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 DEPLOY ADVANCED METERING INFRASTRUCTURE, APPROVAL OF CERTAIN REGULATORY AND ACCOUNTING TREATMENTS, AND ESTABLISHMENT OF A ONE-YEAR SURCREDIT	))))))))))	**CASE NO. 2020-00350**

RESPONSE OF
LOUISVILLE GAS AND ELECTRIC COMPANY
TO
LOUISVILLE/JEFFERSON COUNTY METRO GOVERNMENT'S
SECOND REQUEST FOR INFORMATION
DATED FEBRUARY 5, 2021

FILED: FEBRUARY 19, 2021

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

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

Lonnie E. Bellar

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

Notary Public

Notary Public ID No. 603967

My Commission Expires:

July 11, 2022

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Kent W. Blake**, being duly sworn, deposes and says that he is Chief Financial Officer 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.

Kent W. Blake

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 17th day of February 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 17th day of February 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 17th day of February 2021.

Notary Public

Notary Public ID No. 603967

My Commission Expires:

July 11, 2022

VERIFICATION

STATE 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 17th day of February 2021.

Kyle Mello
NOTARY PUBLIC
BUNCOMBE COUNTY, NC
MY COMMISSION EXPIRES 7/29/2023

(SEAL)
Notary Public

Notary Public ID No. 20182130096

My Commission Expires:
7/29/2023

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 17th day of February 2021.

Notary Public

Notary Public ID No. 603967

My Commission Expires:

July 11, 2022

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 1

Responding Witness: William Steven Seelye

Q-1. Refer to Response to Metro 1-1. See Chart provided as answer to Metro 1-1(a) and 1-1(d) and PSC 2-130(a), line 42, "material burden," which shows a 120% mark up for material on each column.

(a) What is basis for this "material burden"?

(b) What is basis for the amount of the "material burden" being 120% of material cost?

(c) Is there a true-up mechanism to determine the true value of the material and give credit, or additional cost, when actual expenses are known?

A-1.

(a) Material burden includes overhead expenses related to stores expense, local engineering-distribution, and general and administrative expenses associated with material that is purchased/warehoused.

(b) The burden rate is not 120%. The amount of the burden is 20%. It is shown in the spreadsheet as 120% to simplify the calculation so the material cost and the burden (overhead cost) is included in the product once it is multiplied by the burden rate. The burden rate is based on forecasted cost for stores expense, local engineering-distribution, and general and administrative expenses.

(c) There is no true-up mechanism for the burden amount included in base rates. It is not a normal utility practice to incorporate over-under cost recovery mechanisms (true-up mechanisms) for base rates.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 2

Responding Witness: William Steven Seelye

Q-2. Refer to Response to Metro 1-1. See Chart provided as answer to Metro DR 1-1(a) and 1-1(d) and PSC 2-130(a), line 50, "labor burden," which shows a 112% mark up for labor on each column.

(a) What is basis for this "labor burden"?

(b) What is basis for the amount of the "labor burden" being 112% of labor cost?

(c) Is there a true-up mechanism to determine the true value of the labor and give credit, or additional cost, when actual expenses are known?

A-2.

(a) Labor burden includes overhead expenses related to local engineering-distribution and general and administrative expenses associated with labor that is used to install facilities.

(b) The burden rate is not 112%. The amount of the burden is 12%. It is shown in the spreadsheet as 112% to simplify the calculation so the labor cost and the burden (overhead cost) is included in the product once it is multiplied by the burden rate. The burden rate is based on forecasted cost for local engineering-distribution and general and administrative expenses.

(c) There is no true-up mechanism for the burden amount included in base rates. It is not a normal utility practice to incorporate over-under cost recovery mechanisms (true-up mechanisms) for base rates.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 3

Responding Witness: William Steven Seelye

Q-3. Please provide in native (Excel) format the Attachment to Response to Metro 1-2(c).

A-3. 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 Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 4

Responding Witness: William Steven Seelye

Q-4. Please refer to Response to Metro 1-2(c) and (d).

(a) Would NBV of fixture decrease over time until it is either replaced, either by failure or conversion?

(b) What is NBV of fixtures as of January 1, 2018, 2019, 2020, and 2021?

(c) Why shouldn't one-time conversion fee be tied to each years' NBV, thus ratcheting down with depreciation?

A-4.

(a) Yes, the NBV of fixtures should decrease over time until they are fully replaced.

(b) The NBV per fixture as of May 2020 was $277.29 and was used in this proceeding. The NBV per fixture as of December 2017 was $288.38 and was used in the prior rate case proceeding. The Company has not performed the calculations for the other years requested due to the original work required and the data only being needed for purposes of a rate case proceeding.

(c) Calculating the conversion fee annually for each conversion would be administratively burdensome and would likely not result in significant annual changes to the fees paid by customers.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 5

Responding Witness: William Steven Seelye

Q-5. Refer to the Attachment to Response to Metro 1-2(c).

(a) What is the cost of LED installations included in the "New Business" section for 2017, 2018 and 2019?

(b) What is the cost of LEDs included for each year shown in the "Repair/replace Def Street Lighting" section?

(c) Reference the section titled "Calculated Present Day NBV."

i) What is the source of the NBV figures shown for OH Fix, UF Fix, and Poles?

ii) Why is "Total NBV" of $148,199,192.13different from "Net Cost Rate Base" for Distribution Street & Customer Lighting (Outdoor Lighting LS & RLS) of $7,771,357.00 as shown on Exhibit WSS-32, page 6/36?

A-5.

(a) LG&E does not track its new business lighting installations by light type; therefore, it has not performed these calculations.

(b) LG&E does not track the repair and replacement of street lighting by light type; therefore, it has not performed these calculations.

(c)

i) The NBV figures shown for OH Fix, UG Fix, and Poles are calculated based on the average current cost per fixture or pole multiplied by the number of fixtures or poles in each category.

ii) The "Total NBV" of $148,199,192.13 is a calculated number based on current costs. It is used to allocate the actual book value, used in the calculation of the conversion fee, between poles and fixtures. The $77,771,357 shown in Exhibit-32, page 6 of 36 is a rate base number and

will not correspond to either the calculated "Total NBV" at current costs or the actual NBV for a particular year. NBV and rate base are not the same thing.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 6

Responding Witness: William Steven Seelye

Q-6. Please refer to Response to Metro 1-2(g) and Exhibit WSS-5. Of the $277.29 proposed one-time conversion fee, in dollars and cents, what amount is salvage and what amount is revenue?

A-6. All of the $277.29 would be salvage.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 7

Responding Witness: John K. Wolfe

Q-7. Refer to the Response to Metro 1-5.

(a) Why do reactive conversions require a one-man crew but proactive conversions require a two-man crew?

(b) Please refer to Witness Wolfe's "Labor Cost Detail" spreadsheet (page 71 of 89).

i) Please describe what is included in "Total Labor Costs." Specifically, does Total Labor Cost include:

1. Any labor time spent not at the worksite, for example in planning and preparation or in transit to each work site?

(2) Any indirect or overhead labor charges, for example labor costs of staff who prepare and represent project proposals to customers, engineering and design staff, staff who record lighting changes to assure correct billing, or corporate staff whose time is charged by allocation?

ii) How was the "Unit Rate per Light," shown in the 'Maintenance Conversion Comparison" section, determined?

(c) In Witness Wolfe's attached e-mail from Bradley Hayes including spreadsheet, Mr. Hayes finds that a 6-year LED conversion timeline would have greater NPV than LG&E's current approach to conversions with a 25-year timeline (page 75 of 89). Why is LG&E not proposing to implement the 6-year conversion methodology analyzed by Mr. Hayes?

(d) Please confirm that the 6-year conversion timeline analyzed by Mr. Hayes would not require customer conversion payments.

A-7.

(a) Reactive conversion requires one person in a bucket truck traveling to a specific location to repair a single light following the procedures described in the response to METRO 1-21. Bucket trucks have limited capacity for hauling large LED fixtures. A proactive conversion requires a second person to drive a follow pick-up truck to transport fixtures so that many fixtures can be replaced in succession without the need to return to the storeroom. The second person helps reduce setup and teardown time between fixture replacements and aides in traffic control. The pick-up truck also carries an arrow board for traffic control.

(b)

(i) Total labor costs include the two-person crew's full 8 or 10-hour workday. That includes loading trucks, jobsite safety briefings, transit, setup, teardown, and fixture replacements.

(1) These costs do not directly include any planning or administrative costs, but do include transit costs to and from the worksite.

(2) These costs include the labor burden applied to all contractor labor. These costs do not directly include the costs of staff who work to prepare project proposals to customers, engineering and design staff, staff who record lighting changes to assure correct billing, or corporate staff.

(ii) The unit rate per light is the unitized rate from the contractor that typically performs lighting maintenance work in the Louisville area.

(c) The analysis makes a number of assumptions that set up an ideal environment for both plans and evaluates the initial capital investment over 50 years. These assumptions include perfect recovery by the Company, consistent cost of capital, does not include replacements of failed LED fixtures and does not consider the stranded asset costs incurred for removing ~270,000 fixtures in good working order from service. In light of the Company's goal to make this base rate case the last base rate case it will file for a number of years (as explained on page 3 of Kent W. Blake's Direct Testimony), the initial capital outlay of ~$118 million over 6 years necessary for this plan does not represent a feasible investment at this time.

(d) No customer conversion payments were considered in this analysis.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 8

Responding Witness: John K. Wolfe

Q-8. Please refer to Response to Metro 1-5.

(a) The question requested "technical specification or metrics established by the Company." The materials provided by witness Wolfe are manufacturer specs, not established by the Company. Please either:

i) verify that the Company did not establish its own technical specification or metrics to select LED types, or

ii) provide any technical specifications or metrics established by the Company.

(b) Please describe procurement processes the Company uses to source luminaires. Provide any RFPs, evaluation rubrics and actual vendor/product evaluations developed for and used in those processes since 2017.

A-8.

(a) The Company does not have its own internally developed technical specifications or metrics to select LEDs.

(b) The Company periodically evaluates products from different lighting manufacturers to select LEDs. As part of these evaluations, the Company assesses the reliability, lumen output, surge protection, cost, energy usage, warranties and compliance with various ANSI standards (C136.2, C136.31, C136.10, etc.). During these evaluations, lighting personnel, field users, and electric standard engineers have the opportunity to review and demo the product lines. The Company seeks product reviews from other utilities and participates in multiple industry groups that help the Company assess lighting products. The Company evaluates each product as a whole and does not have any evaluation rubrics nor has it developed product evaluations for use in that process.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 9

Responding Witness: John K. Wolfe

Q-9. Please refer to Response to Metro 1-5, and specifically "LED OUTDOOR LIGHTING CONVERSION PROJECT" page 70 of 89 of attachment.

