

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF)	
LOUISVILLE GAS AND ELECTRIC COMPANY)	
FOR AN ADJUSTMENT OF ITS ELECTRIC)	
AND GAS RATES, A CERTIFICATE OF)	
PUBLIC CONVENIENCE AND NECESSITY TO)	CASE NO. 2020-00350
DEPLOY ADVANCED METERING)	
INFRASTRUCTURE, APPROVAL OF CERTAIN)	
REGULATORY AND ACCOUNTING)	
TREATMENTS, AND ESTABLISHMENT OF A)	
ONE-YEAR SURCREDIT)	

RESPONSE OF
LOUISVILLE GAS AND ELECTRIC COMPANY
TO
METROPOLITAN HOUSING COALITION,
KENTUCKIANS FOR THE COMMONWEALTH, AND
KENTUCKY SOLAR ENERGY SOCIETY'S
FIRST SET OF DATA REQUESTS
DATED JANUARY 8, 2021

FILED: JANUARY 22, 2021

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Daniel K. Arbough**, being duly sworn, deposes and says that he is Treasurer 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 K. Arbough

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 18th day of January 2021.


Notary Public

Notary Public ID No. 603967

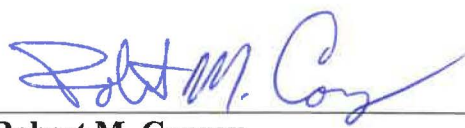
My Commission Expires:

July 11, 2022

VERIFICATION


COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

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



Robert M. Conroy

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 30th day of January 2021.



Notary Public
Notary Public ID No. 603967

My Commission Expires:

July 11, 2022

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Christopher M. Garrett**, being duly sworn, deposes and says that he is Controller 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.

DocuSigned by:
Christopher M. Garrett
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Christopher M. Garrett

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 18th day of January 2021.

Judy Schooner
Notary Public
Notary Public ID No. 603967

My Commission Expires:

July 11, 2022


VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Gregory J. Meiman**, being duly sworn, deposes and says that he is Vice President, Human Resources 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.


Gregory J. Meiman

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 21st day of January 2021.


Notary Public

Notary Public ID No. 603967

My Commission Expires:

July 11, 2022

VERIFICATION


COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Eileen L. Saunders**, being duly sworn, deposes and says that she is Vice President, Customer Services for Louisville Gas and Electric Company and Kentucky Utilities Company and an employee of 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.



Eileen L. Saunders

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 20th day of January 2021.



Notary Public
Notary Public ID No. KVNP 4577

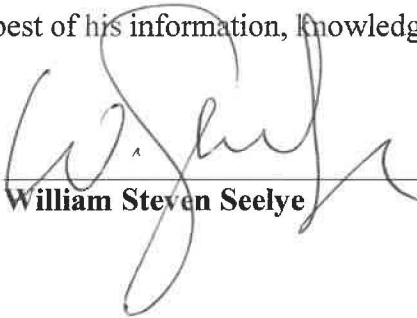
My Commission Expires:

April 1, 2024

VERIFICATION


COMMONWEALTH OF NORTH CAROLINA)
)
COUNTY OF BUNCOMBE)

The undersigned, **William Steven Seelye**, being duly sworn, deposes and states that he is a Principal of The Prime Group, LLC, 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.



William Steven Seelye

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 16 day of January 2021.



Notary Public (SEAL)
Notary Public ID No. _____

My Commission Expires:

9/22/2025

Ryan Meagher
Notary Public
Henderson County, NC
My Commission Expires 9/22/25

VERIFICATION


COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

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



David S. Sinclair

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 20th day of January 2021.



Notary Public
Notary Public, ID No. 603967

My Commission Expires:

July 11, 2022

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Paul W. Thompson**, being duly sworn, deposes and says that he is Chief Executive Officer and President 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.



Paul W. Thompson

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 20th day of January 2021.



Notary Public

Notary Public, ID No. 603967

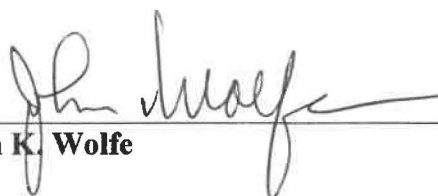
My Commission Expires:

July 11, 2022

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **John K. Wolfe**, being duly sworn, deposes and says that he is Vice President, Electric Distribution 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.



John K. Wolfe

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 18th day of January 2021.



Notary Public

Notary Public ID No. 603967

My Commission Expires:

July 11, 2022

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to Metropolitan Housing Coalition, Kentuckians for the Commonwealth,
and Kentucky Solar Energy Society's First Set of Data Requests**

Dated January 8, 2021

Case No. 2020-00350

Question No. 1

Responding Witness: Eileen L. Saunders / David S. Sinclair

- Q-1. Please provide the following information regarding the Company's NMS-1 customer-generators, for each year from 2015 through 2020. For all requests that result in a data response, please provide the data in Excel spreadsheet format with formulas intact and cells unlocked.
- a. For each month and year, how many kWh of excess generation ("Received" or "Rcvd" kWh) were supplied back to the Company from all Net Metering Service ("NMS") customers? How many kWh were consumed ("Delivered" or "Dlvd") by all NMS customers? Provide the aggregate amount for each month and year of total delivered "Dlvd" kWh and received "Rcvd" kWh by rate class.
 - b. List the number of residential and commercial customers taking NMS service. List the number within each specific rate class tariff.
 - c. List the total installed generation capacity (AC and DC) for customers receiving NMS within each specific rate class tariff.
 - d. For each NMS customer, please list the capacity (system size in KW) of their Distributed Generation System, the technology type (e.g. PV, wind, hydro, biomass), the date of interconnected operation, and their rate class. List the total amount of kWh Delivered and Received from each NMS customer in each month.
 - e. What was the total combined capacity by rate class of all NMS customers, residential NMS customers, and commercial NMS customers for each year?
 - f. What percentage of the Company's single hour peak load for the previous year did NMS represent for each year?
 - g. Please provide any additional data concerning net metering or generation from NMS customers for the years 2015 through 2020 which the Company

has reported to the US Energy Information Administration, FERC, the Kentucky Energy and Environment Cabinet, or any other regulatory agency. This would include but not be limited to data filed on Form EIA-861.

- h. For each NMS customer, please provide the monthly and annual energy consumption data for the year prior to the interconnected operation of the customer generation system. If this data is not available, please explain why not.

A-1.

- a - e. Property served under NMS will change ownership from time to time. This ownership change will result in an interconnection date and consumption periods that will not coincide. See attachment being provided in Excel format.
- f. This information is not available because the Companies do not have hourly load profile data for all NMS customers.
- g. For information concerning net metering or generation from NMS customers for the years 2015 through 2020, please refer to Louisville Gas and Electric's EIA-861 Monthly submissions to the Energy Information Administration (EIA). The data is located at <https://www.eia.gov/electricity/data/eia861m/>. The Louisville Gas and Electric monthly data will be under the Net Metering section for each year and on the Utility Level-States tab.
- h. Monthly consumption for the twelve months prior to interconnection was provided where available. Customers that took NMS the same period they moved into their premise will not appear in the data for this response. See attachment being provided in Excel format.

The attachment is being provided in a separate file in Excel format.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to Metropolitan Housing Coalition, Kentuckians for the Commonwealth,
and Kentucky Solar Energy Society's First Set of Data Requests**

Dated January 8, 2021

Case No. 2020-00350

Question No. 2

Responding Witness: David S. Sinclair

- Q-2. What is the Company's projection for how NMS customer cumulative capacity would expand through 2025 under two scenarios: (1) If the NMS tariff remained in its current form with 1 for 1 netting at the retail rate, and (2) Under the proposed NMS-2 tariff? Please represent this in terms of cumulative capacity (KW) and percent of the Company's single hour peak load for the previous year. Please provide a detailed explanation and copies of all analysis or studies supporting the Company's projections.
- a. Under each scenario, when does the company project the aggregate capacity of NMS customers would reach 1% of the Company's single hour peak load for the previous year? Please provide a detailed explanation and copies of all analysis or studies supporting the Company's projection.
- A-2. The NM forecast used in the business plan assumed NMS-2 takes effect July 2021. The table below contains the forecasted cumulative installed net metering capacity on the LG&E system every 5 years and how that would compare to the 1% cap, which is calculated off of the previous year's system peak hour. Due to the assumed end of the NMS-1 grandfathering period and the termination of the investment tax credit, the plan assumes accelerated solar adoptions through the end of 2021 before steadying to a historical linear trend from 2022 through the end of the forecast period.
- a. Under the NMS-2 scenario, aggregate capacity does not reach 1% of system peak load by 2050. While NMS-1 was not run as a scenario, it was assumed in the business plan that the average size of solar array would become smaller under NMS-2. Therefore, holding forecasted new customer solar installations equal, the 1% cap would be reached more quickly in NMS-1 than NMS-2 due to the difference in the average size of installation under each scenario. Because of this, NMS-2 provides the opportunity for more customers to adopt solar before reaching the 1% cap.

Year	Previous Year Forecasted Peak*	1% Capacity	Forecasted Installed NM Capacity
2020	2,609	26.09	5.88
2025	2,623	26.23	8.73
2030	2,619	26.19	9.26
2035	2,607	26.07	9.78
2040	2,699	26.99	10.28
2045	2,699	26.99	10.78
2050	2,646	26.46	11.26

Forecasted hourly peak, 1% of system peak, and forecasted installed capacity (MW) for LG&E in five year increments. *The 2020 peak is based on the 2019 actual peak.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to Metropolitan Housing Coalition, Kentuckians for the Commonwealth,
and Kentucky Solar Energy Society's First Set of Data Requests
Dated January 8, 2021**

Case No. 2020-00350

Question No. 3

Responding Witness: Robert M. Conroy

- Q-3. Explain how each surcharge will be handled for NMS-2 customers? Will those surcharges that are based on kWh usage be treated as they are with NMS-1 now (i.e. based on the net kWh in a billing cycle)? With NMS-2, will monthly net excess kWh carry forward to offset future billing cycle surcharges as is done under NMS-1 now?
- A-3. As written in the proposed NMS-2 tariff (Sheet No. 58):

For each billing period, Company will (a) bill Customer for all energy consumed in accordance with Customer's standard rate and (b) Company will provide a dollar denominated bill credit for each kWh of production. The dollar denominated bill credit will be calculated by multiplying the total kWh of production within the billing period by the Non-Time-Differentiated SQF rate within tariff Sheet No. 55. Any bill credits greater than the Customers' total bill will be carried forward to future bills.

Unused credits existing at the time Customer's service is terminated, end with Customer's account, have no monetary value, and are not transferable between locations.

The reference to "total kWh of production" in this specific sentence is the amount of energy produced by the customer's eligible electric generating facility that flows back onto the grid as noted in KRS 278.466(3).

With NMS-2 all excess kWh will be monetized into a bill credit and carried forward as described within the tariff.

The surcharges will apply based on the demand imposed, where applicable, and energy consumed by the customer in accordance with each standard rate schedule.

