

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Evergy Metro, Inc.)	
d/b/a Evergy Missouri Metro’s 2022)	
Integrated Resource Plan Annual)	File No. EO-2022-0201
Update Filing)	

In the Matter of Evergy Missouri)	
West, Inc. d/b/a Evergy Missouri)	File No. EO-2022-0202
West’s 2022 Integrated Resource Plan)	
Annual Update Filing)	

**SIERRA CLUB’S COMMENTS ON EVERGY’S 2022
INTEGRATED RESOURCE PLAN ANNUAL UPDATE**

PUBLIC VERSION

Pursuant to 20 CSR 4240-22.080, Sierra Club respectfully submits these comments on the 2022 Integrated Resource Plan (“IRP”) Annual Update filed by Evergy Metro, Inc. and Evergy Missouri West, Inc. (“Evergy” or the “Company”). Sierra Club respectfully requests that the Company agree to prepare, or the Commission order the Company to prepare, a revised IRP filing that corrects the deficiencies identified herein. At a bare minimum, the Commission should order Evergy to address these deficiencies in its 2023 IRP Annual Update filing. As explained more thoroughly below, Sierra Club offers the following findings on Evergy’s 2022 IRP Annual Update:

- (1) Evergy should update its modeling to reflect the expanded tax credits provided in the Inflation Reduction Act (“IRA”). The IRA reflects a significant change in federal energy law that, if modeled, would be expected to change Evergy’s near-term action plan by increasing deployment of solar, wind, and batteries. Evergy’s customers deserve a prompt response to this significant change in federal energy incentives.

- (2) Other plans that include earlier coal retirement are lower cost than Evergy's preferred plan. The Company's preferred plan retires several units in 2039; but, the Company's modeling shows savings when retiring some units earlier, including Jeffrey Unit 2 (2030), LaCygne Unit 2 (2029), and Iatan Unit 1 (2029). Instead, the Company elected to choose a high-cost plan and keep more uneconomic coal online.
- (3) Evergy's hesitation in adopting more coal retirements is risky and costly. Despite showing lower costs with advancing more coal retirements, the Company elected to keep more coal units on-line due to "uncertainty."¹ But the Company's resource plan should make the best decision given the data and market intelligence available. The Company's hesitancy is also belied by the added risks of keeping coal units online and Evergy's substantial capacity surplus.
- (4) Evergy's failure to test the going-forward value of all of its existing units fails to meet the IRP's objective of cost-minimization because Evergy's approach has shielded possible lower-cost paths from study. Accordingly, Evergy should test the selection of a preferred plan that expedites additional coal unit retirements, such as Jeffrey Unit 1. Evergy is still relying on hand-selected resource decisions in the short-term. The Company has partially adopted capacity expansion modeling in this IRP Annual Update. However, the decisions for when to retire coal units and the limited number of retirement year options were still pre-determined by the Company. The new capacity expansion model is mainly being used

¹ Evergy response to Sierra Club Data Request 1.15.

to determine what to build in the medium- to long-term. This process should be applied to add the necessary rigor to short-term retirement decisions.

(5) Evergy ** [REDACTED]
[REDACTED]
[REDACTED] **

(6) Evergy is assuming that all new resources will be self-builds and added to ratebase. This assumption ignores the prospect of power purchase agreements (“PPAs”) and the potential for lower costs to customers under these arrangements. In particular, Evergy appears likely to procure new renewable resources from third parties and should account for this in their modeling.

(7) The Company is assuming a ** [REDACTED] ** premium for solar PV costs in its modeling compared to last year’s triennial IRP. We recognize that there have been supply chain issues with solar PV in the last year; yet, with recent policy changes, a persistent premium cannot be justified for these resources because costs are likely to be cut drastically.

(8) The new builds chosen by the capacity expansion model are also limited because Evergy fails to consider stand-alone storage resources and solar-battery hybrid resources. These types of resources have become more prevalent in the U.S. in recent years. We understand that Evergy plans to incorporate these resources in future filings; but the Company should have considered these critical resources in its current planning.

(9) Evergy should document and consider the public health impacts of generation portfolios as one decision metric in selecting a final preferred plan. The public health impacts of

generating electricity are indisputably vast and yet Evergy failed to even consider these impacts. Evergy should update its IRP scorecard to include a metric that assesses each ARP's contribution to reducing air pollution harms.

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I. Deficiency 1: Evergy should update its modeling to reflect federal law on energy tax credits.

