COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC JOINT APPLICATION OF KENTUCKY UTILITIES COMPANY AND LOUISVILLE GAS AND ELECTRIC COMPANY FOR CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY AND APPROVAL OF A DEMAND SIDE MANAGEMENT PLAN	)))))))	**CASE NO. 2022-00402**

RESPONSE OF
KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY
TO
THE ATTORNEY GENERAL'S INITIAL REQUEST FOR INFORMATION
DATED FEBRUARY 17, 2023

FILED: MARCH 10, 2023

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Lonnie E. Bellar**, being duly sworn, deposes and says that he is Chief Operating Officer for Louisville Gas and Electric Company and Kentucky Utilities Company and an employee of LG&E and KU Services Company, 220 West Main Street, Louisville, KY 40202, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.

Lonnie E. Bellar

Lonnie E. Bellar

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 8th day of March 2023.

Judy Schooler

Notary Public

Notary Public ID No. KYNP53381

My Commission Expires:

July 11, 2026

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **John Bevington**, being duly sworn, deposes and says that he is Director – Business and Economic Development for LG&E and KU Services Company, 220 West Main Street, Louisville, KY, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge, and belief.

John Bevington

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 8th day of March 2023.

Notary Public

Notary Public ID No. KYNP53381

My Commission Expires:

July 11, 2026

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Robert M. Conroy**, being duly sworn, deposes and says that he is Vice President, State Regulation and Rates, for Kentucky Utilities Company and Louisville Gas and Electric Company and an employee of LG&E and KU Services Company, 220 West Main Street, Louisville, KY 40202, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge, and belief.

Robert M. Conroy

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 8th day of March 2023.

Notary Public

Notary Public ID No. KYNP63286

My Commission Expires:

January 22, 2027

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Christopher M. Garrett**, being duly sworn, deposes and says that he is Vice President, Finance and Accounting, for Kentucky Utilities Company and Louisville Gas and Electric Company and an employee of LG&E and KU Services Company, 220 West Main Street, Louisville, KY 40202, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge, and belief.

Christopher M. Garrett

Christopher M. Garrett

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 10th day of March 2023.

Tammy J. Elzy

Notary Public

Notary Public ID No. KYNP61560

My Commission Expires:

November 9, 2026

TAMMY J. ELZY
COMM EXPIRES 11/09/2026
NOTARY PUBLIC
ID # KYNP61560
STATE AT LARGE, KENTUCKY

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Philip A. Imber**, being duly sworn, deposes and says that he is Director – Environmental and Federal Regulatory Compliance for LG&E and KU Services Company, 220 West Main Street, Louisville, KY 40202, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge, and belief.

Philip A. Imber

Philip A. Imber

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 8 day of March 2023.

Judy Schooler

Notary Public

Notary Public ID No. KYNP53381

My Commission Expires:

July 11, 2026

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Lana Isaacson**, being duly sworn, deposes and says that she is Manager – Emerging Business Planning and Development for Louisville Gas and Electric Company and Kentucky Utilities Company, 220 West Main Street, Louisville, KY 40202, and that she has personal knowledge of the matters set forth in the responses for which she is identified as the witness, and the answers contained therein are true and correct to the best of her information, knowledge, and belief.

Lana Isaacson

Lana Isaacson

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 8th day of March 2023.

Notary Public

Notary Public ID No. KYNP53381

My Commission Expires:

July 11, 2026

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Tim A. Jones**, being duly sworn, deposes and says that he is Manager – Sales Analysis and Forecast for LG&E and KU Services Company, 220 West Main Street, Louisville, KY 40202, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge, and belief.

T. A. J

Tim A. Jones

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 8th day of March 2023.

Judy Schooler

Notary Public

Notary Public ID No. KYNP53381

My Commission Expires:

July 11, 2026

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Charles R. Schram**, being duly sworn, deposes and says that he is Director – Power Supply for LG&E and KU Services Company, 220 West Main Street, Louisville, KY 40202, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge, and belief.

Charles R. Schram

Charles R. Schram

Subscribed and sworn to before me, a Notary Public in and before said County and State this 8th day of March 2023.

Judy Schooler

Notary Public

Notary Public ID No. KYNP53381

My Commission Expires:

July 11, 2026

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **David S. Sinclair**, being duly sworn, deposes and says that he is Vice President, Energy Supply and Analysis for Kentucky Utilities Company and Louisville Gas and Electric Company and an employee of LG&E and KU Services Company, 220 West Main Street, Louisville, KY 40202, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge, and belief.

David S. Sinclair

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 8th day of March 2023.

Notary Public

Notary Public ID No. KYNP53381

My Commission Expires:

July 11, 2026

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Stuart A. Wilson**, being duly sworn, deposes and says that he is Director, Energy Planning, Analysis & Forecasting for LG&E and KU Services Company, 220 West Main Street, Louisville, KY 40202, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge, and belief.

Stuart A. Wilson

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 8th day of March 2023.

Judy Schooler
Notary Public

Notary Public ID No. KYNP53381

My Commission Expires:

July 11, 2026

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 1

Responding Witness: Philip A. Imber

Q-1. Reference the Wilson testimony beginning at 4:4. Confirm that compliance with the Environmental Protection Agency's ("EPA") Good Neighbor Plan ("GNP") would require that the Companies install new selective catalytic reduction ("SCR") technology to Mill Creek Unit 2 and Ghent Unit 2, which would require capital investments of $110 million, and $126 million, respectively.

a. If confirmed, explain the reasoning for the conclusion that the GNP requires the installation of new SCR.

A-1. See Imber testimony beginning at 3:11. The EPA's GNP implements a NOx trading plan. The GNP trading program includes the state of Kentucky. The GNP allocates NOx emissions credits to electric generating units based on past heat input to the unit and implementation of NOx controls. As the rule is proposed, Mill Creek Unit 2 and Ghent Unit 2 will be allocated NOx credits based on state-of-the-art combustion controls starting in 2024 (0.199 lbs of NOx/mmbtu) and new SCR controls in 2026 (0.05 lbs of NOx/mmbtu). Section VI.B.1.e of the proposed rule explains the basis for new SCR control technology. The combination of NOx allocations based on new SCR, dynamic budgeting, back-stop limit, and bank recalibration effectively require non-SCR-equipped coal units to cease operating, or operate only at very minimal levels, during each year's ozone season beginning in 2026 or implement new SCR technology.

a. Mill Creek Unit 2 and Ghent Unit 2 operate at approximately 0.3 lbs of NOx/mmbtu. With allocations based on 0.05 lbs of NOx/mmbtu, these units can at most only operate one-sixth of the time. Implementing the 3:1 allocation surrender penalty for exceeding the daily backstop limit is expected to decrease the unit availability further. Given the CSAPR trading season, i.e., about 150 days from May to September, there are approximately 8 days of ozone season allocations available for the operation of these units; 150/6/3 ~ 8 in 2027. Eight days results in a low heat input for the calculation of future year allocations, thus dynamic budgeting results in dramatically less allocations in the following years. These units will be completely unavailable during the ozone season in a short period of time unless new SCR technology is implemented.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 2

Responding Witness: Lonnie E. Bellar / Philip A. Imber

Q-2. Confirm both of the following: (i) the plan to retire Mill Creek Unit 2 and Ghent Unit 2 is driven by the inability of the Companies to cost-effectively comply with the GNP; and (ii) the decision to retire these two units is a financial one, and is not driven by any need to improve reliability.

a. Provide a brief description of what the GNP requires, how it compares with the existing Cross-State Air Pollution Rule, and all measures the Companies would have to employ to meet compliance with the GNP if they were to keep these two units open, together with cost estimates.

b. Provide a web link to the most recent iteration of the GNP, and explain if that iteration is the final, permanent version.

c. Do the Companies anticipate any changes in the GNP?

d. If there are any such changes, explain whether the Companies anticipate making any changes to the 2022 Resource Assessment.

A-2. (i) The Companies proposed plan in this case as it relates to Mill Creek 2 and Ghent 2 represents a least-cost plan to comply with the GNP. The Companies filing demonstrates that it is not least cost to retrofit Mill Creek 2 and Ghent 2 with the pollution control technology necessary to bring those units into compliance with the requirements of the GNP. (ii). The proposed retirement of Mill Creek Unit 2 and Ghent Unit 2 is driven by cost, net present value of revenue requirements (customer cost), of compliance with the GNP. The retirement of these units impacts the Companies' ability to reliably meet their customers' energy demands.

a. The GNP is a Cross-State Air Pollution Rule. The GNP requires Kentucky to participate in an expanded NOx trading program. The new rule couples the existing 12 CSPAR NOx Ozone Season Group 3 trading program states with the 5 Group 2 trading states (which will be converted to the Group 3 program) and adds an additional 5 new states to the CSAPR NOx trading program. A total of 25 states are proposed to be in the GNP trading program. In addition to expanding the number of impacted states, the EPA adjusted the NOx allocation calculation methodology – incrementally reducing the allocations for all electric generating units based on past heat input and implementation of various NOx controls between 2024 and 2026. The EPA refers to the allocation calculation methodology as dynamic budgeting. The GNP implements a bank recalibration process starting in 2025 to minimize the available bank of NOx allocations. The GNP implements a daily NOx emissions rate back stop limit (0.14 lb of NOx/mmBtu) on units in 2027 with an additional surrender penalty for exceedances. This daily back stop limit effectively requires units to have an SCR installed for continued operation.

b. This link, **2022-04551.pdf (govinfo.gov)**, is for the most recent (April 6, 2022), publicly available iteration of the proposed GNP. According to the current EPA Unified Agenda (Fall 2022), a final version of the GNP is planned to be issued in March 2023.

c. Yes.

d. While the Companies do not currently anticipate making changes to the 2022 Resource Assessment, when the GNP is finalized a decision can be made at that time on changes, if any.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 3

Responding Witness: Lonnie E. Bellar

Q-3. Can the Companies confirm that before they started retiring coal plants due to EPA regulations, that they never had to institute rolling blackouts?

A-3. The service interruptions on December 23, 2022 were the first in the Companies' history, thus occurring after all historical unit retirements regardless of the cause of the retirements.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 4

Responding Witness: Lonnie E. Bellar

Q-4. List all the dates in which the companies have had to institute blackouts or rolling blackouts, the duration and the reasons for each occurrence.

A-4. December 23, 2022 is the only instance the Companies have had to institute rolling service interruptions for a capacity and energy emergency.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 5

Responding Witness: Lonnie E. Bellar / Robert M. Conroy

Q-5. Can the Companies confirm that the closing of coal plants, and shifting fuel source from coal to gas has contributed to all-in rate increases (i.e., both base rates and costs recovered through the Companies' Fuel Adjustment Charge)?

A-5. The Companies cannot confirm the statement. There have been and are many factors that affect a customer's all-in rate from year to year. Such factors include, but are not limited to: fuel prices; generating unit operation; weather; system load; requirements to meet environmental regulations; general operating costs; and investments in systems to continue to provide safe and reliable energy to customers. While the Companies all-in rates have increased over the years, they are still among some of the lowest rates in the nation.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 6

Responding Witness: Tim A. Jones

Q-6. Confirm the following regarding the load forecast included within this case:

a. Load is projected to be 6.5% higher than under the load forecast utilized in the 2021 IRP docket;[1] and

b. Summer and winter peak demand will be approximately 4% and 6% higher, respectively.

A-6.

a. Confirmed regarding total energy requirements. See page 15 of the Jones Direct Testimony. See also Figure 1 on page 6 of the Jones Direct Testimony.

b. Confirmed. See page 15 of the Jones Direct Testimony.

---

[1] Case No. 2021-00393.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 7

Responding Witness: Lonnie E. Bellar / David S. Sinclair / Stuart A. Wilson

Q-7. Explain how North American Stainless' ("NAS") announced $244 million expansion[2] of its Ghent, Kentucky facility, which will increase its production by 200,000 tons annually, will affect the Companies' load forecast. Explain further whether the added load of additional satellite industries serving one or more of the battery production plants being built within the I-65 corridor in Kentucky will affect the Companies' load forecast, and if so, how.

a. Include in your response an explanation of whether it would be cost-effective to increase the capacity of one or both of the proposed Class J or H natural gas combined cycle ("NGCC") plants to accommodate these, and potentially other future load expansions.

b. Explain whether one or both of the NGCC plants would be scalable, such that it might be possible to add additional capacity at a later date, if needed, rather than build an entirely new generating unit.

c. Explain whether intermittent, inverter-based generation alone will be able to meet one or both of the new loads at: (i) NAS; and (ii) the BlueOval SK Battery Park, and explain why, or why not.

A-7. The announced NAS expansion is substantial in terms of capital investment and increased output, but it will not have a significant impact on the Companies' load forecast. If the planned additional load has a load factor similar to NAS's current Rate RTS load, it will result in a marginal (approximately 0.15%) increase in the load forecast and would have no impact on the Companies' proposals in this proceeding.

Regarding possible additional load associated with satellite industries related to the BlueOval SK Battery Park, see the Jones Direct Testimony at page 15, lines

[2] *See, e.g.*, https://www.yahoo.com/now/north-american-stainless-announces-244-154500760.html

8-12. If this load materializes, it is unclear whether it will be located in the Companies' service territories.

a. The Companies plan to issue a request for proposals to the three original equipment manufacturers. Their respective unit design characteristics will drive the unit capacity available for installation. One universally available option to provide incremental unit capacity is duct-firing[3] which the Companies plan to request as an option from each vendor. The size of the proposed NGCC units is also cost effectively limited by the modifications that could be required to upgrade the existing electrical infrastructure both on and off site and potential natural gas supply limitations that exist at each site. There is some margin between the 621 MW filed and what each site could cost-effectively install.

b. Not in any material way. See the response to part a. above.

c. No. It would not be possible to serve such loads without interruption solely with intermittent inverter-based resources. See also the response to PSC 1-38.