See also the response to KSIA 1-4.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to Metropolitan Housing Coalition, Kentuckians for the Commonwealth,
and Kentucky Solar Energy Society's First Set of Data Requests
Dated January 8, 2021**

Case No. 2020-00350

Question No. 4

Responding Witness: Robert M. Conroy

- Q-4. Explain how customer-generators who are grandfathered under NMS-1 would be served under the following situations after NMS-2 takes effect:
- a. If the customer-generator decides to increase the capacity of their generator after NMS-2 takes effect, will the compensatory rate for excess generation from the customer-generator be changed, and if so, will that change affect all existing capacity or only that fraction attributable to the expanded capacity?
 - b. If a grandfathered customer-generator taking service under NMS-1 replaces a failed solar module with a newer solar module of the same capacity, would they remain grandfathered under NMS-1? If not, why not? What if the new solar module has a larger capacity than the older module being replaced?
 - c. Please identify proposed changes to tariff language intended to reflect the changes described in responses to 1-4.a. and 1-4.b.
- A-4. See the response to KSIA 1-5.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to Metropolitan Housing Coalition, Kentuckians for the Commonwealth,
and Kentucky Solar Energy Society's First Set of Data Requests
Dated January 8, 2021**

Case No. 2020-00350

Question No. 5

Responding Witness: William Steven Seelye

- Q-5. For each rate class with customer demand charges, list, by rate class, the percentage of fixed costs assigned to that rate class that are recovered through the demand charges within that rate class. Please provide references to the cost of service study where these fixed costs are reflected.
- A-5. For all rates with demand charges, all demand-related costs are collected through the respective demand charge in each rate schedule. Each rate with a demand charge has a cost-based customer and energy charge thus allowing actual demand-related costs to be collected through the demand charge in each rate.

For more information on the total costs classified in each cost category, please see the unit cost sheets provided in the response to AG-KIUC 1-188.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to Metropolitan Housing Coalition, Kentuckians for the Commonwealth,
and Kentucky Solar Energy Society's First Set of Data Requests
Dated January 8, 2021**

Case No. 2020-00350

Question No. 6

Responding Witness: Robert M. Conroy

Q-6. Define how customers taking NMS-2 that also are taking a T.O.D. service would be billed.

A-6. As written in the proposed NMS-2 tariff (Sheet No. 58):

For each billing period, Company will (a) bill Customer for all energy consumed in accordance with Customer's standard rate and (b) Company will provide a dollar denominated bill credit for each kWh of production. The dollar denominated bill credit will be calculated by multiplying the total kWh of production within the billing period by the Non-Time-Differentiated SQF rate within tariff Sheet No. 55. Any bill credits greater than the Customers' total bill will be carried forward to future bills.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to Metropolitan Housing Coalition, Kentuckians for the Commonwealth,
and Kentucky Solar Energy Society's First Set of Data Requests
Dated January 8, 2021**

Case No. 2020-00350

Question No. 7

Responding Witness: Robert M. Conroy

- Q-7. Provide a breakdown by category of each component of costs included in the Company's avoided cost calculations, and the methodology and data on which the cost was calculated and assigned.
- A-7. See the response to AG-KIUC 1-172.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to Metropolitan Housing Coalition, Kentuckians for the Commonwealth,
and Kentucky Solar Energy Society's First Set of Data Requests
Dated January 8, 2021**

Case No. 2020-00350

Question No. 8

Responding Witness: Robert M. Conroy

- Q-8. The Final Net Metering-Interconnection Guidelines that came out of PSC Administrative Case 2008-0169 addressed aspects that utilities raised at the time concerning cost-recovery. In those very detailed 23-page Guidelines, is included (condition 2—generation capacity will not exceed transformer nameplate rating on shared secondary and condition 1—on a distribution circuit, the aggregated generation on that circuit, including the proposed will not exceed 15 percent of the Line Section's most recent annual one hour load).
- a. Do you agree that Condition 1 was included to prevent a distributed net metering service generator from supplying transmission through a substation and limiting the resource to within the line section distribution circuit only?
 - b. What potential costs for monitoring and technology, e.g. back-flow preventers, are avoided by Condition 2 and Condition 1 guidelines?
- A-8.
- a. The Commission's orders and guidelines issued in Administrative Case 2008-0169 speak for themselves; the Company will not speculate regarding the reasons why the Commission may have included Condition 1 in the Final Net Metering Interconnection Guidelines.
 - b. The Company has not conducted a study or analysis to assess precisely which costs the cited conditions might help avoid. That notwithstanding, limiting the amount of distributed generation capacity on a distribution circuit could help avoid or reduce costs the Company might otherwise incur to accommodate greater amounts of distributed generation.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to Metropolitan Housing Coalition, Kentuckians for the Commonwealth,
and Kentucky Solar Energy Society's First Set of Data Requests
Dated January 8, 2021**

Case No. 2020-00350

Question No. 9

Responding Witness: John K. Wolfe

- Q-9. Do you agree that distribution losses from substation delivery points to points of use are greater than distribution losses from a distributed generation resource delivery point (e.g. meter of a customer-generator taking NMS) to the point of use?
- A-9. The answer to this question depends on where the energy from a distributed generator is consumed: locally at the same meter point, or at another meter point on the distribution system.

Any energy generated from a behind-the-meter distributed generation resource and directly consumed by local loads at the same energy delivery point, or utility meter, could experience less losses than energy served from the substation. However, if that energy is fed back onto the utility system, it is transformed to primary voltage levels through the customer's service transformer and flows to another electrical load. Before the energy is consumed through another delivery point, it is typically transformed back to secondary voltage levels by a service transformer. This transformation of voltage to and from primary voltage introduces energy losses that could be greater than energy delivered by a substation. There are too many variables in either scenario to determine which method would have greater losses.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to Metropolitan Housing Coalition, Kentuckians for the Commonwealth,
and Kentucky Solar Energy Society's First Set of Data Requests
Dated January 8, 2021**

Case No. 2020-00350

Question No. 10

Responding Witness: William Steven Seelye

- Q-10. Explain the methodology for accounting for "Distribution losses" that were included in the avoided cost rate proposed for NMS-2. Does the methodology used by the Company account for variations in losses associated with variation in load level? Please explain.
- A-10. Distribution losses were not included in the avoided cost rate proposed for Rider NMS-2. See the response to AG-KIUC 1-172 for the determination of the avoided cost rates.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to Metropolitan Housing Coalition, Kentuckians for the Commonwealth,
and Kentucky Solar Energy Society's First Set of Data Requests
Dated January 8, 2021**

Case No. 2020-00350

Question No. 11

Responding Witness: Robert M. Conroy

- Q-11. Provide the justification for the Company's proposal to maintain an avoided cost compensation rate for excess energy that is generated by distributed solar during on-peak hours when the Company's cost of generation is much higher than off-peak hours?
- A-11. The Company refutes the assertion that its on-peak and off-peak avoided cost per hour is materially different. In referencing the SQF Time Differentiated Rates for the summer time period, the difference between on and off peak time period is approximately a thousandth of a cent per kWh ($\$0.02282 - \$0.02145 = \$0.00137$), and even less in the winter ($\$0.02236 - \$0.02145 = \$0.00091$).

In addition, the Company's tariffs (LQF, SQF, and NMS) address electricity generated using solar, wind, biomass or biogas, or hydro installations. The avoided cost compensation rate for energy produced to the Company's network accommodates the diversity of customer facilities.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to Metropolitan Housing Coalition, Kentuckians for the Commonwealth,
and Kentucky Solar Energy Society's First Set of Data Requests
Dated January 8, 2021**

Case No. 2020-00350

Question No. 12

Responding Witness: Robert M. Conroy

- Q-12. Provide a detailed breakdown of the full cost for developing and administering the new NMS-2 tariff, including but not limited to legal and consultant fees and staff time for development; monies spent advocating for the NMS-2 tariff at the PSC; and the Company's costs for participating in the PSC Administrative Case 2019-00256, concerning net metering.
- a. Explain whether this rate request seeks cost recovery for lobbying and other legislative expenses associated with SB 100.

- A-12. Regarding "a detailed breakdown of the full cost for developing and administering the new NMS-2 tariff, including but not limited to legal and consultant fees and staff time for development," the Company does not maintain its records in such a way as to be able to accurately provide the requested data for NMS-2 or any other single tariff provision. The Company develops all tariffs to allow for the ability to provide safe and reliable service at low cost rates.

Regarding "monies spent advocating for the NMS-2 tariff at the PSC," Rider NMS-2 is part of the Company's application in this proceeding. As noted above, the Company does not maintain its records in that level of detail. However, outside of this case, the Company has not otherwise advocated for the NMS-2 tariff at the PSC. The Company's projected rate case expenses and certain expenses already incurred are in the record of this proceeding.

Any Company costs related to participation in PSC Administrative Case No. 2019-00256 are not relevant to this proceeding as the Company is not seeking to recover any such costs in this proceeding, the application for which uses a forecasted test year, not an historical test year.

- a. The Company is using a forecasted test year in this proceeding. Therefore, none of the cited past expenditures are included in the Company's test year, and the Company is not seeking recovery of them. The proposed rate associated with Rider NMS-2 is the compensation for energy that flows back onto the grid and does not include cost recovery for lobbying and other legislative expenses associated with SB100.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to Metropolitan Housing Coalition, Kentuckians for the Commonwealth,
and Kentucky Solar Energy Society's First Set of Data Requests
Dated January 8, 2021**

Case No. 2020-00350

Question No. 13

Responding Witness: David S. Sinclair

Q-13. What was the Company's load profile for each of the last two years, expressed in 15-minute intervals? Provide a breakdown of how the Company's cost of power changes over the course of each day for each month of the year? What is the Company's cost of power during peak demand times for each month (including all energy, demand, and transmission charges)? Identify what resources the Company uses to meet demand during times of peak demand? Identify the Company's costs for power and energy during on peak and off-peak times each month.

A-13. It is unclear what the request means by "power." The response assumes power is energy.

For the Company's load profile, see Attachment 1 being provided in Excel format.

Generally, the Company's cost of energy increases during times of higher demand and decreases during times of lower demand.

The Company does not track the actual cost of energy, demand, or transmission charges at the granular level requested. For the Companies' estimated hourly marginal cost of energy based on actual system lambda, see Attachment 2 being provided in Excel format.

As demand increases, the Company generally uses additional resources in order of increasing incremental cost, subject to their availability. See the response to AG-KIUC 1-128 for the general dispatch order applicable to January 2021.

The attachments are
being provided in
separate files in Excel
format.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to Metropolitan Housing Coalition, Kentuckians for the Commonwealth,
and Kentucky Solar Energy Society's First Set of Data Requests
Dated January 8, 2021**

Case No. 2020-00350

Question No. 14

Responding Witness: William Steven Seelye

- Q-14. In determining the rate for crediting NMS-2 customers for excess generation, how do avoided demand and transmission costs factor into the Company's calculations and what value is assigned to each?
- A-14. The Company is proposing compensation under Rider NMS-2 for energy that flows back onto the grid based on its Rider SQF avoided costs rates. See the response to AG-KIUC 1-172 for the methodology used to determine the rates in Rider SQF. Demand costs are not included in the determination of the Small Qualifying Facility (SQF) avoided cost rate upon which the credit under NMS-2 is based. Energy from net metering customers is provided on a strictly as-available basis. Additionally, net metering customers do not make long-term commitments to supply demand. Consequently, avoided demand-related costs should not be included in the SQF rate used to determine the energy credit in NMS-2.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to Metropolitan Housing Coalition, Kentuckians for the Commonwealth,
and Kentucky Solar Energy Society's First Set of Data Requests
Dated January 8, 2021**

Case No. 2020-00350

Question No. 15

Responding Witness: Robert M. Conroy

- Q-15. In the final order of case 2019-00256, dated December 18, 2019, the Commission announced an intention to initiate a proceeding to update the Interconnection Guidelines as one of “immediately in conjunction with implementing the Net Metering Act.” (p. 34). Would the Company be willing to request that the Commission defer consideration of the proposed NMS-2 tariff, or would the Company be willing to withdraw the proposed NMS-2 tariff pending updates to these guidelines?
- A-15. No, it is not necessary to defer consideration of the proposed Rider NMS-2 in this proceeding. The Company is proposing compensation under Rider NMS-2 for energy that flows back onto the grid based on its Rider SQF avoided costs rates and will incorporate any changes to the interconnection guidelines pending completion of Case No. 2020-00302 initiated by the Commission on September 24, 2020.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to Metropolitan Housing Coalition, Kentuckians for the Commonwealth,
and Kentucky Solar Energy Society's First Set of Data Requests
Dated January 8, 2021**

Case No. 2020-00350

Question No. 16

Responding Witness: Robert M. Conroy / William Steven Seelye

- Q-16. Please produce utility-specific data that substantiates any claim of non-negligible cost shifting from the current NMS-1 customers to non-net metered rate payers. Please provide the dollar amount that the Company believes a non-participating net metered customer pays, on a monthly and yearly basis, due to service being provided to the NMS-1 customers under the current tariff. Assuming that the number of NMS-1 customers under the current tariff rose to the 1% statutory cap, what would the dollar amount that a non-participating customer pays, on a monthly and yearly basis, due to service being provided to the NMS-1 customers under the current tariff.
- A-16. See pages 46-64 of Mr. Seelye's Direct Testimony for a discussion of cost-shifting and subsidies received by net metering customers. Also see the response to PSC 2-122.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to Metropolitan Housing Coalition, Kentuckians for the Commonwealth,
and Kentucky Solar Energy Society's First Set of Data Requests
Dated January 8, 2021**

Case No. 2020-00350

Question No. 17

Responding Witness: Robert M. Conroy

- Q-17. If a customer investing in solar submits a net metering application for NMS service before the NMS-2 service tariff is approved, but due to weather or other contingencies the system is not "operational" before NMS-2 service takes effect, would they be served under NMS-1 or NMS-2?
- A-17. See the response to KSIA 1-5.

