COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF KENTUCKY	**)**	
UTILITIES COMPANY AND LOUISVILLE GAS	**)**	
AND ELECTRIC COMPANY FOR	**)**	**CASE NO. 2025-00045**
CERTIFICATES OF PUBLIC CONVENIENCE	**)**	
AND NECESSITY AND SITE COMPATIBILITY	**)**	
CERTIFICATES	**)**	

RESPONSE OF
KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY
TO
THE COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION
DATED APRIL 30, 2025

FILED: MAY 16, 2025

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Lonnie E. Bellar**, being duly sworn, deposes and says that he is Senior Vice President Engineering and Construction for PPL Services Corporation and he provides services to Louisville Gas and Electric Company and Kentucky Utilities Company, 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 12th day of May 2025.

Caroline J. Davison
Notary Public

Notary Public ID No. KYNP63286

My Commission Expires:

January 22, 2027

CAROLINE J. DAVISON
COMM EXPIRES 01/22/2027
NOTARY PUBLIC
ID # KYNP63286
STATE AT LARGE, KENTUCKY

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **John Bevington**, being duly sworn, deposes and says that he is Senior Director – Business and Economic Development for PPL Services Corporation and he provides services to Louisville Gas and Electric Company and Kentucky Utilities Company, 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 12th day of May 2025.

Caroline J. Davison
Notary Public

Notary Public ID No. KYNP63286

My Commission Expires:

January 22, 2027

CAROLINE J. DAVISON
COMM. EXPIRES 01/22/2027
NOTARY
PUBLIC
ID # KYNP63286
STATE AT LARGE, KENTUCKY

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, 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

Robert M. Conroy

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 15th day of May 2025.

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, **Christopher M. Garrett**, being duly sworn, deposes and says that he is Vice President – Financial Strategy & Chief Risk Officer for PPL Services Corporation and he provides services to Kentucky Utilities Company and Louisville Gas and Electric Company, 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 13th day of May 2025.

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, **Daniel Hawk**, being duly sworn, deposes and says that he is Director – Transmission Strategy and Planning for Kentucky Utilities Company and Louisville Gas and Electric Company and an employee of LG&E and KU Services Company, 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.

____
Daniel Hawk

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 13th day of May 2025.

Caroline J. Davison
____
Notary Public

Notary Public ID No. KYNP63286

My Commission Expires:

January 22, 2027

CAROLINE J. DAVISON COMM EXPIRES 01/22/2027 NOTARY PUBLIC ID # KYNP63286 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 Compliance for PPL Services Corporation and he provides services to Louisville Gas and Electric Company and Kentucky Utilities Company, 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 12th day of May 2025.

Caroline J. Davison
Notary Public

Notary Public ID No. KYNP63286

My Commission Expires:

January 22, 2027

CAROLINE J. DAVISON
COMM EXPIRES 01/22/2027
NOTARY PUBLIC
ID # KYNP63286
STATE AT LARGE, KENTUCKY

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Lana Isaacson**, being duly sworn, deposes and says that she is Manager – Energy Efficiency Programs for LG&E and KU Services Company, 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 12th day of May 2025.

Caroline J. Davison

Notary Public

Notary Public ID No. KYNP63286

My Commission Expires:

January 22, 2027

CAROLINE J. DAVISON
COMM. EXPIRES 01/22/2027
NOTARY
PUBLIC
ID # KYNP63286
STATE AT LARGE, KENTUCKY

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Tim A. Jones**, being duly sworn, deposes and says that he is Senior Manager – Sales Analysis and Forecasting for LG&E and KU Services Company, 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

Tim A. Jones

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 13th day of May 2025.

Caroline J. Davison

Notary Public

Notary Public ID No. KYNP63286

My Commission Expires:

January 22, 2027

CAROLINE J. DAVISON
COMM EXPIRES 01/22/2027
NOTARY PUBLIC
ID # KYNP63286
STATE AT LARGE, KENTUCKY

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Elizabeth J. McFarland**, being duly sworn, deposes and says that she is Vice President, Transmission for Kentucky Utilities Company and Louisville Gas and Electric Company and an employee of LG&E and KU Services Company, 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.

Beth McFarland

Elizabeth J. McFarland

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 15th day of May 2025.

Caroline J. Davison
Notary Public

Notary Public ID No. KYNP63286

My Commission Expires:

January 22, 2027

CAROLINE J. DAVISON
COMM EXPIRES 01/22/2027
NOTARY PUBLIC
ID # KYNP63286
STATE AT LARGE, KENTUCKY

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Charles R. Schram**, 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 is an employee of LG&E and KU Services Company, 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 13th day of May 2025.

Caroline J. Davison

Notary Public

Notary Public ID No. KYNP63286

My Commission Expires:

January 22, 2027

CAROLINE J. DAVISON
COMM EXPIRES 01/22/2027
NOTARY PUBLIC
ID # KYNP63286
STATE AT LARGE, KENTUCKY

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **David L. Tummonds**, being duly sworn, deposes and says that he is Senior Director - Project Engineering for Kentucky Utilities Company and Louisville Gas and Electric Company and is an employee of LG&E and KU Services Company, 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 L. Tummonds

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 15th day of May 2025.

Venita M. Deutzfreeze
Notary Public

Notary Public, ID No. KYNP4577

My Commission Expires:

April 1, 2028

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Stuart A. Wilson**, being duly sworn, deposes and says that he is Director – Power Supply for Kentucky Utilities Company and Louisville Gas and Electric Company and is an employee of LG&E and KU Services Company, 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 13th day of May 2025.

Caroline J. Davison
Notary Public

Notary Public ID No. KYNP63286

My Commission Expires:

January 22, 2027

CAROLINE J. DAVISON
COMM EXPIRES 01/22/2027
NOTARY PUBLIC
ID # KYNP63286
STATE AT LARGE, KENTUCKY

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Commission Staff's Second Request for Information
Dated April 30, 2025

Case No. 2025-00045

Question No. 1

Responding Witness: Stuart A. Wilson

Q-1. Refer to the Direct Testimony of Stuart Wilson (Wilson Direct Testimony), Exhibit SAW-1, Section 4.4 Stage One: Portfolio Development, pages 29–33.

a. Perform additional PLEXOS modeling runs using identical assumptions to those in Stage One, Step One as described in Exhibit SAW-1, making no modifications, except set the "Data Center Load in Load Scenario," as that phrase is used in Table 10 on page 31 of Exhibit SAW-1, to 1,002 MW, and provide the least cost resource portfolio, as identified by PLEXOS, in each of the five fuel price scenarios.

b. Calculate and provide the total LOLE, LOLH, and EUE for each of the least cost portfolios produced in response to Item 1(a) with the reduced load assumption but otherwise using the same assumptions used to calculate the LOLEs in Table 13 on page 34 of Exhibit SAW-1.

c. Provide the present value revenue requirement (PVRR) for each of the least cost portfolios produced in response to Item 1(a) in each fuel price scenario, accounting for the change in the load assumption, but otherwise using the same method used to calculate the PVRRs for the portfolios in Table 11 of Exhibit SAW-1, and provide the workpapers used to calculate those of those amounts, in Excel spreadsheet format, with all formulas, columns, and rows unprotected and fully accessible, including an updated financial model if an updated financial model was used to calculate those amounts.

A-1.

a. See the table below. Workpapers for this response are attached in a separate file. Certain information is confidential and proprietary and is being provided under seal pursuant to a petition for confidential protection.

2030 Portfolios

Data Center Load in Load Scenario	Expected CTG Ratio			Atypical CTG Ratio	
	Low Gas, Mid CTG	Mid Gas, Mid CTG	High Gas, Mid CTG	Low Gas, High CTG	High Gas, Low CTG
1,002 MW	Brown 12; 300 MW 4hr BESS; GH2 SCR	Brown 12; 300 MW 4hr BESS; GH2 SCR	Brown 12; 300 MW 4hr BESS; GH2 Non-Ozone; 815 MW Solar	Brown 12; 300 MW 4hr BESS; GH2 SCR	Brown 12; 300 MW 4hr BESS; GH2 Non-Ozone; 815 MW Solar

b. See the table below. For the five fuel price scenarios, PLEXOS produced two unique portfolios. Workpapers for this response are attached in a separate file. Astrapé Consulting, the entity that licenses the SERVM software, has denied the Companies' permission to disclose the native file format (.bak) of the Companies' SERVM database and other proprietary files to any person or party who lacks an active SERVM license. Therefore, the Companies will provide these files to any party to this proceeding who has an active SERVM license and enters into a confidentiality agreement with the Companies.

Resource Adequacy (1,002 MW Data Center Load Scenario)

Portfolio	LOLE	LOLH	EUE
2028 Portfolio + BR12 NGCC + 300 MW CR BESS + GH2 SCR	0.42	1.46	345
2028 Portfolio + BR12 NGCC + 300 MW CR BESS + 815 MW Solar	0.32	0.74	155

c. See the table below. Workpapers for this response are attached in a separate file. Certain information is confidential and proprietary and is being provided under seal pursuant to a petition for confidential protection.

PVRR (1,002 MW Data Center Load Scenario, $M)

Fuel Price Scenario	Expected CTG Ratio			Atypical CTG Ratio	
	Low Gas, Mid CTG Portfolio	Mid Gas, Mid CTG Portfolio	High Gas, Mid CTG Portfolio	Low Gas, High CTG Portfolio	High Gas, Low CTG Portfolio
Low Gas, Mid CTG	35,240	35,240	35,738	35,240	35,738
Mid Gas, Mid CTG	41,286	41,286	41,492	41,286	41,492
High Gas, Mid CTG	53,694	53,694	53,322	53,694	53,322
Low Gas, High CTG	35,528	35,528	36,008	35,528	36,008
High Gas, Low CTG	52,292	52,292	51,988	52,292	51,988
Average	43,608	43,608	43,710	43,608	43,710

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Commission Staff's Second Request for Information
Dated April 30, 2025

Case No. 2025-00045

Question No. 2

Responding Witness: Stuart A. Wilson

Q-2. Refer to Wilson Direct Testimony, Exhibit SAW-1, Section 4.4 Stage One: Portfolio Development, Table 10, page 31. Explain whether PLEXOS produces more than one portfolio for each scenario, such as the least cost portfolio and the second or third least cost portfolio. If so, provide the top three least cost portfolios produced by PLEXOS for each fuel and load scenario in Table 10, ranked from least to highest cost for each scenario.

A-2. The Companies use fitted chronology with a six-year rolling horizon to solve large long-term models such as those used in the Stage One, Step One analysis. These settings allow PLEXOS to develop a tractable model that evaluates shorter periods with detailed granularity and progressively resolves the entire study period in full detail. While PLEXOS is able to produce more than one solution with certain study settings, this feature is not available when using a rolling horizon, as confirmed by the software vendor.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Commission Staff's Second Request for Information
Dated April 30, 2025

Case No. 2025-00045

Question No. 3

Responding Witness: Stuart A. Wilson

Q-3. Refer to Wilson Direct Testimony, Appendix C. Calculate the summer (March-November), winter (January-February, December), and total LOLE, LOLH, and EUE; and the PVRR (on an absolute and relative basis, compared to the proposed portfolio) for all alternative resource portfolios. Provide the results in a table formatted like the one provided in Case No. 2022-00402[1] in LG&E/KU's Response to Staff's PostHearing Request for Information, Item 20, Attachment 1.

