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 LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT'S AND LOUISVILLE/JEFFERSON COUNTY METRO GOVERNMENT'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.

Caroline J. Davison
Notary Public

Notary Public ID No. KYNP63286

My Commission Expires:

January 22, 2027

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **John R. Crockett III**, being duly sworn, deposes and says that he is President of 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.

John R. Crockett III
John R. Crockett III

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 9th 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, **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.

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.

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 Lexington-Fayette Urban County Government's and Louisville/Jefferson County Metro Government's Initial Request for Information Dated February 17, 2023

Case No. 2022-00402

Question No. 1

Responding Witness: John R. Crockett III / Lonnie E. Bellar

Q-1. Refer to the Crockett Testimony at page 1, which stated that the various supply-side proposals were consistent with the Companies' CO2 goals but that such goals were not considered an objective function in the economic analysis. Given the testimony of other representatives of LG&E/KU regarding the need to diversify generation assets and potential impact of CO2 regulations (including testimony on page 3 acknowledges the "growing certainty…that the future of electric generation in the United States and the Commonwealth will likely be lower carbon emitting" and on page 4 where it is stated, "At my direction…the Companies took a comprehensive and holistic approach to researching and analyzing a wide variety of demand- and supply-side options for continuing to provide the safe, reliable service at the lowest reasonable cost…"), explain why the Companies chose not to consider CO2 goals as an "objective function" in the Companies' economic analysis.

A-1. The Companies' CO_2 goals are important for many reasons and reflect their expectations that economic retirements will result in a lower CO2-emitting generation resource portfolio over time. When the Companies bring a proposal to the Commission for CPCN approval, they seek to propose the least cost reasonable solution to meet the need or otherwise explain why a particular proposal may not be least cost but should still be approved. The Companies' economic analysis in this case is based on a least-cost portfolio. In this case, economic resources available to the Companies are all lower carbon-emitting than generation being replaced and consistent with the Companies' interim targets.

KENTUCKY UTILITIES COMPANY
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Question No. 2

Responding Witness: Lonnie E. Bellar

Q-2. Do the economic analyses (for generation and DSM plans) consider cost impacts for customers (not just the Companies)? If so, what are these cost impacts for customers?

A-2. All of the economic analysis in this filing utilize revenue requirements which reflect the total costs that customers would have to pay for each alternative evaluated.

KENTUCKY UTILITIES COMPANY
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Question No. 3

Responding Witness: Tim A. Jones

Q-3. Refer to the Crockett Testimony at pages 2-3, which stated that the current load forecast shows a 6.5 percent increase from the 2021 IRP load forecast beginning in 2027 due to addition of BlueOval SK Battery Park as well as higher penetration of electric vehicles and electric space heating and that summer and winter peak demand are approximately 4 percent and 6 percent higher, respectively. Confirm that the comparable increase in seasonal peak demand is primarily due to the addition of the BlueOval SK Battery Park load.

A-3. Confirmed. See the response to AG 1-6. See also Figure 2 on page 7 of the Jones Direct Testimony.

KENTUCKY UTILITIES COMPANY
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Question No. 4

Responding Witness: Lonnie E. Bellar

Q-4. Does the BlueOval SK Battery Park have renewable energy targets which it must meet at that facility? If so, what are those targets? How much if any of those targets are expected to be met on site by self-generation by BlueOval?

A-4. See the response to PSC-31(d). Also, it is currently unknown how much of an eventual solar agreement will be "on site."

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Question No. 5

Responding Witness: David S. Sinclair

Q-5. Is the Battery Electric Storage System, which will be located near generation at the E.W. Brown Generation station, considered best practice for the BESS? Please explain your answer.

A-5. The Companies are not clear what the phrase "best practice" means in the context of siting battery storage facilities. Locating the proposed BESS system at E.W. Brown Generation station is appropriate because the site has adequate land and personnel and access to the bulk electric transmission system. This will allow it to charge from the grid, discharge energy to the grid, and provide ancillary services as needed to support grid operations.

KENTUCKY UTILITIES COMPANY
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Question No. 6

Responding Witness: John R. Crockett III / Lonnie E. Bellar

Q-6. Refer to the Crockett Testimony at page 8, which states that the Companies' "goal" is to be net-zero GHG by 2050 and a "commitment" not to burn unabated coal by 2050. Explain why the Companies are not committed to achieve net-zero GHG by 2050 but rather only aspire to achieve that "goal" by 2050.

A-6. The Companies disagree with the term "aspire" used in the question as that term is not contained in the referenced testimony.

As stated in PPL's 2021 Climate Assessment Report[1]:

> "At PPL, we are committed to delivering a net-zero carbon future while keeping energy reliable and affordable for our customers and communities."
>
> "We've set a clear goal to achieve net-zero carbon emissions by 2050, with interim reduction targets of 80% from 2010 levels by 2040 and 70% by 2035."
>
> "We view our path to net-zero emissions on a continuum, with a primary focus on eliminating our gross emissions, leveraging technology to remove emissions where they cannot be eliminated due to cost or reliability constraints, and finally, considering carbon offsets for any remaining emissions as the least-preferred option."

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[1] https://pplweb.wpenginepowered.com/wp-content/uploads/2022/01/PPL_Corp-2021-Climate-Assessment_2022-01-04.pdf

KENTUCKY UTILITIES COMPANY
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Question No. 7

Responding Witness: Lonnie E. Bellar

Q-7. Refer to the Crockett Testimony at page 8, which states that the plan to retire nearly 1,200 MW of coal-fired generation by 2028 is consistent with the Companies' net-zero emission goal by 2050. Explain in detail and quantify how these early coal plant retirements coupled with a proposal to construct two natural gas combined cycle units is consistent with the Companies' net-zero GHG goals.

A-7. See the responses to Question Nos. 1 and 6.

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Question No. 8

Responding Witness: Lonnie E. Bellar

Q-8. Refer to the Crockett Testimony at page 8, which stated that the NGCC proposals also comport with Companies' environmental commitments and goals because these units will produce up to 65 percent less CO_2 per MWh than the soon-to-be retired coal-fired units. Explain and quantify how the NGCC proposals will enable the Companies to achieve net-zero GHG emissions by 2050 or to otherwise meet the two interim targets of 70 percent reduction by 2035 and 80 percent reduction by 2040.

