

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 JOINT MOTION OF KENTUCKIANS FOR THE COMMONWEALTH,
KENTUCKY SOLAR ENERGY SOCIETY, METROPOLITAN HOUSING
COALITION, AND MOUNTAIN ASSOCIATION'S SUPPLEMENTAL
REQUESTS FOR INFORMATION
DATED MAY 2, 2025

FILED: MAY 16, 2025

VERIFICATION

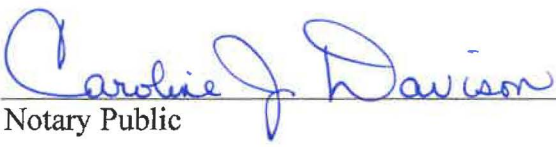
COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

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

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 12th day of May 2025.




Notary Public
Notary Public ID No. KYNP63286

My Commission Expires:

January 22, 2027



COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)



Livingston

Caroline J. Davison
Notary Public

January 22, 2027



COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)


Robert M. Conroy

Sammy J. Elzy
Notary Public

November 9, 2026



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.



Notary Public

Notary Public ID No. KYNP63286

My Commission Expires:

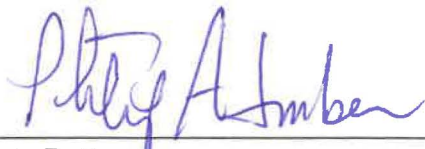
January 22, 2027



VERIFICATION

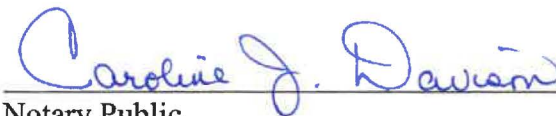
COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Philip A. Imber**, being duly sworn, deposes and says that he is Director – Environmental 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

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 12th day of May 2025.



Notary Public

Notary Public ID No. KYNP63286

My Commission Expires:

January 22, 2027



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

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 12th day of May 2025.



Notary Public

Notary Public ID No. KYNP63286

My Commission Expires:

January 22, 2027



VERIFICATION

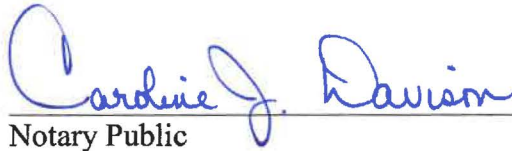
COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

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

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



Notary Public

Notary Public ID No. KYNP62286

My Commission Expires:

January 22, 2027



COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

Both M^c failed

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. KYNPL63286

January 22, 2027



COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)


Charles R. Schram

Caroline J. Davison
Notary Public

January 22, 2027



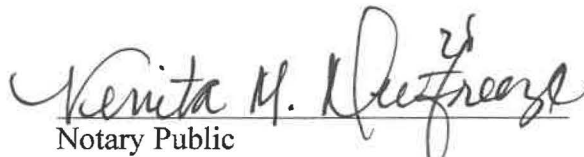
VERIFICATION

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.


Notary Public


Notary Public, ID No. KYNP4577

My Commission Expires:

April 1, 2028

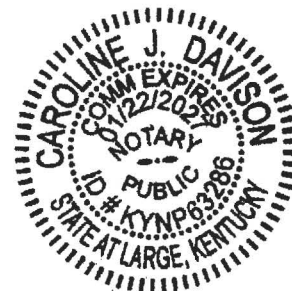


COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)


Stuart A. Wilson

Caroline J. Davison
Notary Public

January 22, 2027



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

**Response to Joint Motion of Kentuckians for the Commonwealth, Kentucky Solar
Energy Society, Metropolitan Housing Coalition, and Mountain Association’s
Supplemental Requests for Information
Dated May 2, 2025**

Case No. 2025-00045

Question No. 2.1

Responding Witness: Tim A. Jones

Q-2.1. Please refer to the Companies’ response to JI 1.121. For each of the low, mid, and high load forecasts in the 2024 IRP,¹ and the load forecast in the 2025 CPCN, identify for each of the years 2025 through 2054:

- a. The forecasted annual energy demand in MWhs for each customer class for which such data is available. If not available for any or all customer classes, then for the Companies as a whole.
- b. The forecasted winter peak in MWs for each customer class for which such data is available. If not available for any or all customer classes, then for the Companies as a whole.
- c. The forecasted summer peak in MWs for each customer class for which such data is available. If not available for any or all customer classes, then for the Companies as a whole.

A-2.1.

- a. See KPSC Case No 2024-00326 -- LGE-KU 2024 IRP Load Forecasting Workpapers—PUBLIC.zip at “IRP_Workpapers\Vol_I_Data\20240922_TotalEnergyRequirementsFigure.xlsx.” In the tab “ER_withHighLow,” columns D, E, and F are the annual energy requirements for the IRP Mid, High, and Low scenarios, respectively. Note that the IRP forecast only goes through 2039 and the values represent total company usage in GWh.

See Exhibit TAJ-2 at
“Load_Forecasting\CPCN\Work\GenPlanning_Data_Smoothed_D02_Pivot

¹ 2024 *Joint Integrated Resource Plan of Louisville Gas and Electric Company and Kentucky Utilities Company*, Case No. 2024-00326 (Oct. 18, 2024) (“2024 IRP”).

.xlsx.” In the tab “Annual Energy Requirements,” column B is the forecasted annual energy requirements for the CPCN load forecast.

- b. See KPSC Case No 2024-00326 -- LGE-KU 2024 IRP Load Forecasting Workpapers—CONFIDENTIAL.zip at “IRP_Workpapers\Vol_I_Data\IRP_Peak_Scenario_Comparisons_20240913.xlsx.” Columns G, H, and I are the forecasted winter peak for the IRP Mid, High, and Low scenarios, respectively.

See the file path provided in part (a) pertaining to the CPCN. In the tab “Summer and Winter Peaks,” column F is the forecasted annual winter peak for the CPCN load forecast.

- c. See the file path provided in part (b) pertaining to the IRP. Columns C, D, and E are the forecasted summer peaks for the IRP Mid, High, and Low scenarios, respectively.

See the file path provided in part (a) pertaining to the CPCN. In the tab “Summer and Winter Peaks,” column B is the forecasted annual summer peak for the CPCN load forecast.

**KENTUCKY UTILITIES COMPANY
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**Response to Joint Motion of Kentuckians for the Commonwealth, Kentucky Solar
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Case No. 2025-00045

Question No. 2.2

Responding Witness: John Bevington

- Q-2.2. Please refer to the Companies' response to JI 1.130. When a proposed data center or other potential large load customer contacts LG&E-KU regarding new service, does LG&E-KU present such prospective customers with information regarding DSM programs and/or curtailable services?
- a. If so:
- i. Identify each DSM programs or curtailable services for which LG&E-KU provides information.
 - ii. Produce copies of all documents regarding DSM programs or curtailable services that LG&E-KU provides to prospective data center or other large load customers.
 - iii. Identify at what stage (i.e. when the prospective customer inquires about potential service, an application is received, an electric service agreement is signed, etc.) in the development of a relationship with a prospective data center or other large load customer that LG&E-KU provides such DSM program or curtailable service information.
- b. If not, explain why not.
- A-2.2. a-b. The Companies are working to provide the best service possible to data centers and all prospects and projects as they consider locating in the Companies' service territories. The Companies do not discuss DSM, curtailable service, or energy efficiency programs at a particular stage in the economic development process. If information about DSM programs is an important consideration of the project's consideration, the Companies will absolutely share information about DSM and other programs that are available. In the Companies' experience, data center projects are primarily concerned with access to transmission and generation capacity and the speed at which the Companies can assist with those considerations. See the response to JI 1-130 (b).

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Case No. 2025-00045

Question No. 2.3

Responding Witness: John Bevington

- Q-2.3. Please refer to the Companies' responses to JI 1.145 and 1.146 and to the Direct Testimony of John Bevington, p. 8, lines 16-21. State whether land in Kentucky is "relatively inexpensive" compared to land in the areas "in close proximity to major data centers in neighboring states" as described in JI 1.145(a). If so, provide any documentation showing such.
- A-2.3. The Companies asserted that land in Kentucky is "relatively inexpensive" when compared to other, more developed, data center markets. The Companies do not assert that land in Kentucky is "relatively inexpensive" compared to the areas described in JI 1-145(a).

**KENTUCKY UTILITIES COMPANY
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Dated May 2, 2025**

Case No. 2025-00045

Question No. 2.4

Responding Witness: Robert M. Conroy

- Q-2.4. Please refer to the Companies' response to JI 1.147. State whether the Companies have analyzed the potential impact that serving the 1,750 MW of data center load assumed in this proceeding would have on the rates or monthly bills that the Companies' residential customers would pay.
- a. If so, explain in detail the inputs, assumptions, and results of such analysis, and produce any modeling inputs and output files, workpapers, workbooks, and other documents used in carrying out such analysis.
 - b. If not, explain why not.
- A-2.4. See the response to AG-KIUC 2-22(f).
- a. See the response to AG-KIUC 2-22(f).
 - b. See the response to AG-KIUC 2-22(f).

**KENTUCKY UTILITIES COMPANY
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**Response to Joint Motion of Kentuckians for the Commonwealth, Kentucky Solar
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Dated May 2, 2025**

Case No. 2025-00045

Question No. 2.5

Responding Witness: John Bevington

Q-2.5. Please refer to the Companies' response to JI 1.150. For data centers or other large load projects:

- a. In the Companies' experience with completed or expected projects, what is the average time and range of time from a TSR being completed to the signing of an EPC contract?
- b. In the Companies' experience with completed or expected projects, what is the average time and range of time from the signing of an EPC contract to start of construction?
- c. In the Companies' experience with completed or expected projects, what is the average time and range of time from the start of construction to the customer coming online?
- d. In its planning, how much time are the Companies' assuming there would be between a TSR being completed and a data center coming online?

A-2.5.

- a. See the response to JI 1.150.
- b. The time from signing an EPC contract to the start of construction varies considerably and depends on the necessary construction, availability of equipment, and/or engineering necessary as it pertains to the project, location, and interface to our systems.
- c. See response to part (b).
- d. See response to part (b).

**KENTUCKY UTILITIES COMPANY
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Dated May 2, 2025**

Case No. 2025-00045

Question No. 2.6

Responding Witness: John Bevington

Q-2.6. Please refer to the Companies' response to Staff 1.18(c), which explains the Companies' five economic development project stages. Confirm the number of projects and MW of peak demand identified for each stage are only for data center projects, as opposed to also including other economic development projects.

- a. If confirmed, identify for each stage the number of other economic development projects and MW of peak demand for such projects.
- b. If not confirmed, identify for each stage how much of the number of projects and MW of peak demand identified are for data center projects versus other economic development projects.

A-2.6.

- a. Confirmed. See attachment to AG-KIUC 1-33(a) and updated attachment to PSC 2-17(g).
- b. Not applicable.

**KENTUCKY UTILITIES COMPANY
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**Response to Joint Motion of Kentuckians for the Commonwealth, Kentucky Solar
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Dated May 2, 2025**

Case No. 2025-00045

Question No. 2.7

Responding Witness: John Bevington

Q-2.7. Please refer to the Companies' response to Staff 1.18(c). For each of the six projects in the Prospect stage, state whether the project has:

- a. Secured control of the land where the project would be located.
- b. Entered into any contractual relationships with the Companies and, if so, identify what such contracts have been entered.
- c. Applied for any construction, water use, or air quality permits.
- d. Been submitted to any other utility's economic development queue.

A-2.7.

- a. Five of the projects in the "prospect" stage had land control secured as of the time of the response given for PSC 1-18(c) and one project was evaluating multiple sites in the Companies' service territories. Since that time, one of the five projects with land control let their land option expire, but has expressed interest in continuing evaluation pending the outcome of other projects in the economic development queue.
- b. The Companies have not entered into any contracts with projects in the "Prospect" stage.
- c. Unknown
- d. Unknown. It is also important to consider that a developer or hyperscaler may have projects considering multiple jurisdictions which are not the same project. See the response to JI 1-5(f).

**KENTUCKY UTILITIES COMPANY
AND
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**Response to Joint Motion of Kentuckians for the Commonwealth, Kentucky Solar
Energy Society, Metropolitan Housing Coalition, and Mountain Association's
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Dated May 2, 2025**

Case No. 2025-00045

Question No. 2.8

Responding Witness: John Bevington

Q-2.8. Please refer to the Companies' response to Staff 1.17(a). With regards to the Camp Ground Road and Project Lincoln: OC data center projects referenced therein, state whether the project has:

- a. Secured control of the land where the project would be located.
- b. Entered into any contractual relationships with the Companies and, if so, identify what such contracts have been entered.
- c. Applied for any construction, water use, or air quality permits.
- d. Been submitted to any other utility's economic development queue.

A-2.8.

- a. Yes.
- b. Yes. The Camp Ground Road data center project has an executed EPC agreement with the Companies.
- c. Unknown
- d. See response to Question No. 7(d).

