

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

**In the Matter of:**

<b>ELECTRONIC 2024 JOINT INTEGRATED</b>	<b>)</b>	
<b>RESOURCE PLAN OF LOUISVILLE GAS AND</b>	<b>)</b>	<b>CASE NO. 2024-00326</b>
<b>ELECTRIC COMPANY AND KENTUCKY</b>	<b>)</b>	
<b>UTILITIES COMPANY</b>	<b>)</b>	

**RESPONSE OF**  
**LOUISVILLE GAS AND ELECTRIC COMPANY**  
**AND**  
**KENTUCKY UTILITIES COMPANY**  
**TO**  
**THE KENTUCKY INDUSTRIAL UTILITY CUSTOMERS'**  
**FIRST REQUEST FOR INFORMATION**  
**DATED NOVEMBER 22, 2024**

**FILED: December 18, 2024**


**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 17th day of December 2024.

  
\_\_\_\_\_  
Notary Public  
Notary Public ID No. KYNP63286

My Commission Expires:

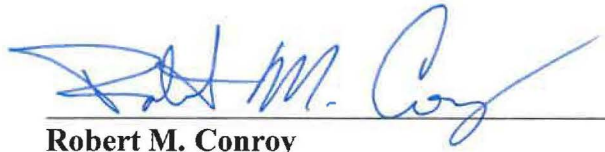
January 22, 2027



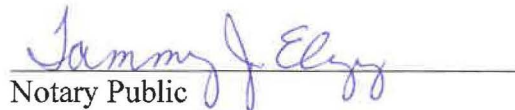
**VERIFICATION**

**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**

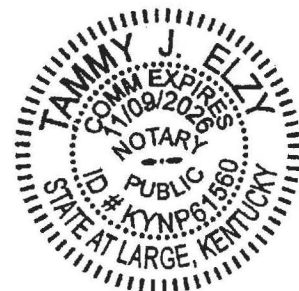
Subscribed and sworn to before me, a Notary Public in and before said County and State, this 16<sup>th</sup> day of December 2024.

  
Notary Public

Notary Public ID No. KYNP61560

My Commission Expires:

November 9, 2026



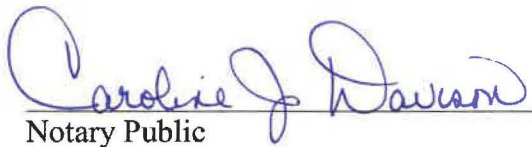
**VERIFICATION**

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

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

  
\_\_\_\_\_  
**Tim A. Jones**

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 16<sup>th</sup> day of December 2024.

  
\_\_\_\_\_  
Notary Public

Notary Public ID No. KYNP 63286

My Commission Expires:

January 22, 2027



**VERIFICATION**

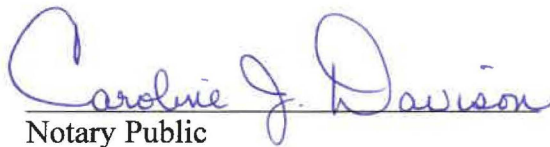
**COMMONWEALTH OF KENTUCKY** )  
 )  
**COUNTY OF JEFFERSON** )

The undersigned, **Michael S. Sebourn**, being duly sworn, deposes and says that he is Manager – Generation Planning 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.



**Michael S. Sebourn**

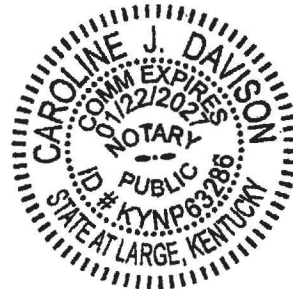
Subscribed and sworn to before me, a Notary Public in and before said County and State, this 16<sup>th</sup> day of December 2024.