In its 2022 IRP Annual Update, Evergy stated that “[c]hanges to tax credit eligibility of specific projects or all renewable projects can ultimately impact economics and trigger reevaluation of resource additions.”² Congress recently passed and President Biden will sign the Inflation Reduction Act, which dramatically alters and expands federal tax credits available for zero greenhouse gas emitting facilities such as solar, wind, and batteries. Evergy should revise its modeling for this IRP Annual Update to include the expanded tax credits. Under the IRA, all zero emitting resources will be permitted to take a 30% Investment Tax Credit ("ITC") or a Production Tax Credit ("PTC") valued at \$25/MWh if the generator pays prevailing wages.³ Such projects are eligible for a 10% adder if the project is located in a low-income area or an “energy community,” generally defined as one with a history of fossil fuel generation, extraction, transport, or processing, a brownfield, or where a coal unit has retired.⁴ Zero emitting resources are also eligible for an additional 10% increase to the credit if U.S. manufactured components are used.⁵ The expanded credits extend through at least December 31, 2032.⁶

Evergy should update its modeling to incorporate the Inflation Reduction Act changes for two general reasons. First, the expansion of the clean credits available is dramatic. For example, a lower PTC for wind was going to expire for projects that were started construction after 2021; now, wind is eligible for the full PTC through at least 2032. Evergy did not model batteries at all

² Evergy Metro 2022 IRP Annual Update, p. 85.

³ Inflation Reduction Act, Section 13701 and 13702.

⁴ Inflation Reduction Act, Section 13701 and 13702.

⁵ Inflation Reduction Act, Section 13701 and 13702.

⁶ Inflation Reduction Act, Section 13701 and 13702.

in its 2022 IRP Annual Update; now, batteries are eligible for a 30% ITC through at least 2032—which is a major shift from previous policy. Solar credits have increased back to the highest previous level of 30% for the ITC extended through 2032, rather than sunseting. Solar projects may also qualify to receive this credit using the PTC mechanism, so that utilities will be able to capture the benefits sooner than before.⁷ The difference between federal law and Evergy’s modeling is now vast. Second, Evergy should update its modeling as soon as possible because, as explained herein, its modeling already shows a benefit to early retirement of coal and replacement with clean energy resources. Now the only uncertainty is in the magnitude of customers savings that would be expected from retiring its coal units earlier.

II. Deficiency 2: Evergy has several lower-cost plans that retire units earlier than the preferred plan.

We discuss Evergy’s 2022 IRP Annual Update modeling in more detail in subsequent sections. But even accepting Evergy’s methodology and assumptions as-read, the results of its modeling do not justify the selection of its preferred plan (CDAAA), which is the sixth lowest-cost plan. This plan retires Jeffrey Unit 2, LaCygne Unit 2, and Iatan Unit 1 all in 2039; but other plans modeled by Evergy show that retiring these units about a decade earlier reduces costs to customers. Figure 1 shows the ten Evergy joint company plans with early retirement dates highlighted in blue. While Evergy unfortunately only modeled limited retirement dates and combinations of unit retirements, these results indicate that the Company should have included more accelerated retirements in its preferred plan. The Company is required to use cost-

⁷ See Howland, Ethan, *Senate passes Inflation Reduction Act with \$369B in energy and climate spending*, Utility Dive (August 8, 2022), available at <https://www.utilitydive.com/news/senate-inflation-reduction-act-climate-solar-tax/629087/>

minimization as the “primary selection criterion in choosing a preferred plan.”⁸ In particular, the Company noted that Jeffrey Unit 2 was the “most economic accelerated retirement option” for earlier retirement.⁹ Indeed, there are two plans shown below where that unit retires nine years earlier (2030 versus 2039), and both plans (CBBAB and CCBAB) are cheaper than the Company’s preferred plan (CDAAA).

Figure 1: Evergy Joint Company’s Plans, Expected Value with Coal Unit Retirement Dates¹⁰

Rank	Plan	NPVRR (\$mm)	Delta	Jeffrey 1	Jeffrey 2	Jeffrey 3	LaCygne 1	LaCygne 2	Iatan 1	Iatan 2	Hawthorn 5	Lawrence 4	Lawrence 5
1	CCBAB	\$57,291	\$0	2039	2030	2030	2032	2039	2039	2041+	2041+	2024	2023 gas
2	CCBAE	\$57,379	\$88	2039	2039	2030	2032	2039	2029	2041+	2041+	2024	2023 gas
3	CCBAD	██████	██████	2039	2039	2030	2032	2029	2039	2041+	2041+	2024	2023 gas
4	CBBAB	\$57,451	\$161	2039	2030	2030	2032	2039	2039	2041+	2041+	2024	2023 gas
5	CCBAA	\$57,461	\$170	2039	2039	2030	2032	2039	2039	2041+	2041+	2024	2023 gas
6	CDAAA	\$57,541	\$250	2039	2039	2030	2032	2039	2039	2041+	2041+	2024	2023 gas
7	CCBAC	\$57,565	\$274	2039	2039	2030	2032	2039	2039	2041+	2029	2024	2023 gas
8	CBAAA	\$57,688	\$397	2039	2039	2030	2032	2039	2039	2041+	2041+	2024	2023 gas
9	BBAAA	\$57,717	\$426	2039	2039	2030	2032	2039	2039	2041+	2041+	2024	2023 gas
10	AAAAA	\$57,808	\$517	2039	2039	2030	2032	2039	2039	2041+	2041+	2024	2023 gas

