

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY

In the Matter of:

A REVIEW OF THE ADEQUACY OF)	
KENTUCKY'S GENERATION CAPACITY)	ADMINISTRATIVE
AND TRANSMISSION SYSTEM)	CASE NO. 387

**2025 ANNUAL RESOURCE ASSESSMENT FILING
OF
LOUISVILLE GAS AND ELECTRIC COMPANY
PURSUANT TO APPENDIX G
OF THE COMMISSION'S ORDER
DATED DECEMBER 20, 2001
AS AMENDED BY THE
COMMISSION'S ORDER
DATED MARCH 29, 2004**

FILED: MARCH 31, 2026

VERIFICATION

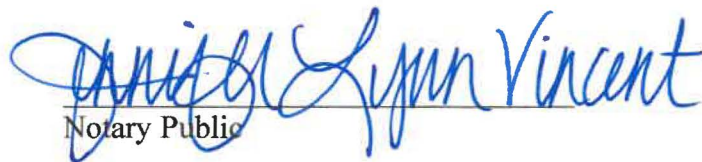
COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

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, 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 9 day of MARCH 2026.



Notary Public

Notary Public ID No. KYNP32193

My Commission Expires:

06-25-2029



LOUISVILLE GAS AND ELECTRIC COMPANY

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ITEM NO. 1

The information originally requested in Item 1 of Appendix G of the Commission's Order dated December 20, 2001, in Administrative Case No. 387, is no longer required pursuant to the Commission's Order of March 29, 2004, amending the previous Order.

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ITEM NO. 2

The information originally requested in Item 2 of Appendix G of the Commission's Order dated December 20, 2001, in Administrative Case No. 387, is no longer required pursuant to the Commission's Order of March 29, 2004, amending the previous Order.

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ITEM NO. 3

RESPONDENT: James R. Frank / Tim A. Jones

3. Actual and weather-normalized monthly coincident peak demands for the just completed calendar year. Demands should be disaggregated into (a) native load demand (firm and non-firm) and (b) off-system demand (firm and non-firm).

Response:

See Table 3, which shows the actual and weather-normalized native Louisville Gas & Electric (LG&E”) peak demands. The normalized native LG&E stand-alone peak demands are available only on a seasonal (summer/winter) basis.

Table 3: LG&E Native and Off-System Demands for 2025 (MW)

Time of Monthly Native Peak	Actual			Normal Weather (Seasonal)	Combined Companies Off-System		
	Native Peak	Non-Firm	Firm	Native Peak	Firm	Non-Firm	Total
1/22/2025 9:00	2,017	0	2,017	1,857	0	229	229
2/20/2025 10:00	1,840	0	1,840		0	713	713
3/6/2025 10:00	1,534	0	1,534		0	5	5
4/29/2025 16:00	1,794	0	1,794		0	0	0
5/15/2025 16:00	2,014	0	2,014		0	0	0
6/25/2025 17:00	2,541	0	2,541		0	0	0
7/28/2025 18:00	2,541	0	2,541		0	0	0
8/19/2025 15:00	2,524	0	2,524	2,564	0	0	0
9/15/2025 17:00	2,132	0	2,132		0	0	0
10/2/2025 17:00	1,873	0	1,873		0	0	0
11/10/2025 19:00	1,515	0	1,515		0	0	0
12/15/2025 9:00	1,862	0	1,862		0	0	0

