

**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

**In the Matter of:**

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

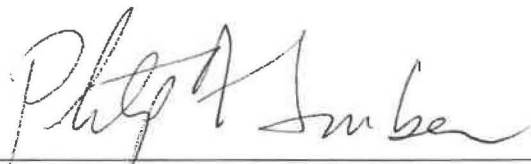
**RESPONSE OF**  
**KENTUCKY UTILITIES COMPANY**  
**AND**  
**LOUISVILLE GAS AND ELECTRIC COMPANY**  
**TO**  
**THE KENTUCKY INDUSTRIAL UTILITY CUSTOMERS, INC.'S**  
**SUPPLEMENTAL REQUEST FOR INFORMATION**  
**DATED APRIL 14, 2023**

**FILED: MAY 4, 2023**

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**

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 2<sup>nd</sup> day of May 2023.



Notary Public

Notary Public ID No. KYNP63286

My Commission Expires:

January 22, 2027



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

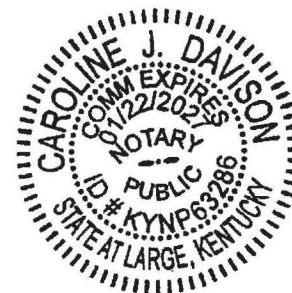
Subscribed and sworn to before me, a Notary Public in and before said County and State this 1st day of May 2023.

*Caroline J. Davison*  
Notary Public

Notary Public ID No. KYNP63286

My Commission Expires:

*January 22, 2027*



**VERIFICATION**

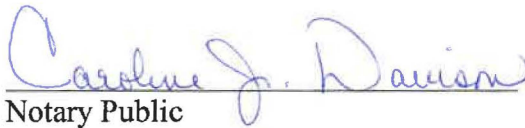
**COMMONWEALTH OF KENTUCKY )**  
**)**  
**COUNTY OF JEFFERSON )**

The undersigned, **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 1<sup>st</sup> day of May 2023.



Notary Public

Notary Public ID No. KYNP63286

My Commission Expires:

January 22, 2027





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

**Response to Kentucky Industrial Utility Customers, Inc.'s  
Supplemental Request for Information  
Dated April 14, 2023**

**Case No. 2022-00402**

**Question No. 2-1**

**Responding Witness: David S. Sinclair / Stuart A. Wilson**

- Q.2-1. In the Kentucky Power Company IRP recently filed in Case 2023-00092, there is extensive discussion throughout the IRP Report regarding the determination of forecast market prices for capacity and energy; however, in the LG&E/KU request for CPCN application, testimony, and exhibits in this proceeding, there appears to be no discussion of forecast market prices for capacity and energy.
- a. Confirm that there is no discussion of forecast market prices for capacity and energy in the LG&E/KU application, testimony, and/or exhibits. If this is incorrect, then list all references to discussion of forecast market prices for capacity and energy. If this is correct, then explain why there is no discussion and explain why market prices for capacity and/or energy are not relevant to the economics of existing supply side resources and the economics and selection of new resources.
  - b. If the Companies developed and/or used forecast market prices for capacity and energy in the base reference case and the screening, selection of resources, and sensitivities modeling in PLEXOS and PROSYM, then describe how they developed these prices and how they were used in the modeling. In addition, provide the forecast market prices used for the modeling if, in fact, such market prices were used in that modeling. Provide the source(s) of those market prices, including any forecast data series relied on for this purpose.
  - c. Also describe how market prices for capacity and energy would and/or could affect the base reference case and the screening, selection of resources, and sensitivities in each step of the modeling process.
  - d. Indicate if the Company developed any sensitivities of forecast market prices for capacity and energy, and if so, describe how these lower or higher market prices affected the base reference case and the screening, selection of resources, and sensitivities in each step of the modeling process.

- e. Provide the Company's most recent forecast of market prices for capacity and energy for both on-peak and off-peak for each market trading hub and each month during the study period.
- f. Provide the bi-directional transmission capacity limits for transactions to and from each market trading hub for each month during the study period that were used in the PLEXOS and/or PROSYM models.
- g. If there are any other limits on transactions to market trading hubs such as market depth limits, please provide the limits for the study period that were used in the PLEXOS and/or PROSYM models.

A.2-1.

- a. Confirmed. See the response to JI 1-1.165. The consideration of a market price for capacity and energy would be appropriate only if the Companies were RTO members, as is the case with Kentucky Power. The ability of generation to hedge load's market price exposure is extremely important for RTO members because all load pays market price in an RTO.
- b. Not applicable. See the response to part (a).
- c. See the response to part (a). If the consideration of market energy and capacity prices was appropriate, it would continue to be challenging to forecast these prices given the uncertainty that currently exists in RTO markets.<sup>1</sup>
- d. Not applicable. See the response to part (a).
- e. For forecasted PJM annual capacity prices through the 2040/2041 planning year, see the response to SC 1-12(a), Attachment 1 (*SC DRI LGE KU Attach to Q12(a) – Att 1 RTO Files*), filename *GuidehouseRTO\_Capacity Prices.xlsx*. For forecasted PJM West Hub monthly energy prices by peak type, see attached. The Companies do not have current capacity or energy price forecast data for additional years or trading hubs.
- f-g. Not applicable. See the response to part (a).

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<sup>1</sup> See, e.g.,

<https://www.utilitydive.com/news/pjm-miso-iso-ne-capacity-markets-ferc-reliability/645285/>;  
<https://insidelines.pjm.com/pjm-board-of-managers-delays-capacity-auction-schedule-pending-resource-adequacy-reform/>;  
<https://insidelines.pjm.com/pjm-stakeholders-discuss-pjm-draft-proposal-for-capacity-market-reform/>.