[3] Plants with duct burners can burn additional fuel, utilizing burners located in located between the combustion and steam turbine components, to heat the combustion turbine's exhaust gases, which allows the HRSG to increase or maintain steam production to adapt to operating conditions and increase generation.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 8

Responding Witness: Stuart A. Wilson

Q-8. Provide LG&E-KU's current reserve margin, both summer and winter.

a. Provide the projected reserve margin (summer and winter) for each year during the period 2024-2035, assuming the Commission grants the requested CPCNs. Include in your response:

(i) whether the projected future reserve margins also take into consideration all projected load growth, such as the new NAS and BlueOval loads addressed above; and

(ii) how much of the reserve margin (summer and winter) will be fully dispatchable;

(iii) A categorization of the resources comprising the reserve margin (summer and winter) indicating whether they are: (1) fully dispatchable resources, and if so the duration thereof; (2) renewable resources, and if so the duration thereof; and (3) Demand Side Management ("DSM")(including demand response ("DR")), and if so the duration thereof.

A-8. See the response to PSC 1-53(f).

a. See the response to PSC 1-53(f).

(i) The load forecast did not consider the recently announced NAS expansion and did not include potential incremental load growth associated with the BlueOvalSK battery park. See the response to Question No. 7.

(ii) See the response to PSC 1-53(f).

(iii) See the response to PSC 1-53(f). Fully dispatchable resources are resources that can be dispatched any time and operated for days at a time. Limited-duration resources can only be dispatched for several hours at a time. Intermittent resources include solar, wind, and the Companies' hydro resources where their generation depends on the availability of sunlight, wind, or water. See Table 18 on page 36 of Exhibit SAW-1 for the duration of the proposed dispatchable DSM programs. The duration of the Brown BESS is four hours.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 9

Responding Witness: Lonnie E. Bellar / David S. Sinclair / Stuart A. Wilson

Q-9. Rather than retire and demolish Ghent Unit 2 and Mill Creek Unit 2, have the Companies considered "mothballing" (i.e., preserving) one or both of these units? Please include in your response discussions regarding:

a. the different levels of "mothballing," the engineering standards involved, and cost estimates for each level of mothballing.

b. the costs that would be involved in keeping Ghent Unit 2 operating for seven months of the calendar year that exclude the ozone season; include any related studies.

(i) Reference Wilson Exhibit SAW-1, the Resource Assessment, Table 31. Confirm that once SCRs are constructed at Ghent Unit- 2, no significant "life-extension" overhauls are scheduled until 2033.

A-9. The Companies did not evaluate mothballing Ghent 2 or Mill Creek 2 because it is not warranted or reasonable. Given the Companies' proposed resource plan, the additional expense of maintaining inactive units is not reasonable.

a. Not applicable.

b. The costs to operate Ghent Unit 2 during non-ozone months would include the Ongoing Costs and Overhaul Costs in Exhibit SAW-1, Table 31. As an alternative to SCR investment, the Companies evaluated four portfolios that included operating Ghent 2 only in non-ozone season months. See Portfolios 3, 4, 6, and 7 and analysis summary in section 4.5 of Exhibit SAW-1 beginning on page 27. Portfolio 1 (replace Brown 3, Mill Creek 2, and Ghent 2 with Mill Creek NGCC, Brown NGCC, and 637 MW solar PPAs) is lower cost than these portfolios in all fuel price and CO_2 price scenarios.

(i) Confirmed.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 10

Responding Witness: Philip A. Imber

Q-10. Confirm that before the Companies could re-start a coal plant that had been retired, they would have to apply to the EPA for a New Source Review. If so confirmed, describe that process.

A-10. Confirmed. The Companies would have to go through the Prevention of Significant Deterioration / New Source Review ("PSD/NSR") permitting process. Prior to the permitting process described in Question No.11, the Companies would have to do an emissions analysis for the unit(s). The emissions analysis includes comparing baseline actual emissions to projected actual emissions to determine if there will be a significant net emissions increase. Baseline actual emissions are determined by taking the highest 24-month average from the previous 5 years. Projects that have increases below the Significant Emission Rate ("SER") proceed with the permitting process described in Question No.11. Projects that exceed the SER, must provide additional analysis in support of the permit application that includes: a Best Available Control Technology ("BACT") analysis, an analysis/modeling of National Ambient Air Quality Standard ("NAAQS") impacts, and additional impacts analysis.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 11

Responding Witness: Philip A. Imber

Q-11. Describe the local, state and federal permitting process the Companies would have to undergo to restart a retired coal plant.

A-11. Following the emissions analysis described the response to Question No. 10, the Companies would submit an air permit application to the appropriate regulatory agency (KYDAQ, LMAPCD). The regulatory agency would then review the application for administrative and technical completeness. If there are deficiencies the Companies would need to address those identified by the agency. Once all requirements for completeness are met, the regulatory agency prepares a draft permit. The draft permit undergoes a public comment period. Members of the public are given a time period to review and submit formal comments on the draft permit. A public hearing is generally scheduled to within the comment period. The regulatory agency responds to all comments on the draft permit in writing and may adjust the permit. Depending on the significance of the draft permit adjustments, the permit may go back through public comment. Once the comment period(s) is complete, the permit will be issued as proposed. A proposed permit is then sent to EPA for a given time period for review and comments. Again, the regulatory agency may adjust the permit based on EPA's review. Finally, a final permit is issued, and the company can begin construction and operation. Once a unit is retired through the SERC Reliability Corporation an interconnection request would be required to restart.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 12

Responding Witness: Lonnie E. Bellar

Q-12. Can the companies confirm that many of their large industrial customers compete on an international basis with businesses located in China and Europe? If so confirmed, can the Companies also confirm: (i) that China is expanding its coal fleet; (ii) whether China has rolling blackouts; and (iii) several European nations are bringing coal plants back online.

A-12. It is certainly plausible that some of the Companies' large industrial customers compete with firms that produce similar products in China and Europe. The Companies are aware of reports that China is expanding its coal fleet. The Companies do not have information on whether or not China has had rolling blackouts but they are aware of reports that China has rationed electricity due to a lack of generation. The Companies are aware that several European nations have been operating coal units recently due to disruptions in natural gas coming from Russia.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 13

Responding Witness: Lonnie E. Bellar

Q-13. Provide a detailed, thorough and comprehensive explanation regarding the causes of the rolling blackouts the Companies instituted during Winter Storm Elliott ("the Storm"), from Dec. 23-25, 2022. Include in your discussion, at a minimum, the following issues set forth below. For each issue identified below, and for any additional issues the Companies identify, explain also, where applicable, the potential future impact as to both of the proposed NGCC plants:

a. The performance of each one of the Companies' generating units, including the capacity factor of all of the Companies' existing solar units;

b. Whether the Companies had secured adequate fuel, and whether the Companies, and/or their pipeline suppliers, may need to obtain additional storage for both the LG&E LDC operations and the Companies' joint electric generation operations. Include in your response whether the Companies can identify any infrastructure needs that would help increase the reliability of their gas supply;

c. Whether pipelines that provide gas to the Companies' generating units were affected in any manner by the Storm, and if so, how;

d. Whether the Brown Station combustion turbines ("CTs") were operated off of the Texas Eastern or Tennessee Gas pipelines, or perhaps both;

e. Identify the pipeline and the supplier that provide gas to the Trimble Station CTs;

f. Explain whether any of the issues that may have affected the Brown CTs also affected the Trimble CTs. If so, provide a discussion on whether a redundant gas supply to Trimble should be investigated;

g. Whether any of the gas suppliers and/or owners of any such affected pipelines declared a force majeure as a result of the Storm, and if so, the impact this had on the Companies, in terms of cost and otherwise;

h. Whether the Companies maintain any hedging or insurance products designed to reduce the risk of gas and/or other fuel shortages;

i. If the supplier the Companies use was unable to supply gas, explain whether any other suppliers are allowed to supply gas on the Texas Gas pipeline, and if so, explain whether the Companies either currently have a back-up supply contract with any other supplier, or if not, whether they will consider doing so in the future;

j. Explain whether any of the Companies' CTs have dual-fuel capability, and if so, whether the Companies have investigated installing on-site tanks to store a second fuel supply, such as Duke Energy, Kentucky and East Kentucky Power Cooperative ("EKPC") have;

k. Whether the Companies were able to make any off-system purchases to help mitigate the rolling outages;

l. Provide all studies / internal analyses, evaluations or reports the Companies performed regarding the performance of their generation and transmission facilities during the Storm, including any "lessons learned" studies. Include in your response whether the Companies plan to retain any external consultants to perform any such studies or analyses, and if so, provide timelines for the completion of such studies;

m. Explain whether in light of the Storm, the Companies believe that their generation reserve margin should be re-evaluated;

n. The Storm's impact on the Fuel Adjustment Charge (i.e., will there be any significant increases or decreases), and whether there will be any significant impact on base rates;

o. Provide the total time duration during which rolling blackouts were instituted, the total number of ratepayers affected, and the average length of time the blackouts lasted.

p. In the aftermath of the Storm, do the Companies believe it is more important to preserve their remaining coal fleet?

q. Explain whether the Companies believe they did an adequate job of communicating with their customers regarding the rolling blackouts. Explain also whether the Companies could provide more enhanced communications, including via a phone or computer app.

A-13.

a. See the response to JI 1-22d. During December 23-25, 2022, the Brown Solar capacity factor was 11.5%, while the Simpsonville Solar capacity factor was 13.6%.

   The Brown Solar and Simpsonville Solar facilities were not operating during the hours that load was curtailed.

b. LG&E's gas distribution business had adequate natural gas supplies including storage to serve its customers during the Storm. LG&E's gas business has not identified any infrastructure needs that would increase reliability as a result of its operating experience during the Storm. The Companies secured adequate natural gas supply for generation during Winter Storm Elliott and those supplies were not cut by suppliers. The Texas Gas Transmission pipeline serving Cane Run and Trimble County experienced equipment issues that caused reductions in gas pressure affecting the Companies' ability to operate generating units at full output at those sites. Texas Gas is taking steps to upgrade equipment and update operational procedures to ensure transportation reliability.

c. See the response in part (b) for the interstate pipeline impact on the Companies generating units. LG&E's gas distribution business serves coal-fired generation units at Mill Creek with gas for unit start-up and stabilization. LG&E's gas distribution pipeline serving Mill Creek was not impacted by the Storm.

d. The Brown Station CTs were operated on the Texas Eastern pipeline during Winter Storm Elliott.

e. Texas Gas Transmission provides natural gas transportation to the Trimble Station CTs.

f. The interstate pipeline pressure issue affecting the Trimble County CTs did not affect the Brown CTs, where gas was delivered via a different interstate pipeline. There is not another interstate pipeline in the vicinity of the Trimble County plant for potentially developing a secondary interstate pipeline connection.

g. The Companies did not receive force majeure notices from any gas suppliers or interstate pipelines providing gas to the Companies' generation assets. LG&E's gas distribution business receives gas from suppliers on Texas Gas Transmission, LLC ("Texas Gas") and Tennessee Gas Pipeline, LLC

("Tennessee"). There were no Force Majeures issued by LG&E's suppliers, Texas Gas or Tennessee during the Storm.

h. LG&E's gas distribution company does not maintain any hedging or insurance products designed to reduce the risk of gas shortages. LG&E's gas supply plan includes a reserve margin to mitigate the risk of forecast error, LG&E compressor station equipment issues, or the loss of pipeline supply. The reserve margin is provided by LG&E's on-system storage.

   The Companies do not maintain hedging or insurance products designed to reduce the risk of gas shortages for generation. The Companies' firm gas transport agreement services, gas purchasing practices, and dual fuel capability for some of the Brown CTs are designed to ensure that adequate fuel is available and deliverable to the Companies' generating units.

i. See the response to part (b). The Companies purchase gas from multiple suppliers on the spot and forward markets for generation gas supply.

   None of the suppliers to LG&E's gas distribution system declared Force Majeure. However, LG&E's gas distribution business has contracts in place with several suppliers that allow it purchase gas a day at a time. If one supplier fails to perform, LG&E could attempt to purchase gas "intra-day" from another supplier. However, there is no guaranty that "intra-day" supply will be available.

j. The Companies currently have dual fuel capabilities for 4 CTs at the Brown Station, which has both fuel oil storage and demineralized water storage to support operation on fuel oil.

k. See the response to PSC 1-58(b).

l. The investigation into the events of Winter Storm Elliott are ongoing. Attached are two completed reports, a comprehensive event summary report for Generation, Transmission and Distribution, and a summary report for Gas Operations. The Companies have not retained the services of an external consultant to review the event.

m. The Companies review of storm events, see the response to AG 1-13(l), will inform any decision to change the Companies Reserve Margin requirements. Currently, we do not expect a change in Reserve Margin requirements.

n. The issues that impacted the Companies' ability to meet its load requirements during Winter Storm Elliott did result in the Companies' making high cost energy purchases. Based on Commission precedent, $3.4 million of KU's purchases were excluded from FAC recovery for the month of December.

None of LG&E's purchases were excluded from FAC recovery, as they did not exceed the cost of LG&E's highest cost unit available during the month of December. There will be no impact to current base rates, as they can only be changed through an application with the Commission.

o. Total time duration during which rolling blackouts were instituted: 5:59PM to 10:11PM December 23, 2022 (4 hours, 12 minutes). Total customers Affected: 54,637. Average length of outage per customer: 59 minutes.

p. See the response to PSC 1-58(a). Also, it is important to note that one of the Companies' coal units was on a forced outage on December 23 and several coal units experienced derates during the course of the storm event. The Companies are confident that the new generation resources proposed in this CPCN case will provide reliable, low-cost service to our customers for many decades into the future.

q. The Companies are always seeking to improve performance and are reviewing their communications during the storm to identify opportunities for future improvements.

The attachments are being provided in separate files.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 14

Responding Witness: Lonnie E. Bellar / David S. Sinclair

Q-14. Explain whether the Companies conducted any off-system purchases from MISO during the Storm.

a. Include in your response a discussion of:

(i) MISO's current capacity issues and whether proliferation of renewable resources in their footprint has impacted reliability considerations;

(ii) how competitive an off-system purchase from MISO is compared with the cost of the Companies' own generation resources; and

(iii) whether any such off-system purchase would include transmission costs to cover the expense of wheeling power to the LG&E-KU transmission system.

b. If the Companies purchased off-system power from MISO during the Storm, explain whether the Companies will necessarily be able to rely on off-system purchases from MISO during the next storm.

A-14. Yes, the Companies purchased energy from MISO during Winter Storm Elliott. See the response to PSC 1-58(b)(1).

a.