(a) Why are labor costs higher for LG&E than KU?

(b) Why is there traffic control in proactive conversion and not failed fixture replacement?

(c) Are the labor costs listed on this page still accurate for the conversions requested in this rate case? If not, what are those costs?

(d) Please break down the $112.36, or actual, labor cost for proactive conversion.

(e) What is total cost, including labor, for proactive conversion?

(f) Please break down the $94.33, or actual, labor cost for failed fixture replacement.

(g) What is total cost, including labor, for failed fixture replacement?

(h) Have the benefits of proactive conversion over failed fixture replacement, such as ability to plan, order material, less travel, been considered in these costs?

(i) If someone requested many proactive conversions, could the costs of labor be lowered through economies of scale?

A-9

(a) In respect to the LED Outdoor Lighting Conversion Project, the contractor used for the project in the LG&E Market had a slightly higher hourly rate. The LG&E contractor experienced more delays due to parked cars along roadways during workdays. LG&E experiences a slightly higher burden rate on outside labor.

(b) In most situations, a one-off light repair (replacing bulb or fixture) does not require traffic control, as the work does not impede traffic or the work is performed after normal business hours. In rare situations where drivers may not be able to see the repair truck, such as on a hill or curve, traffic control is utilized.

(c) The Company is not requesting any conversions in this rate case. The labor costs built into the Lighting Service rates are accurate for this case.

(d) Please see response to 7(b). This figure is the actual time and expense the contractor incurred to perform the proactive LED conversion.

(e) Using the average labor costs incurred during the Proactive Conversion Project, a system-wide conversion of all LG&E lights to LED is estimated at $42.8 million.

(f) This is the average per unit rate (in this instance, per fixture replaced) for fixture replacements for the contractor that typically performs this work in the Louisville area.

(g) Using the unit rates for the contractor that typically performs lighting maintenance work in the Louisville area, a system-wide conversion of LG&E lights to LEDs upon fixture failure is estimated at $39.8 million.

(h) Yes, the Company believes those benefits are represented by using the costs from the Proactive Conversion Project.

(i) Based on the LED Outdoor Lighting Proactive Conversion Project, at this time, the Company does not believe lower costs could be achieved through economies of scale.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 10

Responding Witness: John K. Wolfe

Q-10. Please refer to Response to Metro 1-13, which states "KU has a long-standing practice of maintaining a database of all lighting related activities in Lexington-Fayette County. KU and LG&E do not replicate this practice anywhere else in the service territories. KU does not have a business need to track information at this level for public street lights in KU jurisdictional operations or KU's entire system." Please explain how LG&E is able to prepare accurate customer invoices if it does not track the types of lights installed and the number of these lights in LG&E's system.

A-10. When each work order is completed comments are entered that provide the necessary instructions for customer billing on that particular work order (e.g. if a new light is installed, if a HPS light is replaced with an LED, if a light is removed, etc.). The billing database and work request database are not built to track those changes by individual light and customer, only in the aggregate for each month. The Lexington Operations Center takes extra steps to track changes at the individual light level for LFUCG in a standalone database.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 11

Responding Witness: John K. Wolfe

Q-11. Are streetlight customers entitled to bill credits or other compensation for outages? If the answer is yes, please:

(a) Describe or document any such policies and practices and under what authority or agreement they have been implemented.

(b) Address whether credits, or other compensation, are granted automatically or if they require a request and documentation from the customer.

(c) Provide an accounting for 2017, 2018 and, 2019 for total outage-related bill credits or compensation, and if credits are granted for different reasons break down the accounting accordingly.

A-11. No.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 12

Responding Witness: John K. Wolfe

Q-12. Refer to Response to Metro 1-15, 1-22, and 1-25. Metro believes it is imperative that the system currently employed for failed fixture replacement be improved.

(a) Is there any technology available, used by other utilities, that can identify street light outages without the need for human inspection?

(b) Assuming so, what is the cost for such technology and what does it consist of?

(c) Is the Company familiar with Citytouch, by Phillips or Current, by GE? If so, has the Company considered these applications?

(d) See answer to Metro 1-25(a) regarding mobile applications that allows street light outages to be "geo-tagged" or otherwise noticed to the Company. What is status of the "company considering the feasibility of developing this type of feature on the Company's App or Website"?

(e) Has Company reviewed what other utilities have done regarding this?

(f) If so, which utilities?

(g) Would Company be willing to accept information regarding street light outages that is reported to Louisville Metro through Metro technology?

(h) Assuming so, would company work with Louisville Metro to set up a bridge to receive directly?

A-12.

(a) Yes.

(b) There is a variety of technology that provide this service, referred to as Streetlight controllers or as Smart Lighting devices. The most common application is a controller (or smart device) that replaces the traditional

photoelectric control and attaches to the NEMA 7-Pin Receptacle that comes standard on the LED fixtures the Company is installing. These controllers generally communicate through a mesh network or through a cellular connection, and report the status of the light to a central hub. Most of the products provide a range of additional capabilities beyond monitoring, such as the ability to turn the fixture on and off remotely, dimming, motion sensing to turn the light on as vehicles approach, traffic and pedestrian counting, public Wi-Fi, cameras, air quality monitoring, and gunshot detection, and more. The company has seen controller pricing ranging between $100 per unit and $3,500 per unit, not including installation, commissioning, connectivity (cellular or mesh network), maintenance and troubleshooting costs, and annual software license fees necessary to manage and use the controllers.

(c) The Company is aware of these products and has not considered them for application at this time.

(d) The Company is evaluating internal development vs. purchasing a product from a software provider.

(e) Yes. The Company participates in various industry groups and conferences that help the Company stay abreast of innovations in lighting technology.

(f) The Company found and reviewed two utilities that have deployed this technology, Duke Energy and Oncor Electric.

(g) Yes, assuming an approach agreeable to both parties can be developed for the format and delivery of this information such that it does not interfere with Company's obligations to its lighting customers.

(h) The Company is willing to explore the feasibility and cost of creating a secure interface for the exchange of such information.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 13

Responding Witness: John K. Wolfe

Q-13. Refer to Response to Metro 1-18.

(a) Does the average time to repair of 2.01 days in 2020 include outages identified through the patrol-and-fix practices described in the answer to question 15?

(b) If so, what was the average time to repair for outages other than those identified and addressed by patrol-and-fix?

(c) What is Standard Operating Procedure for repair calls including how the contractor is chosen?

(d) Does the process differ based on how the Company receives the outage report?

A-13.

(a) LG&E assumes the reference to 2.01 days should be 2.82 days for the Company's response to Metro 1-18. Yes.

(b) Work requests generated during patrols are not differentiated from other work requests generated by company personnel and cannot be removed from the metric.

(c) For standard operating procedure for repair calls please see response to Metro 1-21. Lighting maintenance contractors for the LG&E area are selected through the Company's normal sourcing process and once that relationship is established lighting repair work orders are directed to that contractor.

(d) No.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 14

Responding Witness: John K. Wolfe

Q-14. Refer to Response to Metro 1-22(b) stating that the rate schedule provides LG&E two business days to initiate a repair. Is there any time standard within which the company is required to complete a repair and restore service? If the answer is yes, please identify under what authority or agreement the standard has been established, and how the Company communicates that standard to customers.

A-14. No, see the response to Metro 1-18 for the average time to restore service for light outages.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 15

Responding Witness: John K. Wolfe

Q-15. Refer to Response to Metro 1-24, which states that Based on historical maintenance the Company expects to replace approximately 2,095 fixtures with LED fixtures each year over the next 5 years.

(a) Confirm that the Company's expectation to replace approximately 2,291 fixtures per year is for the Company's entire system, and not only within Louisville Metro.

(b) If customers request conversion of traditional street lighting to LED lighting, does the Company anticipate that there will be a maximum capacity of conversions that can occur in one year? If so, what is that anticipated maximum capacity?

(c) What assurances will the Company provide that it will not prioritize replacing traditional RLS lights with lower rates than their LED equivalent?

A-15.

(a) The 2,291 figure is for the entire LG&E system.

(b) The Company does not have a specific maximum number of conversions it can complete in one year. The Company will work with any customer who seeks a conversion to LED to complete that request in a timely manner, acceptable to both parties. High volumes will necessarily take more time to complete from both a labor availability and materials acquisition standpoint, and very large requests may take more than one year to complete. For example, if Metro sought to convert all of the ~25,000+ lights provided to Metro by the Company, that project will likely take longer than one year due to logistical constraints.

(c) The Company understands this question to ask what assurances the Company can provide that it will not replace failed traditional RLS lights with a traditional RLS light. The Company is replacing failed fixtures upon failure and has no other priority replacement plan. With the exception of the Company's non-LED post-top light offerings, today, an LED fixture is replacing all of the

Company's failed non-LED lights. The Company expects to exhaust the remaining inventory of non-LED post-top fixtures in 2021, consistent with the removal of the spot replacement and continuity language from the RLS Rate Schedule proposed in this rate proceeding, at which time an LED will replace any failed non-LED post top light.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 16

Responding Witness: William Steven Seelye

Q-16. Describe how revenue received from the Pole Attachment rates effectively results in lower rates for street lighting. Within your answer, please identify where this is demonstrated in the Company's Application materials.

A-16. Revenues from Pole Attachment charges are included in Other Operating Revenue and thereby serve to reduce the revenue requirement for the Company's electric service customers. Revenue from Pole Attachment charges are included in Other Rent from Electric Property on Schedule M-2.3-E of the Company's Application. The revenues included in Other Operating Revenue reduce the revenue requirement that would otherwise be collected from Sales to Ultimate Customers.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 17

Responding Witness: N/A

Q-17. This item is intentionally left blank.

A-17. N/A

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 18

Responding Witness: Lonnie E. Bellar

Q-18. Please refer to the Response to Metro 1-42(a) referencing Table 2 of the Meter Life Study in Exhibit LEB-3, Appendix C.

(a) Are the electromechanical meters with a total failure rate in 70 years those contemplated in the Company's Status Quo scenario?

(b) The Company's requested meters total failure rate is 28 years, less than ½ the comparable meters, has the company compared the cost of the status quo versus the requested meters over the 70-year period?

