

**BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS**

In the Matter of the Triennial Compliance Docket)
for the Integrated Resource Plan of Evergy Central)
Inc. & Evergy Kansas Metro, Inc. Pursuant to the)
Commission's Order in Docket No. 19-KCPE-)
096-CPL.)

Docket No. 24-EKCE-387-CPL

**COMMENTS OF THE CITIZENS' UTILITY RATEPAYER BOARD REGARDING
THE 2024 TRIENNIAL UPDATE TO EVERGY'S INTEGRATED RESOURCE PLAN**

COMES NOW, the Citizens' Utility Ratepayer Board ("CURB") and submits its comments pursuant to the schedule set forth in the State Corporation Commission of the State of Kansas ("Commission") *Order Opening Docket* issued in this docket on December 14, 2023, and the *Order Opening Docket Order Adopting Integrated Resource Plan and Capital Plan Framework* issued in Docket No. 19-KCPE-096-CPL on February 6, 2020,¹ which requires the filing of triennial reports on Evergy's Integrated Resource Plan ("IRP"); the present triennial report was filed on May 17, 2024, as *Evergy Integrated Resource Plan Filing*.

Background

1. On May 24, 2018, the Commission issued an Order Approving Merger Application ("Merger Order") of Westar Energy, Inc. and Kansas Gas and Electric Company ("Westar"), Great Plains Energy Incorporated and Kansas City Power & Light Company ("KCPL") to form what is now known as Evergy Kansas Central, Inc., Evergy Kansas South, Inc. (together "Evergy Kansas Central"), and Evergy Kansas Metro, Inc. ("Evergy Kansas Metro," collectively "Evergy" or "Company") in Docket No. 18-KCPE-095-MER ("18-095 Docket"). In paragraph 94 of its Merger

¹ Order Adopting Integrated Resource Plan and Capital Plan Framework, February 6, 2020.

Order, the Commission required Westar and KCPL to work with the parties to develop and submit to the Commission a reporting format for an IRP process.²

2. On September 4, 2018, Docket No. 19-KCPE-096-CPL (“19-096 Docket”) was opened for intervenors to work with the Company to develop a procedural framework for the IRP to comply with the Merger Order.³ This docket would serve as the repository for reports and filings from Evergy regarding plans for capital investment and resource acquisition, pursuant to a detailed framework on reporting requirements and content.⁴ The Commission required Evergy to submit triennial filings in tandem with the IRP filings made in Missouri, beginning in 2021. In between the triennial filings, Evergy must also submit annual updates to the IRP and document changes to inputs and forecasts. Intervenors, such as CURB, as well as Commission Staff (“Staff”) may file responsive comments regarding the contents of the reports and compliance with the terms of the established framework. Deficiencies identified by intervenors can be formally resolved by agreement or Commission order.

3. On June 26, 2020, Evergy filed its initial IRP update, based on the most recent Missouri IRP update filing at the time.⁵ On May 28, 2021, Evergy filed its initial triennial report for its Kansas jurisdictions, also based on Missouri IRP findings.⁶ Since then, Evergy continued to file annual updates to the IRP and intervenors continued providing substantive comments. The Commission has reviewed each update and responsive comments to determine whether Evergy’s reports comply with the established IRP framework. To date, the Commission has reviewed all

² Order Approving Merger Application, Docket No. 18-KCPE-095-MER, May 24, 2018.

³ Joint Filing Regarding Capital Plan and Integrated Resource Plan Reporting Format Compliance 19-KCPE-095-MER, Docket No. 19-KCPE-096-CPL, Sept. 4, 2018.

⁴ Order Adopting Integrated Resource Plan and Capital Plan Framework, Attachment A, Docket No 19-KCPE-096-CPL, Feb. 6, 2020. (“IRP Framework”)

⁵ Evergy Notice of Compliance, Docket No. 19-KCPE-096-CPL, June 26, 2020.

⁶ Evergy Kansas Central and Evergy Metro 2021 Integrated Resource Plan May 2021, Docket No. 19-KCPE-096-CPL, May 28, 2021.

prior IRP filings and intervenor comments and has found that Evergy has complied with the IRP framework since the initial filings, while also ordering additional analyses from the Company as deemed appropriate.

4. The 19-096 Docket received its last IRP update filing from Evergy on June 15, 2023.⁷ On August 31, 2023, intervenors, including CURB, filed comments to that update.⁸ CURB stated that Evergy's filing complied with the Commission's IRP framework, but expressed substantive concerns regarding certain modeling decisions and external risk factors.

5. On October 3, 2023, Evergy filed its response to intervenor comments.⁹ In regard to CURB's concerns with the reliance upon owned resources versus power purchase agreements ("PPAs"), Evergy stated that the IRP is used to evaluate generic resource options rather than financial structure of those resources. In practice, the Company would select the best type of resource among available options.¹⁰

6. On November 9, 2023, Evergy filed an application to request the opening of a new docket to receive the 2024 Triennial IRP filing and the two annual updates in 2025 and 2026.¹¹

7. On November 21, 2023, the Commission found that the 2023 IRP Update filing met the requirements of the IRP framework and that no further action was necessary.¹²

8. On December 14, 2023, the Commission gave approval to open the present docket to receive the 2024 IRP filings and granted intervention to all parties from the 19-096 Docket.¹³

⁷ 2023 KS Central-Metro Annual Update 6-15-2023, Docket No. 19-KCPE-096-CPL, June 15, 2023.

⁸ Comments of The Citizens' Utility Ratepayer Board Related to the 2023 Annual Update to Evergy's Integrated Resource Plan, Docket No. 19-KCPE-096-CPL, August 31, 2023.

⁹ Evergy Response to IRP Comments, Docket No. 19-KCPE-096-CPL, Oct. 2, 2023.

¹⁰ Id. at pg. 3.

¹¹ Evergy Application, Nov. 9, 2023.

¹² Order Finding Evergy Complied with Requirements of Capital Plan and IRP Framework, Docket. No. 19-KCPE-096-CPL, Nov. 21, 2023.

¹³ Order Opening Docket, Dec. 14, 2023.

9. On May 17, 2024, Evergy filed its triennial update to the IRP and accompanying reports (“2024 IRP Filing”).¹⁴

CURB’s Comments

10. CURB engaged Synapse Energy Economics to review the 2024 IRP Filing and to consult with CURB on preparation of these comments. Accordingly, CURB offers these observations and recommendations for the Company’s consideration as it refines this dynamic planning process. In light of an uncertain future and the importance of a flexible and robust portfolio, CURB reserves the right to amend its stance on topics when presented with new information and changed conditions in other dockets.

11. CURB concludes that the 2024 IRP Filing complies with the reporting requirements under the IRP framework. The IRP framework states that the purpose of the IRP process is to present the utility’s preferred portfolio of resources.¹⁵ This presentation includes a discussion of how the portfolio “meets customer requirements at the lowest reasonable cost given an uncertain future.” Evergy’s IRP structure follows the one used in prior filings from the 19-096 Docket. Evergy provides an executive summary of the IRP updates, supplemented by detailed reports on the methods used to develop the list of resource portfolios from which Evergy selected its preferred plan.

12. Evergy organizes its planning process by topic based on the IRP framework requirements. Evergy provides load analysis and forecasting (Volume 2), supply-side and demand-side resource outlooks (Volumes 3 and 4), external risk factors and uncertainty review (Volume 5), and selection of the preferred portfolio and acquisition strategy (Volume 6). The reports

¹⁴ Evergy Integrated Resource Plan Filing, May 17, 2024.

¹⁵ IRP Framework, pg. 1.

document Evergy's analyses from its modeling inputs and methodologies to address required topics such as plant retirements and regulatory changes.