(i) The limited availability of energy to be purchased from MISO during Winter Storm Elliot is consistent with the Companies' cited public discussions of MISO's current capacity issues in their 2022 RTO Membership Study filed with the Commission in November 2022.[4]

---

[4] Available at: https://psc.ky.gov/pscecf/2020-00350/rick.lovekamp@lge-ku.com/11142022034938/Closed/03-2022_LGE_KU_RTO_Membership_Analysis.pdf

(ii) The prices paid to MISO during Winter Storm Elliot were higher than the Companies' cost of generation that was online. However, the Companies had to purchase energy when it was available due to curtailments in its own generation fleet. The price of MISO purchases varies by hour based on MISO's generation and load balance and regional demand for power.

(iii) Such purchases require the Companies to pay for transmission services on MISO's system to wheel the power out of their control area.

b. Whether the Companies will be able to purchase power from MISO during a similar storm in the future is unknown. The export capability from neighboring regions is often also limited when the Companies' load is high. In their reliability planning, the Companies developed a probability distribution for available transmission capacity ("ATC") based on historical daily ATC data from summer and winter months of 2019-2021. Based on the daily ATC data, the Companies' ATC for importing power from neighboring regions is zero 42% of the time. See Table 7 on Page D-15 of Exhibit SAW-1, Appendix D (Minimum Reserve Margin Analysis).

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 15

Responding Witness: Tim A. Jones / Stuart A. Wilson

Q-15. Confirm that the 2022 CPCN Load Forecast is premised on normal weather.[5] Explain whether in light of the Storm's events, the Companies believe any changes to that Load Forecast should be made, or whether it should be re-evaluated.

A-15. Confirmed.[6] However, the load forecast also accounts for weather variability, including extreme temperatures, in the 49 hourly energy requirement forecasts for 2028 the Companies created based on weather in each of the last 49 years.[7] The 49 weather-year forecasts informed the Companies' reserve margin analysis.[8] Indeed, weather variability is a major contributor to the magnitude of the Companies' minimum reserve margin targets and helps explain the difference between the summer and winter reserve margin targets. Winter low temperatures are significantly more variable than summer high temperatures, which results in greater variability of winter peak demands than summer peak demands, as Figures 13 and 14 from Exhibit TAJ-1 show:

[5] Wilson Direct Testimony, 9:19-20.
[6] *See* Jones at 13; Exhibit TAJ-1 at 12-13; Exhibit TAJ-2 at 17.
[7] *See* Jones at 13; Exhibit TAJ-1 at 12-13; Exhibit TAJ-2 at 18.
[8] *See id.*

Figure 13: Louisville Annual High and Low Temperature Distributions (1973-2021)[9]

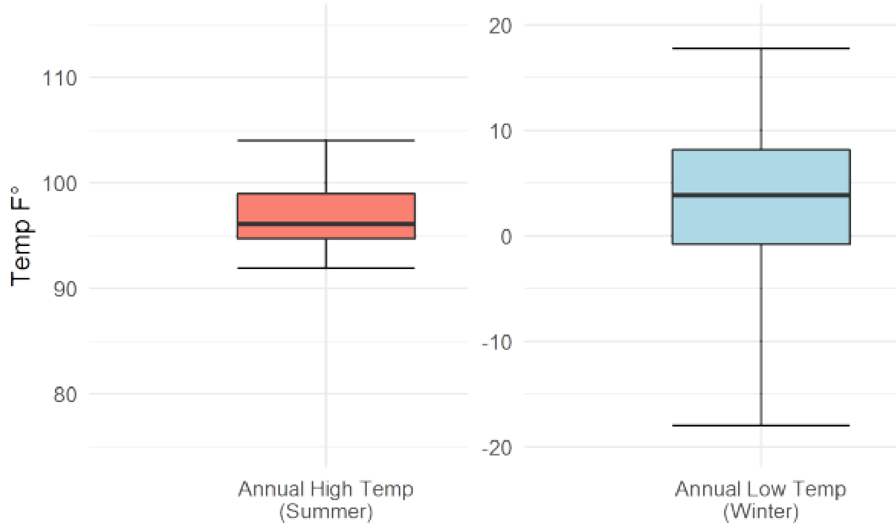
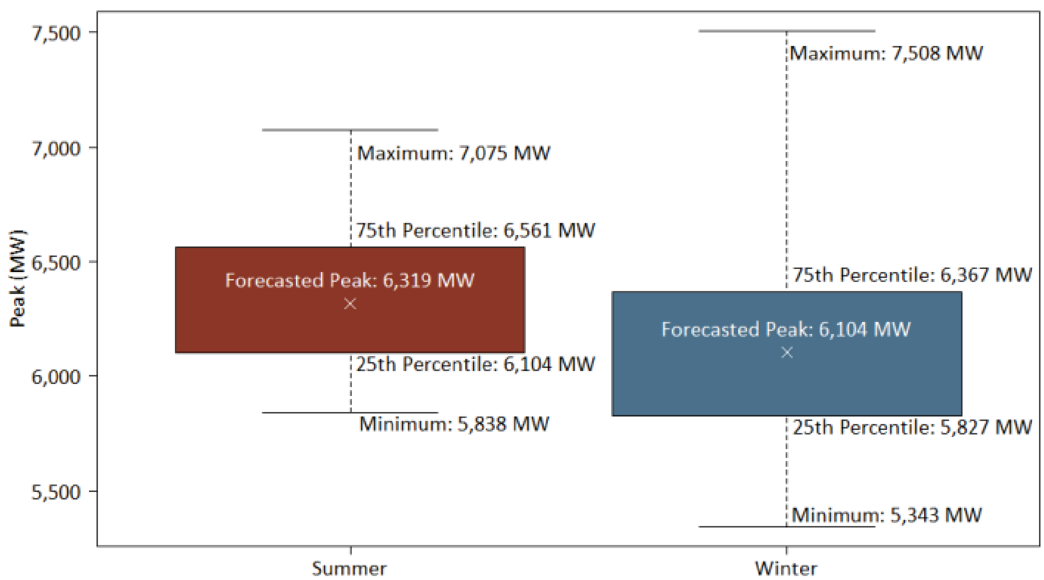


Figure 14: Distribution of 2028 Summer and Winter Peak Demands



Notably, the lowest temperature recorded at Bowman Field in Louisville during Winter Storm Elliott (-7°F) was within the range of low temperatures included in the Companies' weather-year modeling. The Companies' hourly load prior to the period of unserved load was 6,407 MW. Including estimates for unserved load, CSR curtailments, and BlueOval SK's future winter demand, the Companies' peak demand would be 6,851 MW. As demonstrated in Figure 14 above, 6,851 MW is well within the winter peak planning range. In fact, it falls between similar winter weather days observed in the weather years analysis. Specifically, it is higher than the 2028 winter peak demand forecast based on January 6, 2014 weather, which was actually slightly warmer than the weather on December 23, 2022, and it is lower than the forecast based on December 22, 1989 weather, which was slightly colder. Therefore, the experience of Winter Storm Elliott does not require changes to the 2022 CPCN Load Forecast.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 16

Responding Witness: Tim A. Jones

Q-16. Confirm that the temperatures prevailing during the Storm were not the coldest ever experienced in Kentucky.

A-16. Confirmed. See also the response to Question No. 15.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 17

Responding Witness: Lonnie E. Bellar

Q-17. Confirm that Mill Creek Station is currently served by a gas pipeline owned by Texas Gas Transmission. Explain whether the Companies have investigated the cost of providing a second gas supply source to Mill Creek Station, just as Brown Station is served by two separate gas supply lines, and if so, provide copies of any internal studies / analyses regarding such.

a. Explain whether in light of the Storm outages, any of the proposed natural gas transmission / piping work (including compressors) that would have to be performed or added at Mill Creek Station and/or at Brown Station would have to utilize more stringent cold-weather protection standards, such as are more commonly associated with plants located in northern states. If so, will the Companies include these more stringent standards in its engineering design specifications?

b. Reference the Bellar testimony beginning at 17:6. Explain whether the new gas compression that would have to be installed at Brown Station would be just one set of compression equipment that could apply to gas supplied by either the Texas Eastern pipe or the Tennessee Gas pipe, or whether a second set of equipment would have to be installed for both pipes. Include in your response the same information requested in subpart a. of this question, regarding cold-weather protection standards.

A-17. Yes, the proposed Mill Creek NGCC will be served by Texas Gas Transmission. The Company has not investigated providing a second gas supply source to the proposed Mill Creek NGCC due to the extreme cost, permitting challenges, and schedule length to connect to another pipeline approximately 60 miles away.

a. As confirmed in the response to Question No. 16, the temperatures encountered during Winter Storm Elliott were not the coldest ever experienced in Kentucky. The design basis for the NGCC projects, including the Company owned natural gas infrastructure, will be based on the historical extreme hot and cold temperatures recorded at the project site area.

b. The proposed Brown Station gas compression equipment will be able to support both the Texas Eastern and Tennessee Gas pipe lines.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 18

Responding Witness: David S. Sinclair

Q-18. Provide the capacity factor for all of the Companies' existing generation fleet, broken down by coal, gas, hydro and solar, for the following periods:

a. December, 2021 through and including March, 2022; and

b. December, 2020 through and including March, 2021.

A-18.

a. See the table below.

b. See the table below.

Net Capacity Factors								
	Dec-20	Jan-21	Feb-21	Mar-21	Dec-21	Jan-22	Feb-22	Mar-22
Coal	62.7%	65.2%	78.1%	50.2%	47.8%	61.4%	57.4%	53.2%
Gas (SCCT)	1.3%	0.7%	1.6%	2.3%	13.3%	24.9%	15.0%	2.2%
CR7 NGCC	96.2%	97.5%	68.2%	95.7%	95.7%	84.8%	93.5%	96.8%
Hydro	32.4%	29.4%	37.8%	30.3%	35.3%	30.5%	13.8%	29.4%
Solar	9.2%	9.4%	8.4%	21.5%	10.5%	9.2%	16.2%	19.3%

Note: Hydro and Solar based on nameplate ratings.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 19

Responding Witness: David S. Sinclair

Q-19. Explain the following regarding the Rhudes Creek solar facility:

a. Whether the developer has started construction, and if not, whether the Companies expect the developer to abandon the project.

b. The date that the project was projected to start providing power to the Companies' combined grid;

c. The projected capacity factor for each month, if available, once the project becomes commercially operable.

A-19.

a. The developer has not started construction and continues to work on obtaining the necessary permits. The Companies have not been notified that the developer is abandoning the project.

b. The project is assumed to start providing energy in 2024. See Exhibit SAW-1, page 45, footnote 29.

c. See the following table.

Rhudes Creek Solar Projected Capacity Factor by Month												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2024	15.4%	19.9%	24.0%	31.4%	33.3%	37.0%	35.3%	33.6%	29.7%	22.9%	18.2%	12.7%
2025	15.3%	19.4%	23.9%	31.3%	33.2%	36.9%	35.2%	33.4%	29.5%	22.8%	18.1%	12.6%
2026	15.1%	19.3%	23.8%	31.2%	33.1%	36.7%	35.1%	33.3%	29.4%	22.7%	17.9%	12.5%
2027	15.0%	19.2%	23.7%	31.0%	33.0%	36.6%	35.0%	33.2%	29.3%	22.5%	17.8%	12.4%
2028	14.9%	18.6%	23.5%	30.9%	32.8%	36.5%	34.9%	33.1%	29.2%	22.4%	17.7%	12.3%
2029	14.8%	18.9%	23.4%	30.8%	32.7%	36.4%	34.7%	33.0%	29.1%	22.3%	17.6%	12.1%
2030	14.7%	18.8%	23.3%	30.7%	32.6%	36.3%	34.6%	32.9%	28.9%	22.2%	17.5%	12.0%
2031	14.6%	18.7%	23.2%	30.6%	32.5%	36.1%	34.5%	32.7%	28.8%	22.1%	17.3%	11.9%
2032	14.4%	18.0%	23.1%	30.4%	32.4%	36.0%	34.4%	32.6%	28.7%	22.0%	17.2%	11.8%
2033	14.3%	18.4%	23.0%	30.3%	32.3%	35.9%	34.3%	32.5%	28.6%	21.9%	17.1%	11.7%
2034	14.2%	18.3%	22.8%	30.2%	32.1%	35.8%	34.2%	32.4%	28.5%	21.7%	17.0%	11.6%
2035	14.1%	18.1%	22.7%	30.1%	32.0%	35.7%	34.0%	32.3%	28.3%	21.6%	16.9%	11.4%
2036	14.0%	17.5%	22.6%	30.0%	31.9%	35.5%	33.9%	32.2%	28.2%	21.5%	16.7%	11.3%
2037	13.9%	17.9%	22.5%	29.8%	31.8%	35.4%	33.8%	32.0%	28.1%	21.4%	16.6%	11.2%
2038	13.7%	17.8%	22.4%	29.7%	31.7%	35.3%	33.7%	31.9%	28.0%	21.3%	16.5%	11.1%
2039	13.6%	17.6%	22.3%	29.6%	31.6%	35.2%	33.6%	31.8%	27.9%	21.2%	16.4%	11.0%
2040	13.5%	18.0%	22.1%	29.5%	31.4%	35.1%	33.5%	31.7%	27.7%	21.0%	16.3%	10.9%
2041	13.4%	17.4%	22.0%	29.4%	31.3%	34.9%	33.3%	31.6%	27.6%	20.9%	16.1%	10.7%
2042	13.3%	17.2%	21.9%	29.2%	31.2%	34.8%	33.2%	31.5%	27.5%	20.8%	16.0%	10.6%
2043	13.2%	17.1%	21.8%	29.1%	31.1%	34.7%	33.1%	31.3%	27.4%	20.7%	15.9%	10.5%
2044	13.0%	17.6%	21.7%	29.0%	31.0%	34.6%	33.0%	31.2%	27.3%	20.6%	15.8%	10.4%
2045	12.9%	16.9%	21.6%	28.9%	30.9%	34.5%	32.9%	31.1%	27.1%	20.5%	15.6%	10.3%
2046	12.8%	16.7%	21.4%	28.8%	30.7%	34.3%	32.8%	31.0%	27.0%	20.3%	15.5%	10.2%
2047	12.7%	16.6%	21.3%	28.6%	30.6%	34.2%	32.6%	30.9%	26.9%	20.2%	15.4%	10.0%
2048	12.6%	16.7%	21.2%	28.5%	30.5%	34.1%	32.5%	30.8%	26.8%	20.1%	15.3%	9.9%
2049	12.5%	16.3%	21.1%	28.4%	30.4%	34.0%	32.4%	30.6%	26.7%	20.0%	15.2%	9.8%
2050	12.3%	16.2%	21.0%	28.3%	30.3%	33.9%	32.3%	30.5%	26.5%	19.9%	15.0%	9.7%

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 20

Responding Witness: David S. Sinclair

Q-20. Can the Companies confirm that given the current electrification movement in American society (i.e., increased usage of electric vehicles, and increasing electric space and water heating to replace gas space and water heating), it will become increasingly difficult to maintain reliability for all hours of a day, all days of a week and every week in a calendar year? Include in your response: (i) a discussion of how weather events such as Winter Storm Elliott could complicate efforts to maintain reliability; (ii) whether in the mid-to-long-term future, it will remain important to diversify generation fuel sources, and to maintain dispatchable resources; and (iii) whether rolling blackouts will become more likely.

