a PPL company

Louisville Gas and
Electric Company
State Regulation and Rates
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PO Box 32010
Louisville, Kentucky 40232
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Derek A. Rahn
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Jeff D. Cline, Manager – Annual Report Branch
Public Service Commission of Kentucky
Division of Filings
211 Sower Boulevard
P.O. Box 615
Frankfort, Kentucky 40602-0615

March 29, 2019

Re: Annual Resource Assessment Filing for Louisville Gas and Electric Company Pursuant to Administrative Case No. 387

Dear Mr. Cline:

Enclosed, in accordance with Ordering Paragraph (2) of the Commission's Order in Administrative Case 387, dated October 7, 2005, are an original and ten (10) copies of the 2018 Annual Resource Assessment Filing for Louisville Gas and Electric Company, along with a Petition for Confidential Protection regarding certain information provided in response to Item Nos. 11 and 14.

Additionally, in response to your letter dated May 31, 2013, which requested a discussion regarding the consideration given to price elasticity in the forecasted demand, energy, and reserve margin information submitted with the annual Administrative Case No. 2000-387 resource assessments. The discussion is provided following Item No. 14.

Sincerely,

Derek A. Rahn

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

RECEIVED
MAR 29 2019
PUBLIC SERVICE COMMISSION

In the Matter of:

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

PETITION OF
LOUISVILLE GAS AND ELECTRIC COMPANY
FOR CONFIDENTIAL PROTECTION

Louisville Gas and Electric Company ("LG&E") petitions the Public Service Commission of Kentucky ("Commission") pursuant to 807 KAR 5:001, Section 13, to grant confidential protection to certain planning-related information it is required to submit in connection with its annual report. In support of this Petition, LG&E states as follows:

1. By Order of December 20, 2001, in *In the Matter of: A Review of the Adequacy of Kentucky's Generation Capacity and Transmission System,* Administrative Case No. 387, the Commission established findings regarding the adequacy of Kentucky's generation capacity and transmission system. In an effort to continue monitoring these issues, however, the Commission ordered Kentucky's six major jurisdictional electric utilities to file annually certain planning-related information, as defined in Appendix G to its Order, and as amended in its subsequent Order dated March 29, 2004. By Order of October 7, 2005, the Commission closed Administrative Case No. 387, but required jurisdictional utilities to continue to submit such information as a supplement to their annual report (such annual report being the FERC Form No. 1).

2. Simultaneous with the filing of this Petition, LG&E is filing its annual report including the planning-related information required by Appendix G to the Commission's

December 20, 2001 Order. LG&E's response to Item No. 14 of Appendix G regarding the need for transmission capacity additions contains confidential information the disclosure of which has a reasonable likelihood of threatening public safety. Additionally, LG&E's response to Item No. 11 of Appendix G regarding scheduled outages or retirements of generating capacity contains confidential commercial information the disclosure of which would cause LG&E competitive injury. Therefore, LG&E's responses to Item Nos. 11 and 14 are being submitted with this request for confidential treatment.

Transmission Capacity Additions

3. Pursuant to Item No. 14 of Appendix G to the Commission's December 20, 2001 Order in Administrative Case No. 387, jurisdictional electric utilities must file annually all planned transmission capacity additions for the 10 years following such filing including such facility's expected in-service date, size and site, as well as, identify the transmission need each addition is intended to address.

4. On June 20, 2005, the Kentucky General Assembly amended the Kentucky Open Records Act to protect from disclosure certain information that has a reasonable likelihood of threatening public safety by exposing a vulnerability "in preventing, protecting against, mitigating, or responding to a terrorist act." KRS 61.878(1)(m). This includes infrastructure records exposing such a vulnerability in the location, configuration, or security of critical systems, including electrical systems. KRS 61.878(1)(m)(1)(f).