  
Notary Public


Notary Public ID No. KYNP63286

My Commission Expires:

January 22 2027

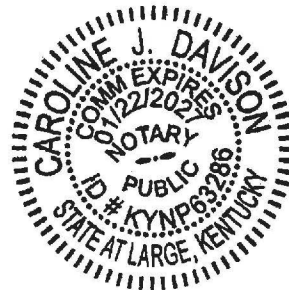


**COMMONWEALTH OF KENTUCKY )**  
**)**  
**COUNTY OF JEFFERSON )**

  
**Stuart A. Wilson**

Caroline J. Dawson  
Notary Public

January 22, 2027



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

**Response to Kentucky Industrial Utility Customers' First Request for Information  
Dated November 22, 2024**

**Case No. 2024-00326**

**Question No. 1**

**Responding Witness: John Bevington**

Q-1. Refer to Volume I, page 7-13 and the statement, "Data centers specifically require significant amounts of electric power, low to moderate risk of adverse weather events and natural disasters, availability of telecommunications infrastructure, water for equipment cooling, and favorable tax incentives. Kentucky is well positioned with respect to most, if not all, of these requirements."

- a. Provide any reports or documents that analyze the economic benefits of locating data centers in Kentucky compared to the costs of serving that load.
- b. Please describe the "favorable tax incentives" available in Kentucky for data centers.

A-1.

- a. See the response to PSC 1-20. Note also that KRS 154.20-222, enacted in 2024, states concerning the economic benefits of data centers, "[T]he inducement of the location of data center projects within the Commonwealth *is of paramount importance to the economic well-being of the Commonwealth.*"<sup>1</sup> It further states:

- (1) The purposes of KRS 154.20-220 to 154.20-229 are to:
  - (a) Provide incentives for an approved company with a qualified data center project;
  - (b) Encourage the location of data centers within the Commonwealth; and
  - (c) Advance the public purposes of the:
    - 1. Creation of new jobs that would not exist within the Commonwealth;
    - 2. Creation of new sources of tax revenues for the support of public services provided by the Commonwealth;

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<sup>1</sup> KRS 154.20-222(3) (emphasis added).

3. Improvement in the quality of life for Kentucky citizens through the creation of sustainable jobs with higher salaries; and

4. Provision of an economic stimulus to the Commonwealth.

...

(3) The General Assembly finds and declares that the authority granted in KRS 154.20-220 to 154.20-229 and the purposes accomplished are proper governmental and public purposes for which public moneys may be expended, and that the inducement of the location of data center projects within the Commonwealth is of paramount importance to the economic well-being of the Commonwealth.

- b. Effective July 15, 2024, KRS Chapter 139 provides a sales and use tax exemption for the sale, purchase, use, storage, consumption, installation, repair, and replacement of data center equipment for major data center projects.<sup>2</sup> The exemption can last for up to 50 years for a qualified data center that makes a capital investment of at least \$450,000,000.<sup>3</sup>

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<sup>2</sup> See KRS 139.499; KRS 154.20-220 to 154.20-229.

<sup>3</sup> See KRS 154.220(17)(b) and (18)(b)1.



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

**Response to Kentucky Industrial Utility Customers' First Request for Information  
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**Case No. 2024-00326**

**Question No. 2**

**Responding Witness: John Bevington / Robert M. Conroy / Tim A. Jones /  
Stuart A. Wilson**

- Q-2. Refer to Volume I, page 7-13 and the statement, "The Companies' Economic Development team is working with a growing number of data center projects that vary in stages of development, but which mostly have very large power requirements."
- a. Please provide a narrative explanation of the discussions that the Companies have had with potential new data centers.
  - b. Please provide a listing of the individual data center projects under the mid load forecast case (1,050 MW by 2032). This listing should include for each data center estimated peak demand, estimated energy requirements, load factor, date of inquiry, location, and timing of load additions including load ramping up to full usage.
  - c. For each data center listed in 2.b. above, please indicate if the potential customer will require redundant transmission feeds for added reliability. Will data centers that require redundant transmission be required to sign long term contracts to pay for the enhanced transmission? Please explain.
  - d. Please provide a listing of the individual data center projects under the high load forecast case (1,750 MW by 2032). This listing should include for each data center estimated peak demand, estimated energy requirements, load factor, date of inquiry, location, and timing of load additions including load ramping up to full usage.
  - e. For each data center listed in 2.d. above, please indicate if the potential customer will require redundant transmission feeds for added reliability. Will data centers that require redundant transmission be required to sign long term contracts to pay for the enhanced transmission? Please explain.
  - f. Please describe how the Companies translated the pipeline of potential new data center projects to the load that was included in the mid and high load

forecasts. In other words, what methodologies were used and what assumptions were made for load materialization expectations?