A-8. See the responses to Question Nos. 1 and 6.

KENTUCKY UTILITIES COMPANY
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Response to Lexington-Fayette Urban County Government's and Louisville/Jefferson County Metro Government's Initial Request for Information Dated February 17, 2023

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Question No. 9

Responding Witness: Lonnie E. Bellar

Q-9. Refer to the Crockett Testimony at page 8, regarding the Southeast Hydrogen Hub. Explain what the Southeast Hydrogen Hub is and what is its purpose. Further explain how research into hydrogen development allows the Companies to offset the carbon emissions of the proposed NGCC units and enables the Companies to achieve their net-zero carbon emissions goal by 2050. Explain whether the Companies anticipate this technology becoming economically available at scale within the next decade.

A-9. The Southeast Hydrogen Hub Coalition includes major utility companies Dominion Energy, Duke Energy, Louisville Gas & Electric Company and Kentucky Utilities Company (LG&E and KU), Southern Company and the Tennessee Valley Authority (TVA), along with Battelle and others. The Southeast Hydrogen Hub Coalition has been formed to pursue federal financial support for a Southeast Hydrogen Hub. The coalition will respond to the DE-FOA-0002779 Regional Clean Hydrogen Hub Funding Opportunity Announcement from the U.S. Department of Energy (DOE), which includes $8 billion for regional hydrogen hubs and is part of the Infrastructure Investment and Jobs Act (IIJA). The Companies are researching hydrogen as one of the potential technologies that can reduce carbon dioxide emissions and lower costs. Researching hydrogen production and power generation could enable low cost, low-carbon power generation in the future. Blending hydrogen in a NGCC unit could be used to reduce carbon dioxide emissions. The Companies have no estimate on the economic availability of hydrogen technologies. The Department of Energy, Hydrogen Hub initiative funds hydrogen projects with 12-year timelines and approximate completion in 2036.

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Question No. 10

Responding Witness: Lonnie E. Bellar

Q-10. Are hydrogen hub efforts specifically focused on the development of green hydrogen technologies? Describe in detail.

A-10. While the Companies' interest is in green hydrogen, the federally-funded hydrogen hub efforts, including the Southeast Hydrogen Hub coalition, which the Companies are a member of, are not specifically focused on the development of green hydrogen technologies. The coalition's vision is to develop scalable, integrated hydrogen projects at key locations across the entire Southeast in support of carbon-reduction goals and to encourage the broad-based development of a regional energy ecosystem that will allow members to deploy hydrogen as a decarbonization solution for customers and communities. More information on the hydrogen hubs is available from the DOE at:
https://www.energy.gov/oced/regional-clean-hydrogen-hubs

KENTUCKY UTILITIES COMPANY
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Question No. 11

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

Q-11. Refer to the Crockett Testimony at page 8, regarding the full-scale carbon capture feasibility study at the Cane Run NGCC facility. Provide the status of this study and state when it is expected to be completed. Do the Companies anticipate the results of this study to be any different than the Brown Station carbon capture project? Also, do the Companies anticipate this technology becoming economically available at scale in the next decade?

A-11. See the responses to JI 1-3(a) and KCA 1-43. The Companies anticipate the results of the study to be different because the carbon capture technology is being applied to NGCC generation rather than-fired coal generation.

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Response to Lexington-Fayette Urban County Government's and Louisville/Jefferson County Metro Government's Initial Request for Information Dated February 17, 2023

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Question No. 12

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

Q-12. Refer to the Crockett Testimony at page 9, which stated that the proposals would reduce the Companies' carbon emissions by over 6 million metric tons or nearly 25 percent annually compared to the Companies' carbon emissions in 2021. Explain and quantify how the reduction in the Companies' carbon emissions of more than 6 million metric tons annually was determined. Also, what is the percentage of carbon emissions reduction when compared to the baseline year used in setting the Companies' net-zero carbon reduction goal by 2050 as opposed to using the Companies' carbon emissions in 2021?

A-12. The Companies calculated this difference by subtracting their projected CO_2 emissions from generation with the proposed projects from their actual 2021 CO_2 emissions from generation. With the proposed projects, the Companies' CO_2 emissions will reduce by 3.7 million metric tons by 2027. By 2029, CO_2 emissions will reduce an additional 2.5 million metric tons.

The baseline year used in setting the Companies' net-zero goal is 2010. From 2010 to 2021, LG&E and KU have reduced CO_2 emissions by 19%. Projected CO_2 emissions in 2030 with the proposed projects are 38% lower than the Companies' 2010 CO_2 emissions. In terms of the overall parent company, PPL reductions from 2010 to 2021, PPL has reduced CO_2 emissions by 57%. Projected CO_2 emissions in 2030 with the proposed projects are 67% lower than PPL's 2010 CO_2 emissions.

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Question No. 13

Responding Witness: Lonnie E. Bellar

Q-13. Do the Companies anticipate the newly proposed NGCC plants becoming stranded assets as they make progress towards their net zero goals?

A-13. No.

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Question No. 14

Responding Witness: Philip A. Imber

Q-14. Refer to the Bellar Testimony at pages 2-3, regarding the Companies' request to U.S. EPA to allow the option of evaluating replacement generation for Mill Creek 2 and Ghent 2 as a Good Neighbor Plan compliance alternative. Provide a copy of this request and state when the Companies anticipate a response from the U.S. EPA.

A-14. See the response to PSC 1-10. Page 3 of the Company comments state: "additional flexibility and time is required to allow for compliance while maintaining a reliable and sustainable energy supply". EPA is required to globally respond to all comments in the docket when publishing a final rule. Final rule is anticipated in the second quarter of 2023.

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Question No. 15

Responding Witness: Lonnie E. Bellar

Q-15. Refer to the Bellar Testimony at page 4, regarding the continued operation of the remaining existing coal-fired plants (those plants other than Mill Creek 1 & 2, Ghent 2, and Brown 3) is expected until their respective anticipated retirement dates "absent significant new regulatory requirements, extraordinary needs due to individual unit condition, or a significant reduction in customer demand." Provide examples and quantify the threshold of what would be considered "significant new regulatory requirements," "extraordinary investment needs," or "significant reduction in customer demand" as characterized in the testimony.