5. The information provided in response to Item No. 14 reveals information regarding LG&E's transmission capacity additions and the need that such additions are intended to address. If such information is made available in the public record, individuals seeking to induce public harm will have critical information concerning the present vulnerabilities of

LG&E's transmission system. Knowledge of such vulnerabilities may allow such a person to cause public harm through the disruption of the electric transmission system. Because LG&E's response to Item No. 14 regards planned transmission capacity additions for the next ten years, LG&E requests the information contained in response to Item No. 14 be afforded confidential protection for a period of ten years.

6. The information contained in response to Item No. 14 for which LG&E is seeking confidential treatment is not known outside of LG&E, and it is not disseminated within LG&E except to those employees with a legitimate business need to know and act upon the information.

Scheduled Outages

7. Pursuant to Item No. 11 of Appendix G to the Commission's December 20, 2001 Order in Administrative Case No. 387, jurisdictional electric utilities also must file annually information concerning scheduled outages or retirements of generating capacity.

8. The Kentucky Open Records Act protects commercial information, generally recognized as confidential or proprietary, if its public disclosure would cause competitive injury to the disclosing entity. KRS 61.878(1)(c). Competitive injury occurs when disclosure of the information would give competitors an unfair business advantage. The information contained in the response to Item No. 11 contains such competitive and proprietary information, and is therefore being submitted with this request for confidential treatment.

9. LG&E's response to Item No. 11 regarding scheduled maintenance outages and retirements of generation capacity contains sensitive commercial information, the disclosure of which would unfairly advantage LG&E's competitors for wholesale power sales. This information would allow competitors of LG&E to know when LG&E's generating plants will be down for maintenance and thus know a crucial input into LG&E's generating costs and need for

power and energy during those periods. The commercial risk of the disclosure of this information is that potential suppliers will be able to manipulate the price of power bid to LG&E in order to maximize their revenues, thereby causing higher prices for LG&E's customers and giving a commercial advantage to LG&E's competitors.

10. Further, disclosure of this information will damage LG&E's competitive position and business interests. The information provided in response to Item No. 11 regarding scheduled outages is highly sensitive information that, if made public, would enable prospective purchasers of LG&E's power supply to manipulate the bidding process to the detriment of LG&E. Thus, disclosure of this information may detrimentally impact LG&E's ability to contract for off-system sales during the same time period. Any impairment of LG&E's ability to obtain fair prices for its power supply will decrease the price LG&E is paid for its power supply. As a result, LG&E will not get the same quality of offers that would be produced by a system protected by the confidentiality employed by unregulated business and LG&E will not be able to compete effectively for off-system sales. Because LG&E's response to Item No. 11 regards scheduled outages or retirements of generating capacity during the current year and the following four years, LG&E requests the information contained in response to Item No. 11 be afforded confidential protection for a period of five years.

11. The information contained in response to Item No. 11 of the Commission's Order for which LG&E is seeking confidential treatment is not known outside of LG&E, and it is not disseminated within LG&E except to those employees with a legitimate business need to know and act upon the information. This information is not on file with the Federal Energy Regulatory Commission, the Securities and Exchange Commission or other public agencies, and is not available from any commercial or other source outside of LG&E.

12. The information contained in response to Item No. 11 and for which LG&E is seeking confidential protection is identical in nature to that provided to the Commission in response to the Commission's requests for information in Case No. 2000-497 and previously in this proceeding. The Commission granted confidential protection to LG&E's planned maintenance schedule for each of LG&E's generating units.

13. The information provided in response to Item Nos. 11 and 14 of Appendix G to the Commission's December 20, 2001 Order demonstrates on its face that it merits confidential protection. If the Commission disagrees, however, it must hold an evidentiary hearing to protect the due process rights of LG&E and supply the Commission with a complete record to enable it to reach a decision with regard to this matter. *Utility Regulatory Commission v. Kentucky Water Service Company, Inc.*, Ky. App., 642 S.W.2d 591, 592-94 (1982).

14. LG&E does not object to disclosure of the confidential information, pursuant to a protective agreement, to intervenors with a legitimate interest in reviewing the confidential information for the purpose of assisting the Commission's review in this proceeding.