13. The framework provides expectations regarding the IRP content, including contingency plans related to changed conditions and the considerations used by Evergy to implement such plans. However, there is no particular threshold for the performance of the plan or accuracy of forecasts. As a result, intervenors submit substantive comments to provide Evergy additional information and ideas to improve the planning process. The remainder of these comments will focus on identifying CURB's specific areas of concern and potential ideas to address them.

A. Evergy 2024 IRP Overview

14. In the Evergy Kansas Central and Evergy Metro 2024 IRP filing, the Company develops preferred portfolios separately for each jurisdiction. The preferred portfolios include combustion turbines (CT), combined-cycle (CC) turbines, coal-to-gas conversion, wind, solar, and battery storage. The IRP assumes thermal generators (CT and CC) installed after 2024 and before 2035 are "hydrogen enabled," while thermal generators selected after 2035 are modeled as natural gas plants that can be cost-effectively replaced with "non-emitting dispatchable technologies."¹⁶ The new resource decisions by year are as follows for Kansas Central and Metro.

¹⁶ Evergy IRP Executive Summary – Volume 1, pg. 14, May 17, 2024.

Figure 1. Kansas Central Preferred Portfolio AAAB

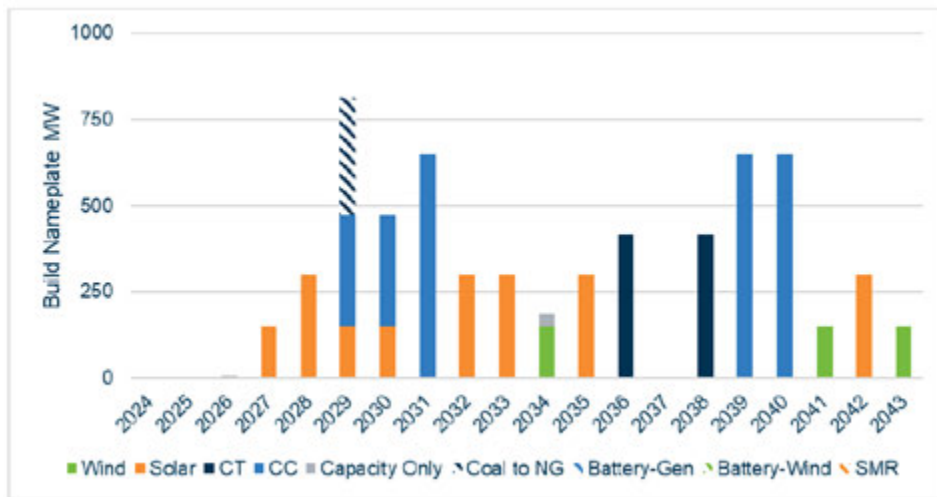
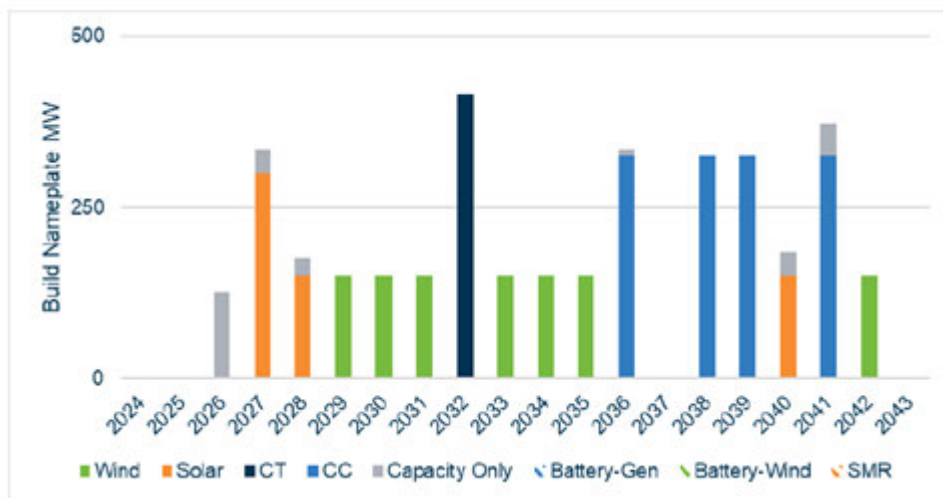


Figure 2. Evergy Metro Preferred Portfolio 2024 CAAB



Source: Derived from Evergy 2024 IRP, Volume 5, Page 54, 58.

15. Load growth expectations are moderate, with an average annual peak load growth rate of 0.2 percent over the planning timeframe for Evergy Kansas Central and 0.4 percent for Evergy Metro¹⁷. For Kansas Central, new resource acquisition is driven by near-term coal retirements. The largest driver of near-term resource acquisition for Evergy Metro is new load

¹⁷ Evergy IRP Load Analysis and Load Forecasting - Volume 2, pgs. 13-14, May 17, 2024.

growth from economic development.¹⁸ Other drivers of new resource selection for both portfolios are the winter capacity requirements of Southwest Power Pool (SPP) that are scheduled to begin in winter of 2026/2027 and Evergy's expectation that the SPP's reserve margin requirement will increase in the future.^{19,20}

16. Evergy uses the PLEXOS capacity expansion optimization modeling software to select new resources in the 2024 IRP Filing. PLEXOS assesses a very large number of possible portfolios to find the lowest-cost resource plan. The preferred portfolios for Evergy Kansas Central and Metro include new gas generators as well as zero-emission thermal generators with an unidentified fuel type. The model also selects cost-effective solar and wind generators.

17. Evergy's use of a capacity expansion model to select new resources is a resource planning best practice. However, capacity expansion modeling accepts its inputs as given, and inaccurate or out-of-date inputs result in poorly optimized and unnecessarily expensive portfolios. For this reason, utility planners must use the best assumptions and inputs available on resource costs, resource parameters, and policy requirements.

18. This document covers several concerns regarding the Evergy 2024 IRP modeling assumptions, including:

- Evergy treating new resources differently depending on fuel type, creating bias in the model's resource selection;
- Evergy including a significant deployment of non-emitting fuel as a baseload generation strategy;
- Evergy locking in coal unit retirement dates, not allowing the model to economically select coal unit retirement dates; and

¹⁸ Id. at pg. 58.

¹⁹ Evergy Integrated Resource Plan and Risk Analysis - Volume 5, pg. 62, May 17, 2024.

²⁰ Id. at pg. 130.

- The IRP does not include all relevant aspects of the U.S. Environmental Protection Agency’s (“EPA”) new greenhouse gas (“GHG”) rule.

19. These comments recommend additional actions that Evergy can take to make sure it is planning prudently for customers:

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- Evergy should run its IRP model using resource costs that allow for apples-to-apples comparison between technologies, including the same level of inflation and return on investment for each resource. Evergy should provide the results of this model run to participants in the IRP process.
- Evergy should investigate whether it could procure larger amounts of wind, solar, and storage each year, given the Company’s ability to acquire PPAs instead of making capital investments, and the high economic value of these resource types.
- Evergy’s assumption that it will have access to non-emitting baseload generation at a similar cost to a natural gas plant is extremely optimistic. The Company should develop alternative approaches to long-term regulatory risk around GHG emissions before the next IRP update.
- Evergy should fully consider the EPA’s final GHG rule in the next IRP update, including evaluating the potential costs and risks to customers from the Company’s limited ability to utilize its planned new CC generators above a 40 percent capacity factor.
- The next IRP update should thoroughly model the EPA’s GHG rule, including optimized coal retirement/retrofit decisions and limits on natural gas generation.
- Evergy should not procure new CC capacity in the early 2030s unless it is needed to replace a retiring coal unit or support new load.
- Evergy should continue to consider the risks of additional industrial load growth to all its customers and reasonable ways to mitigate that risk.
- Moving forward, Evergy should use a Kansas Demand-Side Management (“DSM”) potential study, instead of a Missouri study adjusted to approximate DSM potential in Kansas.