- g. Provide all data center load materialization modeling and analysis in excel spreadsheet format with formulas intact deriving the data center load forecast adjustments used in the mid and high load case sensitivities.
- h. Under the mid load forecast (1,050 MW by 2032), how many full-time data center jobs are expected to be created? What are the types of jobs (security, maintenance, etc.)? For each job, what are the expected annual wages and total compensation?
- i. Under the high load forecast (1,750 MW by 2032), how many full-time data center jobs are expected to be created? What are the types of jobs (security, maintenance, etc.)? For each job, what are the expected annual wages and total compensation?
- j. What protections are included in the tariffs that data center customers would take service under to ensure that the data centers will actually locate in Kentucky if new generation and transmission is built to serve them? Would the data centers be required by contract to commit to a minimum term and/or minimum demand charges? Please explain.
- k. Have the Companies considered proposing new data center specific tariffs in order to ensure that those customers will make minimum payments for minimum terms to support any new generation and transmission that is built to serve them? Please explain.
- l. If the Companies build new generation to serve the expected data center load and that load does not materialize, how will the cost of unneeded generation be mitigated? If excess energy is sold off-system would the Companies expect to retain part of the margins? Would unneeded generation make joining PJM or MISO more economic since the unneeded generation could be sold into those capacity markets?
- m. If the Companies build a new 660 MW natural gas combined cycle (NGCC) unit to serve the expected data center load and that load does not materialize, using the base case forecast of coal and gas prices in the IRP, how much coal generation will be displaced by the NGCC generation? Would this circumstance affect the Companies coal procurement strategy?
- n. If the Companies build a new 660 MW natural gas combined cycle (NGCC) unit to serve the expected data center load and that load does not materialize, would this circumstance make it harder to economically justify environmental upgrades at the Companies' coal plants?

- o. Please provide all marginal cost studies which demonstrate that the marginal revenue from serving the projected data center load will exceed the marginal cost of building new generation and transmission to serve them.
- p. Are the Companies offering any economic development discount rates to attract the new data center load? If yes, please explain.
- q. Provide all studies performed by Companies in evaluating whether projected data center load will increase or decrease average rates for existing customers.
- r. Have the Companies evaluated the incremental impact of additional data center load on average or marginal energy costs? If yes, please provide those studies.

A-2.

- a. See the response to PSC 1-2.
- b. See the response to PSC 1-21.
- c. Not applicable; see the response to PSC 1-21. All customers requesting excess facilities are subject to the terms of the Companies' Excess Facilities tariff provisions.
- d. See the response to PSC 1-21.
- e. Not applicable; see the response to PSC 1-21. All customers requesting excess facilities are subject to the terms of the Companies' Excess Facilities tariff provisions.
- f. See the responses to PSC 1-21 and KCA 1-15.

- g. See KPSC Case No 2024-00326 -- LGE-KU 2024 IRP Load Forecasting Workpapers--CONFIDENTIAL.zip at filepath  
Electric\_Load\_Forecast\Electric\Forecasts\  
CONFIDENTIAL\_Major\_Accounts\Analysis\IRP\_Scenario\_Files

The Mid Scenario data center load comes from two files, the "Data\_Center\_LF\_Adjust" file and MA Shaping file for "Data Center 1".

The High Scenario is a combination of 4 files, the "Data\_Center\_LF\_Adjust" file and the MA Shaping files for "Data Center 1", "Data Center 2", and "Data Center 3".

- h. The Companies do not have such projections, which are not relevant to the purposes of this proceeding as articulated in 807 KAR 5:058. That notwithstanding, see the response to PSC 1-20(a).