(c) If so, please provide.

(d) If not, why not

A-18.

(a) See Appendix C of Exhibit LEB-3, 2019 Meter Life Study. Electromechanical meters comprise approximately 75% of the Companies' existing meter population today; however, electromechanical meters are no longer commercially available, and the Companies have not installed any new electromechanical meters since 2008. In the Status Quo scenario, electromechanical meters are replaced with non-communicating electronic meters as they fail. The Status Quo does not contemplate installation of new electromechanical meters because they are not commercially available, but the Status Quo does contemplate the failure of existing electromechanical meters (and replacement thereof with new non-communicating electronic meters) using the failure curves referenced in the Electromechanical Meter Failure Rate in Table 2 of the Meter Life Study.

(b) See response to part a. The standard replacement option in the Status Quo is a non-communicating electronic meter. As stated in Section 3 of Exhibit LEB-3, AMI meters and non-communicating electronic meters share the same meter platform, and aside from the ability to communicate via the mesh network and remotely connect and disconnect service, an AMI meter is no different than a

non-communicating electronic meter. The expected operating lives of both AMI and non-communicating electronic meters are identical. The Companies have not compared the cost of the Status Quo versus the requested AMI meters over a 70-year period.

(c) Not applicable.

(d) The Companies elected to use a 30-year analysis period because cash flows begin to approach a steady-state across all alternatives, and a 30-year period provides sufficient time to evaluate costs and benefits over more than one meter replacement cycle. See Figure 10 in Section 5.1 of Exhibit LEB-3, which shows that the cash flows of the AMI alternative are consistently favorable to the Status Quo after the initial deployment period. Extending the analysis period by any number of years will improve the favorability of AMI versus the Status Quo.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 19

Responding Witness: Kent W. Blake

Q-19. Please refer to the Response to Metro 1-46. Please detail the assumptions used by LG&E in concluding that the combined revenue requirement is zero.

A-19. Note that the last row of Exhibit KWB-2, page 2 (15-year meter life) and page 3 (20-year meter life) shows no change to the combined revenue requirement of the Companies for 10 years following full deployment with a net reduction in the revenue requirement for years beyond that. Assumptions with respect to ratemaking treatment are detailed in Blake direct testimony beginning on page 9, row 14 and concluding on page 18, row 9. Specific assumptions used in the analysis are included in the bottom left corner of page 1 of both Exhibit KWb-1 and Exhibit KWB-2. Key assumptions regarding the meters and operational costs and savings are included in sections 5 and 6 of Exhibit LEB-3 to Mr. Bellar's testimony.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 20

Responding Witness: Lonnie E. Bellar / Kent W. Blake

Q-20. Please refer to the Response to Metro 1-46 and KWB-2, which identifies Status Quo meter reading and field services on the order of $22M and $17M, respectively. Please provide support for the derivation of these figures.

A-20. See sections 6.3 and 6.4 of Appendix A within Exhibit LEB-3 for supporting detail regarding the derivation of these figures. The difference between the values reported for Meter Reading in 2026 in Table 20 of Exhibit LEB-3 and what is shown in Exhibit KWB-2 is that Exhibit LEB-3 reflects values on a calendar year basis while Exhibit KWB-2 reflects values from July through June. The same explanation applies for the difference between values for Field Services in Table 22 and Exhibit KWB-2.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 21

Responding Witness: Kent W. Blake

Q-21. Please refer to the Response to Metro 1-46(c): Is it possible that a Cost of Service Study for the rate impact of AMI proposal could require rate increases for a customer class even though the projections currently provided by the Company's current "combined revenue requirement impact is shown as zero"?

A-21. It is important to note that the last row of pages 2 (15-year meter life) and 3 (20-year meter life) of Exhibit KWB-2 shows no change in the combined revenue requirement of the Companies for ten years with a reduction in the combined revenue requirement for each year beyond that. 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 when AMI costs and benefits are initially reflected in retail rates. As such, it is premature to speculate on the rate impact for individual customer classes.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 22

Responding Witness: Kent W. Blake

Q-22. Please refer to the Response to Metro 1-46. If the Company is unsuccessful in its CPCN application for the AMI proposal does it plan to follow the status quo scenario as outlined in the application? If not, what other options are there?

A-22. The Company believes and expects its AMI proposal will be approved. The Companies' cost-benefit analysis has demonstrated that full deployment of AMI represents the least cost option among the various alternatives considered to provide service while also providing several incremental reliability and customer service benefits. If the Companies' CPCN application is denied, the Companies would need to consider the stated reasons provided for that decision before considering any alternative path forward relative to the status quo.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 23

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

Q-23. Please refer to the Response to Metro 1-47(a). For the AMI meters in use in the "downtown network" over the last 10 years

(a) How many actual AMI meters were installed?

(b) For each meter that is in use for Metro as a customer of LG&E, please state the locations of each meter and whether the meter provides usage data to Metro within 24 hours of the use.

(c) Are there any Metro meters within the "downtown network" in which AMI meters have not been installed? If so, where? If so, why?

(d) What was the actual failure rate of these meters?

(e) What type of failures occurred?

(f) What savings did these meters provide the Company?

(g) What savings did these meters provide the ratepayers?

(h) What rate classifications used these meters?

(i) Were customers able to expand their rate options?

(j) Where TOD rates available?

(k) If so, how many changed to TOD rates in response to the AMI option?

A-23.

(a) There are 1,605 AMI meters installed as part of the downtown network.

(b) See attached. There are 64 AMI Metro meters within the downtown network of which 8 provide usage data within 24 hours to the MyMeter portal for Metro's review.

(c) Yes, there are 2 Metro meters located within the downtown network that are not AMI. One meter is located at 601 W Jefferson St. and was not completed during the installation process; this could have occurred for a number of reasons including access difficulties. The other meter is at 400 S 8th St. and was not identified for exchange as part of the population of meters selected.

(d) Nine downtown network meters have failed to date.

(e) Six meter failures were the result of electronic component failure and three due to physical damage.

(f) See response to subpart (g) below. The Company achieves efficiencies from enhanced operations and decision-making, and such efficiencies create benefits and savings for ratepayers. Those efficiencies serve the purpose of providing safe and reliable service to our customers in a cost effective manner.

(g) The AMI meters in use in the downtown network have been used for engineering analysis and have resulted in improved model accuracy for power flow, and fault analysis in the downtown network. The resulting data enhances reliability maintenance activities in the downtown network through increased knowledge of loads for switching operations, contingency analysis, and outage planning. The model guides decision on construction and maintenance such as underground vaults and conductor. Improved decision-making resulting from these AMI lead to more efficient operations and maintenance, benefitting ratepayers. The additional systems and automation included in the Companies' current AMI proposal is necessary to enable additional savings which will accrue to ratepayers.

(h) The downtown network meters include customers on Residential Service, General Service, Power Service, Time-of-Day Secondary Service, and Metered Traffic Energy Service and Lighting Energy Service rates.

(i) Customers on Residential Service within the downtown network were also eligible to optionally select one of the Company's Residential Time-of-Day rates consistent with all Residential Service customers.

(j) Yes.

(k) None of the 340 AMI downtown network meters associated with Residential Service adopted one of the Company's optional Residential Time-of-Day rates.

Business Partner	Meter Number	Location	Usage available to Metro within 24 Hours
LOUISVILLE METRO GOVT DEPT OF PUBLIC WORKS	889364	444 S 5TH ST	No
LOUISVILLE METRO GOVT	889495	745 W MAIN ST	Yes
LOUISVILLE METRO HOUSING AUTHORITY	889232	600 S 7TH ST	No
LOUISVILLE METRO HOUSING AUTHORITY	889556	600 S 7TH ST	No
LOUISVILLE METRO GOVT PUBLIC WORKS	889442	719 W MAIN ST	No
LOUISVILLE METRO GOVT PUBLIC WORKS	888275	101 E JEFFERSON ST	No
LOUISVILLE METRO GOVT PUBLIC WORKS	912641	701 W MAIN ST	No
LOUISVILLE METRO GOVT PUBLIC WORKS	888897	658 S 4TH ST PLAZA	No
LOUISVILLE METRO GOVT PUBLIC WORKS	924378	601 W JEFFERSON ST CROSSWALK	No
LOUISVILLE METRO GOVT	912638	215 E MUHAMMAD ALI BLVD	No
LOUISVILLE METRO GOVT	889281	211 W MUHAMMAD ALI BLVD	No
LOUISVILLE METRO GOVT	889774	225 7TH JEFFERSON	No
LOUISVILLE METRO GOVT	889507	627 W MAIN ST	No
LOUISVILLE METRO GOVT	889150	601 W JEFFERSON ST	No
LOUISVILLE METRO GOVT	889396	601 W JEFFERSON ST	No
LOUISVILLE METRO GOVT	889751	601 W JEFFERSON ST	No
LOUISVILLE METRO GOVT	889752	601 W JEFFERSON ST	No
LOUISVILLE METRO GOVT	889753	601 W JEFFERSON ST	No
LOUISVILLE METRO GOVT	889366	515 W JEFFERSON ST	No
LOUISVILLE METRO GOVT	889669	658 S 3RD ST	No
LOUISVILLE METRO GOVT	888625	302 S 6TH ST	No
LOUISVILLE METRO GOVT	888677	550 S BROOK ST SLE	No
LOUISVILLE METRO GOVT	889235	400 S 6TH ST	Yes
LOUISVILLE METRO GOVT	889484	400 S 6TH ST	Yes
LOUISVILLE METRO GOVT	912635	201 GUTHRIE ST	No
LOUISVILLE METRO GOVT	912639	456 1/2 S 2ND ST	No
LOUISVILLE METRO GOVT	888301	550 1/2 S 2ND ST	No
LOUISVILLE METRO GOVT	888574	140 W JEFFERSON ST	No
LOUISVILLE METRO GOVT	888576	411 1/2 S 2ND ST	No
LOUISVILLE METRO GOVT	888390	207 W BROADWAY	No
LOUISVILLE METRO GOVT	888283	130 W MAIN ST	No
LOUISVILLE METRO GOVT	888274	140 W MARKET ST	No
LOUISVILLE METRO GOVT	889813	514 W LIBERTY ST	No
LOUISVILLE METRO GOVT	889712	140 N 6TH ST	No
LOUISVILLE METRO GOVT	889804	410 S 5TH ST	No
LOUISVILLE METRO GOVT	889541	720 W MAIN ST	No
LOUISVILLE METRO GOVT	889697	400 S 1ST ST	No
LOUISVILLE METRO GOVT	889675	600 W MAIN ST	No
LOUISVILLE METRO GOVT	889827	815 W MAIN ST	No
LOUISVILLE METRO GOVT	888620	418 W MUHAMMAD ALI BLVD	No
LOUISVILLE METRO GOVT	889293	531 W MUHAMMAD ALI BLVD	No
LOUISVILLE METRO GOVT	889749	531 W MUHAMMAD ALI BLVD	No
LOUISVILLE METRO GOVT	889750	531 W MUHAMMAD ALI BLVD	No