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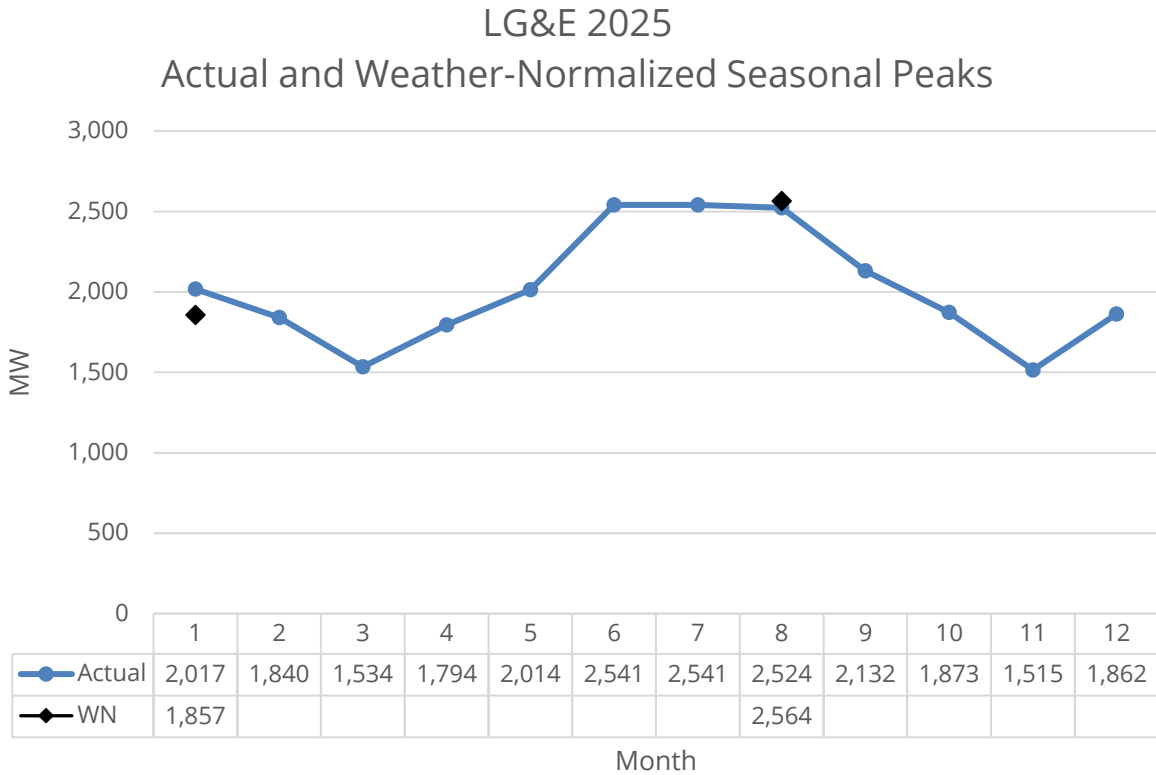
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ITEM NO. 4

RESPONDENT: Tim A. Jones

4. Load shape curves that show actual peak demands and weather-normalized peak demands (native load demand and total demand) on a monthly basis for the just completed calendar year.

Response:



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ITEM NO. 5

The information originally requested in Item 5 of Appendix G of the Commission's Order dated December 20, 2001, in Administrative Case No. 387, is no longer required pursuant to the Commission's Order of March 29, 2004, amending the previous Order.

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ITEM NO. 6

RESPONDENT: James R. Frank / Tim A. Jones

6. Based on the most recent demand forecast, the base case demand and energy forecasts and high case demand and energy forecasts for the current year and the following four years. The information should be disaggregated into (a) native load (firm and non-firm demand) and (b) off-system load (both firm and non-firm demand).

Response:

See the tables below.¹

Table 6a: LG&E Demand and Energy Forecast

	2026	2027	2028	2029	2030
Base Case Energy Sales (GWh)	11,064	12,217	14,509	17,058	19,089
High Case Energy Sales (GWh)	11,064	12,724	16,133	19,340	23,000
Base Case Energy Requirements (GWh)	11,695	12,914	15,273	17,840	19,861
High Case Energy Requirements (GWh)	11,695	13,450	16,983	20,231	23,936
Base Case Native Peak Demand (MW, Summer)	2,560	2,774	3,037	3,402	3,665
High Case Native Peak Demand (MW, Summer)	2,560	2,774	3,173	3,646	4,087

¹ The Base Case reflects only the Economic Development load that the Companies can reliably serve assuming the future approval of the 400 MW Cane Run BESS with commercial operation beginning in 2029. The Base Case also assumes commercial operation of Mill Creek 5 in 2027, Brown 12 in 2030, and the continued operation of Mill Creek Unit 2. The High Case assumes no generation-related constraints.

Table 6b: Combined Companies' Base Case OSS Energy Projection (GWh)

	2026	2027	2028	2029	2030
Existing OSS	0	0	0	0	0
Wholesale OSS	495	608	461	413	350
Total OSS	495	608	461	413	350

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ITEM NO. 7

RESPONDENT: James R. Frank

7. The target reserve margin currently used for planning purposes, stated as a percentage of demand. If changed from what was in use in 2001, include a detailed explanation for the change.