**KENTUCKY UTILITIES COMPANY
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**Response to Joint Motion of Kentuckians for the Commonwealth, Kentucky Solar
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Dated May 2, 2025**

Case No. 2025-00045

Question No. 2.9

Responding Witness: John Bevington

- Q-2.9. Please refer to the Companies' response to Staff 1.17(a). Is the referenced Project Lincoln: OC Data Center in Oldham County anticipated to have 600 MW of demand in its initial year of operation?
- a. If not, identify the anticipated demand in the initial year of operation and the rate and timing over which the data center is expected to ramp up to 600 MW of demand.
- A-2.9. As of the date of this response, yes.

**KENTUCKY UTILITIES COMPANY
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**Response to Joint Motion of Kentuckians for the Commonwealth, Kentucky Solar
Energy Society, Metropolitan Housing Coalition, and Mountain Association's
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Dated May 2, 2025**

Case No. 2025-00045

Question No. 2.10

Responding Witness: Tim Jones

Q-2.10. Please refer to the Companies' response to AG-KIUC 1-35(a)-(b) and the AG-KIUC_DR1_LG&E-KU Attachment to Q35 (a)(b)(f).

- a. Explain what the LowProbability, MidProbability, and HighProbability tabs in the referenced attachment refer to.
- b. Explain what the percentages in Columns G, H, and I in the Project Map tab of the referenced attachment represent, and what role they played in identifying the Companies' projected 1,750 MW of economic development load.
- c. Explain how the percentages in Columns G, H, and I in the Project Map tab of the referenced attachment were determined, and provide any analysis or other document supporting such percentages.

A-2.10.

- a. See the response to SC 2-9. The tab names refer to each probability and load weighted scenario described in this response.
- b. See the response to SC 2-9.
- c. See the response to SC 2-9.

**KENTUCKY UTILITIES COMPANY
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**Response to Joint Motion of Kentuckians for the Commonwealth, Kentucky Solar
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Dated May 2, 2025**

Case No. 2025-00045

Question No. 2.11

Responding Witness: John Bevington

- Q-2.11. Please refer to the Companies' response to Staff 1.1(b) and 1.17(a) which state "there are currently about 1,000 MW of announced data center projects in the Companies' service territories: the 402 MW Camp Ground Road data center in Jefferson County and the 600 MW Project Lincoln: OC Data Center in Oldham County." Please reconcile that statement with the Companies' Response to Staff 1.18(c) in which they state there are currently no projects in the "announced" phase.
- A-2.11. See the response to PSC 2-18(b) and (c).

**KENTUCKY UTILITIES COMPANY
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**Response to Joint Motion of Kentuckians for the Commonwealth, Kentucky Solar
Energy Society, Metropolitan Housing Coalition, and Mountain Association's
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Dated May 2, 2025**

Case No. 2025-00045

Question No. 2.12

Responding Witness: John Bevington / Robert M. Conroy

- Q-2.12. Please refer to the Companies' response to Staff 1.96 which states that "[i]n this proceeding, the Companies are proposing neither rates for data centers nor demand-charge discounts of any kind." Please confirm whether any such rates or discounts are part of the Companies' discussions with potential data center customers.
- A-2.12. The Companies have not discussed special rates or discounts with potential customers.

**KENTUCKY UTILITIES COMPANY
AND
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**Response to Joint Motion of Kentuckians for the Commonwealth, Kentucky Solar
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Supplemental Requests for Information
Dated May 2, 2025**

Case No. 2025-00045

Question No. 2.13

Responding Witness: Lonnie E. Bellar / Lana Isaacson

Q-2.13. Please refer to the Companies' response to JI 1.92 referring to JI 2.15 in Case No. 2024-00326 in which the Companies' state "there is no need to evaluate [distributed capacity procurement or virtual power plants] in view of the Companies' effective use of the demand response and distributed generation offerings."

- a. Please define the term "effective" as used in the referenced statement.
- b. Please explain the Companies' plan for promoting and increasing participation in existing demand response and distributed generation offerings.
- c. Please explain whether and how the Companies intend to increase spending or otherwise expand existing program offerings. If not, explain why not.

A-2.13.

- a. In this context, effective means that the Companies' multiple and broadly accessible demand response programs and distributed generation offerings are being successfully dispatched and meeting the needs of the Companies and their customers.
- b. The Companies market demand response programs to customers to increase awareness and participation. Marketing efforts include, but are not limited to, direct mail; newsletters; bill inserts and bill messages; key account, energy efficiency program manager, customer service representative, and program vendor outreach; social media; conferences; trade shows; community events; and features on the Companies' online marketplace. Original equipment manufacturers also conduct marketing campaigns to recruit customers to the Companies' demand response programs.

- c. The Companies' current DSM/EE Program Plan, filed in Case 2022-00402 and approved in November of 2023, expanded the portfolio from six to 13 programs and increased the annual investment by 200%. Marketing funds for demand response programs are included in the Companies' current DSM/EE Program Plan. Additionally, the Companies are exploring three enhancements to existing programs which were modeled in the 2024 IRP using preliminary assumptions: Bring Your Own Device - Energy Storage, Bring Your Own Device - Home Generators, and Business Demand Response for small business customers.

**KENTUCKY UTILITIES COMPANY
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**Response to Joint Motion of Kentuckians for the Commonwealth, Kentucky Solar
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Dated May 2, 2025**

Case No. 2025-00045

Question No. 2.14

Responding Witness: Lana Isaacson

Q-2.14. Please refer to the Companies' response to JI 1.93, which provides data on the WeCare program over the past five years showing a decline in both spending and the number of energy efficiency measures installed since 2020.

- a. Please explain why the WeCare program investment has decreased despite increasing need for energy efficiency and affordability among ratepayers.
- b. Explain whether the Companies plan to scale up WeCare and other bill assistance programs in light of potential rate increases from the construction of the proposed resources.

A-2.14. The Companies object to this request as irrelevant to the subject matter of this proceeding under KRS 278.020(1) and the Commission's prior orders.² Without waiving that objection, the Companies provide the following responses.

- a. There was a lower number of participants in WeCare in 2024 which results in overall lower spend and reduced measure count. The Companies onboarded a new program vendor in 2024 and also deployed a new income-qualified program targeted to serve the whole-building of a qualifying multi-family building. The Companies have increased program and

² See, e.g., *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) ("To obtain a CPCN, a utility must demonstrate a need for such facilities and an absence of wasteful duplication. ... 'Need' requires: [A] showing of a substantial inadequacy of existing service, involving a consumer market sufficiently large to make it economically feasible for the new system or facility to be constructed or operated. ... 'Wasteful duplication' is defined as 'an excess of capacity over need' and 'an excessive investment in relation to productivity or efficiency, and an unnecessary multiplicity of physical properties.' ... The fundamental principle of reasonable least-cost alternative is embedded in such an analysis. Selection of a proposal that ultimately costs more than an alternative does not necessarily result in wasteful duplication. All relevant factors must be balanced.") (internal citations omitted).

marketing activities as a means to increase the number of voluntary participants in this program and the others that are available to residential customers.

- b. An instrumental part of the new DSM/EE Plan approved in Case No. 2022-00402 included increased funding for income-qualified programs to serve more participants and at a higher allowable average spend per property. The participation targets were 4,000 per year in the prior DSM/EE Plan and were increased by 35% to 5,390 per year in Case No. 2022-00402. In addition, a new income-qualified, whole-building multi-family program was deployed in January 2024. In total, the budget for these two programs equates to over 20% of total overall budget. It is at approximately \$71 million of the approximate \$341 million, over the seven years, and reflects an increase of over 50% of budget from the prior DSM/EE Plan (Case No. 2017-00441).

**KENTUCKY UTILITIES COMPANY
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Dated May 2, 2025**

Case No. 2025-00045

Question No. 2.15

Responding Witness: Lana Isaacson

Q-2.15. Please refer to the Companies' response to JI 1.106(b) and (d). When do the Companies expect the design for the BYOD programs to be complete?

A-2.15. The pilot program design is planned to be completed in late 2025 or early 2026.

**KENTUCKY UTILITIES COMPANY
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Case No. 2025-00045

Question No. 2.16

Responding Witness: Lana Isaacson

- Q-2.16. Please refer to the Companies' response to JI 1.106(g). Please explain why the Companies have not evaluated the reasonableness of increasing the program budget for the existing Business Demand Response program given the increased urgency and size of expected load since the program was approved in November 2023.
- A-2.16. The Business Demand Response program was very close to its 2024 target and is projected to exceed the 2025 target. Should the program show indications of this trend slowing (such that additional incentives may be necessary) and/or the 7-year budget is projected to be used ahead of the DSM/EE Plan Period ending Dec 2030, then the Companies will file for a request of additional funds. This was the exact path the Companies followed in 2022 when the Business Rebates Program was projected to exceed budgets due to higher than forecasted activity and savings (See Case No. 2022-00123).

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Case No. 2025-00045

Question No. 2.17

Responding Witness: Charles R. Schram

- Q-2.17. Please refer to the Companies' response to JI 1.62 and explain when the Companies anticipate knowing for certain whether new interstate pipeline additions or other upgrades would be required to support the addition of either of the two NGCCs.
- A-2.17. Based on discussions with the applicable interstate pipelines, the Companies believe that sufficient interstate pipeline transport capacity is either available now or will be available by the time of each proposed unit's commercial operation. The Companies cannot be completely certain about the potential need for interstate pipeline additions or upgrades until the Companies attempt to execute a transportation agreement with the applicable interstate pipeline company.

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Question No. 2.18

Responding Witness: Charles R. Schram

- Q-2.18. Please refer to the Companies' response to JI 1.63 and explain what is meant by the statement that Texas Eastern Transmission Company is "fully subscribed" and whether that is expected to change by the Brown 12 in-service date.
- A-2.18. Fully subscribed means there is no transportation capacity available for purchase from Texas Eastern Transmission Company. The Companies have no information related to a potential change to the "fully subscribed" status. In the response to JI 1.63, the Companies also noted that the Tennessee Gas Pipeline ("TGP") currently has firm transport capacity available to serve Brown 12.

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Question No. 2.19

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

- Q-2.19. Please refer to the Companies' response to JI 1.71 and clarify whether the cost figure provided for Mill Creek 6 in 2050 is accurate. If so, justify the firm gas transportation cost assumed for Mill Creek 6 in 2050. If not, please provide the accurate firm gas transportation cost assumed for Mill Creek 6 in 2050.
- A-2.19. The referenced figure is accurate. As noted in the footnote referenced in the Companies' response, the firm gas transportation costs for Mill Creek 6 reflect an adder to recover the incremental infrastructure needed to accommodate interstate pipeline improvements on the Texas Gas system. This adder only applies to the first 20 years of operation, after which the go-forward cost is expected to revert to standard tariff rates as shown in 2050's costs.

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Question No. 2.20

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

- Q-2.20. Please refer to the Companies' response to JI 1.26 and AG-KIUC 1.14(e) and explain why the Companies are proposing that Brown 12 and Mill Creek 6 be owned 100% by LG&E due to expected incremental data center load when the Companies claim the two proposed NGCCs will not be used exclusively to supply data center load and any new data center load will be supplied by all resources on a system-wide basis.
- A-2.20. See Section 5.2.1 in Exhibit SAW-1 regarding the methodology used to develop the ownership allocations for Brown 12 and Mill Creek 6. LG&E's 100% ownership of these units best balances the *total* energy generated and the *total* energy consumed for each company over the study period. This calculation is shown in the workpaper previously provided in Exhibit SAW-2 at file path "\UnitOwnership\20250206 2025CPCN NGCC Ownership 0336.xlsx" on the "Energy Balance" tab. The costs for these units will be allocated in accordance with their ultimate ownership percentages, which could change prior to the facilities going into service. See also the response to PSC 1-30.

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Question No. 2.21

Responding Witness: John Bevington

- Q-2.21. Please refer to the Companies' response to Staff 1.28. The Companies' assert that there is more than 2000 MW of non-data center economic development load but acknowledge that "not . . . all [] will come to fruition." Please provide the Companies' best estimation of non-data center economic development load that will likely materialize, including any analysis or support for such belief.
- A-2.21. The non-data center projects included in the CPCN load forecast remain the most likely non-data center projects to materialize. Since the CPCN load forecast was finalized, two existing customers have announced additional expansions that were not included in the CPCN load forecast. The total load expansion of these two customers together is around 90 MW. Should additional projects in the economic development pipeline materialize, this represents upside risk to the load forecast.

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Question No. 2.22

Responding Witness: Lonnie E. Bellar / Philip A. Imber / David L. Tummonds

Q-2.22. Please refer to the Companies' response to JI 1.31 and explain the following:

- a. Why Ghent 2 cannot utilize the SCR on Ghent Unit 3 with which it shares a common stack.
- b. Explain why the Companies installed had previously installed a SCR on Ghent Unit 3 and not Ghent 2.

A-2.22.

- a. The Companies sized the Ghent Unit 3 SCR to support the flow from one unit (Unit 3) and directly coupled that SCR to the outlet of the Unit 3 boiler before the Unit 3 Flue Gas Desulfurization ("FGD") system. The Ghent Unit 3 is neither sized to support flow from Ghent Unit 2 nor is it capable of being connected to Ghent Unit 2 without substantial demolition and reconstruction cost.
- b. The Companies are obligated to comply with regulations by implementing the lowest reasonably cost plans. The Companies implemented several SCR across the coal fired electric generating unit fleet to comply with the good neighbor provisions utilized to drive attainment of the 1997 Ozone National Ambient Air Quality Standard (NAAQS). Ghent Unit 2 was evaluated as the most complex and costly SCR in the fleet. The Companies determined they could self-comply with their allocated NOx credits by overcontrolling NOx with the lower capital cost SCR implemented on other units (including Ghent Unit 3). Going forward, Reasonably Achievable Control Technology (SCR) is necessary on Ghent 2 to ensure year-round unit availability for compliance with the 2015 Ozone NAAQS and in support of load demand.