The Company’s own modeling results point to retiring Jeffrey Unit 2 in 2030 and/or Iatan Unit 1 and/or LaCygne Unit 2 in 2029—although there is not a plan that tests the combination of these retirements. Yet Jeffrey Unit 2 in particular is clearly uneconomic and should retire earlier as shown in the two lower-cost plans above and per the Company’s own statements about the unit’s future. Unfortunately, despite this evidence, the Company opted for a plan that extended the use of this uneconomic unit. We discuss below additional deficiencies with Evergy’s decision-making and methodology—including its flawed reasoning for failing to accelerate more

⁸ 20 CSR 4240-22.010(2)(B).

⁹ Evergy Metro 2022 IRP Annual Update, pp. 46-47.

¹⁰ *Id.* at pp. 51-52, 60.

coal unit retirements. The failure by Evergy to select the lowest-cost plan has the potential to cause harm to customers soon. Evergy should be immediately planning to replace units like Jeffrey Unit 2, Iatan Unit 1, and LaCygne Unit 2 by 2029/2030. While, as explained below, some units could be replaced without the need for new generation, time is needed to build the resources required to replace all of Evergy's uneconomic coal units. Further, investments in Jeffrey Unit 2, Iatan Unit 1, and LaCygne Unit 2 that are needed only to extend the life of these units into the 2030s should be avoided (or scrutinized heavily, at a minimum), as such spending would likely be imprudent.

III. Deficiency 3: Evergy's treatment of uncertainty is one-sided and biased in favor of keeping coal on-line.

Despite the strong evidence for accelerating Jeffrey Unit 2 retirement, the Company was reluctant to include that in its preferred plan because of "uncertainty over future risks which may affect which resource may retire early."¹¹ One uncertainty it mentions is replacement resource costs, focusing on price increases due to supply chain issues.¹² But the recent IRA bill would lead to drastic price reductions for wind, solar, and battery resources. The Company also neglected to consider Iatan 1 or LaCygne 2 for early retirement even though its modeling showed that these retirements would provide savings compared to its preferred plan. Delaying such retirement decisions in this IRP Annual Update due to "uncertainty" and "risk" appears to be a status quo bias that presupposes that keeping existing coal units on-line is inherently less risky. But coal generation carries costs and risks that are not inherent to other resources. For instance, renewable and storage resources do not carry environmental compliance risk, nor do they carry

¹¹ Evergy response to Sierra Club Data Request 1.15.

¹² Evergy Metro 2022 IRP Annual Update, p.76.

fuel cost risk. Further, Evergy’s coal units are subject to risk associated with drought conditions in the Missouri River basin, as the North American Electric Reliability Corporation (“NERC”) has highlighted as a reliability concern.¹³ Evergy’s stance on uncertainty is puzzling because its modeling methodology addresses some of these key risks head-on. The Company models multiple scenarios of gas prices, carbon prices, and load growth and assigns probabilities to low, mid, and high outcomes for each of these factors. Testing the portfolios under all of these conditions is a means to addressing these critical uncertainties, and the results of that test showed that more coal retirements was cost-effective. Moreover, continued capital investments—environmental or otherwise—in coal units also introduce further risk that these costs will be stranded if the units retire before these investments are depreciated. While investments made previously are already “sunk,” future capital investments that can be avoided will prevent them from contributing further to stranded ratebase. These stranded costs are a risk for coal; they are not a risk for clean replacement resources, and even less so with the passage of the IRA.