- i. The Companies do not have such projections, which are not relevant to the purposes of this proceeding as articulated in 807 KAR 5:058. That notwithstanding, see the response to PSC 1-20(a).
- j. The Companies are considering a number of possible tariff and contract options regarding potential large, high-load factor customers. Under the Companies' current tariffs, customers with large loads greater than 250 kVA and that take service at transmission voltage are currently served under Retail Transmission Service (Rate RTS), which contains minimum demand charge, contract term, and termination notice provisions.
- k. See the response to part (j).
- l. The Companies reject the characterization of the generation in the posited scenario as "unneeded." For example, see IRP Vol. III, Resource Assessment at 42, Table 23, regarding least-cost portfolios in the Low Load, Ozone NAAQS + ELG + GHG scenario across all five modeled fuel price scenarios.
- m. The Companies have not performed this analysis.
- n. The Companies have not performed this analysis.
- o. The Companies have not performed this analysis.
- p. No.
- q. The Companies have not performed this analysis.
- r. The Companies have not performed this analysis.

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

**Response to Kentucky Industrial Utility Customers' First Request for Information  
Dated November 22, 2024**

**Case No. 2024-00326**

**Question No. 3**

**Responding Witness: Michael S. Sebourn / Stuart A. Wilson**

- Q-3. Refer to Volume I, page 5-25 and the statement, "The Companies developed least-cost resource plans subject to reserve margin and other constraints for each load and environmental scenario (12 scenarios in total comprising three load scenarios and four environmental scenarios). To do this, the Companies first used PLEXOS to develop resource plans for each of the 12 load and environmental scenario across each of the five fuel price scenarios, resulting in 60 total resource plans. The Companies then evaluated each resource plan with detailed production costs over each of the fuel price scenarios to determine which resource plan for a given load and environmental scenario is lowest cost across all fuel price scenarios."
- a. Identify where the company presents a summary of the cost and NPVRR results for each of the 60 plans in the IRP filing.
  - b. Provide an index describing the purpose, capacity expansion plan assumptions, fuel scenario, and run naming convention used in the PLEXOS and PROSYM modeling inputs and outputs.
  - c. For each of the 60 total resource plan runs, provide a breakdown of the "syscost" output by year split by reporting cost category (fixed, variable, fuel, emissions, start, etc.) Provide in Excel format.
  - d. Provide run output for each of the 60 cases with unit specific resource data (firm capacity and installed capacity) and load for deriving reserve margin by year.
  - e. Provide run output for each of the 60 cases with unit specific dispatch data by month and by year (generation, fuel costs, emissions costs and rates, etc.) Provide in Excel format.
  - f. Provide run output for each of the 60 cases describing the hourly marginal price data for the system. Provide in Excel format.

A-3. As noted above, the Companies used PLEXOS to develop 60 resource plans in the Stage One, Step One analysis. Then, in the Stage One, Step Two analysis, each of these plans was evaluated with detailed production costs in PROSYM over each of the five fuel price scenarios. Thus, the Step Two analysis involves 300 “cases” (i.e., five fuel price cases for each of the 60 Stage One, Step One resource plans). In addition, the Companies ran a solar price sensitivity for the Mid Load, Ozone NAAQS + ELG environmental scenario, resulting in an additional five Stage One, Step One resource plans and an additional 25 Stage One, Step Two cases. For each case, the Companies used the Financial Model to compute the present value of revenue requirements (“PVR”) and then averaged the PVR results by resource plan (each average is based on the PVR results of five cases). Of the five resource plans developed for each load and environmental scenario, the resource plan with the lowest average PVR is the least-cost resource plan for that load and environmental scenario.

a. This information is available in the Financial Model files. The PVRs for all cases are available in a data table on the ModelCounter tab. The average PVR by resource plan and the identification of the least-cost resource plan is summarized on the PivotResults tab. One set of PROSYM runs was completed for each environmental scenario, so the Financial Model for each environmental scenario contains 15 resource plans and 75 cases. The Financial Model for the solar price sensitivity contains 5 resource plans and 25 cases, because this sensitivity was evaluated for only one load scenario (Mid load). On the Model tab, users can toggle between resource plans using the load (cell D21) and generation scenario (cell D16) inputs (e.g., set D21 and D16 equal to one for the PLEXOS resource plan corresponding to the Mid load scenario and the Low Gas, Mid CTG fuel price scenario; see the response to part (b)). Users can toggle between PROSYM fuel price scenarios using cell D20. See KPSC Case No. 2024-00326 -- LGE-KU 2024 IRP Resource Planning Workpapers--CONFIDENTIAL.zip at the “FinancialModel” folder.