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Question No. 2.23

Responding Witness: Lonnie E. Bellar / Philip A. Imber

- Q-2.23. Please refer to the Companies' response to JI 1.32(b). Please explain the Companies plan to "self-supply required NOX allowances" to operate Ghent 2 in a scenario without SCR.
- A-2.23. JI 1.32(b) references JI 1.32(a) which references AG-KIUC 1-37. AG-KIUC 1.37 states "Ghent 2 would be inoperable during the ozone season (May through September) without Reasonably Achievable Control Technology (SCR)". The Companies will not "self-supply required NOx allowances" without an SCR. Installing an SCR allows the Companies to "self-supply required NOx allowances" or "self-comply" with the emissions standards of Reasonably Achievable Control Technology that are the historic foundation of good neighbor provision NOx allowance calculations.

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Question No. 2.24

Responding Witness: David L. Tummonds

- Q-2.24. Please refer to the Companies' response to JI 1.17. Please confirm that favorable solar panel pricing reduced costs for the Marion Solar County facility by \$11 million.
- A-2.24. Confirmed. At the time of this update from FRON bn LLC, FRON expected a savings of \$11 million from their original estimate in Case No. 2022-00402 which netted against the other increases noted in the response to JI 1.17.

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Question No. 2.25

Responding Witness: Robert M. Conroy / Counsel

- Q-2.25. Please refer to the Companies' response to LMG-LFUCG 1.18 and confirm whether different customers can aggregate loads to meet the 10 MVA requirement.
- A-2.25. The Companies object to this request as irrelevant to the subject matter of this proceeding under KRS 278.020(1) and the Commission's prior orders.³ Without waiving that objection, no, different customers cannot aggregate loads to meet the 10 MVA requirement. See the response to LMG-LFUCG 1.18.

³ See, e.g., *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) ("To obtain a CPCN, a utility must demonstrate a need for such facilities and an absence of wasteful duplication. ... 'Need' requires: [A] showing of a substantial inadequacy of existing service, involving a consumer market sufficiently large to make it economically feasible for the new system or facility to be constructed or operated. ... 'Wasteful duplication' is defined as 'an excess of capacity over need' and 'an excessive investment in relation to productivity or efficiency, and an unnecessary multiplicity of physical properties.' ... The fundamental principle of reasonable least-cost alternative is embedded in such an analysis. Selection of a proposal that ultimately costs more than an alternative does not necessarily result in wasteful duplication. All relevant factors must be balanced.") (internal citations omitted).

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Question No. 2.26

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

Q-2.26. Please refer to Direct Testimony of Stuart A. Wilson, Exhibit SAW-1 at p. 11, where it states that the Companies' Mid-Case load forecast includes annual energy reductions of 1,500 GWh by 2032 from energy efficiency and other reductions.

- a. Please provide, in a Microsoft Excel workbook in executable format, a breakdown of the sources of the 1,500 GWh savings for each year of the planning period. Please provide a table(s) with separate rows for each category of savings listed (i.e., customer-initiated EE, AMI-related Conservation Voltage Reduction and ePortal savings, distributed generation, and the Companies 2024-2030 DSM-EE Plan amounts and assumed impacts of DSM-EE programs beyond 2030.)
- b. Please describe the methodology the Companies followed to estimate the customer-initiated energy efficiency improvements. Please provide any and all associated workpapers.
- c. Please describe the methodology for assigning impacts of DSM-EE programs beyond 2030 the Companies included in the forecast. Please provide any and all associated workpapers.
- d. Please reconcile the statement in Wilson Direct Testimony of including 1,500 GWh annual energy savings amount by 2032 with Figure 12 from Direct Testimony of Jones, at 31, which does not appear to reach 1,500 GWh until approximately 2037.

A-2.26.

- a. See the response to JI 1-59 from Case No. 2024-00326.
- b. See the response to SC 1-15 from Case No. 2024-00326.

- c. See the response to SC 1-15 from Case No. 2024-00326.
- d. The statement in Mr. Wilson's testimony refers to the combined impacts of total energy efficiency, distributed generation, CVR, and AMI ePortal savings. Figure 12 in Mr. Jones's testimony displays only total energy efficiency and AMI ePortal impacts. Therefore, this is comparing all energy reductions to the load forecast to a subset of energy reductions to the load forecast.

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Question No. 2.27

Responding Witness: Lonnie E. Bellar

Q-2.27. Please answer the following requests concerning the Companies' 2021 AMI plan.

- a. Please state the number of AMI installations each year from 2021 to 2024, on a monthly basis.
- b. Please provide the costs of implementing the 2021 AMI plan that are currently being collected in rate base.
- c. Specific to customers that received AMI installation in each of calendar years 2021, 2022, 2023, and 2024, have the Companies attempted to estimate how customer usage patterns changed post-AMI installation? If so, please provide the Companies' most recent assessment of AMI installation impacts on customer usage behavior for each cohort or group analyzed.
- d. Please specifically identify the means through which AMI installation impacts customer energy usage behavior (e.g., enhanced customer ability to reduce specific appliance loads).
- e. Please describe the Companies' plan to encourage customer familiarity and use of energy services or features newly available post-AMI installation. (e.g., bill inserts, email).

A-2.27.

- a. See attachment being provided in a separate file.
- b. None of the costs related to implementing the 2021 AMI plan are currently being collected in rate base.
- c. There have been fuel savings from decreased customer usage where communications encouraged customers to take full advantage of their AMI meter capabilities in order to save energy, resulting in avoided fuel expense

for rate payers. On-going energy savings calculated on an annual basis are difficult to assess. For the 346k meters that have been installed for a full 12 months as of December 31, 2024, the on-going energy savings is shown at 6.16% vs the 2021 AMI plan assumed rate of 0.35%. The Companies consider these energy savings estimates to be preliminary as the population of customers with access to interval data and the length of time customers have an AMI meter increases. For the 22k customers that have had meters installed for 24 months, the on-going energy savings is calculated at 1.89% in comparison to the assumed rate of 0.35%.

There have not been any additional assessments at this time.

- d. One way to identify AMI impacts is through participation in the Companies voluntary time-of-day (“TOD”) rates for residential and non-residential customers with loads that do not exceed 50 kW. AMI meters provide customers with information through the My Meter online tool to make an informed decision on whether a TOD rate would benefit them. The customer communication and engagement plan lets customers know about these alternative rates and how they can utilize their AMI meter data to make an informed decision. In addition, the My Meter tool allows customers to monitor energy use, both gas and electric, and view their usage down to the 15-minute interval providing data on which to base behavior changes that may impact their energy usage.
- e. The Companies are committed to customer service and satisfaction, and the AMI communications plan ensures a positive customer experience before, during, and after the system-wide rollout of the advanced meter infrastructure. Customer Education and Engagement is ongoing, using a variety of communications channels and tactics to convey the benefits and features of the My Meter tool and encourage customers to use the resources available to better understand and manage their energy usage.

Customer Education & Engagement messaging goals:

- Educate customers about how to access My Meter.
 - Using multiple communication channels to engage the customer (e.g., bill messages, bill inserts, corporate website, videos, etc.)
- Make it easy for customers to select energy management tools and energy efficiency offerings that are available to them based on their personal preferences.
 - For example, written materials and videos that explain each feature and how it can be used to accomplish an individual’s goals.

Communications tactics executed to-date include:

- Post-installation doorhangers left behind with each meter installation, explaining how a customer can access My Meter

- Direct mail postcards mailed to the premise highlighting the My Meter features
- A series of Power Source news articles, highlighting each of the My Meter features – available in both the paper bill as inserts and in electronic Power Source emails for paperless billing customers
- A comprehensive website with answers to frequently asked questions, My Meter tutorial videos, and helpful My Meter user guides at lge-ku.com/mymeter
- Customer Commitment Advisory Forum presentations and distribution of Fact Sheets to low-income advocacy agencies
- Cross-promotion of Energy Efficiency programs within My Meter with links to promotional offerings
- Paid advertising plan began April 1, 2025, across the entire service territory through June 15 including
 - Digital display ads
 - Native ads
 - Search engine marketing ads

Additional tactics to be incorporated during Q3-4 2025:

- Back of the bill stub messaging
- Customer emails with seasonal tips and links to tutorial videos
- A second paid ad campaign scheduled from July through September
 - :30 Streaming radio ads with a clickable banner (e.g. Spotify, Pandora, Amazon Music)
 - Streaming television advertisements (e.g. Hulu, Netflix, Peacock, ESPN, etc.)
 - High-impact interactive digital display ads
 - Digital display ads
 - Native ads
 - Search engine marketing ads
- Customer webinars in partnership with energy efficiency program offerings
- My Meter bill insert in all paper bills
- Continued Power Source news articles and cross promotions

See attachment being provided in a separate file for examples of customer communications.

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Question No. 2.28

Responding Witness: Stuart A. Wilson

Q-2.28. Please refer to the Companies' Joint Application at pp. 8-9, showing the summer and winter capacity need based on the 2025 CPCN load forecast.

- a. Please explain why Table 1 includes only 2 MW of Dispatchable DSM additions for summer peak load by 2032 but Table 2 includes 125 MW for winter. Please provide the composition of these MW totals in a Microsoft Excel spreadsheet, including any and all associated workpapers.
- b. Please explain why new Dispatchable DSM additions were limited to 2 MW in summer and 125 MW in winter through 2032 and why greater amounts for these resources were not selected. Please provide any analysis conducted in the selection of these amounts of additional dispatchable DSM.

A-2.28.

- a. The rows for "Dispatchable DSM" additions in these two tables were included in error and are not relevant to the data presented. The values in these rows do not impact the total of Renewable/Limited-Duration Resources, Total Supply, Total Reserve Margin, or Capacity Need. The correct versions of these tables can be found in Exhibit SAW-1 pages 23-24, Tables 7-8 and are provided below. See the workpaper previously provided in Exhibit SAW-2 at the file path "\\Tables\\20250129 Resource Assessment RM Need Tables_0336_D02.xlsx."

Table 7: Winter Peak Demand and Resource Summary (2025 CPCN Load Forecast, MW)

	2025	2028	2029	2030	2031	2032	2035	2040	2050
Peak Load	6,146	6,481	6,918	7,386	7,795	7,930	7,928	7,928	7,940
Fully Dispatchable Generation Resources									
Existing Resources	7,909	7,977	7,977	7,977	7,977	7,977	7,977	7,977	7,977
Retirements/Additions									
Coal ³⁵	-300	-597	-597	-597	-597	-597	-1,013	-1,013	-2,051
Small-Frame SCCTs ³⁶	0	-55	-55	-55	-55	-55	-55	-55	-55
NGCC (Mill Creek 5)	0	660	660	660	660	660	660	660	660
Total	7,609	7,985	7,985	7,985	7,985	7,985	7,569	7,569	6,531
Reserve Margin	23.8%	23.2%	15.4%	8.1%	2.4%	0.7%	-4.5%	-4.5%	-17.7%
Renewable/Limited-Duration Resources									
Existing Resources	72	72	72	72	72	72	72	72	72
Existing CSR	111	111	111	111	111	111	111	111	111
Existing Disp. DSM ³⁷	24	110	124	125	135	145	158	163	163
Retirements/Additions									
Solar ³⁸	0	0	0	0	0	0	0	0	0
BESS ³⁹	0	125	125	125	125	125	125	125	125
Total	206	417	431	433	442	452	465	471	471
Total Supply	7,815	8,402	8,416	8,418	8,427	8,437	8,034	8,040	7,002
Total Reserve Margin	27.2%	29.6%	21.7%	14.0%	8.1%	6.4%	1.3%	1.4%	-11.8%
Capacity Need⁴⁰	113	-42	507	1,111	1,629	1,792	2,193	2,188	3,241

Table 8: Summer Peak Demand and Resource Summary (2025 CPCN Load Forecast, MW)

	2025	2028	2029	2030	2031	2032	2035	2040	2050
Peak Load	6,230	6,795	7,304	7,677	8,040	8,034	8,017	7,992	7,967
Fully Dispatchable Generation Resources									
Existing Resources	7,612	7,618	7,618	7,618	7,618	7,618	7,618	7,618	7,618
Retirements/Additions									
Coal ⁴¹	-300	-597	-597	-597	-597	-597	-1,009	-1,161	-2,029
Small-Frame SCCTs ⁴²	0	-47	-47	-47	-47	-47	-47	-47	-47
NGCC (Mill Creek 5)	0	645	645	645	645	645	645	645	645
Total	7,312	7,619	7,619	7,619	7,619	7,619	7,207	7,055	6,187
Reserve Margin	17.4%	12.1%	4.3%	-0.8%	-5.2%	-5.2%	-10.1%	-11.7%	-22.3%
Renewable/Limited-Duration Resources									
Existing Resources	106	107	107	107	107	107	107	107	107
Existing CSR	107	107	107	107	107	107	107	107	107
Existing Disp. DSM ⁴³	69	150	166	170	179	190	208	227	227
Retirements/Additions									
Solar ⁴⁴	0	201	201	201	201	201	201	201	201
BESS ⁴⁵	0	125	125	125	125	125	125	125	125
Total	282	689	705	710	719	730	747	766	766
Total Supply	7,594	8,308	8,324	8,329	8,338	8,349	7,954	7,821	6,953
Total Reserve Margin	21.9%	22.3%	14.0%	8.5%	3.7%	3.9%	-0.8%	-2.1%	-12.7%
Capacity Need⁴⁶	68	50	660	1,114	1,552	1,534	1,907	2,009	2,846

b. See the response to part (a).