A-3. See attachment being provided in a separate file as Attachment 1. Workpapers for this response are attached in separate files as Attachments 2 and 3. Certain information in Attachment 3 is confidential and proprietary and is being provided under seal pursuant to a petition for confidential protection. Astrapé Consulting, the entity that licenses the SERVM software, has denied the Companies' permission to disclose the native file format (.bak) of the Companies' SERVM database and other proprietary files to any person or party who lacks an active SERVM license. Therefore, the Companies will provide these files to any party to this proceeding who has an active SERVM license and enters into a confidentiality agreement with the Companies.

[1] Case No. 2022-00402, *Electronic Joint Application of Kentucky Utilities Company and Louisville Gas and Electric Company for Certificates of Public Convenience and Necessity and Site Compatibility Certificates and Approval of a Demand Side Management Plan and Approval of Fossil Fuel-Fired Generating Unit Retirements*.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Commission Staff's Second Request for Information
Dated April 30, 2025

Case No. 2025-00045

Question No. 4

Responding Witness: Stuart A. Wilson

Q-4. Refer to Wilson Direct Testimony, Exhibit SAW-1, page 40. Explain how LG&E/KU modeled all existing coal units that have not already been approved for retirement. Include in the explanation why certain coal units, such as Mill Creek 3 and 4 and Brown 3, were assumed to be retired, while others, such as Ghent 1-4 and Trimble 1, were not assumed to retire.

A-4. No coal units other than those already approved for retirement were assumed to be retired. The information in Table 17 on page 40 was included to provide context regarding the need for life extension costs to operate existing coal units beyond the end of their depreciable lives. All of the Companies' generating units necessarily have a book life for depreciation purposes. However, for resource planning, the Companies do not assume that each unit will retire at the end of its book life. Instead, the Companies evaluate the economics of potentially extending the life of units that have not already been approved for retirement by evaluating the investments required to do so.

In their Stage One, Step One analysis, the Companies developed resource plans with and without landfill constraints to understand the impact of these constraints on the 2030 portfolio. In the scenario with landfill constraints (Table 10 of Exhibit SAW-1), PLEXOS cannot operate Brown 3 as a coal-fired unit beyond 2034 and cannot operate Mill Creek 3-4 as coal-fired units beyond 2044. When these constraints are removed, the model continues to retire Brown 3 in most scenarios, but Mill Creek 3-4 remain in service, and the impact on the 2030 portfolios is immaterial.

In their Stage One, Step Two analysis, the Companies evaluated each of the 2030 portfolios with detailed production costs in the context of a fixed resource plan beyond 2030. Based on the Stage One, Step One results with and without landfill constraints, the Companies believed that it would be unreasonable to assume Brown 3 continues to operate through the full analysis period, and production cost modeling reflects this capacity being unavailable in 2035 as a simplifying assumption. The Companies' analysis does not reflect retirement of Mill Creek 3-4 during the analysis period. To be clear, the Companies are not requesting the retirement of any unit in this proceeding, and none of the Companies' proposals requires any unit retirements the Commission has not already approved.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Commission Staff's Second Request for Information
Dated April 30, 2025

Case No. 2025-00045

Question No. 5

Responding Witness: Robert M. Conroy / Stuart A. Wilson

Q-5. Refer to Wilson Direct Testimony, Exhibit SAW-1, page 18.

a. Explain what expansion of the curtailable service rider (CSR) entails.

b. Explain whether any customers have expressed interest in participating in the CSR-2 rider that are not currently participating.

c. Assume the credits to customers participating in CSR-2 increased. Explain whether this would likely increase customer participation in the rider.

A-5.

a. Expanding participation in CSR would require tariff revisions to reopen the riders to new participants and additional participation by existing CSR customers. The Companies' CSR-1 and CSR-2 riders have been closed to new and expanded participation since July 1, 2017, in accordance with the Commission's final orders in the Companies' 2016 base rate cases.[2]

b. Some large customers who currently have CSR-2 on other accounts have expressed interest in potentially adding accounts to CSR-2 if ever reopened. To the best of the Companies' knowledge, no CSR non-participants have directly expressed interest to the Companies about participating in Rider CSR-2, but it is possible such interest could exist. Regardless, as the Companies' analysis in this proceeding shows, adding CSR-2 curtailable load would be uneconomical.

c. Increasing CSR-2 credits would likely increase interest in the rider, but it would make the rider more uneconomical.

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[2] *Application of Kentucky Utilities Company for an Adjustment of Its Electric Rates and for Certificates of Public Convenience and Necessity*, Case No. 2016-00370, Order (Ky. PSC June 22, 2017); *Application of Louisville Gas and Electric Company For an Adjustment of Its Electric and Gas Rates and for Certificates of Public Convenience and Necessity*, Case No. 2016-00371, Order (Ky. PSC June 22, 2017).

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Commission Staff's Second Request for Information
Dated April 30, 2025

Case No. 2025-00045

Question No. 6

Responding Witness: Robert M. Conroy / Charles R. Schram / Stuart A. Wilson

Q-6. Explain whether LG&E/KU has considered expanding the curtailable service rider to allow customers to have an advanced notice option in anticipation of a need for curtailment.

A-6. It is unclear what is meant by "expanding the curtailable service rider to allow customers to have an advanced notice option." The Companies' existing CSR tariffs include advance notice requirements, as explained in greater detail below. An increase in advance notice requirements would further limit CSR's usefulness as a means of reliably serving load and therefore further decrease its economic value, making any CSR expansion more uneconomical than the Companies' analysis has already shown it to be.

The tariffed restrictions on CSR-1 and CSR-2 significantly reduce their value as compared to a comparable amount of a dispatchable resource such as a battery energy storage system ("BESS"). Subject to charging status and time needed to charge, BESS can be available all 8,760 hours of the year, typically can provide peak output four hours at a time (or longer at lower output), can fully charge and discharge up to twice a day, can be instantly dispatchable (no advance notice is required to use an owned BESS resource), and can be available for dispatch irrespective of which other units the Companies have committed or dispatched. In contradistinction, CSR-1 and CSR-2 have the following constraints:

- CSR-1
  - Maximum curtailment hours per year: 375
  - Curtailment duration constraints: minimum 30 minutes; maximum 14 hours
  - Maximum curtailment events per day: two
  - Advance notice of beginning or ending curtailment: at least 60 minutes

    - Hours with buy-through option per year: 275
    - Hours Companies can request physical curtailment per year: 100
    - Constraints on when Companies may request physical curtailment:
        - All available units have been dispatched or are being dispatched; and
        - All off-system sales have been or are being curtailed

- CSR-2
    - Maximum curtailment hours per year: 375
    - Curtailment duration constraints: minimum 30 minutes; maximum 14 hours
    - Maximum curtailment events per day: two
    - Advance notice of beginning or ending curtailment with buy-through option: at least 60 minutes
    - Hours with buy-through option per year: 275
    - Physical curtailment request constraints and conditions
        - Hours Companies can request physical curtailment per year: 100
        - Maximum physical curtailment requests per year: 20
        - When more than ten of the Companies' primary combustion turbines (those with a capacity greater than 100 MW) are being dispatched, Companies may request, but customers may buy through, physical curtailment request
            - Any buy-through of a physical curtailment request will not count toward the 100-hour limit or 20-curtailment-request limit, but will count toward the 275 buy-through hours
            - Customer has ten minutes after receiving a physical curtailment request with buy-through option to inform the Companies whether it will physically curtail (default if customer provides no response is buy-through); customer electing physical curtailment then

has 30 minutes to physically curtail (i.e., a total of 40 minutes from first notification from the Companies)

- Constraints on Companies physical curtailment requests without a buy-through option:

    - All available units have been dispatched or are being dispatched

    - Customers have 40 minutes to comply with curtailment request

As a practical matter, there is no material difference between CSR-1 and CSR-2 from a dispatcher's perspective when physical curtailments are involved—when it matters most. Using either CSR requires picking up the phone to call customers to request curtailments, which is a time-consuming and distracting process under challenging system conditions. It is important to reiterate that point: There is no "CSR button" the Companies can push to cause CSR curtailments to occur; rather, the Companies must *call* customers and count on them to respond timely, i.e., within 40 or 60 minutes for CSR-2 and CSR-1, respectively. This significantly reduces the value of CSR relative to BESS, and it places a practical constraint on how much CSR load can be added and be reasonably expected to add any dependable reliability value to the system.

To be clear, the Companies are not arguing to reduce or eliminate current CSR participation. But it is important to understand the practical and economic impacts of any expansions of CSR-2, particularly any increase to the existing credits or additional advance notice of requested curtailments.

KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Commission Staff's Second Request for Information
Dated April 30, 2025

Case No. 2025-00045

Question No. 7

Responding Witness: John Bevington / Tim A. Jones

Q-7. Explain whether LG&E/KU is able to identify any of the data centers in contact with LG&E/KU that have secured land/leases within the service area or received zoning approval. If so, explain how this factors into the economic development load forecast analysis.

A-7. Yes. The Companies are aware of land control scenarios for the data center projects being cultivated, particularly for the projects that are in the "prospect" and "imminent" stages. Higher likelihood projects, such as those that have initiated TSRs with the Companies or which have secured EPC agreements, are more indicative of projects that are in the load forecast than specific land control status (option, letter of intent, ownership, etc.). See also AG-KIUC 2-29 for additional context.

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

**Response to Commission Staff's Second Request for Information
Dated April 30, 2025**

Case No. 2025-00045

Question No. 8

Responding Witness: Stuart A. Wilson

Q-8. Refer to Wilson Direct Testimony, SAW-1, page 7. Provide a resource adequacy and reliability analysis for determining the least-cost resources for serving the 2,030 MW, 1,890 MW, 1,610 MW, and 1,470 MW of load.

A-8. In their Stage Two analysis summarized in Section 4.5 of Exhibit SAW-1, the Companies assessed the reliability of the least-cost Stage One portfolio for the load scenario with 1,750 MW of data center load. This analysis is necessary because the level of reserves needed for reliable service can vary with changes in the load and resource mix. The new resources in this portfolio comprise Brown 12, Mill Creek 6, 400 MW of Cane Run Bess, 200 MW of Ghent BESS, and SCR for Ghent 2. To perform this analysis, the Companies computed the loss-of-load expectation ("LOLE") for the least-cost portfolio, determined it was less than 1 day in 10 years, and removed BESS in 100 MW increments until LOLE was approximately 1 day in 10 years. This analysis showed that LOLE is approximately 1 day in 10 years with 400 MW of BESS, which is the maximum amount of BESS that can be installed at the Cane Run station.

For this request, the Companies repeated the Stage Two analysis for the requested load scenarios. The results are summarized in the table below along with the results of the scenario with 1,750 MW of data center load. Notably, with three NGCCs and Ghent 2 operating in the non-ozone season only (i.e., no Ghent 2 SCR), the LOLE for the 1,890 MW load scenario is 0.84 days in 10 years. If the third NGCC is replaced by a Ghent 2 SCR (so that Ghent 2 can operate year-round) and 700 MW of BESS, the LOLE for the 1,890 MW load scenario is 0.89 days in 10 years. Workpapers for this response are attached in separate files. Astrapé Consulting, the entity that licenses the SERVM software, has denied the Companies' permission to disclose the native file format (.bak) of the Companies' SERVM database and other proprietary files to any person or party who lacks an active SERVM license. Therefore, the Companies will provide these files to any party to this proceeding who has an active SERVM license and enters into a confidentiality agreement with the Companies.