- Evergy should provide an explanation of its near-term contingency plan if it does not attain the expected levels of DSM.
- In the next IRP update, Evergy should report how much efficiency has been achieved, compared to the amount forecasted in the 2024 IRP Filing. Evergy should adjust its next IRP forecast to consider the actual results of the Kansas Energy Efficiency Investment Act (“KEEIA”) program.

B. New Resource Modeling Parameters and Assumptions

i. New Wind, Solar, and Battery Capital Costs

20. In the 2024 IRP capacity expansion modeling, Evergy uses capital cost assumptions for new resources that are based on “offers in Evergy’s 2023 [request for proposal (“RFP”)], research into self-build options, SPP’s interconnection queue timelines and publicly available information.”²¹

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Figure 3. [REDACTED]

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²¹ Evergy 2024 IRP. Volume 5, pg. 34.

Source: [REDACTED]

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ii. [REDACTED]

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Figure 4. [REDACTED]

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²² Every response to CURB DR 7.

26. [REDACTED]

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Figure 5. [REDACTED]

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27. [REDACTED]

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28. For comparison, recent cost estimates from Indiana Michigan Power show cost estimates for CC turbines starting at about \$1,700 per kW, and CTs starting at \$1,400 per kW in 2028 dollars.^{23,24}

29. If Evergy does not account for these factors in its cost estimates for gas resources, it will base its resource plans on inaccurate costs that unfairly favor one technology type and systematically disadvantage renewables and battery storage. This will result in resource selections that are more expensive than necessary.

²³ Indiana Michigan Power Company. Indiana IRP Stakeholder Meeting #2. Sept. 24, 2024.

https://www.indianamichiganpower.com/lib/docs/community/projects/IM-irp/IN_Stakeholder_Meeting_2.pdf.

²⁴ Values from the Stakeholder Meeting presentation were converted to 2028 dollars for comparison to Evergy's costs.

iii. New Resource Quantity

30. Evergy has placed limits on the quantity of each resource type that may be selected each year in the planning timeframe.²⁵ New solar is limited to a 300 MW cap each year while wind is limited to 150 MW per year. CCs are limited to 325 MW per year (Metro) and 650 MW per year (Kansas Central). CTs are limited to 415 MW per year.²⁶ Evergy states that these limits reflect the “capital budget spending considerations” at Evergy Metro and Kansas Central.²⁷ However, given that Evergy can sign PPAs for resources owned by other parties to reduce capital spending, limiting new resource acquisition based on capital budget considerations is not necessary.

31. The capacity limits on solar and wind are lower than the limit on gas resources and are likely reducing the IRP model’s economic renewable energy selections. Evergy Metro’s preferred portfolio, CAAB, for example, selects the maximum amount (150 MW) of wind in seven years within the planning timeframe. The selection of the maximum amount of available wind indicates the model likely could have chosen more wind to reduce portfolio costs but was not allowed to do so because of Evergy’s modeling constraints.

32. Similarly, Kansas Central’s preferred portfolio, AAAB, selects the maximum amount (300 MW) of solar in six years of the planning timeframe, and selects the maximum amount (150 MW) of wind in three years. This indicates that more solar and wind energy would reduce the cost of Kansas Central’s preferred portfolio.

33. As seen in Figure 1 and Figure 2 above, the IRP model tends to select renewable resources earlier than CC or CT generators, even when it has the option to choose either renewables

²⁵ Evergy response to CURB DR 6.

²⁶ Evergy response to NEE DR 3-8.

²⁷ Evergy response to NEE DR 3-8.

or thermal generators in a given year, indicating that renewables are an economic near-term resource.

34. Evergy should run its IRP model using resource costs that allow for apples-to-apples comparison between technologies, including the same level of inflation and return on investment for each resource. The results could be shared with participants in the IRP process. Further, Evergy should investigate whether it could procure larger amounts of wind, solar, and storage each year, given the Company's ability to acquire PPAs instead of making capital investments, and the high economic value of these resource types.

C. Zero-Emission Dispatchable Baseload Energy in 2035

35. Flexible, dispatchable, non-emitting resources are essential to reduce GHG emissions while reliably serving load. Evergy's IRP assumes that non-emitting, dispatchable generators with operational parameters similar to natural gas CC turbines will be available to cost-effectively replace all of the natural gas selected in its preferred portfolio after 2035.²⁸

36. This assumption is problematic. The Evergy Metro and Kansas Central preferred portfolios collectively select 2,600 MW of CC gas generators after 2035 that provide on average ***BEGIN CONFIDENTIAL*** [REDACTED] ***END CONFIDENTIAL*** of energy each year.^{29,30} There is no clear path to such an abundant quantity of non-emitting, low-cost dispatchable energy to power baseload generators by 2035. Evergy does not provide support or justification for this assumption, and in discovery acknowledged that it did not consult any studies when developing this assumption. The resource types that Evergy suggested could provide this type of energy are "hydrogen-fired resources, carbon-capture enhancements, long-duration energy storage, and

²⁸ Evergy 2024 IRP. Volume 1, pg. 14.

²⁹ Evergy response to CURB DR 13.

³⁰ Evergy 2024 IRP. Volume 5, pg. 66.

nuclear small modular reactors.”³¹ These resource types all have cost or technical feasibility issues that make their wide availability as baseload generation resources at costs similar to natural gas by 2035 unlikely.

37. In fact, Evergy does not need to rely on an unidentified future baseload generation technology to supply non-emitting energy because non-emitting resources including solar and wind are already among the lowest cost sources of energy. By relying so heavily on speculative technology, the 2024 IRP misses an opportunity to manage regulatory risk around GHGs and identify options it can pursue in the near term that reduce carbon dioxide emissions at a reasonable cost.

38. One of the technologies most likely to provide non-emitting dispatchable generation with similar operational parameters to a gas turbine is green hydrogen produced using renewable electricity. According to industry sources, green hydrogen is expected to decrease in cost in the near future; however, this cost decrease would generally not be to levels competitive with natural gas by 2035 without policy intervention.³² In addition, green hydrogen production requires constructing renewable energy projects, which are subject to challenges including financing, transmission construction timelines (either electric transmission or hydrogen transportation), and construction delays.³³

39. In the years from 2036 through 2043, the 2,600 MW of CC generators in the Evergy Metro and Kansas Central preferred portfolios provide on average ***BEGIN CONFIDENTIAL***
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³¹ Evergy response to CURB DR 27.

³² “Emerging Economics of Hydrogen Production and Delivery,” Graves, et. al. Brattle Group, pg. 2, Feb. 2024. Accessed at <https://www.brattle.com/wp-content/uploads/2024/02/Emerging-Economics-of-Hydrogen-Production-and-Delivery-2-2024.pdf>.

³³ Id.

³⁴ Evergy response to CURB DR 13.

green hydrogen, *BEGIN CONFIDENTIAL* [REDACTED] *END CONFIDENTIAL* of green hydrogen would be needed each year, requiring approximately *BEGIN CONFIDENTIAL* [REDACTED] *END CONFIDENTIAL* of solar energy.³⁵ Using Evergy's estimated solar capacity factor of *BEGIN CONFIDENTIAL* [REDACTED] *END CONFIDENTIAL*³⁶ this equates to about *BEGIN CONFIDENTIAL* [REDACTED] *END CONFIDENTIAL* of solar panels. For comparison, Evergy's total company preferred portfolio for Kansas and Missouri includes 2,850 MW of solar through 2042.³⁷ The challenge of building enough renewable resources to generate large amounts of green hydrogen may be the reason that other utilities typically model green hydrogen peakers, but do not contemplate burning green hydrogen as a fuel in baseload CC generators.

