

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

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


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

FILED: MARCH 10, 2023

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

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



Lonnie E. Bellar

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



Notary Public

Notary Public ID No. KYNP53381

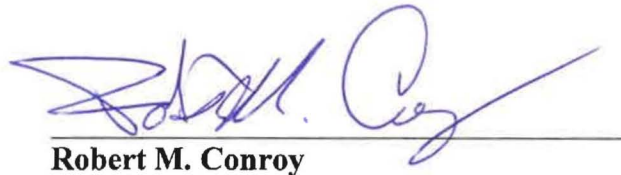
My Commission Expires:

July 11, 2026

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

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


Robert M. Conroy

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


Notary Public

Notary Public ID No. KYNP63286


My Commission Expires:

January 22, 2027

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

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


Philip A. Imber

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


Judy Schoote
Notary Public

Notary Public ID No. KYNP53381

My Commission Expires:

July 11, 2026

VERIFICATION

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

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


Tim A. Jones

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


Notary Public

Notary Public ID No. KYNP53381

My Commission Expires:

July 11, 2026

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

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



Charles R. Schram

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



Notary Public

Notary Public ID No. KYNP53381

My Commission Expires:

July 11, 2026

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

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

David S. Sinclair

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

Notary Public

Notary Public ID No. KYNP53381


My Commission Expires:

July 11, 2026

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

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



Stuart A. Wilson

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



Notary Public

Notary Public ID No. KYNP53381

My Commission Expires:

July 14, 2026

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

**Response to Sierra Club's Initial Request for Information
Dated February 17, 2023**

Case No. 2022-00402

Question No. 1-1

Responding Witness: Robert M. Conroy

- Q.1-1. Please provide all responses to Requests for Information issued by KU/LG&E or any other party to this proceeding.
- A.1-1. Under 807 KAR 5:001 Section 8, the Companies requested, and the Commission approved, the use of electronic filing procedures in this proceeding. Sierra Club consented to the use of those procedures. All documents are filed electronically and provided to all parties of record.

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

**Response to Sierra Club's Initial Request for Information
Dated February 17, 2023**

Case No. 2022-00402

Question No. 1-2

Responding Witness: Robert M. Conroy

- Q.1-2. Please provide all testimony, exhibits, work papers, and schedules supporting the Companies' application in electronic, machine-readable format with formulae intact, including all confidential or highly sensitive testimonies, exhibits, work papers, and schedules supporting the Companies' application.
- A.1-2. The Companies have filed electronic documents (testimony, exhibits, and work papers) that support the Joint Application in this case before the Commission. The Commission issued an Order on January 6, 2023 that accepted the Joint Application and deemed it filed as of this date. At the request of counsel for the Sierra Club, the Companies' counsel provided a confidentiality agreement to Sierra Club. As of March 10, 2023, Sierra Club has not returned the executed confidentiality agreement. Upon receipt of the executed confidentiality agreement, the Companies will provide Sierra Club access to the confidential information.

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

**Response to Sierra Club's Initial Request for Information
Dated February 17, 2023**

Case No. 2022-00402

Question No. 1-3

Responding Witness: Stuart A. Wilson

- Q.1-3. Please refer to Exhibit SAW-1, sponsored by Stuart A. Wilson, at pages D-11 and D-22, Table 12 (pages 126 and 137 of the PDF). For the referenced Equivalent Load Duration Curve Model ("ELDCM"):
- a. Provide all input and output files supporting the ELDCM (in electronic, machine-readable format with formulae intact).
 - b. For the analysis conducted by ELDCM, provide all documents, analyses, or forecasts relied upon to calculate or develop its responses.
- A.1-3.
- a. The following file contains both inputs and outputs:

"\\Reliability\ELDC\CONFIDENTIAL_20221206_CHW_SeasonalELDC_0308.xlsx" in Exhibit SAW-2.
 - b. See the response to part (a).

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

**Response to Sierra Club's Initial Request for Information
Dated February 17, 2023**

Case No. 2022-00402

Question No. 1-4

Responding Witness: Stuart A. Wilson

- Q.1-4. Please refer to Exhibit SAW-1, sponsored by Stuart A. Wilson, at pages D-11 and D-23, Table 13 (pages 126 and 138 of the PDF). For the referenced Strategic Energy Risk Valuation Model ("SERVM") minimum reserve margin target analysis:
- a. Provide all input and output files supporting SERVM (in electronic, machine-readable format with formulae intact).
 - b. For the analysis conducted by SERVM, provide all documents, analyses, or forecasts relied upon to calculate responses.
- A.1-4.
- a. Input files are in the "\Reliability\SERVM\Inputs" folder in Exhibit SAW-2.¹ Output files are in the "\Reliability\SERVM\SERVM_runs" folder in Exhibit SAW-2.²
 - b. See the response to part (a).

¹ The public version of this data is available on the Commission's website in the zip files for Exh. SAW-2 Vols. 6-10.

² The public version of this data is available on the Commission's website in the zip files for Exh. SAW-2 Vols. 11-12.

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

**Response to Sierra Club's Initial Request for Information
Dated February 17, 2023**

Case No. 2022-00402

Question No. 1-5

Responding Witness: Stuart A. Wilson

Q.1-5. Please refer to Exhibit SAW-1, sponsored by Stuart A. Wilson, at page D-12 (page 127 of the PDF), footnote 14.

- a. Provide all documents, analyses, or forecasts that the Companies used to “ma[k]e” “adjustments . . . to the neighboring regions’ generating portfolios as needed to reflect planned retirements and meet the neighboring regions’ target reserve margins.”
- b. Describe how KU/LG&E made these adjustments in the reserve margin analysis.

A.1-5.

- a. No workpapers were provided for the adjustments because they were made via the SERVVM interface.
- b. For MISO-Indiana, 24,552 MW of the region’s generation resources were included to meet its target reserve margin of 18%. For PJM-West, 40,007 MW of the region’s generation resources were included to meet its target reserve margin of 14.8%. For TVA, 35,648 MW of the region’s generation resources were included to meet its target reserve margin of 17%. These levels were obtained by deactivating existing dispatchable resources in SERVVM.

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

**Response to Sierra Club’s Initial Request for Information
Dated February 17, 2023**

Case No. 2022-00402

Question No. 1-6

Responding Witness: Stuart A. Wilson

Q.1-6. Please refer to Exhibit SAW-1, sponsored by Stuart A. Wilson, at pages D-12 to D-13 (pages 127 to 128 of the PDF).