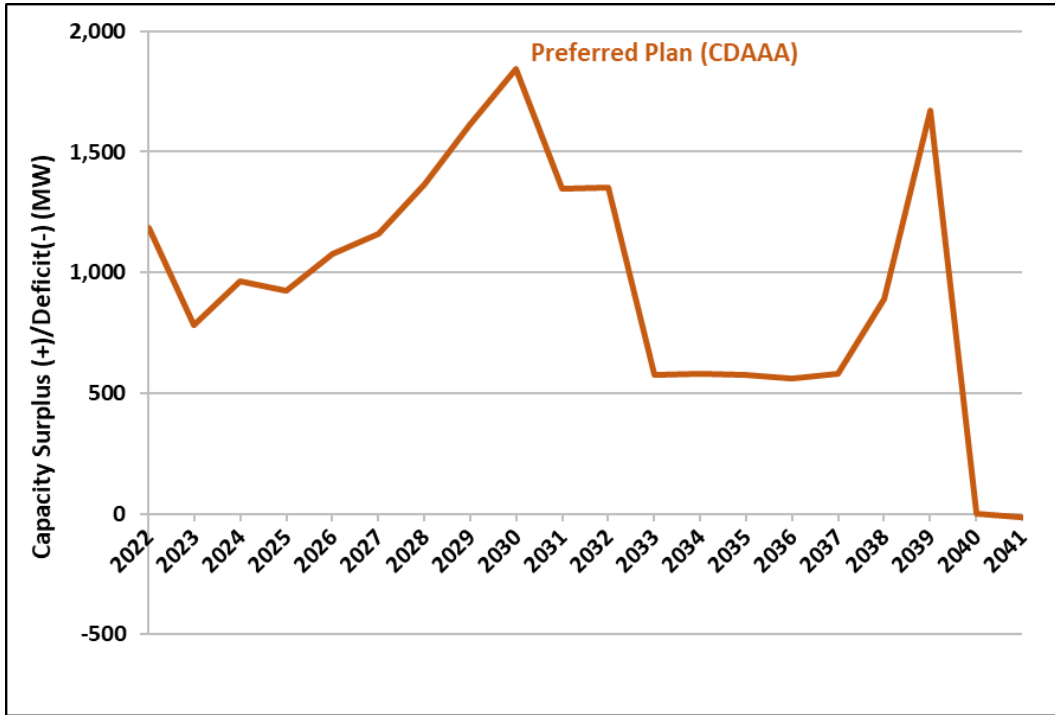
Further, the Company’s preferred plan (CDAAA) leaves it with significant headroom to retire additional coal units without the need for replacement in this decade. Evergy’s 2022 IRP Annual Update¹⁴ shows that the Company’s joint system would be massively overbuilt with the

¹³ 2022 Summer Reliability Report, NERC, page 4. (“As drought conditions continue over the Missouri River Basin, output from thermal generators that use the Missouri River for cooling in Southwest Power Pool (SPP) may be affected in summer months. Low water levels in the river can impact generators with once-through cooling and lead to reduced output capacity. Energy output from hydro generators on the river can also be affected by drought conservation measures implemented in the reservoir system. Outages and reduced output from thermal and hydro generation could lead to energy shortfalls at peak demand. Periods of above normal wind generator output may give some relief, however, this energy is not assured. System operators could require emergency procedures to meet peak demand during periods of high generator unavailability.”).

¹⁴ Evergy 2022 IRP Annual Update Workpaper, *Evergy Joint CDAAA.xlsx*

total capacity of its new preferred plan (CDAAA) exceeding its total capacity need by as much as 1,845 MW in 2030, as shown in Figure 2.