Data Center Load (MW)	BR12 NGCC	MC6 NGCC	Generic NGCC	CR BESS	GH BESS	Solar PPA	Add. DSM (Y/N)	GH2 SCR (Y/N)	LOLE
2,030	645	645	645	-	-	-	Y	Y	0.67
1,890	645	645	645	-	-	-	Y	N	0.84
1,890	645	645	-	400	300	-	Y	Y	0.89
1,750	645	645	-	400	-	-	Y	Y	1.07
1,610	645	645	-	200	-	-	Y	Y	1.02
1,470	645	645	-	-	-	-	Y	Y	1.05

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Question No. 9

Responding Witness: John Bevington / Tim A. Jones

Q-9. Refer to LG&E/KU's Response to Commission Staff's First Request for Information (Staff's First Request), Item 3(b). Provide a detailed explanation of why the flat economic development load growth assumption beyond 2032 is considered conservative and potentially too low. Identify, provide and explain the potential risks associated with this assumption.

A-9. The Companies assume the intended reference of this request was the Companies' response to PSC 1-1(c), the first sentence of which stated, "The flat economic development load growth assumption beyond 2032 is conservative and potentially too low."[3] The Companies described their post-2032 zero load growth assumption as "conservative and potentially too low" because it is possible for additional data center or other economic development load to begin taking service from the Companies after 2032; the Companies' over 8,000 MW economic development queue suggests it is at least possible. Also, there are other forecasters are projecting that energy demand will continue to grow significantly through 2040, further suggesting it is possible the Companies' demand could increase beyond 2032.[4]

Regarding potential risks of the Companies' post-2032 assumption, see the response to PSC 1-1(a)(2).

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[3] The Companies' response to PSC 1-3(b) stated:

> As noted in the response to Question No. 1(a), the load forecast in this proceeding reasonably accounts for currently announced and potential projects. If current and subsequent announcements account for a much larger share of the current outlook for economic development load growth (1,750 MW) and the remaining economic development load potential remains high, the Companies would likely increase their next load forecast and possibly seek authorization for an additional resource or resources in a subsequent CPCN.

[4] *See, e.g.*, S&P Global Commodity Insights, "CI Consulting, US National Power Demand Study—Executive Summary: Electricity Demand Returns to Growth," at page 2, prepared for The American Clean Power Association (Mar. 7, 2025) ("Sustained power growth through 2040 is driven by manufacturing and data centers in the near-term, and electrification of heating and transportation in the long-term. General economic and population growth underpin the outlook along the way"), available at https://cleanpower.org/wp-content/uploads/gateway/2025/03/US_National_Power_Demand_Study_2025_ExecSummary.pdf.

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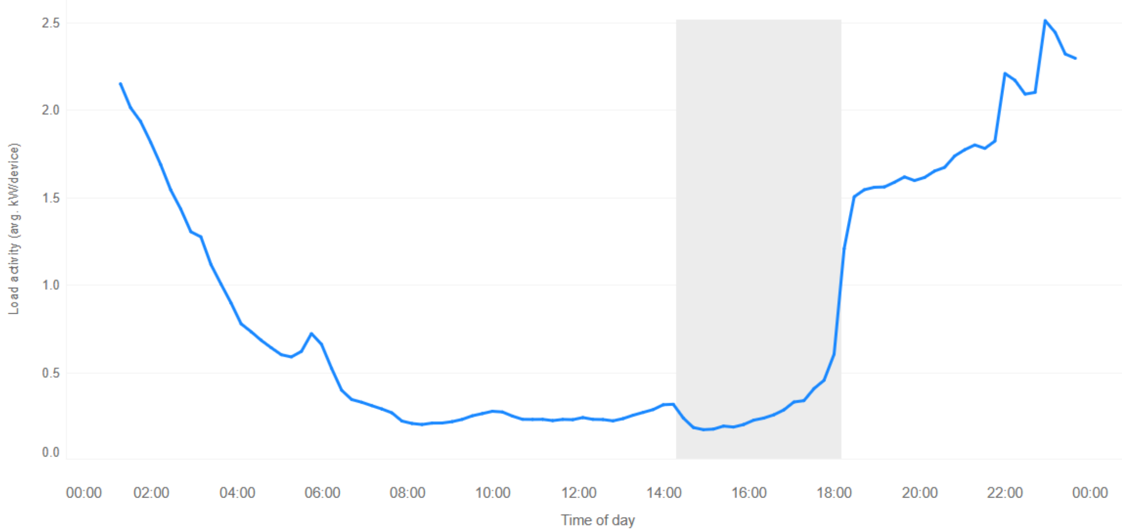
Question No. 10

Responding Witness: Lana Isaacson / Tim A. Jones

Q-10. Refer to LG&E/KU's Response to Staff's First Request, Item 5. Provide evidence or documentation supporting the claim that the listed incentives, such as the Optimized EV Charging Program, have led EV owners to change their consumption behaviors.

A-10. The Companies respectfully observe that their response to PSC 1-5 does not make any claims about behavioral changes; rather, it discusses incentives the Companies provide to encourage off-peak EV charging.

That notwithstanding, the chart below shows the average load per connected device in the Optimized EV Charging program between April 1, 2025, and May 5, 2025. Average load is lower during the peak period than would be expected based on the load before and after the peak period.



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Question No. 11

Responding Witness: Tim A. Jones

Q-11. Refer to LG&E/KU's Response to Staff's First Request, Item 6. Explain why LG&E/KU chose not to include the possibility of stronger customer growth in the CPCN load forecast and dismissed it as negligible.

A-11. The CPCN load forecast is the forecast the Companies believe is most likely to occur and therefore includes the most likely customer growth forecast. Instead of choosing the more aggressive approach to customer growth contemplated in the High load scenario in the 2024 IRP, the Companies chose to include the model with similar variables for customer growth (such as household or population projections) as they have in past residential customer models and deem this to be the most likely scenario to occur. When the Companies characterized the load impact of permanent job increases related to data centers as "negligible when compared to the loads associated with the data centers themselves," they were referring to Figures 7-17, 7-18, and 7-19 from IRP Volume I from Case No. 2024-00326. The high customer growth scenario in these figures includes more customers than would be associated with data center jobs, and the load impact of the high customer growth is negligible compared to the data center load.

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Question No. 12

Responding Witness: Lonnie E. Bellar / David L. Tummonds

Q-12. Refer to LG&E/KU's Response to Staff's First Request, Item 8.

a. Explain whether there are any updates to the response if tariff changes or uncertainty surrounding tariff changes impact the availability or supply chain for any of LG&E/KU's projects in this proceeding. In this explanation, include whether it is still true that LG&E/KU are not aware of any direct tariff-based impact on timing of current or planned construction projects. Consider this an ongoing request.

b. Provide a summary of potential impacts on contracts related to tariff-based issues, considering the concerns expressed by contract partners and the possible direct/indirect effects on project costs.

c. Explain what specific concerns contractors have raised with LG&E/KU.

A-12.

a. Since the referenced response to PSC 1-8 on April 17, 2025, the Companies and the Companies' contract partners have continued to communicate about the concern associated with tariff activity. To date, that concern does not include timing risk but focuses on cost implications as noted in the previous response. All communication continues to focus on: (i) existing contract language that appropriately governs this concern via provisions addressing "changes in law," "force majeure events," and "Excusable Events"; (ii) the Companies' emphasis that they will require that contractors demonstrate mitigation efforts and provide reasonable documentation of tariff impact at time of customs clearance prior to issuing any resulting necessary change order; and (iii) addressing the elevated concern about material imported from China, given the country-specific tariff activity. Although final impact is not known, and, given rapid ongoing tariff policy developments, cannot be known for a particular component until that component clears customs in the U.S., the following bullets note interim project status while contract partners continue to assess this risk. Contract partners have not yet estimated the presumably favorable movement following recent tariff activity, i.e., the recent 90-day reduction in tariff rates applicable to China.[5]

- The EPC/OEM consortium for Mill Creek 5 and OEM supplier for Brown BESS have assessed the material for each with planned sourcing from China. Each contract partner continues to assess the expected value of that material which will be assessed when clearing customs in the U.S. Once that value is assessed, the Companies expect to have further discussions with each contract partner relative to the project specific change order that each will likely pursue individually. The Companies will focus these discussions on adherence to contract language specifically focused on reasonable mitigation efforts and limiting each change order to the tariff cost difference at the time material clears customs in the U.S. For Mill Creek 5, the subject material is scheduled to import over the next 1-2 months. For Brown BESS, the subject material is scheduled to import in first or second quarter 2026.
- Mercer Solar: The favored bidder has estimated approximately $[redacted] in current tariff risk associated with various material across multiple export countries ([redacted]% of the proposed project cost). The bidder has issued this information proactively prior to contract award so the Companies can track potential change in law impact. The noted interim information indicates minimal reliance on Chinese material and expresses an expectation that material will import through the first and second quarter of 2026. Certain information requested is confidential and proprietary and is being provided under seal pursuant to a petition for confidential protection.
- Marion Solar: Since April 17, 2025, the Companies' partner in the Build Transfer Agreement, FRON bn LLC, has not provided substantive update to their expression of general concern previously noted.

b. See the response to part (a).

c. See the response to part (a).

[5] *See, e.g.*, "US and China reach a deal to slash sky-high tariffs for now, with a 90-day pause," AP (May 12, 2025), *available at* https://apnews.com/article/china-us-switzerland-tariffs-negotiations-b3f5174d086e39b2522ab848ddad9372 (accessed May 13, 2025).

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Question No. 13

Responding Witness: Charles R. Schram

Q-13. Refer to LG&E/KU's Response to Staff's First Request, Item 14. Explain whether LG&E/KU plans to enter into long-term commitments for gas supply or transportation contracts if its application is approved.

A-13. Yes. The Companies plan to enter into transportation contracts to ensure reliable gas deliveries to the NGCCs. The terms of such contracts may vary, but they will contain evergreen or other rollover provisions to ensure the Companies' ability to renew. The Companies also anticipate purchasing a portion of the NGCC's gas supply on a forward basis. Under the Companies' current guidelines, those forward purchases span zero to three years into the future.

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Question No. 14

Responding Witness: Lonnie E. Bellar / John Bevington / Robert M. Conroy / Tim A. Jones

Q-14. Refer to LG&E/KU's Response to Staff's First Request, Item 17(a)-(c).

a. Provide a step-by-step explanation of how LG&E/KU estimated the 1,750 MW of data center load included in the 2025 CPCN Load Forecast. In this explanation, include all factors considered in making the determination, and whether the 402 MW Camp Ground Road and the 600 MW Project Lincoln data center projects are included in the 1750 MW load forecast.

b. If LG&E/KU is unable to identify data center projects included in the 1,750 MW, explain why the Commission should not consider the load as speculative for the purposes of this proceeding.

c. Refer also to LG&E/KU's Confidential Response to Kentuckians for the Commonwealth (KFTC), Kentucky Solar Energy Society (KSES), Metropolitan Housing Coalition (MHC), and Mountain Association's (MA) (collectively, Joint Intervenors) First Request for Information, Item 6a; and the Attorney General of the Commonwealth of Kentucky, by and through the Office of Rate Intervention (Attorney General) and Kentucky Industrial Utility Customers' (KIUC) First Request, Item 33(a), Attachment. Identify which projects, and the associated MW listed in the prospect and imminent phases, also have transmission service requests (TSRs) associated with their respective projects.

