

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Evergy Metro, Inc.)	
d/b/a Evergy Missouri Metro's)	
2021 Triennial Compliance Filing)	File No. EO-2021-0035
Pursuant to 20 CSR 4240-22)	

In the Matter of Evergy Missouri)	
West, Inc. d/b/a Evergy Missouri)	File No. EO-2021-0036
West's 2021 Triennial Compliance)	
Filing Pursuant to 20 CSR 4240-22)	

**SIERRA CLUB'S COMMENTS ON
EVERGY'S 2021 INTEGRATED RESOURCE PLAN**

****REDACTED VERSION****

Pursuant to 4 CSR 240-22.080, Sierra Club respectfully submits these comments on the 2021 Triennial Integrated Resource Plan 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 triennial IRP filing that corrects the deficiencies identified herein. As explained more thoroughly below, Sierra Club offers the following findings on Evergy's 2021 Triennial Integrated Resource Plan ("IRP"):

- (1) Evergy's recent decision to change its preferred plan without notice and opportunity to conduct discovery and comment in Missouri is a deficiency. The Commission should allow stakeholders to conduct discovery and submit supplemental comments on the change of preferred plan.
- (2) Evergy's modeling results show that early retirement of Lawrence Units 4 and 5 as well as some of the Jeffrey units is a low-cost solution. Further, Evergy's preferred plan—even before the recent change in plan to maintain Lawrence Unit 5 in operation—leaves the

Company with significant amounts of excess capacity. Evergy could, for example, amend its current Missouri preferred plan by including a Jeffrey Unit 2 or La Cygne Unit 2 retirement in 2025 while still having excess capacity till the mid-2030s. Evergy should at a minimum select a preferred plan that includes the retirement of Lawrence Units 4 and 5 in the early 2020s and at least two Jeffrey Units before 2030.

- (3) Evergy's resource planning is deficient because the Company does not conduct true optimization modeling (i.e., capacity expansion modeling) that allows for economic unit retirements and resource additions. Evergy's modeling unreasonably restricts retirement analysis for some of the Company's worst-performing coal units, while also restricting new resource additions to hand-select years and amounts. By failing to use true economic modeling in its resource planning, Evergy has likely failed to select a least-cost plan.
- (4) Despite half of its ten lowest alternative resource plans ("ARPs") including a La Cygne Unit 2 retirement in 2029, and despite the Company failing to test 2029 retirement in combination with the retirements in the current Missouri preferred plan, Evergy selected a 2039 retirement for La Cygne Unit 2 without sufficient explanation. The Company should update its modeling to include more alternative resource plans that include a La Cygne Unit 2 early retirement in combination with the retirement of other high cost units. At a minimum, the Company should include a new plan that is identical to its current Missouri preferred plan selection (ERVFL) but tests a La Cygne Unit 2 retirement in 2029.
- (5) Evergy's hand-selected resource plans failed to study the going-forward value of several of its coal units, simply assuming without any study that these units should operate for decades based on depreciation life alone, a metric that has little to do with the long-run

minimization of customer costs. At a minimum, the IRP should be revised to include new alternative resource plans that study the near-term retirement of every coal unit.

(6) ** [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] **

(7) Evergy should ** [REDACTED]
[REDACTED] ** and should model at least some new renewable resources as power purchase agreements. Further, Evergy’s modeling assumption that new renewable and storage would all be utility self-build resources could be disadvantageous to these resources in calculating the portfolios’ net present value, and therefore likely thwarted the Company’s ability to find and select a least-cost plan. Evergy should update its modeling by assuming that at least some renewable resources are PPAs and ** [REDACTED]
[REDACTED] ** in its alternative resource plans.

(8) Evergy should revise its ARPs to include a robust set of plans with stand-alone storage resources and solar-battery hybrid resources, ** [REDACTED]
[REDACTED] ** By including storage only in a few of its ARPs ** [REDACTED] **
Evergy effectively excluded storage from serious consideration in this IRP.

(9) Despite a specific Commission order to study securitization in this IRP and despite both Missouri and Kansas enacting securitization laws, Evergy chose to ignore the Commission's directive to study this issue. Evergy must update its IRP to include a quantified analysis of how securitization could be used to benefit customers, as the Commission specifically ordered.

(10) 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 substantively changed its preferred plan without providing the requisite notice, and therefore without any opportunity to conduct discovery and comment.