b. The requested information is indicated by the following naming convention for PLEXOS model runs:

*Prefix\_0.01\_6R6\_DH3\_Ren\_XPPA\_Int\_Load\_EnvScen\_FuelPrice*

Where

- *Prefix\_* is “SOescSol\_” for model runs completed with the Solar Price Sensitivity and null otherwise.
- “0.01” indicates a 0.01% performance mixed integer relative gap;
- “6R6” indicates a 6-year rolling horizon solving for 6 blocks per day;
- “DH3” indicates a 3-tranche detailed heat rate curve;
- “Ren” indicates that expansion renewable resources were included;

- “XPPA” indicates no planned solar PPAs were included;
- “Int” indicates that expansion thermal and battery units are built only in integer increments.
- *Load* is the load scenario
  - LL = Load Low
  - ML = Mid Load
  - HL = High Load
- *EnvScen* is the environmental scenario
  - NoReg = No new regulations
  - GNP = Ozone National Ambient Air Quality Standards (“NAAQS”) regulations (i.e., Good Neighbor Plan or equivalent)
  - GNP+ELG = Ozone NAAQS + 2024 Effluent Limitations Guidelines (“ELG”) or equivalent
  - GNP+ELG+111 = Ozone NAAQS + ELG + Greenhouse Gas rules or equivalent
- *FuelPrice* is the fuel price scenario
  - LGMR = Low Gas, Mid CTG fuel price scenario
  - MGMR = Mid Gas, Mid CTG fuel price scenario
  - HGMR = High Gas, Mid CTG fuel price scenario
  - LGHR = Low Gas, High CTG fuel price scenario
  - HGLR = High Gas, Low CTG fuel price scenario

As noted in the response to part (a), one set of PROSYM runs was completed for each environmental scenario. The Companies used the following naming convention for Financial Models:

20241001\_FinancialModel\_*EnvScen*\_0328, where

- *EnvScen* is the environmental scenario:
  - “01\_NoRegs” corresponds with the No New Regulations environmental scenario.
  - “02\_GNP” corresponds with the Ozone NAAQS environmental scenario, where the Good Neighbor Plan or another regulation with a similar effect is enforced.
  - “03\_ELG” corresponds with the Ozone NAAQS + ELG environmental scenario,
  - “03\_ELG\_SolarSens” corresponds with the Ozone NAAQS + ELG sensitivity where solar prices do not de-escalate.
  - “04\_111” corresponds with the Ozone NAAQS + ELG + GHG environmental scenario.
  - “05\_RefCase” corresponds with the Recommended Resource Plan.

In each Financial Model, the PROSYM tab contains detailed production costs for each PROSYM run. The following naming convention (“CaseName”) was used for PROSYM runs:

2024IRPEEELLFFFC000, where

- EEELL indicates the resource plan.
    - EEE is the generation scenario.
      - “E01” corresponds to the resource plan developed for the Low Gas, Mid CTG fuel price scenario.
      - “E02” corresponds to the resource plan developed for the Mid Gas, Mid CTG fuel price scenario.
      - “E03” corresponds to the resource plan developed for the High Gas, Mid CTG fuel price scenario.
      - “E04” corresponds to the resource plan developed for the Low Gas, High CTG fuel price scenario.
      - “E05” corresponds to the resource plan developed for the High Gas, Low CTG fuel price scenario.
    - LL is the load scenario.
      - LL = Low Load
      - ML = Mid Load
      - HL = High Load
  - FFFF is the PROSYM fuel price scenario.
    - LGMR = Low Gas, Mid CTG fuel price scenario
    - MGMR = Mid Gas, Mid CTG fuel price scenario
    - HGMR = High Gas, Mid CTG fuel price scenario
    - LGHR = Low Gas, High CTG fuel price scenario
    - HGLR = High Gas, Low CTG fuel price scenario
  - “C000” corresponds with a zero CO<sub>2</sub> price. The Companies did not model a carbon tax as part of the 2024 IRP, so all PROSYM model runs used a zero CO<sub>2</sub> price.
- c. A breakdown of system production costs for each model run is available in the “out\_uniyr.csv” output files. See KPSC Case No. 2024-00326 -- LGE-KU 2024 IRP Resource Planning Workpapers--CONFIDENTIAL.zip at the “PROSYM” folder.
- d. The Companies did not perform reserve margin calculations for every resource plan, as this math is done by PLEXOS. The Companies compiled the resource plans from PLEXOS into a summary spreadsheet and used a separate spreadsheet to ensure that the Recommended Resource Plan met the expected reserve margin criteria. These spreadsheets can be used to derive reserve margin by year. See KPSC Case No. 2024-00326 -- LGE-KU 2024 IRP Resource Planning Workpapers--PUBLIC.zip at