A-14.

a. The Companies arrived at their 1,750 MW data center load projection in two ways. First, the Companies created an expected value calculation by weighting project sizes and probabilities in the economic development queue, as shared in the attachment to the response to AG-KIUC 1-35(a) and detailed further in the response to SC 2-9. The 1,750 MW of projected data center load falls below the mid-probability expected value of 1,905 MW but above the low-probability expected value of 1,040 MW after removing the 120 MW of BOSK phase 2 load that is included in these calculations.

Second, the Companies observed that the average size of projects in the Suspect, Prospect, and Imminent phases of the economic development queue was 350 MW. Assuming the roughly 1,000 MW of Camp Ground and Project Lincoln data center load came to fruition, only two additional 350 MW data centers (one in LG&E's service territory and the other in KU's service territory) would amount to a total demand of about 1,700 MW. Adding two such data centers was and is reasonable given the queue of more than 5,000 MW of data center potential after removing the Camp Ground and Project Lincoln data centers.

The assumed data center load ramp is consistent with that assumed in the IRP High scenario as it aligns closely with the mid-probability expected value ramp calculation.

b. See the response to part (a). This load is not speculative because the Companies are conversing with prospective data center customers on a weekly and sometimes daily basis, and those conversations show increasing and advancing interest and seriousness in moving forward toward taking service from the Companies. For example, the Companies recently submitted a TSR for an additional 123 MW at the request of the developer of the Camp Ground Road data center, bringing the total potential load for that data center to 525 MW.

But it is also important to bear in mind that receiving a CPCN for a particular resource does not mean the Companies will proceed with it irrespective of changed circumstances. For example, the Companies did not construct the Ghent 2 SCR for which they received a CPCN in Case No. 2006-00206 after they determined they could comply with the relevant regulations by over-controlling for NOx at other units. Similarly, the Companies amended their application in Case No. 2014-00002 to remove their CPCN request for the Green River 5 NGCC unit after the departure of certain municipal customers. Thus, the Companies will act on any CPCN authority granted in this proceeding only insofar as it is reasonable and prudent to do so.

c. See the updated attachment to KIUC 1-33(a) that has been provided in response to PSC 2-17(g). The confidential information shows the Project name in the TSR list reflected in AG-KIUC 1-45(a). Of note and as mentioned in part (b), since the last round of discovery, the Companies recently submitted a third TSR for the Camp Ground Road project, which brings the total load to 525 MW for the project.

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Question No. 15

Responding Witness: John Bevington / Tim A. Jones

Q-15. Refer to the Direct Testimony of Tim Jones (Jones Direct Testimony) page 14, lines 13-15 and Wilson Direct Testimony, page 5, line 12. Confirm that the Camp Ground Road data center and the Powerhouse and Poe Company data center are the same project. If not confirmed, explain the response.

A-15. Confirmed.

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Question No. 16

Responding Witness: John Bevington / Tim A. Jones

Q-16. Refer to LG&E/KU's response to Staff's First Request, Item 17(a). Refer also to LG&E/KU's response to Staff's First Request, Item 18(a).

a. Explain what LG&E/KU means by "near term".

b. Provide the rationale behind the 1,750 MW of data center load being a reasonable estimate.

c. Explain whether the 1,750 MW of data center load is still a reasonable estimate given the 1,252 MW data center load TSRs and the announced 1,002 MW data center projects in LG&E/KU's service area.

A-16.

a. In the response referenced, "near term" means through 2032.

b. See the response to Question No. 14(a).

c. Yes. See the response to Question No. 14(a).

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Question No. 17

Responding Witness: John Bevington / Tim A. Jones

Q-17. Refer to LG&E/KU's Response to Staff's First Request, Item 18(c) and LG&E/KU's response to the Attorney General and KIUC's First Request, Item 33(a), Attachment.

a. Explain whether non-economic development load follows the same five stages as economic development load. If not, explain how the process differs.

b. Provide an estimated timeline for a data center project transitioning from inquiry to announced.

c. Explain why LG&E/KU did not include the remaining 1,960 MW of non-data center projects in LG&E/KU's 2025 CPCN load forecast.

d. Provide the minimum length of time required for an economic development project to proceed through all five project stages.

e. Explain whether an economic development load always proceeds through all five stages, or whether there are instances where a specific load is assigned a later initial stage.

f. Explain whether there is a risk of a data center or other large economic development load committing to locate in LG&E/KU's service area without advancing through all five economic development stages.

g. Provide updates on each stage as economic development loads move through each stage. Consider this an ongoing request.

A-17.

a. The Companies use the five economic development stages to track all economic development projects. The Companies do not use these stages to track "non-economic development load," which the Companies interpret to mean any load requests that are not considered economic development.

b. The project stages are not a scientific methodology with a defined timeframe associated with them. There are clearly defined processes within the stages that dictate a minimum timeframe between initial inquiries and announcements. For example, a TSR must be completed for large loads and that process takes between six and nine months. While it is difficult to formally define the time frame requested, for a large load like a data center, a timeframe of a year or more is not uncommon.

c. The load forecast models for larger rate classes (namely, TOD and RTS) incorporate whatever level new customers have been added to the service territory and existing customers have closed and thus left the service territory for the time period over which the models are trained. At the time the load forecast was completed, the information available to the Companies did not suggest any of the projects associated with this 1,960 MW of load were both likely enough and large enough to include in the load forecast explicitly. However, since the CPCN load forecast was completed, existing customers have informed the Companies of approximately 90 MW of expansions that were not included in the CPCN load forecast.

d. There is no minimum timeframe for which a project progresses in the stages of the economic development queue, nor is there a requirement for each project to progress through all five stages. In some cases, projects start at a more advanced stage such as a customer expansion that may be evaluating less alternatives than a new site location project that may start by looking at a multi-state region. A project process could take as little as a few months or as long as a few years.

e. See the answer to part (d).

f. No.

g. See updated attachment to AG-KIUC 1-33(a) provided in response to PSC 2-17(g). Certain information requested is confidential and proprietary and is being provided under seal pursuant to a petition for confidential protection. It will be submitted monthly until the close of this case.

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Question No. 18

Responding Witness: John Bevington

Q-18. Refer to LG&E/KU's Response to Staff's First Request, Item 18(c).

a. Identify the source of the definitions of the project stages.

b. Confirm that there are no projects in the announced development stage, including the 402 MW Camp Ground Road Data Center and 600 MW Project Lincoln: OC Data Center projects. If not confirmed, explain whether these projects have signed a contract for electric service.

c. Refer also to LG&E/KU's response to Staff's First Request, Item 1(b). Explain whether the term "announced" used in this response is the same definition utilized by LG&E/KU in its economic development project stages.

d. Confirm that the 600 MW Project Lincoln data center is in the prospect phase. If confirmed, explain what the data center has left to do at the prospect stage to move to the imminent stage.

e. Identify the incentives that are negotiated in reference to the prospect stage.

f. Explain whether any of the incentives entail an incentive from LG&E/KU to the potential customer. If so, describe the incentive.

A-18.

a. The Companies defined the project stages several years ago to track progress with economic development-related projects. Using their experience with economic development projects, the Companies developed the sales phases to track the relative probability of how seriously a project is evaluating the Companies' service territory.

b. Confirmed.

c. The terminology in the response to Staff's First Request, Item 1(b) refers to the clients' public communication about their plans and not the "announced" project stage that the Companies use for tracking purposes.

d. Confirmed. The Companies will move this project to an imminent stage upon the execution of an EPC contract.

e Types of incentives negotiated during the prospect stage can vary widely based on the type of project, the number of jobs and the amount of investment the clients are proposing. There are state incentives, sometimes local incentives, and tariff offerings like the Companies' Economic Development Rider. It is difficult to answer the question in general terms given these facts. For a list of state incentives and qualifying projects, see https://ced.ky.gov/Locating_Expanding/Financial_Incentives**.**

f. See mention of the Companies' Economic Development Rider noted in part (e).

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Question No. 19

Responding Witness: Lonnie E. Bellar

Q-19. Refer to LG&E/KU's Response to Staff's First Request Item 19. Explain the current status of OVEC's plans for environmental compliance and the status of each compliance project.

A-19. See attachment being provided in a separate file. Certain information is confidential and proprietary and is being provided under seal pursuant to a petition for confidential protection.

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Question No. 20

Responding Witness: Stuart A. Wilson

Q-20. Refer to LG&E/KU's Response to Staff's First Request, Item 20(d). If the U.S. Energy Information Association's (EIA) 2025 price range is materially different, confirm whether LG&E/KU will update the gas price forecasts.

A-20. The Companies are reviewing EIA's 2025 AEO's forecasts and documentation, which were released in mid-April 2025, but do not plan to use the information to update the gas price forecasts. In its fundamental assumptions regarding federal regulations EIA has assumed compliance with EPA's Section 111 greenhouse gas rules, which the Companies have assumed will be remanded by the current administration.

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Question No. 21

Responding Witness: Tim A. Jones

Q-21. Refer to LG&E/KU's Response to Staff's First Request Item 28(c). Assuming that there is a distinction between technology/efficiency gains in computer chip power requirements for a given data center load versus increases in overall demand caused by an increase in the number of data center loads. Explain whether it is LG&E/KU's modeling assumption that increases in the number of data center customer loads and in other customer loads over time will outweigh any reductions in individual customer power demand due to computing chip efficiency gains.

A-21. Concerning non-data center customer loads, the Companies assumed increasing end-use efficiencies for residential and commercial customers through the SAE modeling approach, which includes consumer and business electronics.

Regarding data centers, the Companies did not model this for the CPCN load forecast or load forecast scenarios. It remains uncertain how technology and efficiency gains will affect data centers specifically. This assumption is reasonable given the historical trends seen in the response to PSC 1-28(c). Also, as reflected in the attachments to KIUC 1-33(a) and PSC 2-17(g), which show projects in the Companies' economic development queue, the Companies continue to have over 6,000 MW of potential data center load. That value has grown appreciably since shortly after the Companies filed their 2024 IRP, when there was over 4,000 MW of such potential load in their economic development queue.[6]

[6] Case No. 2024-00326, Companies' Response to KCA 1-15 ("The Companies currently have over 6,000 MW of economic development load potential based upon the current list of prospective customers, over 4,000 MW of which is related to data centers.").

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Question No. 22

Responding Witness: John Bevington / Tim A. Jones

Q-22. Refer to LG&E/KU's Response to Staff's First Request, Item 28(c).

a. Explain why only 40 MW of the 2,000 MW non-data center projects in LG&E/KU's economic development pipeline is included in the 2025 CPCN Load Forecast.

b. Provide the status and detailed descriptions of these non-data center projects in LG&E/KU's economic development pipeline.

A-22.

a. See the response to Question No. 17(c).

b. See the response to Question No. 17(g).

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Question No. 23

Responding Witness: Christopher M. Garrett

Q-23. Refer to LG&E/KU's Response to Staff's First Request, Item 31, Attachment 04-PSC_DR1_LGE_KU_Attach_to_Q31_-_AFUDC_FERC_vs_WACC.xlsx. Provide an explanation, including any calculations of amounts, for each of the assumptions used to determine the projected amounts.

A-23. The assumptions listed below are those included in the project tabs following the "Total" tab of the excel workbook provided as an attachment to Question 1-31.