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Question No. 2.29

Responding Witness: Lana Isaacson / Charles R. Schram

- Q-2.29. Curtailable Service Rider (CSR) has 107 MW summer and 111 MW winter. Please provide a Microsoft Excel spreadsheet with the customers enrolled in this, by kW of load enrolled.
- a. Do any of these customers have backup diesel generators that are used during curtailment events? Please provide any internal tracking reports showing the installed backup capacity at each site.
 - b. How many times have the Companies called curtailment events?
 - c. Have the Companies received any interest from the customers enrolled in the CSR program about additional resilience or backup-power options, such as battery storage, on-site renewables or combined heat-power, or microgrids?
 - d. Have the Companies conducted any potential assessments or other evaluations for demand response at these customer sites?
 - e. Have the Companies conducted any potential assessments at these customer sites for on-site generation, whether renewable (e.g., solar), co-generation (i.e., combined heat and power or CHP), or natural gas?
 - f. Have the Companies conducted any potential assessments for microgrids at these customer sites?
- A-2.29. See attachment being provided as a separate file. The information requested is confidential and proprietary and is being provided under seal pursuant to a petition for confidential protection.
- a. The Companies are not aware of any backup generators at customer sites that are used for operational service during physical curtailment events.

- b. Since the inception of CSR-1 and CSR-2 in July 2017, the Companies have called three physical curtailment events and ninety curtailment events with buy-through option.
- c. Yes. The company has offered Green Tariff options to these customers. Two of our CSR customers were participants of our second RPA. One of them since has also received a Business Solar proposal from the Company to be on the customer's site.
- d. No. CSR customers are not eligible to participate in the DSM/EE Business Demand Response program.
- e. No.
- f. No.

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Question No. 2.30

Responding Witness: Tim A. Jones

- Q-2.30. Refer to the Direct Testimony of Tim A. Jones at 30, which states that the 1,500 GWh of EE included in the 2025 CPCN forecast by 2032 will reduce peak demand by 230 MW in summer and 171 MW in winter by 2032. Please reconcile this statement with Table 7-14 of the 2024 IRP, Vol. 1 at pp. 7-6 (pdf p. 53/135), which states that for an existing cumulative amount of EE of 1,546 GWh in 2023, there were an associated 555 MW of demand savings.
- A-2.30. The statements in the Jones testimony are using 2023 as a base year and represent energy efficiency (EE) assumptions in the load forecast versus a scenario in which those assumptions are held flat starting in 2024. Table 7-14 in the IRP displays estimated cumulative EE program savings since the inception of EE programs at the Companies.

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Question No. 2.31

Responding Witness: Lana Isaacson / Stuart A. Wilson

Q-2.31. Please refer to Exhibit SAW-1 at 20, which shows Limited Duration Dispatchable DSM Resources (BYOD Energy Storage = 0.89 MW; BYOD Home Generators = 0.85 MW; BDR 50-200 kW = 1.45 MW, summer and winter) for a total of 3.19 MW.

- a. Please explain how these figures were determined.
- b. Please provide any market potential studies that have been prepared regarding the Dispatchable DSM programs shown in Table 5.
- c. How do these figures reconcile with Tables 1 and 2 in the Companies' Joint Application at pp. 8-9, which provide that Additions of Dispatchable DSM equate to 1 MW in summer and 125 MW in winter in 2030?

A-2.31.

- a. See the attachments provided in Case 2024-00326 in response to JI 1-52(c)(iii) which were adjusted for losses in Exhibit SAW-1.
- b. There are currently no market potential studies prepared for these programs. The 2021 Demand Response Potential Study reviewed battery storage; however, it did not proceed for modeling based on program ramp-up speed, levelized costs, and/or likely potential. See attachments provided in response to JI 1-107(b) in Case No. 2022-00402.
- c. See the response to Question No. 28.

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Case No. 2025-00045

Question No. 2.32

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

Q-2.32. Please refer to Exhibit SAW-1 at 20, which states “[t]he Companies’ load forecasts fully account for the energy efficiency effects of the proposed 2024-2030 DSM-EE Program Plan as well as such programs beyond 2030; the combined impact of company-sponsored programs and customer-initiated energy efficiency improvements is assumed to grow throughout the planning horizon.”

- a. Please provide a Microsoft Excel spreadsheet with the incremental annual and cumulative annual MWh assumed for each year in the planning horizon for the 2025 CPCN load forecast.
- b. For the 2024-2030 period covered by the 2024-2030 DSM-EE plan, please provide these broken out by sector, program, and measure.
- c. For the period beyond 2030, please describe how the Companies estimated growth beyond the 2024-2030 DSM-EE plan levels. Please provide the annual incremental and annual cumulative amounts.

A-2.32.

- a. See the attachment to the response to SC 1-16(a) from Case No. 2024-00326.
- b. A breakout of MWh by sector, program, and measure is included the program worksheets of the “LGE KU Program Measure Inputs FINAL – Public.xlsx” workbook provided in Exhibit LI-6 of Case 2022-00402.
- c. See the response to Question No. 26(c).

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Case No. 2025-00045

Question No. 2.33

Responding Witness: Lana Isaacson / Stuart A. Wilson

Q-2.33. Please refer to Exhibit SAW-1 at 39, which shows the 2032 LG&E/KU Generating and DSM Portfolio in Table 16.

- a. Please provide all evaluations of the Demand Conservation Program (DCP).
- b. Please provide, in a Microsoft Excel spreadsheet, the net max summer and winter capacity (MW) by year for each year of the planning horizon, broken out by residential and non-residential customer classes.

A-2.33.

- a. See attachments being provided in separate files from 2015, 2018, and 2022.
- b. See response to Question No. 31(a).

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Case No. 2025-00045

Question No. 2.34

Responding Witness: Lana Isaacson / Tim A. Jones

Q-2.34. Please refer to Direct Testimony of Tim A. Jones at p. 30, referring to the impact of previous EE on the statistically adjusted end use model and usage per customer trends. In the 2024 IRP, Vol. I at pp. 7-15 (pdf p. 61/135), which states, “[f]rom 2010 to 2023, residential and commercial weather-normalized use-per-customer decreased by a total of 10% and 13%, respectively, due primarily to customer-initiated energy efficiency and the Companies’ DSM-EE programs.”

- a. Please confirm that this statement refers to the fact that the Companies’ view is that previous efficiency achievements and observed load reductions are reflected in the SAE methodology to forecast future residential and commercial sales, and therefore are already accounted for in its load forecast. If anything but confirmed, please explain.
- b. Did this trend contribute to any decisions made by the Companies regarding whether or not to model increased levels of DSM in the future?
- c. Given that the past observed reductions in customer energy usage were “primarily driven by customer-initiated energy efficiency and the Companies’ DSM-EE programs”, is it the Companies’ opinion that these reductions will persist, even if funding levels are not continued at the same levels?
- d. Do the Companies have an estimate for how much of the embedded past efficiency was due to customer-initiated EE versus EE driven by utility programs?

A-2.34.

- a. Confirmed. See the response to SC 1-15 from Case No. 2024-00326. The Companies’ modeling approach captures the observed relationship between load reductions and the end-use energy efficiency trends, and assumes this relationship will continue through the forecast period. The Companies use

EIA projections of end-use efficiency improvements in SAE models, and the EIA projects energy efficiency trends to continue in the forecast period.

- b. No. This method is consistent with the method the Companies have used in prior filings. See the response to part (a).
- c. Yes, to the extent the EIA projects continued end-use efficiency improvements. See the response to part (a).
- d. The Companies do not estimate the portion of embedded past efficiency that is due to customer-initiated EE versus the Companies' EE programs beyond the Companies' estimates of savings from their DSM/EE programs.

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Case No. 2025-00045

Question No. 2.35

Responding Witness: Lana Isaacson

Q-2.35. Regarding multifamily DSM-EE programs, please answer the following requests:

- a. Please provide details about historical participation in the Companies' DSM-EE program offerings (Program name, MWh per year, # of projects, incentives paid) for renters (both single family and multifamily).
- b. Have the Companies evaluated barriers to participation in multifamily and renters energy efficiency or DSM-EE programs? Please provide any third-party evaluations or internal studies conducted for this market sector. If none have been conducted, please explain the rationale behind not evaluating this market segment.

A-2.35.

- a. The Companies' WeCare program offered prior to 2024 was available to single-family owners and renters in addition to renters in a multi-family building. The Companies provided participation information in JI 1.93. Approximately 20% of participants were renters.
- b. The primary barrier is the need for the property owner to provide consent for work to be conducted within the owner's property for participation in the WeCare (income-qualified) program. Should this consent not be provided, then those measures that impact the building structure are not available for consideration, but the Companies still provide the audit, education, and other measures. In instances where a renter applies for services under the WeCare for homeowners and renters program, then before proceeding with the next steps, the property owner is contacted to determine if they meet the whole-building program eligibility criteria. That application is then changed to include all units in that building rather than the original single applicant.

The newly deployed whole-building multi-family income qualified program is performing well. The Companies engage at the onset with the property owner or property manager who provides the necessary consent for all units within the building. This program, subject to the results of the EM&V report, has exceeded its participation and energy savings targets for 2024 and is projected to do the same in 2025.

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Case No. 2025-00045

Question No. 2.36

Responding Witness: Lana Isaacson

Q-2.36. Please refer to the Commission's November 6, 2023 Order in Case 2022-00402⁴, at 149, which describes the proposed Business Solutions program, and answer the following requests.

- a. Please provide estimated total installed cost of each measure offered in the audit, and the incentive level. If no data on installed cost is available, please describe what portion of the total installed cost the Companies estimate must be covered by the customer.
- b. Does the Small Business Audit and Direct Install program provide options for no-cost or reduced cost financing options? If yes, please describe the loan terms offered (loan period, interest rate, any down payment requirements, credit score, etc.). If no, please clarify whether the Companies have evaluated financing options for Direct Install or are aware of any other utilities offering turnkey financing options for small business direct install programs, and provide any and all workpapers.

A-2.36.

- a. See the table below for the expected total installed cost for each measure offered through this program. None of the listed costs are charged to the customer.

⁴ *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 149 (Ky. PSC Nov. 6, 2023)

Measure Description/Qualification	Expected Installed Cost	Per Unit Assumption
In person audit	\$750	Per Audit
Linear LED Direct Install Bulbs	\$6	Per Unit
Linear LED Direct Install Retrofits	\$60	Per Unit
Aerators 0.5 GPM	\$2	Per Unit
Showerhead 1.5 GPM	\$8	Per Unit
Pre-rinse Spray Valves 1.15GPM	\$43	Per Unit

- b. The Small Business Audit & Direct Install program provides a complimentary energy audit of the customer's facility plus the option to receive direct installation of energy savings products at no additional cost to the customer. Therefore, for this program, there is no reason to offer financing options since there is no additional cost outside of the DSM rider to the customer.

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Case No. 2025-00045

Question No. 2.37

Responding Witness: Lana Isaacson

Q-2.37. Please refer to Direct Testimony of Lana Isaacson in Case 2022-00402, at p. 12, lines 5-13, regarding DSM-EE opportunities for large customers.

- a. Strategic Energy Management (SEM) is a method to engage large C&I customers in active management of their energy usage through continued education and behavioral incentives, such as paying for facility operators to attend efficiency trainings, developing lists of energy improving actions at the site, and implementing better O&M practices to reduce wasted energy. Have the Companies considered offering Strategic Energy Management to large C&I customers? Please explain why or why not.
- b. Have the Companies previously conducted any site energy audits for large customers that identify potential energy saving opportunities, demand response potential, or on-site renewable potential? If so, please provide copies of all reports and associated workpapers. If not, please explain why the Companies have not engaged large customers in such audits.
- c. Please provide data regarding DSM-EE opt out customers, in a Microsoft Excel spreadsheet, containing a single row for each customer grouping, with the following columns:
 - i. Industry type (SIC or NAICS, or other similar internal Companies' categorization);
 - ii. Count of opt-out customers;
 - iii. Average MWh billed over the last 12 complete billing cycles;
 - iv. Average monthly peak demand during summer months over the last 12 complete billing cycles; and

- v. Average monthly peak demand during winter months over the last 12 complete billing cycles.

A-2.37.

- a. The Companies have not considered this program outside of the work that was done for Case No. 2022-00402 with additional information provided in the Companies' responses to PSC 1-20 and PSC 2-38 in Case No. 2022-00402.

A Strategic Energy Management program was part of the initial 39 program options outlined by the Company and shared with the DSM Advisory Group members for their review and input. This program did not proceed to cost-effectiveness testing and program design given the expectation for low cost-effectiveness results per experience by the Company's consultant who monitors DSM/EE programs throughout the U.S. and performs cost-effectiveness analysis for multiple utility companies. Separately, this type of program is targeted for 3-5 participants who are engaged over multiple years in an energy efficiency process.