“PLEXOS\20240925\Results\20241009\_2024IRP\_PlexosResults.xlsx” and  
“Tables\20241001 Resource Assessment RM Need Tables\_D02.xlsx”.

- e. For annual data, see the response to part (c). Emission cost data is available in the “out\_emissyr.csv” output files. Emission costs affect unit dispatch but are not counted in total production costs as the Companies utilize emission allowances. The Companies did not generate monthly data outputs for the IRP production cost runs.
- f. The Companies did not generate hourly data outputs for the IRP production cost runs.

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

**Response to Kentucky Industrial Utility Customers' First Request for Information  
Dated November 22, 2024**

**Case No. 2024-00326**

**Question No. 4**

**Responding Witness: Michael S. Sebourn / Stuart A. Wilson**

Q-4. For the revenue requirement model provided in the resource planning workpaper "Resource\_Planning\Screening\20240901\_RevenueRequirementProfiles\_2024IRP\_0 328.xlsx."

- a. Explain if the Company has evaluated the near-term resource plan costs on an annual basis assuming levelized economic carrying charge representation or declining revenue requirements representation.
- b. What are the nominal costs associated with each of the 60 runs assuming a declining revenue requirement representation for fixed costs. Provide all workpapers and calculations electronically in spreadsheet format used to develop the final annual values.

A-4.

- a. The Companies developed resource plans with the goal of minimizing the present value of annual (declining) revenue requirements. Because resource planning involves the analysis of resources with different operating lives that extend beyond the end of the analysis period, the present value of revenue requirements for these resources must be computed as a function of the economic carrying charge and a terminal value. The revenue requirement profiles in the referenced file are calculated based on annual (declining) revenue requirements and are key inputs for computing economic carrying charges in the Companies' Resource Screening Model and Financial Models.<sup>4</sup>
- b. See the response to part (a). While the present value of annual (declining) revenue requirements for resources that operate beyond the end of the analysis period must be computed as a function of the economic carrying charge and terminal value, the Companies' Financial Model can represent all capital costs as nominal values, revenue requirements, economic carrying charge, present value, or levelized revenue requirements. Annual revenue

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<sup>4</sup> See KPSC Case No 2024-00326 -- LGE-KU 2024 IRP Resource Planning Workpapers-- CONFIDENTIAL.zip at "Screening" and "FinancialModel" folders.

requirements are available for each model run in nominal dollars on the Model tab by setting cell F3 equal to 2 (Capital Cost Calc = “RR”). See KPSC Case No. 2024-00326 -- LGE-KU 2024 IRP Resource Planning Workpapers-CONFIDENTIAL.zip at the “FinancialModel” folder.

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

**Response to Kentucky Industrial Utility Customers' First Request for Information  
Dated November 22, 2024**

**Case No. 2024-00326**

**Question No. 5**

**Responding Witness: Michael S. Sebourn**

Q-5. Refer to confidential workpaper, "Resource\_Planning\Tables\CONFIDENTIAL\_20241001\_Section8Tables\_2024IRP.xlsx" tab: "9-1AnnualRevReq", row 14.

- a. Provide all supporting workpapers and calculations deriving the non-variable revenue requirements pasted in row 14.
- b. Has the Company prepared the same analysis for the 60 runs referenced in Volume I at page 5-25? If so, provide and or identify the workpapers and supporting computation location for each run. If not, explain why not.

A-5.