15. In accordance with the provisions of 807 KAR 5:001 Section 13, one copy of LG&E's response to the Commission's request with the confidential information highlighted and ten (10) copies of LG&E's response without the confidential information is herewith filed with the Commission.

WHEREFORE, Louisville Gas and Electric Company respectfully requests that the Commission grant confidential protection, or in the alternative, schedule an evidentiary hearing on all factual issues.

Dated: March 29, 2019

Respectfully submitted,

Allyson K. Sturgeon

Allyson K. Sturgeon
Managing Senior Counsel Regulatory and Transactions
LG&E and KU Services Company
220 West Main Street
Louisville, Kentucky 40202
Telephone: (502) 627-2088
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allyson.sturgeon@lge-ku.com

Counsel for Louisville Gas and Electric Company

RECEIVED

MAR 29 2019

PUBLIC SERVICE COMMISSION

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**

2018 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 29, 2019

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

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

Stuart A. Wilson

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 26th day of March 2019.

Judy Schooler (SEAL)
Notary Public

My Commission Expires:
Judy Schooler
Notary Public, ID No. 603967
State at Large, Kentucky
Commission Expires 7/11/2022

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

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

Michael S. Sebourn

Michael S. Sebourn

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 20th day of March 2019.

Judy Schooler (SEAL)
Notary Public

My Commission Expires:
Judy Schooler
Notary Public, ID No. 603967
State at Large, Kentucky
Commission Expires 7/11/2022

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Ashley M. Vinson**, being duly sworn, deposes and says that she is Manager – Transmission Policy and Tariffs 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.

Ashley Vinson
Ashley M. Vinson

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 19th day of March 2019.

Judy Schooler (SEAL)
Notary Public

My Commission Expires:
Judy Schooler
Notary Public, ID No. 603967
State at Large, Kentucky
Commission Expires 7/11/2022

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Delyn Kilpack**, being duly sworn, deposes and says that she is Manager – Transmission Strategy and Planning 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.

Delyn Kilpack

Delyn Kilpack

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 19th day of March 2019.

Judy Schooler (SEAL)
Notary Public

My Commission Expires:
Judy Schooler
Notary Public, ID No. 603967
State at Large, Kentucky
Commission Expires 7/11/2022

LOUISVILLE GAS AND ELECTRIC COMPANY

**2018 ANNUAL RESOURCE ASSESSMENT FILING
PURSUANT TO APPENDIX G OF THE COMMISSION'S ORDER
DATED DECEMBER 20, 2001, IN ADMINISTRATIVE CASE NO. 387
AS AMENDED BY THE COMMISSION'S ORDER DATED MARCH 29, 2004
FILED MARCH 29, 2019**

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.

LOUISVILLE GAS AND ELECTRIC COMPANY

2018 ANNUAL RESOURCE ASSESSMENT FILING
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FILED MARCH 29, 2019

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.

LOUISVILLE GAS AND ELECTRIC COMPANY

2018 ANNUAL RESOURCE ASSESSMENT FILING
PURSUANT TO APPENDIX G OF THE COMMISSION'S ORDER
DATED DECEMBER 20, 2001, IN ADMINISTRATIVE CASE NO. 387
AS AMENDED BY THE COMMISSION'S ORDER DATED MARCH 29, 2004
FILED MARCH 29, 2019

ITEM NO. 3

RESPONDENT: Stuart Wilson / Michael Sebourn

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

TABLE LGE-3
NATIVE AND OFF-SYSTEM DEMANDS BY MONTH FOR 2018

Louisville Gas & Electric Co.