40. If the Company continues to plan to rely on new baseload gas generators while assuming those generators can utilize a non-emitting technology without additional cost, it increases cost and risk for ratepayers. Such unrealistic planning assumptions are likely to cause the IRP model to make incorrect near-term resource decisions that turn out to be unnecessarily expensive. Evergy should develop a more reasonable way to manage regulatory risk and reduce GHG emissions.

41. Evergy's assumption that it will have access to non-emitting baseload generation at a similar cost to a natural gas plant is extremely optimistic. The Company should review alternative approaches to long-term regulatory risk around GHG emissions in the next IRP update.

D. IRP Modeling of Coal and Gas

i. New Gas Generators' Compliance with EPA Rule

³⁵ Synapse workpaper "CONF_generation_cc_conversion_to_green_hydrogen".

³⁶ Evergy 2024 IRP. Volume 5, pg. 4.

³⁷ Evergy 2024 IRP. Volume 1, pg. 13.

42. For the IRP model to provide a least-cost resource plan, Evergy needs to model existing resources, including coal and gas, appropriately with accurate cost and operational assumptions. One cost assumption not included in the IRP modeling comes from the recently finalized EPA GHG rule, which has requirements for existing and new generators. As a result, Evergy’s IRP modeling does not include the full cost of continuing to rely on coal and gas resources.

43. The EPA GHG rule was finalized in May 2024, the same month that Evergy filed its 2024 IRP reports.³⁸ While the final rule is not included in most IRP scenarios, Evergy provides analysis in the IRP that it states is based upon an earlier, proposed version of the GHG rule. However, this analysis does not model any of the GHG rule’s restrictions on new natural gas resources. Under the EPA rule, newly built gas generators must either maintain below a 40 percent capacity factor or meet emissions standards consistent with 90 percent carbon capture and storage (“CCS”) by January 1, 2032.³⁹ Evergy should incorporate current regulation, including for coal and gas, in future IRP updates.

44. In Evergy Metro and Kansas Central’s preferred portfolios, 3,900 MW of new CC gas generators are selected through 2039.⁴⁰ CC generators are designed to operate efficiently and at higher capacity factors than simple-cycle turbines. To meet the EPA’s new rule, Evergy will be required to install CCS or burn mostly non-emitting fuel at these units in order to maintain capacity factors above 40 percent. Alternatively, Evergy could keep the capacity factor below 40 percent and find replacement energy for each year that the plants are expected to run above a 40 percent

³⁸ “Final Carbon Pollution Standards to Reduce Greenhouse Gas Emissions from Power Plants.” U.S. Environmental Protection Agency. April 25, 2024. <https://www.epa.gov/system/files/documents/2024-04/cps-presentation-final-rule-4-24-2024.pdf>.

³⁹ “BSER At-A-Glance.” U.S. Environmental Protection Agency. <https://www.epa.gov/system/files/documents/2024-04/cps-table-of-all-bser-final-rule-4-24-2024.pdf>

⁴⁰ Evergy 2024 IRP. Volume 5, pgs. 66, 99.

capacity factor. In either case, the IRP modeling may overestimate the value of these generators because it does not consider the impacts of the EPA’s new GHG rule. Evergy should fully consider the EPA’s final GHG rule in the next IRP update, including evaluating the costs and risks to customers from the potential loss in ability to utilize the Company’s planned new CC generators above a 40 percent capacity factor.

ii. Existing Coal Generators’ Compliance with EPA Rule

45. Existing coal resources retiring before 2032 have no requirements under the new GHG rule. Coal units retiring after 2032 and before 2039 must meet an emissions standard consistent with co-firing with 40 percent natural gas by 2030. Coal units retiring after 2039 must meet an emissions standard consistent with 90 percent capture of carbon dioxide by 2032. Evergy expects that eight of its thermal units will be affected by the new policy, as shown below. These units will incur substantial costs to comply, including conversion costs to co-fire with natural gas. The IRP includes one scenario where Evergy’s coal and gas units comply with the draft EPA rule based on currently planned retirement dates, and seven early coal retirement scenarios that study different combinations of earlier coal retirement dates.

Table 1. EPA rule compliance through BSER at currently planned retirement dates

Unit	Retirement Date	GHG BSER	BSER Compliance Period
Hawthorn 5	2039	Co-Firing with 40% Natural Gas	Jan 1, 2030 through Dec 31, 2039
Iatan 1	2039	Co-Firing with 40% Natural Gas	Jan 1, 2030 through Dec 31, 2039
Iatan 2	2039	Co-Firing with 40% Natural Gas	Jan 1, 2030 through Dec 31, 2039
Jeffrey 1	2039	Co-Firing with 40% Natural Gas	Jan 1, 2030 through Dec 31, 2039
Jeffrey 2	2030	Routine Operations	Not Applicable
Jeffrey 3	2030	Routine Operations	Not Applicable
La Cygne 1	2032	20% Capacity Factor Restriction	Jan 1, 2030 through Dec 31, 2032

La Cygne 2	2039	Co-Firing with 40% Natural Gas	Jan 1, 2030 through Dec 31, 2039
Lawrence 4	2028	Routine Operations	Not Applicable
Lawrence 5	2028	Conversion to Natural Gas in 2029	Jan 1, 2030 through Dec 31, 2039

Source: Evergy 2024 IRP. Volume,, pg. 124

Table 2. Early retirement scenarios

Plan	Early Retirements
BAAB	Preferred Portfolio 2023
BBAB	Iatan 1 2030
BCAB	Iatan 1 2030, Jeffrey 1 2030
BDAB	Iatan 1 2030, Jeffrey 1 2030, La Cygne 2 2032
BEAB	Iatan 1 2030, Jeffrey 1 2030, La Cygne 2 2032, Hawthorn 5 2027
BFBB	Iatan 1 2030, Jeffrey 1 2030, La Cygne 2 2032, Hawthorn 5 2027, Iatan 2 2030
BGAB	Hawthorn 5 & Iatan 2 2039 (GHG BSER Scenario)

Source: Evergy 2024 IRP. Volume 5, pg. 125.

46. Evergy’s study of the new EPA rule and potential coal retirements provides an initial attempt to identify a least-cost plan for the Company’s coal fleet. However, in future IRPs, Evergy should include an optimized coal retirement portfolio that allows the planning model to select retirement dates and/or environmental upgrades to comply with the GHG policy. The PLEXOS model can select optimal retirement dates and environmental upgrade decisions that lead to a least-cost portfolio. Future IRPs should not miss the opportunity to identify optimal retirement dates using PLEXOS’ endogenous retirement selection capabilities. The next IRP update should thoroughly model the EPA’s GHG rule, including optimized coal retirement/retrofit decisions and limits on natural gas generation.

iii. Evergy Kansas Central Coal Retirement and Replacement Capacity

47. Evergy provides mixed messages on retiring Jeffrey 2. In most scenarios modeled for EKC, Jeffrey 2 is hard-coded as retiring in 2030 and 1,300 MW of new CC gas generation

selected in the early 2030s replaces its capacity.^{41,42} However, Evergy expresses uncertainty about whether the Company plans to actually retire Jeffrey 2 in 2030 as modeled in the IRP; Evergy states that its 2030 retirement is only “a placeholder for a potential additional coal retirement around 2030,”⁴³ and that “[u]ltimately, delaying the Jeffrey 2 retirement could be a lower-cost option in the future.”⁴⁴

48. In the IRP, Evergy presents its combined company preferred portfolio, which is a combination of all the resources selected in the Evergy Metro, Evergy Missouri West, and Evergy Kansas Central preferred portfolios. However, in the combined company portfolio, Evergy includes a delayed retirement of Jeffrey 2 in 2039 (rather than 2030) explaining, “[d]ue to the potential for this retirement to be delayed, the Jeffrey 2 retirement is reflected in 2039 in the Evergy-level view shown below.”⁴⁵

⁴¹ When Jeffrey 2 is retired in 2039 in scenario ABAA, there is no CC selected until 2037.