Figure 2: Capacity Position in Evergy’s New Preferred Plan (CDAAA)¹⁵

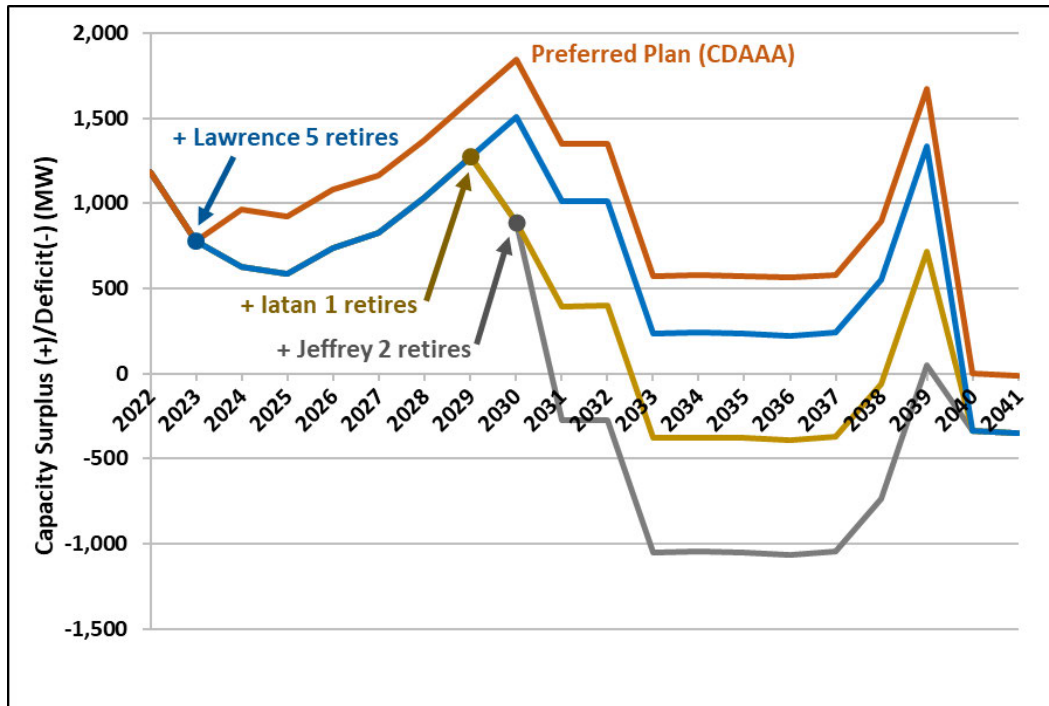


This amount of excess capacity in Evergy’s preferred plan (CDAAA) could allow the Company to retire more units earlier without experiencing a shortfall in capacity until 2031. For illustrative purposes below, we assessed the impact of retiring Lawrence 5 in 2023 instead of converting the unit to gas (see blue line in Figure 3), retiring Iatan 1 in 2029 (see yellow line), and retiring Jeffrey 2 in 2030 (see gray line) in addition to those retirements in the new preferred plan. The retirement of Lawrence 5 was modeled in the Company’s 2021 Triennial IRP—and part of its original preferred plan in that filing—and the latter two units’ retirements were modeled in Evergy’s 2022 Annual Update and were part of lower-cost plans than what the

¹⁵ *Id.*

Company chose. These early retirements of Lawrence 5, Iatan 1, and Jeffrey 2 combined do not cause the joint Evergy system to experience a shortfall in capacity until 2031.

Figure 3: Capacity Position in Evergy’s New Preferred Plan (CDAAA)¹⁶ w/ Early Coal Retirements



Keeping coal on-line also subjects ratepayers to costs and risks, as shown in Evergy’s own modeling and in the rampant coal retirements in the U.S. in the past decade—with many retirements planned for the rest of the 2020s and 2030s. The Energy Information Administration (EIA) expects that 12.6 GW of coal will retire in 2022, more than double the capacity of coal that retired in 2021; and representing 85% of all generator retirements.¹⁷ Like all decision-makers,

¹⁶ *Id.*

¹⁷ EIA, *Coal will account for 85% of U.S. electric generating capacity retirements in 2022*, (January 11, 2022), available at <https://www.eia.gov/todayinenergy/detail.php?id=50838#:~:text=Coal%20will%20account%20for%2085,generating%20capacity%20retirements%20in%202022&text=Operators%20have%20scheduled%2014.9%20gigawatts,latest%20inventory%20of%20electric%20generators>.

Evergy should make the decision based on the market intelligence available at the time. Even accepting its own analysis, including the myriad uncertainties explored in that analysis, leads to the conclusion that more coal units' retirement should be accelerated. Moreover, the Company has capacity headroom with which to retire more coal capacity earlier.

By not including additional unit retirements that it has modeled (in this Annual Update and in the previous triennial IRP filing), Evergy has failed to adhere to the “fundamental objective” of the IRP process, which is the “minimization” of “utility costs” for the benefit of customers.¹⁸ In combination with the deficiencies discussed throughout, the failure of Evergy to select a plan with the retirements of high-cost coal units fails to meet the IRP's fundamental policy goal of minimization of long-run utility costs.¹⁹ To remedy this deficiency, Evergy should select a preferred plan that includes, at a minimum, the retirement of one additional unit that has been shown to provide savings in the Company's own modeling. And, after Evergy updates its modeling to include the Inflation Reduction Act impacts, it is likely that further near-term retirements will be confirmed as cost-effective.

IV. Deficiency 4: Evergy should have considered more coal retirement options in its modeling.

The Company's approach has continually restricted early retirement options such that the Company has failed to test the going-forward value of many of its coal units. For instance, none of the plans consider retiring Iatan Unit 2 or Jeffrey Unit 1 earlier. Of the Company's ten coal units, all but two of the units operated with less than 60% capacity factor in 2021, continuing a trend of low operations, as depicted below in Table 1. The straight average capacity factor for the

¹⁸ 20 CSR 4240-22.010(2).

¹⁹ 20 CSR 4240-22.010(2)(B).

units has been 53%, which is an indicator that these units are either unavailable or uneconomic to operate on a variable basis for roughly half the time.