- a. See KPSC Case No. 2024-00326 -- LGE-KU 2024 IRP Resource Planning Workpapers--CONFIDENTIAL.zip at "FinancialModel\CONFIDENTIAL\_20241001\_FinancialModel\_05\_RefCase\_0328.xlsx" on row 212 of the Model tab.
- b. The Companies have not performed the same analysis for the runs referenced in Volume I at page 5-25. The IRP analysis focused on identifying least-cost resource plans as a function of total PVR. The Companies did not calculate non-variable revenue requirements for every run as this was not a necessary step in comparing total PVR.

**LOUISVILLE GAS AND ELECTRIC COMPANY  
AND  
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**Response to Kentucky Industrial Utility Customers' First Request for Information  
Dated November 22, 2024**

**Case No. 2024-00326**

**Question No. 6**

**Responding Witness: Michael S. Sebourn / Stuart A. Wilson**

Q-6. Refer to confidential workpaper "Resource\_Planning\FinancialModel\CONFIDENTIAL\_20241001\_FinancialModel\_01\_NoRegs\_0328.xlsx" tab: "Pivot Results"

- a. Provide an index mapping cases E01, E02, E03, E04, E05 to the build plans identified in the IRP.
- b. Confirm that the incremental cost between the ML and HL load sensitivities on a NPVRR basis is approximately \$ [REDACTED] (cell H35 less Cell H23, based on plan E02). If not, explain what cost premium is associated with the additional load modeled.
- c. Reconcile each of the 75 sensitivity cases provided across the 3 pivot tables provided in this tab (5 plans x 5 fuel sensitivities x 3 load forecasts) to the 60 cases referenced at Volume I, page 5-25.

A-6.

- a. See the response to Question No. 3(b).
- b. The incremental revenue requirement associated with the additional load is confirmed. However, to clarify, this value is a comparison of the Mid load and High load PVRR for the E04 generation scenario, not the E02 generation scenario. A better metric for comparing different load scenarios is the levelized revenue requirement per MWh, and the levelized revenue requirements per MWh in the High load scenario is lower than in the Mid load scenario. See attachment being provided in a separate file. The information is confidential and proprietary and is being provided under seal pursuant to a petition for confidential protection.
- c. See the response to Question No. 3. The referenced Financial Model file contains 15 resource plans and 75 cases (fives fuel price cases for each resource plan) for the No New Regulations environmental scenario. The values in rows 11, 23, and 35 are the average PVRR across all fuel price

scenarios for each of the five resource plans developed for the Low, Mid, and High load scenarios, respectively. The other values in columns C-G are the PVRRs for specific fuel price scenarios. For example, the value in G6 is the PVRR with Low Gas, Mid CTG ratio fuel prices for the resource plan developed in PLEXOS assuming Low load and High Gas, Low CTG ratio fuel prices. Columns H-I reflect the lowest PVRR and optimal resource plan for each load scenario.

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

**Response to Kentucky Industrial Utility Customers' First Request for Information  
Dated November 22, 2024**

**Case No. 2024-00326**

**Question No. 7**

**Responding Witness: Michael S. Sebourn / Stuart A. Wilson**

- Q-7. Refer to confidential workpaper "Resource\_Planning\FinancialModel\CONFIDENTIAL\_20241001\_FinancialModel\_02\_GNP\_0328.xlsx" tab: "Pivot Results"
- a. Provide an index mapping cases E01, E02, E03, E04, E05 to the build plans identified in the IRP.
  - b. Explain what "GNP" represents in the naming convention of this file.
  - c. Reconcile each of the 75 sensitivity cases provided across the 3 pivot tables provided in this tab (5 plans x 5 fuel sensitivities x 3 load forecasts) to the 60 cases referenced at Volume I, page 5-25.
- A-7.
- a. See the response to Question No. 3(b).
  - b. "GNP" represents the Ozone NAAQS environmental scenario. Specifically, "GNP" is shorthand for the Good Neighbor Plan, and the Companies modeled the Ozone NAAQS to reflect a scenario where the Good Neighbor Plan or a similar regulation takes effect during the planning period.
  - c. See the response to Question No. 3. The referenced Financial Model file contains 15 resource plans and 75 cases (fives fuel price cases for each resource plan) for the Ozone NAAQS environmental scenario. The values in rows 11, 23, and 35 are the average PVRR across all fuel price scenarios for each of the five resource plans developed for the Low, Mid, and High load scenarios, respectively. The other values in columns C-G are the PVRRs for specific fuel price scenarios. For example, the value in G6 is the PVRR with Low Gas, Mid CTG ratio fuel prices for the resource plan developed in PLEXOS assuming Low load and High Gas, Low CTG ratio fuel prices. Columns H-I reflect the lowest PVRR and optimal resource plan for each load scenario.