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**Response to Metropolitan Housing Coalition, Kentuckians for the Commonwealth,
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Dated January 8, 2021

Case No. 2020-00350

Question No. 18

Responding Witness: Robert M. Conroy / Christopher M. Garrett

Q-18. Please provide a comprehensive tabulation of all costs and allocation of costs associated with the following activities, for each of the years 2011-2020:

- a. Trade association dues to and staff time spent on activities conducted by any organization developing or taking any position on net metering rate design, rate design in general, or conducting studies or issuing reports on net metering rate design and rate design in general.
- b. Lobbying and regulatory affairs advocacy and communications relating to net metering rate design, non-utility generation, and related topics; and other utility-related topics.
- c. Economic development rates and incentives.
- d. Storm and extreme-weather damage prevention and response.

A-18.

- a. The Company does not collect and retain the requested information for its corporate files. The requested information is thus not readily available.
- b. The Company does not collect and retain the requested information for its corporate files. The requested information is thus not readily available.
- c. The following chart provides the Economic Development Rider ("EDR") credits for 2011-2020:

Year LG&E EDR Credits	
2011	\$ -
2012	\$ 29,375
2013	\$ 55,159
2014	\$ 67,953
2015	\$ 458,163
2016	\$ 425,351
2017	\$ 313,940

2018	\$	255,392
2019	\$	184,571
2020	\$	218,635

- d. The following chart provides the Distribution O&M and capital storm costs for 2011-2020. The 2011 and 2018 O&M figures include total storm costs for which regulatory assets were filed for in the 2011 Windstorm, 2018 July storm and the 2018 November Ice storm.

LGE Distribution Storms			
<u>Year</u>	<u>O&M</u>	<u>Capital</u>	<u>Total</u>
2011	\$ 14,866,414	\$ 3,680,005	\$ 18,546,419
2012	\$ 4,364,361	\$ 1,210,459	\$ 5,574,820
2013	\$ 5,432,638	\$ 1,099,026	\$ 6,531,664
2014	\$ 9,069,912	\$ 2,706,998	\$ 11,776,910
2015	\$ 4,844,214	\$ 2,234,328	\$ 7,078,542
2016	\$ 2,304,503	\$ 1,317,667	\$ 3,622,170
2017	\$ 2,267,174	\$ 1,174,483	\$ 3,441,657
2018	\$ 14,678,741	\$ 5,190,121	\$ 19,868,862
2019	\$ 5,504,940	\$ 2,336,695	\$ 7,841,635
2020	\$ 2,776,095	\$ 1,779,336	\$ 4,555,431

- The following chart provides the Transmission O&M and capital storm costs for 2011-2020. The 2011 and 2018 O&M figures include total storm costs for which regulatory assets were filed for in the 2018 November Ice storm.

LG&E Transmission Storms			
<u>Year</u>	<u>O&M</u>	<u>Capital</u>	<u>Total</u>
2011	\$ 55,686	\$ 335,943	\$ 391,629
2012	\$ 48,116	\$ 347,245	\$ 395,361
2013	\$ 41,153	\$ 6,744	\$ 47,897
2014	\$ 294,817	\$ 98,919	\$ 393,736
2015	\$ 143,348	\$ 71,716	\$ 215,064
2016	\$ 83,642	\$ 95,288	\$ 178,930
2017	\$ 99,242	\$ 153,409	\$ 252,651
2018	\$ 94,536	\$ 336,846	\$ 431,382
2019	\$ 107,782	\$ 87,088	\$ 194,870
2020	\$ 17,538	\$ 0	\$ 17,538

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Question No. 19

Responding Witness: Robert M. Conroy / William Steven Seelye

Q-19. The National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources ("NSPM-DER," available at <https://www.nationalenergyscreeningproject.org/national-standard-practice-manual/>) provides a comprehensive framework for cost-effectiveness assessment of distributed energy resources including distributed generation, distributed storage, demand response, and energy efficiency. The NSPM-DER also provides guidance on addressing multiple DERs and rate impacts and cost shifts.

- a. Is the Company aware of and familiar with the NSPM-DER?
- b. Did the Company rely upon the NSPM-DER in developing its proposal for a new net metering tariff? Please explain why or why not.

A-19.

- a. No.
- b. No. The Company is proposing compensation under Rider NMS-2 for energy that flows back onto the grid based on its Rider SQF avoided costs rates. See the response to AG-KIUC 1-172 for the methodology used to determine the rates in Rider SQF.

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Question No. 20

Responding Witness: Robert M. Conroy / William Steven Seelye

Q-20. The NSPM-DER (referenced in Question 1-19) identifies the following electric utility system potential impacts. Please indicate and explain in detail for each whether the Company evaluated and quantified these impacts, and if not, why not, over the life of an installed customer generation facility, in developing its proposal for a new net metering tariff, and provide copies of any and all such evaluation and quantification:

- a. Generation - Energy generation
- b. Generation - Capacity
- c. Generation - Environmental compliance
- d. Generation - RPS/CES compliance
- e. Generation - Market price effects
- f. Generation - Ancillary services
- g. Transmission - Transmission capacity
- h. Transmission - Transmission system losses
- i. Distribution - Distribution capacity
- j. Distribution - Distribution system losses
- k. Distribution - Distribution operations and maintenance
- l. Distribution - Distribution voltage
- m. General - Financial incentives
- n. General - Program administration
- o. General - Utility performance incentives
- p. General - Credit and collection
- q. General - Risk
- r. General - Reliability
- s. General - Resilience

A-20. See the response to Question No. 19.

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Case No. 2020-00350

Question No. 21

Responding Witness: Robert M. Conroy / William Steven Seelye

- Q-21. The NSPM-DER (referenced in Question 1-19) identifies the following host customer potential impacts. Please indicate and explain in detail for each whether the Company evaluated and quantified these impacts, and if not, why not, over the life of an installed customer generation facility, in developing its proposal for a new net metering tariff, and provide copies of any and all such evaluation and quantification:
- a. Host Customer - Host portion of DER costs
 - b. Host Customer - Host transaction costs
 - c. Host Customer - Interconnection fees
 - d. Host Customer – Risk
 - e. Host Customer – Reliability
 - f. Host Customer – Resilience
 - g. Host Customer - Tax incentives
 - h. Host Customer - Non-energy impacts
 - i. Host Customer - Low-income customer non-energy impacts
- A-21. See the response to Question No. 19. The Company has a duty to serve all customers safely, reliably, and at the lowest reasonable cost. With regard to net metering, only the costs and benefits net metering customers impose upon or supply to the Company—and therefore its customers—are relevant to ratemaking. Any other costs or benefits a net metering customer might bear or receive are the concern of the net metering customer, not the Company and its other customers.

LOUISVILLE GAS AND ELECTRIC COMPANY

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Case No. 2020-00350

Question No. 22

Responding Witness: Robert M. Conroy / William Steven Seelye

- Q-22. The NSPM-DER (referenced in Question 1-19) identifies the following societal potential impacts. Please indicate and explain in detail for each whether the Company evaluated and quantified these impacts, and if not, why not, over the life of an installed customer generation facility, in developing its proposal for a new net metering tariff, and provide copies of any and all such evaluation and quantification:
- a. Societal - Resilience impacts beyond those experienced by utilities or host customers
 - b. Societal - Greenhouse gas emissions created by fossil-fueled energy resources
 - c. Societal - Other air emissions, solid waste, land, water, and other environmental impacts
 - d. Societal - Incremental economic development and job impacts
 - e. Societal - Health impacts, medical costs, and productivity affected by health
 - f. Societal - Poverty alleviation, environmental justice, and reduced home foreclosures
 - g. Societal - Energy imports and energy independence
- A-22. See the response to Question No. 19. The Company did not study or consider any of the items cited in the request, all of which are externalities for the purposes of utility ratemaking in Kentucky.

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Question No. 23

Responding Witness: William Steven Seelye

- Q-23. Mr. Seelye, at p. 46, (p. 50 of pdf 13-KU_Testimony 4 of 4) quotes the recent net metering law, stating that the law will allow each electric utility to implement rates to recover from new net metering customers all costs necessary to serve its eligible customer generators, including but not limited to fixed and demand-based costs". Have the companies quantified the fixed and demand-based costs necessary to serve solar customers? If so, please provide all assumptions and calculations.
- A-23. See the response to PSC 2-122.

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Question No. 24

Responding Witness: William Steven Seelye

- Q-24. Has the Company performed cost of service analysis on net metering customers? Please explain whether and how net metering customers cost more or less to serve than non-net metering customers. If the Company has not performed cost of service analysis on net metering customers, please explain if and how has the Company determined that its proposed net metering tariff changes adhere to the principle of cost causation, i.e. that customers are fairly allocated the costs to serve them. Please provide copies of any and all such studies, reports, or analyses.
- A-24. See the response to PSC 2-122. Net metering customers were not identified as a separate class in the cost of service study. It is important to emphasize that the Company is not addressing in this proceeding intra-class subsidies that are created by net metering customers not being served under a four-part rate. The proposed net metering tariff changes address the compensation for energy put back on the grid by customer generators.

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Question No. 25

Responding Witness: Robert M. Conroy / John K. Wolfe

- Q-25. Please provide a technical and economic description and accounting for the impacts and effects of energy exported from customer generator facilities. Please confirm whether or not exported energy serves nearby unserved load. Please confirm whether such service results in metered charges for service of such load. Please detail all measured and metered costs associated with the distribution system receiving injected or exported energy from net metered facilities.
- A-25. The request appears to assume that each kWh produced by a distributed generator onto the local grid is then consumed by neighboring customers, offsetting on a one-to-one basis energy the serving utility would otherwise have to produce. As noted below, this one-to-one energy assumption is often, if not always, incorrect.

All other things being equal, at any given time when a distributed generator provides energy to the distribution grid, it affects the voltage and current on the local grid. In short, intermittent bursts, such energy has no effect on the Companies' (KU's and LG&E's) own energy production; local voltage fluctuations are constant and have little or no effect on the Companies' energy production, which must sustain voltage within certain levels across the transmission and distribution grid. Only when distributed generation is sustained sufficiently for the Companies to ramp their generating units to account for the production does distributed generation affect the variable costs the Companies incur to serve load by reducing fuel consumed by the Companies' generating units.