A-20. No, not confirmed. The load forecast discussed by Mr. Jones in his testimony addresses future changes in electrification. The Resource Assessment (Exhibit SAW-1) addresses the supply-side and demand-side resources required to reliably meet the load forecast 8,760 hours a year across a broad range of weather events. The Companies' proposed generation fleet in this CPCN further diversifies its fuel mix across coal, natural gas, and solar. As Mr. Sinclair shows in Table 2 on page 15 of his testimony, the operating range of the fuel dispatchable generation fleet is essentially unchanged in 2028 compared to 2025. As shown in Appendix D to Exhibit SAW-1, the proposed generation fleet was evaluated using the exact same reliability criteria as historically used by the Companies. Therefore, the risk of service interruptions in the future due to a lack of generation is no different from the risk that has historically existed.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 21

Responding Witness: Philip A. Imber/Counsel

Q-21. Provide an update on the environmental permits the Companies are required to file for and obtain prior to constructing the proposed NGCC and solar facilities, including the Marion County build-to-transfer solar facility.

a. Explain whether any of the solar facilities identified in the application require local zoning / permitting approval. If so, provide the status.

A-21. The Title V permits for the proposed NGCC projects were submitted to KDAQ and LMAPCD respectively on December 15, 2022. No further permits have been submitted on the NGCC projects.

a. The proposed Mercer County Solar project does not require local zoning/permitting approval. The Companies are exempt from planning and zoning law pursuant to KRS 100.324 and *Oldham County Planning and Zoning Commission v. Courier Communications Corporation*, 722 S.W.2d 904 (Ky. App. 1987). The Marion County build-to-transfer solar facility will require local zoning/permitting approval; these permits are the developer's responsibility.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 22

Responding Witness: Lonnie E. Bellar

Q-22. Reference the Bellar testimony at 11:19-23. Explain whether the OEM-provided technology that will enable the burning of hydrogen gas at NGCCs will add costs to the proposed NGCC units, in the event it becomes economically viable or mandated.

a. Confirm that the transporting of hydrogen raises its own safety risks, given that hydrogen is one of the smallest (if not the smallest) molecules known.

b. Explain whether there are any safety standards regarding the transporting and mixing of hydrogen with natural gas.

c. Confirm that the BTU rating of hydrogen is significantly less than natural gas.

d. Explain the safety measures that utilities such as LG&E-KU which in the future may burn hydrogen in a NGCC, either separately or mixed with natural gas, would have to take. Include in your response whether any national standards regarding the transportation and burning of hydrogen have been developed in either draft or final form, and if so identify such.

A-22. The current OEMs advance class technology is capability of burning between 30-50% hydrogen based on volume. The proposed NGCCs will be hydrogen ready, meaning they have the ability to burn between 30-50% hydrogen with additional infrastructure (material of construction, enclosure size, fuel blending, etc.). The Companies will request an option to ensure the NGCCs are hydrogen ready, meaning the additional infrastructure will be in place or can be accommodated with minimal modifications after commercial operation.

a. Confirmed. Transporting hydrogen has safety risks. The design of future infrastructure to accommodate hydrogen will take into consideration the molecular size of hydrogen and the safety risks associated with hydrogen.

b. There are safety standards regarding the transportation and of hydrogen with natural gas. 29 CFR Section 1910.103 of the Code of Federal Regulations outlines Occupational Safety and Health Standards for the transportation of hydrogen. Hydrogen is indirectly included in Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHASMA) 49 CFR Part 192, minimum safety standards. Additionally, the American Society of Mechanical Engineers (ASME), standard B31.12 is for Hydrogen Piping and Pipelines.

c. On a volume basis, natural gas has an energy content that is ~2.9 to ~3.2 times greater than hydrogen. On a mass basis, hydrogen has an energy content that is ~2.6 to ~2.7 times greater than natural gas.

d. The Department of Energy Hydrogen Program's code and standards sub-program, led by the Office of Energy Efficiency and Renewable Energy, is working with code development organizations, code officials, industry experts, and national laboratory scientists to draft new model codes and standards for domestic and international production, distribution, storage, manufacturing, and utilization of hydrogen. The Companies would comply with all relevant health and safety regulations.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 23

Responding Witness: Lonnie E. Bellar

Q-23. Refer to EKPC's current IRP filing, Docket No. 2022-00098, in particular that company's post-hearing comments, accessible in the footnote below,[9] at pp. 1-2, which discusses, inter alia, the impact on the EKPC system of the retirement of Brown Unit-3.

a. Provide a discussion of how Brown Unit-3's retirement will affect EKPC's system. Include in your discussion an explanation of whether the construction of the proposed battery energy storage system ("BESS") at Brown station could have an impact on EKPC's system, and if so, how.

b. Given the highly interconnected nature of the LG&E-KU and EKPC transmission systems, explain whether LG&E-KU will have to make any transmission improvements / upgrades in order to maintain the current level of interconnectedness, and voltage flows between the two systems.

A-23.

a. Due to The Companies' "retire and replace" plan of retiring Brown Unit 3 and adding both a NGCC and BESS at Brown, significant impacts to the EKPC transmission system are not expected.

As part of the generator interconnection process for the BESS, the EKPC transmission system will be monitored to determine if they could be a potentially affected system. Additionally, there is an established process that makes neighboring utilities aware of generation interconnections to the LG&E/KU transmission system; as such, EKPC will have the opportunity to perform their own test to determine if their system is affected. More information on this process can be found in the "Generation Interconnection Study Criteria" document publicly posted on the LG&E/KU OASIS site

[9] https://psc.ky.gov/pscecf/2022-00098/jessica.fitch-snedegar%40ekpc.coop/02032023010551/IRP_Draft_Post_Hearing_Comments_-_02032023_Final.pdf

(https://www.oasis.oati.com/woa/docs/LGEE/LGEEdocs/Generator_Interconnection_Study_Criteria_-_effective_7-10-19.pdf).

Finally, following the Companies filling of this CPCN, the LG&E-KU transmission planning team reached out to EKPC to review respective resource and transmission plans and coordinate, as needed. As of February 24^{th}, there has been a kickoff meeting and agreement to schedule a follow up meeting in April.

b. LG&E/KU and EKPC transmission regularly coordinate with one another and monitor flows between the two systems. As discussed above, due to The Companies' "retire and replace" plan, significant upgrades between the LG&E/KU and EKPC transmission systems are not expected.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 24

Responding Witness: Lonnie E. Bellar / Charles R. Schram / David S. Sinclair

Q-24. Reference the Bellar testimony beginning at 19:4. Explain whether utilizing bifacial panels and a tracker rack system at the Mercer solar facility will be cost-effective. Provide all cost-benefit analyses the Companies conducted for utilizing these two features.

a. Confirm that the Brown solar facility does not utilize a tracker system.

b. Explain whether any of the Companies' existing solar facilities utilize either bifacial panels, a tracker rack system, or both. Explain also why, or why not.

c. Explain whether the Marion solar facility will utilize either bifacial panels, a tracker rack system, or both. Explain also why, or why not.

d. Explain whether any of the facilities with which the Companies intend to enter into solar photovoltaic purchase power agreements ("PPAs") will utilize either bifacial panels, a tracker rack system, or both. Explain also why, or why not.

A-24. The use of bifacial panels and a single axis tracker rack system typically result in 15% additional generation over a fixed tilt rack system. The Companies have not performed cost-benefit analyses concerning the use of bifacial panels and a single axis tracker rack system. But consistent with the response to part d. below, the Companies assume that competitive solar developers, who use bifacial panels and a single axis tracker rack system, use the most competitive and cost effective technology.

a. The E.W. Brown Solar Facility built in 2016 does not utilize a single axis tracker rack system.

b. The Companies' solar facilities do not use single-axis tracker rack systems or bifacial panels.

c. It is anticipated that the proposed Marion solar facility will utilize bifacial panels and a single axis tracker rack system to maximum generation as described above.

d. According to the developers of the proposed PPAs, all will employ bifacial panels with single-axis tracking. The Companies presume that the developers would use the most competitive and cost effective technology.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 25

Responding Witness: Charles R. Schram / David S. Sinclair

Q-25. Regarding the proposed solar facilities, explain whether the Mercer and Marion facilities, and the four facilities from which the Companies propose to enter a PPA, will be physically located within the KU service territory. If so confirmed:

a. Provide the approximate length of the power line that will connect each facility to the Companies' nearest transmission facility, if any such lines will be over one mile in length.

b. Explain whether any transmission facility or substations will need upgrades prior to receiving power from one or more of the solar facilities.

c. If any of the proposed solar facilities are physically located outside of the KU service territory, explain whether the project developer will have to go through either the PJM or MISO interconnection queue process.

A-25. With one exception, all of the facilities will be physically located in the LG&E and KU service territory and interconnected to the LG&E and KU transmission system. The Mercer County facility will not be wholly located in KU territory. The substation and tie-in to KU's 69kV transmission line are located in KU's service territory.

a. See the RFP responses filed in Exhibit CRS-2.

b. As with all generator interconnection requests, any necessary upgrades to the transmission system will be studied during the Open Access Transmission Tariff ("OATT") generator interconnection processes. Per completed ITO studies, transmission facilities or substation construction or upgrades will be required for the Mercer County Solar, Marion County Solar, Song Sparrow Solar PPA, and Gage Solar PPA. Because the Nacke Pike and Grays Branch projects have not yet been submitted to the Generator Interconnection queue, the ITO has not performed any studies; however, the Companies have performed high-level internal studies and would expect that transmission facilities or substation construction or upgrades would be required for these as well.

c. Not applicable.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 26

Responding Witness: Stuart A. Wilson

Q-26. Regarding the proposed new solar facilities, explain whether the Companies have determined they may be eligible for financial incentives under the Inflation Reduction Act ("IRA") or any other federal laws, for any portion of the costs associated with the Mercer and Marion facilities, and/or for the power they will obtain under the proposed PPAs with the four non-owned facilities. If so: (i) provide the benefit amount, and (ii) state whether those incentives will inure to ratepayers' benefit.

A-26. IRA incentives have been reflected in the evaluation of the Mercer and Marion as discussed in SAW-1, Section 7.5 and will inure to the benefit of customers. Any IRA benefits assumed by the developers of the PPA projects are reflected in the power price. See also the responses to PSC 1-6, 1-47, 1-69, and 1-94.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 27

Responding Witness: Lonnie E. Bellar / David S. Sinclair / Christopher M. Garrett

Q-27. Explain the closure procedures and expected costs for the solar facilities owned by the Companies or contracted with other companies. Explain also:

a. what will happen to the solar panels once a facility is decommissioned, including whether the panels will be recycled, or placed into landfills. If the latter, explain if the landfills will be located in Kentucky; and

b. how the Companies will factor and compute terminal net salvage into costs for solar generation facilities, and whether such costs were included in the Companies' cost estimates utilized in this docket.

A-27. The counterparties to the PPA have the responsibility for the closure of solar facilities associated with PPAs. The specific responsibilities can be expected to be imposed by the Siting Board in connection with the siting approvals, including filing a complete and explicit decommissioning plan with the Siting Board, committing to remove all facility components, above-ground and below-ground, regardless of depth, from the project site, and posting a bond with the local Fiscal Court, equal to the amount necessary to effectuate the decommissioning plan.

a. The Companies will dispose of or recycle panels at the end of their life in a safe manner that will comply with all laws and regulations. There are numerous commercial options for recycling decommissioned solar panels. In partnership with the University of Kentucky, the Companies have a patent-pending process to recycle and extract valuable materials from decommissioned solar panels. University of Kentucky, Researching Ways to Recycle Solar Panels and Lithium-Ion Batteries, https://www.engr.uky.edu/news/2022/07/researching-ways-recycle-solar-panels-and-lithium-ion-batteries.

b. The Resource Assessment in Exhibit SAW-1 assumes no cost of removal or net salvage value for any of the proposed generation assets, including solar.

For existing solar facilities, the most recent depreciation study assumed a $10/kW terminal net salvage value.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 28

Responding Witness: Lonnie E. Bellar / Robert M. Conroy / Christopher M. Garrett / David S. Sinclair / Stuart A. Wilson

Q-28. Reference the Bellar testimony beginning at 22:8, regarding the proposed Brown BESS.

a. Provide the estimated annual MWh dispatch for the BESS.

b. Explain whether under appropriate circumstances, energy stored in the BESS could be sold off-system.

c. Explain whether any off-system sales ("OSS") from the BESS would inure to the benefit of LG&E customers, KU customers, or both. If the OSS is accomplished via dispatch of the BESS, explain whether for purposes of revenue allocation the benefit is assigned to the BESS, or the general LG&E-KU grid used to charge the BESS.

d. In the event an opportunity for an OSS arises after the BESS is installed, explain what sort of order of dispatch would arise as to the OSS (i.e., would there be any preference for the sale to come directly from the LG&E-KU grid, or would any preference be given to dispatching the BESS?)

e. Provide all rationale, analyses and studies justifying the assignment of 100% of the BESS costs to LG&E ratepayers, with 0% to KU ratepayers. Explain also how this is justified in light of the fact that the Companies' fleet is jointly dispatched.

f. Given the Companies' proposal to charge 100% of the BESS costs to LG&E ratepayers, explain whether LG&E ratepayers will also be charged with 100% of the costs collected in the Fuel Adjustment Charge ("FAC") for powering the BESS, despite the fact that the Companies' generating units are jointly dispatched.

g. Confirm that in Case No. 2021-00393,[10] the Companies' May 5, 2022 Responsive Comments at p. 22 noted that when batteries are charged, there is a 15% energy loss (i.e., for every MWh charged in a battery, 0.85 MWh can be discharged).