⁴² Evergy 2024 IRP. Volume 5, pg. 67.

⁴³ Evergy response to CURB DR 14.

⁴⁴ Evergy 2024 IRP. Volume 1, pg. 10.

⁴⁵ Id. at pg. 13.

Figure 6. Depiction of Evergy’s preferred portfolio combining Evergy Metro, Evergy Missouri West, and Evergy Kansas Central resources



*Lawrence Energy Center 4 (107MW) retires and Unit 5 (373MW) transitions to natural gas only (338MW).
 **Preferred Plan includes a placeholder for an additional coal retirement in 2030 assumed to be Jeffrey Unit 2 (733 MW).

Source: Evergy 2024 IRP. Volume 1, pg. 13.

49. If Jeffrey 2 retires in 2039 instead of 2030, procurement of new CC capacity for Kansas Central in the early 2030s is not a least-cost resource option, as shown in Scenario ABAA.⁴⁶ This Company-preferred portfolio would require customers to pay for unnecessary

⁴⁶ Evergy 2024 IRP. Volume 5, pg. 67.

resources and would not be in the interest of customers. Evergy should not procure new CC capacity in the early 2030s unless it is needed to replace a retiring coal unit or support new load.

E. Load Forecasting

50. The IRP assumes load growth mostly from large new industrial customer load and vehicle electrification.⁴⁷ Evergy bases its preferred portfolio on the expected case load forecast, which includes minimal load growth over the long term, with an average annual peak load growth rate of 0.2 percent over the planning timeframe for Kansas Central and 0.4 percent for Kansas Metro.⁴⁸ The IRP also studies a high electrification scenario that considers peak load growth of 0.8 percent and 2 percent for Kansas Central and Kansas Metro, respectively.

51. The electric vehicle forecast was informed by a study performed in partnership with the Electric Power Research Institute (“EPRI”) for the Evergy service territory.⁴⁹ The large industrial load forecast includes a Google data center and a Panasonic industrial facility.⁵⁰ Evergy reported in discovery that ***BEGIN CONFIDENTIAL*** [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED].⁵¹ [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED].^{52,53} [REDACTED]

⁴⁷ Evergy 2024 IRP. Volume 2, pg. 7.

⁴⁸ Evergy 2024 IRP. Volume 2, pg. 13-14.

⁴⁹ Evergy 2024 IRP. Volume 2, pg. 11.

⁵⁰ Evergy 2024 IRP. Volume 2, pg. 7.

⁵¹ Evergy response to CURB DR 24.

⁵² Evergy response to NEE DR 3-5.

⁵³ Evergy response to CURB DR 23.

██████████⁵⁴ ***END CONFIDENTIAL*** Evergy has included a high load forecast sensitivity that considers the possibility of additional industrial load growth and/or resource adequacy requirements.⁵⁵

52. With nationwide increases in industrial load growth, utilities and regulators are beginning to consider how to reduce risks to current electric customers associated with building the new resources to serve large industrial load growth. Some utilities are considering requiring signed contracts and financial assurances before they will build new infrastructure to support large new industrial customers. While Evergy has limited risks to existing customers by focusing only on known new load projects by industrial customers (the Panasonic and Google facilities) additional measures can potentially help protect customers moving forward.

53. Evergy states that the Company is interested in developing new agreements for large customers: “Evergy is currently reviewing our tariffs and agreements for large loads. We are currently looking at mechanisms from around the country as we seek the best way to move forward.”⁵⁶ CURB has previously voiced concerns about the use of special contracts to provide large industrial customers discounted rates because the lost revenue is recovered from residential and small commercial ratepayers. While CURB acknowledges the potential benefits associated with new and expanding industrial operations for the state of Kansas, Evergy should continue to consider the financial and operational risks of continued industrial load growth to its customers and reasonable ways to mitigate that risk.

⁵⁴ Evergy responses to NEE DR 3-5.

⁵⁵ Evergy Preferred Portfolio Selection and Resource Acquisition Strategy – Volume 6, Evergy 2024 IRP Filing, pg. 13, May 17, 2024.

⁵⁶ Evergy response to CURB DR 25.

F. Demand-Side Management

i. Effects of Efficiency Assumptions on the Preferred Portfolio

54. In 2024–2027, energy efficiency and demand response investment levels in the IRP are based on the levels forecast for Evergy’s KEEIA efficiency program. After 2027, demand response and energy efficiency levels are approximated based on a DSM potential study performed by Applied Energy Group (“AEG”) for Evergy’s Missouri service territory.⁵⁷ Although AEG conducted an “appliance saturation study” to collect data on residential customers in each of Evergy’s Missouri and Kansas service territories, it did not provide a DSM potential forecast for Kansas.⁵⁸

55. To forecast efficiency levels in Kansas after 2027, the IRP uses an approximation based on the ratio of KEEIA efficiency levels in 2027 to the Missouri potential study efficiency levels in the same year. Evergy developed the costs of efficiency after 2027 using the same approximation method. Evergy should replace this approach to approximating efficiency costs and amounts in Kansas with a more accurate methodology in future IRPs. The energy efficiency market in Kansas is less mature than the Missouri market, and it will have different opportunities and challenges. A Kansas DSM potential study would provide a more reliable estimate of the level of efficiency appropriate for Evergy's Kansas IRP.

ii. DSM Energy and Capacity in the IRP

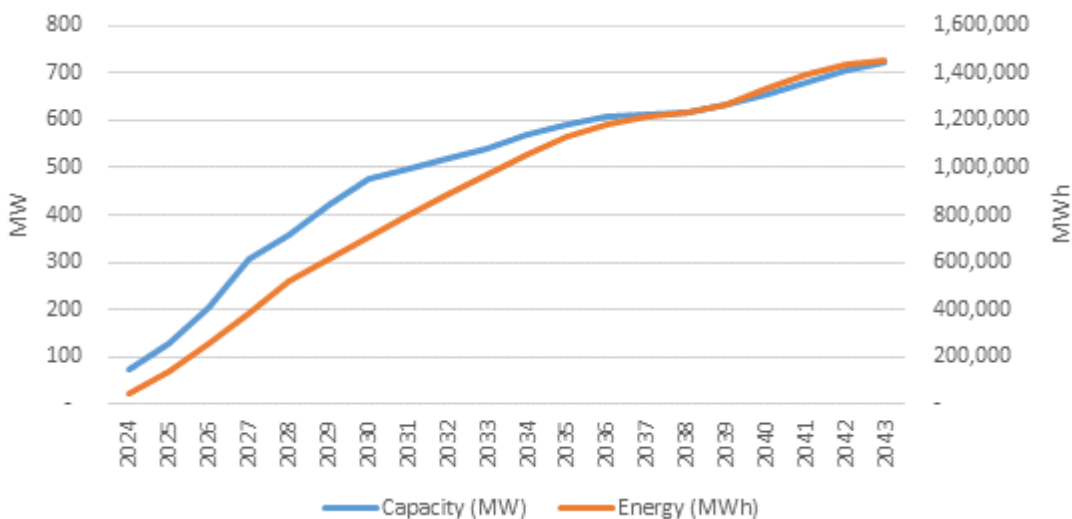
56. Evergy’s forecast of energy and capacity provided by efficiency in the Kansas IRP is shown in the following graph.⁵⁹

⁵⁷ Appendix 4. Evergy 2023 DSM Market potential study.

⁵⁸ Evergy IRP Demand-Side Resource Analysis – Volume 4, Evergy 2024 IRP, pg. 6, May 17, 2024.

⁵⁹ Evergy workpaper “KS DSM Estimations 2023”.