Even assuming for the sake of the argument presented in the data request that a kWh produced by a distributed generator offsets on a one-to-one basis a kWh of energy the utility would otherwise have produced to serve the nearby customer, in LG&E's case the retail energy rate, particularly for residential and general service customers, consists mostly of fixed-cost recovery (about 2/3 of the retail rate is fixed-cost recovery). The energy produced by the distributed generator offsets none of the fixed costs, only variable costs. Therefore, LG&E has proposed in this proceeding to compensate new net metering customers at the

Standard Rate Rider SQF rate—an avoided variable cost-based rate—for all energy a net metering customer flows back onto the grid.

Note that this approach gives new net metering customers a generous assumption in their favor, namely the one-to-one energy offset assumption. It also assumes there are no costs created by producing energy to the local grid. It is true that energy produced and consumed locally has fewer line losses than energy transported over greater distances, but any value from loss-related savings created by distributed generation is far outweighed by the one-to-one assumption. Note also that even though there are some line losses for locally produced energy, Riders NMS-1 and NMS-2 effectively assume those losses are zero, which is a benefit for net metering customers.

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Question No. 26

Responding Witness: John K. Wolfe

- Q-26. Please detail all hosting capacity studies and the hosting capacity status of the distribution system.
- A-26. The company has not completed formalized hosting capacity analyses on the electric distribution system. Hosting capacity is analyzed on a case by case basis when interconnection applications are received.

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Question No. 27

Responding Witness: William Steven Seelye

- Q-27. Has the Company prepared or commissioned any marginal cost of service studies for its distribution system? Please provide copies of any and all such studies. If not, please explain why not.
- A-27. No, the Company does not have a business need for such a study.

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Question No. 28

Responding Witness: Robert M. Conroy / John K. Wolfe

- Q-28. Please explain in detail whether any functionality and capabilities that will be provided by the deployment of AMI and the increase in collected and available data regarding customer usage will enable or improve the Company's understanding of the impacts of customer generation as listed in Questions 1-20 through 1-22. If the AMI data will enable or improve understanding of such impacts, how does the Company intend to incorporate such understanding in its net metering tariff and proposed net metering tariff?
- A-28. AMI provides a number of operational benefits as outlined in the Wolfe testimony Exhibit JKW-2. More specifically, having knowledge of distributed generation totals, the utilities can more efficiently dispatch centralized generation and perform more accurate engineering planning studies of the electric distribution system. Furthermore, distributed generation affects voltage profiles along distribution circuits and can also impact reactive power needs. As the Company implements volt-var optimization (VVO) across the distribution system, AMI will provide critical measurements of system voltage used by the VVO control engine. Without AMI, additional sensors would be required across the distribution system to achieve this same result therefore increasing costs to implement.

See the response to Question No. 19.

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Question No. 29

Responding Witness: William Steven Seelye

- Q-29. Referring to Mr. Seelye's testimony (p.75 of "13-KU_Testimony_4of4(Seelye)"/ pg. 79 of pdf) and Exhibit WSS-11 (pdf pg.202), regarding the optional Electric Vehicle Supply Equipment Rider (EVSE-R), clarify all charges the participating customer would be responsible for, including fixed and variable charges.
- a. Explain what the "Distribution Energy per kWh per month" charge of \$52.00 represents.
 - b. Provide an example monthly bill for a customer taking EVSE service and taking EVSE-R service. For purposes of the example, assume the customer drives 500 miles per month using a 2020 Nissan LEAF and recharges for all driving at home using the Company-provided EVSE charger. Furthermore, assume the customer's electric usage excluding EV charging is 1000 kWh per month. Show all calculations, formulas, and inputs used to determine the customer bill.
 - c. Clarify whether a customer using the EVSE or EVSE-R rates will be charged \$52.00 per month for Distribution Energy PLUS a per-kWh charge for all electricity consumed by the EV charger. What will be the rate charged to the customer for kWh used for EV charging? Explain why it is reasonable to bill these customers twice for energy consumed for EV charging, if that is the effect of the EVSE and EVSE-R tariff.
 - d. Provide all calculations to justify the fixed rate proposed for EVSE and EVSE-R tariffs. Include the Company's estimate for energy consumed by the EVSE charger each month. Justify the basis for these estimates.
 - e. Clarify the difference between rates EVSE and EVSE-R from the customer's perspective, including but not limited to what the customer receives from Company and the costs to the customer.
 - f. Do customers taking service under the EVSE and EVSE-R tariffs pay the annual O&M charge? If yes, how is that fee charged to the customer? If no,

does the Company absorb the O&M charge or is it paid by non-participating customers? Provide all data and calculations used to determine the O&M charge and any evidence which indicates the reasonableness of each EVSE charger requiring \$126 of annual O&M.

g. Explain the role of Chargepoint, which is listed in Exhibit WSS-11.

A-29. The question asks about EVSE and EVSE-R for KU; however, it is assumed that the question intended to ask about the corresponding rates for LG&E. The following responses are answered assuming the questions were intended to be posed for the LG&E rates.

a. The “Distribution Energy per kWh per” represents the annual energy cost for charging of \$618.29 shown in the line above the \$51.52 divided by 12 months [$\$618.29 \div 12$ months]. The annual energy cost is based on 5,004 kWh annually multiplied by the Rate GS energy charge of \$0.12355. This cost is only applicable to stand-alone unmetered charging service under EVSE. It is not included in the metered charging service provided under EVSE-R.

b. The monthly bill under EVSE for the hypothetical scenario described in the question would be \$237.26 per month for a customer served under Rate GS, calculated as follows:

Fixed Monthly Fee	\$ 82.51
Energy for Charging	N/A
Rate GS Charges:	
Basic Service Charge (30 days x \$1.04)	\$ 31.20
Energy Charge (1,000 kWh x \$0.12355)	\$ 123.55
Total	\$ 237.26

The monthly bill under ESVE-R would be approximately \$204.89 for charging the vehicle, calculated as follows:

Fixed Monthly Fee	\$ 30.99
Rate GS Charges:	
Customer Charge (30 days x \$1.04)	\$ 31.20
Energy Charge ([1,000 kWh + 155 kWh*] x \$0.12355)	\$ 142.70
Total	\$ 204.89

* A 2020 Nissan Leaf uses 0.31 kWh/mile according to the fueleconomy.gov. Therefore, a customer that drives a 2020 Nissan Leaf 500 miles per month will require 155 kWh of charging. See below:

<https://www.fueleconomy.gov/feg/noframes/42562.shtml>

- c. Under EVSE, the customer will not be charged the Distribution Energy component of \$51.52 plus the energy actually used to charge vehicles. EVSE is a standalone unmetered service. There is no double counting of the energy payments under EVSE.

Under EVSE-R, the customer is not charged the \$51.52 Distribution Energy component but is only charged for the actual energy that the customer uses. EVSE-R is a behind-the meter service. Under EVSE-R, the customer is charged for any energy used by the customer for charging at their prevailing tariff rate.

- d. See attached. Certain information requested is confidential and proprietary and is being provided under seal pursuant to a petition for confidential protection.
- e. Under EVSE the company provides unmetered charging service from equipment installed, maintained, and owned by the Company. The cost of energy is included in the rate. Under EVSE, the customer would pay a flat monthly fee for the service. The customer is responsible for the cost of electric infrastructure and installation required to serve the charging station, paid up front.

Under EVSE-R the Company owns and maintains the charging service installed behind the customer's meter. The Company is responsible for maintaining the charging equipment, but the customer is responsible for installing the behind-the-meter electric infrastructure (i.e., the electric connection to the charging station). The customer pays a flat monthly fee to cover the fixed costs of the equipment (which does not include the energy) and pays separately for the energy used to supply the charging station at the customer's metered usage under Rates GS. The customer is responsible for the cost of electric infrastructure and installation required to serve the charging station, paid up front.

- f. Yes. Customers pay for the O&M expenses related to the charging facilities under both EVSE and EVSE-R. The only difference is that under EVSE, charging is provided as a stand-alone unmetered service, and under EVSE-R the customer is billed for the energy used for charging and is responsible for maintaining the electrical interconnection equipment to the charging station.

- g. The row labeled Chargepoint Annual Cost is not utilized in the calculation for the non-networked option and includes a value of zero in the determination of annual costs in Exhibit WSS-11. The row could have been omitted in the exhibit without changing the proposed rate. It refers to a network service fee that is not applicable to the calculation of the charges shown in Exhibit WSS-11.

The attachment is being provided in a separate file in Excel format.

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Question No. 30

Responding Witness: Eileen L. Saunders

- Q-30. Ms. Saunders, p. 3, lines 8-17 (p. 408 of pdf 10--LGE_Testimony 1 of 4), discusses "improving the quality of life" of customers served and "refusing to compromise on safety and health,". Have the companies considered offering any energy efficiency programs that also simultaneously address the health of your customers? Programs like the Green and Healthy Homes Initiative have already proven to lower asthma rates, lower energy bills, and provide on overall better quality of life for residents. Is this something LGE would consider offering? If not, why not?
- A-30. The Companies are open to considering new demand-side management and energy-efficiency ("DSM-EE") programs, including those that benefit human health. But to be approved by the Commission, such programs must pass at least one of the Commission's four longstanding cost-benefit tests: "Any new DSM-EE program or change to an existing DSM-EE program shall be supported by ... [t]he results of the four traditional DSM-EE cost-benefit tests [Participant, Total Resource Cost, Ratepayer Impact, and Utility Cost tests]." ¹ Those tests do not take into account health benefits or other societal benefits; indeed, the Commission stated in its final order in the Companies' most recent DSM-EE program plan case:

In evaluating the cost-effectiveness of the proposed DSM/EE programs, the Commission disagrees with MHC's recommendation to include the cost of non-energy factors and benefits. KRS Chapter 278 creates the Commission as a statutory administrative agency empowered with "exclusive jurisdiction over the regulation of rates and service of utilities." The Commission has no jurisdiction over environmental impacts, health, or other non-energy factors that do not affect rates or service. Lacking jurisdiction over these non-energy

¹ *Joint Application of the Members of the Louisville Gas and Electric Company Demand-Side Management Collaborative for the Review, Modification, and Continuation of the Collaborative, DSM Programs, and Cost Recovery Mechanism*, Case No. 1997-00083, Order at 20 (Ky. P.S.C. Apr. 27, 1998).

factors, the Commission has no authority to require a utility to include such factors in benefit-cost analyses of DSM programs.²

Therefore, although the Companies are willing to consider DSM-EE programs that also benefit human health, for any such program to be approved it must demonstrate merit under the Commission's established cost-benefit tests irrespective of its health benefits.

² *Electronic Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for Review, Modification, and Continuation of Certain Existing Demand-Side Management and Energy Efficiency Programs*, Case No. 2017-00441, Order at 28 (Ky. P.S.C. Oct. 5, 2018).

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Question No. 31

Responding Witness: Eileen L. Saunders

Q-31. Mr. Thompson, at p. 3 (page 5 pdf 10--LGE_Testimony 1 of 4) discusses customer expectations for more options and for energy efficiency, and states that the company carefully plans and strategically executes for the benefit of customers. Rural Electric Cooperatives in Kansas, eastern Kentucky, North Carolina, and Arkansas have recently pioneered inclusive financing programs for residential and small commercial energy efficiency retrofits via the Pay-As-You-Save (PAYS) tariffed on-bill cost recovery mechanism. The six rural electric cooperatives that have PAYS programs in Kentucky have invested over 2.5 million dollars into efficiency retrofits, creating an average monthly savings of over 5000 kWh/year for participants, with a default rate of less than .5%.

Has LGE considered offering PAYS-based inclusive financing to any of its residential, municipal, or commercial customers as a response to their expectations for energy efficiency?