The PSC requested the Company complete cost-effectiveness testing on this program, and others, in Case No. 2022-00402. The TRC was 0.54 for the Strategic Energy Management program.

- b. As part of the Business Rebates program in the 2024-2030 Plan, engineering support services are offered to customers at no additional cost through our program vendor. This service may include a walk-through audit. In addition, the Business Rebates program offers a compressed air leak study audit at no additional cost to the eligible program participant. To date, a site audit under this program offering has not yet been requested nor completed.
- c. See attachment being provided in a separate file.

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Case No. 2025-00045

Question No. 2.38

Responding Witness: Lana Isaacson / Tim Jones

- Q-2.38. Please refer to Direct Testimony of Lana Isaacson in Case 2022-00402, Exhibit LI-1, at 2, which states that the Cadmus EE potential assessment did not include increases in high-efficiency equipment standards or other emerging technologies since the 2016-17 study, and answer the following requests.
- a. Do the Companies include any level of emerging technologies in the long-term DSM-EE forecast used in its 2025 CPCN forecast? If yes, please provide annual MWh by technology type and sector/program, in Microsoft Excel format. If no, please justify not included emerging technologies in a long-term outlook.
 - b. Do the Companies have an established process to identify and evaluate emerging technologies for DSM-EE measures or programs? Please describe and provide any and all workpapers.
 - c. Do the Companies have an established process to test and validate emerging technologies for DSM-EE in terms of field performance, i.e., to develop and conduct pilots or field tests? Please describe and provide any and all workpapers and any previous pilot program evaluation reports for measures not already included in DSM-EE program offerings included in the 2024-2030 DSM-EE Plan.
 - d. Thermal energy storage (e.g., ice storage, or phase change materials) can be used to shift commercial HVAC loads to nighttime and have been shown to provide good load shifting and peak-shaving capabilities. Have the Companies analyzed the potential for thermal energy storage (TES) for inclusion in its DSM portfolio, or otherwise explored developing an incentive offering for this technology type? Please provide any associated internal workpapers.

A-2.38.

- a. To the extent that the EIA includes these assumptions in their projections of end-use energy efficiencies and saturations, the Companies include them in their load forecasts.
- b. The Companies have a flexible process that allows for new measures and technologies to be evaluated (and possibly added) as they arise from various sources / channels. For example, as part of a program evaluation, any new measures or technologies may be identified as part of recommended improvements for a program. These are captured in the Evaluation, Measurement, and Verification (EM&V) reports. Also, a program partner may propose new items that could be evaluated and possibly offered as part of a program, like Smart Strips for WeCare customers. Additionally, some new measures/technologies arise from distributors or manufacturers of the products themselves. Lastly, new measures and technologies may be the result of a conversation or topic as part of a DSM Advisory Meeting or even from an industry conference or presentation. Prior EM&V reports for programs have been provided as part of Case No. 2022-000402, Round 1 response for JI 1.140.
- c. As stated in part b, the Companies strive to have a flexible process to allow for the “field” testing of promising new measures and technologies. Since the 2024-2030 DSM-EE Plan, there have not been any field tests of new measures or technologies. The Companies are currently reviewing three new program enhancements as mentioned in the 2024 IRP. See Case No. 2024-00326, Volume I, Section 8.(2).(b) for details.
- d. Thermal energy storage is an energy efficiency application that may be considered under the Business Rebates Custom application. A rebate was recently issued to a customer for their thermal storage application.

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Case No. 2025-00045

Question No. 2.39

Responding Witness: Lana Isaacson

- Q-2.39. Please refer to Direct Testimony of Isaacson in Case 2022-00402, Exhibit LI-1, at 2, which describes the three types of DSM market potential included in the study.
- a. Please provide details of the measure characterization used for the study, in Microsoft Excel format, for each year of the forecast period from the most recent DSM potential study, including as many of the following fields as are available:
 - i. Sector (Residential, Commercial, Industrial, Agricultural)
 - ii. Program (if applicable)
 - iii. End Use Type (e.g., water heating, space heating, etc.)
 - iv. Measure Name
 - v. Measure Description
 - vi. Efficiency level (e.g., UEF, ENERGY STAR TIER, COP)
 - vii. Load Profile Name
 - viii. Baseline saturation %
 - ix. kWh per unit savings
 - x. Unit type
 - xi. Measure Life

- xii. Replacement Type (replace on burnout, lost opportunity/new construction)
 - xiii. Baseline equipment type
 - xiv. Baseline equipment efficiency (and source)
 - xv. Total Cost
 - xvi. Incremental Cost
 - xvii. Incentive
- b. Please provide annual incremental and annual cumulative MWh savings in Microsoft Excel format for each potential types (Technical Potential, Economic Potential, Achievable Potential) from the most recent DSM potential study, including the following fields:
- i. Sector (Residential, Commercial, Industrial, Agricultural)
 - ii. Program (if applicable)
 - iii. End Use Type (e.g., water heating, space heating, etc.)
 - iv. Measure Name
 - v. Measure Description
 - vi. Annual MWh
- c. Please provide the 8760 or 12x24 load profiles for each measure grouping used to characterize the EE resource potential that the Companies' use in altering the 2025 CPCN load forecast. If providing in a 12x24 format, please provide both weekday/peak day profiles as appropriate.

A-2.39.

- a. As part of the 2016 and 2017 Potential Studies and the 2021 Demand Response Potential Study, measure character details were provided in separate Excel files with the requested attributes. For the 2016 and 2017 files, see the response to JI 1-141(a) in Case No. 2022-00402. For the 2021 files, see the response to JI 1-107(b) in Case No. 2022-00402.

For subparts i to xvii, please see the response to part a.

- b. Please see the response to part a. For subparts i to vi, please see the response to part a.
- c. No specific energy efficiency 8,760 exists for the load forecast. Energy efficiency reduces monthly sales and energy requirements prior to the creation of the hourly load forecast. Therefore, the percentage impact energy efficiency has on monthly energy requirements will be the same as the percentage impact on each hour's energy requirements. Said differently, the energy efficiency 8,760 takes the shape of the system hourly shape prior to layering on the impacts of distributed generation, EVs, and economic development.

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Case No. 2025-00045

Question No. 2.40

Responding Witness: Lana Isaacson

Q-2.40. Regarding Manufactured Home Replacement, please answer the following requests:

- a. A Manufactured Home Replacement program is one option to overcome the unique market barriers to retrofitting specific end-use equipment within existing manufactured homes, recognizing that it can be cheaper and more efficient to replace the entire unit versus making incremental improvements. Have the Companies evaluated the potential for a Manufactured Home Replacement program?
- b. Please provide residential customer counts by dwelling type (single family, multifamily, manufactured home)
- c. Please provide residential customer counts by dwelling type (single family, multifamily, manufactured home) and by estimated construction year
- d. Please provide the recent historical monthly residential energy usage for 2022-present broken out by dwelling type (single family, multifamily, manufactured home)
- e. Please provide the residential energy usage forecast for the planning period broken out by dwelling type (single family, multifamily, manufactured home).
- f. Have the Companies offered specific programs tailored to manufactured homes in the past? Please provide any in-house or third-party evaluations of past pilot programs or programs serving this market sector.

A-2.40.

- a. No. However, a residential customer residing within a manufactured home, if they meet the program's eligibility requirements, may pursue

participation in two currently available energy efficiency programs; Residential Online Audit and Rebates and WeCare for homeowners and renters. The Residential Online Audit and Rebates program offers an online energy assessment that walks the customer through a series of questions to determine areas of opportunity for energy savings. The customer may also elect to receive a do-it-yourself energy efficiency kit available to them at no additional cost.

- b. The Companies do not request or maintain this data.
- c. The Companies do not request or maintain this data.
- d. The Companies do not request or maintain this data.
- e. The Companies do not request or maintain this data.
- f. The Companies have not previously offered rebates that are tailored only to manufactured homes.

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Case No. 2025-00045

Question No. 2.41

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

Q-2.41. Please refer to the Companies' response to JI-1 1.93(e) provided as Confidential Attachment 1, regarding the determination of avoided capacity costs for EE and DR resources.

- a. Please provide copies of each table in Attachment 1 in Microsoft Excel format.
- b. Please provide all workpapers used to derive the avoided capacity costs in table 1 through table 7, in Microsoft Excel format, with all cell formulas intact.
- c. Please provide all workpapers, in Microsoft Excel format, with all cell formulas intact, showing the derivation of [REDACTED], including labeled input assumptions.
- d. [REDACTED] Please confirm, and provide [REDACTED]
- e. Do the Companies attribute any Transmission capacity deferral credit to DR and EE programs in calculating program cost effectiveness? If yes, please provide the \$/kW-yr assumed along with any and all associated workpapers. If no, please justify.
- f. Do the Companies attribute any Distribution capacity deferral credit to DR and EE programs in calculating program cost effectiveness? If yes, please provide the \$/kW-yr assumed along with any and all associated workpapers. If no, please justify

A-2.41.

- a. See the response to part (b).

- b. 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.
- c. See the response to part (b).
- d. Yes. See the response to AG-KIUC 1-39(d).
- e. No.
- f. See the response to part (e).

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Case No. 2025-00045

Question No. 2.42

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

Q-2.42. Please refer to the Companies' response to JI-1 1.93(e) provided as Confidential Attachment 2 20241021_LAK_2025BP_IRPUpdate_MarginalCost_2025-2050. Please also refer to Direct Testimony of Jones at p. 24, lines 4-8, describing the hourly system load profile for the 2025 CPCN load forecast.

- a. Please confirm if [REDACTED] in Confidential Attachment 2 [REDACTED]
- b. Please reconcile [REDACTED] in Confidential Attachment 2, [REDACTED], with the statement in Direct Testimony of Jones at p. 24, line 6, that the 2032 max demand is 8,034 MW, [REDACTED].
- c. [REDACTED] Confidential Attachment 2 shows [REDACTED]
- d. [REDACTED]
 - i. Please explain [REDACTED]
 - ii. Please explain [REDACTED]

- iii. Please explain whether the Companies have ability to sell surplus energy to other counter-parties through bilateral day-ahead, week-ahead, or other types of forward contracts during peak demand periods.
- iv. Please explain whether, in the Companies' view, having greater amounts of demand-side resources such as DSM-EE (both dispatchable and traditional EE) would provide additional system benefits from selling excess capacity to counter-parties through such contract mechanisms, regardless of the Companies' capacity need.

A-2.42.

- a. The Demand column represents hourly energy requirements, which have been reduced to account for distributed generation. See Exhibit TAJ-1: Electric Sales and Demand Forecast Process for more detail.
- b. The hourly demand in the referenced attachment comes from the Companies' 2024 IRP "Mid" load forecast, not the CPCN load forecast.
- c. On the referenced day, the marginal cost is highest in the hour of peak demand (hour 15). Demand in every other hour of the day is lower than in the hour of peak demand. Any decrease in demand will result in a decrease in marginal cost, assuming all other things equal, as marginal cost represents the cost of the highest cost MW in each hour; thus, in general, when fewer MWs are required, marginal cost decreases.
- d.
 - i. "PURP5X16a 1" represents market electricity purchases during the on-peak (5x16) period. The model can make market electricity purchases in one hour only and may do so to avoid unserved energy in an hour, for example, when forced outages happen to occur simultaneously in the model. The low likelihood of this occurrence is reflected in the low frequency at which this resource is the marginal unit.
 - ii. See the response to part d(i). Factors other than hourly demand, such as forced outages, can affect marginal cost in the model.
 - iii. The Companies have the ability to sell nonfirm energy at any time, assuming there is sufficient transmission capacity available. However, any arrangement to sell firm power or capacity would require the Companies to "undesignate" the capacity from its status as a Designated Network Resource ("DNR") that enables its

Network Integrated Transmission Service (“NITS”). Therefore, the contracted capacity would be unavailable to serve native load.

- iv. The Companies’ DSM program offerings include cost-effective programs and the programs generally provide limited use during prolonged, extreme weather events. The Companies do not plan their system to make off-system sales and off-system sales are not a factor in DSM cost-effectiveness testing. Also see the response to part (iii).

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Question No. 2.43

Responding Witness: Lana Isaacson / Stuart A. Wilson

Q-2.43. Please refer to the Companies' response to JI-1 1.93(e), provided as Confidential Attachment 3 20220630_LAK_AvoidedCapacityCost_Jhayden_DR, which represents the avoided cost of capacity values assumed in Case No. 2022-00402.

a. Please confirm

[REDACTED]

b. Please confirm that

[REDACTED]

c. Please confirm that

[REDACTED]

d. Please explain why

[REDACTED]

e. Please explain what

[REDACTED]

A-2.43.

a. The term was 7 years for the Income-Qualified Solutions programs and Business Solutions programs. The term was 6 years for Residential Online

Audit & Rebates program. The term was 5 years for Midstream Lighting and Appliance Recycling programs.