- AFUDC Debt Rate FERC – See attachment being provided in a separate file for the calculation.
- AFUDC Equity Rate FERC – See attachment being provided in a separate file for the calculation.
- WACC Debt Percentage – The Companies' capital structure utilized in the 2025 Business Plan assumes a 47% total debt weighting for purposes of determining the weighted average cost of capital ("WACC").
- WACC Equity Percentage – The Companies' capital structure utilized in the 2025 Business Plan assumes a 53% total equity weighting for purposes of determining the WACC.
- WACC Debt Interest Rate – Weighted average short and long-term debt interest rate from the Companies 2025 Business Plan.
- WACC Equity Rate – Equity rate based on the Company's most recently awarded ROE from its last base rate cases (Case No. 2020-00349 and 2020-00350).
- Cane Run BESS LGE percentage – LG&E's ownership percentage of the Cane Run Battery Energy Storage System. See Section 5.2.2 of Exhibit SAW-1.
- Cane Run BESS KU percentage – KU's ownership percentage of the Cane Run Battery Energy Storage System. See Section 5.2.2 of Exhibit SAW-1.

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Question No. 24

Responding Witness: Philip A. Imber

Q-24. Refer to LG&E/KU's response to Staff's First Request, Item 45. Provide the update referenced in the response.

A-24. The Companies filed their supplemental response to PSC 1-45 on April 28th.

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Question No. 25

Responding Witness: Philip A. Imber / David L. Tummonds

Q-25. Refer to LG&E/KU's response to Staff's First Request, Item 47. Explain whether a geotechnical study will be performed for the BESS or Mill Creek NGCC facility.

A-25. The Companies continue to develop a scope of work for geotechnical study at Cane Run with the Owners Engineer. The results of the geotechnical study will support EPC bidding efforts for the Cane Run BESS. The Companies do not plan to perform a geotechnical study for Mill Creek 6 based upon geotechnical study performed for Mill Creek 5.

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Question No. 26

Responding Witness: Daniel Hawk / Elizabeth J. McFarland / David L. Tummonds

Q-26. Refer to LG&E/KU's response to Staff's First Request, Item 52(a)-(c).

a. Provide a map of the alternative transmission line placement compared to the current placement for each location.

b. Provide the expected expense of transmission line relocation for each location. Include in the response if this cost is included in the original project cost estimates.

A-26.

a. See attachment being provided in a separate file. The information requested is confidential and proprietary and is being provided under seal pursuant to a petition for confidential protection.

The map provided is for Brown 12 and Brown BESS. Transmission facility impact for relocations at Mill Creek 6 and Cane Run BESS have not been evaluated.

b. To accommodate Brown 12, the estimated expense is approximately $18 million. This estimate reflects the install of a new tie line between Brown 12 substation and the existing Brown Plant substation, as well as the relocation of an adjacent 69kV line that connects to West Cliff substation.

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Question No. 27

Responding Witness: David L. Tummonds

Q-27. Refer to LG&E/KU's response to Staff's First Request, Item 54.

a. Consider this an ongoing request for this matter. Provide any communications with the Kentucky Department of Transportation, include any applications for permits, and permits granted for each of these three projects.

b. Confirm that the estimated transportation costs related to each project were included in the cost estimate and that the increased expense due to larger loads was a portion of that expense. If not included, explain why not.

A-27.

a. The Companies have not yet communicated with the Kentucky Department of Transportation related to the projects in this CPCN filing. The Companies will work with the selected EPC contractor to ensure communication with Kentucky Department of Transportation as necessary to comply with their requirements.

b. Confirmed.

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Question No. 28

Responding Witness: David L. Tummonds

Q-28. Refer to LG&E/KU's response to Staff's First Request, Item 62(a). Explain how LG&E/KU estimated the costs of the BESS project if the technology selection has not been completed.

A-28. The Companies, with input from the Owner's Engineer, developed the project cost estimate using cost data received for the E.W. Brown (BR) BESS project and adjusted these costs to reflect the larger size of the Cane Run BESS. The lack of final technology selection creates uncertainty regarding many technical aspects of the final design, which is standard at this stage of development within a rapidly evolving industry. However, the Companies currently have no reason to suspect that interim technical changes will drive a step change to pricing.

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Question No. 29

Responding Witness: David L. Tummonds

Q-29. Refer to LG&E/KU's response to Staff's First Request, Item 62(a). Explain how LG&E/KU estimated the kWh expense of the BESS project if the technology selection has not been completed.

A-29. The Companies estimated the kWh expense of the BESS project by escalating the BR BESS expense estimated by the Owner's Engineer to the commercial operation date for the CR BESS.

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Question No. 30

Responding Witness: Philip A. Imber / David L. Tummonds

Q-30. Refer to LG&E/KU's response to Staff's First Request, Item 62(a) and Item 67. Explain how LG&E/KU concluded that the BESS facility would not need to comply with IEEE 1578 standards in relation to electrolyte spills if technology selection is not complete and the utilities are unable to provide the safety sheets for the BESS.

A-30. The lack of final technology specifics yield uncertainty regarding many technical aspects of the final design, which is standard at this stage of development within a rapidly evolving industry. However, the Companies expect that the final design will utilize lithium-ion batteries, which do not contain electrolytes, thus making IEEE 1578 inapplicable.

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Question No. 31

Responding Witness: David L. Tummonds

Q-31. Refer to LG&E/KU's response to Staff's First Request, Item 84. The response states that the EPC contractor will be responsible for designing the pipeline for the Brown unit.

a. Explain what role the natural gas provider will have in this process.

b. If LG&E/KU, do not know the location where the pipeline will be placed, the depth that it will be buried, nor the size of the pipe to be used, explain how it arrived at the estimated cost for this portion of the project.

c. Explain at whether the expense of the pipeline portion of the project within the facility boundaries will be recovered in the natural gas rate paid by the companies or is this portion of the project included in the estimated cost of the project as proposed.

A-31.

a. The natural gas provider will not play a role in the design of the onsite supply line as Kentucky Utilities owns the gas line to which the new line will connect.

b. The Owner's Engineer estimated the noted costs using indicative and historical costs from similar projects.

c. The proposed project cost includes the expense of the onsite pipeline.

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Question No. 32

Responding Witness: John Bevington / Robert M. Conroy / Counsel

Q-32. Refer to LG&E/KU's Response to Staff's First Request Item 96. Explain whether in the course of discussions with potential data center loads, any of the parties have expressed an interest in absorbing any of the costs of locating and operating in LG&E/KU's service territory to lessen the burden of the expansion on existing ratepayers.

A-32. The Companies respectfully question the relevance of this request based on the Commission's legal standard of review of a request for a certificate of public convenience and necessity ("CPCN") stated in Case No. 2022-00402, which does not address rate impacts.[7] That notwithstanding, all the discussions the Companies have had concerning rates for data centers have been premised on such customers paying full retail tariff rates. Paying such rates would ensure that data center customers pay their fair share of the Companies' cost of service.

[7] *Electronic Joint Application of Kentucky Utilities Company and Louisville Gas and Electric Company for Certificates of Public Convenience and Necessity and Site Compatibility Certificates and Approval of a Demand Side Management Plan and Approval of Fossil Fuel-Fired Generation Unit Retirements*, Case No. 2022-00402, Order at 10-12 (Ky. PSC Nov. 6, 2023).

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Question No. 33

Responding Witness: Robert M. Conroy / Lana Isaacson

Q-33. Refer to LG&E/KU's Response to the Kentucky Coal Association's (KCA's) First Request, Item 6, stating that: "Despite potential data center customers not expressing interest in curtailable service, standby on-site generation, customer-owned behind-the-meter generation, participation in energy efficiency programs, or any other approaches to offset needed capacity at this time." This does not necessarily mean that they would not be interested in one or more of these subjects." If the data center customer(s) were interested in implementing or participating in each of these subjects, explain how LG&E/KU would address each subject.

A-33. In response to KCA 1-6, the Companies explained that they have primarily been responding to requests from customers needing around the clock energy. The Companies also noted that potential customers have not asked about or expressed interest to the Companies concerning curtailable service, standby on-site generation, behind the meter generation, participation in energy efficiency programs, or any other approaches to offset needed capacity. If a data center customer is interested in implementing or participating in the aforementioned items, the Companies would explain the tariff options for consideration and also explain how we may have already assisted an existing customer in a similar request. We would review items such as:

- Green Tariff Options,
- Small Capacity Cogeneration & Small Power Production Qualified Facilities
- Large Capacity Cogeneration & Large Power Production Qualified Facilities
- Excess Facilities
- Redundant Capacity
- DSM/EE program options such as New Construction/LEED, Business Rebates, and/or Business Demand Response

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Question No. 34

Responding Witness: David L. Tummonds

Q-34. For each proposed project included in the application, provide the following:

a. A specific and detailed progress and construction timeline up to the proposed in-service date, including a description for each date.

b. A specific breakdown of expected costs including but not limited to permitting, labor, equipment, third party contractor expense, natural gas pipeline.

c. A breakdown of the total cost for each project with a corresponding kWh expense. Include in the response any workpapers, formulas in Excel format, unlocked with all information unlocked.

d. A specific breakdown of the expense of the natural gas pipeline improvements. If this expense will be passed through in an mcf rate, provide the expected natural gas mcf market rate and the natural gas mcf contract rate for each year through 2040.

A-34.

a. The requested construction timelines were previously provided in the Companies' response to AG-KIUC DR1 Question Nos. 28(a) and 29(a).

b. This information is available in Exhibit SAW-2 at \Screening\Support in files:

- CONFIDENTIAL_2031 NGCC MC6 - DRAFT 2025 BP Cost Estimate.xlsx
- CONFIDENTIAL_NGCC BR12 - DRAFT 2025 BP Cost Estimate (Base Case Update).xlsx
- CONFIDENTIAL_CR 2028 BESS - DRAFT Cost Estimate (Buyers Market Adjustment) R1.xlsx

c. See response to part (b).

d. In reference to the interstate natural gas pipelines, see the responses to Question No. 13 and Question No. 35.

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Question No. 35

Responding Witness: Charles R. Schram

Q-35. Provide the natural gas pipeline contracts as each one relates to each proposed project.

A-35. See the responses to PSC 1-14 and Question No. 13. No such contracts currently exist with regard to interstate pipeline transportation of natural gas.

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Question No. 36

Responding Witness: Robert M. Conroy / Stuart A. Wilson / Counsel

Q-36. Provide the overall average rate impact for the proposed projects for the period 2026 through 2040 by year. Include both the approved projects in Case No. 2022-00402[8] and these proposed projects in the calculation.

A-36. The Companies respectfully question the relevance of this request based on the Commission's legal standard of review of a request for a certificate of public convenience and necessity ("CPCN") stated in Case No. 2022-00402, which does not address rate impacts.[9] That notwithstanding, see the following response.

An actual rate impact analysis at this time would be speculative and require significant additional criteria to be specified, including: how much and what kinds of customer demands and energy should be assumed; what sorts of classification and allocation assumptions to use; and whether to use existing rate schedules, about-to-be-proposed rate schedules (including the rate schedule for large, high load factor customers the Companies will propose in their rate cases to be filed on May 30, 2025), or other rates for data center and other customers.

To attempt to provide a response, albeit not a rate impact analysis, the table below compares the average generation revenue requirements per MWh for two cases:

1. Base case scenario with approved 2022 and proposed 2025 CPCN resources and CPCN resource-constrained load forecast.[10]

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[8] Case No. 2022-00402, *Electronic Joint Application of Kentucky Utilities Company and Louisville Gas and Electric Company for Certificates of Public Convenience and Necessity and Site Compatibility Certificates and Approval of A Demand Side Management Plan and Approval of Fossil Fuel-Fired Generating Unit Retirements*

[9] *Electronic Joint Application of Kentucky Utilities Company and Louisville Gas and Electric Company for Certificates of Public Convenience and Necessity and Site Compatibility Certificates and Approval of a Demand Side Management Plan and Approval of Fossil Fuel-Fired Generation Unit Retirements*, Case No. 2022-00402, Order at 10-12 (Ky. PSC Nov. 6, 2023).