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**Question No. 8**

**Responding Witness: Michael S. Sebourn / Stuart A. Wilson**

Q-8. Refer to confidential workpaper  
"Resource\_Planning\FinancialModel\CONFIDENTIAL\_20241001\_FinancialM  
odel\_03\_ELГ\_0328.xlsx" tab: "Pivot Results"

- a. Provide an index mapping cases E01, E02, E03, E04, E05 to the build plans identified in the IRP.
- b. Reconcile each of the 75 sensitivity cases provided across the 3 pivot tables provided in this tab (5 plans x 5 fuel sensitivities x 3 load forecasts) to the 60 cases referenced at Volume I, page 5-25.

A-8.

- a. See the response to Question No. 3(b).
- b. See the response to Question No. 3. The referenced Financial Model file contains 15 resource plans and 75 cases (fives fuel price cases for each resource plan) for the Ozone NAAQS+ELG environmental scenario. The values in rows 11, 23, and 35 are the average PVRR across all fuel price scenarios for each of the five resource plans developed for the Low, Mid, and High load scenarios, respectively. The other values in columns C-G are the PVRRs for specific fuel price scenarios. For example, the value in G6 is the PVRR with Low Gas, Mid CTG ratio fuel prices for the resource plan developed in PLEXOS assuming Low load and High Gas, Low CTG ratio fuel prices. Columns H-I reflect the lowest PVRR and optimal resource plan for each load scenario.



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**Question No. 9**

**Responding Witness: Michael S. Sebourn / Stuart A. Wilson**

Q-9. Refer to confidential workpaper "Resource\_Planning\FinancialModel\CONFIDENTIAL\_20241001\_FinancialModel\_04\_111\_0328.xlsx" tab: "Pivot Results"

- a. Provide an index mapping cases E01, E02, E03, E04, E05 cases to the build plans identified in the IRP.
- b. Reconcile each of the 75 sensitivity cases provided across the 3 pivot tables provided in this tab (5 plans x 5 fuel sensitivities x 3 load forecasts) to the 60 cases referenced at Volume I, page 5-25.

A-9.

- a. See the response to Question No. 3(b).
- b. See the response to Question No. 3. The referenced Financial Model file contains 15 resource plans and 75 cases (fives fuel price cases for each resource plan) for the Ozone NAAQS + ELG + GHG environmental scenario. The values in rows 11, 23, and 35 are the average PVRR across all fuel price scenarios for each of the five resource plans developed for the Low, Mid, and High load scenarios, respectively. The other values in columns C-G are the PVRRs for specific fuel price scenarios. For example, the value in G6 is the PVRR with Low Gas, Mid CTG ratio fuel prices for the resource plan developed in PLEXOS assuming Low load and High Gas, Low CTG ratio fuel prices. Columns H-I reflect the lowest PVRR and optimal resource plan for each load scenario.

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**Question No. 10**

**Responding Witness: Michael S. Sebourn / Stuart A. Wilson**

Q-10. Refer to confidential workpaper "Resource\_Planning\FinancialModel\CONFIDENTIAL\_20241001\_FinancialModel\_05\_RefCase\_0328.xlsx"

- a. Explain why this file does not include a "Pivot Results" summary as provided with the other Financial Models in this directory.
- b. Provide a copy of the documentation, instructions, and/or manuals produced to describing the financial model excel spreadsheet that describes how to run models, create inputs and or outputs, or describes the logic included in the formulas and lookups contained in this file.

A-10.

- a. This file was developed solely to support calculations for output tables pertaining to the Reference Case, such as the table referenced in Question No. 5. This file only contains one case, and thus does not require a separate tab to compare multiple model runs.
- b. See the attachment being provided as a separate file.