LOUISVILLE METRO GOVT	889673	515 W LIBERTY ST	No
LOUISVILLE METRO GOVT	888975	600 W JEFFERSON ST	Yes
LOUISVILLE METRO GOVT	889658	600 W JEFFERSON ST	Yes
LOUISVILLE METRO GOVT	889659	600 W JEFFERSON ST	Yes
LOUISVILLE METRO GOVT	889660	600 W JEFFERSON ST	Yes
LOUISVILLE METRO GOVT	889441	720 W JEFFERSON ST YUTH CNTR	No
LOUISVILLE METRO GOVT	889709	120 S 6TH ST	No
LOUISVILLE METRO GOVT	889887	112 N 4TH ST	No
LOUISVILLE METRO HOUSING AUTHORITY	889858	400 S 8TH ST	No
LOUISVILLE METRO GOVT PARKS AND REC	889811	217 S 6TH ST	No
LOUISVILLE METRO GOVT PARKS AND REC	889812	217 S 6TH ST	No
LOUISVILLE METRO GOVT LIBRARY	889207	301 W YORK ST PSL	No
LOUISVILLE METRO GOVT LIBRARY	889729	301 W YORK ST PSL	No
LOUISVILLE METRO GOVT LIBRARY	889581	604 S 10TH ST	Yes
LOUISVILLE METRO GOVT TRAFFIC ENG DEPT	888273	6TH CONGRESS	No
LOUISVILLE METRO GOVT TRAFFIC ENG DEPT	888270	1ST MUHAMMAD SCFS	No
LOUISVILLE METRO GOVT TRAFFIC ENG DEPT	888284	9TH JEFFERSON TLE	No
LOUISVILLE METRO GOVT TRAFFIC ENG DEPT	888720	111 E GRAY ST	No
LOUISVILLE METRO GOVT TRAFFIC ENG DEPT	888285	FLOYD GRAY TLE E	No
LOUISVILLE METRO GOVT TRAFFIC ENG DEPT	888294	2ND RIVER RD TLE E	No
LOUISVILLE METRO GOVT TRAFFIC ENG DEPT	888277	7TH MARKET TLE	No

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 24

Responding Witness: Lonnie E. Bellar

Q-24. Please refer to the Response to Metro 1-47(c), referencing the answer to Metro 1-42(a).

(a) In DR 1-47(c), the company says, "AMI meters are assumed to have the same failure rates as non-communicating electronic meters." Are these "non-communicating electronic meters" different than the "electromechanical meters" with the 70-year total failure rate shown in Table 2 of the Meter Life Study in Exhibit LEB-3, Appendix C?

(b) If so, what are the meters described as "electromechanical meters" with the 70-year total failure rate shown in Table 2 of the Meter Life Study in Exhibit LEB-3, Appendix C?

(c) What are the "non-communicating electronic meters" referred to in the answer to Metro 1-47(c)?

(d) If they are the same meters, how does the Company explain its contradictory answers to Metro 1-47(c) and Metro 1-42(a)?

(e) Which meter is the Company using as the status quo alternative to the AMI proposal?

(f) If the answer to (e) is "non-communicating electronic meters," please provide a chart like that provided in Table 2 of the Meter Life Study in Exhibit LEB-3, Appendix C, with the "non-communicating electronic meters" added.

A-24.

(a) Yes. See response to Question No. 18.

(b) As stated in Appendix C of Exhibit LEB-3, the 2019 Meter Life Study, electromechanical meters, or analog meters, are an older technology which measures energy by counting revolutions of a metal disc that rotates as energy

flows. The electromechanical meters are part of the Companies' existing meter population but are no longer commercially available. See response to Question No. 18.

(c) As stated in Appendix C of Exhibit LEB-3, the 2019 Meter Life Study, electronic meters, or digital meters, rely on sensors that transmit data to a digital display. AMI and AMR meters are subsets of electronic meters with communications, and their operating lives are expected to be functionally equivalent to that of non-communicating meters because they have the same meter platform. A "non-communicating electronic meter" is simply an electronic meter without communications capabilities.

(d) See responses to parts b and c. Electromechanical meters and non-communicating electronic meters are not the same meters.

(e) The standard replacement meter in the Status Quo is a non-communicating electronic meter.

(f) Non-communicating electronic meters are a subset of electronic meters. The requested data is available in Table 2 under the column Electronic Meter Failure Rate.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 25

Responding Witness: Kent W. Blake / Eileen L. Saunders

Q-25. Please refer to the Response to Metro 1-47, 1-53, and 1-59.

(a) Will multi-factor authentication be required to access customer data provided by the AMI meter?

(b) If not, how will consumer data access be protected?

A-25.

(a) The current access process does not require multi-factor authentication. This may change in the future as the Company continues to evaluate and implement authentication practices.

(b) Access is protected by username and password. Where customers access their data through a mobile app, biometric access can be elected by the customer after successfully connecting the app to their account by username and password.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 26

Responding Witness: Eileen L. Saunders

Q-26. Please refer to the Response to Metro 1-48.

(a) Explain how will LG&E know when the back-up power capacitor is failing or has failed?

(b) Do the proposed meters have self-diagnostics?

(c) The Response indicated the lifecycle replacement has been included in Ongoing Maintenance projections show in LEB-3 6.1 and 6.2, but there is not an increase in these costs on KWB-2's 15- and 20-year rate making projections.

i) Confirm that it is reasonable to anticipate maintenance costs would increase in years 15-20 due to anticipated meter and capacitor failures.

ii) Please explain why there would not be an increase in costs in KWB-2's 15- and 20-year rate making projections.

A-26.

(a) The Company will use analysis of the event reporting from the meter to identify capacitor issues.

(b) Yes.

(c)

i) Confirmed.

ii) The data in tables from sections 6.1 and 6.2 of Exhibit LEB-3 is not directly comparable to data in tables from Exhibit KWB-2, because the former is expressed as cash flows, while the latter is expressed as revenue requirements. In addition, Exhibit LEB-3 reflects values on a calendar year basis while Exhibit KWB-2 reflects values from July through June. The cost items referenced in response to Metro 1-48 are capital costs, and the comparable line items from Exhibit KWB-2 are Cost of Capital,

Depreciation, and Property Taxes, of which the lifecycle replacement costs are a component. The values for these line items of Exhibit KWB-2 do begin to increase gradually in the last few years of the data shown on these tables.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 27

Responding Witness: John K. Wolfe

Q-27. Please refer to the Response to Metro 1-50. Please state the type of information/data coming from both SCADA and AMI that would overlap.

A-27. SCADA data contains information about the primary distribution system whereas AMI data will provide information specific to the secondary distribution system that SCADA cannot measure. While they do provide similar information that is used by multiple systems, each information system has its own benefits and neither will be used in place of the other.

There will be some crossover where data can be used from both systems to help pinpoint outages and energized downed conductors, as described in the Electric Power Research Institute report included as attachment JKW-2 pages 24-27 of 44. Individual meter information is fed to the Outage Management System (OMS) where it is compared with information from distribution devices (for example breakers or reclosers) to predict the outage cause.

Several other DMS functions will utilize information from both systems as well to increase performance and accuracy. Voltage data from both systems would be utilized by Volt-VAR Optimization (VVO) and Conservation Voltage Reduction (CVR). Power/energy measurements will be used from both systems for load flow calculations which are critical for Feeder Load Management (FLM), Fault Location Analysis (FLA), Fault Location Isolation and Service Restoration (FLISR), and PowerFlow/State Estimator functions on the DMS.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 28

Responding Witness: Eileen L. Saunders

Q-28. Please refer to the Response to Metro 1-51. There are concerns that with such a large number of meters serving Louisville Metro accounts, any automated response system to an outage or issue has the potential to overwhelm Metro's incoming phone system, or email accounts. In addition, even on smaller issues, it may be difficult for the automated response system to adequately identify the account, meter, address. Metro is not unique in this situation and other major accounts may have similar issues, such as property management entities and apartment complex owners. These same issues are expected to impact the MyMeter interface as well. Metro is very concerned that these critical communication and information points and tools touted as key factors to improve communication as part of the proposed AMI project will have inherent flaws for Major Account holders unless they are included within the design from day one of development, as opposed to being addressed by Key Account representatives after deployment when there will not be resources to reprogram major systems, if needed. The identification of multiple types of information management arrangements was discussed as a key point during the 2017 AMS collaborative. Please explain how these issues that may impact Major Accounts will be implemented into the proposed AMI project from the initial design phases.

A-28. The Company always endeavors to implement functionality that best meets the diverse needs of its many customers, including Major Account holders. The Company intends to use feedback from customers (including Major Account holders), peer utilities, and business partners to design these tools around leading practices in the industry. The Company would also note that all automated responses must be enabled by the customer so customers will continue to have the ability to tailor the messages that are of most interest to them.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 29

Responding Witness: Eileen L. Saunders

Q-29. Please refer to the Response to Metro 1-52, wherein the term "validated" was underlined in the response addressing the process if the proposed AMI deployment is approved.

(a) Is the current data from Opt-in meters not validated?

(b) Please explain the process of how this data will be validated in the proposed AMI project.

A-29.

(a) Currently the interval data provided to AMS Opt-in customers is considered "raw" data, meaning it is going directly from the Head-End system to MyMeter for presentment. A meter data management system (MDMS) is required to perform the function of validation where interval data is processed for billing quality purposes. This is considered "validated" data. Currently, AMI interval data is not being used for billing purposes.

(b) As part of the proposed AMI project, a MDMS will process meter interval data and identify data anomalies such as gaps, overlaps and redundancies, tolerance issues between consumption reads and interval data, and corrects those gaps according to business process rules to provide fundamental data validation.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 30

Responding Witness: Eileen L. Saunders

Q-30. Please refer to the Response to Metro 1-53.

(a) Will LG&E commit to not obtaining the disaggregated data without: (1) providing notice to its customers, and (2) obtaining PSC approval?