	Actual			Normal Weather (Seasonal)	Off-System (1)		
Time of Monthly Native Peak	Native Peak	Non-Firm	Firm	Native Peak	Firm	Non-Firm	Total
1/2/2018 9:00	1,909	0	1,909	1,861	0	41	41
2/2/2018 10:00	1,695	0	1,695		0	101	101
3/21/2018 12:00	1,570	0	1,570		0	24	24
4/16/2018 20:00	1,499	0	1,499		0	4	4
5/15/2018 16:00	2,315	0	2,315		0	1	1
6/18/2018 16:00	2,548	0	2,548		0	1	1
7/5/2018 15:00	2,618	0	2,618	2,599	0	125	125
8/28/2018 16:00	2,500	0	2,500		0	25	25
9/20/2018 16:00	2,486	0	2,486		0	166	166
10/5/2018 15:00	2,210	0	2,210		0	150	150
11/27/2018 19:00	1,748	0	1,748		0	0	0
12/11/2018 8:00	1,694	0	1,694		0	0	0

Notes

(1) The allocation of off-system sales split between LG&E and KU is handled in the After-the-Fact Billing process in accordance with the Power Supply System Agreement between LG&E and KU. The individual company sales will include an allocation of the sales sourced with purchased power and allocated to the individual company based on each company's contribution to off-system sales.

LOUISVILLE GAS AND ELECTRIC COMPANY

2018 ANNUAL RESOURCE ASSESSMENT FILING
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AS AMENDED BY THE COMMISSION'S ORDER DATED MARCH 29, 2004
FILED MARCH 29, 2019