- a. Provide all documents, analyses and workpapers, including all modeling input and output files, used to generate the equivalent forced outage rates listed in Table 3 on page D-13.
- b. Explain why “the availability of units in neighboring regions was assumed to be consistent with the availability of units in the Companies’ generating portfolio.”

A.1-6.

- a. See “\06_ModelInputs\EFOR\20220628_CHW_EFORTemplateForPROSYM.xlsx” in Exhibit SAW-2.³
- b. The Companies do not know EFOR for each generation resource in the neighboring regions in 2028. EFOR assumptions for the Companies’ resources reflect maintenance programs consistent with good utility practice. In the absence of better information, the Companies assumed resources in neighboring regions would be similarly maintained. Therefore, the Companies assumed that the EFOR of units in neighboring regions are consistent with the EFOR of units with the same fuel type in the Companies’ generating portfolio.

³ The public version of this data is available on the Commission’s website in the zip file for Exh. SAW-2 Vol. 2.

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

**Response to Sierra Club's Initial Request for Information
Dated February 17, 2023**

Case No. 2022-00402

Question No. 1-7

Responding Witness: Stuart A. Wilson

Q.1-7. Please refer to Exhibit SAW-1, sponsored by Stuart A. Wilson, at page D-15 (page 130 of the PDF). Provide all documents, analyses and workpapers, including all modeling input and output files, used to:

- a. Generate Table 7, Daily ATC [available transmission capacity]
- b. “[M]odel ATC in SERVVM based on this distribution”

A.1-7.

- a. See “\Reliability\SERVM\Inputs\ATC\MHC_Joint DR1 Attach to Q80(a).xlsx” in Exhibit SAW-2.⁴
- b. See “\Reliability\SERVM\Inputs\ATC\20221028_2022CPCN_ATC.csv” in Exhibit SAW-2.⁵

⁴ The public version of this data is available on the Commission's website in the zip file for Exh. SAW-2 Vol. 6.

⁵ The public version of this data is available on the Commission's website in the zip file for Exh. SAW-2 Vol. 6.

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

**Response to Sierra Club's Initial Request for Information
Dated February 17, 2023**

Case No. 2022-00402

Question No. 1-8

Responding Witness: Stuart A. Wilson

Q.1-8. Please refer to Exhibit SAW-1, sponsored by Stuart A. Wilson, at pages D-20 and D-21, figure 8 (pages 135 and 136 of the PDF). For the referenced SERVM scarcity price curve, provide:

- a. All input and output files supporting the SERVM analysis (in electronic, machine-readable format with formulae intact).
- b. For the analysis conducted by SERVM, provide all documents, analyses, or forecasts relied upon to calculate responses.

A.1-8.

- a. See
“\Reliability\SERVM\Inputs\ScarcityPricing\20220831_OperatingReserveDemandCurve.csv” in Exhibit SAW-2.⁶
- b. See the response to part (a). The scarcity price curve was jointly developed by the Companies and Astrape Consulting, the developer of SERVM. The Companies do not possess any additional responsive documents.

During Winter Storm Elliott on December 23 and 24, the Companies purchased power at prices in excess of \$3,000/MWh. These purchases corroborate the Companies' scarcity price curve.

⁶ The public version of this data is available on the Commission's website in the zip file for Exh. SAW-2 Vol. 6.

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

**Response to Sierra Club's Initial Request for Information
Dated February 17, 2023**

Case No. 2022-00402

Question No. 1-9

Responding Witness: Stuart A. Wilson

- Q.1-9. Please refer to Exhibit SAW-1, sponsored by Stuart A. Wilson, at page D-23 (page 138 of the PDF).
- a. Please provide all documents, analyses and workpapers, including all modeling input and output files, used to:
 - i. Generate Table 14, Generation Portfolios for Capacity Contribution Analysis
 - ii. Generate Table 15, Capacity Contribution for Limited-Duration Resources. This includes all documents, analyses, or forecasts relied upon to calculate responses generated by SERVM.
 - b. Please describe the process by which KU/LG&E generated Table 14.
- A.1-9.
- a.
 - i. See “\Reliability\SERVM\SERVM_runs\20221108_ForELCC.xlsx” in Exhibit SAW-2.⁷
 - ii. See the response to part (a)(i). The Companies do not possess any additional responsive documents.
 - b. Starting with the Reference portfolio that replaces Mill Creek 2, Ghent 2, and Brown 3 with one 621 MW NGCC, Portfolios 2-5 were created by adding 480 MW of various technologies to the Reference portfolio. 480 MW was chosen to achieve summer and winter reserve margins close to the minimum reserve margin targets. Portfolio 2's 480 MW comes from SCCT, which is a

⁷ The public version of this data is available on the Commission's website in the zip file for Exh. SAW-2 Vol. 12.

fully dispatchable resource. Portfolio 3-5's 480 MW comes from limited-duration resources.

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

**Response to Sierra Club’s Initial Request for Information
Dated February 17, 2023**

Case No. 2022-00402

Question No. 1-10

Responding Witness: Stuart A. Wilson

Q.1-10. Please refer to the Direct Testimony of Stuart A. Wilson at page 19.

- a. Please provide all documents, analyses, and workpapers that KU/LG&E relied upon to “develop[] ten total portfolios to evaluate.”
- b. Please describe the process by which KU/LG&E developed these ten portfolios.

A.1-10.

- a. See Exhibit SAW-1, Section 4.5.1 – *Stage Two, Step One: Portfolio Creation*. The PLEXOS files used to develop the portfolios are located in Exhibit SAW-2 in the folder named 02_PLEXOS.⁸
- b. See the response to part (a). The portfolios were developed in PLEXOS using the methods described in Exhibit SAW-1, Section 4.5.1 – *Stage Two, Step One: Portfolio Creation*. The Companies chose the constraints that defined the development of these portfolios to facilitate comparisons of these various suboptimal portfolios to the Companies’ proposed portfolio.

⁸ The public version of this data is available on the Commission’s website in the zip file for Exh. SAW-2 Vol. 1.

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

**Response to Sierra Club's Initial Request for Information
Dated February 17, 2023**

Case No. 2022-00402

Question No. 1-11

Responding Witness: Stuart A. Wilson

- Q.1-11. Please refer to the Direct Testimony of Stuart A. Wilson at page 22. Please provide all documents, analyses and workpapers, including all modeling input and output files, used to generate Table 5, Stress Testing (Portfolios 1-10); 2028 Summer and Winter Reserve Margins.
- A.1-11. See "ScenarioRM" tab in
"\Tables\CONFIDENTIAL_20221209_ResourceAssessmentTables_0308.xlsx"
in Exhibit SAW-2.