Response:

Since the Companies' 2024 IRP, the target planning reserve margins have been defined based on the margin required to achieve a one day in 10 years ("1-in-10") loss of load expectation (LOLE). In that case, the Companies developed reserve margin targets for resource planning of 29% in the winter and 23% in the summer, based on the 1-in-10 LOLE standard, using a load forecast with less economic development load than current expectations. As demonstrated in the Companies' 2025 CPCN, the reserve margin required to meet the 1-in-10 LOLE standard decreases in winter as high load-factor, weather-insensitive economic development load is incorporated.² Accordingly, the winter reserve margin target is expected to decline modestly over time, approaching approximately 27% as the expected economic development load is realized.

In their 2021 IRP and 2022 CPCN, the Companies used "economic" reserve margins: the reserve margins where the cost of adding new generation is approximately equal to the benefits provided by the new generation. In the 2024 IRP, these economic reserve margins were calculated to be 22% in winter and 17% in summer. However, these economic reserve margins resulted in a LOLE of 4.7 days in 10 years, significantly higher than the 1-in-10 LOLE standard. Based on the Companies' experience in Winter Storm Elliot and the ensuing investigation, the Companies no longer believe planning resources based on economic reserve margins is appropriate. Therefore, starting in the 2024 IRP, the Companies plan their resource portfolio based on reserve margins that satisfy the 1-in-10 LOLE standard.³

² See Case No. 2025-00045 Exhibit SAW-1 Resource Assessment, Section 4.5

³ See Case No. 2024-00326 2024 Joint Integrated Resource Plan of Louisville Gas and Electric Company and Kentucky Utilities Company Volume III, Resource Adequacy Analysis

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ITEM NO. 8

RESPONDENT: James R. Frank

8. Projected reserve margins stated in megawatts and as a percentage of demand for the current year and the following 4 years. Identify projected deficits and current plans for addressing these. For each year identify the level of firm capacity purchases projected to meet native load demand.

Response:

See Tables 8a and 8b for the combined Companies. These tables show for each peak season the dispatchable reserve margin, which excludes renewable and limited-duration resources, and the total reserve margin, which includes all resources using an expected contribution at the time of peak. The peak load forecasts reflect the base load forecast that can be reliably served with the resources approved in Case No. 2022-00402, the resources approved in Case No. 2025-00045, and the addition of Cane Run BESS in March 2029. The projected reserve margins in 2027 and 2030 reflect the 1-in-10 LOLE standard and do not represent capacity deficits, even though the winter reserve margins are lower than the constraint of 29% computed for the 2024 IRP.⁴

⁴ See the response to Item No. 7.

Table 8a: Winter Peak Demand and Resource Summary (MW)⁵

	2026	2027	2028	2029	2030
Peak Load	6,025	6,099	6,367	6,699	7,036
Fully Dispatchable Generation Resources					
Existing Resources	7,614	7,614	7,682	7,682	7,682
Retirements/Additions					
Coal ⁶	0	0	0	-4	-4
Large-Frame SCCTs	0	0	0	0	0
Small-Frame SCCTs ⁷	0	-55	-55	-55	-55
NGCC ⁸	0	0	660	660	660
Total	7,614	7,559	8,287	8,283	8,283
Reserve Margin	1,589	1,460	1,920	1,584	1,247
Reserve Margin %	26.4%	23.9%	30.2%	23.6%	17.7%
Renewable/Limited-Duration Resources					
Existing Resources	72	72	72	72	72
Existing CSR	117	117	117	117	117
Existing Disp. DSM ⁹	60	82	110	124	125
Retirements/Additions					
Solar ¹⁰	0	0	0	0	0
BESS ¹¹	0	0	125	125	457
Dispatchable DSM ⁹	0	0	1	1	1
Total	248	270	424	438	772
Total Supply	7,862	7,829	8,711	8,721	9,055
Total Reserve Margin	1,837	1,731	2,344	2,022	2,019
Total Reserve Margin %	30.5%	28.4%	36.8%	30.2%	28.7%

⁵ The peak load forecast reflects the Base Case load forecast.

⁶ The Ghent 2 SCR is assumed to be in-service in March 2028.