ITEM NO. 4

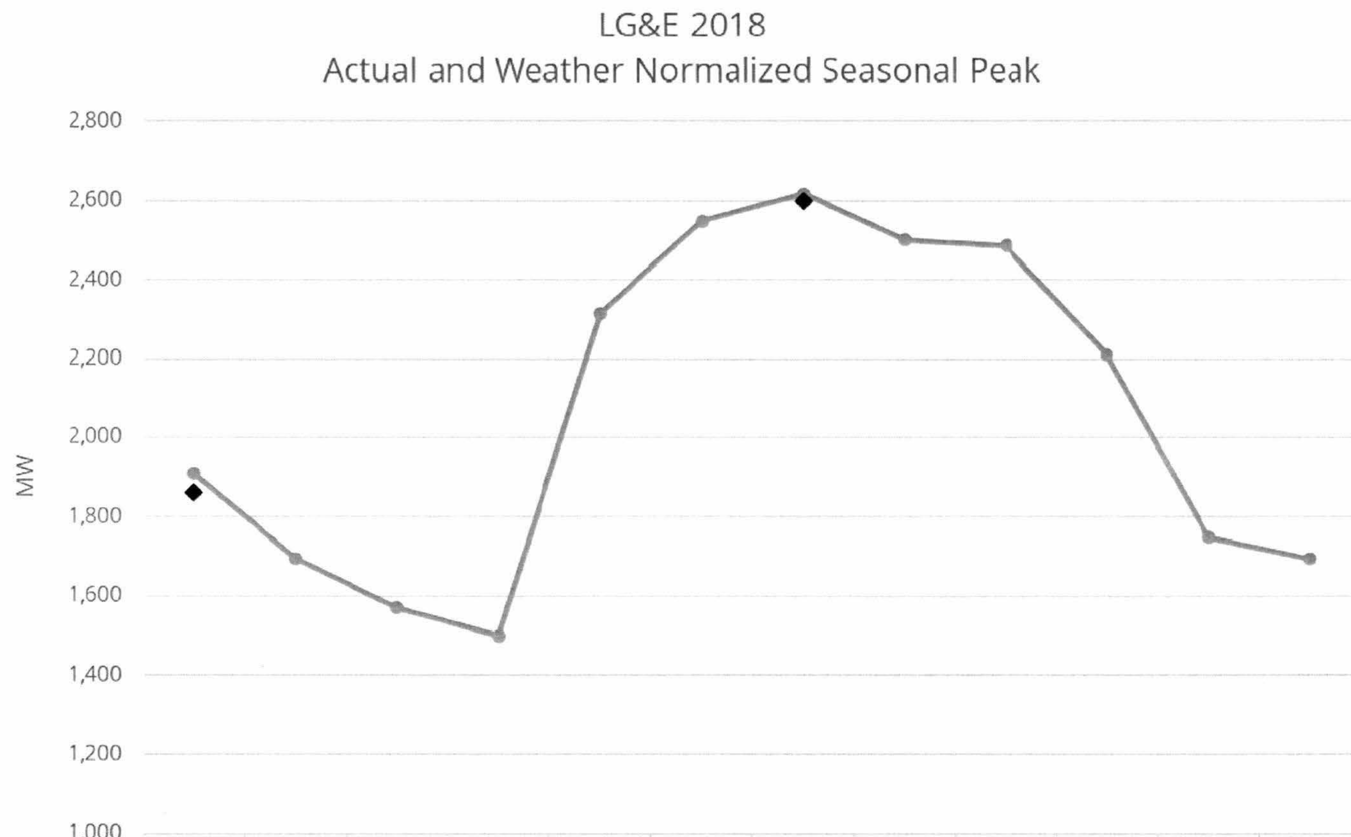
RESPONDENT: Stuart Wilson

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:

See attached Figure LGE-4.

Figure LGE-4



	1	2	3	4	5	6	7	8	9	10	11	12
Actual	1,909	1,695	1,570	1,499	2,315	2,548	2,618	2,500	2,486	2,210	1,748	1,694
WN	1,861						2,599					

Month

LOUISVILLE GAS AND ELECTRIC COMPANY

2018 ANNUAL RESOURCE ASSESSMENT FILING
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FILED MARCH 29, 2019

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.

LOUISVILLE GAS AND ELECTRIC COMPANY

2018 ANNUAL RESOURCE ASSESSMENT FILING
PURSUANT TO APPENDIX G OF THE COMMISSION'S ORDER
DATED DECEMBER 20, 2001, IN ADMINISTRATIVE CASE NO. 387
AS AMENDED BY THE COMMISSION'S ORDER DATED MARCH 29, 2004
FILED MARCH 29, 2019

ITEM NO. 6

RESPONDENT: Stuart Wilson / Michael Sebourn

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:

a) See attached Table LGE-6a. The values in Table LGE-6a reflect the impact of the Companies' Energy Efficiency programs.

b) Off-system sales ("OSS") projections for 2019-2023 contained in the attached Table LGE-6b are based on the combined Companies' current plan. For OSS, only base case total sales energy projections exist for 2019-2023. The projections consist of the expected market sales, denoted as "Wholesale OSS." All OSS are non-firm.

Table LGE-6a
Louisville Gas & Electric
Demand and Energy Forecasts

	2019	2020	2021	2022	2023
Base Case Energy Sales (GWh)	11,644	11,652	11,634	11,638	11,647
High Case Energy Sales (GWh)	11,751	11,801	11,831	11,887	11,955
Base Case Energy Requirements (GWh)	12,363	12,372	12,353	12,357	12,366
High Case Energy Requirements (GWh)	12,477	12,530	12,561	12,622	12,694
Base Case Native Peak Demand (MW)	2,680	2,682	2,687	2,703	2,682
High Case Native Peak Demand (MW)	2,688	2,696	2,705	2,718	2,732

Table LGE-6b
Combined Companies
Total Base Case Off-System Sales Energy Projection

	2019	2020	2021	2022	2023
Existing OSS (GWh)	0	0	0	0	0
Wholesale OSS (GWh)	260	263	445	540	777
Total OSS (GWh)	260	263	445	540	777

LOUISVILLE GAS AND ELECTRIC COMPANY

2018 ANNUAL RESOURCE ASSESSMENT FILING PURSUANT TO APPENDIX G OF THE COMMISSION'S ORDER DATED DECEMBER 20, 2001, IN ADMINISTRATIVE CASE NO. 387 AS AMENDED BY THE COMMISSION'S ORDER DATED MARCH 29, 2004 FILED MARCH 29, 2019

ITEM NO. 7

RESPONDENT: Michael Sebourn

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:

As part of the 2018 Integrated Resource Plan ("2018 IRP"), the Companies established an optimal reserve margin range of 17% to 25%. The range provides an optimum level of reliability through various system operating conditions. The 2018 IRP was filed with the Commission in November 2018.