Table 1: Evergy Coal Unit Capacity Factors (%)²⁰

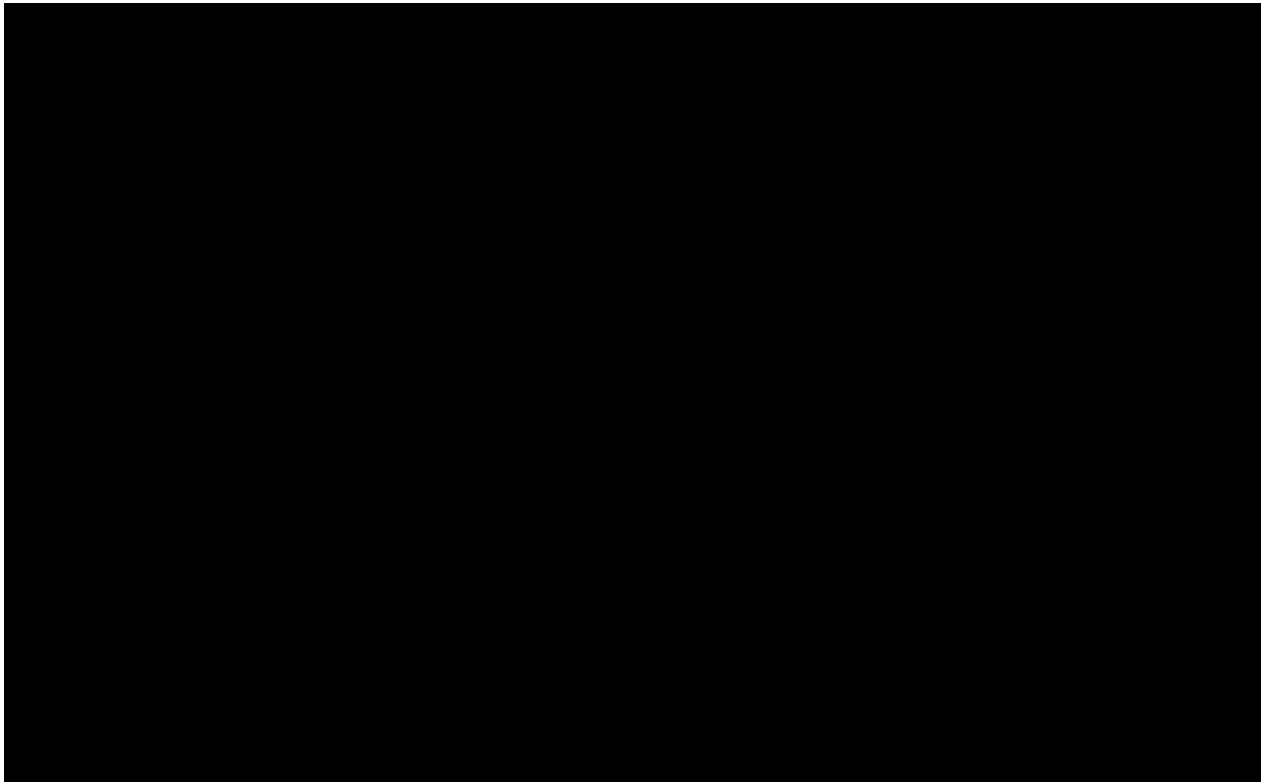
Capacity Factor	2016	2017	2018	2019	2020	2021
LaCygne 1	66%	38%	34%	40%	37%	43%
LaCygne 2	67%	26%	55%	54%	61%	60%
Lawrence 4	42%	46%	77%	54%	50%	52%
Lawrence 5	62%	62%	63%	58%	44%	42%
Jeffrey 1	69%	55%	66%	32%	36%	52%
Jeffrey 2	44%	65%	56%	36%	34%	48%
Jeffrey 3	55%	63%	40%	44%	43%	41%
Iatan 1	82%	68%	65%	42%	34%	50%
Iatan 2	61%	87%	50%	78%	64%	62%
Hawthorn 5	53%	64%	56%	59%	40%	53%

The Company’s modeling shows that it does not **

** Under what the Company considers to be the most probable scenario (mid gas prices, mid carbon prices, and mid load forecasts), its modeling shows that most units’ capacity factors are ** (see Figure 4).

²⁰ Energy Information Administration, Form 923, available at <https://www.eia.gov/electricity/data/eia923/>.

Figure 4: Historical (2016-2021) vs Projected (2022-2041) Average Coal Unit Capacity Factors²¹



While Iatan 2 has had the highest capacity factor of the fleet in recent years, Jeffrey 1 operated infrequently, and the Company projects it to have ** [REDACTED] **, with an average capacity factor of ** [REDACTED] **. The ** [REDACTED] ** of Jeffrey 1 once again calls into question why the Company never even tested retiring that unit. When asked why this option was not considered, the Company stated that:

An early retirement of Jeffrey 1 was not tested because it was impractical to consider retiring Jeffrey 1 before Jeffrey 2. Jeffrey 2 has significantly higher forecasted capital spends, and thus would provide a greater cost reduction with early retirement.²²

²¹ EIA Form 923, QSC1.4_CONF_Generation_EVG, QSC1.4_CONF_SPPAccreditedCap_EVG

²² Evergy response to Sierra Club Data Request 1.10.