One week before the comment deadline in this docket, Evergy initiated a proceeding before the State Corporation Commission of the State of Kansas (“Kansas Corporation Commission”) and disclosed publicly for the first time that the Company was changing its IRP preferred plan.¹ Two days later, Evergy requested a waiver of relevant IRP notice rules in Kansas.² Curiously, Evergy has not publicly informed this Commission and parties to this docket of the change despite the existence of similar IRP notice rules. Specifically, 20 CSR 4240-22.080(12) requires that Evergy, *inter alia*, notify the Commission and relevant parties within sixty days of the utility’s determination that its preferred plan is no longer appropriate. Evergy’s plan to procure fewer megawatts of solar than outlined its preferred plan and its decision not to retire Lawrence Unit 5 constitute material changes to the Company’s preferred plan. The Company’s decision to forego notification before this Commission is a deficiency. Stakeholders should have an opportunity to conduct discovery and comment on Evergy’s change in preferred plan in this proceeding.

¹ See Petition of Evergy Kansas Central, Inc. and Evergy Kansas South, Inc. for Determination of Ratemaking Principles and Treatment, Sept. 20, 2021, Kansas Corporation Commission, Docket 22-EKCE-141-PRE, *available at* <https://estar.kcc.ks.gov/estar/ViewFile.aspx/S202109200727054038.pdf?Id=7918cb08-a60d-4dea-b4b0-eeafa61bc0d0>.

² Evergy Kansas Metro and Evergy Kansas Central Request for Waiver, Sept. 22, 20121, Kansas Corporation Commission, Docket No. 19-KCPE-096-CPL, *available at* <https://estar.kcc.ks.gov/estar/ViewFile.aspx/S202109221520143329.pdf?Id=b72a5f3c-a55f-4899-bc27-d93f7047ea53>.

II. Deficiency 2: Evergy’s modeling shows that Lawrence Units 4 & 5 and some Jeffrey units should be retired early as part of a least-cost plan.

In subsequent sections, we discuss concerns with Evergy’s IRP modeling assumptions and methodology. But taking the results at face value can still provide strong indications of coal units’ economics. Most clearly, Evergy’s 2021 IRP modeling shows that early retirement of Lawrence Units 4 and 5, in combination with some retirements at Jeffrey, were the lowest-cost option of those considered by the Company. Figure 1 shows the ten (out of 44 studied) lowest-cost plans using the expected value results that are weighted by the probabilities set by the Company—with early retirement dates shown in green. (These dates are considered “early” by Evergy because they are sooner than the current depreciation life of each unit.)

The early retirement of Lawrence Units 4 and 5 was a part of all ten lowest-cost plans because of the high ongoing costs to retain these units in operation. The early retirement of some Jeffrey units was a component of nine of the ten lowest-cost plans. These results strongly indicate that Lawrence Units 4 and 5 and some Jeffrey units should be retired early and should be a key component of any preferred plan.

Figure 1: Evergy’s Ten Lowest-Cost Plans, Expected Value with Coal Unit Retirement Dates.³

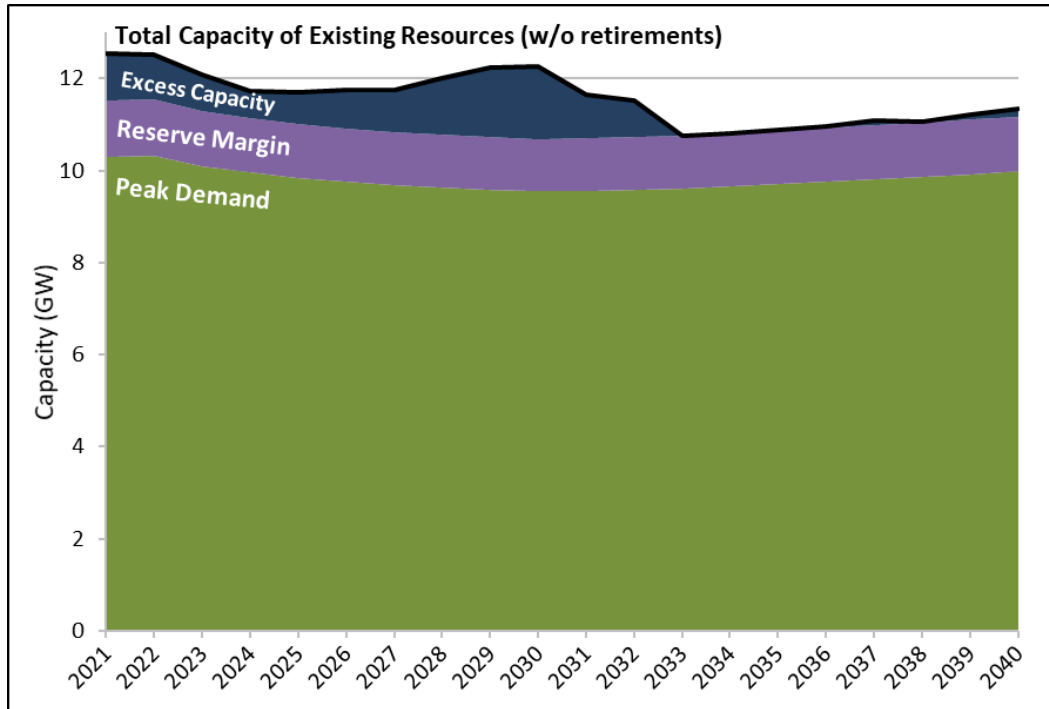
Rank	Plan	NPVRR (\$mm)	Delta	Lake Road 4/6	LaCygne 1	LaCygne 2	Lawrence 4	Lawrence 5	Jeffrey 1	Jeffrey 2	Jeffrey 3	Iatan 1	Hawthorn 5
1	ERVFL	\$58,984	\$0	2024	2032	2039	2023	2023	2039	2039	2030	2039	2055
2	ERVDL	\$59,021	\$37	2024	2032	2039	2023	2023	2039	2039	2030	2039	2055
3	ENPFG	\$59,223	\$239	2024	2032	2029	2023	2023	2039	2026	2026	2039	2055
4	ENPFZ	\$59,308	\$324	2024	2032	2029	2023	2023	2039	2026	2026	2039	2055
5	ERVFN	\$59,329	\$344	2024	2032	2039	2023	2023	2039	2039	2030	2039	2055
6	EOSFZ	\$59,388	\$404	2024	2032	2029	2023	2023	2034	2026	2026	2039	2055
7	EQUFK	\$59,388	\$404	2024	2032	2039	2023	2023	2039	2039	2039	2039	2055
8	EORFZ	\$59,389	\$405	2024	2032	2029	2023	2023	2026	2026	2026	2039	2055
9	ERVFM	\$59,391	\$407	2024	2032	2039	2023	2023	2039	2039	2030	2039	2055
10	ENQFZ	\$59,402	\$418	2024	2032	2029	2023	2023	2039	2029	2029	2039	2055