(b) Does the commitment to not sell customers' energy usage data including future data collected, such as the data which it may obtain from future analytics' system?

(c) Does the data collected from AMI increase the risk to customers' data being breached? If so, why?

(d) Please provide all documentation, research, presentations, internal and external communications regarding advanced analytics, data mining, load or use identification associated with the proposed AMI project, specifically for information at the meter level.

(e) Use of analytics to identify specific loads, use, equipment/device, and use patterns at the meter level does not appear to be a critical business need. This information done at the circuit level would seem sufficient to identify any clear business needs, e.g. infrastructure improvements. Please explain why LG&E needs to have the ability to "See behind the meter" using advanced analytics in comparison to at the circuit level.

(f) Please provide a list of all data points the AMI proposed meters are capable of measuring.

(g) Please provide a list of all data points the AMI proposed meters are capable of measuring that LG&E intends to record and the interval of those readings.

(h) Please provide a business use/need for each AMI proposed meters data point LG&E intends to record and analyze.

(i) Has LG&E developed a policy under which it will share or allow third parties to access meter level data, including any developed as a result of advanced analytics from data obtained via AMI meters? This response may disregard data sharing that has been "specifically" authorized by the customer, e.g., to a third-party energy efficiency contractor or landlord.

A-30.

(a) The Company's privacy policy found at lge-ku.com/privacy sets forth the Company's position on the first part of this request. Further Commission approval is not required.

(b) The Companies' privacy policy does not allow the selling of customer meter data without written authorization. See the response to Question No. 31.

(c) No.

(d) There is no advanced analytics, data mining, load or use identification included in the proposed AMI project.

(e) As discussed in response to Metro 1-53, the goal of advanced analytics is to provide more reliable and affordable service to customers. Data analytics cannot be used with circuit-level data to reduce theft or automatically notify the Companies in the case of an outage or meter malfunction.

(f) See Exhibit 5, on page 1 under Key Features and page 2 in Display Options for a summary level overview. A full list of load profile data points that can be measured is below. The list below does not cover all capabilities of the meter to issue "alerts" such as meter removal or tampering.

Delivered kWh	Sag V Ph. A
Received kWh	Sag V Ph. B
I^2/Ih Ph. A	Sag V Ph. C
I^2/Ih Ph. B	Swell V Ph. A
I^2/Ih Ph. C	Swell V Ph. B
V^2h/Vh Ph. A	Swell V Ph. C
V^2h/Vh Ph. B	Sag V Any Ph.
V^2h/Vh Ph. C	Swell V Any Ph
Delivered kVARh	Received kVARh
Delivered kVAh	Received kVAh
Delta Temperature	Frequency
Temperature	Average Power Factor
Delivered kWh Rate A	Received kWh Rate A
Delivered kWh Rate B	Received kWh Rate B

Delivered kWh Rate C	Received kWh Rate C
Delivered kWh Rate D	Received kWh Rate D
Delivered kWh Rate E	Received kWh Rate E
Delivered kVARh Rate A	Received kVARh Rate A
Delivered kVARh Rate B	Received kVARh Rate B
Delivered kVARh Rate C	Received kVARh Rate C
Delivered kVARh Rate D	Received kVARh Rate D
Delivered kVARh Rate E	Received kVARh Rate E
Delivered kVAh Rate A	Received kVAh Rate A
Delivered kVAh Rate B	Received kVAh Rate B
Delivered kVAh Rate C	Received kVAh Rate C
Delivered kVAh Rate D	Received kVAh Rate D
Delivered kVAh Rate E	Received kVAh Rate E
Voltage Min (Phase A)	Voltage Max (Phase A)
Voltage Min (Phase B)	Voltage Max (Phase B)
Voltage Min (Phase C)	Voltage Max (Phase C)
Current Min (Phase A)	Current Max (Phase A)
Current Min (Phase B)	Current Max (Phase B)
Current Min (Phase C)	Current Max (Phase C)

(g) The Company expects to record delivered kWh, received kWh, delivered kVARh, received kVarh, and voltage per phase. Current per phase may also be recorded in some cases. All data points are expected to be in 15-minute intervals.

(h) The kWh and kVARh data points are needed for billing purposes. All listed data points additionally support engineering analysis including but not limited to power flow modeling and the uses described in Exhibit JKW-2.

(i) Treatment of additional data generated by AMI implementation will be subject to the Company's existing privacy policy found at lge-ku.com/privacy.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 31

Responding Witness: Eileen L. Saunders

Q-31. Please refer to the Response to Metro 1-53(b). The Companies state that they "previously committed to not sell customer energy usage information."

(a) How was this commitment stated or provided?

(b) What is penalty if the company violated this commitment?

(c) Is this commitment in the tariff?

(d) If not, will the company put the commitment in the tariff?

(e) Has the company sold any other customer data to any entity?

(f) Will the company commit to not sell any customer data to outside entities in the future?

A-31.

(a) The Companies have confirmed in testimony filed in this proceeding and in previous Commission proceedings that they are committed not to sell individual customer data to third parties.[1] Furthermore, the Companies' customer privacy policy restricts disclosure of customer account information to certain narrow situations, which do not include sale of individual customer account information to third-parties without written authorization.[2]

(b) Action by the Commission.

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[1] Case No. 2020-00349, Case No. 2020-00350, Testimony of Eileen L. Saunders, at p. 35 (filed Nov. 25, 2020), citing *Electronic Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for a Certificate of Public Convenience and Necessity for Full Deployment of Advanced Metering Systems*, Case No. 2018-00005, Hearing Video at 1:59:11 – 1:59:16.
[2] https://lge-ku.com/privacy

(c) No.

(d) No. The Companies' privacy policy is maintained outside the tariff and adequately protects against disclosures contrary to its terms.

(e) The Companies abide by their privacy policy which prohibits the disclosure of individual customer account information except in certain narrow situations, which do not include sale of individual customer account information to third-parties without written authorization.

(f) See the response to part (a).

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 32

Responding Witness: Eileen L. Saunders

Q-32. Please refer to the LG&E Response to Metro 1-58. Regarding customer connection to AMI via Zigbee, please describe what equipment/software is needed by the customer, such as the make/model of the "bridge."

A-32. See generally the response to AG-KIUC 1-214. The Company is unable to describe in further detail the equipment/software needed as there are many devices commercially available and the required equipment or software will vary by device. The Company has committed to supporting customers through the Company's online Marketplace program.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 33

Responding Witness: Kent W. Blake

Q-33. Please refer to the LG&E Response to Metro 1-59(a).

(a) Are the 24 employees dedicated to cybersecurity for LG&E, LKE or throughout all of PPL?

(b) Do these 24 employees handle cybersecurity throughout generation, transmission and distribution? If not, what do these 24 specifically handle?

(c) What tools are used to ensure cybersecurity of the customers data assisting the cybersecurity team?

A-33.

(a) The employees are dedicated to cybersecurity for LG&E, KU and LKE.

(b) Yes. The 24 employees provide cybersecurity support for the IT supported network including layers of defense to protect operational technology and industrial control systems. Operational and industrial control systems cover generation, transmission, and distribution.

(c) The Company maintains a defense in depth approach to protect customer information including network firewalls, an intrusion prevention/detection system, antivirus software, and a data loss prevention system.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 34

Responding Witness: Kent W. Blake / Eileen L. Saunders

Q-34. Please refer to the LG&E Response to Metro 1-59(g). Will LG&E commit to notifying Metro if its Metro's data has been breached?

A-34. In the event of a confirmed compromise of Metro's data that would otherwise be inconsistent with LG&E's privacy policy, LG&E will take all appropriate action, including notifying Metro.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 35

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

Q-35. Please refer to the LG&E Response to Metro A-60(b).

(a) Please refer to the last sentence, "The advanced motor deployment schedule has meters installed from late 2022-2026." Does that include all meters including those Power Service meters served by the company's Itron MV-90 system?

(b) What is the location of Metro Power Service meters currently not billed by Itron's MV-90 system?

(c) Exhibit 5 of the Application listed only model meters with 200A and 320A ratings. Please provide data sheets for any other meters that will be used for PS applications where the rating may be above 320A.

(d) Louisville Metro benefits from interval data, but receipt of the data is often delayed.

i. With the full implementation of the RF mesh network, will there be any improvements or benefits to the interval data collection and availability to the customer including Louisville Metro, e.g., will the reporting lag be reduced? If not, why?

ii. What would it take to interconnect the to the new RF Mesh network? If interconnection is possible, would it result in near real time readings with the meters?

iii. If the response is no, it is not possible, or it was not included in the proposed AMI project for that reason; Was there any research or discussion of including of a compatible meter for TOD and PS meters to take advantage of the new RF mesh network? Would the inclusion of these meters then result in a further reduction of meter reading services, a key cost reduction measure for the proposed AMI project?

(e) Metro currently has accounts that started out as TOD accounts, thus requiring the MV-90 meter. Some of these accounts have changed use/demand profiles and are now PS accounts thus not needing MV-90 metering. The proposed AMI project results in 24 hour lag on interval data vs the MV90 minimum of 30 day lag. Will it be possible to request AMI meters be installed at PS accounts that currently have MV90 meters, but do not require them for their current billed rate code?

A-35.

(a) To clarify, the last sentence reads "The advanced *meter* deployment schedule has meters installed from late 2022-2026." (emphasis added) It includes all meters in scope for the AMI project, which does include some of the Power Service meters currently served by the MV-90 system. The Company currently relies on the MV-90 system for billing determinant calculation where interval data is required. If the AMI proposal is approved the Company expects the Meter Data Management System will support interval data billing for many of the Power Service and Time-of-Day meters that currently require the MV-90 system while others, namely those requiring complex calculations e.g. in totalized billing, are expected to remain in the MV-90 system.

(b) See attached.

(c) See attached supplemental sheets.

(d)

i. Yes, the Company expects interval data collection and availability to be improved. If the AMI proposal is approved, the Company will continue to look for opportunities to reduce the reporting lag for Key Accounts like Louisville Metro.

ii. The Company will need to evaluate options to interconnect the MV-90 system with data collected over the new RF Mesh network. The Company will commit to evaluating these options as part of the proposed AMI project if it is approved.

iii. N/A

(e) Yes, though no request is necessary. Meters that do not require the MV-90 system for billing determinant calculation will be changed to AMI meters and move to the Meter Data Management System. The Companies would also clarify that AMI interval data is expected to be available every 4 – 6 hours. See the response to Metro 1-52.