A-15. The proposed retirement of Mill Creek Unit 1 is an example where significant new regulatory requirements (Effluent Limitation Guidelines) and extraordinary investment needs (cooling tower to meet 316b requirements) incur capital and operating costs that outweigh the costs incurred by transitioning to alternative energy supplies. Examples of regulatory requirement could be National Ambient Air Quality Standards, Cross State Air Pollution Rules, Effluent Guidelines, Regional Haze, Hazardous Air Pollution, or greenhouse gas standards of performance that are not achievable or the capital and operating costs of compliance technologies are higher than alternative generation sources. Extraordinary investment needs could result from component failures. Significant reduction in customer demand could result from loss of large industrial customers, blocks of municipal customers, or consumer technology (like lightbulbs) that cause demand reduction. Demand reduction resulting from these or other factors that increases reserves greater than the output of a unit could lead to unit retirement(s).

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Question No. 16

Responding Witness: Lonnie E. Bellar

Q-16. Refer to the Bellar Testimony at page 11, which stated that, as the carbon capture technology develops in the coming years, NGCC allows for better capture of CO2 at relatively lower cost due to the flue gas properties of gas-fired emissions compared to coal-fired emissions. Provide in more detail how the Companies have supported research and development around carbon capture for NGCC plants and explain whether the Companies have conducted any geological studies to determine whether the proposed NGCC sites at Mill Creek and Brown are capable of sequestering and storing the captured CO2.

A-16. The Companies have supported carbon capture research and development for NGCC plants through research projects with the University of Kentucky and Electric Power Research Institute (EPRI). The Companies provided funding for Department of Energy (DOE) Funding Opportunity Announcement (FOA) 0002515 on research to enhance carbon capture reactor performance for NGCC with CCS. The Companies provided funding and the host site for the Cane Run 7 Front End Engineering Design (FEED) study, DOE-FOA-0002515, for designing a carbon capture system for an NGCC plant. The Companies funded and provided the carbon capture unit at E.W. Brown for DOE-FOA-0002515 to research a net-negative carbon capture system for use with NGCC. The Companies also supported the 2013 Kentucky Geological Survey study on carbon dioxide storage potential for the Companies' power plants, and Mill Creek and E.W. Brown were included in this study, Evaluation of Geologic CO_2 Storage Potential at LG&E and Kentucky Utilities Power Plant Locations, Central and Western Kentucky, which is available online at Kentucky Geological Survey, https://kgs.uky.edu/kgsweb/olops/pub/kgs/CNR1_12.pdf

KENTUCKY UTILITIES COMPANY
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Question No. 17

Responding Witness: Lonnie E. Bellar

Q-17. Refer to the Bellar Testimony at page 11, which stated that all original equipment manufacturers that provide NGCC technology are designing their gas turbines to combust hydrogen in the future should it become economically viable or mandated. Do the Companies have any expectation when hydrogen will become "economically viable or mandated" and how much of a reduction in CO2 emissions will result from using hydrogen as a fuel source?

A-17. The Companies do not have expectations when hydrogen will be "economically viable or mandated". The combustion of pure hydrogen does not produce carbon dioxide, however, carbon dioxide emissions are attributed to hydrogen based on the production method. If the hydrogen is produced via an electrolyzer that is powered entirely by renewable energy, the hydrogen has no associate carbon dioxide emissions and is called "green" hydrogen. If green hydrogen is blended, then the carbon dioxide emissions reduction is directly proportional to the heat content that the hydrogen provides.

KENTUCKY UTILITIES COMPANY
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Response to Lexington-Fayette Urban County Government's and Louisville/Jefferson County Metro Government's Initial Request for Information Dated February 17, 2023

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Question No. 18

Responding Witness: Lonnie E. Bellar

Q-18. Refer to the Bellar Testimony at page 19, regarding the land acquisition for the proposed Mercer County Solar Facility. State when the Companies intend to begin the land acquisition phase and how many property owners comprise the approximately 900 acres needed for the Mercer County Solar Facility.

A-18. The Companies initiated negotiations with Savion, who has purchase options for the property in question, in November 2022 to purchase approximately 900 acres for the Mercer County Solar Facility. See the Companies' response to Mercer 1-8 for the Exclusivity Agreement the Companies have with Savion. Savion has executed an option to purchase approximately 1300 acres from Ceres Farms and expects to close on the property in April 2023. In turn, Savion will subdivide the property and sell the Companies the needed land for the Mercer County Solar Facility (approximately 900 acres). The approximately 1300 acre is owned by Ceres Farms and fully contains the required land for the Mercer County Solar Facility.

KENTUCKY UTILITIES COMPANY
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Question No. 19

Responding Witness: Lonnie E. Bellar

Q-19. Refer to the Bellar Testimony at pages 20-21, regarding the land acquisition for the proposed Marion County Solar Facility. State how many acres have been acquired by the third-party developer and approximately when LG&E/KU anticipates that the developer will acquire all the necessary acreage needed for the construction of the Marion County Solar Facility.

A-19. Property acquisition is the responsibility of the third-party developer and is a condition precedent of the transaction. Having said that, the Companies are informed the 3rd party developer has executed lease and/or purchase option agreements for 873 acres. The Companies anticipate that all land required for construction will be optioned by the end of June, 2023.

KENTUCKY UTILITIES COMPANY
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Question No. 20

Responding Witness: Lonnie E. Bellar

Q-20. Refer generally to the Petition for Full Intervention for the Mercer County Fiscal Court. Have the Companies studied alternatives to the use of the Mercer County Industrial Park for the development of solar? If yes, which parcels have been analyzed? And what were the results? If not, why not?

A-20. The Companies are familiar with the very conceptual idea that Mercer County has for the same property that Savion has purchase options on. However, the Companies have not studied alternatives to use of that property for anything other than the development of a solar facility proposed in this case.

As part of the Companies' New Generation RFP, the Companies' Project Engineering department evaluated several solar locations include existing property and property adjacent to or near existing transmission infrastructures. Based on the Companies' analysis, a property in Muhlenberg County was identified. During the development process, the Companies were unable to secure land control needed for the project. The Companies evaluated several additional properties; however, they were eliminated from consideration early in the analysis as they were unable to support a minimum of 100 MWac. It is noteworthy to understand that tracts of land large enough for utility scale solar facilities are very limited in Kentucky and they will have to compete with development and farming due to the limited large tracts and the amount of acreage needed for utility scale solar (approximate 5-6 acres per MW capacity).