A detailed explanation of the current target reserve margin is documented in the report titled, "2018 IRP Reserve Margin Analysis," included in Volume III of the Companies' 2018 IRP.

LOUISVILLE GAS AND ELECTRIC COMPANY

2018 ANNUAL RESOURCE ASSESSMENT FILING
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ITEM NO. 8

RESPONDENT: Michael Sebourn

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 attached Table LGE-8. The Companies will monitor load requirements and evaluate supply alternatives to address future capacity deficits.

Table LGE-8
Combined Companies
Reserve Margin Needs (MW)

	2019	2020	2021	2022	2023
Peak Load	6,703	6,688	6,674	6,657	6,653
DSM at Peak Hour	-343	-327	-323	-320	-316
Net Load*	6,360	6,361	6,350	6,338	6,338
Existing Capability	7,563	7,563	7,549	7,550	7,550
OVEC Purchase	152	152	152	152	152
CSR/Interrupt	141	141	141	141	141
Total Supply	7,856	7,856	7,842	7,843	7,843
MW Margin	1,495	1,495	1,491	1,505	1,505
Reserve Margin %	23.5%	23.5%	23.5%	23.7%	23.7%
Capacity Need for 17%	(414)	(414)	(412)	(427)	(428)
*Sum of individual values may not match totals due to rounding.					

LOUISVILLE GAS AND ELECTRIC COMPANY

2018 ANNUAL RESOURCE ASSESSMENT FILING
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FILED MARCH 29, 2019

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.

LOUISVILLE GAS AND ELECTRIC COMPANY

2018 ANNUAL RESOURCE ASSESSMENT FILING
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FILED MARCH 29, 2019

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.

LOUISVILLE GAS AND ELECTRIC COMPANY

2018 ANNUAL RESOURCE ASSESSMENT FILING
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FILED MARCH 29, 2019

ITEM NO. 11

RESPONDENT: Michael Sebourn

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

Response:

The planned maintenance outage schedule for 2019 through 2023 is being provided 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.

LOUISVILLE GAS AND ELECTRIC COMPANY

2018 ANNUAL RESOURCE ASSESSMENT FILING
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FILED MARCH 29, 2019

ITEM NO. 12

RESPONDENT: Michael Sebourn

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. LG&E and KU do not currently forecast a need for additional generating capacity in the next 10 years.

LOUISVILLE GAS AND ELECTRIC COMPANY

**2018 ANNUAL RESOURCE ASSESSMENT FILING
PURSUANT TO APPENDIX G OF THE COMMISSION'S ORDER
DATED DECEMBER 20, 2001, IN ADMINISTRATIVE CASE NO. 387
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FILED MARCH 29, 2019**

ITEM NO. 13

RESPONDENT: Ashley Moore

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 2018. The Company does not forecast this type of data; therefore no forecast exists for 2018-2021.

a. LG&E and KU operate as a single NERC Balancing Area that contains several generators not owned by LG&E and KU; the non-Company owned facilities are also included as sources below:

Tie Lines Received (MWH)	20,327,764
Net Generation-LG&E (MWH)	14,818,734
Net Generation-KU (MWH)	21,802,811
Net Received from OMU (MWH)	2,213,348
Net Generation-KMPA (MWH)	44,269
Net Generation-EKPC (MWH)	111,769
Total Sources (MWH)	59,318,695

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 22,514,517 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 firm PTP 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 7,336 MW for the peak hour of 7/05/18 at 3PM.

   The maximum winter peak transmission load for the combined LG&E/KU transmission system was 7,602 MW for the peak hour of 01/02/18 at 9AM.