Meter Number	Service Address
889364	444 S 5TH ST
828941	3515 NEWBURG RD
945415	3516 NEWBURG RD
765695	3400 BOHNE AVE
868114	1515 CYPRESS ST HSMT
889232	600 S 7TH ST
889556	600 S 7TH ST
809577	7219 DIXIE HWY
814584	7201 OUTER LOOP
889774	225 7TH & JEFFERSON
882510	601 W JEFFERSON ST
889150	601 W JEFFERSON ST
889396	601 W JEFFERSON ST
889753	601 W JEFFERSON ST
889366	515 W JEFFERSON ST
849495	2900 W BROADWAY
823169	635 INDUSTRY RD
889813	514 W LIBERTY ST
889697	400 S 1ST ST
835660	3501 ROGER E SCHUPP ST
854190	3501 ROGER E SCHUPP ST
907509	501 W ASHLAND AVE
889293	531 W MUHAMMAD ALI BLVD
793720	810 BARRET AVE
847090	1137 W JEFFERSON ST
889441	720 W JEFFERSON ST YUTH CNTR
931696	700 W JEFFERSON ST
833036	400 E GRAY ST
859268	400 E GRAY ST
873210	636 MERIWETHER AVE
896158	834 E BROADWAY FLR 5
889858	400 S 8TH ST
800452	4314 BISHOP LN
859202	768 BARRET AVE
864921	1411 ALGONQUIN PKWY
882773	0 4TH & ST CATHERI
876207	550 S 8TH ST
928315	413 E MUHAMMAD ALI BLVD
928237	415 E MUHAMMAD ALI BLVD
841307	735 EASTERN PKWY
899906	3225 7TH STREET RD
828705	405 E MUHAMMAD ALI BLVD
559986	1340 S 4TH ST

754016	1340 S 4TH ST
829455	1340 S 4TH ST
901926	10800 AMPHITHEATER RD THEA
800502	0 COOPER CHAPEL RD PUMP
913202	7300 JEFFERSON BLVD
899968	3528 NEWBURG RD ANIMAL SRV
849497	1100 TREVILIAN WAY PSL
776239	1300 HEAFER RD
882777	9725 DIXIE HWY
916410	15 BELLEVOIR CIR
889207	301 YORK ST PSL
889729	301 YORK ST PSL

Product Specifications

Commercial:
E330 FOCUS AX
Polyphase

Landis+Gyr
manage energy better

Economical and Reliable Option for Light Commercial Applications

Overview

The FOCUS® AX Polyphase meter provides a cost-efficient alternative for light commercial metering applications that do not require all of the functionality of the S4e meter. As an addition to the FOCUS family of meters, the AX Polyphase brings the same proven solid-state performance utilities have come to expect from FOCUS meters, in an economical and AMI-ready platform for commercial and industrial applications.

A single circuit board design, mounted at the front of the meter allows room for modular AMI communications or a KYZ output board. Highly accurate load performance and the use of field-proven Digital Multiplication Measurement Technique ensure reliability and dependability during the entire life of the meter.

The FOCUS AX Polyphase meter is available for both self-contained and transformer-rated meter forms and includes the ASIC, non-volatile memory, selectable metrics, flexible display functionality, an optional KYZ output, configuration port, and a customer program option.

The FOCUS AX Polyphase meter contains a 120V to 277V auto-ranging power supply that is suitable for both 277/480V, 4W, WYE and 240/480V 4-wire Delta services. The robust design of the FOCUS AX meter exceeds the ANSI 6KV surge requirements and provides 10KV of surge protection.

With customer satisfaction as our top priority, we are committed to providing the best metering solution in terms of capability, technology and affordability. By uniting our experience and technology with that of our strategic allies and development partners, we provide metering solutions that cover the range of utilities' light commercial and industrial need.

FEATURES & BENEFITS:
Why Landis+Gyr makes a difference.

- Digital Multiplication Measurement technique
- Non-volatile memory
- Designed for a 20+ year life
- Meets or exceeds industry and ANSI standards
- Uses ANSI protocol (between meter and advanced metering device)
- 6 digit LCD and 3 Alpha ID
- Selectable meter multiplier
- Event log of 500+ entries
- 77 kb of load profile memory, 1–8 channels
- Advanced second generation over-the-air-flashable firmware

Specifications

General Specifications	Active Energy “kWh-kW” meter	
	Digital Multiplication Measurement Technique	
	Non-Volatile Memory	
	Designed for 20+ years life	
	Meets ANSI standards for performance	
	Utilizes ANSI protocol (between meter and AMI device)	
	9-Digit LCD	
	Display scroll sequence programmable (factory or end user)	
	Configuration Port – cover does not have to be removed or optional ANSI C12.18 optical port available	
Operating Temperature	-40C to +85C under cover	
Nominal Voltage	120–277V Auto Ranging Power Supply	
Operating Voltage	80% to 120% of Vn	
Frequency	60Hz +/- 5%	
Humidity	5% to 95% relative humidity, non condensing	
Starting Load (Watts)	Class 20	0.005 Amp (0.6W)
	Class 200	0.050 Amp (6W)
	Class 320	0.080 Amp (9.6W)
Voltage Burden	< 1.8W Max	
Load Performance Accuracy	Accuracy Class 0.2%	
	Exception: Form 36S 0.5%	
	Reactive energy 0.5%	
Available Forms	Self-Contained	12S, 12SE, 16S, 16SE, 25S, 25SE
	Transformer Rated	9S, 36S, 45S
Display Options	Energy Metrics: +kWh, -kWh, Net kWh, and added kWh (Security)	
	Metric Energy Display Format – 4x1, 4x10, 5x1, 5x10, 6x1 or 6x10	
	Time of Use and Demand Billing	
AMI Platform	Modular	
Selectable Meter Multiplier	Up to 4096 as result of PT ratio • CT ratio	
Applicable Standards	ANSI C12.1 for electric meters	
	ANSI C12.10 for physical aspects of watt hour meters	
	ANSI C12.18 Protocol specifications for ANSI Type 2 Optical Port	
	ANSI C12.19 Utility Industry End Device Data Tables	
	ANSI C12.20 for electricity meters, 0.2 and 0.5 accuracy classes	
	CAN3-C17-M84 Canadian specifications for approval of type of electricity meters	

Phone: **678.258.1500**
FAX: **678.258.1550**

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E650 S4x Polyphase

Enhanced Metering for Commercial and Industrial Applications

Expanding upon the industry-leading flexibility of Landis+Gyr polyphase meters, the E650 S4x sets a new standard for versatility in a C&I metering platform. Out of the box, the S4x is a full-featured C&I meter that provides four-quadrant measurements of active and reactive energy, load profile, and TOU without a battery when existing on an AMI network.

The E650 S4x provides the metrics utilities need to take full advantage of advanced grid management technologies. Delivered, received, and per quadrant measurements of active, reactive, and apparent energy are all simultaneously calculated, as are their respective demand values. Additionally, the S4x provides two alternative methods for calculating reactive and apparent energy and demand values. They can be either directly measured or vectorially derived, giving an electric utility the ultimate flexibility in how they measure and bill their customers.

The E650 S4x provides all of its metrics at significantly higher resolution than most competitive C&I meters. All energy and demand metrics are stored with milliunit resolution. All instrumentation metrics such as voltage, current, and phase are stored in microunits.

The E650 S4x raises the bar on security and tamper detection capabilities. A tilt and vibration sensor can identify significant shock force applied to the meter. A dedicated Hall effect sensor is used to detect strong magnetic field presence. The physically actuated cover removal switch can trigger an alarm and log an event. A new optical port lockout feature allows total control over port access through a compatible communication module.

The S4x has significantly more RAM, ROM, and non-volatile memory for load profile, self-reads, and event logs. Standard 16 channel load profile memory of 256 KB can be upgraded to 1 MB without the need for additional hardware.

SUPERIOR METRICS

- Four-quadrant measurement
- Delivered and received kW, kVA and kVAR demands
- Two alternate methods of VAR and VA calculation
- Milliunit energy and demand resolution
- Microunit instrumentation resolution

LOAD PROFILE

- 16 CH 256K standard, 1 MB option
- 2nd recorder option
- 32 bit data storage

HARDWARE OPTIONS

- Enhanced Gridstream RF module
- I/O board
- Three-phase power supply

UNIQUE SECURITY

- Magnetic tamper detection
- Cover removal switch
- Tilt and vibration sensor

RF COMMUNICATION OPTIONS

- Series 5
- Series 6

SUPERIOR METRICS | LOAD PROFILE | HARDWARE OPTIONS | UNIQUE SECURITY | RF COMMUNICATION OPTIONS

E650 S4x Polyphase

An optional second 16 channel recorder can be configured with a different interval length than the first, making it an ideal instrumentation recorder for continuously monitoring voltage, current, phase, and frequency. Load profile data is stored in 32 bit registers that can easily handle the increased data resolution the S4x offers without interval overflow or the need for a scale factor.

The meter is available with multiple hardware options that further expand its capabilities. With the addition of an enhanced RF communications module, the S4x becomes a powerful C&I endpoint on the industry-leading Landis+Gyr Gridstream® Connect IoT network. An I/O board enables inputs that can increment a load profile channel or trigger a different billing rate; and outputs that can provide KYZ pulses or trigger load control devices. The Enhanced RF module and I/O board are available together for even greater functional versatility. A true three-phase power supply can ensure that the S4x keeps metering, even if a voltage phase is lost.

PRODUCT SPECIFICATIONS

GENERAL SPECIFICATIONS

Specifications	Active and reactive energy are standard TOU and 256K load profile are standard ANSI C12.19 standard protocol Unsurpassed 10KV surge protection for safety Designed for 20+ years of life Extensive event logging Magnetic tamper detection via Hall effect sensor Cover removal switch Tilt and vibration sensor
Operating Temperature	-40C to +85C under cover
Frequency	50 or 60Hz ± 5%
Humidity	Less than or equal to 95% relative humidity, non-condensing
Accuracy Class	Class 20, 120, 200, & 320 meters ± 0.2% Class 480 meters and forms 36S, 29S, 36A ± 0.5%
Over Voltage Withstand	Temporary (.5 sec) 150% rated voltage Continuous (5 hours) 120% rated voltage
Voltage Burden	≤ 2.5W

NOMINAL VOLTAGE

Standard Power Supply	120–480V (2 and 3 wire 120, 208, 240, 277, 347, 480. 4 wire 120/208, 240/416, 277/480, 347/600)
Three-phase Power Supply Option	120– 277V (2 and 3 wire 120, 208, 240, 277. 4 wire 120/208, 277/480)

Kbps = Kilobytes per second

This information is provided on an "as is" basis and does not imply any kind of guarantee or warranty, express or implied. Changes may be made to this information.