(i) Explain how this 15% energy loss will be accounted for, and whether LG&E ratepayers would be exclusively responsible for it.

(ii) Provide all justification for charging ratepayers for the 15% energy loss when the energy will not be available to ratepayers.

h. Reference the Wilson testimony, Exhibit SAW-1, p. 43. Provide a complete explanation for the following sentence: "The Brown BESS is assigned 100% to LG&E to better balance the Companies' summer reserve margins."

(i) Explain whether there are any other means of "balanc[ing] the Companies' summer reserve margins."

(ii) Explain to what extent the Companies analyzed purchasing one or more CTs to be used for the LG&E system and if so, whether that option would prove more cost-effective than a BESS; confirm also that in Exhibit SAW-1, p. 17, it is acknowledged that a BESS is not as cost-effective as a CT. Include in your response the estimated lifespan(s) of a CT, and of the BESS.

(iii) Confirm that LG&E is projected as experiencing more future winter peaks, and eventually becoming a winter-peaking utility. If so confirmed, explain whether the BESS is best situated to meet the needs of a winter-peaking utility, and whether the change to winter peaking obviates any need to balance summer reserve margins.

(iv) Reference Exhibit SAW-1, p. 5, the following sentence: "It further demonstrates that including the proposed Brown battery energy storage system. . . in the optimal portfolio adds reliability and notes that Brown BESS could offer quantifiable operational benefits, including possible reductions in required spinning reserves and reduced wear on fast-ramping units." Assuming the Commission approves assignment of 100% of BESS costs to LG&E ratepayers, does the Company agree that LG&E ratepayers should likewise be credited with 100% of any quantifiable operational benefits as described in this sentence? If not, why not? If the Companies do not agree, then explain why KU ratepayers should not be assigned a portion of the BESS costs.

[10] *In Re*: Electronic Joint Integrated Resource Plan of Louisville Gas & Electric Co. and Kentucky Utilities Co.

(v) Reference Exhibit SAW-1, p. 38, the statement: "Adding Brown BESS further enhances reliability, but its primary value is in providing operational experience for integrating future renewable generation." (1) Provide the projected estimates for how much the BESS will enhance reliability; and (2) If the primary value is in integrating future renewable generation, explain why the Companies do not postpone seeking the BESS CPCN until such time as they install the referenced additional future renewable generation.

(vi) Please confirm whether the Companies remain committed to seeking the least-cost means of enhancing reliability, when needed.

i. Reference the Bellar testimony at 24, wherein he states that the BESS project will be eligible for up to a 50% investment tax credit. Explain whether this credit would inure to the credit of shareholders, or to ratepayers (specifically, LG&E ratepayers).

(i) Explain further whether the credit would be amortized over the lifespan of the BESS, or whether it would accrue in its entirety once the BESS is commercially operable.

(ii) Provide the total monetary impact of the credit, assuming the full 50% credit is obtained.

(iii) Explain whether the impact of the tax credit was taken into consideration in performing the cost-benefit analyses for the BESS.

j. Describe the projected ramp-up time necessary for dispatch of the BESS, and how that ramp rate might differ from other generation resources.

k. Explain whether the Companies, which are not RTO members, would be eligible to sell power from the BESS into PJM or MISO as an ancillary service, including ramping. If so, explain how the revenue proceeds of such a sale to an RTO would be allocated as between LG&E and KU.

l. Explain whether installation of the BESS will require any transmission improvements / upgrades. If so:

(i) explain whether such improvements / upgrades will also benefit KU customers; and

(ii) explain whether any such transmission costs have been assigned to KU customers.

m. Explain whether there could be any benefits from charging the BESS solely from one of the Companies' renewable resources (solar or hydro), if doing so is possible.

n. Explain for how long the battery will remain charged before the charge begins to diminish. Provide also the projected rate at which the charge will diminish over time.

o. Explain whether cold weather affects a BESS in any manner, including whether cold air can erode the stored charge faster than under normal temperature conditions. If so:

  (i) Given the diminished capacity factor of renewable resources during winter, confirm that during winter, a BESS would almost certainly be charged by dispatchable resources.

  (ii) discuss how the BESS' diminished winter capacity factor would be useful to a winter peaking utility, such as LG&E is projected to become

A-28.

a. See the response to KIUC 1-7(a).

b. The Companies currently make off-system sales from the generation fleet, not a specific generating unit, when the cost of producing the energy is less than external market prices. Seventy-five percent of off-system sales margin is returned to customers through the off-system sales adjustment clause. The Companies' After-the-Fact Billing ("AFB") system processes hourly data and stacks all sources from lowest cost to highest on a MW by MW basis. The highest costs are allocated to off-system sales for determining the costs associated with making off-system sales. The energy discharged from the BESS, like the energy produced by the generating units, will go through this AFB process and could be allocated to off-system sales.

c. See the response to part (b).

d. See the response to part (b).

e. See Exhibit SAW-1, Section 6.2.3.

f. The Company is still evaluating the accounting and ratemaking impacts but at this time, the Companies anticipate that the energy used to charge the BESS will be charged to LG&E ratepayers through the fuel adjustment clause based on the costs incurred to generate the electricity being stored in the BESS. When the energy is discharged, it will be assigned to native load or off-system sales using the Companies' AFB process. If the energy is assigned to KU native load instead of LG&E native load, an intercompany purchase and sale will occur between the utilities so that LG&E customers recover the cost of the energy from KU customers.

g. Confirmed.

(i) The Companies are still evaluating the accounting and ratemaking impacts but at this time, the Companies anticipate that energy losses from utilization of a battery for storage will be accounted for similar to other energy losses. As power is generated or purchased to charge the battery, the applicable fuel costs will be included in the fuel adjustment clause for recovery and the kWh will be recorded as an energy source. Losses will be recognized when the battery's energy sources for the period do not equal the battery's energy uses (e.g., the power discharged for consumption by customers). Since the BESS will be solely owned by LG&E, LG&E customers will typically be responsible for the energy losses incurred. See also the response to part f.

(ii) Losses are inherent in the facilities that the Companies utilize (i.e., generators, transmission lines, distribution lines, transformers, etc.) to provide safe, reliable and affordable energy to customers. The cost of the energy for losses is included in the rates customers pay for the energy consumed. The round-trip energy losses for battery storage are no different than any other losses incurred in providing energy for customers.

h.

(i) There are other possible means to balance reserve margins between the Companies, such as modifying the ownership assignments of existing assets or proposed new assets. However, historical precedent for assigning ownership of the Companies' peaking resources, including the SCCTs at Brown, Trimble County, and Paddy's Run as well as the Bluegrass CT tolling agreement, has been to balance summer reserve margins between the Companies. The Bluegrass CT tolling agreement, which was effective in 2015 through 2019, was the most recent peaking resource to be assigned ownership and was allocated 100% to LG&E.

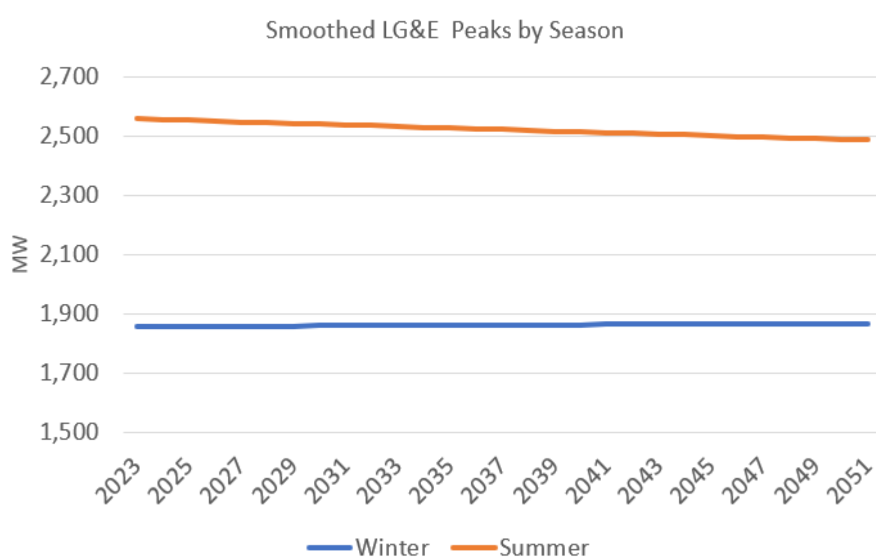
(ii) The Companies' analysis demonstrated that additional SCCTs are not cost effective for meeting minimum reserve margin targets. See Mr. Sinclair's testimony on pp. 24-26 regarding the value of the Brown BESS. The Companies are proposing Brown BESS primarily to gain operational experience with BESS at utility-scale.

The Companies confirm that the clause referenced from Mr. Wilson's testimony is accurate but is taken out of context. For the full context, see the following excerpt:

> "They [the Companies] further concluded that adding the proposed 125 MW, 500 MWh Brown BESS, though not as economical as SCCT, would further enhance reliability and provide the Companies valuable experience with battery technology at utility scale, which will likely be instrumental in reliably integrating large quantities of renewable generation in the future."

The Companies assumed a book life of 30 years for a new SCCT and 15 years for the Brown BESS.

(iii) Not confirmed for the LG&E system. See the figure below.



(iv) System level operational benefits would likely be a benefit to both LG&E and KU customers. However, they would be impossible to directly assign to each utility's customers. The Companies are not proposing such an arrangement in this filing.

(v)

1. See Exhibit SAW-1, Section 4.6.2 - *Stage Three, Step Two: Increasing Reliability through DSM and Battery Storage*.

Please note that this section of Exhibit SAW-1 was updated in the response to PSC 1-47(a).

2. The Companies are seeking to gain the operational experience with BESS in advance of needing to implement BESS more broadly to allow the Companies to plan and prepare for additional future renewable generation in a lowest reasonable cost manner.

(vi) Confirmed.

i. (i) (ii) (iii) See the response to PSC 1-47.

j. The BESS can be dispatched instantaneously; there is no ramp time required. Coal and natural gas resources have ramp rates, usually expressed in MW/min, which indicate how quickly they can ramp up and down.

k. The BESS is being developed for the benefit of the Companies' customers, including the provision of ancillary services. The Companies do not attempt to sell ancillary services to an RTO and are not sure that RTO tariffs would permit a non-member generator to provide ancillary services. As discussed in response to (b), if revenues were received due to such a sale to an RTO, they would be allocated directly to LG&E since LG&E customers incurred the costs related to the BESS.

l. As specified in Bellar testimony beginning at 23:18, the Companies do not anticipate any significant modifications or upgrades will be necessary to charge or transmit power stored in the batteries other than the electric transmission system upgrades on-site to connect the BESS to the existing E.W. Brown electrical substation.

(i) Improvements/upgrades to the transmission network generally have inherent benefits to customers, including KU customers. However, as previously stated, no significant modifications or upgrades are expected.

(ii) No transmission projects have been identified to-date and thus, no costs have been assigned to KU customers. Any required transmission projects and associated costs will be ultimately determined as part of the Open Access Transmission Tariff generator interconnection process.

m. Directly charging the proposed Brown BESS is not possible via the current or proposed renewable resources. Furthermore, limiting the charging of the BESS to just intermittent resources would significantly reduce the availability and value of the BESS since its performance is directly related to the generation sources used to charge it.

n. The charge performance of BESS systems is variable and system specific. At this time, a specific BESS system has not been proposed for the Brown BESS (Bellar Testimony, page 23, lines 4-6 ; Schram Testimony page 4, lines 3-5). Generally understood self-discharge rates for utility-scale lithium-ion BESS are in the range of 0.1% - 0.3%, per day as discussed https://doi.org/10.1016/j.apenergy.2014.09.081.

o. The design of the Brown BESS will ensure that the facility will provide its full name plate rating of 125 MW/500 MWh during the winter months. Without climate control, ambient temperature conditions, including instances of extreme low temperature, will negatively affect the charge state and performance of lithium-ion battery systems. Cold temperatures decrease lithium-ion battery performance. However, climate control will be used maintain optimal temperature in the BESS to mitigate these effects. The Companies have six years of experience managing climate control for the demonstration 1 megawatt, 2 megawatt-hour lithium-ion battery project at E.W. Brown.

(i) See the response to part (m).

(ii) The capacity of the Brown BESS will not be diminished during winter months because of climate control.

**KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY**

**Response to Attorney General's Initial Request for Information
Dated February 17, 2023**

Case No. 2022-00402

Question No. 29

Responding Witness: Stuart A. Wilson

Q-29. Provide the projected capacity factor of the Brown BESS for the periods:

(i) December through and including March; and

(ii) April through and including November. Explain whether cold weather will impact the December – March capacity factor.

A-29. Forecasted capacity factors vary by fuel price scenario, so results are provided for the six fuel price scenarios with no CO_2 price used in the analysis over Brown BESS's 15-year depreciable life.

(i) See the table below.

Year	Low Gas, Mid CTG Ratio	Mid Gas, Mid CTG Ratio	High Gas, Mid CTG Ratio	Low Gas, High CTG Ratio	High Gas, Low CTG Ratio	High Gas, Current CTG Ratio
2026-2027	0.6%	0.6%	1.6%	0.5%	2.8%	1.7%
2027-2028	0.2%	1.3%	2.5%	0.6%	3.8%	2.6%
2028-2029	0.9%	1.4%	3.4%	0.8%	5.3%	4.3%
2029-2030	0.8%	1.5%	3.3%	0.6%	4.8%	5.5%
2030-2031	0.9%	1.3%	2.1%	0.8%	4.0%	5.1%
2031-2032	0.4%	1.1%	2.1%	0.4%	4.3%	3.7%
2032-2033	0.3%	0.9%	2.1%	0.4%	3.0%	3.1%
2033-2034	0.8%	1.3%	2.6%	0.3%	3.7%	3.9%
2034-2035	0.4%	1.6%	2.8%	0.2%	3.3%	3.9%
2035-2036	0.4%	1.6%	2.8%	0.2%	3.5%	4.4%
2036-2037	0.3%	0.7%	2.4%	0.3%	3.5%	4.0%
2037-2038	0.2%	1.2%	1.9%	0.2%	2.6%	3.1%
2038-2039	0.3%	1.0%	2.1%	0.1%	2.4%	2.7%
2039-2040	0.3%	1.2%	2.6%	0.1%	3.8%	2.9%
2040-2041	0.1%	0.1%	0.6%	0.0%	0.8%	1.3%

(ii) See the table below. Regarding cold weather impact, see the response to Question No. 28(o).