Evergy's reasoning here is flawed. The fact that Jeffrey 2 is less economic than unit 1 does not impact whether unit 1 is also itself uneconomic. Therefore, Jeffrey 1 should also be tested for early retirement.

In combination with the other deficiencies discussed throughout, the failure of Evergy to consider earlier retirement of more existing coal units, most notably Jeffrey Unit 1, is a deficiency under the Missouri IRP rules.²³ Most importantly, Evergy's failure to test the going-forward value of all of its existing units fails to meet the IRP's objective of cost-minimization because Evergy's approach has shielded possible lower-cost paths from study.²⁴ To that end, Evergy should test the selection of a preferred plan that expedites additional coal unit retirements, such as Jeffrey Unit 1.

V. Deficiency 5: Evergy does not present an economically optimal plan because it pre-selected portfolios to model.

Evergy's reliance on hard-wired retirements is a deficiency under the IRP rules because the Company likely failed to select the least-cost plan. Evergy's plans include only a limited set of coal unit retirement options that were pre-determined by Evergy rather than developed through an objective optimization model. Evergy has partially incorporated a capacity expansion model in this IRP Annual Update in response to previous stakeholder concerns. But this modeling was applied to pre-set retirement options that are too limited, as discussed above. These limited options unrealistically bias the Company's modeling to continue to favor running

²³ 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."

²⁴ 20 CSR 4240-22.010(2)(B).

most of its coal generation through the 2030s. Instead, Evergy should test the value of all existing units against a robust set of replacement options using this new modeling capability—or at the very least consider more retirement year options and allow the model to select short-term replacement resources—some of which will be much cheaper due to the IRA.

As currently constructed, Evergy’s modeling fails to allow for unit retirements in the most economical manner. Evergy’s resource modeling could not have identified the lowest-cost plan because, as explained above, it was a subjective exercise with Evergy’s thumb on the scale in favor of hard-wired retirement options. Accordingly, as presented, Evergy’s preferred plan fails to minimize costs in contravention of the IRP regulations.²⁵

VI. Deficiency 6: ** [REDACTED] **

** [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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²⁵ 20 CSR 4240-22.010(2).

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Contains information that Evergy has designated as confidential and protected from public disclosure.

VII. Deficiency 7: Evergy should model PPAs, not assume self-build.

Evergy should have also modeled power purchase agreements (PPAs) in its IRP, rather than assume that all new resources were built by the Company, and therefore put into ratebase.²⁷ The Company has issued requests for proposals in the past and is likely to do so in the future. It is unrealistic to ignore the option that a third-party could build (and possibly operate) replacement resources in the future. Unfortunately, by failing to model PPAs, Evergy has failed to adhere to the IRP rule's goal of including plans with "substantively different mixes of supply-side resources," as well as their "robustness under a broad range of conditions."²⁸ This approach also harms the Company's ability to minimize costs for utility customers.

Evergy's assumption that new renewable resources were all self-build is disadvantageous in calculating the portfolios' net present value. A PPA is typically structured on a levelized cost basis, sometimes with a percentage escalation, whereas a self-build resource would have much higher costs in earlier years than in later years due to the decreasing ratebase and rate of return. In addition, PPAs can take quicker advantage of tax credits, such as the ITC for solar and solar-battery hybrids (not modeled by Evergy, as discussed below), whereas Evergy assumes that the credits are spread over the 30-year project life.²⁹ The Company's approach falsely understates the tax credit impact for non-utility builds.³⁰ In order to capture a more realistic procurement of

²⁷ Company's response to Sierra Club Data Request 1.8.

²⁸ 20 CSR 4240-22.060(3).

²⁹ Company's response to Sierra Club Data Request 1.7.

³⁰ Company's response to Sierra Club Data Request 1.7.

future PPAs, Evergy should structure some of the new resources in its model in this way—whereas currently it is overstating the costs of these resources to customers.

The failure to adequately assess alternatives to owning new resources resulted in an IRP that fails to identify the portfolio of resources that meets customer requirements at the lowest reasonable cost. To remedy this deficiency, Evergy should model at least some new resources as PPAs, particularly renewable PPAs for which the Company is more likely to avail itself in the future. For solar and solar-hybrids, the Company should assume that the ITC is immediately built into the price per MWh, as it would be with a PPA. As mentioned previously, the impacts of the IRA should also be captured to the extent possible.