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Question No. 21

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

Q-21. Refer to the Bellar Testimony at pages 16-17.

a. Regarding a new natural gas transmission pipeline needed for the proposed Mill Creek NGCC. Explain whether the Companies anticipate that there will be any issues with respect to easements for this new gas pipeline to supply the Mill Creek NGCC as a result of crossing environmentally or culturally sensitive sites. If yes, please describe the anticipated location of the pipeline and what issues that may arise.

b. Confirm that no new natural gas transmission pipeline is needed to be constructed for the proposed Brown NGCC.

A-21.

a. The Companies anticipate no issues with respect to easements for the new gas pipeline to supply the Mill Creek NGCC.

b. No new natural gas supply line is needed for the proposed Brown NGCC.

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Question No. 22

Responding Witness: David S. Sinclair

Q-22. Refer to the Sinclair Testimony at pages 5-6, which stated that the Companies could not wait to address the future of the retired units to ensure reliable service, pointing to the responses to the June 2022 RFP which showed that the earliest start date for a new fully dispatchable generating unit is April 2026, just before the Good Neighbor Plan, as proposed, would require Mill Creek 2 and Ghent 2 to severely curtail or cease operating altogether during the summer months. State why the reference point for the Companies need to address its future capacity shortfall is based upon responses to the June 2022 RFP associated with fully dispatchable resources rather than the earliest start date for non-dispatchable resources or a combination of non-dispatchable resources and battery energy storage resources.

A-22. Mr. Sinclair's testimony regarding the earliest availability of dispatchable generation is a comment on the RFP response relative to the proposed Good Neighbor Plan compliance timeframe. The June 2022 RFP was open to all technologies and, as Mr. Wilson discusses in his Direct Testimony, all RFP responses were evaluated.

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Question No. 23

Responding Witness: David S. Sinclair

Q-23. Refer to the Sinclair Testimony at pages 20-22, regarding execution risk associated with the proposed solar PPAs. Explain why the Companies did not consider more self-build solar generation capacity rather than rely on the proposed 637 MW of solar PPAs. Should one or more of the proposed solar PPA projects fail to come to fruition, how would this impact the Companies in terms of reliably serving its customers at the least reasonable cost?

A-23. Based on past experience with solar PPAs and responses to past RFPs by solar developers, independent developers have had a significant cost advantage compared to potential self-build options. These advantages were primarily linked to the high amount of debt developers utilize, aggressive assumptions regarding asset value post the PPA period, and tax treatment of solar investment tax credits. The last item was only recently addressed by the IRA. Given this cost advantage, the Companies did not think it was prudent to expend large amount of resources in developing multiple sites in advance of the RFP. With the changes in the solar market and the IRA, the Companies anticipate more aggressively pursuing owning solar projects in the future should the economics of solar warrant additional projects, especially if some of the proposed solar PPAs fail to materialize.

The solar projects are not being proposed based on reliability, but rather to hedge future fuel prices and CO_2 regulation risk. See the response to PSC 1-25(a).

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Question No. 24

Responding Witness: David S. Sinclair

Q-24. Refer to the Sinclair Testimony at page 31, which stated that the proposed resources "will lay a strong operational foundation for future coal unit retirements." Explain further regarding the statement that the proposed generation resources will result in future coal retirements for the Companies.

A-24. See Sinclair Direct Testimony, page 31, lines 9 – 23 and page 32, lines 1-13. The testimony does not say that the proposed generation in this CPCN will result in future coal retirements. It acknowledges that future coal unit retirements will occur as the units age and economics warrant and that these particular assets will be in place and supportive of future generation technologies that will replace those retiring coal units when the time comes.

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Question No. 25

Responding Witness: Stuart A. Wilson

Q-25. Refer to the Wilson Testimony at pages 22-23 and Table 5, regarding the reserve margins achieved by the 10 portfolios developed by the Companies. The testimony indicates that Portfolio 8 consisting of all renewables, batteries, and dispatchable DSM did meet the minimum total reserve capacity requirements but looking at dispatchable assets only Portfolio 8 shows potentially insufficient capacity. If minimum total reserve requirements are met, state whether fully excluding intermittent generation to assess only dispatchable generation is reasonable or justified, especially as this seems to be assessing a path that does not include storage.

A-25. The Companies have no intention of assessing reliability based solely on the level of fully dispatchable resources. See the response to PSC 1-63.

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Question No. 26

Responding Witness: Stuart A. Wilson

Q-26. Refer to the Wilson Testimony, page 23, Table 5, which shows that Portfolio 8 consisting of all renewables, batteries, and dispatchable DSM would result in a Fully Dispatchable Reserve Margin for summer at -3.9 percent. Refer also to the Wilson Testimony at page 5, which stated that the proposed unit retirements with no further action to adjust capacity would leave the Companies' summer reserve margin at 7 percent. Explain whether the information provide in Table 5 is inconsistent with the statement made on page 5 of the Wilson Testimony.

A-26. To clarify, page 5 of the Wilson testimony says, "As shown in Tables 26 and 27 of the Resource Assessment, if the Companies retired Mill Creek Unit 2, Ghent Unit 2, and Brown Unit 3 without taking any action to mitigate the loss of their capacity and energy production, the Companies' 2028 summer and winter reserve margins of 3.3% and 7.7%, respectively, would be significantly below their summer and winter minimum reserve margins of 17% and 24%, respectively."

Tables 26 and 27 of the Resource Assessment show the 3.3% summer and 7.7% winter reserve margins in the bottom rows (labeled "Total Reserve Margin") of each table in year 2028. Two rows above the "Total Reserve Margin" are rows labeled "Reserve Margin" under the heading "Dispatchable Generation Resources with Additional Coal Retirements." These values show -3.9% summer and 4.1% winter dispatchable reserve margin in year 2028, matching Table 5 on page 23 for Portfolio 8 fully dispatchable reserve margin in summer and winter.