A-31. LG&E has evaluated offering a PAYS-type program (also referred to as "on-bill financing") for residential efficiency upgrades. In our most recent review and in discussions with Mountain Association in summer 2020, the preliminary cost-effectiveness of such an offering did not score above 1 in the Total Resource Cost (TRC) Test. Further, the operational, legal, and regulatory issues around implementing such an offering were highly complex especially as it relates to mitigating the risk of default and whether the risk of default stays with a customer or the property where the retrofits were made. Finally, if a customer defaults on the financing, disconnection decisions add to the complexity.

The Company is evaluating the Energy Project Assessment Districts (EPAD) and the Kentucky Property Assessed Clean Energy (PACE) program help educate customers on how they initiate and finance projects to reach their goals.

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Question No. 32

Responding Witness: Eileen L. Saunders

Q-32. Mr. Blake, at p. 2 (p. 33 pdf 9—KU Testimony 1 of 4) states, “We constantly seek to strike the right balance between delivering excellent service and low rates for our customers while also delivering an appropriate return of and on the investments of our creditors and shareholders.”

Ouachita Electric in Arkansas, another cooperative with a PAYS program, implemented a 4.5% rate decrease in February of 2020; their general manager Mark Cayce said, “solar installations have lowered our peak demand by approximately 8 MW and our energy efficiency efforts have contributed an additional 2 MW. That, together with some growth on our system, has made this rate decrease possible.” Investor-owned utilities in Georgia, Minnesota, California, and elsewhere are investigating and implementing PAYS-based programs as well.

Has LGE considered offering PAYS-based inclusive financing to any of its residential, municipal, or commercial customers as a response to every stakeholder's desire for lower rates?

A-32. See the response to Question No. 31.

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Question No. 33

Responding Witness: Eileen L. Saunders

Q-33. Mr. Thompson, at p. 15 (p. 17 pdf 12—KU Testimony 1 of 4) states, “Providing assistance to our low-income customers is another integral part of our culture and commitment to the community principles discussed above.”

The six rural electric cooperatives that have PAYS programs in Kentucky have invested over 2.5 million dollars into efficiency retrofits, creating an average net cash flow of over \$10/month for participants, with a default rate of less than .5%.

Has LGE considered offering PAYS-based inclusive financing to any of its low-income customers in response to this stated commitment?

If LGE has not considered offering a PAYS program to any of its customers, please provide documentation of your analysis, as well as your reasoning for not doing so?

A-33. See the response to Question No. 31.

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Question No. 34

Responding Witness: Eileen L. Saunders

- Q-34. What, if any, measures are taken to ensure that commercial customers with contract demand that is fair? What triggers a review of contract demand if metered demand trends down over time as demand savings improvements are made?
- A-34. See Louisville Gas and Electric Company, P.S.C. Electric No. 12, Original Sheet No. 97, "CONTRACTED DEMANDS"; Louisville Gas and Electric Company, P.S.C. Electric No. 12, Original Sheet No. 97.3, "NOTICE TO COMPANY OF CHANGES IN CUSTOMER'S LOAD"; Louisville Gas and Electric Company, P.S.C. Electric No. 12, Original Sheet Nos. 101.1-101.2, "CUSTOMER RATE ASSIGNMENT."

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Question No. 35

Responding Witness: Eileen L. Saunders

- Q-35. Given the research showing the impact of high efficiency technologies on energy savings, could the investment in AMI be better spent providing opportunities for customers to install energy efficient technologies in their homes?
- A-35. No. Operational savings outweigh the energy savings in the AMI proposal. Energy efficiency technologies usually depend upon customer participation and adoption. In the AMI proposal, CVR energy savings are not dependent upon customer participation. Additionally, the Companies' analysis in Exhibit LEB-3 demonstrated that AMI is the least cost metering alternative and is primarily cost-justified based on operational savings.

LOUISVILLE GAS AND ELECTRIC COMPANY

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Question No. 36

Responding Witness: Eileen L. Saunders

Q-36. Please provide comparative data on the number of people who are behind on their bills and are at risk of being shut off between 2019 and 2020.

A-36. See attached.

Louisville Gas and Electric Company
January 2019 through December 2020

Past Due Customers

<u>Year</u>	<u>Annually</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
2019	807,009	75,744	65,015	72,511	68,648	62,757	60,184	69,924	74,742	71,737	73,544	52,498	59,705
2020	808,459	75,461	66,403	85,823	67,094	55,817	63,871	62,799	76,618	73,820	68,031	57,246	55,476

Customers Eligible for Disconnection

<u>Year</u>	<u>Annually</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
2019	156,509	12,505	12,492	13,239	14,371	13,331	11,940	12,323	14,787	14,531	15,024	10,561	11,405
2020	278,756	11,439	12,406	19,380	28,587	23,094	23,520	23,869	29,155	30,878	29,782	24,725	21,921

*Moratorium on disconnections March 16, 2020 through October 20, 2020.

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Question No. 37

Responding Witness: Robert M. Conroy

- Q-37. Under this proposal, both gas and electric meters will experience an increase: Electric increases \$25.28 for the year and gas increases \$47.45 for the year. Without any usage at all, the bill will increase \$72.73 for the year. Considering that since 2013, SSI went from \$710 to current \$783 per month, please explain how this basic service charge increase will not disproportionately impact those who are low income or on fixed incomes?
- A-37. Customers receive bills for all applicable charges, not the Basic Service Charge alone. The Companies do not dispute that low- and fixed-income customers are likely to be more affected by bill increases than other customers. Nonetheless, the Company has proposed rates that are cost-based and a residential Basic Service Charge that moves toward the underlying cost of service, resulting in rates the Company believes are fair, just, reasonable, and necessary to ensure safe and reliable service.

LOUISVILLE GAS AND ELECTRIC COMPANY

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Question No. 38

Responding Witness: Daniel K. Arbough

- Q-38. In an April 2020 LGE case before the PSC, (case number 2020-00110), LGE was allowed to borrow a half billion dollars to cover COVID. Given that the ratepayers will have to pay this debt, please provide a detailed accounting for how these funds were utilized.
- A-38. LG&E has not issued any of the debt approved in Case No. 2020-00110.

LOUISVILLE GAS AND ELECTRIC COMPANY

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Question No. 39

Responding Witness: Robert M. Conroy

- Q-39. Mr. Thompson, at p. 10, (p. 12 of pdf 10--LGE_Testimony 1 of 4), in discussing cost containment, presents evidence that LGE and KU rates are lower than average US rates.
- a. Please provide similar data on the "energy burden" (the percent of income spent on energy bills) of LGE customers vs. energy burdens nation-wide.
 - b. Please provide similar data on the size of the "Basic Service Charges" for LGE customers compared to such fixed, customer, charges nationwide.
- A-39.
- a. The Company has not performed such a comparison on "energy burden" nationwide.
 - b. The Company has not performed a comparison of the Basic Service Charge nationwide.

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Question No. 40

Responding Witness: Robert M. Conroy / William Steven Seelye

- Q-40. Given that AMI will enable meter reading and other customer services to become automated or remotely handled, do the companies expect the residential Basic Service Charge to decline with the full AMI build-out? If so, what is the size of the expected decline? If not, why not?
- A-40. It should be noted, the Basic Service Charge proposed in this proceeding only recovers 75% of the customer costs from the cost of service study as discussed in the testimony of Mr. Seelye. Without considering other distributed-related cost increases, the Companies would expect the costs recoverable through the residential Basic Service Charge to begin to decline with full AMI roll out. Most of the cost savings from AMI relate to cost components that are recoverable through the Basic Service Charge. Consequently, the implementation of AMI will put downward pressure on the Basic Service Charge after full implementation. However, there are other costs recoverable through the Basic Service Charge that will not be affected by AMI (e.g., fixed costs related to service lines), and any normal cost increases of those components would also be reflected in the Basic Service Charge in future proceedings. It should also be noted that the implementation of AMI will also put downward pressure on Disconnect/Reconnection Charges. The Companies have not developed models to project what the overall level of customer-related costs will be in the future.

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Question No. 41

Responding Witness: Robert M. Conroy / Eileen L. Saunders / John K. Wolfe

- Q-41. Please detail what functions and capabilities will be enabled by AMI in addition to traditional consumption and billing metering and basic condition sensing. Please detail what services are enabled and/or supported by AMI, including energy efficiency, demand response, service connection/disconnection, integration of distributed energy resources (including distributed generation, distributed storage, electric vehicle charging, energy efficiency, etc.). Please provide a detailed accounting of how the costs of AMI will be functionalized and allocated to the various functions and services enabled by the AMI.
- A-41. All of the capabilities and services listed are either enabled or enhanced by AMI. See Exhibit LEB-3 and Exhibit JKW-2 for discussions of these capabilities. The Company has not performed an allocation of costs or savings specifically to the various classes of customers in this proceeding. Such allocation will be performed through the cost of service study in the base rate case following implementation. See the testimony of Mr. Blake for a detailed discussion of the proposed ratemaking for AMI.

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Case No. 2020-00350

Question No. 42

Responding Witness: Lonnie E. Bellar / Robert M. Conroy / Eileen L. Saunders

Q-42. Analysis of customers currently opting in to the Advanced Metering pilot shows that their energy use declines by 1.3-1.7% (Exhibit LEB-3, Appendix E, Testimony 1). Since these data come from customers who requested AMS, the energy savings are likely to be much lower for customers in general as stated in Appendix A, A-19, (p. 205 of pdf 10--LGE_Testimony 1 of 4).

- a. Do the companies plan to take steps to increase this amount of energy saved by customers once AMI is installed? What are these steps?
- b. The reason that customers would like to monitor their usage is so that they can lower their usage and bills. Are there specific tools, beyond detailed information about usage, that will be made available to customers to allow them to "actively manage" usage? E.G. will the company supply "smart thermostats" to customers? Will the company provide financial support for energy efficiency upgrades (beyond that given to customers qualifying for WeCare)?
- c. How do you square your goal of improving customers' ability to actively manage their bills via AMI, with the continual increases in the Basic Service Charge that substantially reduce customers' control over their bills?

A-42. The Companies note that they do not state that energy savings are "likely" to be much lower for customers in general in Appendix A, page A-19. The Companies do state that it is difficult to extrapolate energy savings from an opt-in program to the broader population of all customers so are therefore evaluating this benefit conservatively.

- a. The Companies plan to educate customers on the tools available to them to better manage their energy usage and their bill. See Exhibit ELS-2 for the steps the Companies plan to take.
- b. Some customers may be able to achieve lower bills simply by electing one of the Companies' voluntary rates e.g. Residential Time-of-Day Energy.

Customers with AMI meters can use the rate comparison tool available within the MyMeter portal to determine if that is a good option for them, see ELS-1, page A-16. Smart thermostats and financial support for energy efficiency upgrades, beyond that provided to customers qualifying for WeCare, are not included in the Companies' proposal.

- c. The goal of improving customers' ability to actively manage their bills and lower their consumption via AMI achieves a lower revenue requirement as it reduces the fuel expenses of the Company, which are reflected in the variable cost of energy and ultimately recovered in the energy rate.

The Basic Service Charge is designed to recover the Company's fixed costs of service but is at a level that only recovers a portion of those fixed costs leaving the remainder to also be recovered through the energy rate. The increases have been related to shifting more of those fixed costs out of the energy rate and into the Basic Service Charge. Regardless of the level of the Basic Service Charge, customers still have an incentive to reduce their energy consumption as doing so will reduce their energy costs and thus lower their bills.

These initiatives are in alignment in that they both seek to align cost of service with the usage of the customer.

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Question No. 43

Responding Witness: Robert M. Conroy

Q-43. Mr. Bellar, at p. 58 (p. 129 of pdf 10--LGE_Testimony 1 of 4) states that the companies are committed to offering innovative rate designs such as pre-paid and time-of-day rates when AMI is in operation.