Figure 7. Energy efficiency (energy and capacity) in Evergy’s Kansas IRP



Source: Evergy workpaper “KS DSM Estimations 2023”

57. Evergy relies on about 200 MW of new capacity in Kansas from DSM by 2026 and about 300 MW by 2027.⁶⁰ This is a significant amount of capacity, equivalent to about ***BEGIN CONFIDENTIAL*** of the total Evergy Metro and Kansas Central capacity requirement in that year.⁶¹ Further, this is more than Evergy forecast in its KEEIA program, which was expected to provide only 183 MW in the fourth program year.⁶² It appears that Evergy is using estimates from the rejected full KEEIA plan instead of the settlement plan that was approved by the Commission.

58. DSM in Kansas after 2027 is estimated based on a Realistic Available Potential Plus (RAP+) level from the Missouri DSM potential study, “which consists of a suite of nine residential and seven commercial programs.”⁶³ The RAP+ forecast is a high case estimate of energy efficiency and demand response, rather than a reference case estimate, and Evergy did not

⁶⁰ KS DSM Estimations 2023 workpaper.

⁶¹ Evergy “IRP 2023 PBAEvergy Winter CapacityCONFIDENTIAL” workpaper.

⁶² Evergy response to CURB DR 45.

⁶³ Evergy 2024 IRP. Volume 6, pg. 4.

provide reasoning in the IRP for using high levels of energy efficiency and demand response in the preferred portfolio.

59. Energy Efficiency is a valuable resource, and Evergy should seek the maximum amount of efficiency that it can procure at a reasonable cost. While it is possible that Kansas may have an efficiency program rollout consistent with the optimistic levels from the Missouri potential study, it may be better for Evergy to plan cautiously for a moderate level of efficiency, at least until the KEEIA program results can inform the long-term forecast.

60. The preferred portfolio is currently relying on a large amount of DSM to be deployed in the next few years, creating expected savings of about \$550 million for customers in Evergy Metro and Kansas Central. If these levels are not realized, then Evergy may have to procure capacity resources not considered in the IRP to meet its reserve margin. The need to procure new capacity quickly instead of relying on energy efficiency will reduce the savings expected in the IRP.⁶⁴ It may also make any resource procurement more rushed and expensive than if Evergy had planned in the alternative or utilized contingency plans.

61. Due to the potential range of DSM implementation impacts, Evergy should provide an explanation of its near-term contingency plans if it does not attain the expected levels of efficiency. In future updates, Evergy should include data on DSM performance compared to the forecast amounts from this IRP filing and adjust future forecasts on these actual values.

Conclusion

62. CURB greatly appreciates the opportunity to review Evergy's IRP and to provide feedback on the analyses that forecasts resource acquisition. The transparency provided by the IRP framework is a valuable benefit of this process and allows a richer understanding of the Company's

⁶⁴ Evergy 2024 IRP. Volume 5, pgs. 88, 129.

decision-making process. CURB recognizes the difficult task of planning for an uncertain future and the potential of dramatic changes in assumptions and risk factors. CURB believes that the 2024 IRP Filing complies with Commission requirements by providing a detailed narrative of the preferred portfolio of resources that provide a least-cost plan to maintain service while accounting for changes in the future. The substantive portions of CURB's comments serve to communicate other perspectives of regulatory concerns that CURB believes will improve the robustness of Evergy's IRP.

WHEREFORE, CURB submits these comments to Evergy's 2024 IRP Filing for the Commission's consideration and asks that the Commission issues any and all orders it deems appropriate.

Respectfully submitted,

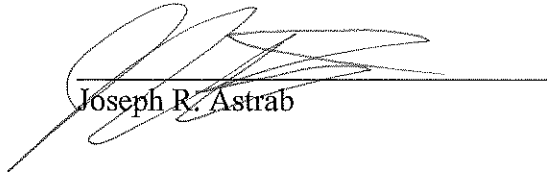


David W. Nickel, Consumer Counsel #11170
Todd E. Love, Attorney #13445
Joseph R. Astrab, Attorney # 26414
Citizens' Utility Ratepayer Board
1500 SW Arrowhead Road
Topeka, KS 66604
(785) 271-3200
david.nickel@ks.gov
todd.love@ks.gov
joseph.astrab@ks.gov

VERIFICATION

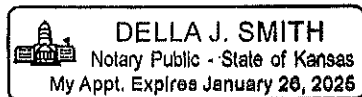
STATE OF KANSAS)
)
COUNTY OF SHAWNEE) ss:

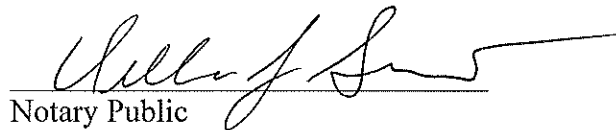
I, Joseph R. Astrab, of lawful age and being first duly sworn upon my oath, state that I am an attorney for the Citizens' Utility Ratepayer Board; that I have read and am familiar with the above and foregoing document and attest that the statements therein are true and correct to the best of my knowledge, information, and belief.



Joseph R. Astrab

SUBSCRIBED AND SWORN to before me this 15th day of October, 2024.





Notary Public

My Commission expires: 01-26-2025.

REFERENCED DATA REQUESTS

CURB-6

****CURB-7 (REDACTED)**

****CURB-13 (REDACTED)**

CURB-14

CURB-23 (REDACTED)

****CURB-24 (REDACTED)**

CURB-25

CURB-27

CURB-45

NEE-3-5 (REDACTED)

NEE-3-8

**** Redacted attachments not provided**



Evergy KS Central and KS Metro
Case Name: 2024 Evergy KS Central and Metro Triennial IRP
Case Number: 24-EKCE-387-CPL

Requestor Astrab Joseph -
Response Provided June 28, 2024

Question:CURB-6

Topic: Portfolio modeling

Please provide a table demonstrating, for each new resource available for selection in the PLEXOS model, how many MW are allowed to be added in each year in the PLEXOS model, and how many MW are allowed over the entire planning timeframe.

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC

Statement: This response is Public. No Confidential Statement is needed.

Response:

Resource	Max Capacity (MW)	First Year Available (Jan 1)	Units/Year
Wind	150	2026	1
Battery located in generation zone	150	2026	2
Battery located at wind node	150	2026	2
Solar	150	2027	2
Combined Cycle	325 (Metro), 650 (Kansas Central)	2028	1
Combustion Turbine	415	2028	1
Market Capacity	1	2024	300 (2024-2026), 50 (2027+)
Combined Cycle with CCS in 2035	325 (Metro), 650 (Kansas Central)	2028	2
Nuclear SMR	300	2038	1



Wind, Battery, Solar, Combined Cycle, Combustion Turbine and Market Capacity were considered base planning options. Combined Cycle with CCS and Nuclear SMR were only available as build options in limited scenarios. The MW available over the time frame is equal to the sum of the years through 2043. There were some scenarios run with “relaxed budget” constraints due to infeasibility at base budget constraints (plans allowing only renewable and battery additions) – which limited each type of resource to 10 units added per year.

Information provided by:

Kelli Merwald, Sr. Mgr. Fundamental Analysis

Attachment(s):

Verification:

I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*

Director Regulatory Affairs



REDACTED

Evergy KS Central and KS Metro
Case Name: 2024 Evergy KS Central and Metro Triennial IRP
Case Number: 24-EKCE-387-CPL

Requestor Astrab Joseph -
Response Provided July 01, 2024

Question:CURB-7

Topic: Volume 5

Please provide more detail about the types of new gas generators modeled in the IRP, for both combined and simple cycle generators. Include:

- a. The full model name and the name of the manufacturer,
- b. An explanation of why Evergy believes these models will be available during the planning timeframe,
- c. Documentation on that model of generator from the manufacturer, and
- d. Any price estimates from the manufacturer.