Further, the Company’s chosen ARPs—both the preferred plan filed in Missouri and even more so the recent changed plan filed in Kansas—leave it with significant headroom to retire these high-cost coal units without the need for replacement in this decade. Evergy’s 2021 IRP Capacity Forecast⁴ shows that the Company’s system would be massively overbuilt with the total capacity of its current Missouri preferred plan exceeding its reserve margin requirement of 12 percent by 6 to 17 percentage points (representing 586 to 1,585 MW of excess capacity) between the years of 2021 and 2032, as shown in Figure 2.

³ Evergy Metro IRP, Vol 6, pp.21-27.

⁴ QNEE-5-4 Evergy IRP Capacity Forecast (L&C) from Evergy KS IRP (Case No. 19-KCPE-096-CPL).

Figure 2: Capacity Position in Evergy’s Preferred Plan (ERVFL)⁵



This amount of excess capacity in Evergy’s Missouri preferred plan could allow the Company to retire more units earlier without experiencing a shortfall in capacity until 2032, and doing so would almost certainly save customers money. For illustrative purposes, we assessed the impact of retiring Jeffrey 2 in 2025 (see Figure 3) or La Cygne 2 in 2025 (see Figure 4) in addition to those retirements in the preferred plan. In both cases, these early retirements of either Jeffrey 2 or La Cygne 2 do not cause Evergy to experience a deficit (or shortfall) in capacity until after 2032. Even with these hypothetical early retirements, Evergy’s preferred plan would still have surplus capacity, with reserve margins of from 13 to 22 percent (which is one to ten percentage points higher than its required reserve margin of 12 percent) between the years of 2021 and 2032.

⁵ *Id.*

Figure 3: Capacity Position in Evergy's Preferred Plan (ERVFL, w/ Jeffrey 2 retiring in 2025)