- b. Confirmed.
- c. Confirmed.
- d. Capital revenue requirements extend through the life of the assumed capacity resource. The values in row 15 reflect the difference between capital revenue requirements for a capacity resource in-service in 2027 (for which capital revenue requirements for a 30-year SCCT, for example, would begin in 2027 and end in 2056) and a capacity resource in-service in 2032 (for which capital revenue requirements for a 30-year SCCT, for example, would begin in 2032 and end in 2061).
- e. The values on the “Profiles” worksheet represent capital revenue requirement profiles for each capacity resource. It is not an “adjustment” to the PVRR, it is a way of calculating annual revenue requirements over the life of the capacity resource based on the resource’s overnight capital cost. For more information regarding revenue requirement profiles, see the response to SC 1-41 in Case No. 2024-00326.

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Case No. 2025-00045

Question No. 2.44

Responding Witness: Lana Isaacson / Stuart A. Wilson

Q-2.44. Please refer to Confidential Attachment 1 to Response to JI-1 1.93(e), at 1, which states [REDACTED] Please also refer to Exhibit SAW-1 at 20, which shows the Capacity Contribution of Dispatchable DSM, CSR, and BYOD Energy Storage.

- a. Please confirm or deny that the levels of cost-effective DSM-EE included in the 2025 CPCN forecast were developed using avoided capacity costs developed under 2022-0042 DSM-EE and that they assumed a SCCT as the capacity resource proxy. If deny, please provide evidence of where this change is noted and provide any and all associated workpapers.
- b. Please confirm or deny that the 39% capacity contribution shown in Table 5 of Exhibit SAW-1 for the above referenced energy-limited resources was developed using comparison to a SCCT and associated forced outage rates. If deny, please provide evidence of where this change is noted and provide any and all associated workpapers.
- c. Has the Company conducted any subsequent LOLE or resource capacity contribution modeling for energy-limited resources like Dispatchable DSM, BYOD energy storage, or CSR [REDACTED] resource proxy as opposed to a SCCT? If yes, please provide the updated capacity contribution values for each, along with any and all supporting workpapers. If not, please explain whether the Company plans to modify capacity contribution calculations in the future to reflect this change, and what expected directional impacts it would have.

A-2.44.

- a. The levels of cost-effective DSM/EE included in the 2025 CPCN forecast include the full 2024-2030 DSM/EE program suite the Commission

approved in Case No. 2022-00402, along with additional customer-initiated energy efficiency. Initial cost-effectiveness analysis for the 2024-2030 DSM/EE Plan was based on SCCT avoided capacity cost, which was consistent with prior DSM/EE filings. The Companies conducted additional cost-effectiveness testing in 2023, which used avoided capacity based on SCCT for demand response and avoided capacity based on NGCC for energy efficiency. The result between the two analyses was a small decline of 2.5% in the overall portfolio. The TRC results on demand response programs increased and were offset by a decline in TRC results for energy efficiency programs.

- b. Confirmed.
- c. No. This is not appropriate. For resource planning, capacity contributions for limited-duration resources must be computed by comparing their reliability benefits to a fully dispatchable resource.

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Case No. 2025-00045

Question No. 2.45

Responding Witness: Lana Isaacson / Stuart A. Wilson

Q-2.45. Please refer to the Companies 2024 IRP, Volume III Resource Adequacy study, section 5.10 at 29, regarding scarcity pricing used in evaluating the economic reserve margin, and answer the following requests.

- a. Please provide the model inputs and outputs of the SERVVM model instance used to support the 2024 IRP Mid and High cases, including (as available) hourly load forecasts, generation from each source (coal, gas, solar, wind, hydro, other), market purchases/sales, market price assumptions and assumed weather inputs.
- b. Please confirm or deny that the energy avoided cost values associated with the Companies' EE and DR programs reflected in its 2024-2030 DSM-EE plan levels is based upon the system hourly marginal cost prices provided in Confidential "20220803_LAK_2023BPMarginalCost." If deny, please describe the source of the energy avoided cost values and provide any and all associated workpapers.
- c. Please explain the large difference between the marginal cost prices used in developing avoided costs for EE and DR, and the scarcity pricing values underlying the economic reserve margin calculation.
- d. Do the Companies [REDACTED]
[REDACTED] If so, please explain, and provide any references or workpapers. If not, please justify.

A-2.45.

- a. For SERVVM inputs, see KPSC Case No. 2024-00326 -- LGE-KU 2024 IRP Resource Planning Workpapers -- PUBLIC.zip at "SERVVM\Inputs" and "SERVVM\SERVVM Data CSV Files". For SERVVM outputs, see KPSC Case No. 2024-00326 -- LGE-KU 2024 IRP Resource Planning Workpapers -- PUBLIC.zip at "SERVVM\Outputs_SERVVMResults".

- b. Confirmed.
- c. The scarcity price represents the difference between market power prices and the marginal cost of supply during a limited number of hours when reserve capacity is less than approximately 16% of hourly load and market power is available; the scarcity price is zero in the majority of hours.
- d. No. Scarcity price risk is not considered in the analysis of any demand-side or supply-side resource.

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Case No. 2025-00045

Question No. 2.46

Responding Witness: Tim A. Jones

Q-2.46. Please refer to Direct Testimony of Tim Jones at page 37, describing the forecast of distributed generation capacity.

- a. Please provide the annual incremental adoption figures, in a Microsoft Excel spreadsheet, showing nameplate kW of net-metered rooftop solar and distributed QFs separately. In the spreadsheet, please include five columns including: Year, kW, Sector (Residential, Non-Residential), Number of projects, and flag for rooftop or QF.
- b. Please provide the annual incremental adoption figures, in a Microsoft Excel spreadsheet, showing BTM storage. In the spreadsheet, please include four columns including: Year, kW, Sector (Residential, Non-Residential), Number of projects.
- c. Please provide the annual incremental adoption figures, in a Microsoft excel spreadsheet, showing nameplate kW of any other solar or storage interconnections the Companies are aware of and tracking. In the spreadsheet, please include four columns including: Year, kW, Sector (Residential, Non-Residential), Number of projects.

A-2.46.

- a. See attachment being provided in a separate file.
- b. See the response to part (a).
- c. The Companies are not aware of any other distributed storage or solar interconnections in their service territory.

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Question No. 2.47

Responding Witness: Robert M. Conroy / Tim A. Jones / Counsel

- Q-2.47. Please refer to the Direct Testimony of Tim A. Jones at p. 32, lines 12-17, which states “Batteries can only increase total energy consumption for residential customers due to AC-to-DC losses when charging and DC-to-AC losses when discharging. Given that the vast majority of residential customers take service under Rate RS, which has a flat rate per kWh and no demand charge, this can only mean a more expensive energy proposition for the battery alone for most of the Companies’ residential customers.”
- a. Admit that the Companies have freedom and wherewithal to suggest alternative rates, programs, and/or incentives to alter the economic proposition facing residential and commercial customers with respect to adopting battery storage technologies, as opposed to simply taking the fact that most customers are on a flat rate as a given.
 - b. Have the Companies evaluated any alternative rate designs (including different peak to off-peak ratios, time windows, or seasonal differences) to its current Time of Use rate design? If yes, please describe why the current TOU rate design was chosen over the alternatives and provide any and all workpapers. If no, please explain why the Companies did not evaluate any alternatives.
 - c. Have the Companies evaluated different TOU rate designs or incentive mechanisms that could provide economically attractive incentives to battery storage customers to align their consumption and export profiles to achieve higher grid value? If yes, please provide any and all workpapers. If no, please describe why not.
 - d. Please provide any and all workpapers and evaluations the Companies have completed in developing and implementing its TOU rates.

- e. Do the Companies admit that a possible use case for customers adopting storage is to mitigate peak demand charges, such as is the case for PS customers?
- f. Have the Companies studied the potential for storage adoption at PS customer classes, including by evaluating the payback or other economics of installing battery storage for purposes of reducing the demand charge? If yes, please provide any and all workpapers. If no, please describe why not.

A-2.47. The Companies object to this request as irrelevant to the subject matter of this proceeding under KRS 278.020(1) and the Commission's prior orders.⁵ Without waiving that objection, the Companies provide the following responses.

- a. The Companies may propose any number of rates, programs, or incentives. The Companies have sought to propose rates, programs, and incentives that are consistent with reliable service at the lowest reasonable cost. Regarding rates, the Companies have sought to move toward cost-based rates consistent with other relevant ratemaking principles such as gradualism.

Regarding time-differentiated rates available to residential customers, the Companies have had RTOD-Energy and RTOD-Demand rates available for almost a decade (such rates first became available on July 1, 2015). Each of the Companies has been able to have up to 500 customers across the two rate schedules since their inception (1,000 total for both Companies). The Companies have never had full participation in those rates.

Regarding distributed energy storage, the Companies are planning to develop a Bring Your Own Device Battery pilot program to provide customers incentives to allow the Companies to monitor and control their batteries. The Companies believe such a program is the appropriate means of exploring distributed energy storage as a utility resource.

- b. Other than changes to the off-peak and peak periods and seasons, the Companies have not sought to change the structure of their RTOD rates

⁵ See, e.g., *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) ("To obtain a CPCN, a utility must demonstrate a need for such facilities and an absence of wasteful duplication. ... 'Need' requires: [A] showing of a substantial inadequacy of existing service, involving a consumer market sufficiently large to make it economically feasible for the new system or facility to be constructed or operated. ... 'Wasteful duplication' is defined as 'an excess of capacity over need' and 'an excessive investment in relation to productivity or efficiency, and an unnecessary multiplicity of physical properties.' ... The fundamental principle of reasonable least-cost alternative is embedded in such an analysis. Selection of a proposal that ultimately costs more than an alternative does not necessarily result in wasteful duplication. All relevant factors must be balanced.") (internal citations omitted).

since their inception because there were sound cost-of-service reasons for them to be structured as they were.

- c. No. See the response to part (a) and Question No. 49(b).
- d. See the response to AG-KIUC 2-5(a) concerning the Companies' 2020 rate cases and related testimony and workpapers for time of day rates. Testimony and workpapers for prior rate cases related to time of day rates are also publicly available on the Commission's website.⁶
- e. Yes, it is possible. To the extent customers are already doing so, their behavior is reflected in the Companies' load forecast.
- f. No. See the responses to parts (a) and (e) and Question No. 49.

⁶ For example, 2018 rate case files are available at <https://psc.ky.gov/Case/ViewCaseFilings/2018-000294> (KU) and <https://psc.ky.gov/Case/ViewCaseFilings/2018-000295> (LG&E); 2016 rate case files are available at <https://psc.ky.gov/Case/ViewCaseFilings/2016-00370> (KU) and <https://psc.ky.gov/Case/ViewCaseFilings/2016-00371> (LG&E); and 2014 rate case files are available at <https://psc.ky.gov/Case/ViewCaseFilings/2014-00371> (KU) and <https://psc.ky.gov/Case/ViewCaseFilings/2014-00372> (LG&E).

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Question No. 2.48

Responding Witness: Tim A. Jones

Q-2.48. Please refer to Direct Testimony of Tim A. Jones at p. 33, lines 5-10, which refers to customers adopting storage to act as backup power supply.

- a. Have the Companies conducted any evaluation of customer motivations, preferences, and experiences with battery storage to justify this claim? Please justify and provide any and all workpapers or third-party evaluations that informed its position.
- b. Do the Companies admit that, even if a customer with storage intends their system primarily for backup power use cases during extreme conditions, there are likely significant numbers of hours throughout the year under "blue sky" conditions where energy shifting may be valuable and mutually desirable to both the customer and the utilities?

A-2.48.

- a. The Companies disagree with the characterization that any claims were made in the referenced lines of the Jones testimony. From lines 5 and 6: "Putting aside economics, some customers may purchase battery storage as a backup power supply." No evaluation of customer motivations or preferences have been done, but the Companies assumed that if customers are purchasing for backup power supply, these customers will want that power available in the case they should need it and will not want to risk dispatching it and putting its availability during an outage in jeopardy.
- b. Yes, the Companies agree this is possible. A customer may use an onsite battery in any way consistent with the Companies' applicable retail electric service tariff.

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Question No. 2.49

**Responding Witness: Robert M. Conroy / Lana Isaacson / Tim A. Jones /
Charles R. Schram**

Q-2.49. Please refer to Direct Testimony of Tim A. Jones at p. 34, lines 10-12, which cites an NREL 2022 report⁷ and states that the Companies' storage attachment rates are in line with most other states, and that there is no reason to believe the Companies' penetration would approach that of California.

- a. Do the Companies see potential future value for residential and commercial BTM storage to act as a grid resource, for example when coordinated for charging and discharging along with normal utility planning and operations?
- b. Do the Companies admit that the utilities play an important role in developing and expanding a future market for distributed storage?
- c. Please refer to Table 2 and Table 3 of the cited NREL report regarding policies and associated utility actions that can advance distributed storage adoption, by market preparation, market creation, and market expansion. In the Companies' opinion, which of these items have the Companies met through its current planning and proposed program offerings?

A-2.49.

- a. Yes, there is potential value in distributed energy storage resources the serving utility can control. The Companies are planning to develop a Bring Your Own Device – Batteries pilot program to explore this potential.
- b. The Companies' statutory obligation is to provide adequate, efficient, and reasonable service, not to create markets for distributed energy storage.⁸

⁷ NREL, *Check the Storage Stack: Comparing Behind-the-Meter Energy Storage State Policy Stacks in the United States* (Aug. 2022).

⁸ KRS 278.030(2).