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: CONFIDENTIAL

Statement: (7) Information concerning trade secrets, as well as private, technical, financial and business information

Response:

- a. [REDACTED]
- b. [REDACTED]
- c. [REDACTED]
- d. [REDACTED]



Information provided by: Kyle Olson

Attachment(s):

CURB 7 Attachment 1 – GE 7HA.03 Gas Turbine Information
CURB 7 Attachment 2 – Power Engineering Technology Study

Verification:

I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs



Evergy KS Central and KS Metro
Case Name: 2024 Evergy KS Central and Metro Triennial IRP
Case Number: 24-EKCE-387-CPL

Requestor Astrab Joseph -
Response Provided August 15, 2024

Question: CURB-13

Topic: Capacity Expansion Modeling

Please provide the PLEXOS outputs for individual generators by year. The outputs should include but not be limited to:

- a. Fuel use and type by year, by individual generator, for all newly selected resources in the 2024 IRP; and
- b. Generation by year, by individual generator, for all newly selected resources in the 2024 IRP.

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: CONFIDENTIAL

Statement: (3) Market analyses or other market-specific information relating to services offered in competition with others.

Response:

Please see attached files.

Information provided by:

Reston Noscail, Energy Resource Analyst I

Attachment(s):

CURB-13_CONF_Fuel_Usage_and_Type_EVG.xlsx

CURB-13_CONF_Fuel_Usage_and_Type_KSC.xlsx

CURB-13_CONF_Fuel_Usage_and_Type_MET.xlsx

CURB-13_CONF_Generation_EVG.xlsx



CURB-13_CONF_Generation_KSC.xlsx

CURB-13_CONF_Generation_MET.xlsx

Missouri Verification:

I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs



Evergy KS Central and KS Metro
Case Name: 2024 Evergy KS Central and Metro Triennial IRP
Case Number: 24-EKCE-387-CPL

Requestor Astrab Joseph -
Response Provided August 15, 2024

Question:CURB-14

Topic: Coal and Gas Generators

See page 10 of volume 1 of the IRP: "Due to the potential for this retirement to be delayed, the Jeffrey 2 retirement is reflected in 2039 in the Evergy-level view shown below. However, the current Kansas Central Preferred Portfolio includes this retirement in 2030." Please explain why the retirement is reflected in 2030 for Kansas Central and 2039 in the consolidated view. In what year does the Company plan to retire Jeffrey 2?

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC

Statement: This response is Public. No Confidential Statement is needed.

Response:

As discussed on page 13, the economics of the retirement are highly sensitive to assumptions around environmental regulations. Evergy considers it a placeholder for a potential additional coal retirement around 2030. The Kansas Central Preferred Portfolio includes resources that will meet the energy and capacity needs of customers if Jeffrey 2 retires in 2030.

Information provided by:

Kelli Merwald, Sr. Mgr. Fundamental Analysis

Attachment(s):



Missouri Verification:

I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs

Evergy KS Central and KS Metro
Case Name: 2024 Evergy KS Central and Metro Triennial IRP
Case Number: 24-EKCE-387-CPL

Requestor Astrab Joseph -
Response Provided August 20, 2024

Question: CURB-23

Topic: Load Forecast

Regarding the newly announced Google data center discussed on page 7 of volume 2 of the IRP:

- a. What year is the recently announced Google data center expected to be completed?
- b. What communications has Evergy had with Google regarding the new load?
- c. What assurances, if any, has Google provided Evergy that the new facility will be in place on the expected timeline?
- d. Why is the new Google data center not included in the base case forecast charts for Evergy Metro?
- e. What is the expected peak and average annual load of the new Google data center for each year in the planning timeframe?

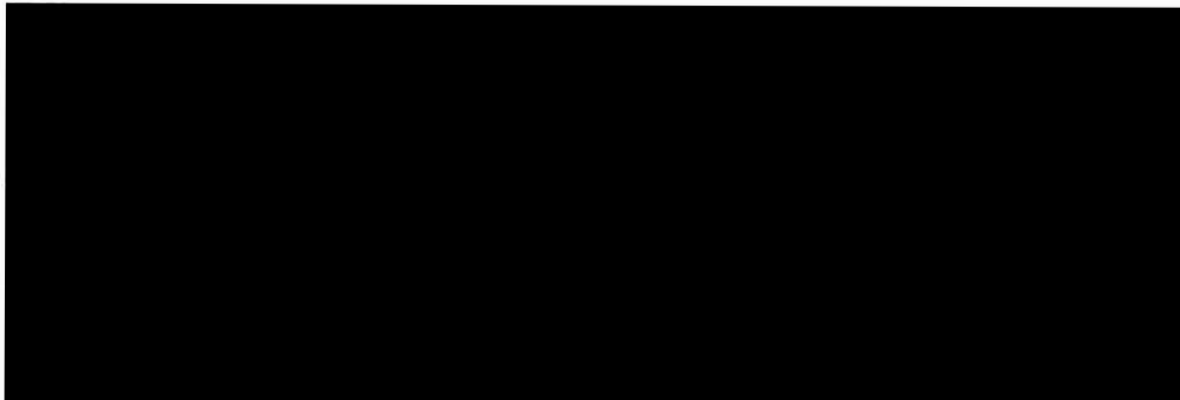
RESPONSE: (do not edit or delete this line or anything above this)

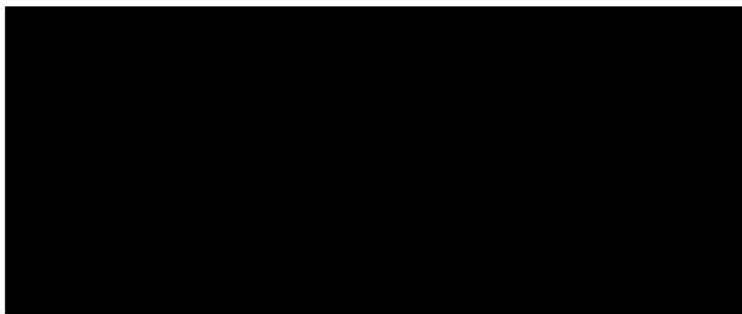
Confidentiality: CONFIDENTIAL

Statement: (1) Material or documents that contain information relating directly to specific customers

Response:

- a.
- b.
- c.
- d.
- e.





Information provided by: David Adamczyk, Kelli Merwald

Attachment(s):

Verification:

I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs



REDACTED

Evergy KS Central and KS Metro
Case Name: 2024 Evergy KS Central and Metro Triennial IRP
Case Number: 24-EKCE-387-CPL

Requestor Astrab Joseph -
Response Provided August 15, 2024

Question: CURB-24

Topic: Load Forecast

Regarding the announced Panasonic battery plant center discussed on page 13 of Volume 6 of the IRP:

- a. What year is the recently announced plant expected to be completed?
- b. What communications has Evergy had with Panasonic regarding the new load?
- c. What assurances, if any, has Panasonic provided Evergy that the new facility will be in place on the expected timeline?
- d. What is the expected peak (MW) and average annual (MWa) load of the new Panasonic plant for each year in the planning timeframe?

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: CONFIDENTIAL

Statement: (1) Material or documents that contain information relating directly to specific customers

Response:

a.

b.

c.

d.



Information provided by: Jason Klindt, Sr. Director of External Affairs
Albert Bass, Sr. Manager Energy Forecasting & Analytics

Attachment(s):
DRCURB24_CONF_ATTACHMENT1

Missouri Verification:

I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs



Evergy KS Central and KS Metro
Case Name: 2024 Evergy KS Central and Metro Triennial IRP
Case Number: 24-EKCE-387-CPL

Requestor Astrab Joseph -
Response Provided August 15, 2024

Question:CURB-25
Topic: Load Forecast

Has Evergy considered requiring large new industrial customers to make financial commitments or sign agreements committing to accept or pay for power beginning on a certain date? For example, minimum demand charges and long-term service contracts.