LOUISVILLE GAS AND ELECTRIC COMPANY

2018 ANNUAL RESOURCE ASSESSMENT FILING
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AS AMENDED BY THE COMMISSION'S ORDER DATED MARCH 29, 2004
FILED MARCH 29, 2019

ITEM NO. 14

RESPONDENT: Delyn Kilpack

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:

The requested information is being provided pursuant to a Petition for Confidential Protection.

Discussion Regarding the Consideration Given to Price Elasticity in the Forecasted Demand, Energy and Reserve Margin Information Provided with Annual Resource Assessment Filings 2019

Price elasticity of demand is a direct input into the Louisville Gas and Electric Company and Kentucky Utilities Company (collectively "the Companies") Residential and General Service (small commercial) forecast models. These models use Itron's Statistically Adjusted End Use ("SAE") Models. The elasticity coefficients used in the SAE models are applicable to shorter-term forecasting (up to 10 years). Over the longer-term, the implied elasticity estimate increases (in absolute value) in the SAE models due to assumed improvements in the efficiencies and saturations of appliances and other equipment to appropriately adjust demand.

In developing the elasticity coefficients, the Companies have consulted multiple sources to better understand how customers respond to electricity prices. These sources include ITRON, available studies[1], and our small commercial customers. The Companies' price elasticity of demand coefficients are consistent with the ranges cited in the studies. Sources do not indicate any recent change in customer response to electricity prices but the Companies continue to monitor new research and data. Specifically, EPRI research states that the "effect of including recent information covering a period of rising prices appears to be minimal."

Currently, the Companies use an elasticity coefficient of -0.1 for the Residential forecast. Below, the residential price elasticity of demand is applied in a simple example to determine the impact on customer usage for a hypothetical customer, price, and price increase.

Inputs
Electricity Price: $0.08/kWh
Monthly customer usage: 1,000 kWh
Price increase: 5%
Price Elasticity of demand: -0.1

Formula
(price elasticity of demand) = (% change in quantity demanded) / (% change in price)
Restated as:
(% change in quantity demanded) = (% change in price) x (price elasticity of demand)

Results
Completing the equation based on the inputs above:

[1] "Regional Differences in the Price-Elasticity of Demand for Energy" by M.A. Bernstein and J. Griffin, RAND Corporation for NREL (2006); "Price Responsiveness in the AEO2003 NEMS Residential and Commercial Buildings Sector Models" by S. Wade, Energy Information Administration (2005); "Price Elasticity of Demand for Electricity: A Primer and Synthesis" by B. Neenan, EPRI (2007) ; "Trends in Regional U.S. Electricity and Natural Gas Price Elasticity" by V. Niemeyer, EPRI (2010); "A Global Survey of Electricity Demand Elasticities" by C. Dahl was presented at the 34th IAEE International Conference: Institutions, Efficiency, and Evolving Energy Technologies in June 2011 at the Stockholm School of Economics in Sweden.

(% change in quantity demanded) = (.05) x (-0.1) = -0.005 = -0.5%
Therefore, the revised monthly customer usage is 0.5% less than 1,000 kWh, or 995 kWh per month.

For small commercial customers, the Companies currently use a price elasticity of demand of -0.05. The Companies' discussions with small commercial customers indicate that these customers will attempt to pass along higher costs for electricity in the price of their goods and services. These customers typically noted that they have few options for changing their use of energy after upgrading lighting and climate control to increase efficiency.

The Companies' forecasts for Large Commercial and Industrial customers also consider how customers respond to energy prices, but these forecasts do not use the SAE models to incorporate explicit price elasticity of demand coefficients. Instead, the Companies' forecast the largest customers' energy and demand on an individual basis and use specific industry indices for others. Recognizing that customers may respond to price through efficiency measures or other operational changes, these individual forecasts and indices inherently reflect the expected changes in customers' energy use due to economic inputs, including the price of electricity. The Companies recognize that larger commercial and industrial customers may not display a smooth reduction in usage as prices rise. Over the longer-term, in extreme cases, some large energy intensive customers may even cease operations or relocate upon reaching certain energy price points.