- a. Please provide examples of these prepaid and TOD rates, and estimates of how much they could decrease a customer's bills, (please illustrate both for customers who do, and do-not have rooftop solar). (Have bill declines with such rates been illustrated with other utilities using AMI?)
- b. How will the TOD rates available after AMI differ from the currently available TOD rates?
- c. Will the new rate designs include demand charges for residential customers as Mr. Seelye recommends? Please illustrate how such charges will impact customer bills, and how these would interact with TOD rates. Document how such residential demand charges have reduced demand in other states.

A-43.

- a. The Company has committed to offering innovative rate designs after AMI is in operation. No analysis related to these opportunities has been performed, as this analysis requires interval customer usage data. The rate design offered will be consistent with cost of service and revenue requirement principles and will be addressed in future base rate proceedings after implementation of AMI.
- b. See the response to part a.
- c. See the response to part a. See also the response to AG-KIUC 1-219.

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Question No. 44

Responding Witness: Robert M. Conroy

Q-44. Mr. Thompson, p. 3 (page 5 pdf 10--LGE_Testimony 1 of 4) discusses customer expectations for more options and for energy efficiency, and states that the company carefully plans and strategically executes for the benefit of customers. Please explain:

- a. How continual increases in the Basic Service Charge, which create poor price signals and discourage energy efficiency and investment in efficiency upgrades, benefit customers and meet their expectations for energy efficiency?
- b. How the proposed net metering policy, which will drastically increase the time to recover a customer's investment in rooftop solar (making it unaffordable for most customers), benefits customers and meets their expectations for more options?
- c. What in your current application positively addresses customers' desire for energy efficiency (other than the provision of detailed usage information through AMI)?
- d. What in your current application positively addresses customers' desire for renewable energy options?

A-44.

- a. LG&E does not accept the premise of the request. That aside, the purpose of the Basic Service Charge is to recover costs that do not vary with usage through a charge that does not vary with usage. This helps prevent customers' energy rates from being further loaded with fixed-cost recovery, which in turn gives customers the benefit of more accurate incentives to invest in energy efficiency at levels that are economically rational based on the underlying costs.

- b. LG&E does not accept the premise of the request. That aside, the proposed Rider NMS-2 benefits customers by reducing for new net metering customers the subsidy non-net-metering customers provide them.
- c. This is not a demand-side-management and energy-efficiency program plan proceeding, but rather a base rate proceeding. Therefore, there are no explicit energy efficiency proposals in this proceeding (excepting the AMI energy-efficiency benefit cited in the request).
- d. LG&E proposes to continue to offer several renewable energy options to its customers in these proceedings, including its Green Tariff options, the Solar Share Program, net metering, and its qualifying facilities tariff options. See also the response to Question No. 61.

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Question No. 45

Responding Witness: Lonnie E. Bellar / Eileen L. Saunders

Q-45. Mr. Thompson, at p. 19, discusses the companies' position on reducing carbon emissions. He describes the companies' goals of reducing emissions from generation assets by 45-90% by 2050.(Page 21 of pdf, 10--LGE_Testimony 1 of 4).

- a. What proposals in the current rate case address these goals? Please provide quantitative estimates of the impact of the current rate case proposals on achieving these goals. For example, with installation of AMI, Conservation Voltage Reduction is expected to yield energy savings. Please quantify the impact of this estimated energy saving on reaching emissions reduction goals.
- b. To what degree will the companies achieve these emissions reductions by changing the energy mix, and to what degree will these reductions be achieved through energy efficiency measures?
- c. Please provide data on how energy use by LGE residential customers compares to usage by customers nationwide (or in similar geographical regions).
- d. Does the company have goals related to reduce methane emissions?
- e. How will the Company's proposed changes to net metering impact carbon emissions reductions over the next 25 years?

A-45.

- a. All proposals in this rate filing were made on the basis of providing reliable service at the lowest reasonable cost to customers. Fuel savings associated with ePortal and CVR as part of AMI deployment and acceleration of retirement of coal units have an added benefit of contributing to progress toward the Companies' emission reduction goals; however, the Companies have not quantified the impact of any of these proposals on achieving emission reduction goals as that was not part of the justification for these proposals.

- b. See the response to PSC 2-20. Energy efficiency measures will continue to have a material impact just as they have over the past decade with the LED light bulb, among other end-use appliance efficiencies. Please see the 2018 IRP Vol. 1 pages 6-4 – 6-7 as well as Figure 5-8 on page 5-13 for details. (https://psc.ky.gov/pscecf/2018-00348/rick.lovekamp%40lge-ku.com/10192018102925/3-LGE_KU_2018_IRP-Volume_I.pdf)
- c. The EIA's Short-Term Energy Outlook (STEO) has data on retail sales as well as customer counts, so this data can be obtained from this tool. Links to this tool are below:

STEO:

<https://www.eia.gov/outlooks/steo/data/browser/#/?v=19>

Sales:

<https://www.eia.gov/electricity/data/browser/#/topic/5?agg=2,0,1&geo=g&freq=M&start=200101&end=202010&ctype=linechart<ype=pin&rtype=s&maptype=0&rse=0&pin=>

Customers:

<https://www.eia.gov/electricity/data/browser/#/topic/56?agg=0,1&geo=g&endsec=vg&freq=M&start=200101&end=202010&ctype=linechart<ype=pin&rtype=s&pin=&rse=0&maptype=0>

- d. No.
- e. The Company does not anticipate that the proposed changes to net metering service will have a material impact on carbon emission reductions.

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Question No. 46

Responding Witness: Robert M. Conroy / William Steven Seelye

- Q-46. Mr. Thompson, at p. 22 (pf 24 of pdf 10--LGE_Testimony 1 of 4), discusses the companies' need for more revenue. Please explain how the proposed changes to Net Metering will address the companies' need for more revenue. Please quantify how current, grand-fathered, net metering customers are impacting revenue shortfalls. Please account for all costs, avoided costs, and benefits are changed between current net metering and proposed changes in net metering. Please provide copies of any and all such studies associated with this accounting.
- A-46. The proposed Rider NMS-2 does not address the Company's need for more revenue; it addresses what the Company, and therefore the Company's customers, will pay for energy produced to the Company's grid by NMS-2 customers. See the response to PSC 2-122 regarding the rest of this request.

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Question No. 47

Responding Witness: Eileen Saunders

- Q-47. Ms Saunders, p. 12 (p. 417 of pdf 10--LGE_Testimony 1 of 4), presents data on WeCare and other low-income assistance programs. Please provide:
- a. The percent of eligible customers who request WeCare assistance. What percent of these (eligible customers who make a request) receive assistance?
 - b. Of those who have received WeCare assistance, what percent have received just educational information, and what percent have received upgrades?
 - c. The percent of eligible customers you envision helping with WeCarePlus?
 - d. The percent of eligible customers who request bill pay assistance through WinterCare and WinterHelp. What percent of these (eligible customers who make a request) receive assistance?
- A-47.
- a. LG&E does not track income data on customers, therefore the Company does not know the total number of WeCare eligible customers and cannot calculate the percentage requested.
 - b. 100% of customers receiving WeCare assistance receive both educational information and upgrades (installed measures).
 - c. Since the filing of this case and original testimony, the company's partner for WeCare Plus, the Midwest Energy Efficiency Alliance (MEEA) was denied funding from the Federal Home Loan Bank (FHLB) for the WeCare Plus project. Thus, the WeCare Plus project will not be implemented.
 - d. The Company does not maintain the requested data.

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Question No. 48

Responding Witness: Eileen Saunders

- Q-48. Customers are not eligible for WeCare benefits if they have already received benefits in the past three years. Does that apply only to customers who previously received upgrades, or does it also apply to customers who just received educational information?
- A-48. Because all customers that receive assistance receive both education and upgrades, this three year measure applies to all customers who've been served by the program.

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Question No. 49

Responding Witness: Robert M. Conroy / William Steven Seelye

Q-49. Mr. Seelye, at p. 10 (p. 14 of pdf 13-LGE_Testimony_4of4) discusses the division of the energy charge into the infrastructure component and variable component.

- a. Please list other utilities of which the Company is aware that have divided the energy charge in this way?
- b. Since this division is not displayed on customer bills, in what way does this division educate customers?

A-49.

- a. Mr. Seelye is aware of many utilities that have separated or unbundled their rates into various cost components. It is not uncommon for utilities to separate their rates into production demand, production energy and distribution demand components. For example, South Central Power Company, The Energy Cooperative, Pioneer Electric Cooperative, Choctawhatchee Electric Cooperative, Cloverland Electric Cooperative, and Paulding-Putnam Electric Cooperative have unbundled their rates into these types of components.
- b. The division is meant to give customers more information on how much of the energy charge they pay is associated with fixed demand-related costs that do not vary with the consumption of energy and how much of the charge is associated with costs that vary with the consumption of energy. Providing customers with more information and transparency concerning the costs they pay in their bills attempts to educate customers on how the Company's costs align with the rates they pay. Even though the charges are not shown explicitly on the customer's bills each month, having this information shown in the Company's tariffs and press releases attempts to inform customers of the differences in the costs collected through the energy charge.

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Question No. 50

Responding Witness: William Steven Seelye

Q-50. Mr. Seelye, at p. 20 (page 24 of pdf 13-LGE_Testimony_4of4) discusses the claim that intra-class subsidies arise because low-usage customers are paying less than their fair share of a utility's fixed costs.

- a. Is this claim about intra-class subsidies consistent with the relationship between usage and demand? Is it not the case that customers with higher usage also have higher demand? Please present data showing whether there is a negative or positive correlation between usage and demand.

A-50.

- a. Intra-class subsidies arise in part when the customer charge is understated. Under a two-part rate design, when a customer charge is less than customer-related costs, fixed customer-related costs that do not vary with the amount of energy that a customer uses are collected through the energy charge component of the rate. Therefore, with an understated customer charge, a customer that uses more kWh than the average effectively overpays the customer-related costs incurred to serve the customer. This particular subsidy, which is addressed on pages 20-21 of Mr. Seelye's testimony, relates strictly to the recovery of *customer-related costs* through an energy charge and thus solely to the relationship between customers' kWh usage. It does not relate to the relationship between usage and demand.

The relationship between usage and demand relates to the recovery of *demand-related costs* through an energy charge in a two-part rate design consisting of only a customer charge and an energy charge. The relationship between energy and demand is represented by a customer's load factor. Customers with higher load factors typically impose lower average unit costs on a utility system. Intra-class subsidies resulting from load factor differences through the use of a two-part rate *are not the focus of the discussion on pages 20-21 of Mr. Seelye's testimony.*

In any rate class, customer load factors will vary significantly from customer to customer. It is therefore not uncommon for two customers with essentially

the same demands to have significantly different monthly kWh usages. For example, annual load factors for residential customers can vary from practically zero to 80 percent. The following table illustrates how customers with the same demand can have widely varying annual kWh usages.

Demand	Annual	Load
KW	KWH	Factor
		%
20	1,752	1%
20	8,760	5%
20	17,520	10%
20	26,280	15%
20	35,040	20%
20	52,560	30%
20	70,080	40%
20	87,600	50%
20	105,120	60%
20	122,640	70%
20	140,160	80%

Cost disparities due to differences in customer load factors cannot be captured by a two-part rate design consisting of only a customer charge and an energy charge. Addressing intra-class subsidies resulting from differences in load factors require the implementation of three- or four-part rate designs, as described on pages 21-25 and pages 46-78 of Mr. Seelye's direct testimony.

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Question No. 51

Responding Witness: William Steven Seelye

- Q-51. In terms of intra-class subsidies, do low usage customers living in multi-family housing or dense neighborhoods impose lower distribution costs than high usage customers?
- A-51. The Companies have not performed an analysis addressing the question. However, the cost of distribution facilities in dense neighborhoods is often higher because the facilities often utilize underground distribution facilities in dense neighborhoods, which are often more costly. Furthermore, low usage customers living in those neighborhoods would not necessarily have lower demands than customers with higher usage. See the response to Question No. 50.