The Companies are unaware of any Commission-recognized “important role in developing and expanding a future market for distributed storage” for electric utilities in Kentucky. That being said, the Companies are committed to providing safe and reliable service at the lowest reasonable cost, which is why they are exploring a Bring Your Own Device – Batteries pilot program to evaluate the economics and practicalities of utility control of customer-owned distributed energy storage.

- c. The purpose of the “see also” citation to the NREL report at issue was solely to observe that “according to the report’s ranking methodology, Kentucky’s behind-the-meter ‘policy stacking score’ placed it almost exactly in the middle of the group of 50 states plus Washington, D.C.,”⁹ not to suggest it would be desirable per se to implement policies that would move Kentucky toward California, which received NREL’s “full score.” Notably, the three highest-ranked states in that report’s scoring (California, New York, and Massachusetts) also have some of the highest electric rates in the U.S.; all three have all-sector electric rates that are about or more than *double* those of Kentucky.¹⁰ In contrast, the Companies’ duty is to provide safe and reliable service at the *lowest* reasonable cost, not to achieve a particular score in an NREL report.

⁹ Jones Direct at 34 fn. 43.

¹⁰ U.S. Energy Information Administration, “Electric Power Monthly,” Table 5.6.A. Average Price of Electricity to Ultimate Customers by End-Use Sector, by State, February 2025 and 2024, available at https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_5_6_a (accessed May 12, 2025).

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Question No. 2.50

Responding Witness: Tim A. Jones

- Q-2.50. Please refer to Direct Testimony of Tim A. Jones at p. 36, Fig. 13, and the 2024 IRP Figure 7-3, showing a decline in annual BTM battery storage adoption and stating that “[i]t is worth noting that after an uptick in 2021 and 2022, incremental battery storage adoption in 2023 fell off significantly.” Please provide an update to the data behind the referenced figures, showing 2016 through year-end 2024, in a Microsoft Excel spreadsheet. Please include columns for Year, Month, Nameplate kW, Sector (Res, Non-Residential), and number of projects.
- A-2.50. See attachment provided in response to Question Nos. 46(a)(b).

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Question No. 2.51

Responding Witness: Tim A. Jones

Q-2.51. Please refer to 2024 IRP at p. 7-21 (pdf p. 68/135), which states “[a]ll net metering forecasts were created using a consumer choice model, in which the ratio of net-metering customers to total residential customers is predicted by the avoided cost-to-LCOE ratio, which is weighted by the potential universe of net-metering customers per company. The avoided-cost-to-LCOE ratio is computed as a function of the above economic factors.”

- a. How do the Companies define the “potential universe of net-metering customers”?
- b. Please provide all workpapers showing the calculation of the avoided cost-to-LCOE ratio, including the sources and derivation of the inputs (namely, the avoided cost values and LCOE calculation), and how it is applied to the potential universe of net-metering customers.

A-2.51.

- a. The referenced language used is out of date in that the Companies no longer use the ratio and universe of net metering customer to forecast distributed generation adoption. As described in Exhibit TAJ-1, Electric Sales and Demand Forecast Process at Section 4.5, the Companies now use two models to predict the number of customers that will adopt net metering: “Two models are specified using the above variables to create both a near-term and a long-term model. This forecast is a blend of the output of these two models.”

However, the Companies still use the universe of net metering customers to check the reasonableness of the total levels forecasted. The Companies define the potential universe by first calculating the physical potential of the

service territory using LiDar studies from NREL,¹¹ as well as information from Project Sunroof,¹² to determine the percentage of solar-viable rooftops in Kentucky and Virginia. Percentage of home ownership, total number of customers in the service territory, and residential customer CAGR are included in this estimation along with the physical potential. The output of this calculation suggests a maximum number of customers by year that would be able to install rooftop solar. This annual number is used to create an upper bound of what is technically possible for rooftop solar adoption.

- b. For calculation of the avoided cost and LCOE ratio by year, see KPSC Case No 2024-00326 -- LGE-KU 2024 IRP Load Forecasting Workpapers—PUBLIC.zip, located at Electric_Load_Forecast\Electric\Forecasts\PV\Input_Data\Price Needed for Energy Exported to Grid to Meet Total Project Costs_SAW_25BP_GP_IRP. This economic input variable does not apply to the potential universe directly, as the potential universe is a measure of technical potential.

¹¹ Gagnon, P., Margolis, R., Melius, J., Phillips, C., & Elmore, R. (2016). Rooftop solar photovoltaic technical potential in the United States. A detailed assessment (No. NREL/TP-6A20-65298). National Renewable Energy Lab.(NREL), Golden, CO (United States).

¹² <https://sunroof.withgoogle.com/data-explorer/>

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Question No. 2.52

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

Q-2.52. Please refer to 2024 IRP, at pp. 7-22 (pdf p.69/135), which states, “[t]his lessens the benefits of selling back to the grid, so it is assumed that customers will be less likely to overbuild their solar installations. However, the number of customers choosing to install solar will be less affected; average customer growth after the cap is hit is not adjusted in the mid forecast. This is similar to the Companies’ distributed generation forecast in the most recent CPCN.”

- a. Please confirm that this means the Companies did not alter the estimates trajectory of the mid-case number of projects based on the 1% net-metering cap, but that it did alter the sizing of systems installed.
- b. Please explain how the Companies determined the relative impact of the reduction in “oversizing” based on reducing the net-export credit from the full retail rate to the QF avoided cost rate. Please provide any and all workpapers supporting this assumption.
- c. Please provide the estimated average size of BTM solar installations in each year of the Companies’ planning period, segmented by residential and non-residential.

A-2.52.

- a. Not confirmed. The quoted text says the number of customers is “less affected,” meaning the impact on the 1% cap is greater on capacity than it is on customers. The quote “average customer growth after the cap is hit is not adjusted in the mid forecast” means that the number of customers added per year is mostly unchanged beginning in the year after the cap is hit.
- b. In 2021, the Companies used the AMI sample of customers available to evaluate the economics of distributed generation in various years, tax incentives (0% and 26%), export credit scenarios (QF and NMS), etc. The results of this analysis suggested the number of customers adopting would

not be as affected under QF versus NMS, but the installed capacity size was reduced consistently moving from NMS to QF. See attachment being provided in a separate file.

- c. For average capacity per customer by rate by year during the planning period, see attachment being provided in a separate file.

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Question No. 2.53

Responding Witness: Lana Isaacson

Q-2.53. Please refer to Direct Testimony of John Bevington in Case 2022-00402, at p. 14, lines 1-7, which describes future plans for studying DSM-EE programs that incorporate rooftop solar and the feasibility of including this in future DSM-EE program plans.

- a. Have the Companies conducted any internal or external evaluations related to potential program designs for rooftop solar since filing its application in Case 2022-00402? If so, please provide any and all workpapers, evaluation reports, internal memoranda, or other summaries of the evaluation(s).
- b. Have the Companies initiated plans for any pilot programs relating to how rooftop solar could interact with other DSM-EE program designs?
- c. Have the Companies initiated plans for any pilot programs relating to how rooftop solar could interact with other DSM-EE program designs?

A-2.53.

- a. No. The Companies plan to begin this review in 2026.
- b. No.
- c. No.

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Question No. 2.54

Responding Witness: Stuart A. Wilson

- Q-2.54. Please refer to Direct Testimony of Stuart A. Wilson, at p. 5, line 7, through p. 6, line 1, regarding the LOLE analysis for the 2024 IRP. Please provide the LOLE heat maps, in Microsoft Excel format, for each year throughout the study period showing the relative resource adequacy need in each month-hour (i.e., a 12x24 matrix).
- A-2.54. See the table below. The Companies’ 2024 IRP Resource Adequacy Analysis evaluated LOLE for one year only. For Microsoft Excel format, see KPSC Case No. 2024-00326 -- LGE-KU 2024 IRP Resource Planning Workpapers -- PUBLIC.zip at “SERVM\Outputs_SERVMResults\20240920_SMMA_2024IRP_ForCapacityContributions(BS4h, CT).xlsx”.

Month	LOLE (days/10 years)
Jan	1.52
Feb	0.25
Mar	0.00
Apr	0.00
May	0.00
Jun	1.14
Jul	3.79
Aug	3.68
Sep	0.00
Oct	0.00
Nov	0.00
Dec	0.46
Total	10.84

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Question No. 2.55

Responding Witness: Stuart A. Wilson

- Q-2.55. Please refer to Direct Testimony of Stuart A. Wilson, at p. 8, footnote 8, related to the solar output during recent Winter storms. Please provide hourly solar output estimates, based on billing or direct metering where possible, and estimates otherwise, for each large solar PPA throughout the duration of each previous winter storm, including one day prior to the storm onset.
- A-2.55. None of the Companies' previously proposed solar PPAs have been commissioned, and the Companies do not have actual or estimated solar output for these facilities. The footnote refers to the Companies' experience with their 10 MW solar facility at E.W. Brown. See attachment being provided in a separate file for the hourly output of the E.W. Brown solar facility during the requested periods.

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Question No. 2.56

Responding Witness: Stuart A. Wilson

Q-2.56. Please refer to the Companies' 2024 IRP, Vol. III Resource Adequacy Study at 18, which shows the generation profiles used for capacity contribution analysis in SERVM, and answer the following requests.

- a. Please explain the Companies' rationale for using a reference profile of "2032 less solar" to evaluate future capacity contributions of energy-limited resources.
- b. Please clarify if the adjustment to remove solar from the reference portfolio in Table 10 is supply-side solar, distributed solar (rooftop and QFs), or some combination thereof.
- c. Please provide the hourly load profile for the reference scenario before and after this adjustment, with separate columns for the amount of solar removed due to supply-side and distributed solar generation, as applicable.
- d. Did the Companies' resource adequacy modeling in the 2024 IRP evaluate portfolio interactive effects of different resource combinations, such as adding solar and storage together, or solar and dispatchable DSM? If yes, please provide the combined ELCCs of the different scenarios studied. If no, please explain why possible interactive effects were not considered.

A-2.56.

- a. The Companies computed capacity contributions in the context of the referenced portfolio so that the analyses of capacity contributions and minimum reserve margin constraints for resource planning would be aligned.
- b. The exclusion of solar is for supply-side solar only. Specifically, the solar generation includes 240 MW of Company-owned solar and 518 MW of solar PPAs.

- c. The exclusion of supply-side solar has no impacts on load. See attachment being provided in a separate file for weather year solar profiles.
- d. No. All resource combinations are fully considered in PLEXOS for resource planning. ELCC is not applicable to the Companies. See the response to AG-KIUC 1-15(e) and AG-KIUC 2-12.

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Question No. 2.57

Responding Witness: John Bevington / Stuart A. Wilson

- Q-2.57. Please refer to Exhibit SAW-1, at 6, which states, “Finally, given limitations on the availability of these resources, the Companies determined the levels of economic development load they can serve as the optimal resources are placed in service.” Flexible connections are a tool to allow interconnection of load or generation with pre-established rules for curtailing demand/output under certain conditions. Have the Companies evaluated flexible connections as an opportunity to interconnect new economic development loads and data center loads? If yes, please summarize the steps taken to evaluate and the conclusions reached by the Companies. If no, please describe why not.
- A-2.57. No. The Companies have not at this time had any requests from data center projects about flexible connections and have not evaluated flexible connections

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Question No. 2.58

Responding Witness: Daniel Hawk / Elizabeth J. McFarland

Q-2.58. Please provide the power flow models in PSS/E machine-readable, executable format for the system impact studies and facilities studies which resulted in the list of interconnection facilities for each generation option.

- a. Please provide the associated monitored element files (.MON) used for the system impact studies.
- b. Please provide the associated contingent element files (.CON) used for the system impact studies.
- c. Please provide the associated subsystem definition files (.SUB) used for the system impact studies.

A-2.58.

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

The generating unit Brown 12 was submitted to the Independent Transmission Organization (ITO) as Generator Interconnection requests to be evaluated as part of the Companies' initial cluster study (Transitional Cluster Study) under FERC Order 2023. The generating units Mill Creek 6 and Cane Run BESS will be submitted in future cluster studies. Therefore, no System Impact Studies (SIS) or Facilities Studies (FS) have been completed for these options. The Transitional Cluster Study evaluating Brown 12 is scheduled to be completed in late July 2025. Transmission Service Requests ("TSRs") for these generation options have not yet been submitted to the ITO for evaluation, so no TSR SIS, or FS has been completed for these options.

The interconnection facilities for any generation resource connecting to the LG&E and KU transmission system must adhere to the requirements stated in the Facility Interconnection Requirements and Facility Interconnection Studies document posted on OASIS:

(<https://www.oasis.oati.com/woa/docs/LGEE/LGEEdocs/Facility-Interconnection-Requirements-and-Studies.pdf>).

Attachment includes requested files for the transmission study referenced in Section 6.5 (Transmission System Upgrade Costs) of the 2025 CPCN Resource Assessment completed by Generation Planning & Analysis.

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Question No. 2.59

Responding Witness: Daniel Hawk / Elizabeth J. McFarland

- Q-2.59. Please provide the PSS/E output in machine-readable format used to generate the results of the system impact studies.
- A-2.59. See attachment being provided in a separate zip file. The information requested is confidential and proprietary and is being provided under seal pursuant to a petition for confidential protection.