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

**Response to Sierra Club's Initial Request for Information
Dated February 17, 2023**

Case No. 2022-00402

Question No. 1-12

Responding Witness: David S. Sinclair

- Q.1-12. Please refer to the Direct Testimony of David S. Sinclair at page 26, lines 17-19. In response to the question, "Did the Companies consider joining an RTO as an alternative to building and/or acquiring new generation assets," Mr. Sinclair states, "Yes," and refers to KU/LG&E's "recently filed RTO study."
- a. Provide all documents, analyses, and workpapers related to the Companies' consideration of joining an RTO as an alternative to building and/or acquiring new generation assets.
 - i. If the Companies are not aware of any such documents, please so state.
 - b. Provide any and all inputs into the modeling conducted in support of this application related to the Companies' consideration of joining an RTO.
 - i. If no such inputs exist, please so state.
 - c. Confirm that the referenced RTO study is included in Volume III of KU/LG&E's 2021 Integrated Resource Plan, Kentucky Public Service Commission Docket 2021-00393 beginning at page 84 of the pdf document, and captioned "2021 RTO Membership Analysis" dated October 2021, available at https://psc.ky.gov/pscecf/2021-00393/rick.lovekamp%40lge-ku.com/10192021013101/5-LGE_KU_2021_IRP_Volume_III.pdf. If not confirmed, please provide the referenced RTO study.
 - d. Please provide all workpapers and assumptions underlying the referenced RTO study, including all workpapers supporting each table and figure in the study, in their native format with all formulae unlocked.
- A.1-12.
- a. See the response to LFUCG/Louisville Metro 1-51 and see attachments one and two. Attachments three and four are confidential and proprietary and are being provided under seal pursuant to a petition for confidential protection.

- i. Not applicable.
- b. See the response to part (a).
 - i. Not applicable.
- c. Not confirmed. See the response to LFUCG/Louisville Metro 1-51.
- d. See the response to part (a).

The attachments are
being provided in
separate files.

The attachments are
confidential and
provided separately
under seal.

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

**Response to Sierra Club's Initial Request for Information
Dated February 17, 2023**

Case No. 2022-00402

Question No. 1-13

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

- Q.1-13. Please refer to the Direct Testimony of Lonnie E. Bellar at page 6, lines 3-9. In each response to the below, indicate real or nominal dollars; and if real dollars, provide the dollar year.
- a. Provide the annual forecasted capital expenditures for the Mill Creek NGCC, net of environmental compliance costs.
 - b. Provide the annual forecasted fixed O&M costs for the Mill Creek NGCC, net of environmental compliance costs.
 - c. Provide the annual forecasted variable O&M costs for the Mill Creek NGCC, net of environmental compliance costs.
 - d. Provide the annual forecasted capital expenditures for the Brown NGCC, net of environmental compliance costs.
 - e. Provide the annual forecasted fixed O&M costs for the Brown NGCC, net of environmental compliance costs.
 - f. Provide the annual forecasted variable O&M costs for the Brown NGCC, net of environmental compliance costs.
- A.1-13. All values are in nominal dollars. Ongoing capital expenditures are based on operating hours in the Mid Gas, Mid CTG ratio fuel price scenario.

a-c. See the table below.

Year	Capital Expenditures (\$M)	Fixed O&M (\$M)	Variable O&M (\$/MWh)
2023	3.5	0	0
2024	145.2	0	0
2025	369.1	0	0
2026	122.3	0	0
2027	24.8	12.1	0.258
2028	3.5	12.3	0.263
2029	3.5	12.4	0.268
2030	3.5	12.6	0.273
2031	3.6	12.8	0.279
2032	3.8	12.9	0.284
2033	3.8	13.1	0.290
2034	3.8	13.3	0.296
2035	3.9	13.5	0.302
2036	3.9	13.6	0.308
2037	4.1	13.8	0.314
2038	4.1	14.0	0.320
2039	4.2	14.2	0.327
2040	4.4	14.4	0.333
2041	4.4	14.6	0.340
2042	4.5	14.8	0.347
2043	4.6	14.9	0.354
2044	4.7	15.1	0.361
2045	4.8	15.3	0.368
2046	4.8	15.6	0.375
2047	5.0	15.8	0.383
2048	5.2	16.0	0.390
2049	5.2	16.2	0.398
2050	5.3	16.4	0.406

d-f. See the table below.

Year	Capital Expenditures (\$M)	Fixed O&M (\$M)	Variable O&M (\$/MWh)
2023	1.4	0	0
2024	2.1	0	0
2025	154.4	0	0
2026	393.7	0	0
2027	127.2	0	0
2028	24.1	16.1	0.263
2029	3.4	16.3	0.268
2030	3.5	16.5	0.273
2031	3.6	16.7	0.279
2032	3.7	16.9	0.284
2033	3.8	17.2	0.290
2034	3.8	17.4	0.296
2035	3.9	17.6	0.302
2036	3.9	17.8	0.308
2037	4.1	18.0	0.314
2038	4.1	18.3	0.320
2039	4.2	18.5	0.327
2040	4.4	18.7	0.333
2041	4.4	19.0	0.340
2042	4.5	19.2	0.347
2043	4.6	19.5	0.354
2044	4.7	19.7	0.361
2045	4.8	20.0	0.368
2046	4.8	20.2	0.375
2047	5.0	20.5	0.383
2048	5.2	20.8	0.390
2049	5.2	21.0	0.398
2050	5.3	21.3	0.406

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

**Response to Sierra Club's Initial Request for Information
Dated February 17, 2023**

Case No. 2022-00402

Question No. 1-14

Responding Witness: Lonnie E. Bellar

- Q.1-14. Please refer to the Direct Testimony of Lonnie E. Bellar at page 3, lines 1-16. In each response to the below, indicate real or nominal dollars; and if real dollars, provide the dollar year.
- a. Provide the annual forecasted capital expenditures for Mill Creek Unit 2, net of environmental compliance costs, from this year until 2028.
 - b. Provide the annual forecasted fixed O&M costs for Mill Creek Unit 2, net of environmental compliance costs, from this year until 2028.
 - c. Provide the annual forecasted variable O&M costs for Mill Creek Unit 2, net of environmental compliance costs, from this year until 2028.
 - d. Provide the annual forecasted capital expenditures for Ghent Unit 2, net of environmental compliance costs, from this year until 2034.
 - e. Provide the annual forecasted fixed O&M costs for Ghent Unit 2, net of environmental compliance costs, from this year until 2034.
 - f. Provide the annual forecasted variable O&M costs for Ghent Unit 2, net of environmental compliance costs, from this year until 2034.
 - g. Provide the annual forecasted capital expenditures for Brown Unit 3, net of environmental compliance costs, from this year until 2028.
 - h. Provide the annual forecasted fixed O&M costs for Brown Unit 3, net of environmental compliance costs, from this year until 2028.
 - i. Provide the annual forecasted variable O&M costs for Brown Unit 3, net of environmental compliance costs, from this year until 2028.