[10] The load forecast utilized for this scenario is a resource-constrained load forecast, which is lower than the 2025 CPCN Load Forecast in 2028 through 2030 and reflects the level of new data center load that can be served reliably with the proposed resource additions. The load forecast, resource in-service dates, and modeling assumptions are consistent with those used in the Companies' response to JI 1-22.

2. Counterfactual scenario without the 2022 and 2025 CPCN resources and without economic development load growth.[11]

While total generation revenue requirements are expected to increase because of the CPCN resources, the average generation revenue requirements per MWh are lower in most years, because the economic development load results in greater utilization of existing resources and the fixed costs of these resources are spread over an increasing amount of MWhs.

The workpapers for this response are attached in a separate file. Certain information is confidential and proprietary and is being provided under seal pursuant to a petition for confidential protection.

Comparison of Average Generation Revenue Requirements ($/MWh)

Year	CPCN Resources and Resource-Constrained Load[10]	No CPCN Resources and No Economic Development Load[11]	Delta (Average Generation Revenue Requirement Impact)	Percentage Change
2026	64.71	65.44	-0.74	-1.1%
2027	69.37	67.94	1.43	2.1%
2028	69.33	69.21	0.12	0.2%
2029	67.08	68.81	-1.73	-2.5%
2030	69.45	69.97	-0.52	-0.7%
2031	69.69	70.02	-0.33	-0.5%
2032	68.15	69.90	-1.76	-2.5%
2033	67.04	68.52	-1.49	-2.2%
2034	66.10	67.07	-0.97	-1.4%
2035	68.32	69.82	-1.50	-2.2%
2036	67.52	68.24	-0.72	-1.1%
2037	68.39	69.29	-0.91	-1.3%
2038	66.42	66.36	0.07	0.1%
2039	66.91	67.08	-0.16	-0.2%
2040	69.69	71.51	-1.83	-2.6%

[11] Economic development load excluded from the counterfactual scenario comprises data centers, BOSK, the two smaller economic development loads (totaling about 40 MW) included in the Companies' 2025 Load Forecast. Ghent 2 is assumed to operate year-round without an SCR in this scenario as a simplifying assumption to maintain system reliability, but the Companies believe an SCR would be necessary to maintain year-round availability.

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Question No. 37

Responding Witness: Philip A. Imber

Q-37. Refer to the Siting Report for the Mill Creek 6 Unit. Explain why KU/LG&E did not update its noise study even though three years have elapsed, and the surrounding area may have changed.

A-37. The Mill Creek 6 *NGCC Site Assessment Report* utilized the 2022 noise study from the Mill Creek 5 project and an additional 2023 study. The two studies had similar results. There have been no new developments in the surrounding properties that would change the noise results. It was therefore reasonable and cost-effective for customers to rely on the existing studies.

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Question No. 38

Responding Witness: Charles R. Schram

Q-38. Given the length of hours of outages and generator derates and the potential for energy for purchase not being available during Winter Storm Elliott and in future, explain how a four-hour BESS would be a reasonable resource to address a potential emergency lasting for an extended period.

A-38. The load shedding event during Winter Storm Elliott was approximately four hours in length, so a four-hour BESS would have contributed significantly during that event. While a four-hour BESS that is dispatched at its maximum output cannot on its own address an extended energy emergency that is longer than four hours, it is still part of a solution for meeting energy needs during peak hours. Assuming it is charged, a four-hour battery can help meet peak demand conditions and can also be dispatched for longer than four hours at an output level that is less than its maximum.

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Question No. 39

Responding Witness: David L. Tummonds

Q-39. Explain why a fixed, ongoing operating cost of $10,000,000 for the battery energy storage system (BESS) is reasonable. Include in the explanation assumptions that support the reasonableness argument.

A-39. The Companies assume fixed O&M cost of $25/kW-yr for BESS resources, based on the fixed O&M cost assumptions for Brown BESS submitted as part of Case No. 2022-00402. $10 million represents $25/kW-yr for the proposed 400 MW Cane Run BESS. The $25/kW-yr includes costs for future augmentation once the BESS facility degrades to the name plate rating. The fixed O&M costs were developed by the Companies' owner's engineer using previous project experience and current market data.

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Question No. 40

Responding Witness: Robert M. Conroy / Counsel

Q-40. Provide a specific list of tariff or contract provisions to protect the residential customer from paying for the expense of the generation required by a customer(s) requiring 200 MW or more.

A-40. The Companies respectfully question the relevance of this request based on the Commission's legal standard of review of a request for a certificate of public convenience and necessity ("CPCN") stated in Case No. 2022-00402, which does not address rate impacts.[12] That notwithstanding, please see the responses to Question No. 32, PSC 1-28(b) and (c), PSC 1-96, and the Companies' response to PSC 1-20(c) in Case No. 2024-00326. Also, the Companies will include in their base rate applications to be filed on May 30, 2025, in Case Nos. 2025-00113 and 2025-00114 a new rate schedule for large (greater than 100 MVA), high load factor customers that includes higher minimum demand charge ratchets, longer minimum contract terms (15 years), and enhanced collateral requirements to help protect all customers.

[12] *Electronic Joint Application of Kentucky Utilities Company and Louisville Gas and Electric Company for Certificates of Public Convenience and Necessity and Site Compatibility Certificates and Approval of a Demand Side Management Plan and Approval of Fossil Fuel-Fired Generation Unit Retirements*, Case No. 2022-00402, Order at 10-12 (Ky. PSC Nov. 6, 2023).

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Question No. 41

Responding Witness: Lonnie E. Bellar / Philip A. Imber / Charles R. Schram

Q-41. Provide a summary of how federal executive orders or other regulatory decisions, from March up to the date of the response, have impacted the testimony provided in this case to this point.

A-41. For the period of March 1 to May 5, President Trump has signed 67 Executive Orders. Specific orders are related to removing regulatory burdens from mining, including coal mining, and other energy production. However, the outcome and impact of these orders is not yet evident or measurable. See the response to Question No. 12 related to the potential impacts of tariff related orders.

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Question No. 42

Responding Witness: Charles R. Schram / Stuart A. Wilson

Q-42. Refer to Application at 10, and LG&E/KU's response to Louisville/Jefferson County Metro Government and Lexington-Fayette Urban County Government's First Request for Information, Item 29.

a. Explain how the resource assessment and chosen portfolio would change with the assumption that LG&E/KU would not receive an investment tax credit (ITC) for any BESS.

b. Explain how LG&E/KU's chosen resource portfolio would change if LG&E/KU made the assumption that the Inflation Reduction Act would be repealed.

A-42.

a. See the response to Question No. 47.

b. See the response to Question No. 47.

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Question No. 43

Responding Witness: Lonnie E. Bellar / Stuart A. Wilson

Q-43. Refer to LG&E/KU's response to Louisville/Jefferson County Metro Government and Lexington-Fayette Urban County Government's First Request for Information, Item 13. Explain why the expected retirement date for Ghent 2 does not correspond with the end of Ghent 2's useful life.

A-43. All of the Companies' generating units necessarily have a book life for depreciation purposes. However, for resource planning, the Companies do not assume that each unit will retire at the end of its book life. Instead, the Companies evaluate the economics of potentially extending the life of each unit by evaluating the investments required to do so. Based on the Companies' analysis, Ghent 2 will operate beyond the end of its current book life. See also the response to Question No. 4 and Section 6.3.1 "Stay-Open Costs" of Exhibit SAW-1.

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Question No. 44

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

Q-44. Refer to the Direct Testimony of Robert Conroy (Conroy Direct Testimony), page 15, lines 9–15.

a. Explain whether LG&E/KU anticipate any reduction to costs currently recovered in base rates related to the requested facilities. If so, state whether these cost reductions should also be tracked to a regulatory liability.

b. Explain whether LG&E/KU anticipates any increase to revenues or net margins from new load growth related to the requested facilities. If so, state whether these increases to revenues or net margins should also be tracked to a regulatory liability.

A-44.

a. Because these investments represent incremental generation resources and are not associated with plant retirements, there are no associated financing, operation and maintenance, depreciation, or property tax savings.

b. A regulatory liability may be appropriate to serve as an offset to the post in service deferral request to the extent the Companies are over earning their authorized ROEs. This regulatory liability could be subject to a sharing provision based on the amount the Companies are over earning.

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Question No. 45

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

Q-45. Refer to the Conroy Direct Testimony, page 16, lines 1-4. Explain the reasoning for regulatory asset treatment for depreciation expense given that depreciation will not be expensed until the projects are in service.

A-45. In addition to accruing AFUDC during the construction phase of the project, the Companies are requesting deferral accounting treatment for costs incurred *after* the asset is placed in service until such costs are reflected in the Companies' retail base rates or an applicable recovery mechanism. These costs include the associated carrying costs, operation and maintenance expense, property taxes, investment tax credit amortization, and depreciation expense.

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Question No. 46

Responding Witness: Tim A. Jones

Q-46. Refer to the Direct Testimony of Tim Jones, page 8. Explain why the 2025 CPCN Load Forecast did not include the high load scenario for residential customers.

A-46. See the response to Question No. 11.

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Question No. 47

Responding Witness: Lonnie E. Bellar / Stuart A. Wilson

Q-47. Refer to LG&E/KU's response to the Kentucky Coal Association's First Request for Information, Item 3. Provide the anticipated completion date for this analysis.

A-47. The Companies assume this question should refer to KCA 1-4. The Companies are addressing the possibility of delaying the retirement of Mill Creek 2 in the context of a broader analysis to determine the optimal approach for supporting economic development and managing tariff, ITC, firm gas transport availability, and load risk for customers. This study will be completed by May 30, 2025.

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Question No. 48

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

Q-48. Refer to LG&E/KU's response to the Attorney General and KIUC's First Request, Item 19. Reconcile the statement "the Companies will not commit to serving data center load if they cannot do so reliably" with its responsibility to provide adequate, efficient, and reasonable service to customers.

A-48. It is helpful to place the quoted portion of the Companies' response in context.

AG-KIUC 1-19 asked, "What additional resources could be built by the 2029/2030 timeframe if data center load materializes faster than expected? Would the Companies consider rejecting or delaying the data center load to protect existing customers?"

The Companies responded, "Additional battery storage is the only new resource that can potentially be built prior to 2030. The Companies will not commit to serving data center load if they cannot do so reliably."

The Companies do not believe stating they will not commit to serve a new load, data center or otherwise, if they cannot do so reliably is in any way at odds with their duty to provide adequate, efficient, and reasonable service to customers; indeed, it would be unreasonable to commit to do something that cannot be done. For example, if 3,000 MW of data center load sought to take service from the Companies in 2026, the Companies simply could not commit to serve it even if the Commission approved all the resources requested in this proceeding and much more; there simply would not be time to bid, order, receive, and construct all of the necessary resources.

Thus, all the Companies intended by their response was that, though they always have and will make prudent, reasonable efforts to accommodate all requests for new service, there are practical limits to what can be done. The Companies must manage the pace of load additions to align with the pace of resource additions such that system reliability for all customers is maintained; to do otherwise would be inconsistent with the Companies' obligation to provide adequate, efficient, and reasonable service.