The attachment is being  
provided in a separate  
file.



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

**Response to Kentucky Industrial Utility Customers, Inc.'s  
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**Case No. 2022-00402**

**Question No. 2-2**

**Responding Witness: Philip A. Imber / Stuart A. Wilson**

- Q.2-2. Refer to Portfolio 4 described on Table 10 in Exhibit SAW-1 at 28 where no SCR is installed on Ghent 2, but it continues to operate beyond 2028 during the “non-ozone months.” For each month during the study period where there is a difference compared to the base reference case wherein Ghent 2 is retired in 2028, provide the following information.
- a. Net increase in off-system sales margins, including the calculation of those margins (incremental off-system sales revenues, less incremental fuel expense, less incremental environmental expenses, less incremental variable non-fuel O&M expense, less incremental other variable operating expenses). Provide all assumptions and other inputs that affect these calculations, including, but not limited to, inputs into PLEXOS and PROSYM in Excel or text report format and all PLEXOS and PROSYM outputs in Excel or text report format.
  - b. Ghent 2 fixed operating expenses, including, but not limited to, fixed non-fuel O&M expense and other fixed or non-variable operating expenses that will be incurred solely due to the continued operation of Ghent 2 in lieu of the base reference case retirement of that unit in 2028. Indicate if these expenses are inputs or outputs of PLEXOS and/or PROSYM. Provide all assumptions and other inputs, as well as all calculations of each of these expenses.
  - c. Ghent 2 capital expenditures that will be incurred solely due to the continued operation of Ghent 2 in lieu of retirement in 2028. Provide all assumptions and detail as to the capital expenditures required to continue operation.
  - d. Indicate if the decision to install an SCR on Ghent 2 can be made at a later date if the Company initially continues to operate the unit only during the “non-ozone” months instead of retiring it in 2028, but subsequently determines it would be economic to install an SCR and operate it during all months, including the “ozone” months. Identify each requirement, and the

costs of each such requirement, to maintain the flexibility to install an SCR at a later date.

- e. Refer to Table 11 in Exhibit SAW-1 at 29. In portfolio 4, confirm that the addition of the proposed Brown 12 NGCC resource would be delayed compared to portfolio 1. In portfolio 4, indicate when the proposed Brown 12 NGCC resource would be added.

A.2-2.

- a. Not applicable. Consistent with other long-term resource planning analyses performed by the Companies, the CPCN analysis does not include short-term, non-firm energy purchases or sales with unspecified third parties. The Companies do not believe that it is prudent to make long-term reliability driven asset decisions based on speculation about electricity prices associated with short-term, non-firm sales and purchase opportunities that may or may not materialize. Therefore, the Companies have not completed this analysis.
- b. See the attachment being provided in Excel format. The data and calculations that support this information are available in “\04\_FinancialModel\Support\StayOpenCosts\20221207\_StayOpenSummary\_0308.xlsx” and “\04\_FinancialModel\Support\StayOpenCosts\20221021\_StayOpenDetail\_GH\_0308.xlsx” in Exhibit SAW-2. The Companies’ proposal to retire Ghent 2 in 2028 assumes that its turbine overhaul in 2027 would be avoided. Continued operation of Ghent 2 would require the Companies to perform the turbine overhaul in addition to maintaining ongoing fixed O&M spending.
- c. See the response to part (b). The Companies’ proposal to retire Ghent 2 in 2028 assumes that its turbine overhaul in 2027 would be avoided and that capital spending for Ghent 2 would begin tapering down as the unit approaches retirement. Continued operation of Ghent 2 would require the Companies to perform the turbine overhaul and maintain near-term and ongoing capital spending.
- d. Yes, the Companies could decide to operate Ghent 2 during non-ozone months and subsequently decide to install an SCR to allow for year-round operation. However, if Ghent 2 is not operated during the ozone season for two consecutive years, it would lose status as a Group 3 unit and be considered a new unit under the GNP. Under this scenario, Ghent 2 would return to ozone season under the new unit set aside process. Ghent 2 can maintain Group 3 status by an ozone season operating hour. In this scenario, due to the nature of the dynamic budgeting mechanism in the Good Neighbor Plan, each ozone season in which Ghent 2 is not operated reduces future allowances and reduces the flexibility of future ozone season operation.

Implementing SCR control at a future date would trigger New Source Review (NSR) for a change in operation. The NO<sub>x</sub> and other air pollutant NSR implications of returning to year-round operation are uncertain. The Companies are not aware of the incremental investment that would be required to maintain the flexibility to install an SCR at a later date.

- e. Confirmed. In Portfolio 4, Brown 3 is retired with no replacement and Ghent 2 operates only during the non-ozone season throughout the analysis period. The Brown NGCC is never added in Portfolio 4.

The attachment is being  
provided in a separate  
file.

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

**Response to Kentucky Industrial Utility Customers, Inc.'s  
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Dated April 14, 2023**

**Case No. 2022-00402**

**Question No. 2-3**

**Responding Witness: Charles R. Schram**

- Q.2-3. Refer to the Direct Testimony of Mr. Sinclair at 21:9 through 22:5 wherein he addresses the price reopener on two of the proposed PPAs as a form of mitigation to the solar PPA execution risk. Describe the ability of the other two PPA sellers to reopen the pricing or to terminate the contracts at their discretion.
- A.2-3. See the response to PSC 1-27. There is no price reopener provision in the Clearway Song Sparrow PPA. For the Gage GGSO PPA, the developer may exercise a price reopener within specific timeframes.