OPERATING VOLTAGE

Standard Power Supply	98 to 552 VAC (line to neutral) autoranging power supply
Three-phase Power Supply Option	98 to 318 VAC (line to neutral) autoranging power supply

STARTING CURRENT (AMPS)

Class 20	0.005 Amp
Class 150	0.050 Amp
Class 200	0.050 Amp
Class 320	0.080 Amp
Class 480	0.120 Amp

AVAILABLE FORMS

Self-Contained S-Base	2S, 12S, 14/15/16/17S, 25S, 1S, 2SE, 12SE, 14/15/16/17SE, 25SE
Self-Contained K-Base	12K, 14/15/16K, 27K
Self-Contained A-Base	16A
Transformer Rated S-Base	3S, 3SC, 4S, 8/9S, 45S, 36S, 29S
Transformer Rated A-Base	8/10A, 45A, 36A

APPLICABLE STANDARDS

ANSI C12.1 for electric meters
ANSI C12.10 for physical aspects of watt hour meters
ANSI C12.20 for electricity meters, 0.2 and 0.5 accuracy class
CAN3-C12-M84 Canadian specs for approval of electrical meters
CAN3-Z234.4-79 Canadian specs for all numeric dates and times

GET IN TOUCH.

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Landis+Gyr

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Since 1896, Landis+Gyr has been a global leader of energy management solutions. We've provided more than 3,500 utility companies all over the world with the broadest portfolio of products and services in the industry. With a worldwide team of 1,300+ engineers and research professionals, as well as an ISO certification for quality and environmental processes, we are committed to improving energy efficiency, streamlining operations, and improving customer service for utility providers.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 36

Responding Witness: Eileen L. Saunders

Q-36. Please see LG&E Response to Metro 1-61. Which meters of Metro will not receive an AMI meter?

A-36. The Company expects that only meters that Metro elects to opt-out or those requiring the MV-90 system for complex billing determinant calculation will not receive an AMI meter. All other meters will be changed to AMI meters.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 37

Responding Witness: William Steven Seelye

Q-37. Please refer to the LG&E Response to Metro 1-64. Does your Response mean that participants in the Solar Share or Business Share Programs receive credits not measured by the amount of solar energy produced by the Customer? If the credits are not measured this way, how is the amount of the credit determined?

A-37. For the Solar Share or Business Solar Programs, the Company owns the solar facilities; therefore, the energy produced from the facilities is owned by the Company. A Solar Share or Business Solar customer pays a monthly fixed charge to receive energy from the facilities. The customer then receives monthly credits for the energy produced from the customer's share of the facilities.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 38

Responding Witness: Robert M. Conroy / William Steven Seelye

Q-38. Please refer to the Response to Metro 1-68. From review of testimony referenced, it appears that the Company believes KRS 278.486(5), which allows recovery of "all costs necessary to serve its eligible customer – generators," would allow a greater recovery from net metering customers than the SQF tariff that the Companies are proposing.

(a) Is this accurate?

(b) If so, please explain what additional recovery the Companies believe it can recover?

(c) Please include any analysis to support these answers.

A-38.

(a) It is not accurate as stated. The Company does not propose to recover anything under Rider NMS-2; rather, it has proposed a cost-based compensation approach for energy produced to the Company's system by net metering customers. All cost recovery from net metering customers occurs through the Company's other applicable standard rates, riders, cost-recovery mechanisms, and other charges.

With that clarification, it is accurate that the Company believes KRS 278.466(5) allows the Company to seek different rate structures for net metering customers to ensure full and accurate cost recovery.

(b) The Company does not propose to seek "additional recovery" in future proceedings; rather, the Company could propose alternate rate structures to ensure full and accurate cost recovery, particularly for Rider NMS-2 customers not already taking service under a rate schedule with demand charges. *See* Seelye Testimony at pages 46-64. The Company is not proposing such alternate rate structures in this proceeding.

(c) See the response to PSC 2-122.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 39

Responding Witness: Robert M. Conroy / William Steven Seelye

Q-39. Please refer to the LG&E Response to Metro 1-66, 1-68 and 1-69. Based on the very few customers who use the net metering rates, what is the actual dollar amount of the subsidies they are receiving from other customers in total and by customer by class? What would the subsidies be under the proposed tariff?

A-39. See response to PSC 2-122.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 40

Responding Witness: William Steven Seelye

Q-40. Please refer to the LG&E Response to Metro 1-81. Please break down these increased costs specifically by group in dollar amount. Explain.

A-40. Below is the breakdown of Customer-related costs for the RS rate class as requested in this proceeding compared to what was requested in the 2018 rate case. As mentioned in the response to Metro 1-81, the increases in costs are due to changes in all of the cost categories shown below.

Cost Category	2018 Case	Current Case	Increase/(Decrease)
Rate Base	$359,142,020	$432,495,103	$73,353,083
Rate of Return	3.71%	2.78%	-0.93%
Return	13,318,730	12,016,821	(1,301,909)
Interest Expenses	11,591,035	9,473,420	(2,117,615)
Net Income	1,727,695	2,543,400	815,705
Income Taxes	900,848	2,444,270	1,543,422
O&M Expenses	51,986,019	56,404,261	4,418,242
Depreciation Expenses	20,217,298	20,826,845	609,547
Other Taxes	4,804,602	5,129,882	325,280
Expense Adjustments	18,752	48,058	29,306
Misc Revenue Credits	(1,629,767)	(1,413,985)	215,782

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 41

Responding Witness: John K. Wolfe

Q-41. Please refer to the LG&E Response to Metro 1-83(a). Is the 2007 Distribution Plan filed still in effect in its entirety? If not, please indicate which provisions are not in effect and documentation of what has replaced provisions in the 2007 plan.

A-41. Yes, the 2007 Distribution Plan is still in effect. However, there are three differences:

1. There are eight certified company arborists versus nine. Three of the eight are positioned in the Louisville Metro area.

2. Additional data analytics algorithms in combination with the worst circuit list are used to designate underperforming circuits.

3. Due to the complexity of contactor bidding, distribution vegetation contractors have competitively bid a multi-year unit-based contract precluding the need to bid out work by circuit.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 42

Responding Witness: Lonnie E. Bellar

Q-42. Please refer to the LG&E Response to Metro 1-83(b).

(a) Have any of the four (4) plans attached been submitted to the PSC? If so, please state which plans were submitted and why were they submitted?

(b) Have any of the four (4) plans been submitted to NERC or FERC for review and/or approval?

A-42.

(a) No. In Case No. 2018-00295, LG&E submitted as Exhibit LEB-4 to the Direct Testimony of Mr. Bellar a third-party program review of the Transmission Vegetation Management Plan, which assessed the plan and the progress made to date on the cycled approach.

(b) Not specifically for approval, but the plans have been provided as supporting documentation for audits performed by SERC Reliability Corporation (SERC) in 2012, 2015, and 2018. SERC is the North American Electric Reliability Corporation (NERC) delegated Regional Entity that has the authority to enforce the NERC Reliability Standards. SERC's footprint includes most of the southeast United States.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 43

Responding Witness: N/A

Q-43. This item intentionally left blank.

A-43. N/A

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 44

Responding Witness: N/A

Q-44. This item intentionally left blank.

A-44. N/A

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 45

Responding Witness: Lonnie E. Bellar

Q-45. Please identify the location of all transmission lines in Louisville Metro and the kV level of each.

A-45. See attached. The information requested is confidential and proprietary and is being provided under seal pursuant to a petition for confidential protection.

The entire attachment is Confidential and provided separately under seal.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 46

Responding Witness: Lonnie E. Bellar

Q-46. Please refer to paragraph 7 on page 9 of the Transmission Vegetation Practice Plans submitted in Response to Metro 1-83(b).

(a) Under what circumstances "may" nearby property owners need to be notified of work plan and schedule.

(b) Under what circumstances are rights deemed "necessary" to procure before work occurs on private property, or Federal, State, and County road rights of way?

A-46.

(a) Nearby property owners may be contacted when entry to their property is required to gain access to the work site (that may be located on another property in the area).

(b) In addition to the response to part a, it may be necessary to coordinate with Federal, State, and County agencies when traffic control plans are required to complete the vegetation work.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 47

Responding Witness: N/A

Q-47. This item intentionally left blank.

A-47. N/A

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 48

Responding Witness: Lonnie E. Bellar

Q-48. Please refer to the LG&E Response to Metro 1-85.

(a) How much was spent on transmission vegetation management within Louisville Metro for each year between 2017 – 2020?

(b) How much does removing a tree cost on average?

(c) Do you pay a set cost regardless of type of tree or different cost depending on the type of tree?

A-48.

(a) LG&E does not track transmission vegetation management costs by county. Please see response to Question No. 1-92(a).

(b) There are a number of factors that impact the cost of removing trees, with location and tree size being two of the primary variables. The range of costs typically vary from approximately $40 per tree up to $700 or greater depending on the specific situation.

(c) The removal work is performed using competitively bid labor and equipment rates independent of the type of tree.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 49

Responding Witness: Lonnie E. Bellar

Q-49. Refer to Response to Metro 1-86. Provide a true-scale map of Louisville Metro (or larger geographical area) identifying LG&E's transmission-line corridors and distinguishing between transmission-line corridors that have been cleared under the current five-year plan and transmission-line corridors that have not been cleared under the current five-year plan.

A-49. See attached. The information requested is confidential and proprietary and is being provided under seal pursuant to a petition for confidential protection.

The entire attachment is Confidential and provided separately under seal.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 50

Responding Witness: John K. Wolfe

Q-50. Please refer to the Response to Metro 1-87(a), referring to Distribution Vegetation Management Plan provided in response to DR 1-83(a), page 4 "Routine Trimming Cycle Plan" and "Mid-Cycle Touch up Plan."

(a) How often is the same circuit, on average, trimmed?

(b) Do only circuits with "fast growing and hazard trees" get a mid cycle touch up?

(c) How does the Company determine what are "fast growing and hazard trees"?

A-50.