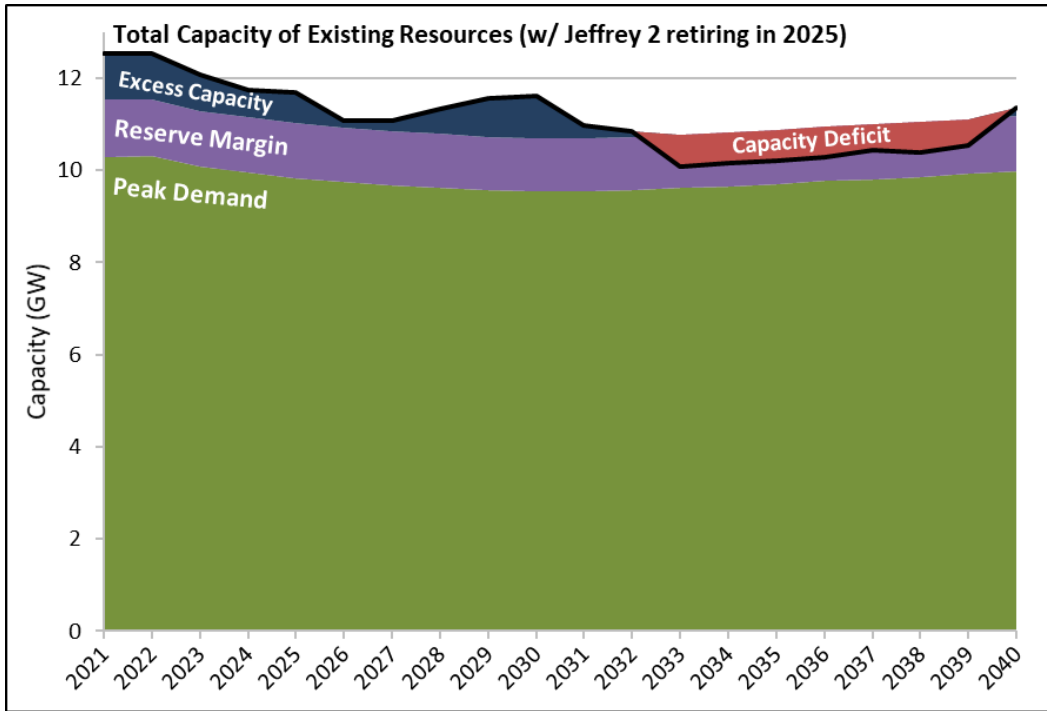
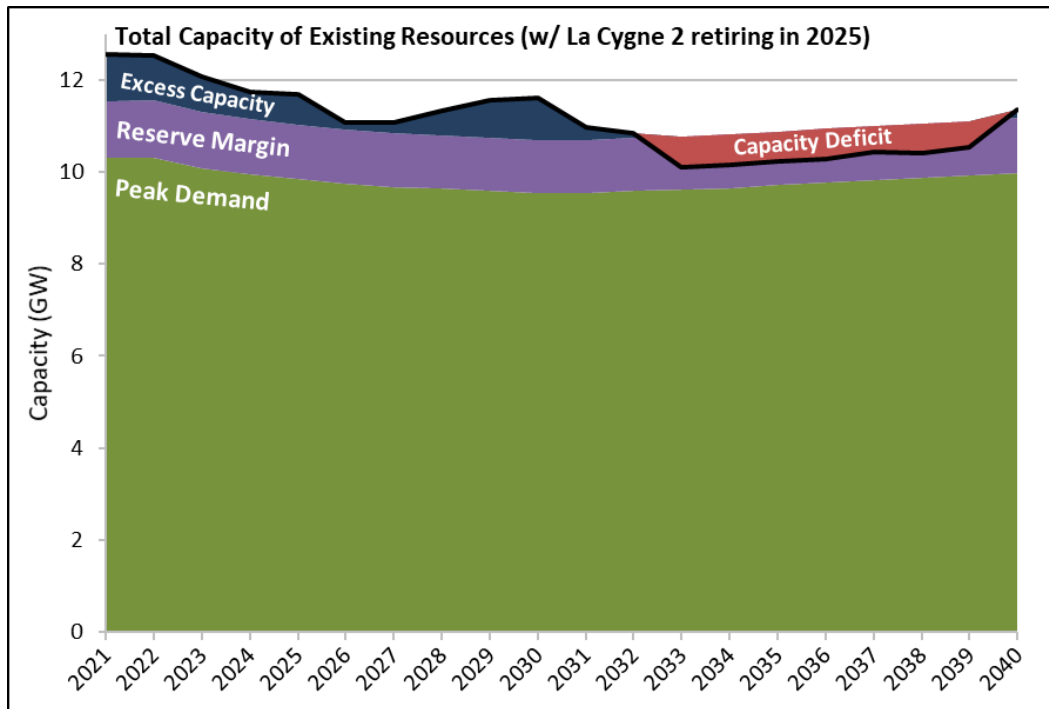


Figure 4: Capacity Position in Evergy’s Preferred Plan (ERVFL, w/ La Cygne 2 retiring in 2025)



By not exploring options with further coal retirements (and now by proposing to delay the retirement of Lawrence Unit 5 as it has stated in its Kansas filing), given its excess capacity, Evergy has failed to adhere the “fundamental objective” of the IRP process, which is the “minimization” of “utility costs” for the benefit of customers.⁶ In combination with the procedural 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.⁷ To remedy this deficiency, Evergy should select a preferred plan that includes, at a minimum, the retirements of Lawrence Units 4 and 5 in the early 2020s and at least two Jeffrey Units during or before 2030. Further, Evergy should test the

⁶ 20 CSR 4240-22.010(2).

⁷ 20 CSR 4240-22.010(2)(B).

selection of preferred plan that expedites additional coal unit retirements, such as at La Cygne, given the current capacity headroom the Company has.