A.1-14. All values are in nominal dollars. Variable O&M is based on costs in the Mid Gas, Mid CTG ratio fuel price scenario.

a-c. See the table below.

Year	Costs For Continued Operation			Costs For Proposed Retirements		
	Capital Expenditures (\$M)	Fixed O&M (\$M)	Variable O&M (\$/MWh)	Capital Expenditures (\$M)	Fixed O&M (\$)	Variable O&M (\$/MWh)
2023	3.8	7.1	0.97	2.3	7.1	0.97
2024	11.4	9.8	1.01	2.7	9.8	1.01
2025	6.3	9.1	1.04	0.4	9.1	1.04
2026	12.9	15.6	1.06	0.1	12.5	1.06
2027	4.3	10.0	1.08	0	0	1.08
2028	5.5	12.4	1.10	0	0	1.10

d-f. See the table below.

Year	Costs For Continued Operation			Costs For Proposed Retirements		
	Capital Expenditures (\$M)	Fixed O&M (\$)	Variable O&M (\$/MWh)	Capital Expenditures (\$M)	Fixed O&M (\$M)	Variable O&M (\$/MWh)
2023	3.8	8.3	1.32	2.6	8.3	1.32
2024	12.3	10.5	1.37	7.3	10.5	1.37
2025	2.1	9.4	1.40	0.5	9.4	1.40
2026	12.6	8.6	1.44	0.8	8.6	1.44
2027	33.9	18.6	1.47	0.2	9.3	1.47
2028	2.2	10.1	1.50	0	0	1.50

g-i. See the table below.

Year	Costs For Continued Operation			Costs For Proposed Retirements		
	Capital Expenditures (\$M)	Fixed O&M (\$M)	Variable O&M (\$/MWh)	Capital Expenditures (\$)	Fixed O&M (\$M)	Variable O&M (\$/MWh)
2023	3.2	24.0	1.85	2.2	24.0	1.85
2024	5.2	24.9	1.91	3.1	24.9	1.91
2025	5.6	25.1	1.96	1.3	25.1	1.96
2026	8.9	26.2	2.00	0.5	26.2	2.00
2027	22.8	34.8	2.04	0.1	26.3	2.04
2028	4.0	27.9	2.08	0	0	2.08

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**Response to Sierra Club's Initial Request for Information
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Case No. 2022-00402

Question No. 1-15

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

Q.1-15. Please refer to the Direct Testimony of Lonnie E. Bellar at page 4, lines 10-20.

- a. Provide all documents, analyses, and workpapers to support the conclusion that “[c]ontinued operation of these units until their respective anticipated retirement dates is currently expected to require stay open costs generally consistent with historical experience,” including:
 - i. Any and all calculations of the referenced units’ stay open costs.
 - ii. Any and all calculations and analyses of the impact of the Inflation Reduction Act (“IRA”) on the units’ retirement dates.
- b. Provide all documents, analyses, and workpapers to support the conclusion that absent extraordinary circumstances, “continued operation is expected to remain least-cost as compared to retirement and replacement.”
- c. Provide citations to all locations in which “Mr. Wilson discusses how he considered retirements for” the units referenced at page 4, line 20.
- d. Provide the expected depreciation date for each referenced unit.

A.1-15.

- a. The conclusion is based on the observation that the Companies’ remaining existing coal units are equipped with modern emission controls and their forecasted stay-open costs are generally consistent with historical stay-open costs.
 - i. See “\04_FinancialModel\Support\StayOpenCosts” in Exhibit SAW-2 for forecasted stay-open costs.

- ii. The IRA is not expected to directly impact the existing units' retirement dates, and the Companies have not performed any such calculations or analysis.

- b. See Table 9 from Section 4.4.3 of Exhibit SAW-1. The Companies have not performed any specific analysis demonstrating that the continued operation of the remaining coal units remains least cost but observe that the PVRR delta between the portfolios where Ghent 2 continues to operate and where Ghent 2 is retired is below the capital cost of an SCR for Ghent 2 (\$126 million) in all fuel price scenarios except for the atypical High Gas, Current CTG ratio and Low Gas, High CTG ratio scenarios. So, absent the requirement to build an SCR, the Companies' analysis would support continued operation of Ghent 2.

- c. See Section 3.3 of Exhibit SAW-1.

- d. See the response to PSC 1-48.

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Case No. 2022-00402

Question No. 1-16

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

- Q-16. Please refer to the Direct Testimony of Lonnie E. Bellar at 11.
- a. Has KU/LG&E conducted any analysis of the viability or economics of carbon capture for the Mill Creek or Brown NGCC units? If yes, please provide all documents reflecting such analyses.
 - b. Has KU/LG&E conducted any analysis of the viability, supply, or economics of burning hydrogen at the Mill Creek or Brown NGCC units? If yes, please provide all documents reflecting such analyses.
- A-16.
- a. No studies on the economics of carbon capture for Mill Creek or Brown NGCC units have been performed by the Companies. See also the response to KCA 1-43.
 - b. No analysis has been conducted by the Companies on the viability, supply, or economics of burning hydrogen at the Mill Creek or Brown NGCC units. See also the responses to PSC 1-5, AG 1-22 and KCA 1-43.

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Case No. 2022-00402

Question No. 1-17

Responding Witness: Lonnie E. Bellar / Charles R. Schram / Stuart A. Wilson

Q.1-17. Please refer to the Direct Testimony of Charles R. Schram at page 5 and to Exhibit SAW- 1, sponsored by Stuart A. Wilson, at page 54 (page 96 of the PDF).