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Question No. 27

Responding Witness: Stuart A. Wilson

Q-27. Refer to the Wilson Testimony at pages 24-26, regarding the second step of Stage Two of the Resource Assessment. Provide a narrative explanation for Table 7 which shows Portfolio 1 having a lower total CO2 emission as compared to Portfolio 8 which consists of all renewables. Provide a narrative explanation for Table 8 which shows coal units providing more energy under Portfolio 8 – All Renewables as compared to Portfolio 1 – MC NGCC, BR NGCC and 637 MW Solar PPAs. Also provide a narrative explanation as to the decrease in energy provided by NGCC under Portfolio 8 as compared to Portfolio 1.

A-27. As shown in Table 4 on page 22 of the Wilson Testimony, both Portfolio 1 and Portfolio 8 assume the retirements of 1,194 MW of net summer coal capacity. Portfolio 1 adds 1,242 MW of NGCC capacity and 637 MW of solar capacity. Portfolio 8 adds 1,972 MW of solar capacity (1,335 MW more than Portfolio 1), 143 MW of wind capacity, and 400 MW of battery storage capacity.

In Portfolio 1, the NGCC capacity has a forecasted capacity factor of approximately 75%, and it not only replaces the generation from the retired coal units but also displaces additional energy from the remaining coal units. The incremental solar and wind in Portfolio 8 (1,478 MW in total) has a forecasted capacity factor of approximately 26%. The volume of energy generated by the incremental solar and wind does not fully replace the volume of energy generated by the retiring coal units, particularly at night, and the difference must be made up by the remaining coal and SCCT units with much higher CO_2 emission rates. So, while Portfolio 8 contains more zero-CO_2-emission resources, Portfolio 1 has more NGCC capacity, which has up to 65% lower CO_2 emissions than coal on a lb/MMBtu basis and displaces significantly more coal generation than Portfolio 8.

The decrease in energy provided by NGCC under Portfolio 8 as compared to Portfolio 1 is due to Portfolio 8 only containing 691 MW of NGCC capacity

(Cane Run 7), compared to Portfolio 1 containing 1,933 MW of NGCC capacity (Cane Run 7, Mill Creek NGCC, and Brown NGCC).

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Question No. 28

Responding Witness: Stuart A. Wilson

Q-28. Refer to the Wilson Testimony at pages 29-30, regarding the first step of Stage Three of the Resource Assessment. Provide in detail how the Companies arrived at 120 MW as the right capacity size for the self-build and the acquisition solar options.

A-28. 120 MW was the size of the proposed projects based on land and optimal panel layout and was not determined by Mr. Wilson's analysis.

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Question No. 29

Responding Witness: Tim A. Jones

Q-29. Refer to the Wilson Testimony, Exhibit SAW-1, pages 45-46, Tables 26 and 27, as well as Application, page 10, Table 1. Does the data in Peak Load row of the Tables include the cumulative impact of the proposed DSM-EE programs in the Application as well as demand reductions previously approved in prior cases such as AMI? If yes, please describe those reductions by amount and type of program.

A-29. Yes. The impacts of non-dispatchable DSM-EE programs (current and proposed) are included in the load forecast, as are the impacts of CVR and ePortal savings from the AMI case.

For a summary of DSM-EE program impacts to the load forecast, see confidential Exh. TAJ-3 at:
Hourly_Forecast_Updates\DSM\DSM Savings Summary_Cadmus_Final_D02.xlsx ("Program Summary" tab).

For a summary of AMI reductions, see Exh. TAJ-3 at:
July2022_Forecast\Electric\2_Forecasts\Summary_of_Billed_Forecasts\Work\20220630_CVREnergyReductions_2023BP.xlsx and
July2022_Forecast\Electric\2_Forecasts\Summary_of_Billed_Forecasts\Work\20220706_AMI_EPortal_Savings_Adjustments_2023BP.xlsx.

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Question No. 30

Responding Witness: Stuart A. Wilson

Q-30. Refer to the Wilson Testimony, Exhibit SAW-1, page 5, paragraph 3.a.: Solar PPA execution risk analysis. In the event the execution risk materializes and one or more of the proposed solar PPAs do not come to fruition, is adding 240 MW of solar owned by the Companies sufficient to mitigate the loss of any of the solar PPAs? In other words, if a portion of the 637 MW of solar PPAs cannot be obtained, how does this impact Companies' ability to reliably serve its customers?

A-30. With no solar, the Companies' generation portfolio would not be as reliable in the hours when the solar projects would have otherwise generated power, but it would still meet minimum total reserve margin targets. The Companies' projected summer reserve margin would remain greater than their minimum total reserve margin target of 17%. Winter reserve margin would be unaffected because the expected contribution to winter peak from solar is 0%.

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Question No. 31

Responding Witness: David S. Sinclair

Q-31. Please provide a list of every renewable generation project currently in operation to or for the benefit of the Companies.

a. For each such project, please provide the county in which it is located; the type of generation (e.g., solar, wind); the nameplate capacity; whether it is company owned; leased or PPA (and if it is a PPA, who is the counterparty).

b. Please provide the same information requested above for which the Companies expect to be in operation during the next term (10) years.

A-31. See table below.

Unit	County	Type	Nameplate (AC MW)	Ownership	Counterparty
(a) Existing Units					
Brown Solar	Mercer	Solar	10	Owned	-
Archdiocese of Louisville Business Solar	Jefferson	Solar	0.03	Owned	-
Maker's Mark Business Solar	Marion	Solar	0.2	Owned	-
Dix Dam 1-3	Mercer/ Garrard	Hydro	33.6	Owned	-
Ohio Falls 1-8	Jefferson	Hydro	100.6	Owned	-
Solar Share	Shelby	Solar	2.1	Owned	-
(b) Planned Units					
Rhudes Creek	Hardin	Solar	100	PPA	ibV Energy Partners
Ragland	McCracken	Solar	125	PPA	BrightNight, LLC
Mercer Co. Solar	Mercer	Solar	120	Owned	-
Marion Co. Solar	Marion	Solar	120	Owned	-
Song Sparrow	Ballard	Solar	104	PPA	Clearway Energy
Gage Solar	Ballard	Solar	115	PPA	BrightNight, LLC
Nacke Pike	Hardin	Solar	280	PPA	ibV Energy Partners
Grays Branch	Hopkins	Solar	138	PPA	ibV Energy Partners

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Question No. 32

Responding Witness: Robert M. Conroy / Charles R. Schram / David S. Sinclair

Q-32. Refer to the Application, page 20, paragraph 31. The Companies refer to the PPA contracts as "energy only." Please define what that phrase means. Specifically, who will own the renewable energy credits ("RECs"). If the Companies will own the RECs, will the RECs be retired by the Companies. If they will be retired, will the benefits from the credits flow to customers in the respective FAC proceedings as a credit to customers? Please explain your answer.