III. Deficiency 3: Evergy does not present an economically optimal plan because it pre-selected portfolios to model.

Evergy's reliance on hard-wired retirements and additions is a deficiency under the IRP rule because the Company likely failed to select the least-cost plan. Evergy's ARPs include only a limited set of solutions that were hand selected without the benefit of economic optimization. The dates of coal unit retirement, and the timing and type of resource additions, were pre-determined by Evergy rather than optimized in an objective optimization model⁸—as other utilities do instead.⁹ Evergy's failure to use an objective, optimized capacity expansion model allows the Company to effectively place its thumb on the scale to create biases in the modeling outcomes—such as favoring retention of existing coal generation. Instead, Evergy should test the value of all existing generation against a robust set of replacement options. This can be achieved through “capacity expansion” modeling that allows for economic retirement and replacement of resources due to changing market conditions. Such modeling would produce an objective, optimized portfolio comprised of resources that have been economically justified.

As currently constructed, Evergy's modeling fails to allow for unit retirements or resource additions in the most economical manner. In order to achieve the “fundamental objective” of the IRP process, which is the “minimization” of “utility costs” for the benefit of

⁸ See *Sierra_Club_20210806-f.1-Answer-Sierra_Club_2_1*.

⁹ See, e.g., Pacificorp 2021 IRP, Volume 1, p. 247, available at <https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-plan/2021-irp/Volume%20I%20-%209.15.2021%20Final.pdf>.

customers,¹⁰ Evergy should reach an objective, optimized low-cost preferred portfolio while considering all reasonable supply- and demand-side additions in combination with testing the value of retention of all its existing units.

In combination with the other deficiencies discussed throughout, the failure of Evergy to use economic modeling to select retirements and resource additions is a deficiency under the Missouri IRP rules. In constructing its plans without optimization, the Company’s IRP failed to create “a set of alternative plans based on substantively different mixes of supply-side resources and demand-side resources and variations in the timing of resource acquisition to assess their relative performance under expected future conditions as well as their robustness under a broad range of future conditions.”¹¹ This failure to rely on optimization and to study coal retirements under a reasonable range of assumptions also fails to meet the IRP’s fundamental policy of goal of minimization of long-run utility costs.¹² To remedy this deficiency, Evergy should update, or be ordered by the Commission to update, its approach to modeling by removing its hard-coded, pre-determined coal retirements and resource additions, and allow new supply-side and demand-side resources to compete against its existing resources.

IV. Deficiency 4: Retirement of La Cygne Unit 2 was extended by 10 years with no reasonable explanation.

As a change from the initial modeling in this IRP, Evergy tested a later retirement date for La Cygne Unit 2—2039 instead of 2029—in its latest modeling (shown in Figure 1 in gray).

¹⁰ 20 CSR 4240-22.010(2).

¹¹ 20 CSR 4240-22.060(3).

¹² 20 CSR 4240-22.010(2)(B).

Of the ten lowest-cost plans, half include a 2029 retirement and half a 2039 retirement for La Cygne Unit 2. Evergy claims that it prolonged the retirement of the unit because “the preferred plan has determined that it is economically beneficial.”¹³ While the lowest-cost plan includes 2039 retirement of La Cygne 2, there is no ARP that includes the same retirement for other coal units in the current Missouri-filed preferred plan and retirement of La Cygne Unit 2 in 2029. Thus, one cannot directly glean whether a 2029 retirement would be beneficial if part of the preferred plan. This again points to the limitations of Evergy’s approach of setting portfolios in stone and failing to use valid economic modeling. It is possible that a plan that included retiring La Cygne Unit 2 in 2029 would be lower cost than the current preferred plan, but Evergy did not pre-select such a plan so it is impossible to tell. Regardless, keeping the unit on-line for an additional ten years increases the risk that it will face additional environmental compliance costs. While Evergy has summarized the state of various regulations,¹⁴ it has assumed ** [REDACTED] [REDACTED] **. ¹⁵ But the risk of additional costs being incurred that are not currently anticipated is ** [REDACTED] **. Any coal unit that does not retire early simply introduces more environmental compliance risk to a portfolio.

In combination with the other deficiencies discussed throughout, the failure of Evergy to robustly study the retirement date of La Cygne Unit 2 and, at a minimum, analytically support its choice of La Cygne Unit 2 retirement in 2039 is a deficiency under the Missouri IRP rules. Specifically, 20 CSR 4240-22.010(C) requires that Evergy, among other things, consider the

¹³ Evergy Metro IRP, Vol 1, p.14.

¹⁴ Evergy Metro IRP, Vol 4, pp. 23-30.

¹⁵ QSierra Club-2.8_CONF_Environmental Capital Spends & Regulations.