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Question No. 52

Responding Witness: William Steven Seelye

Q-52. Mr. Seelye, at p. 13 (p. 17 of pdf 13-LGE_Testimony_4of4) states that a portion of electricity "customer costs" are currently recovered through the Energy Charge.

- a. Please list what these costs are.
- b. Please demonstrate how these costs have no connection to the volume of electricity used by the customer either in the short or the long run.
- c. Please explain which of these costs will be recovered in the Basic Service Charge in the proposed rates.

A-52.

- a. The Company's Cost-of-Service Study showed that customer-related costs for RS were \$0.69 per customer per day while the current charge is \$0.45 per customer per day. Therefore, \$0.24 per customer per day of customer-related cost are being collected through the energy charge. These costs include, but are not limited to, a portion of the meter, service line, transformer, a portion of overhead and underground conductor, and operation and maintenance expenses of those facilities, plus meter reading, billing and customer service.
- b. As explained on Page 15-16 of Mr. Seelye's testimony, "other fixed costs are customer-related and are thus related to the number of customers that the utility serves. These fixed costs typically will not change if a customer uses more energy or if a customer uses less energy. For example, once KU or LG&E installs a distribution line, transformer, service line, and meter to serve a customer, the operation and maintenance expenses, depreciation expenses, property taxes, interest expenses, and other such costs are not decreased if a customer uses less energy. Once the facilities are installed, they are invariant to customer usage and are therefore fixed."
- c. Only 75.4% of the customer-related costs described in part b of this response are recovered through the customer charge. Of this percentage, it is not

possible to identify the particular customer-related costs that are – or are not – recovered through the Basic Service Charge. The question can only be answered as a percentage of the total.

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Question No. 53

Responding Witness: William Steven Seelye

Q-53. Mr. Seelye, at p. 11 (page 15 of pdf 13-LGE_Testimony_4of4) discusses costs that “do not vary directly with energy use”, including “fixed operation and maintenance expenses related to utility infrastructure” and costs that are “not automatically” reduced when customers use less energy.

- a. Please distinguish “fixed” vs “variable” operation and maintenance expenses.
- b. Are there costs that vary “indirectly” with energy use, rather than varying directly?
- c. What does “not automatically” reduced mean? Does that mean some of these costs may be reduced over the long term with less energy use?

A-53.

- a. Variable operation and maintenance expenses include fuel, scrubber reactant, and other expenses that vary with the amount of energy consumed by customers. This means that if a customer uses an additional kWh of energy, there is a corresponding increase in costs the Company must incur to provide that energy. Conversely, if a customer uses less kWh energy there is a corresponding reduction in costs incurred by the Company.

Fixed operation and maintenance expenses include items that do not vary with how much energy is consumed by customers such as power plant staffing costs, maintenance of power plant equipment, maintenance of transmission facilities, and maintenance of distribution substations. These costs are more closely correlated to the demand carrying capability of the equipment installed to meet customer's needs. A customer could use 1 kWh or 1,000 kWh in a month and the levels of expenses to maintain this equipment will not vary.

- b. Mr. Seelye is not aware of any costs that vary “indirectly” with the use of energy. Energy costs are directly related to the production and consumption of energy, not any other part of the Company's operations.

- c. Once a fixed cost is incurred it does not change in the short run if a customer reduces their consumption of energy and therefore the magnitude of that cost is not automatically reduced when a customer uses less energy. The Company's long-run marginal cost is more dependent on demand than energy, so while reductions in energy use may reduce the Company's long-run marginal costs it is not automatic.

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Question No. 54

Responding Witness: Paul W. Thompson / David S. Sinclair / Eileen L. Saunders

- Q-54. Witness Thompson states on page 21 (p. 23 of pdf of 10—LGE Testimony 1 of 4): “Under my direction, the Companies delayed this filing two months from what was previously planned, to a time when Kentucky’s moratorium on disconnections for non-payment has been lifted and the economy has begun to reopen. Furthermore, we have taken unique measures to minimize the bill impact occasioned by a rate increase through the middle of 2022, including a proposed economic relief surcredit.”
- a. Have the companies developed estimates measuring the size of an economic recovery by the middle of 2022? Provide that analysis and any accompanying workpapers.
 - b. The proposed surcredit reduces the size of the bill increases by the following: 0.7% for KU customers, 3% for LGE Electric customers, and 0.5% for gas customers. In the context of current and likely continuing economic hardship as a consequence of COVID-19, provide all information and sources relied on by the companies to support their claims that they have “minimized bill impacts through the middle of 2022”.
 - c. Given the economic impacts of COVID-19, what are the expected increases in disconnections that are likely to occur in 2021, if any? Please provide an explanation of the analysis on projected disconnections for 2021. Provide numbers of actual disconnections, by month, for years 2018, 2019, and 2020.
 - d. If there are projected increases in disconnections for 2021, what is the basis for the company increasing the fees for disconnections and reconnections? (\$9.00 KU; \$4.00 LGE).
- A-54.
- a. The Company uses economic forecasts provided by IHS Markit. Per IHS, the US economy is forecasted to return to pre-pandemic (2019) levels by 2022. See LG&E Filing Requirements Tab 16 p. 19 for details (p.851 at the following link: <https://psc.ky.gov/psccef/2020-00350/rick.lovekamp%40lge->

[ku.com/11252020085918/07-LGE Filing Requirements 1of3%28Tabs 1-45%29.pdf](https://www.ku.com/11252020085918/07-LGE_Filing_Requirements_1of3%28Tabs_1-45%29.pdf)).

- b. Given the economic data supplied in response to a. above, the Company believes its surcredit is appropriate, including its termination in mid-2022, when the economy is expected to recover.
- c. The Companies continue to recognize the unprecedented emergency posed by COVID-19 and will continue to work with customers to offer extended payment plans for all charges incurred during this period and will work to connect customers with resources for additional support. The Companies are unable to project the number of disconnections for 2021 due to the many variables impacted by the pandemic. See attached for actual disconnections, by month for years 2018, 2019, and 2020.
- d. See the response to PSC 2-136.

Louisville Gas and Electric Company
Completed Disconnections For Non-Payment
January 2018 through December 2020

<u>Year</u>	<u>Annually</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
2018	64,303	3,976	5,385	5,797	5,149	5,571	6,644	6,417	7,347	4,402	5,233	2,790	5,592
2019	60,469	4,933	6,558	6,415	6,258	5,784	4,237	4,053	4,347	4,700	4,550	3,210	5,424
2020	16,646	6,646	6,425	2,813	-	-	-	-	-	-	-	329	433

*Moratorium on disconnections March 16, 2020 through October 20, 2020.

LOUISVILLE GAS AND ELECTRIC COMPANY

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Case No. 2020-00350

Question No. 55

Responding Witness: Robert M. Conroy

- Q-55. Provide the workpapers (in excel, with formulas intact) for the calculations of the bill increases given in the customer notices and by Witness Conroy, p. 6 page (388 of pdf. 11-KU Testimony 2 of 4).
- a. With respect to the first year the proposed rates are in place please explain and provide the financial impact of the sur credit.
 - b. With respect to the time after the first year, please explain and provide the financial impact of the sur credit.
- A-55. See the response to PSC 1-56 and the files named "2020_Att_LGE_PSC_1-56_ElecScheduleM_Forecasted.xlsx" and "2020_Att_LGE_PSC_1-56_GasScheduleM_Forecasted.xlsx". The bill increases that were contained in the notices are shown in Schedule M-2.2-E for LG&E Electric and Schedule M-2.2-G for LG&E Gas.
- a. See the testimony of Mr. Conroy at pages 6-8 for the financial impact of the Economic Relief Surcredit. For a LG&E electric customer, the surcredit will be \$0.00343 per kWh. For a LG&E gas customer, the surcredit will be \$0.00619 per Ccf.
 - b. The Economic Relief Surcredit will terminate after one year. Thus, the financial impact to customers is that they will no longer receive the credits expressed in part a.

LOUISVILLE GAS AND ELECTRIC COMPANY

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Case No. 2020-00350

Question No. 56

Responding Witness: William Steven Seelye

Q-56. How does the company determine the costs to include in the residential basic service charge (or customer charge)?

- a. Identify the functionalized costs included in the residential basic service charge (i.e. billing, postage, etc.)
- b. Provide the USOA account numbers where the company records these costs.

A-56.

- a. The Basic Service Charge includes costs associated with meters, service lines, a portion of transformer, overhead conductor, and underground conductor, meter reading and billing, customer service, and the customer-related portions of administrative and general expenses.
- b. Distribution customer-related costs recovered through the Basic Service Charge are recorded in accounts 364, 365, 366, 367, 368, 369, 370, 371, 580 through 599, 901 through 916, 920 through 935, and associated costs in 301-303 and the Construction Work in Progress accounts.

LOUISVILLE GAS AND ELECTRIC COMPANY

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Case No. 2020-00350

Question No. 57

Responding Witness: William Steven Seelye

- Q-57. Provide all workpapers (in excel worksheets with formula's intact) showing the proposed rate increases (by class), including all analysis broken down by charge type (i.e. customer charge, kWh, and Demand-charges).
- A-57. See the following Excel attachments to the response to PSC 1-56:
"2020_Att_LGE_PSC_1-56_ElecScheduleM_Forecasted.xlsx" and
"2020_Att_LGE_PSC_1-56_GasScheduleM_Forecasted.xlsx".

LOUISVILLE GAS AND ELECTRIC COMPANY

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Case No. 2020-00350

Question No. 58

Responding Witness: David S. Sinclair

- Q-58. Provide the Company's current Integrated Resource Plan (public and confidential versions). Please include any updates that have been added since the time it was filed, if any. Identify the company's current capacity position and any planned additions or retirement of generation.
- A-58. See the response to AG-KIUC 1-6. The Companies have not made any updates to their 2018 Integrated Resource Plan.

For the Companies' capacity position, see Table 4 in Mr. Sinclair's testimony at page 26, line 4, which shows the Companies' reserve margin. Mr. Bellar's testimony at page 9 discusses the Companies' retirement dates for generating units. As approved by the PSC in Case 2020-00016, the Companies plan to purchase energy from a 100 MW solar facility starting in 2022. The Companies have no specific plans for additional generation at this time but have issued a request for proposals for replacement capacity and energy resources.

LOUISVILLE GAS AND ELECTRIC COMPANY

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Case No. 2020-00350

Question No. 59

Responding Witness: Lonnie E. Bellar

- Q-59. Provide all analyses performed by the company (or its contractors) to evaluate the cost impact of installing AMI meters for all residential customers. Include all analysis performed by the company showing the residential bill and rate impact when the cost of the meters is included in rates.
- A-59. The Companies have not quantified the benefits of AMI by class. The Companies have provided for cost recovery of the proposed AMI investment in a manner which, based on the Companies' current projections, will not result in an increase in our customers' rates currently or when cost recovery of that investment is ultimately sought – Blake direct testimony, page 3 at 5-8. See also the response to AG-KIUC 1-193.

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Question No. 60

Responding Witness: Robert M. Conroy / William Steven Seelye

- Q-60. For each of the last five years provide the financial cost of net metering to the utility. Provide all analysis performed to show the rate impact, if any, on non-net-metering customers.
- A-60. The Companies have not performed the requested analysis. See the response to PSC 2-122.

LOUISVILLE GAS AND ELECTRIC COMPANY

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Case No. 2020-00350

Question No. 61

Responding Witness: Robert M. Conroy / Eileen L. Saunders

Q-61. Please describe, and provide complete and detailed documentation on, all current programs that the company currently operates relating to solar energy, wind energy, and other forms of renewable energy, including, but not limited to, the name of the program, annual budget, the customer classes to which the program applies, the number of participating customers, and the applicable tariff sheets. Please provide information for any programs currently planned and/or in development for the future.