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Question No. 49

Responding Witness: Lonnie E. Bellar / David L. Tummonds

Q-49. Refer to LG&E/KU's response to the Attorney General's and KIUC's First Request, Item 30(a).

a. Explain the potential risks for each negotiator in relation to inverter-based resource (IBR) compliance requirements.

b Explain what efforts LG&E/KU have taken to ensure that it is minimizing its risks.

A-49.

a. Potential risks to the Companies include costs and delays incurred to ensure compliance with the compliance standards footnoted in response to AG-KIUC 1-30(a). The Companies cannot speak for the risk aversion of any counterparties other than to assume they would rather not contractually commit to mitigate that risk as the noted standards had recently promulgated and said counterparties had, presumably, not contractually committed to mitigate the risk of non-existent standards. In the battery supply negotiations, which, as noted in the response, successfully concluded prior to the response, the battery supplier appropriately accepted contractual risk with respect to requirements applicable to the supplied battery components. The Companies expect that same will be true with respect to the EPC noted in the response when those negotiations conclude.

b. See the response to part (a).

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Question No. 50

Responding Witness: John Bevington

Q-50. Refer to the Attorney General and KIUC's First Request, Item 33(a), Attachment. Of the projects in the announced phase, explain which ones are in the construction process and which are in operation.

A-50. Please note that certain projects have advanced to the announced phase since the Companies filed the attachment to AG-KIUC 1-33(a). An updated Attachment to AG-KIUC 1-33(a) is being provided in response to PSC 2-17(g).

The following "announced" projects are operating and in service as of May 12, 2025 (identified by Opportunity ID number): 3703 (900 kW), 3896 (100 kW), 4062 (253 kW), 4071 (650 kW), 4104 (2.2 MW), and 4413 (950 kW).

The following "announced" projects are under construction as of May 12, 2025: 340 (8 MW), 675 (1.8 MW), and 1371 (400 kW), 1381 (16 MW), 2085 (19.4 MW), 3696 (1.2 MW), 3797 (315 kW), 3821 (35 kW), 4351 (157 kW), 4444 (2.9 MW), 4445 (2.6 MW), and 4446 (277 kW).

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Question No. 51

Responding Witness: John Bevington / Tim A. Jones

Q-51. Refer to LG&E/KU's response to the Attorney General and KIUC's First Request, Item 35(a).

a. Explain whether the probability ranges given to the projects are based on information LG&E/KU receives from conversations with data projects or based solely on the stage that they are in.

b. Explain how these probability ranges were used in the analysis for the economic development load forecast.

A-51.

a. These probability ranges were applied strictly based upon the stages they were in.

b. The Companies' load forecasting team attempted to put a probability range around what the Companies' economic development team deems as the midpoint probability per stage to contemplate high, mid, and low load ramps based upon these probabilities and the ramp schedules associated with each potential project. See also the response to Question No. 14(a) and SC 2-9.

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Question No. 52

Responding Witness: John Bevington

Q-52. Refer to LG&E/KU's response to the Attorney General's First Request, Item 45a. Provide a definition for each of the statuses listed in the chart provided.

A-52. The economic development team's definitions of the terms shown in the "Status" column of the table in AG-KIUC 1-45(a) are:

- "Accepted" means that a TSR has been accepted by the Transmission Owner's Independent Transmission Organization (ITO). This signifies that the ITO has validated the request and agrees to provide the requested transmission service, provided the Transmission Customer confirms the acceptance on the Transmission Owner's Open Access Same-Time Information System (OASIS) within the specified timeframe.
- "Complete" means that a TSR study has been completed but has not been accepted yet by the Transmission Owner's Independent Transmission Organization (ITO). This signifies that the ITO is in the midst of validating the request to provide the requested transmission service, provided the Transmission Customer confirms the acceptance on the Transmission Owner's Open Access Same-Time Information System (OASIS) within the specified timeframe.
- "Pending" means that a TSR study is in process but has not been completed yet.
- "Expired" means the TSR has been terminated because the requesting party who submitted the TSR (Transmission Customer) has not completed its required actions in the time frame allowed.

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Question No. 53

Responding Witness: John Bevington

Q-53. Refer to LG&E/KU's Response to Sierra Club's First Request for Information (Sierra Club's First Request), Item 10(g). Provide the most recent updated project profile.

A-53. The Companies provide updates to the project profiles in PSC 2-17(g), which is the updated file the Companies previously provided in response to AG-KIUC 1-33(a). Changes to the announced load or ramp schedule are shown in the EPC contracts, which the Companies provided for the Camp Ground Road project in response to SC 1-21(c)(i) in Case No. 2024-00326 and for Project Shelby in response to JI 1-5.

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Question No. 54

Responding Witness: Lonnie E. Bellar / John Bevington

Q-54. Refer to LG&E/KU's Response to Sierra Club's First Request, Item 27(b). Explain how LG&E/KU determines when a data center customer is more likely to advance their projects versus those that appear to be speculative. Include in this explanation if this is based on economic development stage alone.

A-54. The interconnection process includes internal studies, a formal TSR process, the potential for execution of an EPC contract, and all of these occur logically and serially. The Companies use this process to determine the seriousness of the prospects by causing them to agree to terms and conditions that require financial backing in the form of payment for the TSR process and the possible establishment of collateral to initiate engineering, procurement, and construction of transmission-related facilities. In the Companies' experience, clients that are willing to fund TSR studies and post collateral are more likely to have projects that come to fruition, development stage notwithstanding.

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Question No. 55

Responding Witness: Daniel Hawk / Elizabeth J. McFarland

Q-55. Refer to LG&E/KU's Response to Sierra Club's First Request, Item 40. Explain whether any current projects in the economic development project stages warrant Electromagnetic Transient (EMT) studies.

A-55. The Companies have not identified any current projects requiring an Electromagnetic Transient (EMT) study.

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Question No. 56

Responding Witness: John Bevington / Charles R. Schram

Q-56. Refer to the Direct Testimony of John Bevington (Bevington Direct Testimony), page 14, line 17–19.

a. Explain what types of data centers are not interested in uninterrupted service.

b. Explain whether for each data center project, how LG&E/KU determines whether a data center is interested in the curtailable service offerings.

c. Assuming that data centers provide a variety of different computing services, is it reasonable to expect that with sufficient notice, some services could be scaled back.

d. Assume that a data center is participating in an interruptible service rider. If a data center required a longer interruption notice than what is provided in a CSR2 tariff, how far in advance could LG&E/KU provide that notice.

A-56.

a. Based on the Companies' experience with potential data center customers, the Companies are unaware of data centers that are interested in interruptible service.

b. The Companies use the load profiles provided by clients, particularly those that have submitted TSR applications which ask for specific load data to determine what type of service a client is looking for. Of the TSR applications completed and submitted to date, none of them have expressed an interest in curtailable service offerings.

c. The Companies are responding to clients' actual wants and needs and are not assuming what they may or may not be willing to consider.

d. The Companies do not offer and are not planning to offer CSR to any new customers. However, if the Companies did open CSR to new customers and they wished to participate, they would be bound under the tariff that currently defines a total of 40 minutes from the time Company requests curtailment to the time the Customer must implement the physical curtailment. For a buy-through option, the Companies currently will give no less than sixty (60) minutes notice when either requesting or canceling a curtailment.

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Question No. 57

Responding Witness: Lonnie E. Bellar / David L. Tummonds

Q-57. Explain why LG&E/KU filed this application prior to an Engineering, Procurement and Construction (EPC) contractor being selected for any of the projects. Include in that explanation the source of the estimated EPC contractor expense for each of the projects, considering that no EPC contractor has been selected.

A-57. In the case of the NGCCs and the BESS, the yet to occur final determination of OEM equipment design, which must precede a detailed EPC quote, make selection of an EPC contractor prior to filing a CPCN a timing impossibility considering the in-service dates required for the projects in this case. The envisioned EPC bidders for each of these projects have extremely heavy project loads for at least the next three to five years and have expressed reticence to commit the necessary resources to support a full EPC proposal prior to CPCN approval. In the case of the NGCCs, the Companies understand that some EPCs may now charge a substantial fee for non-selected bids. The Companies will assess the value of this potential charge as necessary. However, the Companies prefer to limit that risk via the currently envisioned contract timing.

The Companies estimated EPC costs for the NGCCs primarily based upon recently received EPC bids for the units recommended in Case No. 2022-00402. The Companies then updated that starting point for market changes on a per kW basis driven by regular update discussions with potential EPC contract partners and any changes to the scope of work for the previously recommended units. Currently contemplated scope changes are de minimis relative to market changes.

The Companies estimated the Cane Run BESS EPC costs using a similar methodology to that expressed for the NGCCs above. For the Ghent 2 SCR, the Companies estimated EPC cost from a budgetary estimate provided by the likely contract partner given the Companies' experience with that company, that company's market share for this type of installation, and that company's familiarity with Ghent 2.

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Question No. 58

Responding Witness: Robert M. Conroy / Philip A. Imber / David L. Tummonds

Q-58. Generally, explain how LG&E/KU and its site assessment report team(s) reached the conclusion that each facility complies with KRS 278.708, when there are numerous items either undecided or not explored according to the totality of LG&E/KU's responses.

A-58. KRS 278.708 states what content must be in a site assessment report. The site assessment reports the Companies submitted in this proceeding meet those content requirements, including addressing any mitigation measures to avoid any adverse impacts. To the extent an adverse impact arises that is unknown at this time, the Companies will consider mitigation measures to address them.

Please note the Commission has granted site compatibility certificates in cases where similar site assessment reports were submitted for projects at comparable stages of development, such as in Case Nos. 2022-00402 and 2023-00361, and did not find those site assessment reports lacking.

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Question No. 59

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

Q-59. Explain, if LG&E/KU did not forecast load past approximately 2031-2032, as depicted in its testimony, if the companies view long-term as seven years.

A-59. The Companies produced a forecast of load from the current year to beyond 2050 for the CPCN. The Companies believe Staff is referring to the fact that economic development load in the CPCN forecast ramps only through 2032. This load forecast assumption is based upon the visibility the Companies have regarding potential economic development projects in the queue. The Companies do not view long-term as seven years. See also the response to PSC 1-1(a)(2).

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Question No. 60

Responding Witness: Christopher M. Garrett

Q-60. Refer to Application at 14, paragraph 6.

a. Identify the depreciation rate by component LG&E/KU anticipates using to calculate its depreciation expense and the source of this rate.

b. Explain when LG&E/KU anticipates completing a new depreciation study. If completed, provide a copy of this study.

c. Explain whether LG&E/KU plans to update the depreciation rates when the new depreciation study is complete. If already complete, explain whether the depreciation rates reflect this study.

A-60.

a. Depreciation rates have not yet been established or approved for Brown 12, Mill Creek 6, or the Cane Run BESS.

b. The Companies plan to file new depreciation studies in their upcoming base rate case proceedings, Case Nos. 2025-00113 and 2025-00114, on May 30, 2025. These studies will incorporate new depreciation rates for assets associated with the 2022 CPCN including Mill Creek 5, Brown BESS, and Marion and Mercer County solar facilities. The Companies anticipate subsequent depreciation studies will incorporate new depreciation rates for Brown 12, Mill Creek 6 and the Cane Run BESS. However, approved depreciation rates for Mill Creek 5 and Brown BESS will serve as proxies until such time as new depreciation rates are approved by the Commission.

c. See the response to part (b).

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Question No. 61

Responding Witness: David L. Tummonds / Stuart A. Wilson

Q-61. Refer to LG&E/KU's response to Staff's First Request, Item 26(c). Explain whether LG&E/KU considered installing reciprocating internal combustion engine (RICE) units.