VIII. Deficiency 8: Evergy must justify its premium on solar PV costs.

Evergy is assuming a premium for solar PV and wind costs in the short-term due to supply chain issues and uncertainty caused by Department of Justice and Department of Commerce activity involving solar photovoltaic manufacturing.³¹ For solar in particular, this adjustment leads to ** [REDACTED]

[REDACTED]**.³² But there is no supporting documentation for the particular cost adjustment, nor is there support for the assumption that supply chain issues will persist (and the passage of the IRA will reduce overall costs and aims to simplify the supply chain by directing vast resources toward domestic, clean energy manufacturing). Evergy can no longer justify a premium on these resources' costs given the recent tax policy changes. The assumed premium biased the model against this resource, and as

³¹ Evergy Metro 2022 IRP Annual Update, p. 76.

³² QSC1.6_CONF_Supply Side Build Costs

with other deficiencies mentioned in these comments, harmed the Company’s ability to conduct cost minimization planning. Now with the IRA, even just removing the premium would not be sufficient to capture the likely impact on these clean replacement resources.

IX. Deficiency 9: Evergy did not model battery storage or solar-battery hybrids.

Evergy did not evaluate standalone or hybrid battery storage resources in its 2022 IRP Annual Update, but notes that the Company will address it in its 2023 Annual Update.³³ These resources are too important to be ignored in this annual update. Standalone storage installations have skyrocketed in recent years and will continue to increase—especially now that the IRA adds a minimum of a 30% ITC incentive. These resources provide valuable peaking capacity and immediate response that facilitates smooth operations of the electric grid. While both solar and battery resources have become more attractive on a cost-basis in recent years, when paired together, these hybrids are valuable energy and capacity resources that utilities are increasingly looking to instead of gas-burning, peaking resources (and certainly when compared to high cost coal units). The goal of Evergy’s IRP process is to achieve “just and reasonable rates” and provide a plan that “serves the public interest,” while achieving other valid policy goals.³⁴ The failure to adequately incorporate these important resources resulted in an IRP that fails to identify a plan that is in the public interest by improperly limiting the types of resources available. To remedy this deficiency, Evergy should include battery storage and solar-battery hybrid resources as options in its modeling along with updated tax incentives.

³³ Evergy Metro 2022 IRP Annual Update, p. 12.

³⁴ 20 CSR 4240-22.010(2).

X. Deficiency 10: Evergy failed to evaluate the public health impacts of its ARPs.

Evergy failed to evaluate public health impacts of Alternative Resource Plans (“ARPs”). As Evergy knows, electricity generation through the burning of fossil fuels, especially coal, has undeniable negative impacts on public health. To comply with the Missouri IRP rules—which require that resource planning serve the “public interest” and that utility “identify and, where possible, quantitatively analyze any other considerations which are critical to meeting the fundamental objective”³⁵—we encourage Evergy to include quantified consideration of the health impacts of each portfolio.

Evergy should document the public health costs that various air pollutants—sulfur dioxide, nitrogen oxide, particulate matter, and mercury—have on public health, which include increased instances of asthma attacks, respiratory infections, hospital admissions, missed school and work days, and a variety of other health problems.³⁶ Air pollution contributes significantly to increased morbidity and mortality, and existing modeling tools can be used to translate air pollution into social cost estimates.

Further, Evergy should consider the environmental justice implications associated with its ultimate selection of its preferred plan because the communities that are harmed most by persisting reliance on coal-burning power plants are the communities who should benefit the greatest from reduced emissions, coal retirements, and investments in renewable energy. Evergy cannot simultaneously claim to be acting in the best interests of its customers if the Company

³⁵ 20 CSR 4240-22.010 - Policy Objectives.

³⁶ *See, e.g.*, EPA, Sulfur Dioxide Basics, *available at* <https://www.epa.gov/so2-pollution/sulfur-dioxide-basics> (summarizing public health harms from SO₂); *see also* EPA, Ground-level Ozone Basics, *available at* <https://www.epa.gov/ground-level-ozone-pollution/ground-level-ozone-basics#effects> (summarizing public health harms from ozone).

does not evaluate how resource plans directly impact them. The current IRP Annual Update inadequately prioritizes these issues. Evergy cannot continue to ignore the externalities that its generating units cause, and should take care to consider the distinct communities whose health is affected by the continued operation of the Company's coal plants. To remedy this deficiency, Evergy should document the public health impacts of its ARPs and consider relying on public health as one factor in ranking its resource plans.

XI. 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 IRP filing that corrects the deficiencies identified herein. At a minimum, the Commission should order Evergy to address these deficiencies in its 2023 IRP Annual Update filing.

Respectfully submitted,

Dated: August 15, 2022

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