A-61. The Companies offer the following renewable energy programs:

- Net Metering Service (Rider NMS, Sheet Nos. 57 – 57.7)
 - Complete and detailed documentation is available at:
 - KPSC Case No. 2001-00303
 - KPSC Case No. 2018-00295
 - KPSC Case No. 2019-00256
 - The Companies do not have a specific budget for Net Metering Service.
 - Availability and description: see Sheet Nos. 57 – 57.7.
 - See response in KSIA Question No. 1-14(a) for details on NMS customer participation.

- Renewable Energy Certificates (RECs) (Rider GT Option #1, Sheet Nos. 69. – 69.3)
 - Complete and detailed documentation is available at:
 - KPSC Case No. 2016-00274
 - KPSC Case No. 2018-00295
 - The Companies do not have a specific budget for Renewable Energy Certificates.
 - Availability: see Sheet Nos. 69. – 69.3.
 - The number of participating customers is 1,109 (see attachment for more detail).

- Business Solar (Rider GT Option #2, Sheet Nos. 69. – 69.3)
 - Complete and detailed documentation is available at:
 - KPSC Case No. 2018-00295
 - The Companies do not have a specific budget for Business Solar.
 - Availability: see Sheet Nos. 69. – 69.3.
 - The number of participating customers is two (see attachment for more detail).

- Renewable Power Agreement (Rider GT Option #3, Sheet Nos. 69. – 69.3)
 - Complete and detailed documentation is available at
 - KPSC Case No. 2018-00295
 - KPSC Case No. 2020-00016
 - The Companies do not have a specific budget for Renewable Power Agreement.
 - Availability: see Sheet Nos. 69. – 69.3.
 - The number of participating customers is 2.

- Solar Share Program (Rider SSP, Sheet Nos. 72 – 72.3)
 - Complete and detailed documentation is available at:
 - KPSC Case No. 2016-00274
 - The Companies' budget for the Solar Share Program was provided as part of KPSC Case No. 2016-00274 under Steve Seelye's testimony (WSS-6). Availability: see Sheet Nos. 72 – 72.3.
 - The number of participating customers is 2,768 (see attachment for more detail).

In addition to these programmatic offerings, the Companies have two qualifying facility tariff provisions, Riders SQF (Sheet Nos. 55 – 55.3) and LQF (Sheet Nos. 56 – 56.1), which allow customers operating renewable generating facilities to receive compensation for energy they produce to the Companies' grid.

The Companies are continually evaluating programs for customers, however there are no imminent plans for expanded renewable energy programs at this time.

LGE KU RENEWABLE PROGRAM OFFERINGS

Solar Share - provides customers with an opportunity to purchase shares of solar and receive bill credits. The program is open to all customer classes. See charts below for current participation levels.

Solar Share 2016-2020**Details – Solar Share Participation**

# of Subscriptions	Organization					
	Array Number	KU	LG&E	Grand Total	KU%	LG&E%
	1	118	194	312	38%	62%
	2	357	386	743	48%	52%
	3	301	392	693	43%	57%
	4	366	331	697	53%	47%
	5	190	133	323	59%	41%
Grand Total		1332	1436	2768		

# of Subscriptions	Customer Type					
	Array Number	Residential	Non-Residential	Grand Total	Res%	Non-Res%
	1	303	9	312	97%	3%
	2	723	20	743	97%	3%
	3	679	14	693	98%	2%
	4	685	12	697	98%	2%
	5	322	1	323	100%	0%
Grand Total		2712	56	2768		

Business Solar - offers individual private solar facilities for business and industrial customers interested in renewable generation at their location.

Current participation levels shown below:

- Archdiocese of Louisville (+/- 33.6 kW (DC)/28 kW (AC) roof mount solar array - Go Live Date: 05/17/2018
- Maker's Mark (+/-190 kW (DC)/180 kW (AC) ground mount solar array - Go Live Date: 01/25/2019

Green Energy - The Green Energy program uses monetary contributions from customers to purchase Renewable Energy Certificates (RECs) on their behalf. The program is open to all customer classes. See chart below for current participation levels:

Green Energy 2016-2020**Details – Green Energy Participation**

Year	Organization				
	KU	LG&E	Grand Total	KU%	LG&E%
2016	483	817	1300	37%	63%
2017	488	787	1275	38%	62%
2018	450	757	1207	37%	63%
2019	441	723	1164	38%	62%
2020 YTD	409	700	1109	37%	63%

Year	Customer Type				
	Residential	Non-Residential	Grand Total	Res%	Non-Res%
2016	1264	36	1300	97%	3%
2017	1221	54	1275	96%	4%
2018	1178	29	1207	98%	2%
2019	1138	26	1164	98%	2%
2020 YTD	1081	28	1109	97%	3%

Note: 2020 YTD represents (January 2020 through November 2020). Green Energy data is reported with a one-month lag.

LOUISVILLE GAS AND ELECTRIC COMPANY

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Case No. 2020-00350

Question No. 62

Responding Witness: Robert M. Conroy / Eileen L. Saunders

- Q-62. Please describe, and provide complete and detailed documentation on, all current programs that the company currently operates relating to energy efficiency, including, but not limited to, the name of the program, annual budget, the customer classes to which the program applies, the number of participating customers, and the applicable tariff sheets. Please include information for any programs that have been provided in the past 5 years. Please provide information for any programs currently planned and/or in development for the future.
- A-62. LG&E's demand-side management and energy efficiency ("DSM-EE") offerings are described in, and availability information is available at, Sheet Nos. 86 – 86.7. See the attachment being provided in Excel format for budgetary and participation information. Additional information and documentation regarding LG&E's DSM-EE offerings in the last 5 years can be found in the KPSC Case No. 2017-00441 for years 2019-2025, and 2014-00003 for years 2015-2018.

The Companies' current DSM-EE program plan runs through 2025. Therefore, the Companies are preparing to consider potential future offerings but do not have any additional programs currently planned or in development.

The attachment is being provided in a separate file in Excel format.

LOUISVILLE GAS AND ELECTRIC COMPANY

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Case No. 2020-00350

Question No. 63

Responding Witness: Robert M. Conroy / Eileen L. Saunders

- Q-63. Please describe, and provide complete and detailed documentation on, all current low-income or income-eligible programs that the company currently operates relating to energy efficiency and renewable energy, including, but not limited to, the name of the program, annual budget, the customer segment to which the program applies, the number of participating customers, and the applicable tariff sheets. Please include information for any programs that have been provided in the past 5 years. Please provide information for any programs currently planned and/or in development for the future.
- A-63. See the response to Question No. 62. A summary of the WeCare program and proposed enhancements to that program is also included in the testimony of Eileen L. Saunders at pp. 12-14.

LOUISVILLE GAS AND ELECTRIC COMPANY

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Case No. 2020-00350

Question No. 64

Responding Witness: Robert M. Conroy

- Q-64. Provide the Case docket numbers for the company's 5 most recent rate cases.
- A-64. The five most recent Kentucky rate cases for LG&E are listed below.

Case No. 2018-00295

Case No. 2016-00371

Case No. 2014-00372

Case No. 2012-00222

Case No. 2009-00549

LOUISVILLE GAS AND ELECTRIC COMPANY

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Case No. 2020-00350

Question No. 65

Responding Witness: Gregory J. Meiman

- Q-65. Provide the amounts of all salary increases, financial incentives, or bonuses paid to C-suite level employees and other non-union employee in management positions by year for 2018, 2019, 2020, and projected for 2021, if any.
- A-65. Employees in management positions and above had a budget of 3% for salary increases in years 2018-2021. The target TIA percentage for managers during each of these years is 14% with senior managers having a target of 25%. Incentives for officer level employees are excluded from the revenue requirement.

LOUISVILLE GAS AND ELECTRIC COMPANY

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Case No. 2020-00350

Question No. 66

Responding Witness: Christopher M. Garrett

- Q-66. Provide the amount of shareholder (below-the-line) money the company has spent on community outreach or financial assistance to customers for the years 2018, 2019, 2020, and projected for 2021, if any.
- A-66. Please see the table below detailing direct customer assistance made by the Company for years 2018, 2019, 2020 and projected for 2021.

Program	2018¹	2019¹	2020²	2021²
LG&E Home Energy Assistance (HEA) Program	\$180,000	\$180,000	\$180,000	\$180,000
Association of Community Ministries (ACM)	\$700,000	\$700,000	\$700,000	\$700,000
WinterHelp Energy Fund	\$150,661	\$111,981	\$130,939	\$115,000
Total	\$1,030,661	\$991,981	\$1,010,939	\$995,000

Additionally, the LG&E and KU Foundation made a \$100,000 contribution to the One Louisville Fund for COVID-19 relief in 2020.

¹ Amounts contributed in 2018 and 2019 were made by Louisville Gas and Electric Company.

² Amounts contributed in 2020 and projected for 2021 were made by the LG&E and KU Foundation.

LOUISVILLE GAS AND ELECTRIC COMPANY

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Question No. 67

Responding Witness: Christopher M. Garrett

- Q-67. Provide the amount of ratepayer (above-the-line) money the company has spent on community outreach or financial assistance to customers for the years 2018, 2019, 2020, and projected for 2021, if any.
- A-67. The Company did not have any ratepayer (above-the-line) funds spent in years 2018, 2019, 2020, and projected for 2021.

LOUISVILLE GAS AND ELECTRIC COMPANY

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Case No. 2020-00350

Question No. 68

Responding Witness: Robert M. Conroy

- Q-68. Provide the company's plan to develop rate offerings that offer customers choice and savings that AMI meters would enable, if any. Please include copies of the program tariffs.
- A-68. See the testimony of Mr. Conroy at page 10.

LOUISVILLE GAS AND ELECTRIC COMPANY

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Case No. 2020-00350

Question No. 69

Responding Witness: Robert M. Conroy

- Q-69. Identify all increased costs the company would incur by account, for each year during an implementation of system-wide AMI meters for residential customers. Please include all workpapers associated with these calculations, if any.
- A-69. See the response to Question No. 59. The Company has not performed an allocation of costs or savings specifically to residential customers in this proceeding. Such allocation will be performed through the cost of service study in the base rate case following implementation. There are no costs or savings associated with AMI in the revenue requirement for this proceeding. See the testimony of Mr. Blake for a detailed discussion of the proposed ratemaking for AMI.

LOUISVILLE GAS AND ELECTRIC COMPANY

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Case No. 2020-00350

Question No. 70

Responding Witness: Robert M. Conroy

- Q-70. Identify all savings the company projects it would incur, by account, for each year during an implementation of system-wide AMI meters for residential customers. Please include all workpapers associated with these calculations, if any.
- A-70. See the response to Question No. 69.

LOUISVILLE GAS AND ELECTRIC COMPANY

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Case No. 2020-00350

Question No. 71

Responding Witness: Eileen L. Saunders / John K. Wolfe

- Q-71. Does the company have a plan to use AMI meters to support distributed energy resources, such as solar? Provide any documentation of that plan, including tariff sheets, if available.
- A-71. AMI will give customers access to 15-minute interval data, which enables customers to provide data to third parties for the purpose of optimizing distributed energy resources such as solar. The Companies have not prepared any documented plans regarding support to distributed energy resources as a result of AMI meters.

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Case No. 2020-00350

Question No. 72

Responding Witness: Robert M. Conroy

- Q-72. Please explain whether any of the monies expended by LGE on legislative agents, on direct or grassroots lobbying, informational materials, and any other expenses associated with LGE's efforts to have SB 100 enacted by the General Assembly, are included in this rate case. If so, please itemize by category all of those expenses for which recovery is sought.
- A-72. See the response to Question No. 12.