Year	Low Gas, Mid CTG Ratio	Mid Gas, Mid CTG Ratio	High Gas, Mid CTG Ratio	Low Gas, High CTG Ratio	High Gas, Low CTG Ratio	High Gas, Current CTG Ratio
2026	0.7%	0.5%	0.5%	0.9%	1.8%	0.3%
2027	0.4%	0.2%	0.5%	0.6%	3.6%	3.2%
2028	1.3%	1.3%	1.8%	1.3%	4.2%	6.3%
2029	0.5%	0.6%	1.2%	0.4%	4.2%	8.0%
2030	0.0%	0.5%	1.4%	0.2%	4.1%	6.4%
2031	0.3%	0.6%	1.6%	0.2%	3.8%	7.0%
2032	0.3%	0.8%	1.7%	0.3%	4.0%	7.7%
2033	0.3%	0.6%	2.0%	0.4%	3.5%	7.0%
2034	0.3%	0.6%	2.2%	0.5%	3.5%	7.0%
2035	0.4%	0.7%	2.4%	0.8%	4.4%	7.3%
2036	0.2%	0.5%	2.1%	0.2%	3.4%	6.8%
2037	0.3%	0.6%	2.2%	0.5%	3.9%	6.1%
2038	0.3%	0.6%	2.6%	0.2%	4.5%	6.1%
2039	0.2%	0.3%	2.3%	0.2%	3.3%	7.5%
2040	0.4%	0.6%	2.9%	0.3%	5.3%	6.5%

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 30

Responding Witness: Stuart A. Wilson

Q-30. Using the same calendar time frames provided in the subpart immediately above, provide projected operating costs for the BESS (including the cost of power to charge the BESS) for both timeframes.

A-30. Forecasted capacity factors vary by fuel price scenario, so results are provided for the six fuel price scenarios with no CO_2 price used in the analysis over Brown BESS's 15-year depreciable life. The cost of the energy that charges the battery is not available, so the average annual system production cost for each fuel price scenario was used as a proxy.

BESS Projected Operating Costs, Dec-Mar ($M, Nominal)

Year	Low Gas, Mid CTG Ratio	Mid Gas, Mid CTG Ratio	High Gas, Mid CTG Ratio	Low Gas, High CTG Ratio	High Gas, Low CTG Ratio	High Gas, Current CTG Ratio
2026-2027	1.1	1.1	1.3	1.1	1.5	1.4
2027-2028	1.1	1.2	1.4	1.1	1.6	1.5
2028-2029	1.2	1.2	1.6	1.2	1.9	1.9
2029-2030	1.2	1.3	1.6	1.1	1.8	2.2
2030-2031	1.2	1.2	1.4	1.2	1.7	2.1
2031-2032	1.1	1.2	1.5	1.1	1.8	1.9
2032-2033	1.1	1.2	1.5	1.1	1.6	1.8
2033-2034	1.2	1.3	1.6	1.1	1.8	2.0
2034-2035	1.1	1.3	1.7	1.1	1.7	2.0
2035-2036	1.1	1.3	1.7	1.1	1.8	2.2
2036-2037	1.1	1.2	1.6	1.1	1.8	2.1
2037-2038	1.1	1.3	1.5	1.1	1.7	1.9
2038-2039	1.2	1.3	1.6	1.1	1.6	1.9
2039-2040	1.2	1.3	1.7	1.1	2.0	1.9
2040-2041	1.1	1.1	1.3	1.1	1.3	1.5

BESS Projected Operating Costs, Apr-Nov ($M, Nominal)

Year	Low Gas, Mid CTG Ratio	Mid Gas, Mid CTG Ratio	High Gas, Mid CTG Ratio	Low Gas, High CTG Ratio	High Gas, Low CTG Ratio	High Gas, Current CTG Ratio
2026	2.2	2.2	2.2	2.3	2.6	2.2
2027	2.2	2.1	2.3	2.2	3.2	3.3
2028	2.4	2.5	2.7	2.4	3.4	4.6
2029	2.2	2.3	2.5	2.2	3.5	5.4
2030	2.1	2.3	2.6	2.2	3.5	4.8
2031	2.2	2.3	2.7	2.2	3.5	5.2
2032	2.2	2.4	2.8	2.2	3.6	5.7
2033	2.2	2.3	3.0	2.2	3.5	5.5
2034	2.2	2.4	3.1	2.3	3.5	5.6
2035	2.3	2.4	3.2	2.4	4.0	5.9
2036	2.2	2.4	3.1	2.3	3.6	5.8
2037	2.3	2.4	3.2	2.3	3.9	5.5
2038	2.3	2.4	3.4	2.3	4.2	5.6
2039	2.3	2.3	3.3	2.3	3.7	6.6
2040	2.3	2.4	3.7	2.3	4.8	6.1

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 31

Responding Witness: Christopher M. Garrett

Q-31. Explain whether the Companies have determined they may be eligible for any financial incentives under the IRA or any other federal laws in addition to the investment tax credit for any portion of the BESS costs, and if so: (i) provide the benefit amount, and (ii) state whether those incentives will inure to ratepayers' benefit.

A-31. See the response to PSC 1-6 for a discussion surrounding the Energy Infrastructure Reinvestment ("EIR") program regarding the potential availability of funding for this project.

Additionally, see the response to PSC 1-47 for a discussion surrounding the investment tax credit for the BESS.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 32

Responding Witness: Christopher M. Garrett

Q-32. Explain what financial incentives are available to the Companies to keep their remaining coal-fired generation facilities open and operable.

A-32. The Companies currently receive annual Kentucky Clean Coal Incentive state income tax credits associated with its Trimble County unit 2 plant. The Companies also perform annual studies to identify qualified Research and Development (R&D) activities to claim Section 41 R&D federal income tax credits. Additionally, the Companies would be eligible to claim Section 45(q) tax credits should carbon capture and sequestration become a viable option. Lastly, see the response to PSC 1-6 for a discussion surrounding the Energy Infrastructure Reinvestment ("EIR") program regarding the potential availability of federal funding for projects to avoid, reduce, utilize or sequester air pollutants or anthropogenic emissions of GHG.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 33

Responding Witness: Stuart A. Wilson

Q-33. Provide the projected winter-time capacity figure for all of the proposed solar facilities, including Mercer, Marion, and the four proposed independently-owned sites with which the Companies will enter into PPAs.

A-33. The Companies assume a winter capacity credit of zero for all solar because winter peaks tend to occur during non-daylight hours. The projected average winter capacity factor for each solar facility is listed in the table below.

Solar Facility	Projected Capacity Factor (December - February)
Grays Branch 138 MW PPA	14.7%
Nacke Pike 280 MW PPA	14.1%
Gage Solar 115 MW PPA	16.1%
Song Sparrow 104 MW PPA	15.7%
Marion County Solar Facility	15.6%
Mercer County Solar Facility	15.0%

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 34

Responding Witness: David S. Sinclair

Q-34. Provide the winter-time capacity factor of each of the Company's existing coal-fired plants for the last ten (10) years. For Cane Run Unit 7, provide the winter-time capacity factor since the date it became commercially operable.

A-34. See the table below for the net winter season capacity factors.

	Net Capacity Factors										
	2012 Winter	2013 Winter	2014 Winter	2015 Winter	2016 Winter	2017 Winter	2018 Winter	2019 Winter	2020 Winter	2021 Winter	2022 Winter
Brown Coal	37.87%	45.53%	40.56%	29.55%	14.21%	25.25%	11.42%	22.54%	23.54%	27.00%	9.28%
Cane Run 7 NGCC	-	-	-	86.81%	45.40%	85.75%	85.37%	74.88%	86.99%	91.25%	91.30%
Ghent Coal	78.42%	85.29%	79.90%	68.07%	72.09%	73.70%	65.07%	56.13%	71.05%	52.14%	59.68%
Mill Creek Coal	74.28%	76.13%	69.12%	63.27%	74.68%	72.37%	70.24%	63.15%	66.61%	48.79%	62.19%
Trimble County Coal	57.44%	73.43%	89.09%	84.62%	81.97%	78.65%	89.30%	88.55%	81.73%	85.36%	83.39%

Winter season is December-January-February; Example: 2012 winter season = Dec-2012, Jan-2013, Feb-2013.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 35

Responding Witness: David S. Sinclair

Q-35. Explain whether the primary purpose of the solar generation facilities is to add capacity. If not, provide the primary purpose.

A-35. See the response to PSC 1-25(a).

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 36

Responding Witness: Robert M. Conroy / David S. Sinclair

Q-36. Explain whether the Companies' analyses in the instant docket examined the true levelized costs of solar photovoltaic energy, apart from all available subsidies.

a. If the Companies' analyses included such subsidies, discuss what will happen to the Companies' rates if and when subsidies should become no longer available.

b. Explain whether the Companies' revenue streams are dependent upon government subsidies for renewable generation.

A-36.

a-b. The Companies' analysis was based on the projected annual revenue requirements, not levelized costs. The Companies evaluated the RFP's PPAs' prices as proposed, which included any subsidies the bidder might have assumed. The Companies applied IRA tax incentives as appropriate to solar and battery storage asset proposals. See Exhibit SAW-1, Section 7.5 and the response to PSC 1-47(a). The Companies did not evaluate solar without subsidies.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 37

Responding Witness: Christopher M. Garrett

Q-37. Provide the net book value as of the end of 2022 of the following generating units:

a. Ghent Unit 2;

b. Mill Creek Units 1 and 2;

c. Brown Unit 3.

A-37.

a. Ghent Unit 2: $200.8m

b. Mill Creek Unit 1: $106.4m; Mill Creek Unit 2: $268.1m

c. Brown Unit 3: $614.8m

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 38

Responding Witness: Christopher M. Garrett

Q-38. Regarding the units identified in the immediately preceding question, provide the projected net book value as of the most recent projected retirement dates, as provided in this docket.

A-38.

a. Ghent Unit 2: $110.9m

b. Mill Creek Unit 1: $82.9m; Mill Creek Unit 2: $160.4m

c. Brown Unit 3: $340.1m

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 39

Responding Witness: Christopher M. Garrett

Q-39. Provide the current annual depreciation expense for Ghent Unit 2, Mill Creek Units 1 and 2, and Brown Unit 3.

a. Explain whether the Companies will be providing a depreciation study for these four units at any time prior to their projected retirement dates. If not, please identify the most recent depreciation study in which these units were assessed.

A-39. See table below for the current annual depreciation expense for Ghent Unit 2, Mill Creek Units 1 and 2, and Brown Unit 3.

Station	Depreciation Expense
Ghent Unit 2	20,059,962.90
Mill Creek Unit 1	13,264,281.81
Mill Creek Unit 2	24,190,690.91
E W Brown Unit 3	52,416,606.54
Total	$ 109,931,542.17

*The depreciation expense for Brown Unit 3 is calculated using a blended depreciation rate based on approved rates by the PSC and Virginia State Corporation Commission ("VSCC").

a. KU has been requested to file its next depreciation study based on plant and accumulated depreciation balances as of a date no later than June 30, 2025, by the VSCC Staff. However, the Companies do not anticipate updating future depreciation rates for these units given the stipulation reached in Case Nos. 2020-00349 and 2020-00350 whereby the Companies agreed not to increase the depreciation rates for Mill Creek Units 1 and 2 and Brown 3 in lieu of the establishment of the Retired Asset Recovery rider. The most recent depreciation study where the units were assessed was filed as part of Case Nos. 2020-00349 and 2020-00350.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 40

Responding Witness: Christopher M. Garrett

Q-40. Please provide the average annual cost of capital additions over the last three years for Ghent Unit 2, Mill Creek Units 1 and 2, and Brown Unit 3.

A-40. See table below for the average annual cost of capital additions over the last three years for Ghent Unit 2, Mill Creek Units 1 and 2, and Brown Unit 3.

Station	Average Annual Cost of Capital Addition
Ghent Unit 2	11,623,400.48
Mill Creek Unit 1	5,811,871.92
Mill Creek Unit 2	11,456,157.45
E W Brown Unit 3	20,983,269.30
Total	$ 49,874,699.15

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 41

Responding Witness: Christopher M. Garrett

Q-41. Provide the amount of stranded cost that will arise, if any, upon the planned retirement dates for each of Ghent Unit 2, Mill Creek Units 1 and 2, and Brown Unit 3.

A-41. See the response to Question No. 38 for the estimated remaining net book value for each of the units at the currently proposed retirement dates. The Companies expect to recover these costs along with other associated retirement costs including decommissioning costs through the Retired Asset Recovery Rider or other rate recovery.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 42

Responding Witness: Lonnie E. Bellar / David S. Sinclair

Q-42. If, hypothetically speaking, the following two events should occur / arise: (i) the BlueOval SK Battery Park is for some reason not completed and the Companies experience little or no major new load for this facility; and (ii) all four coal-fired units still retire at their currently projected dates, explain whether:

a. both of the proposed NGCC facilities would still be required; and

b. compliance with the GNP would become more expensive than anticipated.

A-42.

a. See Exhibit SAW-1, Section 5, page 40. Also, Mill Creek Unit 1 is being retired without replacement at the end of 2024, so the BlueOval SK load has no impact on that decision. Lower load would not preclude the obligation to comply with the Good Neighbor Plan, and because Mill Creek Unit 2 and Ghent Unit 2 are currently utilized and required to reliably serve load today, the proposed NGCC facilities would be required. Finally, Brown Unit 3 is being retired due to its relatively high stay-open costs, which are not impacted by the additional load of BlueOval SK.

b. Good Neighbor Plan compliance costs would not be materially impacted.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 43

Responding Witness: Lonnie E. Bellar

Q-43. Confirm that that in order to operate a NGCC at Mill Creek Station, additional gas compression would have to be added on-site. If confirmed:

a. Explain whether based on lessons learned during the Storm, the gas pipeline and compression facilities to be added at Mill Creek Station would need any type or sort of upgrades to allow for cold weather protections.

b. Please explain whether Brown Station would require any such new facilities and/or winter hardening.