A-61. The Companies did not consider RICE resources. RICE resources have quick start times and provide operational flexibility, but their cost is higher than a simple-cycle combustion turbine on a $/kW basis, and RICE installations would make inefficient use of available acreage and increasingly limited gas transport capacity relative to NGCC. The Companies focused on BESS for this analysis because BESS can be charged by existing resources and can provide operating flexibility similar to RICE units. See the response to JI 1-114.

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Question No. 62

Responding Witness: Tim A. Jones

Q-62. Refer to LG&E/KU's response to Staff's First Request, Item 30. Provide the support for the split of the load center load between LG&E and KU. Explain whether LG&E/KU plans to use the same methodology to split the loads in the future.

A-62. See the attachment to the response to AG-KIUC 1-35(a). Based upon the potential projects in the economic development queue, these splits are reasonable and supported by (a) the probabilistic analysis in this file and summarized in the response to SC 2-9 and (b) the first tab of the attachment to the response to AG-KIUC 1-35(a). The Companies plan to use this methodology in the future and adapt it to any new information.

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Question No. 63

Responding Witness: Christopher M. Garrett

Q-63. Refer to LG&E/KU's response to Joint Intervenors' First Request, Item 30. Explain whether LG&E/KU is aware of any other regulatory jurisdictions that allow Post In Service Carrying Cost (PISCC). If so, identify those jurisdictions and the specific conditions that warrant the use of the proposed PISCC regulatory treatment.

A-63. Yes, the Companies are aware of other regulatory jurisdictions which allow PISCC treatment. These include Indiana which permits post in service carrying costs for clean energy investments and federally mandated compliance costs. Please see the link to the direct testimony of Marisa Johnson which provides background and revenue requirement schedules from a recent clean energy cost adjustment "CECA" filing.[13] Furthermore, 20% of approved federally mandated compliance costs are eligible for PISCC regulatory treatment under IC 8-1-8.4-7. Additionally, PISCC are recorded as a regulatory asset by Columbia of Ohio as authorized by regulatory orders issued by the Public Utility Commission of Ohio.[14] As such, Columbia of Ohio is allowed to capitalize a carrying charge on eligible property, plant and equipment ("PP&E") from the time that PP&E is placed into utility service by Columbia of Ohio until recovery of the PP&E is included in customer rates, which generally occurs when Columbia of Ohio files its next rate proceeding following the in-service date of the PP&E.

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[13] https://iurc.portal.in.gov/_entity/sharepointdocumentlocation/a9fc0324-e9c1-ee11-9079-001dd80a8a32/bb9c6bba-fd52-45ad-8e64-a444aef13c39?file=44909_CECA%206_CEI%20South_2_Johnson%20Direct%20Testimony%20and%20Attachments_02012024.pdf

[14] *See, e.g.*, *Application of Columbia Gas of Ohio, Inc. for Approval to Implement a Capital Expenditure Program; Approval to Change Accounting Methods*, Case No. 11-5351-GA-UNC, Case No. 11-5352-GA-AAM, Order (Oh. PUC Aug. 29, 2012).

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Question No. 64

Responding Witness: David L. Tummonds

Q-64. Refer to the Direct Testimony of David Tummonds (Tummonds Direct Testimony), page 8, line 15. Provide a detailed description of the LG&E/KU Project Management Organization that will manage the ongoing Mill Creek Unit 5 NGCC and Brown BESS construction, coincidently with the proposed Mill Creek 6 NGCC, Brown 12 NGCC, Cane Run BESS and Ghent Unit 2 SCR construction. Include an organizational chart and description of each Project Management Organization member's specific skill sets and numbers of Full Time Equivalent employees.

A-64. The Project Engineering department consists of an experienced management team, multi-disciplined engineers, and support staff with vast experience developing, contracting, and executing multiple projects of greater complexity contemporaneously as noted on pages 14 and 15 of the referenced testimony. The attached organizational chart provided as a separate file for team makeup and approximate years of experience. The robust makeup of the department facilitates a nimble approach wherein team assignments are continuously evaluated and adjusted based on current and upcoming project activities to ensure managers, engineers, and support staff effectively flex between teams as necessary. Similarly, project teams maintain flexibility such that they service multiple projects simultaneously taking advantage of the natural ebb and flow of each project's pace. As the number and complexity of projects fluctuates, the department expands and contracts the project teams via full time internal and external resources as well as temporary supplemental contract support. This approach has served the department and the Companies well historically.

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Question No. 65

Responding Witness: David L. Tummonds

Q-65. Refer to Tummonds Direct Testimony, page 8, line 15. Please verify that LG&E/KU intends to utilize an Engineering, Procurement and Construction (EPC) contractor for all phases of the Mill Creek Unit 5 NGCC and Brown BESS construction, concurrently with the proposed Mill Creek 6 NGCC, Brown 12 NGCC, Cane Run BESS and Ghent Unit 2 SCR construction.

A-65. Confirmed.

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Question No. 66

Responding Witness: David L. Tummonds / Counsel

Q-66. Refer to the Application, Exhibit 7, SAR 2.1.1. Provide any and all correspondence with all impacted local firefighting organizations indicating their commitment to respond to a BESS fire at Brown and/or Cane Run.

A-66. No responsive documents exist: every fire department in Kentucky has a statutory obligation to respond to all fires in its jurisdiction.[15] The Companies remain committed to engaging and training first responders on the E.W. Brown and Cane Run BESS projects as discussed in the response to PSC 1-106.

[15] KRS 75.450(6) ("A fire department shall respond within its jurisdiction to all fires and to other emergencies for which it is responsible as set forth in its mission statement.").

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Question No. 67

Responding Witness: Robert M. Conroy / Stuart A. Wilson / Counsel

Q-67. Provide the expected impact each of the major projects, including the Mill Creek Unit 6 NGCC, Brown Unit 12 NGCC, Cane Run BESS and Ghent Unit 2 SCR, will have on average residential monthly rates.

A-67. The Companies respectfully question the relevance of this request based on the Commission's legal standard of review of a request for a certificate of public convenience and necessity ("CPCN") stated in Case No. 2022-00402, which does not address rate impacts.[16] That notwithstanding, please see the response to Question No. 36. Any further analysis at this time would be speculative at best and require significant additional criteria to be specified, including: how much and what kinds of customer demands and energy should be assumed; what sorts of classification and allocation assumptions to use; and whether to use existing rate schedules, about-to-be-proposed rate schedules (including the rate schedule for large, high load factor customers the Companies will propose in their rate cases to be filed on May 30, 2025), or other rates for data center and other customers.

[16] *Electronic Joint Application of Kentucky Utilities Company and Louisville Gas and Electric Company for Certificates of Public Convenience and Necessity and Site Compatibility Certificates and Approval of a Demand Side Management Plan and Approval of Fossil Fuel-Fired Generation Unit Retirements,* Case No. 2022-00402, Order at 10-12 (Ky. PSC Nov. 6, 2023).

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Question No. 68

Responding Witness: Stuart A. Wilson

Q-68. Refer to LG&E/KU's Response to Sierra Club's First Request, Item 13(g) and the Excel spreadsheet titled CONFIDENTIAL_20250226_FinancialModel_01_Stage1Step2_0336 (SAW-2 Confidential Financial Model), produced with Wilson Direct Testimony PivotResults tab. Identify what each of the portfolios identified using shorthand in Columns D through G, such as those in Columns D through G, Row 5.

A-68. PROSYM case names utilize the following file naming convention:
2025CPCN LXXXX EYY ZZZZ C000
Where:

LXXXX defines the load scenario:

- L1470 pertains to the load scenario with 1,470 MW of data center load
- L1610 pertains to the load scenario with 1,610 MW of data center load
- L1750 pertains to the load scenario with 1,750 MW of data center load
- L1890 pertains to the load scenario with 1,890 MW of data center load
- L2030 pertains to the load scenario with 2,030 MW of data center load

EYY defines the PLEXOS resource plan:

- E01 pertains to the 2030 PLEXOS resource plan associated with the LGMR fuel price scenario
- E02 pertains to the 2030 PLEXOS resource plan associated with the MGMR fuel price scenario
- E03 pertains to the 2030 PLEXOS resource plan associated with the HGMR fuel price scenario
- E04 pertains to the 2030 PLEXOS resource plan associated with the LGHR fuel price scenario
- E05 pertains to the 2030 PLEXOS resource plan associated with the HGLR fuel price scenario

ZZZZ defines the fuel price scenario:

- LGMR pertains to the Low Gas, Mid coal-to-gas ratio fuel price scenario

- MGMR pertains to the Mid Gas, Mid coal-to-gas ratio fuel price scenario
- HGMR pertains to the High Gas, Mid coal-to-gas ratio fuel price scenario
- LGHR pertains to the Low Gas, High coal-to-gas ratio fuel price scenario
- HGLR pertains to the High Gas, Low coal-to-gas ratio fuel price scenario

And C000 defines the carbon price (in all instances, carbon prices are assumed to be zero).

This information is also available in Exhibit SAW-2 at "PROSYM\01_Stage1Step2\PROSYMFileNomenclature.docx".

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Question No. 69

Responding Witness: Stuart A. Wilson

Q-69. Refer to LG&E/KU's Response to Sierra Club's First Request, Item 13(g) and Wilson Direct Testimony, SAW-2 Confidential Financial Model, Model tab.

a. Explain what the amounts in Column AF refer to.

b. Explain how LG&E/KU determined the number of years to discount.

c. Explain whether the discount rate is based on LG&E/KU's current weighted average cost of capital (WACC).

d. Explain how LG&E/KU chose the base year of all costs.

A-69.

a. Column AF contains the terminal value, which is the present value (in 2051 dollars) of costs beyond 2050. For each cost item, the terminal value is computed with the assumption that the 2050 portfolio operates in perpetuity. Operating and maintenance costs are assumed to escalate beyond 2050 at specified rates, and the terminal value for capital costs considers the cost of replacement resources. For example, the terminal values for NGCC and BESS capital costs are computed with the assumption that NGCC and BESS are replaced every 40 and 15 years, respectively. Importantly, a terminal value is needed to properly evaluate assets with different book lives. The terminal values for existing coal units consider life extension costs that recur every 20, 35, and 50 years, but because the Companies are not proposing any new coal retirements, these costs are the same for each set of new resources evaluated.

b. In their Stage One, Step One analysis, to ensure an optimal mix of resources for serving economic development load, the Companies developed resource plans through 2050 with no unit availability constraints and with the assumption that economic development loads are added in 2030. 2050 is the last year of the EIA Annual Energy Outlook gas price forecast. Terminal value assumptions in PLEXOS and the Financial model are the same (e.g., terminal value is computed with the assumption that the 2050 portfolio operates in perpetuity). With the terminal value, the discount period appropriately considers years beyond 2050, but because the terminal value is in 2051 dollars, it is discounted significantly.

c. The modeled discount rate of 6.56% was based on the Companies' most recent Business Plan assumption at the time the analysis was completed. Additional detail about the breakdown of the components of WACC is available in Table 28 in Section 6.7 of Exhibit SAW-1.

d. The 'Base Year for ALL Costs' in cell D4 of the Model tab is part of the model function that allows the Companies to easily move costs in time. Particularly for resources in the NewResources tab where the basis for different cost items varies (e.g., the capital cost for Brown 12 is estimated in 2030 dollars, but its firm gas transport cost is estimated based on 2024 dollars), this input simplifies the process of properly escalating costs to model the commissioning of the resource in a particular year. Changing this value has no impact on the relative differences between modeled portfolios.