- a. Provide all documentation and analyses provided by respondents to the request for proposals ("RFP") discussing or otherwise considering the impacts of the IRA on their responses.
- b. For all RFP responses that were revised after "the RFP proposals were received in August 2022" and "the Companies followed up with the respondents to ensure their proposals fully reflected" provisions of the IRA, a comparison of the initial RFP response and the final RFP response noting all changes between the initial RFP response and the final RFP response.
- c. Explain how the Companies considered the impacts of the IRA in their analysis of the RFP responses, including any supporting documentation, analyses, or workpapers. Please include a description of how the Companies generated Table 34 in Exhibit SAW-1 at page 54, including citations to the relevant provisions of the IRA and any relevant documentation, analyses, or workpapers.
- d. Explain whether and, if so, how the Companies considered the impacts of the IRA in the formulation of the Companies' self-build proposals.

A.1-17.

- a-b. See the response to PSC 1-69 (a) and (b).
- c. See Section 7.5 in Exhibit SAW-1. See the response to PSC 1-47(a) regarding the Companies' incorporation of appropriate IRA tax incentives in their analysis.
- d. Yes, the Companies considered the impacts of the IRA in the formulation of self-build proposals. Costs include the use of domestic material, prevailing

wages, and apprenticeship labor. See the response to PSC 1-47(a) regarding the Companies' incorporation of appropriate IRA tax incentives in their analysis.

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Case No. 2022-00402

Question No. 1-18

Responding Witness: Tim A. Jones

- Q.1-18. Please refer to the Direct Testimony of Tim A. Jones at page 17.
- a. Provide all documents, analyses, and workpapers used to model the impact of the IRA on the load forecast, including all documents, analyses, and workpapers used to arrive at the “assum[ption]” as to the value of “the joint impact of the IRA and DSM-EE programs.”
 - b. Describe “the IRA’s energy-efficiency provisions” considered for the analysis of the impact of the IRA on the load forecast, including with citations to the relevant provisions of the IRA.
- A.1-18.
- a. See the response to PSC 1-91(c).
 - b. See the response to PSC 1-39. See also the response to PSC 1-31(a) for a link to IRA documentation.

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Case No. 2022-00402

Question No. 1-19

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

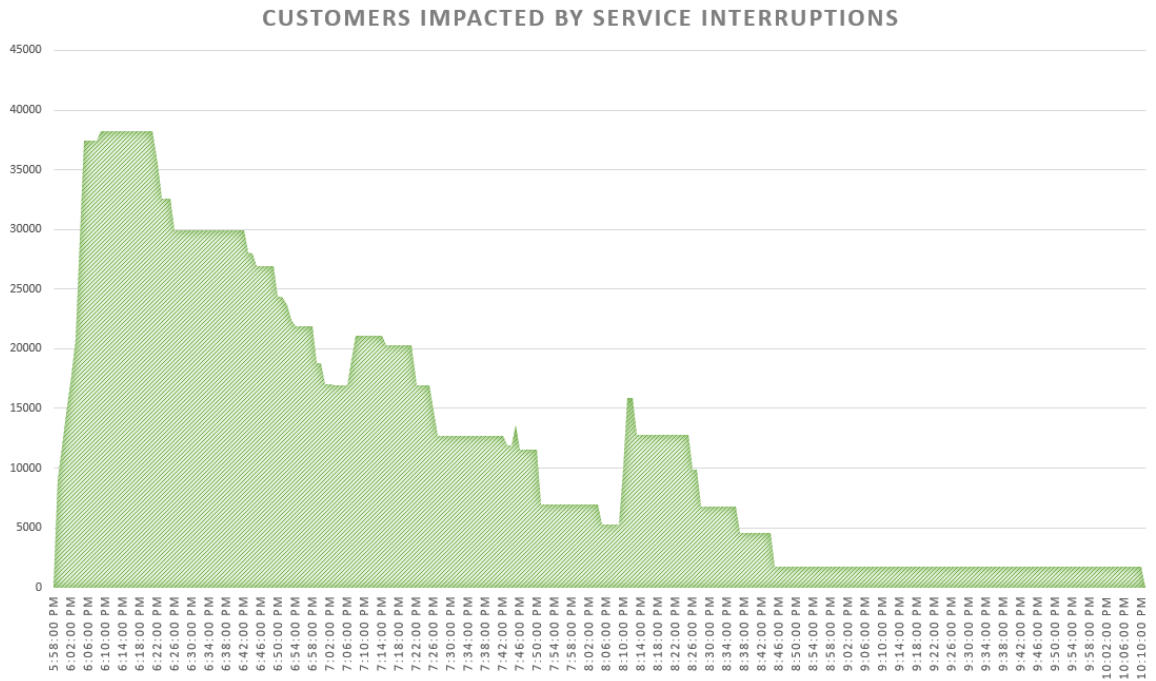
- Q.1-19. Please refer to the Direct Testimony of Stuart A. Wilson at page 9, stating, "Extreme weather conditions drive a need for additional reliability considerations"; Exhibit TAJ-1, sponsored by Tim A. Jones, at page 10, stating, "customers demand even greater load for a longer duration during extreme weather events"; and Exhibit SAW-1, sponsored by Mr. Wilson, at page D-12 (page 127 of the PDF), stating, "A key aspect in developing a target reserve margin is properly considering the likelihood of unit outages during extreme weather events."
- a. Please provide documents, analyses, and workpapers sufficient to show the scope of service interruptions for KU/LG&E during Winter Storm Elliott in December 2022 (including but not limited to interruptions on December 23, 2022), including:
 - i. The number and percentage of customers affected hourly by service interruptions
 - ii. The amount and percentage of resources offline each hour on December 23, 2022, and any other times during Winter Storm Elliott, broken down by generation category (coal, NGCC, SCCT, solar, wind, hydro, etc.)
 - b. Please provide documents sufficient to show the amount of power purchased hourly from the Midcontinent Independent System Operator ("MISO"), PJM Interconnection, and any and all other sources of power external to the Companies from December 21, 2022, to December 28, 2022, broken down by:
 - i. Hour
 - ii. Seller (i.e., MISO, PJM, or other), and

