would have to rely on 40% co-firing with natural gas; coal units that Evergy commits to retire by 2032 would not be subject to the 40% co-firing requirement.[14] Evergy did not assume in its IRP modeling that CCS would be installed at any of its coal-fired units in the future.[15] In fact, the Company has not developed any compliance plans for its coal-fired units with respect to the EPA's final rule for carbon pollution standards.[16] We raised this same concern in the last IRP update, and stated that this regulation, which is the law of the land, should be modeled in this triennial IRP. Indeed, Missouri IRP Rule 20 CSR 4240-22.010(2)(C)(2) requires that Evergy consider the "[r]isks associated with new or more stringent

[14] New Source Performance Standards for Greenhouse Gas Emissions From New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units; Emission Guidelines for Greenhouse Gas Emissions From Existing Fossil Fuel-Fired Electric Generating Units; and Repeal of the Affordable Clean Energy Rule, Final Rule, 88 Fed. Reg. 39,798 (May 9, 2024). Table 1 in the Final Rule summarizes the compliance options for existing coal units. 89 Fed. Reg. at 39,841.

[15] Evergy response to Sierra Club Data Request 2-12.

[16] *Id.*

legal mandates that may be imposed at some point within the planning horizon." Moreover, 20 CSR 4240-22.060(3)(C) states that the "utility shall include in its development of alternative resource plans the impact of – (1) [t]he potential retirement or life extension of existing generation plants; [and] (2) [t]he addition of equipment and other retrofits on generation plants to meet environmental requirements."

II. Evergy's selection of new resources is grossly biased towards new gas and against clean energy.

In addition to the concerns above regarding modeling of coal unit operations, we find that the Company's treatment of replacement resources unfairly favors new gas generation. The use of a sophisticated model is only as good as the assumptions used, and in this case, we find two key deficiencies on new resource costs:

- **Deficiency 3:** The Company has overstated the costs of clean resources.
- **Deficiency 4:** The Company has understated the costs of new gas by not considering the costs associated with CCS in most cases.

We remain concerned that Evergy is handicapping clean resources and instead investing in new gas generation that will lead to stranded costs in the future—as coal assets are today.

A. Deficiency 3: The Company has overstated the costs of clean resources.

Evergy's cost projections assume that the recent uptick in clean energy installation costs will ** [redacted], ** which unfairly ** [redacted] ** these costs. For new clean resources, Evergy constructed a long-term forecast using the results of a recent Request for Proposal ("RFP") as a starting point and then applied the changes in costs from the National Renewable Energy Laboratory's ("NREL") Annual Technology Baseline ("ATB") and the U.S. Energy Information Administration's ("EIA") Annual Energy Outlook ("AEO") cost forecasts

for each resource type.[17] Importantly, however, the way that Evergy uses the RFP results ** [redacted] ** due to supply chain and interconnection issues. Even if NREL and EIA project declining costs (after adjusting for inflation), merely applying these ** [redacted] ** costs in the long-term. As a result, Evergy's assumed capital costs for clean energy resources[18] were ** [redacted] ** than those reported by in NREL's recent 2024 ATB—the latter shown in Figure 1.

Figure 1: Overnight capital costs for solar PV, wind and storage ($/kW nominal, unsubsidized)[19] CONFIDENTIAL

** [redacted] **

[17] Evergy MO West 2024 IRP, Vol 4, pp. 48, 54-59; Evergy Metro 2024 IRP, Vol 4, pp. 49, 55-60.

[18] Evergy Workpaper "CONFIDENTIAL New Build Renewables 2024."

[19] National Renewable Energy Laboratory (NREL). 2024. *2024 Annual Technology Baseline (ATB) Cost and Performance Data for Electricity Generation Technologies*, available at:

It is unlikely that the high costs reflected in Evergy's 2023 All-Source RFP results ** [redacted] . ** There is also movement at the federal level to improve the interconnection process that has created a bottleneck in many regions of the U.S. Thus, the Company's assumption that ** [redacted] ** is overly pessimistic, and this assumption should be corrected to rely directly on medium- to long-term forecasts themselves.

B. Deficiency 4: The Company has understated the costs of new gas by not considering the costs associated with CCS in most cases.

In contrast to its handling of clean energy resources, Evergy's cost assumptions for new gas-fired resources are positively biased towards these resources by excluding CCS in most of its modeling. EPA's final rule for carbon pollution standards requires gas-fired power plants with capacity factors greater than 40% to use technologies such as CCS beginning in 2032.[20] In response to discovery, Evergy notes that the Company only included gas-fired combined-cycle units with CCS as an option for new builds in its High CO_2 restriction/High Natural Gas price future scenario.[21] The Company apparently did not apply any other compliance measures either—such as capacity factor limitations—which it claims is because the rule was not yet finalized at the time of the modeling. But the proposed rule was available at the time, and we had advised the Company to address that in the last IRP update. In its 2025 IRP Annual Update,

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https://atb.nrel.gov/electricity/2024/data; Evergy Workpaper "CONFIDENTIAL New Build Renewables 2024."

[20] New Source Performance Standards for Greenhouse Gas Emissions From New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units; Emission Guidelines for Greenhouse Gas Emissions From Existing Fossil Fuel-Fired Electric Generating Units; and Repeal of the Affordable Clean Energy Rule, Final Rule, 88 Fed. Reg. 39,798 (May 9, 2024). Table 1 in the Final Rule summarizes the compliance options for combustion turbines. 89 Fed. Reg. at 39,917.

[21] Evergy Response to Sierra Club Data Request 3-1.

Evergy must include the costs of CCS—or impose other means of compliance—for all of its new gas units. As we stated regarding coal, this rule is now in place and cannot be ignored.

The construction of new gas-fired power plants, in addition to being more costly than what Evergy assumes, is also at substantial risk of becoming a stranded asset in the medium- to long-term. Planning to build new gas resources in the 2020s or 2030s is analogous to building coal units in the 2000s or 2010s. A substantial amount of coal has retired in the U.S. in the past decade and, as a result, Commissions and ratepayers have been left to deal with immense stranded costs when these units retire. Often the owner of the retired unit seeks to fully recover the remaining asset value after retirement, including a rate of return that goes well past the unit's shutoff. But sitting here today and planning for the future: gas units will be in the same position as the energy system moves more in the direction of carbon-free resources. Avoiding building gas today sidesteps the future pain of stranded costs that ratepayers would have to bear. The mistake of investing in coal need not be repeated by building up new gas.

III. Conclusion.

Sierra Club appreciates the opportunity to engage in Evergy's IRP process and respectfully requests that the Company agree to prepare, or the Commission order the Company to prepare, a revised triennial IRP filing that corrects the deficiencies identified herein.

Respectfully submitted,

Dated: August 29, 2024

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of the above and foregoing Sierra Club's Comments on Evergy's 2024 Triennial Integrated Resource Plan has been emailed this August 29, 2024, to all counsel of record.

/s/Sarah Rubenstein
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