“[r]isks associated with new or more stringent legal mandates that may be imposed at some point within the planning horizon.” Moreover, 20 CSR 4240-22.060(3)(C) counsels 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.” To remedy this deficiency, Evergy should update, or be ordered by the Commission to update, its preferred plan to test the value of retiring La Cygne Unit 2 in the 2020s.

V. Deficiency 5: Evergy should have more seriously considered the early retirement of other units.

As noted in Section II, under the modeling that Evergy performed, it should have selected a plan that had more coal retirements in order to approach a lower-cost plan. But the Company also failed to robustly consider more combinations of retirements. While the results shown in Figure 1, above, indicate that early retirement of Lawrence Units 4 and 5 and some Jeffrey Units is favorable, the Company’s approach has continually restricted the early retirement options explored in the ARPs, such that the Company has failed to test the going-forward value of many of its coal units. For instance, 43 of the 44 modeled ARPs assume that Iatan Unit 1 retires in 2039 and all 44 ARPs assume that Iatan Unit 2 retires in 2070—the latter 49 years from now.¹⁶

Of the Company’s ten coal units, all but three of the units operated with less than 50 percent capacity factor in 2020, continuing a trend of declining operations, as depicted below in Table 1. This is in an indication of the struggling economics of the Evergy coal fleet as it

¹⁶ Evergy Metro IRP, Vol 6, p.21-27; Appendix 8c evergy metro and evergy mo west irp stakeholder presentation 12-16-2020_public.pdf, slide 14.

confirms that most of these units are uneconomic to operate for a majority of the time—even apart from their fixed costs. In particular, Evergy largely ignored the possibility of early retirement of Hawthorn Unit 5, Iatan Unit 1, Iatan Unit 2 and La Cygne Unit 1. The economic prospect of these units is unclear because Evergy has neglected to scrutinize their going forward value. Absent a unit disposition study, there is no valid means of justifying the ongoing costs of these units.

Table 1: Evergy Coal Unit Capacity Factors (%)¹⁷

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

As mentioned previously, earlier retirement of coal units also reduces the risk of environmental compliance costs, which the Company has not adequately studied. First, the Company apparently failed to consider, document, or describe the effect of the United States Supreme Court’s 2020 *County of Maui v. Hawaii Wildlife Fund* decision on its generating fleet.¹⁸

** [REDACTED]

[REDACTED]

¹⁷ Energy Information Administration, Form 923, available at <https://www.eia.gov/electricity/data/eia923/>.

¹⁸ There is no discussion of the case in Evergy Metro IRP Volumes 4 or 6.

[REDACTED]

In combination with the other deficiencies discussed throughout, the failure of Evergy to robustly study the retirement of its existing coal units is a deficiency under the Missouri IRP rules. As noted in Section IV, 20 CSR 4240-22.010(C) requires that Evergy consider the “[r]isks associated with new or more stringent legal mandates that may be imposed at some point within the planning horizon.” Additionally, 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.” Most importantly, the failure of Evergy to test the going-forward value of all of its existing units fails to meet the IRP’s fundamental policy goal of minimization of long run utility costs as Evergy’s approach has shielded possible lower cost paths from study.²¹ To remedy this deficiency, the Company should update its IRP to include ARPs that study the going forward value of all of its existing coal units.

[REDACTED]

¹⁹ SC-1.6_CONF_Evergy_ERVFL.

²⁰ *Id.*

²¹ 20 CSR 4240-22.010(2)(B).

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

*22

[REDACTED]

** [REDACTED]

[REDACTED]

[REDACTED]**

VII. Deficiency 7: Evergy’s most-recent RFP brought a competitive pool of resources,
** [REDACTED] **.

Evergy should be commended for its most recent RFP and resulting competitive pool of bids. We remain concerned, though, that the Company is not taking full advantage of this competitive pool of bids. Evergy should have also modeled power purchase agreements (PPAs)

²² QSierra Club-1.5_Evergy MO Metro_GADS_Coal_2015-2020; QSierra Club-1.5_Evergy MO West_GADS_Coal_2015-2020; and SC-1.6_CONF_Evergy_ERVFL.

in its IRP, rather than assume that all new resources are self-build.²³ Unfortunately, by failing to model power purchase agreements ** [REDACTED]

[REDACTED],** 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 future conditions.”²⁴ This approach also harms the Company’s ability to minimize costs for utility customers.

** [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]**

²³ Sierra_Club_20210517-f.3-Answer-Sierra_Club_1_17.

²⁴ 20 CSR 4240-22.060(3).

²⁵ QSierra Club-1.2_CONF Evergy 2021 RFP Bid Analyses.