A-32. The PPA contracts addressed in this application are "energy only" in the same manner as the PPA that was the subject of the Companies' application in Case No. 2020-00016;[2] it is "energy only" because the contract is for energy alone, not capacity. Environmental attributes including RECs, which result entirely from the renewable energy produced, will be transferred to the Companies with the energy. The Companies have the right to sell or retire the RECs. As indicated in Case No. 2020-00016, the revenue from the sale of RECs will result in a credit to the cost of energy purchased and will be a benefit to customers through the FAC. To the extent the Companies retire the RECs, there would not be any resulting revenue.

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[2] *Electronic Application of Louisville Gas and Electric Company and Kentucky Utilities Company for Approval of a Solar Power Contract and Two Renewable Power Agreements to Satisfy Customer Requests for a Renewable Energy Source under Green Tariff Option #3*, Case No. 2020-00016, Order (Ky. PSC May 8, 2020); Case No. 2020-00016, Order (Ky. PSC Dec. 16, 2020).

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Question No. 33

Responding Witness: Philip A. Imber / David S. Sinclair

Q-33. How much carbon is expected to be generated by the two NGCC units over the period 2025-2050?

A-33. See the table below.

Mill Creek NGCC and Brown NGCC CO_2 Emissions (000s Tons, Zero CO_2 Price Scenario)

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
2025	0	0	0	0	0	0
2026	0	0	0	0	0	0
2027	1,649	1,649	1,594	1,660	1,455	1,686
2028	3,231	3,165	3,103	3,264	2,776	3,304
2029	3,144	3,066	3,026	3,186	2,739	3,247
2030	3,165	3,079	3,023	3,203	2,755	3,269
2031	3,127	3,073	2,999	3,166	2,700	3,245
2032	3,205	3,132	3,028	3,240	2,712	3,292
2033	3,155	3,082	2,997	3,198	2,690	3,265
2034	3,130	3,065	2,960	3,176	2,706	3,244
2035	3,144	3,054	2,943	3,186	2,678	3,251
2036	3,131	3,044	2,923	3,175	2,695	3,242
2037	3,163	3,082	2,955	3,197	2,716	3,251
2038	3,146	3,072	2,935	3,181	2,691	3,241
2039	3,152	3,066	2,946	3,189	2,696	3,250
2040	3,209	3,120	2,972	3,248	2,725	3,296
2041	3,178	3,091	2,956	3,220	2,708	3,267
2042	3,166	3,089	2,929	3,204	2,694	3,267
2043	3,183	3,104	2,954	3,219	2,723	3,276
2044	3,191	3,104	2,942	3,226	2,694	3,282
2045	3,185	3,091	2,928	3,222	2,711	3,277
2046	3,155	3,063	2,897	3,191	2,709	3,257
2047	3,193	3,105	2,936	3,225	2,708	3,292
2048	3,231	3,147	2,957	3,261	2,738	3,298
2049	3,200	3,105	2,921	3,234	2,701	3,271
2050	3,204	3,125	2,948	3,241	2,747	3,278
2025-2050 Total	74,636	72,773	69,772	75,510	63,869	76,847

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Question No. 34

Responding Witness: Tim A. Jones

Q-34. Refer to the Jones Testimony at page 4, regarding the 2022 CPCN Load Forecast reflecting updated information since the 2021 IRP Load Forecast, such as updated actual load and customer data, updated national and regional economic forecasts and regulations, and updated model parameters. What are these updated model parameters and what is the trend in the updated national and regional economic forecasts and regulations?

A-34. For load, customer, weather, and economic data, see Exhibit. TAJ-3 at: July2022_Forecast\Electric\1_Inputs (public version available in zip files on the Commission's website for Exhibit. TAJ-3 Vols. 15-17).[3]

For model parameters, see confidential Exhibit. TAJ-3 at: July2022_Forecast\Electric\3_Data_Processing\1_Billed_to_Calendar\Analysis\CONFIDENTIAL_Model_Coefficients.

See Section 3.2 beginning on page 13 of Exhibit TAJ-1.

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[3] Vol. 15: https://psc.ky.gov/pscecf/2022-00402/duncan.crosby%40skofirm.com/12222022061733/Exhibit_TAJ-3_-_Vol._15.zip.
Vol. 16: https://psc.ky.gov/pscecf/2022-00402/duncan.crosby%40skofirm.com/12222022062925/Exhibit_TAJ-3_-_Vol._16.zip.
Vol. 17: https://psc.ky.gov/pscecf/2022-00402/duncan.crosby%40skofirm.com/12222022062925/Exhibit_TAJ-3_-_Vol._17.zip.

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Question No. 35

Responding Witness: Tim A. Jones

Q-35. Refer to the Jones Testimony at page 8, regarding the increase in distributed generation, including qualifying facilities, from 34.4 MW to almost 217 MW by 2052. Explain what is driving the projected increase in distributed generation capacity.

A-35. See Exhibit TAJ-1 at 26-34, Section 3.6.2, "Adoption and Effect of Distributed Solar Generation." See also the response to PSC 1-90(c).

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Question No. 36

Responding Witness: Tim A. Jones

Q-36. Refer to the Jones Testimony at pages 25-26, regarding projected electric vehicles in operation in the Companies' service territories to be around 300,000 by 2052, which is more than double the projections made in the 2021 IRP. Explain why the projections for EVs in the 2022 CPCN Load Forecast is more than twice the projections from the 2021 IRP.

A-36. The CPCN forecast has increased from the 2021 IRP due to three main factors, two of which were data input changes since the 2021 IRP and the third of which was a change to the modeling approach driven by recent increases in EV adoption. First, actual data since the IRP has shown higher-than-forecasted EV adoption growth which resulted in a slightly higher starting point for the forecast. Second, inclusion of Inflation Reduction Act ("IRA") EV tax credits in the forecast model made the internal combustion engine to EV cost ratio slightly more favorable for EVs, which again raised the forecast slightly.