The generating unit Brown 12 was submitted to the Independent Transmission Organization (ITO) as Generator Interconnection requests to be evaluated as part of the Companies' initial cluster study (Transitional Cluster Study) under FERC Order 2023. The generating units Mill Creek 6 and Cane Run BESS will be submitted in future cluster studies. Therefore, no System Impact Studies (SIS) or Facilities Studies (FS) have been completed for these options. The Transitional Cluster Study evaluating Brown 12 is scheduled to be completed in late July 2025.

Transmission Service Requests (TSRs) for these generation options have not yet been submitted to the ITO for evaluation, so no TSR SIS or FS has been completed for these options.

Attachment includes the requested files for the transmission study referenced in Section 6.5 (Transmission System Upgrade Costs) of the 2025 CPCN Resource Assessment completed by Generation Planning & Analysis.

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Question No. 2.60

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

Q-2.60. Have any transmission system upgrades from affected systems been identified?
If so, please provide the following:

- a. Please provide the power flow models in PSS/E machine-readable, executable format for the affected system studies which resulted in the list of network upgrade for each generation option.
- b. Please provide the associated monitored element files (.MON) used for the affected system studies which resulted in the list of network upgrade for each generation option.
- c. Please provide the associated contingent element files (.CON) used for the affected system studies which resulted in the list of network upgrade for each generation option.
- d. Please provide the associated subsystem definition files (.SUB) used for the affected system studies which resulted in the list of network upgrade for each generation option.
- e. Please provide the PSS/E output in machine-readable format used to generate the results of the affected system studies which resulted in the list of network upgrades for each generation option.

A-2.60.

- a. For Brown 12, the Transitional Cluster Study has not been completed, therefore the Companies have not yet been informed if any affected system studies are necessary.

For Mill Creek 6 and Brown BESS, the Companies intend to submit generator interconnection requests and transmission service requests in the fourth quarter of 2025. The Companies will not be informed if any affected

system studies are necessary until after receiving the results of the generator interconnection cluster study that is expected to conclude in the 3rd Quarter of 2026.

- b. See response to part (a).
- c. See response to part (a).
- d. See response to part (a).
- e. See response to part (a).

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Case No. 2025-00045

Question No. 2.61

Responding Witness: Daniel Hawk / Elizabeth J. McFarland

Q-2.61. Please provide the methodology used by the ITO in performing system impact studies and facilities studies.

A-2.61. See the LG&E/KU Transmission Service Request Study Criteria located at https://www.oasis.oati.com/woa/docs/LGEE/LGEEdocs/TSR_Study_Criteria_Document_effective_10-29-2019.pdf.

Section 5 and Section 8 document the System Impact Study and Facilities Study methodology, respectively.

See the LG&E/KU Generator Interconnection Study Criteria located at https://www.oasis.oati.com/woa/docs/LGEE/LGEEdocs/LGE_KU_Generator_Interconnection_Study_Criteria.pdf.

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Question No. 2.62

Responding Witness: Daniel Hawk / Elizabeth J. McFarland

Q-2.62. Please provide the Facility Connection Requirements document that served as the guide for the interconnection facilities for the generation options.

A-2.62. See response to Q-2.58.

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Question No. 2.63

Responding Witness: Daniel Hawk / Elizabeth J. McFarland

Q-2.63. Please provide the language that describes how BESS facilities are studied by the ITO.

A-2.63. See response to Q-2.61.

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Question No. 2.64

Responding Witness: Daniel Hawk / Elizabeth J. McFarland

Q-2.64. Please provide the transmission planning criteria used by the ITO for evaluation of interconnection and transmission service studies.

A-2.64. See response to Q-2.61.

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Question No. 2.65

Responding Witness: Daniel Hawk / Elizabeth J. McFarland

- Q-2.65. Please provide the three most recently approved transmission expansion plans for LG&E/KU.
- A-2.65. See attachments which are being provided in separate files. The information requested is confidential and proprietary and is being provided under seal pursuant to a petition for confidential protection.

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Question No. 2.66

Responding Witness: Stuart A. Wilson

Q-2.66. Please describe how the LOLE is impacted by the configuration of the transmission system. If the transmission system does impact LOLE, please explain how this impact is captured in the LOLE calculation.

A-2.66. The LG&E and KU electric transmission system has interconnection tie-lines with neighboring utilities that allow the company to import and export energy with other companies. In SERVVM, the tool used for calculating LOLE and reserve margins, the following neighboring interconnected regions are modeled:

- MISO-Indiana
- PJM West
- TVA

One constraint of tie-line interchange is the transmission Available Transfer Capacity (ATC). ATC is one of the many inputs modeled in SERVVM. All other things equal, as ATC decreases, LOLE will increase.

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Question No. 2.67

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

- Q-2.67. Please provide the cost and specific facilities breakdown of transmission facilities broken down into: Interconnection Facilities, Network Facilities, and Affected System Facilities for the BESS and generation options.
- A-2.67. These generation options have not yet been completed. Thus, specific cost and facility information about them in the Transitional Cluster Study and Transmission Service Request process is unavailable.

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Question No. 2.68

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

Q-2.68. What is the Companies' philosophy on the use of BESS to impact LOLE?

A-2.68. The Companies' do not have a "philosophy" on using BESS to impact LOLE other than planning for its system impact during charge and discharge cycles. If the system has sufficient energy to charge BESS resources during off-peak periods, then BESS's overall performance will be similar to other available generators as it discharges energy during on-peak periods, affecting LOLE accordingly.

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Question No. 2.69

Responding Witness: Daniel Hawk / Elizabeth J. McFarland

Q-2.69. Please describe the process for including large load additions into the ITO power flow models, including:

- a. When are the load additions included in the power flow models?
- b. When are transmission facilities associated with the load additions included in the power flow models?

A-2.69.

- a. Assuming that the question is referring to the TSR study process, all active or confirmed load addition requests that are prior queued to the TSR request under study are included in the models.
- b. Assuming that the question is referring to the TSR study process, any necessary transmission facilities associated with the load additions are included in the models when the load additions themselves are included.

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Question No. 2.70

Responding Witness: Daniel Hawk / Elizabeth J. McFarland

- Q-2.70. Please provide the application used for load additions to enter the interconnection queue.
- A-2.70. The Companies assume this question refers to the application used to submit Transmission Service Requests for Network Integration Transmission Service. The application can be found on the LG&E/KU OASIS at https://www.oasis.oati.com/woa/docs/LGEE/LGEEdocs/LGEKU_NITS_Application_08-01-24.xlsx

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Question No. 2.71

**Responding Witness: Lonnie E. Bellar / Daniel Hawk / Elizabeth J. McFarland /
David L. Tummonds**

Q-2.71. Please refer to the Companies' response to JI 1.25, and provide:

- a. The interconnection request for Brown 12;
- b. The date the interconnection request for Brown 12 was submitted;
- c. The interconnection requests for Mille Creek 6, and Brown 12, when they are completed;
- d. The average time from submission of interconnection requests by the Companies to final decision.

A-2.71.

- a. See attachment being provided in a separate file.
- b. April 14, 2023
- c. See part "a" for the Brown 12 interconnection request. The Companies anticipate completing the Mill Creek 6 generator interconnection request and submitting it to the ITO late in the fourth quarter 2025.
- d. Brown 12 is part of the FERC Order 2023 Transitional Cluster Study which is scheduled to be completed in late July 2025. Mill Creek 6 will be part of a future Cluster Study which also must comply with FERC Order 2023 deadlines. FERC Order 2023 requires a 45-day Cluster Request Window beginning November 16 of each year (interconnection requests are only accepted during this window), a 60-day Customer Engagement Window, and 150 days for the completion of the Cluster Study itself. An additional 150 days is allowed for a restudy, if required. Following the completion of the Cluster Study, or Cluster Restudy, a Facilities Study may take either 90

or 180 days depending on the level of cost accuracy requested by the Interconnection Customer for the study. After the Facilities Study is completed, there is a 30-day review and comment period before it is considered final. Finally, the Transmission Owner and Interconnection Customer being negotiating the terms of the Generator Interconnection Agreement and then ultimately execute the agreement.

The Transitional Cluster Study is the first study performed under FERC Order 2023 requirements so an average time of completion cannot be provided. Averages based on the prior serial study process are no longer relevant.

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Question No. 2.72

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

Q-2.72. Please refer to the Direct Testimony of Philip A. Imber at 13-15:

- a. Are the Companies' aware of ongoing litigation over the status of the GHG Rule? Please describe the current status of any such litigation.
- b. If the GHG Rule were to remain in place, or if a subsequent administration were to enact a rule with similar restrictions applicable to Brown 12 and Mill Creek 6, how would they comply with such a rule?
- c. If the answer to b., above, is based on capacity or dispatch limitations, what effect would that have on the cost-effectiveness of the chosen resources?

A-2.72.

- a. D.C. Circuit oral argument was held on December 6, 2024. The current EPA requested the litigation be placed in abeyance so the new leadership could "familiarize themselves with the issues and determine how they wish to proceed." On February 19, 2025, the D.C. Circuit granted EPA's unopposed request for a 60-day abeyance. On April 21, 2025, EPA filed another motion requesting a continuing abeyance of the litigation to preserve resources while the Agency reconsiders the final rules, which may "obviate the need for judicial resolution of some or all the disputed issues." On April 25, 2025, the D.C. Circuit granted the unopposed motion, directed the parties to file status reports every 90 days, beginning on July 24, 2025, and directed that motions to govern future proceedings be filed within 30 days after EPA completes its review.
- b. The proposed units will comply with the GHG Rule's phase 1 efficiency standard. The proposed units will likely comply with phase 2 standards by operating as intermediate load units (annual 40% capacity factor limitation). See the 2024 IRP, Volume III, 2024 IRP Resource Assessment, Section 4.4.2.4 Ozone NAAQS + ELG + GHG Environmental Scenario.

- c. The proposed resources will remain cost-effective. See the response to PSC 1-95.

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Question No. 2.73

Responding Witness: Lonnie E. Bellar

Q-2.73. Please refer to the Companies' Response to Staff 1.7, and verify whether [t]he Companies have sufficient space at currently-owned generation properties to construct the additional generation required to serve the noted additional load" after compliance with the 2024 updates to the coal combustion residuals and effluent limitations guidelines rules.

A-2.73. Verified.

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Question No. 2.74

Responding Witness: David L. Tummonds

- Q-2.74. Please refer to the Companies' response to Staff 1.11(a) and state what "queues" the Companies are in for generation work outside the scope of this application.
- A-2.74. As related to new generation, the Companies have executed contracts for supply of batteries for the E.W. Brown BESS, OEM/EPC consortium supply of the Mill Creek 5 NGCC, and the BTA for Marion County Solar. Additionally, the Companies expect to execute the EPC contract for Mercer County Solar in the near future. All these contracts include provisions for materials for which the Companies have positions in a queue being managed by the contract partner.

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Question No. 2.75

Responding Witness: Charles R. Schram / David L. Tummonds

Q-2.75. Please refer to the Companies' response to Staff 1-14 and state:

- a. Is there physical space in the line serving Mill Creek now to accommodate Mill Creek 6, or would it need to be expanded? If expanded, what would the estimated cost be?
- b. Is there physical space in the line serving Brown station now to accommodate Brown 12, or would it need to be expanded? If expanded, what would the estimated cost be?

A-2.75.

- a. See the response to Question No. 17. Furthermore, the lateral line that will connect Mill Creek 5 to the interstate pipeline will have sufficient capacity to accommodate Mill Creek 6.
- b. See the response to Question No. 17. Furthermore, the lateral line currently connecting the E.W. Brown CTs to the interstate pipelines will have sufficient capacity to accommodate Brown 12.

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Question No. 2.76

Responding Witness: John Bevington / Tim A. Jones

Q-2.76. Please refer to the Companies' response to JI 1.5., and state the following:

- a. The Intended peak demand, demand curve, annual energy requirement, and specific location of "Project Shelby"
- b. Have any Data Center projects signed a service agreement?
- c. Confirm no data centers have moved to the "announced" phase.
- d. Has the Company determined whether any of the potential customers have submitted the same project to another utility's economic development queue?
- e. To the extent known, and subject to the confidentiality agreement with Joint intervenors, disclose the identity of all potential customers in the economic development queue.
- f. For each project that is a data center listed in the queue, in addition to the identity, disclose whether it is a developer to lease or an end-user (i.e., a "colocation" project or a "hyperscaler")

A-2.76.

- a. See Exhibit TAJ-2 at "Load_Forecast\Electric_Load_Forecast\Electric\Forecasts\CONFIDENTIAL_Major_Accounts\Analysis\IRP_Scenario_Files\Auto_Manuf_MA_Shaping.xlsx." In the tab "Final_Auto_Manuf," column E is the forecasted hourly energy requirements for "Project Shelby." This data can be used to derive peak demand, demand curve, and the annual energy requirements for the project. Project Shelby is located in Shelby County.

- b. See the response to JI 1-5(b). The Companies do not have any signed contracts for electric service at this time.
- c. See the response to PSC 2-18(b).
- d. See the response to JI 2-8(d).
- e. See PSC 2-17(g). Note many of the Customer Names are noted as “Project” XYZ. The Companies name the Project as such because we are unaware or have not officially been informed of the true end customer.
- f. Unknown and subject to the wants and needs of the individual projects which may be in current negotiations while the Companies are working on the infrastructure aspects of the project.