A-43. The proposed NGCC facility at Mill Creek Station will require gas compression.

a. See the response to Question No. 17.

b. The proposed NGCC facility at Brown Station will require gas compression and will be designed for the temperature extremes as indicated in the response to Question No. 17(a).

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 44

Responding Witness: Christopher M. Garrett

Q-44. Provide copies of all presentations regarding the plans for the proposed CPCN projects and DSM programs made to credit ratings agencies.

A-44. The Companies have not made any presentations to the credit ratings agencies regarding the plans for the proposed CPCN projects and DSM programs at this time.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 45

Responding Witness: Christopher M. Garrett

Q-45. Provide copies of all credit ratings adjustments / updates issued that reflect the proposed CPCN projects and DSM offerings.

A-45. As discussed in the response to Question No. 44, the Companies have not made any presentations to the credit ratings agencies regarding the plans for the proposed CPCN projects and DSM programs at this time.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 46

Responding Witness: Christopher M. Garrett

Q-46. In the event that interest rates should fall over the next several years, discuss what commitment the Companies are willing to take to refinance at lower interest rates, where and when applicable, and when possible.

A-46. The Companies continually assess and review market conditions to develop its financing plans for its construction program. This includes plans to issue debt with varying maturities to ensure an appropriate capital structure is maintained and to provide flexibility should interest rates decrease. Additionally, the Companies have requested in its most recent financing applications (Case Nos. 2022-00007 and 2022-00008) and may request in the future to enter into interest rate hedging agreements to actively manage and limit its exposure to changes in interest rates or lower its exposure to changes in long-term rates between the date of the hedging facility and the bond issuance date. See also the response to PSC 1-6.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 47

Responding Witness: Christopher M. Garrett

Q-47. Confirm that the Companies intent is that for the foreseeable future, they will continue to utilize the same capital structure that was established in their 2020 rate cases.

A-47. Confirmed.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 48

Responding Witness: Robert M. Conroy

Q-48. Provide all justification for the Companies' plan to utilize a return on equity ("ROE") of 9.925%. Explain further why the ROE should not be set in accordance with the Commission's policy of setting the ROE to be used with regard to the Companies' ECR rate at 9.35%.

a. Confirm that if the Commission set the ROE at 9.35% for the new DSM portfolio, the Companies would still be earning a profit significantly higher than most companies are earning during the current difficult economy.

A-48. See the response to PSC 1-7

a. See the response to PSC 1-7.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 49

Responding Witness: Lonnie E. Bellar

Q-49. Given the Companies' intent to add over 1,000 MW of intermittent solar generation, explain whether the need for load-following dispatchable generation will also increase over current needs. Include in your response a discussion of whether the ability of a J or H class NGCC to conduct load-following is more enhanced and efficient than the type of NGCC currently operating at Cane Run Unit 7.

a. Explain whether any potential upgrades could be made at Cane Run Unit 7 to make it more cost-effective to operate, in which O&M savings would exceed costs of such an upgrade. If any such potential upgrade could also extend the operating life of Cane Run Unit 7, please explain.

A-49. The need for load-following dispatchable generation increases in conjunction with the increased penetration of intermittent renewable generation. Yes, the proposed J or H class NGCCs can conduct quicker and larger load following than the Cane Run Unit 7 installed nearly 9 years ago. The larger gas-fired engines along with almost ten years of technology improvements results in ramp rates of 60-80MW per minute.

a. There is a planned upgrade available from the original equipment manufacturer ("OEM") for the two gas turbines that are part of the power block at Cane Run 7. The upgrade facilitates an improvement in efficiency and the ability to operate at a higher capacity. The Companies entered into an agreement with the OEM in December 2022 to install the upgrade in the spring of 2024. As implemented, the Companies will initially only take advantage the efficiency improvement and partial advantage of the capacity improvement. Realization of the full capacity improvement will require an engineering evaluation of the balance of plant equipment, a transmission interconnect study, and a review of environmental regulatory impacts.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 50

Responding Witness: Charles R. Schram / David S. Sinclair

Q-50. Provide a discussion and an update on the progress the developers of the four PPA sites in Ballard, Hardin and Hopkins Counties are making in: (i) obtaining their financing; (ii) site construction and preparation; and (iii) procuring the necessary solar panels and other equipment necessary to conduct operations.

a. In the event one or more of the developers of these sites are unable to complete their projects, discuss the Companies' alternative plans.

A-50. Developers are currently focused on local approvals and State Siting Board application planning before proceeding with financing, procurement, and construction activities.

a. See the response to PSC 1-25(a). If a project is not completed and the PPA is terminated, the Companies will reassess procuring additional solar energy based on market conditions and regulations at that time.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 51

Responding Witness: David S. Sinclair

Q-51. In light of the Companies' intent to procure significant renewable resources, explain whether the Companies envision their remaining dispatchable generation assets performing at higher levels, such that they could incur higher O&M costs than previously anticipated. If so, provide cost projections for the higher O&M costs, and any related studies.

A-51. No. As shown in Mr. Sinclair's Direct Testimony in Table 2 on page 15, the Companies' generating fleet operating range is not materially different in 2028 compared to 2025. The Companies do not anticipate a material change in cycling units on and off or other unit operating costs as a result of additional renewable generation resources that are being proposed in this filing.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 52

Responding Witness: Lonnie E. Bellar

Q-52. Explain how the potential early retirement risk for the OVEC generating units would or might affect the Companies' reliability. Include in your response whether the OVEC board of directors is discussing the potential for early retirement of one or more units, and if so, whether the board has directed any relevant studies to be conducted.

A-52. See the response to PSC 1-28 and see Table 23 in Exhibit SAW-1.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 53

Responding Witness: David S. Sinclair

Q-53. If money was of no concern, could the Companies meet all the energy needs of its customers with only renewable generation?

A-53. Yes.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 54

Responding Witness: David S. Sinclair

Q-54. Explain whether the technology exists today for the Companies to meet all the energy needs of their customers with only renewable generation.

A-54. Yes, however, it would not be economical to do so. As shown in Exhibit SAW-1, page 32, Table 13, it is not even economic to comply with the Good Neighbor Plan with just renewable generation (Portfolio #8 less Portfolio #1).

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 55

Responding Witness: David S. Sinclair

Q-55. What do the companies believe is an appropriate mix of renewable energy generation and dispatchable thermal generation to ensure adequate reliability and resiliency of its electrical service grid?

A-55. The appropriate mix of future generation technologies will depend on the relative cost and performance of each technology in conjunction with the future energy needs of customers. As demonstrated in Exhibit SAW-1, the mix of supply-side and demand-side resources proposed in this case is the lowest-cost, no-regrets portfolio to reliably meet customers' forecasted energy needs and to comply with the Good Neighbor Plan.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 56

Responding Witness: Robert M. Conroy / David S. Sinclair

Q-56. Explain whether customers who participate in the Green Tariff Option #3 ("Renewable Power Agreement") are served with power generated exclusively by renewable resources, or whether that renewable power resource procured under this option is socialized with all other generation, including fossil fuel, that comes onto the Companies' joint grid.

A-56. As a matter of physics, all operating grid-connected resources, including fossil-fueled resources, affect and effect service to Green Tariff Option #3 customers to varying degrees.

As a tariff matter, the Green Tariff is specifically focused on the development and/or procurement of renewable resources. This requirement is specifically discussed within the Availability section associated with Option #3 in tariff sheet: Original Sheet No. 69 and 69.1:

<u>Option #3</u>: Renewable Power Agreement

Available as a rider to customers to be served under Company's Standard Rate Schedules TODS, TODP, RTS and FLS. Service under Option #3 requires Company and Customer to enter into a special contract, which must be filed with and approved by the Kentucky Public Service Commission.

Customers who wish to purchase the electrical output and all associated environmental attributes from a renewable energy generator may contract bilaterally with the Company. In addition this option is limited to:

1. A customer contracting for a minimum monthly billing load of 10 MVA (or MW as is appropriate).
2. Any agreement must be greater than 10 MW nameplate AC, capped at a combined Kentucky Utilities Company and Louisville Gas and Electric Company system cumulative capacity of 250 MW name plate AC and for a term that equals the generation purchase agreement for a minimum period of 5 years.
3. A Customer with multiple accounts may aggregate those accounts for the sole purpose of meeting the 10 MVA requirement.
4. Agreement must be for energy delivered to the Company's transmission system.

AVAILABILITY – continued

5. Energy serving this option must be generated from a renewable resource developed on or after the Kentucky Public Service Commission special contract approval date.
6. Customer will have the opportunity to request the type of renewable resource (e.g., solar or wind) but not the specific facility or generation source.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 57

Responding Witness: David S. Sinclair

Q-57. Explain why the Companies do not believe nuclear is a viable option at this time. Discuss whether the Companies believe nuclear should be considered as a vital option in the future, and if so, at what point in the future.

A-57. See Sinclair Direct Testimony, page 27, lines 10-21 and page 28, lines 1-16. Also see the attached paper prepared by the Companies titled "Estimated Resources Necessary to Pursue an Early Site Permit for a Small Modular Nuclear Reactor Site."

The attachment is being provided in a separate file.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 58

Responding Witness: Tim A. Jones / Stuart A. Wilson

Q-58. Reference the Jones testimony, Exhibit TAJ-2. Explain whether the Companies have developed any load reduction projections arising from the proposed Peak Time Rebate ("PTR") DSM program.

A-58. The PTR program is a dispatchable DSM program modeled as a supply-side resource. The Companies have not developed any load reduction projections for this program. See Exhibit TAJ-3 at: Hourly_Forecast_Updates\DSM\DSM Savings Summary_Cadmus_Final_D02.xlsx for energy savings associated with non-dispatchable DSM programs.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 59

Responding Witness: John Bevington

Q-59. Reference the Bevington Testimony at p. 4, wherein it is stated that through October 2022, cumulative load reductions of the Companies' current DSM programs have provided, *inter alia*, 750,000 Mcf in gas savings. Explain through which DSM program(s) these savings accrued.

a. Regarding projected gas savings arising from future programs, explain through which DSM programs these savings will accrue.

A-59. These natural gas savings have occurred from the currently active programs, WeCare and Nonresidential Rebates, as well as from some programs that are no longer active. Programs that are no longer active include Residential New Construction, Smart Energy Profile, and Residential Audit Program.

a. In the new portfolio, natural gas savings will be produced from Income-Qualified Solutions, Residential Online Audits, Business Solutions (which includes the program currently known as Nonresidential Rebates), and Connected Solutions (Online Transactional Marketplace) offerings.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 60

Responding Witness: John Bevington

Q-60. Regarding the Companies' current DSM programs: provide the cost per MW to achieve the 7-year cumulative energy efficiency of 112 MW under the existing programs, and the cost per MW to achieve the 7-year cumulative DR of 86 MW under the existing programs.

A-60. Extrapolating the existing programs for the seven-year period results in 112 MW of cumulative energy efficiency ("EE") and 86 MW of demand response ("DR") in 2030 at an annual budget of approximately $15 million/year. Using a budget of $105 million ($15 million per year * 7 years) for the seven-year period of 2024-2030 and a 75% allocation to EE and 25% to DR (based on the allocation in the 2019-2025 period), the respective values are $703/kW for EE (=75% * $105 million / 112,000 kW) and $305/kW for DR (=25% * $105 million / 86,000 kW).

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 61

Responding Witness: John Bevington

Q-61. Regarding the Companies' proposed new DSM programs: Provide the projected cost per MW to achieve the 7-year cumulative energy efficiency of 170 MW, and the projected cost per MW to achieve the 7-year cumulative DR of 207 MW.

A-61. To achieve these benefits, the Companies project a total DSM-EE portfolio cost of $341 million from 2024 to 2030. Using a budget of $341 million for the seven-year period of 2024-2030 and a 47% allocation to EE and 53% to DR (based on the allocation of the budget in the 2024-2030 period), the respective values are $943/kW for EE (=47% * $341 million / 170,000 kW) and $873/kW for DR (=53% * $341 million / 207,000 kW).

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 62

Responding Witness: John Bevington

Q-62. Reference the Bevington testimony at p. 14:1-7, regarding the increase to the Market Research budget for the purpose of studying the cost-effectiveness of a rooftop solar DSM program. Provide the amount of this budget increase. Provide also any studies the Companies may have obtained via research of the cost effectiveness of any such programs.

A-62. The Companies increased the Market Research budget from approximately $1.3 million in the last DSM Plan to approximately $7 million in this filing. This increased budget will allow the Companies to research various new technologies that may arise over the next few years, which could include rooftop solar applications, and potentially pilot new projects. See attached for external reference publications.

The attachments are being provided in separate files.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 63

Responding Witness: John Bevington

Q-63. Reference the Bevington testimony at p. 14. Regarding the PAYS financing model as a potential DSM program, explain whether the Companies are aware of whether the federal government has promulgated any additional rules or regulations under the IRA pertaining to a PAYS- type of financing model.

A-63. The Companies are monitoring IRA guidance for additional details and information on possible PAYS-type financing and are not aware of any additional rules or regulations that have been promulgated on the subject at this point.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 64

Responding Witness: John Bevington

Q-64. Reference the Bevington testimony, Exhibit JB-1, the LG&E-KU 2024-2030 DSM and EE Program plan, p. 10. The italicized "Step 2" states, in pertinent part:

"The Companies worked with Cadmus to design a customized scoring rubric using 12 key objective criteria (outlined in Appendix C) such as the program's ability to generate energy savings and demand reduction, be cost-effective, and benefit disadvantaged communities. <u>Each criterion was weighted according to its importance to the Companies</u>. The Companies then assigned six individuals to score each potential program by its ability to meet each criterion, which resulted in total scores ranging from zero to 100."]. [underlined emphasis added]

a. Provide a discussion regarding how and why the Companies found each of the 12 criteria to be important, and how and why the weighting of some criteria differed in any manner from other criteria.

b. Identify the six individuals who performed the above-referenced scoring. Identify also whether these individuals are company employees, officers or directors, and if so, provide the title of each such position.