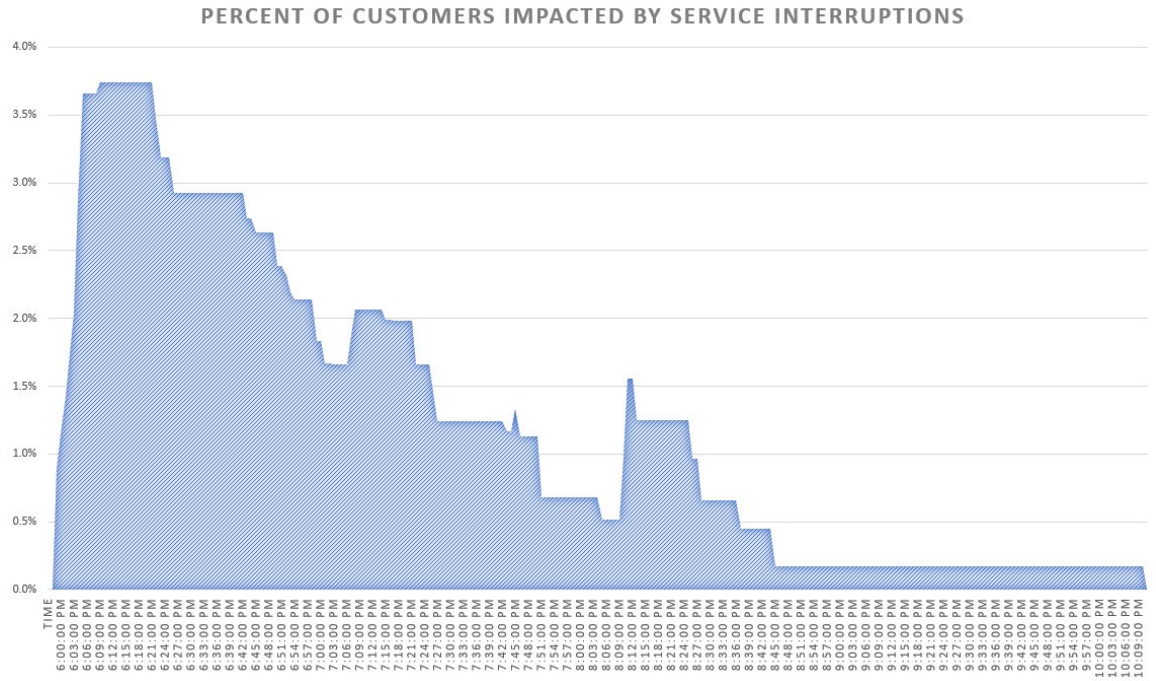
- iii. Generation power source (i.e., coal, NGCC, SCCT, solar, wind, hydro, etc.).

A.1-19.

a.

- i. Between 5:59pm and 10:11pm on December 23, 2022 approximately 54k customers were impacted by service interruptions (~5.3%). The highest amount of customers impacted by service interruptions at any given time was approximately 38k (~3.7%).





ii. See attached.

b. (i) - (iii) See the table below for the power purchased from MISO, PJM, and TVA during the period. There were also 391 MWh in total purchases during the period from other parties in the BA footprint through the OATT ancillary service schedules.

Flow Date	Hour Ending	Total Volume (MWh)	Seller	Power Source Type
12/23/2022	12:00	75	PJM	unknown
12/23/2022	12:00	100	PJM	unknown
12/23/2022	12:00	225	PJM	unknown
12/23/2022	13:00	266	PJM	unknown
12/23/2022	14:00	233	PJM	unknown
12/23/2022	15:00	107	PJM	unknown
12/23/2022	15:00	119	PJM	unknown
12/23/2022	15:00	200	PJM	unknown
12/23/2022	15:00	250	PJM	unknown
12/23/2022	16:00	142	PJM	unknown
12/23/2022	16:00	200	PJM	unknown
12/23/2022	16:00	250	PJM	unknown
12/23/2022	17:00	123	PJM	unknown
12/23/2022	17:00	125	PJM	unknown
12/23/2022	17:00	200	TVA	unknown
12/23/2022	22:00	100	PJM	unknown
12/23/2022	23:00	134	MISO	unknown
12/23/2022	24:00	260	MISO	unknown
12/23/2022	24:00	600	PJM	unknown
12/23/2023	18:00	400	TVA	unknown
12/24/2022	1:00	250	MISO	unknown
12/24/2022	1:00	250	PJM	unknown
12/24/2022	2:00	250	MISO	unknown
12/24/2022	2:00	150	PJM	unknown
12/24/2022	3:00	188	PJM	unknown
12/24/2022	4:00	250	PJM	unknown
12/24/2022	5:00	200	MISO	unknown
12/24/2022	6:00	50	PJM	unknown
12/24/2022	8:00	113	MISO	unknown

The attachment is being
provided in a separate
file.

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Case No. 2022-00402

Question No. 1-20

Responding Witness: Lonnie E. Bellar / Philip A. Imber / David S. Sinclair

Q.1-20. Please refer to the Direct Testimony of David S. Sinclair at page 4, lines 1-13.

- a. To address EPA's impending regulations, did KU/LG&E evaluate converting Mill Creek Unit 2, Ghent Unit 2, or Brown Unit 3 to burn gas? If yes, please provide all documentation reflecting such analyses. If not, why not?
- b. Confirm that Brown Unit 3 is already equipped with SCR technology.
- c. If Brown Unit 3 were converted to gas in future, confirm that KU/LG&E would not be required to invest in SCR technology to comply with the Good Neighbor Plan. If not confirmed, please explain.
- d. Please provide a detailed explanation of the \$26 million maintenance costs required at Brown Unit 3 to continue operating beyond 2028.
- e. Could any of those costs be avoided by converting Brown Unit 3 to burn gas?
- f. Could any of the estimated \$110 million cost for SCR technology at Mill Creek Unit 2 be avoided by converting the unit to burn gas?
- g. Could any of the estimated \$126 million cost for SCR technology at Ghent Unit 2 be avoided by converting the unit to burn gas?
- h. Confirm that, under the proposed Good Neighbor Plan, if Mill Creek Unit 2 or Ghent Unit 2 were converted to gas, they could continue to operate outside the ozone season without SCR and without requiring credits for the emission of NOx. If not confirmed, please explain.
- i. Confirm that, under the proposed Good Neighbor Plan, if Mill Creek Unit 2 or Ghent Unit 2 were converted to gas, they could continue to operate during the ozone season without SCR, provided that the Company has sufficient NOx credits. If not confirmed, please explain.