(a) LG&E maintains its commitment to a <5-year average trim cycle on its distribution circuits through its routine cycle program. LG&E doesn't include the contribution of vegetation management performed through its Hazard Tree, mid-cycle, and capital programs or storm work in its five-year calculation because associated work only targets a subset of individual circuits and trees and is too difficult to attribute to individual circuit averages.

(b) LG&E performs mid-cycle trimming on circuits only where fast growing and hazard trees are contributing to unsatisfactory reliability performance or presenting imminent risks to system integrity and reliability.

(c) LG&E arborists physically inspect vegetation in proximity to its overhead electric system when developing routine and mid-cycle vegetation management plans. Through these system inspections, arborists identify and document trees as fast growing based on their species and growth pattern. Fast growing trees are targeted for mid-cycle trimming whenever actual or projected growth rates and patterns present a risk to system integrity and reliability. LG&E arborists also identify and document a tree to be a "hazard" when it is discovered to be predisposed to failure due to disease, structure, death, declining condition or soil conditions, and where potential exists for contact with a conductor or electric equipment if the tree or a limb from the tree falls.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 51

Responding Witness: N/A

Q-51. This item intentionally left blank.

A-51. N/A

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 52

Responding Witness: N/A

Q-52. This item intentionally left blank.

A-52. N/A

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 53

Responding Witness: N/A

Q-53. This item intentionally left blank.

A-53. N/A

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 54

Responding Witness: N/A

Q-54. This item intentionally left blank.

A-54. N/A

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 55

Responding Witness: N/A

Q-55. This item intentionally left blank.

A-55. N/A

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 56

Responding Witness: N/A

Q-56. This item intentionally left blank.

A-56. N/A

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 57

Responding Witness: John K. Wolfe

Q-57. Please see Response to Metro 1-87(d). Does LG&E comply with those standards for vegetation management or not? Does LG&E comply with the standard related to unacceptable pruning methods?

A-57. Company arborists adhere to ANSI A300 standards for Utility Pruning of Trees where practicable, but have the flexibility to employ a variety of techniques when the circumstances dictate. LG&E has articulated this flexible approach in its Distribution Vegetation Management Plan which is on file with the Commission, and which was produced in response to Metro 1-83(a):

Right of Way Maintenance Strategy
The Companies employ an Integrated Vegetation Management Program (IVM) that is the process of using chemical, manual, or mechanical techniques to control undesirable vegetation and includes natural or directional pruning, environmentally safe herbicides, and tree removals. The program includes flexibility to operate and maintain variable easement widths, differences between rural and urban service areas, applicable codes or ordinances, and the need to maintain some level of flexibility in addressing landowner requests or concerns.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 58

Responding Witness: Lonnie E. Bellar / John K. Wolfe

Q-58. Please refer to the Response to Metro 1-95. Are the listed current arborists ISA certified arborists? Does LG&E have any certified arborists for transmission lines? If so, please state their names.

A-58. Yes, distribution arborists are ISA Certified. For transmission, see the response to Metro 1-96.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 59

Responding Witness: N/A

Q-59. This item intentionally left blank.

A-59. N/A

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 60

Responding Witness: John K. Wolfe

Q-60. Please Refer to Response to Metro 1-29.

(a) What would the cost to Metro and savings to Metro to be in the scenario provided if Metro chose to use the one-time conversion fee instead of the monthly conversion fee. Please provide for the year the conversion fee would come into effect, and each of the next five years. In other words, if Metro converted in year 1, year 2, year 3, year 4 and year 5.

(b) Is there any scenario on any LED conversion (not just the scenario listed in question 29) in which it would be cheaper for Metro to use the monthly conversion fee as opposed to the one-time conversion fee?

(c) If the answer to (b) is yes, please provide an example.

A-60.

(a) The proposed lump sum conversion fee is $277.29. The total monthly conversion fee, proposed $7.08 per month for 60 months, is $424.80. The lump sum conversion fee is $147.51 lower than the total monthly conversion fee. Regardless of the year the conversion fee is applied, the savings from choosing the lump sum fee rather than the monthly conversion fee is $147.51 over the life of the monthly conversion fee.

In this scenario, Metro can save $238.56 per year by converting from RC209 to RC492, not including the conversion fee. This table displays the (costs)/savings during the five years the monthly conversion fee would be charged. The lump sum fee incurs an additional costs of $38.73 in the first year and then savings of $238.56 in every year after that. The monthly conversion fee sees a savings of $153.60 per year and no additional costs incurred, followed by $238.56 savings in year six and beyond. If the conversion is delayed to year two (or beyond), it delays the savings shown below.

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Savings Monthly Conversion Fee	$153.60	$153.60	$153.60	$153.60	$153.60	$768.00

Savings Lump Sum Conversion Fee	$(38.73)	$238.56	$238.56	$238.56	$238.56	$915.51
Lump Sum Savings Over Monthly	$(192.33)	$84.96	$84.96	$84.96	$84.96	$147.51

(b) No. Over the life of the conversion fee the lump sum fee is always $147.51 less expensive.

(c) N/A

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 61

Responding Witness: Lonnie E. Bellar / Robert M. Conroy

Q-61. Please Refer to Response to Metro 1-99, 109(b), and Chart on Bellar testimony, page 52.

(a) The three projects, Western Kentucky A and B modernization, and Magnolia Crossing, totaling $26.7 million dollars, were denied by the Commission in 2019-301 on March 26, 2020 (as accurately noted in DR response) because the "projects did not address any immediate safety or reliability concerns" – what has changed in the last ten months to change this Commission finding?

(b) Have any other projects listed on the chart from Bellar testimony page 52 been disallowed by the Commission in any previous proceedings?

(c) Have any other projects listed in the chart on Bellar testimony page 52 been requested in a previous rate case but were withdrawn in a settlement?

(d) Are the projects listed on the chart on page 52 of Bellar's testimony, which have not received a CPCN or have been previously rejected by the Commission, necessary now? Why?

A-61.

(a) The Commission did not foreclose recovery for Western Kentucky A and B modernization or Magnolia Crossing in Case No. 2019-301. Rather, the Commission found that it was not appropriate to recover costs for those projects in the Gas Line Tracker (GLT) mechanism because the projects were different in character from projects previously approved for GLT treatment. The Commission went on to hold that "although LG&E will not be able to recover the costs associated with the proposed programs through the GLT mechanism, the company is not prohibited from seeking recovery of such costs in future rate

cases."[3] LG&E does that now with inclusion of these projects in the present case.

(b) LG&E disputes the characterization in the request that recovery for the Western Kentucky A and B modernization projects or Magnolia Crossing project were disallowed by the Commission; only the means of proposed recovery was disallowed. LG&E is not aware that any projects including the capital spending outlined in Mr. Bellar's testimony have been disallowed for rate recovery.

(c) The uniform gas transmission line replacement projects on Western Kentucky A and B were removed from the revenue requirement in the Companies' 2018 base rate cases by stipulation, as approved by the Commission's April 20, 2019 Order in Case No. 2018-00295, without prejudice to LG&E including these projects in a future rate case and with intervenors agreeing not to oppose the forum through which LG&E seeks to recover these costs in the future.

(d) Yes, the gas-related projects summarized in Mr. Bellar's testimony are needed for the reasons described therein – namely – because they are prudent expenditures which will enhance the safety and reliability of LG&E's gas transmission and distribution systems.

[3] *Electronic Application of Louisville Gas and Electric Company for an Amended Gas Line Tracker*, Case No. 2019-00301, Order Mar. 26, 2020, at p.9.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 62

Responding Witness: Lonnie E. Bellar / Robert M. Conroy

Q-62. Please Refer to Response to Metro 1-107(c) and Chart on Bellar Testimony page 52.

(a) Is the project, at the top of the chart on page 52, titled "Gas Transmission Modernization (Penile-Blanton, Penile-Preston, Preston-Piccadilly)" totaling $28.6 Million, the same as described in answer to Metro DR 107(c)?

(b) If so, is the company only requesting $28.6 million be recovered in the current rate case?

(c) This amount is different than what is in the answer to DR 107(c), please explain?

(d) What portion of these costs are currently in the GLT?

(e) What portion is being requested to be in the rates in this case?

(f) What portion will remain in the GLT?

A-62.

(a) Yes.

(b) No. The company is seeking recovery of the costs from the inception of the project through the end of the test year, based on applying the 13 month average capitalization, in this rate case. See the response to part c.

(c) The capital included in the chart on Bellar Testimony page 52 is the total base rate capital included from the midpoint of the prior rate case test year to the midpoint of the current rate case test year; this excludes GLT capital. Since the capital spending for the Transmission Modernization Program is included in the GLT mechanism prior to July 1, 2021, the $28.6 million in base rate capital for the Gas Transmission Modernization Program is for the period of July 1, 2021 through December 31, 2021. The amounts in the response to Metro 1-107(c)

reflect the total capital projection for the Gas Transmission Modernization Program (Penile-Blanton, Penile-Preston, and Preston-Piccadilly projects) including capital approved under the GLT mechanism from inception through June 2021 and the future base rate capital forecasted through the end of the forward test year (July 1, 2021 through June 30, 2022).

(d) None of the costs in the chart on Bellar Testimony page 52 for the Transmission Modernization Program projects are currently recovered through the GLT mechanism.

(e) LG&E is requesting recovery in this rate case for the costs, as described in the response to Metro 1-107(c), from inception of the project through end of the test year in this case, inclusive of those costs currently recovered through the GLT that will be rolled into base rates if approved.

(f) If approved for inclusion in base rates, no costs for the Gas Transmission Modernization Program will remain in the GLT after June 30, 2021.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Louisville/Jefferson County Metro Government's
Second Request for Information
Dated February 5, 2021

Case No. 2020-00350

Question No. 63

Responding Witness: Lonnie E. Bellar

Q-63. Please refer to Response to Metro 1-112(a).

(a) What additional technology would be necessary to allow for the safe remote disconnection of gas?

(b) What is the cost per meter of such technology?

(c) Is the company opposed to remote disconnection of gas service or will it consider remote disconnection of gas service in the future?

A-63.

(a) The Company would require a remote disconnect device have a gas tight seal and a compatible power source for being integrated with or installed around a gas meter. As mentioned in Metro 1-112(a), the Company is aware of remote disconnect devices, but in discussion with one vendor, a gas tight seal could not be guaranteed and the Company has not pursued discussions with other vendors.

(b) The Company has not developed the costs per meter given the concerns noted in part a.

(c) The Company would consider remote disconnection in the future based on finding an acceptable device and if the installation and operation have a positive cost benefit and do not diminish reliability.