The third factor is a result of the first two. In the 2021 IRP and other previous EV projections, the Companies blended the output of their proprietary EV forecast model with the U.S. Department of Energy's Energy Information Administration's ("EIA's") EV forecast. The EIA's forecast long-term has historically been higher than what the Companies' in-house model predicts, so the blend has resulted in a higher endpoint. But in preparing the 2022 CPCN Load Forecast, the EIA's EV forecast was lower in the long-term than what the Companies' EV model predicted. Because the Companies' previous blended EV forecast had proven to under-predict EV adoption recently, the Companies elected to use the unblended output of their own EV forecasting model in the 2022 CPCN Load Forecast.

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Question No. 37

Responding Witness: John Bevington

Q-37. Refer to the Bevington Testimony at pages 9-10, regarding the scoring rubric.

a. Provide a detailed explanation of how each rubric objective was developed and the reason why an objective was assigned either a High, Medium, or Low priority.

b. Provide a copy of the results of the evaluation conducted by the Companies and Cadmus showing how each of the 39 possible program was scored by criteria with a breakdown of how each program was scored by criteria by the three representatives of the Companies and the three representatives of Cadmus.

A-37.

a. See the responses to PSC 1-17(d) and AG 1-64(a). Additionally, see Bevington's Direct Testimony on page 82 – 84 for a detailed explanation of the objectives and their priorities.

b. See the response to PSC 1-3(a).

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Question No. 38

Responding Witness: John Bevington

Q-38. Refer to the Bevington Testimony at page 11, regarding the Total Resource Cost test.

a. Confirm that the test was applied according to industry standard methods.

b. Given that the new DSM cost recovery line item appeared to incorporate a Lost Sales Recovery component to recoup costs and the cost effectiveness tests evaluated costs to both the Companies and the customers, confirm that these reduced-sale costs are not double-counted as costs borne to both the utility and customer.

A-38.

a. Confirmed.

b. Confirmed. As stated in the Application at page 17, the Companies are not proposing any changes to the DSM Mechanism. The Companies continue to recover lost sales pursuant to KRS 278.285(1)(c) and 278.285(2)(b). Further, the Total Resource Cost Test was calculated to industry standard methods.

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Question No. 39

Responding Witness: Lana Isaacson

Q-39. Refer to the Bevington Testimony at pages 48-50, regarding the proposed Peak Time Rebates program. Explain in detail the methodology that the Companies intend to implement to measure customer-participant demand savings, including how the Companies will establish a participating customer's baseline for comparison to a peak event performance and whether the determination of a customer's baseline will be adjusted for weather.

A-39. The Companies are in the process of determining the methodology to estimate baseline consumption to calculate energy savings. The Companies have reviewed, and will continue to review, other Peak Time Rebate programs offered by utility companies to understand industry best practices. The Companies plan to work with an RFP-selected vendor to assist in the official determination.

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Question No. 40

Responding Witness: John Bevington

Q-40. Refer to the Bevington Testimony, Exhibit JB-1, LG&E/KU 2024-2030 DSM/EE Plan.

a. On pages 1-2, it is stated that the DSM/EE plans either during development or when implemented recognizes and aims to improve the comfort and indoor health of homes and buildings throughout the Companies' territories as well as addressing environmental concerns. Provide in detail how the proposed DSM/EE programs will improve indoor health and comfort and address environmental concerns.

b. At the bottom of page 2, it is stated that "At the outset of development of this DSM/EE Program Plan, the Companies sought to identify opportunities to curtail demand to compensate for planned fossil fuel generation retirements." Explain whether the Companies' developed the proposed DSM/EE Plan with a goal of deferring the need to construct fossil fuel generation and identify how that goal was incorporated into the DSM/EE Plan development process. If not, explain why not.

A-40.

a. For the WeCare program, as part of the in-person visit to determine what improvements/measures can be made for the customer, the Companies perform a health and safety walk-through with the customer. In this, the auditor can identify possible health and safety issues like internal gas leaks, combustion ventilation, infestations, condensation, standing water, or mold.

b. Yes, the DSM/EE Plan was created in concert with the development of the CPCN proposal. Identifying opportunities to curtail demand to compensate for planned fossil fuel generation retirement is a key focus of the DSM/EE plan. The Companies seek to introduce programs that assist customers from all rate classes and are cost-effective.

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Dated February 17, 2023

Case No. 2022-00402

Question No. 41

Responding Witness: Lana Isaacson

Q-41. Refer to Application, page 16.

a. Describe the "Midstream Lighting" and identify who is eligible to participate in this program.

b. Describe the "Bring-Your-Own Devices" and identify who is eligible to participate in this program.

A-41.

a. See pages 9-10 of Lana Isaacson Direct Testimony starting on line 21.

b. See page 10 of Lana Isaacson Direct Testimony starting on line 14.

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Question No. 42

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

Q-42. The Inflation Reduction Act (IRA) provides incentive bonuses for clean energy projects located near retired coal infrastructure which offer new, additional savings and reinvestment opportunities. State whether the Companies took into account these locational incentive bonuses in determining the economics of a renewable generation resource as compared to a natural gas combined cycle resource. If yes, please explain how the Companies took these bonuses into account. If no, explain why not.

A-42. See the response to PSC 1-94(c).

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Question No. 43

Responding Witness: Robert M. Conroy / Christopher M. Garrett

Q-43. The IRA also provides reinvestment financing opportunities to allow utilities and other power plant operators to access low-cost government-backed loans to reduce the rate impacts associated with large capital expenditures required to transition from coal to clean and stimulate local economic development. The IRA created two programs to support utilities in transition: one is through the U.S. Department of Energy's Loan Programs Office via the Energy Infrastructure Reinvestment program that supports $250 billion in loan-making authority to facilitate refinancing and reinvestment in capital projects at fossil infrastructure sites, using below-market interest rates. Funds can be used flexibly to replace fossil infrastructure across the entire energy industry. State whether the Companies factored this financing incentive in evaluating the economics of renewable generating resources, particularly the self-build proposals. If yes, please explain how the Companies factored this financing incentive. If no, explain why not.