A-64.

a. The criteria in the rubric are consistent with guiding principles from past DSM filings and the Companies also reviewed and revised the criteria to be relevant to current events. The 12 criteria are all important to the Companies and/or stakeholders, and helped determine which programs could be part of a cost-effective plan.

Weighting was necessary to create a filtering process so that the Companies could devote time and resources to analyzing those programs most likely to be part of a cost-effective DSM Plan. The weighting allowed the Companies to consider a number of objectives of varying importance. While all of the criteria are important, a program's evidence of significant firm demand reduction, significant energy savings, cost-effectiveness, and benefit to disadvantaged customers/communities were given the highest priority. The Companies weighted these objectives heavily because they are indicators of cost-effectiveness, high customer value, and reflect components, like low-income assistance, that the Commission and stakeholders have specifically valued in past DSM filings. The Companies viewed other criteria that were weighted less heavily as beneficial but not necessarily required for a cost-effective program.

b. Company personnel:
Lana Isaacson, Manager, Emerging Business Planning & Development
John Hayden, Senior Planning & Development Specialist
Justin Bencomo, Senior Planning & Development Specialist

Cadmus personnel:
Amy Ellsworth, Principal
Jeana Swedenburg, Principal
Aquila Velonis, Senior Associate

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 65

Responding Witness: John Bevington

Q-65. Reference the Bevington testimony, Exhibit JB-1, the LG&E-KU 2024-2030 DSM and EE Program plan, pp. 10-11. The italicized "Step 5" states, in pertinent part: The Companies estimated participation (number of installations) for measures in the DSM/EE Program Plan using historical participation data (for measures currently offered), past potential studies, and secondary sources. . . ."

a. Explain whether the Companies have, in prior DSM plans, relied upon historical participation data and past potential studies. If so:

(i) explain further whether the then-estimated participation rates were ever compared against later actual participation rates using experience-based data; and if so,

(ii) the degree of correlation between estimated vs. actual participation rates.

(iii) Explain also whether the Companies have ever conducted any independent evaluation, measurement and verification ("EM&V") studies regarding their DSM programs' cost effectiveness.

A-65.

a. Yes, reviewing past participation is a key metric in determining the success of various DSM programs.

(i) Yes, the Companies have compared estimated participation rates to actual participation rates. This was part of the Companies' justification for either requesting more funding due to higher-than-expected participation (see Case No. 2022-00123) in the Nonresidential Rebates Program or ending programs due to lower-than-expected participation (see Case No. 2014-00003) in the Residential and Commercial HVAC Diagnostic and Tune-up Programs.

(ii) The Companies have not calculated the specific degree of correlation between estimated and actual participation rates.

(iii) On occasion, as with the recently approved Case No. 2022-00123, an independent cost-effectiveness EM&V analysis is performed (see page 10 of 20 within the application of that case). More traditionally, EM&V of cost effectiveness occurs by continuously evaluating a programs performance of energy and demand savings versus forecasts, and by operating within a programs approved budget. If a program is meeting or exceeding its forecasts and operating within the approved budget, the program will either be as cost effective or more cost effective than was projected within an approved DSM Portfolio Plan.

It should be noted, that while independent EM&V analysis for cost-effectiveness is occasional, independent EM&V on programs and processes within an approved DSM plan is very much an ongoing part of the normal course of DSM program administration.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 66

Responding Witness: Lana Isaacson

Q-66. Regarding the "Connected Solutions" program under the Companies' proposed new DR Programs, explain whether under either the subcomponent "Residential & Small Nonresidential Demand Conservation," and/or under the "Smart Thermostats, Room Air Conditioners, Water Heaters" measure, the Companies envision that they will obtain the ability to remotely adjust thermostats, electric water heaters and/or room air conditioners.

A-66. The existing Residential and Small Nonresidential Demand Conservation subcomponent and the new Smart Thermostats, Room Air Conditioners, Water Heaters measure allow the Companies to remotely adjust thermostats, electric water heaters, and/or room air conditioners. The existing Residential and Small Nonresidential Demand Conservation subcomponent uses devices connected to the customer-enrolled equipment whereas the new Smart Thermostats, Room Air Conditioners, Water Heaters measure communicates via Wi-Fi to customer-enrolled thermostats and water heaters. New enrollments would be made via the Smart Thermostats, Room Air Conditioners, Water Heaters measure.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 67

Responding Witness: John Bevington

Q-67. Reference the Bevington testimony, Exhibit JB-1, the LG&E-KU 2024-2030 DSM and EE Program plan, pp. 14-16, Table 1-1. Explain whether the proposed cost increases to the existing DSM programs are calculated into the total DSM costs as set forth in the application, or whether they are in addition thereto.

a. For each existing DSM program, provide the estimated cost increase for each bulleted item under the "Changes/Details" column.

b. For each existing DSM program which the Companies propose to retain but which will undergo modifications, explain whether the Companies performed the same Benefit-Cost calculations and analyses identified on pp. 17-19 of Ex. JB-1.

A-67. The proposed cost increases detailed in Table 1-1 are included in the total DSM budget.

a. For the existing programs, the table below (in $millions) shows the additional budget requested. The current budget is for 2024-2025 while the new budget is for 2024-2030.

Existing Program	Current Budget for 2024 & 2025	New Budget for 2024-2030	Variance
Program Dev & Admin	$1.5	$21.3	$19.8
Income-Qualified Solutions	$12.7	$70.9	$58.2
Business Solutions	$8.0	$49.9	$41.9
Connected Solutions	$4.7	$100.7	$96.0
Nonresidential DR	$1.7	$38.5	$36.8

b. Yes. The Companies performed new cost-benefit calculations for all programs, including new and currently offered programs, based on the proposed budgets and forecasted energy and demand savings outlined in the Application.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 68

Responding Witness: Lana Isaacson

Q-68. Regarding the proposed PTR program in general, and in particular referencing: (i) the PTR tab in the Excel document, "LGE KU Program Measure Inputs FINAL – Public," filed with the Application; and (ii) Tables A-7 ("Peak Time Rebates Impacts and Costs by Year") and A-8 ("Nonresidential Demand Response Program Impacts and Costs by Year").

a. Confirm that no expense for the following items was included in the Companies' analysis: (i) customer service expenses; (ii) marketing expenses; (iii) program manager expenses; and (iv) EM&V expense.

b. Explain whether the only cost included in the benefit-cost analysis was the amount of the rebate. If not, identify all costs the Companies considered, and provide an itemized breakdown of all costs included in Tables A-7 and A-8.

c. Confirm that the Companies believe the PTR program will be cost effective with a 10% participation rate.

d. Reference Table 1-9.

(i) Explain the nature of the proposed capital expenses for years 1-2; and

(ii) explain why for years 3-7, there is no capital budget.

e. Reference Table 1-8. Explain the increase in the PTR Program's annual budget for years 2 through 6.

A-68.

a. (i) The Companies understand "customer service expenses" to mean call center, business center, and key account staff expenses. There are no customer service expenses that are included within the cost-effectiveness analysis.

(ii) There are some marketing expenses included in the program's costs and thus are included within the cost-effectiveness analysis.
(iii) There are some program manager expenses included in the program's costs and thus are included within the cost-effectiveness analysis.
(iv) There are some EM&V expenses included in the program's costs and thus are included within the cost-effectiveness analysis.

b. See Table 1-3 in Exhibit JB-1 for a list of the items included in each test's cost-effectiveness calculation. Additionally, for the PTR program, see Table 4-6 in Exhibit JB-1 for an itemized budget and Table 4-9 for the Nonresidential Demand Response Program's itemized budget.

c. The Companies considered a preliminary cost-effectiveness analysis of the PTR Program that was based on a total of 100,000 customers in 2030, which resulted in a TRC above 1.0. While this participation level is not precisely 10%, it is near the requested level and shows that the program would likely be cost-effective with a 10% participation rate.

d.

(i) See the response to PSC 1-79(a). The capital expenses for years 1 and 2 reflect the cost of purchasing/licensing and setting up a vendor's software solution to administer the PTR program.

(ii) There are no capital expenses in year 3 to 7 as the costs required for running the program are primarily O&M and incentive costs.

e. The year 1 budget includes the costs of issuing an RFP for a vendor solution, and some costs for the setup work and capital expense for that vendor software. The bulk of the work and capital expense will be in year 2. Additionally, the increase in budget in years 2-6 primarily reflects incentive payments. As participation increases, the incentive budget increases. Incentive payments constitute approximately 85% of the total program budget.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 69

Responding Witness: John Bevington

Q-69. Reference the Bevington testimony, Exhibit JB-1, the LG&E-KU 2024-2030 DSM and EE Program plan, pp. 21-22. Explain how much of the Program Development and Administration budget will be devoted toward expense for: (i) "Membership in associated trade organizations;" and (ii) "subscriptions to educational and trade publications."

a. Provide a list of all trade organizations to which the Companies pay dues, which would or could be included within this expense item.

b. Explain whether any portion of these expenses are recovered in base rates.

A-69. The Companies have allocated 3-4%, depending on the year, of the Program Development and Administration budget for expenses related to trade organization memberships or subscriptions to educational and trade publications.

a. E Source Companies LLC and Midwest Energy Efficiency Alliance ("MEEA")

b. These expenses are not included in base rates.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 70

Responding Witness: Lana Isaacson

Q-70. Regarding programs with thermostats (whether company-supplied or bring-your-own) explain:

a. will participating customers be required to continue in the program for any minimum period of time?

b. will customers who wish to exit the program be charged any type or sort of fee?

c. will customers who wish to exit the program be required to return thermostats and any related equipment, or to reimburse the companies for any equipment installed on customer property?

d. will company-provided thermostats have remote access features that would allow customers to adjust thermostats via wi-fi device while they are away from the premises?

e. provide details regarding:

(i) how frequently the Companies envision remotely adjusting thermostats of participating customers ("an intervention");

(ii) how many degrees of temperature adjustment they would make for each such intervention;

(iii) the time duration each intervention would be expected to last;

(iv) whether participating customers would be able to manually override any intervention;

(v) whether the extent of any customer-initiated manual override would be limited in any manner; and

(vi) how customers could execute a customer-initiated override.

f. Would customers initiating a manual override be penalized in any manner?

A-70.

a. The specific guidelines have not yet been finalized for the minimum commitment. It is expected that the minimum time a customer would commit to participation in this program is one year.

b. The specific guidelines have not yet been finalized for the aspect of exit fees. It is expected that there will be no exit fees for customers who wish to exit the program.

c. Thermostats provided by, and installed through, the Income-Qualified Solutions program will not have to be returned at any time and will become assets of the customer. Customers that enroll in the BYOT program, will do so with an owned, qualifying thermostat or by purchasing a qualifying thermostat. Therefore, the thermostat asset is completely owned by the customer.

d. See the response to part (c). The proposed Plan does not include company-provided thermostats within its programs. An aspect of the proposed Income Qualified Solutions single family program includes the installation of a smart thermostat, where applicable.

e.

(i) The proposed Plan includes up to 25 events per year.

(ii) The specific guidelines for the temperature adjustment have not yet been finalized. Other similar programs adjust 3 to 4 degrees during the event.

(iii) The proposed Plan is based on each event lasting up to 4 hours per event.

(iv) The expectation is that enrolled customers would be able to opt-out of any event without penalty and forego the rewards they would have received following successful participation.

(v) The expectation is that should a customer choose to opt-out of a particular event, it would be isolated to that event and require an opt-out of any future events. Within the event itself, the opt-out would mean the smart thermostat operates based on the customer's settings without further limitations.

(vi) The deployment, management, and execution of this program requires implementation of an appropriate software solution for its success. The Companies expect that following notice/alert of an event sent via text or email, as selected by the participating customer, the customer would then be directed to the steps to opt-out should they choose to proceed with that option.

f. There would not be a penalty for any customer who chooses to opt out of a bring-your-own-device event. Instead, the customer would forego the potential rewards they would have received following successful participation.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 71

Responding Witness: David S. Sinclair

Q-71. In the event the Companies' proposed DR programs are approved, explain whether the Companies (which currently are not members of an RTO), would be able to dispatch / sell the DR savings into either PJM or MISO, once their Automated Metering Infrastructure ("AMI") roll-out, the CPCN for which was approved in Case Nos. 2020-00349 and 2020-00350, is completed in both service territories. If so, would proceeds of such a sale be treated in the same manner as an off-system sale?

A-71. No. The Companies' proposed DR programs are unrelated to the RTOs' demands and therefore are not applicable in the RTOs' markets.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 72

Responding Witness: Lana Isaacson

Q-72. Reference the Bevington testimony, Exhibit JB-1, the LG&E-KU 2024-2030 DSM and EE Program plan, p. 41. In the event that a given customer qualifies for more than one DR program, explain whether the specialized software discussed on this page would also be capable of optimizing the best, and most cost-efficient, DR for that customer to choose.

A-72. The Companies have not yet issued a Request for Proposals for any of the proposed programs to confirm if the software will be able to make specific demand response program recommendations based on customer criteria. The Companies' goal with the software is to provide a rich customer experience where the options are clear, it is easy for the customer to enroll, and there is active engagement throughout an event lifecycle.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 73

Responding Witness: John Bevington

Q-73. Reference the Bevington testimony, Exhibit JB-1, the LG&E-KU 2024-2030 DSM and EE Program plan, Appendix D, "Potential Study Projection." Confirm the following statement from Cadmus to Mr. Bevington: "Compared to the potential identified in the Companies' studies performed in 2016 and 2017, the 2022 potential study projection shows that cumulative electric energy-savings technical potential has declined by approximately 12% over the 20-year study horizon in the five years since the previous studies were completed."

A-73. Confirmed.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Attorney General's Initial Request for Information
Dated February 17, 2023

Case No. 2022-00402

Question No. 74

Responding Witness: Lana Isaacson / Stuart A. Wilson

Q-74. Reference the Isaacson testimony generally. Confirm that: (i) the Cross-Sector DSM Potential Study Projection indicates that the potential for energy efficiency has declined; and (ii) even the identified economic potential would fail to meet the Companies' capacity shortfall resulting from the projected retirement of Ghent Unit 2, Mill Creek Units 1 and 2, and Brown Unit 3.

A-74. Confirmed.