²⁶ ** [REDACTED]
[REDACTED]**

Figure 6: Evergy’s RFP Bid Responses for 2023 (\$/MWH) **CONFIDENTIAL**



We understand that these results would inform the IRP, ** [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

** Also note that renewables and storage should be pursued on an accelerated time scale in order to take advantage of the potentially sunseting federal tax credits—such as the investment tax credit (ITC), which applies to solar and solar/battery hybrids, and the production tax credit (PTC), which applies to on-shore wind. The ITC is currently slated to substantially decrease for projects that enter

²⁷ Sierra_Club_20210517-f.3-Answer-Sierra_Club_1_17.

operation after 2025, and the PTC is scheduled to disappear for onshore wind projects that start operation after that date. Indeed, it may be advantageous to retire more fossil units than currently planned to take full advantage of these resources before tax benefits expire.

Further, Evergy's assumption that new renewable and storage was all self-build resources could be disadvantageous to these resources 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. If Evergy modeled all new renewable and storage resources in the latter fashion, the costs of portfolios would be inflated given the 20-year analysis period. ** [REDACTED]

[REDACTED]

[REDACTED] **

The failure to adequately assess ** [REDACTED] ** and, generally, alternatives to owning new resources resulted in an IRP that fails to adhere to the goal of minimization of long run utility costs²⁹ and that does not adequately address a diverse range of supply side resources.³⁰ To remedy this deficiency, ** [REDACTED] [REDACTED] ** include PPAs as a resource option.

²⁸ QSierra Club-1.2_CONF Evergy 2021 RFP Bid Analyses.

²⁹ 20 CSR 4240-22.010(2)(B).

³⁰ 20 CSR 4240-22.040(4).

VIII. Deficiency 8: Evergy did not seriously consider battery and solar-battery hybrids in its preselected portfolios.

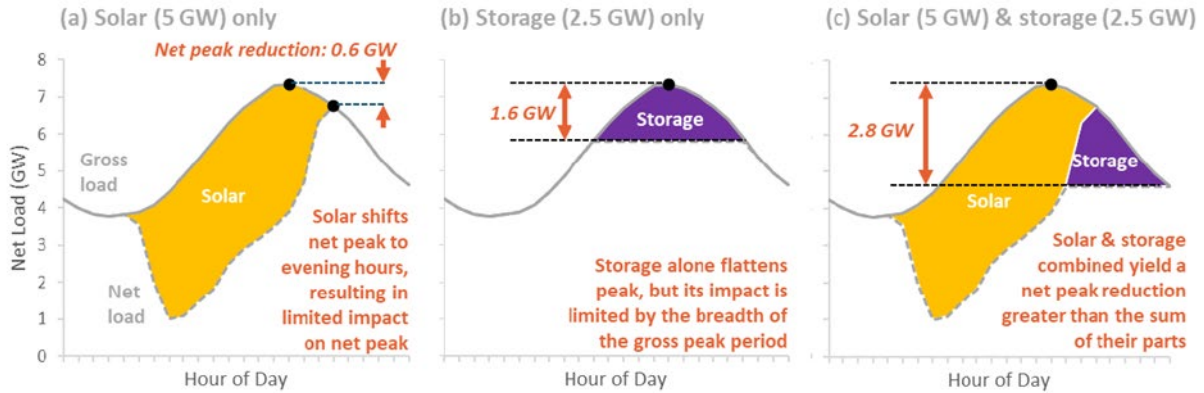
Evergy has not given enough consideration to battery storage, either as a standalone or hybrid resource. Evergy's treatment of storage resources is both limited and confusing. Storage only appears in three of the 44 ARPs as a replacement resource.³¹ This is concerning because, like solar PV, battery storage costs have plummeted and are expected to continue to decrease markedly in the future.³² For hybrid projects, battery storage can also take advantage of the ITC, to the extent that it is charged with the paired solar resource.

While both solar and battery resources are becoming more attractive on a cost-basis, when paired together, they are also mutually beneficial as a capacity resource. More utilities are adopting these hybrids as replacement resources. For instance, Public Service Company of New Mexico (PNM) is replacing its 497 MW share of the San Juan coal plant with solar and battery hybrids, and is currently asking for approval to do the same for its share of the Palo Verde nuclear plant. PNM illustrated the value and complementarity of solar and battery storage hybrids in providing capacity in Figure 7 below.

³¹ Evergy Metro IRP, Vol 6, pp. 21-27.

³² See NREL 2021 ATB, *available at* https://atb.nrel.gov/electricity/2021/financial_cases_&_methods.

Figure 7: Value of Solar-Battery Hybrids



Source: Copy of Figure NS-3 from Direct Testimony of Nicolai Schlag, Before the New Mexico Regulation Commission, Case No. 21-04-02-UT, p.11.