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC

Statement: This response is Public. No Confidential Statement is needed.

Response: Yes. Evergy is currently reviewing our tariffs and agreements for large loads. We are currently looking at mechanisms from around the country as we seek the best way to move forward.

Information provided by: Jason Klindt, Sr. Director of External Affairs

Attachment(s):

Missouri Verification:



I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*

Director Regulatory Affairs



Evergy KS Central and KS Metro
Case Name: 2024 Evergy KS Central and Metro Triennial IRP
Case Number: 24-EKCE-387-CPL

Requestor Astrab Joseph -
Response Provided September 18, 2024

Question:CURB-27

See Volume 1, Page 14 of the 2024 IRP. Please provide any studies or reports Evergy consulted or produced when developing its assumption that non-emitting firm, dispatchable resources will be available and will have the same cost and operational modeling assumptions as gas generation in 2035

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC

Statement: This response is Public. No Confidential Statement is needed.

Response:

Evergy did not consult any studies. The Evergy team believes that advances in technology will be necessary in order to achieve US emissions goals. Firm dispatchable non-emitting resources will need to supplement renewable and storage resources to maintain reliable electricity supply. It is Evergy's understanding that research and development efforts are underway for various technologies including hydrogen-fired resources, carbon-capture enhancements, long-duration energy storage, and nuclear small modular reactors. It is not clear which technology or technologies will be commercially viable in 2035. Given the future uncertainties, natural gas resources (for which costs and characteristics are better estimated) were used as proxies for commercially viable non-emitting, firm, dispatchable resources.

Information provided by:

Kelli Merwald, Sr. Mgr. Fundamental Analysis

Attachment(s):



Verification:

I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*

Director Regulatory Affairs



Evergy KS Central and KS Metro
Case Name: 2024 Evergy KS Central and Metro Triennial IRP
Case Number: 24-EKCE-387-CPL

Requestor Astrab Joseph -
Response Provided October 03, 2024

Question:CURB-45

Topic: KEEIA

Please provide the total capacity in MW of KEEIA DSM, including demand response, forecast annually in the Company's KEEIA filing. Include the estimates from the Company's application, and any updated estimates from settlement.

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC

Statement: This response is Public. No Confidential Statement is needed.

Response:

KEEIA	MW Savings			
	PY1	PY2	PY3	PY4
Metro	20	27	38	54
Central	49	66	94	129

Information provided by:

Mark Leonard

Attachment(s):

Verification:



I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*

Director Regulatory Affairs



REDACTED

Evergy KS Central and KS Metro
Case Name: 2024 Evergy KS Central and Metro Triennial IRP
Case Number: 24-EKCE-387-CPL

Requestor Schulte Andrew -
Response Provided July 03, 2024

Question:NEE-3-5

RE: Load growth workbooks

Please Provide the Following:

Please refer to page 93 of Section 11 in the Evergy Kansas Central and Evergy Metro IRP where it states that “Evergy Metro is now forecasting significant load growth over the next few years due to economic development. This load growth has been driven by economic development which is not yet included in the load forecasts described in Volume 2. Due to the maturity of the economic development activity, the forecasted impact on Evergy Metro’s capacity and energy needs was factored into the requirements utilized for the development of alternative resource plans and this results in capacity being needed earlier to meet customer needs.”

- (a) Please provide the supporting workbooks, with all formulas and links intact, used to develop the energy and peak demand assumptions modeled for each new customer included in the forecast for Evergy Metro and Evergy Kansas Central.
- (b) For each new customer included in the load forecast, please provide the peak demand, annual energy requirements, load factor, anticipated date the customer expects to receive service, the commercial activity of the customer (i.e. data center, cryptocurrency, or EV manufacturing), and whether the customer has entered into any agreements or contracts with the Company.
 - i. For each new customer that has executed an agreement indicating an intention to obtain service from the Company, please provide the date of the agreement.
 - ii. If agreements have not been executed, please explain if any of the new customers are considering locating their facility outside of Evergy’s service territory or in another state.
- (c) Please provide the level of peak demand for each potential new customer that has not been included in the load forecast for this IRP.
- (d) Please explain if any of the new customers have commenced site construction activities.
- (e) Please explain if the Company has had any conversations with new customers about arrangements for curtailable load, standby on-site generation, participation in energy efficiency programs, or any other approaches to offset the capacity need of the new



customers.

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: CONFIDENTIAL

Statement: (1) Material or documents that contain information relating directly to specific customers

Response:

a and b:

[REDACTED]

c.

[REDACTED]

d.

e.

[REDACTED]

Information provided by:

Kelli Merwald, Sr. Mgr. Fundamental Analysis
Jason Klindt, Sr. Director of External Affairs



Attachment(s):

Missouri Verification:

I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*
Director Regulatory Affairs



Evergy KS Central and KS Metro
Case Name: 2024 Evergy KS Central and Metro Triennial IRP
Case Number: 24-EKCE-387-CPL

Requestor Schulte Andrew -
Response Provided July 03, 2024

Question: NEE-3-8
RE: Build limits

Please Provide the Following:

Please refer to Section 2.3.4 of Volume 5 of the Evergy Kansas Central and Evergy Metro IRP where it states that “The amount of resource additions was limited in each year of the planning period to respect expected capital budget spending considerations.”

- (a) Please provide the annual build limits applied to each supply side resource modeled in PLEXOS.
- (b) Please provide any cumulative build limits applied to each supply side resource modeled in PLEXOS.
- (c) Please provide the supporting workbooks, with all formulas and links intact, used to develop the build limits to respect expected capital budget spending considerations.

RESPONSE: (do not edit or delete this line or anything above this)

Confidentiality: PUBLIC

Statement: This response is Public. No Confidential Statement is needed.

Response:

Resource	Max Capacity (MW)	First Year Available (Jan 1)	Units/Year
Wind	150	2026	1
Battery located in generation zone	150	2026	2
Battery located at wind node	150	2026	2
Solar	150	2027	2
Combined Cycle	325 (Metro) 650 (KS Central)	2028	1
Combustion Turbine	415	2028	1



Market Capacity	1	2024	300 (2024-2026), 50 (2027+)
Combined Cycle with CCS in 2035	325 (Metro) 650 (KS Central)	2028	2
Nuclear SMR	300	2038	1

Wind, Battery, Solar, Combined Cycle, Combustion Turbine and Market Capacity were considered base planning options. Combined Cycle with CCS and Nuclear SMR were only available as build options in limited scenarios. The “cumulative build limits” available over the time frame is equal to the sum of the annual limits through 2043. There were some scenarios run with “relaxed budget” constraints due to infeasibility at base budget constraints (plans allowing only renewable and battery additions) – which limited each type of resource to 10 units added per year.

No workbooks were created. The build limits were modified slightly from last year’s IRP annual update to reflect the new sizing of the Combustion Turbine and allow more flexibility for Metro to meet the larger near-term load ramp. Evergy Metro is limited to roughly \$400-\$600 million per year in the next ten years, but depending on the build plan may spend less in some years. Kansas Central is limited to roughly \$400-\$900 million per year in the next ten years, but depending on the build plan may spend less in some years

Information provided by:

Kelli Merwald, Sr. Mgr. Fundamental Analysis

Attachment(s):

Missouri Verification:

I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*

Director Regulatory Affairs

SYNAPSE ENERGY ECONOMICS, INC.
WORKPAPERS

Confidential Generation cc conversion to green hydrogen

**** Confidential attachments pages 1-3 not provided**

CERTIFICATE OF SERVICE

24-EKCE-387-CPL

I, the undersigned, hereby certify that a true and correct copy of the above and foregoing document was served by electronic service on this 15th day of October, 2024, to the following:

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