⁷ Due to their age and relative inefficiency, the Companies do not perform major maintenance on their small-frame SCCTs, Paddy's Run Unit 12 and Haefling Units 1-2, but continue to operate them until they are uneconomic to repair. This response assumes they will be retired in 2027 for planning purposes.

⁸ Mill Creek 5 is assumed in-service in June 2027.

⁹ Dispatchable DSM reflects expected load reductions under normal peak weather conditions. New dispatchable DSM reflects 39% capacity contribution.

¹⁰ This response assumes 120 MW of company-owned solar capacity is added in June 2027, and an additional 120 MW of company-owned solar capacity is added in July 2027. Solar capacity values reflect 0% expected contribution to winter peak capacity.

¹¹ Brown BESS is assumed in-service in February 2027. Cane Run BESS is assumed in-service in March 2029 and reflects 83% capacity contribution.

Table 8b: Summer Peak Demand and Resource Summary (MW)¹²

	2026	2027	2028	2029	2030
Peak Load	6,100	6,308	6,564	7,066	7,453
Fully Dispatchable Generation Resources					
Existing Resources	7,312	7,312	7,318	7,318	7,318
Retirements/Additions					
Coal ¹³	0	0	-4	-4	-4
Large-Frame SCCTs	0	0	0	0	0
Small-Frame SCCTs ¹⁴	0	-47	-47	-47	-47
NGCC ¹⁵	0	645	645	645	1,290
Total	7,312	7,910	7,912	7,912	8,557
Reserve Margin	1,212	1,602	1,348	846	1,104
Reserve Margin %	19.9%	25.4%	20.5%	12.0%	14.8%
Renewable/Limited-Duration Resources					
Existing Resources	106	107	107	107	107
Existing CSR	107	107	107	107	107
Existing Disp. DSM ¹⁶	97	119	150	166	170
Retirements/Additions					
Solar ¹⁷	0	201	201	201	201
BESS ¹⁸	0	125	125	457	457
Dispatchable DSM ⁹	0	0	1	1	1
Total	309	659	689	1,038	1,042
Total Supply	7,621	8,569	8,601	8,950	9,599
Total Reserve Margin	1,522	2,260	2,037	1,884	2,146
Total Reserve Margin %	24.9%	35.8%	31.0%	26.7%	28.8%

¹² The peak load forecast reflects the Base Case load forecast.

¹³ The Ghent 2 SCR is assumed to be in-service in March 2028.

¹⁴ Due to their age and relative inefficiency, the Companies do not perform major maintenance on their small-frame SCCTs, Paddy's Run Unit 12 and Haefling Units 1-2, but continue to operate them until they are uneconomic to repair. This response assumes they will be retired in 2027 for planning purposes.

¹⁵ Mill Creek 5 is assumed in-service in June 2027. Brown 12 is assumed in-service in June 2030.

¹⁶ Dispatchable DSM reflects expected load reductions under normal peak weather conditions. New dispatchable DSM reflects 39% capacity contribution.

¹⁷ This response assumes 120 MW of company-owned solar capacity is added in June 2027, and an additional 120 MW of company-owned solar capacity is added in July 2027. Solar capacity values reflect 83.7% expected contribution to summer peak capacity.

¹⁸ Brown BESS is assumed in-service in February 2027. Cane Run BESS is assumed in-service in March 2029 and reflects 83% capacity contribution.

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ITEM NO. 9

The information originally requested in Item 9 of Appendix G of the Commission's Order dated December 20, 2001, in Administrative Case No. 387, is no longer required pursuant to the Commission's Order of March 29, 2004, amending the previous Order.

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ITEM NO. 10

The information originally requested in Item 10 of Appendix G of the Commission's Order dated December 20, 2001, in Administrative Case No. 387, is no longer required pursuant to the Commission's Order of March 29, 2004, amending the previous Order.

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ITEM NO. 11

RESPONDENT: James R. Frank

11. A list that identifies scheduled outages or retirements of generating capacity during the current year and the following four years.

Response:

See attachment being provided in a separate file. The planned maintenance outage schedule for 2026 through 2030 is confidential and proprietary and is being provided under seal pursuant to a petition for confidential protection. The schedule is regularly modified based on actual operating conditions, forced outages, changes in the schedule required to meet environmental compliance regulations, fluctuations in wholesale prices, and other unforeseen events.