The goal of Evergy’s IRP process should be to achieve the lowest-cost preferred portfolio, while achieving other valid policy goals, such as reducing pollution and supporting economic growth. Evergy has mostly ignored battery storage as a replacement resource. In the Company’s evaluation of battery resources in response to its RFP, **

[REDACTED]

** Solar-battery hybrid resources should also further be considered in Evergy’s planning. 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 failure to adequately assess battery storage, either as a standalone or hybrid resource, resulted in an IRP that fails to adequately address the minimization of long run utility costs³⁴ and that does not adequately address a

³³ QSierra Club-1.2_CONF Evergy 2021 RFP Bid Analyses.

³⁴ 20 CSR 4240-22.010(2)(B).

diverse range of supply side resources.³⁵ To remedy this deficiency, Evergy should revise its ARPs to include a robust set of plans with stand-alone storage resources and solar-battery hybrid resources, while valuing the latter resources primarily for their capacity.

IX. Deficiency 9: Evergy should consider securitization for undepreciated rate base of retiring coal units.

As Evergy prepares for coal unit retirements, it should consider securitization—a financial tool recently passed in Missouri and in Kansas—as a means of decreasing the impact of stranded costs of these retiring units on customers. In its Order Establishing Special Contemporary Resource Planning Issues dated November 4, 2020, the Commission ordered the Company to “[a]nalyze and document the prospects for using securitization to support cost-effective accelerated retirement of coal generation assets and to channel the savings into cost-effective investments such as demand-side management, wind and solar generation, and storage.”³⁶ Yet, while Evergy’s IRP contains a few passing references to securitization,³⁷ it includes no analysis at all, despite the Commission’s order. Given the passage of House Bill 734, it is imperative that the Company analyze and quantify how securitization can be used to support cost-effective accelerated retirement of coal generation assets while also channeling the savings into cost-effective investments such as demand-side management, wind and solar generation, and storage. To remedy this deficiency, Evergy should provide an actual quantified analysis that

³⁵ 20 CSR 4240-22.040(4).

³⁶ File Nos. EO-2021-0067 and EO-2021-0068.

³⁷ *See, e.g.*, Evergy IRP Overview.

shows how earlier retirement of coal units, combined with securitization, could be used to benefit customers.

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

Evergy failed to evaluate public health impacts of resource plans.³⁸ As discussed throughout the stakeholder engagement process and in Sierra Club’s initial stakeholder comments, electricity generation through the burning of fossil fuels, especially coal, has undeniable negative impacts on public health. Compliance with Missouri IRP Rules requires consideration of pollutants, including air emissions,³⁹ and the “fundamental objective” of the IRP process is “to provide the public with energy services that are safe . . . and in a manner that serves the public interest,”⁴⁰ thus Evergy should document the quantified health impacts of each portfolio in its IRP despite the Company’s insistence that “no additional public health assessment is needed”⁴¹ in their evaluation of ARPs. Evergy should document the public health cost 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.⁴² Air pollution contributes significantly to increased morbidity and mortality,

³⁸ See Evergy Response to Sierra Club Request 2.6; *see also* Evergy Response to Sierra Club Request 2.7.

³⁹ 20 CSR 4240-22.060(4)(B)(7).

⁴⁰ 20 CSR 4240-22.010(2).

⁴¹ Evergy Response to Sierra Club Request 2.6; Evergy Response to Sierra Club Request 2.7.

⁴² *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

and existing modeling tools can be used to translate air pollution into social cost estimates. Moreover, Missourians continue to face an unprecedented time during the COVID-19 pandemic. As the pandemic persists, data reveal that COVID-19 is impacting people of color most.⁴³ It is well known that these are the very same communities that also disproportionately bear the brunt of air pollution,⁴⁴ and the Center for Disease Control and Prevention warns that people with asthma, respiratory diseases, and various other health problems, many of which are exacerbated by air pollution and coal combustion, might be at an increased risk for severe illness from COVID-19.

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 does not evaluate how resource plans directly impact them. The current IRP 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

Basics, *available at:* <https://www.epa.gov/ground-level-ozone-pollution/ground-level-ozone-basics#effects> (summarizing public health harms from ozone).

⁴³ The COVID Tracking Project, The COVID Racial Data Tracker, *available at:* <https://covidtracking.com/race>.

⁴⁴ Holden, Emily, *Air pollution remains worst in US communities of color despite progress*, The Guardian (July 30, 2020), *available at:* <https://www.theguardian.com/environment/2020/jul/30/air-pollution-worst-us-communities-of-color-study>; Colmer, J., et. al., *Disparities in PM2.5 air pollution in the United States*, Science Vol 369, Issue 6503 (July 31, 2020), *available at:* <https://science.sciencemag.org/content/369/6503/575>.

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 a determinative 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 triennial IRP filing that corrects the deficiencies identified herein.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that the above and foregoing document was filed in EFIS on this 27th day of September, 2021, with notice of the same being sent to all counsel of record.

/s/ Sarah Rubenstein
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