- j. Has KU/LG&E evaluated whether converting Brown Unit 3, Mill Creek Unit 2, or Ghent Unit 2 to burn gas would reduce CO₂ or NO_x emissions (whether total annual or hourly rates) from those units? If yes, please provide all documentation reflecting such analyses. If not, why not?
- k. Refer to the Direct Testimony of David S. Sinclair at page 14, lines 5-6, and the Direct Testimony of Lonnie E. Bellar at page 10, lines 10-19. Has KU/LG&E evaluated the ramping speed of Brown Unit 3, Mill Creek Unit 2, or Ghent Unit 2 if they were converted to gas? If yes, please provide all documentation reflecting such analyses. If not, why not?

A.1-20.

- a. No. Brown 3 already has SCR controls and can comply with the Good Neighbor Plan without gas conversion, and Ghent 2 and Mill Creek 2 would still need SCR controls to maintain their current availability and comply with the Good Neighbor Plan even if the units were converted to gas.

In general, gas conversion is capital intensive, reduces heat rate efficiencies, reduces capacity, and increases fuel operating costs. As an alternative, the Companies' analysis considered non-ozone operation of Mill Creek 2 and Ghent 2 in Stage Two of Exhibit SAW-1. Non-ozone operation provides the benefits of a winter capacity contribution without the incremental capital and efficiency losses associated with gas conversion and complements the summer capacity contribution from solar generation.

The Companies have previously considered converting certain coal units to burn natural gas. See the response to JI 1.1(a) and (c).

In the 2022 Resource Assessment, the Companies evaluated all technologies for which they received responses to their June 2022 request for proposals, which included a diverse array of fossil-based, renewable, and battery options. The Companies did not receive a proposal for converting Ghent 2 and Mill Creek 2 to natural gas and therefore did not evaluate it in the 2022 Resource Assessment, but the broad range of responses the Companies did receive and analyze satisfies the CPCN requirement to thoroughly review all reasonable alternatives to meet the required need.

- b. Confirmed.
- c. Confirmed. If the Companies were to convert Brown 3 to natural gas in the future, the Companies would retain its existing SCR controls.
- d. See the response to PSC 1-44(a).

- e. Scopes identified that could be avoided if converting Brown 3 to gas are the pulverizer dynamic classifier replacement, pulverizer gearbox overhaul, and the absorber inlet expansion joints replacement. These three projects total \$1.3 million of the \$26 million. A gas conversion would introduce significant new costs.
- f. If Mill Creek 2 were converted to gas, SCR controls would still be needed to comply with the Good Neighbor Plan. The size and scope of such an SCR would differ from the \$110 million cost and has not been estimated, but it is likely that the total cost of SCR controls coupled with gas conversion and pipeline capital would exceed the estimated \$110 million cost.
- g. If Ghent 2 were converted to gas, SCR controls would still be needed to comply with the Good Neighbor Plan. The size and scope of such an SCR would differ from the \$126 million cost and has not been estimated, but it is likely that the total cost of SCR controls coupled with gas conversion and pipeline capital would exceed the estimated \$126 million cost, especially since Ghent does not have existing gas service and it is unclear if gas service could be permitted to that location.
- h. If Mill Creek 2 or Ghent 2 were converted to gas, the Companies would have to revisit the units' permit applications but would generally expect that the units could operate during non-ozone months without an SCR and using existing annual NO_x allowances.
- i. Confirmed. Any unit can operate during the ozone season provided the Company has sufficient NO_x credits. Imber testimony at 4:11-18 identifies concern for sufficient NO_x credits in the market. See the responses to part (a), part (f), and part (g).
- j. The Companies have performed engineering analysis specific to Brown 3 and Mill Creek 2 gas conversions and leveraged these analyses to inform estimates for Ghent 2. See the response to JI 1-1(a) and (c).
- k. No. The Companies have not performed any studies on how gas conversion would affect unit ramping speed as its impact is expected to be immaterial to the overall economics of gas conversion.

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Case No. 2022-00402

Question No. 1-21

Responding Witness: David S. Sinclair

- Q.1-21. Please refer to the Direct Testimony of David S. Sinclair at page 19, lines 2-3. Confirm that converting Ghent Unit 2, Mill Creek Unit 2, or Brown Unit 3 to gas were not resource options in the referenced 2022 Resource Assessment modeling, and therefore could not have been selected. If not confirmed, please explain.
- A.1-21. Confirmed. See the response to Question No. 20(a). In the 2022 Resource Assessment, the Companies evaluated all technologies for which they received responses to their June 2022 request for proposals, which included a diverse array of fossil-based, renewable, and battery options. The Companies did not receive a proposal for converting Ghent Unit 2, Mill Creek Unit 2, or Brown Unit 3 to gas and therefore did not evaluate them in the 2022 Resource Assessment, but the broad range of responses the Companies did receive and analyze satisfies the CPCN requirement to thoroughly review all reasonable alternatives to meet the required need.

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Case No. 2022-00402

Question No. 1-22

Responding Witness: David S. Sinclair

Q.1-22. Refer to the Direct Testimony of David S. Sinclair at page 5 lines 4-5.

- a. Confirm that the addition of significant zero-marginal cost renewable energy and battery resources expected under the IRA are likely to drive energy market prices down. If not confirmed, please explain.
- b. Does KU/LG&E’s 2022 Resource Assessment take into account the impacts of the IRA on energy market prices? Please explain.

A.1-22.

- a. Not confirmed. A “significant” increase in the demand for renewable generation (such as wind and solar) and li-ion batteries is likely to drive their market cost up absent a significant expansion of their production supply chain, particularly as it relates to the mineral and mining expansion that will be required and is well documented by organizations like the International Energy Agency.⁹ These potential cost increases are likely to more than offset any IRA tax benefits, especially given the various domestic production and union labor requirements contained in the IRA.

Market electricity prices in RTOs are set by the marginal cost of generating energy by the marginal generating unit. If renewable generation is offering into the market at \$0/MWh, it is doubtful that it will set the market price. If it did on a consistent basis, then it is unclear how such generation would be viable in the long-term since it would receive no energy revenues. Also, an energy market with a \$0/MWh price would send price signals to consumers that energy was free, which would not be the case given the fixed costs associated with building wind and solar generation.

⁹ For example, see “The Role of Critical Minerals in Clean Energy Transitions,” International Energy Agency, <https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions>, and “Mark Mills: The energy transition delusion: inescapable mineral realities,” Skagen Funds’ New Year’s Conference, January 11, 2023, <https://www.youtube.com/watch?v=sgOEGKDVvsg>

- b. Forecasted energy market prices (with or without the IRA) are not part of the CPCN evaluation because the Companies do not operate in an RTO.