LG&E's only retirement assumed in the following four years is Paddy's Run 12 in 2027.

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ITEM NO. 12

RESPONDENT: James R. Frank

12. Identify all planned base load or peaking capacity additions to meet native load requirements over the next 10 years. Show the expected in-service date, size and site for all planned additions. Include additions planned by the utility, as well as those by affiliates, if constructed in Kentucky or intended to meet load in Kentucky.

Response:

The Companies jointly plan their generation portfolio.

The Companies received approval in Case No. 2022-00402 to build, own, and operate a mix of natural gas combined cycle (“NGCC”), solar, and battery storage over the next 10 years. The following is a summary of these projects:

- 125 MW battery energy storage system (BESS) in Mercer County anticipated to be in service in 2027. This battery will be fully owned by LG&E but will serve native load energy requirements for both LG&E and KU.
- 120 MW solar facility in Mercer County anticipated to be in service in 2027.
- 645 MW NGCC unit in Jefferson County (“Mill Creek 5”) anticipated to be in service in 2027.
- 120 MW solar facility in Marion County anticipated to be in service in 2027.

Also, the Companies received approval in Case No. 2025-00045 to build, own, and operate additional two additional NGCCs:

- 645 MW NGCC unit in Mercer County (“Brown Unit 12”) anticipated to be in service in 2030. This unit is currently expected to be fully owned by LG&E but will serve native load energy requirements for both LG&E and KU.
- 645 MW NGCC unit in Jefferson County (“Mill Creek 6”) anticipated to be in service in 2031. This unit is currently expected to be fully owned by LG&E but will serve native load energy requirements for both LG&E and KU.

Finally, the Companies requested approval in Case No. 2025-00045 to build, own, and operate a 400 MW / 1,600 MWh BESS in Jefferson County. That request was

withdrawn without prejudice as part of the negotiated stipulation in that case. For planning purposes, that BESS is now assumed to be in service in 2029.

In Case No. 2022-00402, the Companies received approval to enter into four solar PPAs in Kentucky. Prior to that, the Companies entered into two solar PPAs as part of the Green Tariff Option 3. Of the six solar PPAs, three have been terminated, and the remaining three appear unlikely to proceed under their approved terms.

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ITEM NO. 13

RESPONDENT: Ashley Vinson

13. The following transmission energy data for the just completed calendar year and the forecast for the current year and the following four years:
- a. Total energy received from all interconnections and generation sources connected to the transmission system.
 - b. Total energy delivered to all interconnections on the transmission system.
 - c. Peak load capacity of the transmission system.
 - d. Peak demand for summer and winter seasons on the transmission system.

Response:

Data exists for 2025. The Company does not forecast this type of data; therefore, no forecast exists for 2026-2030.

- a. LG&E and KU operate as a single NERC Balancing Area that contains several generators not owned by LG&E and KU, which are also included as sources below:

Tie Lines Received (MWH)	20,858,954
Net Generation-LG&E (MWH)	13,305,067
Net Generation-KU (MWH)	20,720,695
Net Generation-KYMEA (MWH)	377
Net Generation-KMPA (MWH)	132,885
Net Generation-EKPC (MWH)	<u>220,570</u>
Total Sources (MWH)	55,238,548

- b. LG&E and KU operate as a single Balancing Area; the amount of energy delivered at the interconnections of the single Balancing Area was 18,898,083 MWH(s).

- c. There is no set number for peak load capacity for the transmission system. The system is built to support Network Service and long-term firm Point-to-Point customers in accordance with the LG&E/KU Transmission Planning Guidelines. Actual transmission capacity available for Network Customers, import, export or thru flow will vary depending on which facilities (generation, load or transmission) in the interconnected transmission system of the eastern interconnect are connected and operated at any given time.
- d. The maximum summer peak transmission load for the combined LG&E/KU transmission system was 7,430 MW for the peak hour of 7/28/2025 at 5:00 p.m.

The maximum winter peak transmission load for the combined LG&E/KU transmission system was 7,985 MW for the peak hour of 1/22/2025 at 9:00 a.m.

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ITEM NO. 14

RESPONDENT: Josh Boone

14. Identify all planned transmission capacity additions for the next 10 years. Include the expected in-service date, size and site for all planned additions and identify the transmission need each addition is intended to address.

Response:

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.