A-43. See the response to PSC 1-6.

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Question No. 44

Responding Witness: John Bevington

Q-44. Are there any changes as a result of the IRA that necessitate a new evaluation of the programs presented to the Commission with this Application?

A-44. The Companies assume "the programs" refers to the Companies' proposed DSM-EE Program Portfolio. The Companies are monitoring IRA guidance for additional details and information on possible programs and are not aware of any additional rules or regulations that have been promulgated at this point that would require a new evaluation of programs proposed in the application.

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Question No. 45

Responding Witness: David S. Sinclair

Q-45. Refer to the Sinclair Testimony, pages 27-28, discussing pumped hydro storage.

a. State what, if any, financial incentives the IRA has for developing pumped hydro storage facilities.

b. State whether the Companies' determination that pumped hydro storage was not cost effective factored in financial incentives from the IRA.

A-45.

a. The IRA financial incentives for energy storage would apply to pumped hydro storage.

b. The pumped hydro proposal the Companies received in response to their RFP was for a PPA. As noted in response to Question No. 44, the Companies asked all RFP respondents to update their responses as needed to account for IRA impacts. The Companies therefore assume that the impact of IRA incentives is reflected in the PPA price.

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Question No. 46

Responding Witness: David S. Sinclair

Q-46. In the 2021 IRP, the Companies assumed that natural gas combined cycle resources would need to be equipped with carbon capture and sequestration technologies. In the instant matter, the Companies did not require the proposed NGCCs to be equipped with CCS technologies. Explain why the change in assumption regarding the need for equipping NGCC with CCS technology and state whether this had an impact on the economic analysis.

A-46. See the response to PSC 1-92. This assumption change, which was based on current regulations, impacted the analysis by resulting in the selection of NGCC units without CCS as part of the optimal portfolio, as the Companies also demonstrated in follow-up analysis in the 2021 IRP. In the 2022 Resource Assessment, the Companies evaluated all technologies for which they received responses to their June 2022 request for proposals, which included a diverse array of fossil-based, renewable, and battery options. The Companies did not receive a proposal for NGCC with CCS and therefore did not evaluate it in the 2022 Resource Assessment, but the broad range of responses the Companies did receive and analyze satisfies the CPCN requirement to thoroughly review all reasonable alternatives to meet the required need.

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Question No. 47

Responding Witness: Lonnie E. Bellar

Q-47. Did the Companies engage major account holders such as the cities to encourage them to be partners with the Companies in renewable projects? If yes, please describe what the Companies did. If not, please describe why not?

A-47. The Companies did not engage major account holders, such as cities, during development of the projects proposed in this matter. The June 2022 RFP was about obtaining options to comply with the GNP in order to reliably serve the energy needs of all customers at the lowest cost, not addressing the renewable preferences of major accounts. The Companies have ongoing discussions with major accounts for meeting their renewable objectives through Green Tariff and will continue to attempt to develop options for meeting them.

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Question No. 48

Responding Witness: Robert M. Conroy

Q-48. Refer to the Companies' Green Tariff, Option #3 Renewable Power Agreement, requires a threshold of a minimum monthly billing load of 10 MVA (or MW as is appropriate). Can customers aggregate accounts from the same customer and be eligible? If not, why not? Can different customers aggregate loads together to qualify? If not, why not?

A-48. Yes, a customer may aggregate accounts from the same customer and become eligible for the Green Tariff Option #3 requirements. This is an issue the Commission raised in its May 8, 2020 Order and clarified in its June 18, 2020 Order in Case No. 2020-00016.[4] Based on the Commission's Orders, the Green Tariff was modified "to allow a single customers the ability to aggregate usage from multiple locations to meet the minimum monthly billing load threshold".[5] The Green Tariff Availability under Option #3 states: "A Customer with multiple accounts may aggregate those accounts for the sole purpose of meeting the 10 MVA requirement."

No, different customers cannot aggregate loads together to qualify for Green Tariff Option #3 Renewable Power Agreement. Option #3 was developed to service utility scale solar to large customers. The Company has renewable offerings of other sizes to accommodate smaller customers such as Net Metering, Solar Share, Green Tariff Option #1 Renewable Energy Certificates and Green Tariff Option #2 Business Solar.

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[4] *Electronic Application of Louisville Gas and Electric Company and Kentucky Utilities Company for Approval of a Solar Power Contract and Two Renewable Power Agreements to Satisfy Customer Requests for a Renewable Energy Source under Green Tariff Option #3*, Case No. 2020-00016 (May 8, 2020 Order at 24 and June 18, 2020 Order at 17).

[5] Id. June 18, 2020 Order at 18.

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Question No. 49

Responding Witness: Lonnie E. Bellar

Q-49. Do the Companies intend to help Louisville achieve its science-based targets of net zero greenhouse gas emissions by 2040 and 50% reduction in emissions by 2030, that have been established through Mayoral Executive Order and Metro Council Resolution.

A-49. The Companies are always seeking ways to help customers and communities achieve their goals.

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Question No. 50

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

Q-50. Have the Companies considered the installation of renewable-energy generation on brownfield sites within Jefferson or Fayette Counties? If so, please provide a detailed explanation as to the Companies' consideration of this issue.

A-50. The Companies have not considered installing renewable energy generation on brownfield sites within Jefferson or Fayette Counties. The Companies are open to working with the cities on any sites that they might propose.

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Question No. 51

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

Q-51. Did the Companies prepare an RTO analysis for this Application to evaluate whether the joining an RTO would be cost-effective. If so, please provide it. If not, please explain why not?

A-51. See the testimony of Mr. Bellar at page 26. In accordance with the Commission's March 22, 2021 Orders in Case Nos. 2018-00294 and 2018-00295, the Companies' RTO Membership Analysis was filed on November 14, 2022 in the records of Case Nos. 2020-00349 and 2020-00350.[6]

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[6] Available at https://psc.ky.gov/pscecf/2020-00349/rick.lovekamp@lge-ku.com/11142022034935/Closed/03-2022_LGE_KU_RTO_Membership_Analysis.pdf; https://psc.ky.gov/pscecf/2020-00350/rick.lovekamp@lge-ku.com/11142022034938/Closed/03-2022_LGE_KU_RTO_Membership_Analysis.pdf.