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Case No. 2022-00402

Question No. 1-23

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

Q.1-23. Please refer to Exhibit CRS-1, sponsored by Charles R. Schram.

- a. Please explain why the RFP required proposals of at least 100 MW.
- b. Please explain why “third party respondents” were not permitted to “assume access to, or utilization of, existing sites owned by the Companies for siting proposed project(s).”
- c. Please describe any and all work on proposals for NGCC generation units, analyses for such proposals, and any other work in support of new NGCC generation units conducted by KU/LG&E from January 1, 2022, to June 21, 2022—in other words, in 2022 prior to the issuance of the RFP.
 - i. Include, in this response, any and all work on requests for NGCC interconnection evaluations. See Case No. 2021-00393, Southern Renewable Energy Ass’n’s Final Written Comments on KU/LG&E’s Joint Integrated Resource Plan, at page 4 & footnote 9, available at https://psc.ky.gov/pscecf/2021-00393/rstrobo%40strobobarkley.com/10072022113021/2022.10.07_SRE_A_IRP_Comments_FINAL.pdf.
 - ii. For all such work that occurred, please explain why it was conducted prior to the issuance of the RFP.

A.1-23.

- a. See the response to JI 1-35(a).
- b. See the response to JI 1-35(d).
- c. See the responses to JI 1-9(e) and 26(b).
 - i. The NGCC interconnection requests are LGE-GIS-2022-003 and LGE-GIS-2022-004 for Mill Creek and Brown, respectively, as shown in the

interconnection queue found at

https://www.oasis.oati.com/woa/docs/LGEE/LGEEdocs/LGE_and_KU_GI_Queue_Posting_March_2,_2023.pdf. The Companies' subsequently withdrew LGE-GIS-2022-004 and submitted LGE-GIS-2022-011 for the Brown NGCC.

- ii. Interconnection request was submitted prior to the RFP due to the long timeline for the review and approval of the interconnection request.

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Case No. 2022-00402

Question No. 1-24

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

Q.1-24. Please refer to the Direct Testimony of Charles R. Schram at page 12.

- a. Has KU/LG&E entered into any firm contracts for supply of gas at the Mill Creek or Brown NGCCs? If yes, please provide all such contracts.
- b. Has KU/LG&E evaluated the reliability risk associated with the Mill Creek NGCC gas supply service on the same interstate pipeline as the Cane Run NGCC? If so, please provide all documentation reflecting such analyses.

A.1-24.

- a. No. The Companies plan to enter into firm gas transportation agreements for the Mill Creek and Brown NGCCs if the Commission grants the requested certificates of public convenience and necessity for the units. See the response to KCA 1-2. For gas supply, the Companies anticipate a mix of spot and forward purchases of natural gas for the planned units as described in Mr. Schram's testimony.¹⁰
- b. See the response to PSC 1-58.

¹⁰ See Schram Direct Testimony at 13-14.

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Case No. 2022-00402

Question No. 1-25

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

Q.1-25. Please refer to the Direct Testimony of Philip A. Imber at pages 3-4.

- a. For each of its coal-fired generation units, has KU/LG&E conducted any analysis of the potential costs to comply with EPA's proposed Good Neighbor Plan, 87 Fed. Reg. 20,036 (Apr. 6, 2022), and timing for such costs? If so, please provide all documents reflecting such analyses for each unit. If not, why not?
- b. Does KU/LG&E have a forecast for NO_x credit costs under the Cross-State Air Pollution Rule or EPA's proposed Good Neighbor Plan, 87 Fed. Reg. 20,036 (Apr. 6, 2022)? If yes, please provide all forecasts through 2030. If not, why not?
- c. For each of its coal-fired generation units, has KU/LG&E conducted any analysis of the potential costs to comply with EPA's Regional Haze Rule for the second planning period, 40 C.F.R. § 51.308, and timing for such costs? If so, please provide all documents reflecting such analyses for each unit. If not, why not?
- d. For each of its coal-fired generation units, has KU/LG&E conducted any analysis of the compliance costs and timing to comply with EPA's Coal Combustion Residuals Rule ("CCR Rule"), 40 C.F.R. Part 257? If so, please provide all documentation reflecting such analyses for each unit. If not, why not?
- e. For each of its coal-fired generation units, has KU/LG&E conducted any analysis of the costs and timing for such costs to comply with EPA's Effluent Limitations Guidelines ("ELG Rule"), 40 C.F.R. Part 423? If so, please provide all documentation reflecting such analyses for each unit. If not, why not?

A.1-25.

- a. Yes. The following units already achieve the 0.08 lbs/mmbtu emission rate proposed in the GNP for existing SCR: Mill Creek Unit 3, Mill Creek Unit 4, Ghent Unit 1, Ghent Unit 3, Ghent Unit 4, Trimble Unit 1, Trimble Unit 2, and E.W. Brown Unit 3. Since these units achieve the proposed emissions rate, no capital expenditures for control technologies need to be assessed. Ghent Unit 2, Mill Creek Unit 1, and Mill Creek Unit 2 would require state-of-the-art combustion controls to achieve emission limits proposed for applicability in 2024 and they would require new SCR to achieve the emissions limits proposed in 2026. Mill Creek Unit 1 is scheduled for retirement by the end of 2024. Table 31 on page 52 of Exhibit SAW-1 contains estimated capital and operating costs for SCR at Mill Creek Unit 2 and Ghent Unit 2.
- b. See Exhibit SAW-2 at
\\06_ModelInputs\CommodityPriceForecasts\CONFIDENTIAL_Price_Forecast_Emissions.xlsx.
- c. No. The Companies' facilities were not requested to perform any analysis as part of Kentucky's second planning period for the Regional Haze Rule.
- d. The Companies filed and received Commission approval of plans to comply with the CCR Rule in Case Nos. 2016-00026 and 2016-00027. These cases included analysis of the costs and timing to comply with the CCR Rule. Updates on the costs and timing are available through reports filed with the Commission on a quarterly basis.
- e. The Companies filed and received Commission approval of plans to comply with the ELG Rule in Case Nos. 2020-00060 and 2020-00061. These cases included analysis of the costs and timing to comply with the ELG Rule. Updates on the costs and timing are available through reports filed with the Commission on a quarterly basis.