

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTONIC APPLICATION OF LOUISVILLE GAS)
AND ELECTRIC COMPANY FOR AN ADJUSTMENT) CASE NO. 2020-00350
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)

**LOUISVILLE/JEFFERSON COUNTY METRO GOVERNMENT'S
FIRST REQUEST FOR INFORMATION TO LOUISVILLE GAS & ELECTRIC**

In accordance with the Public Service Commission's ("Commission") December 9, 2020, Order, Intervenor Louisville/Jefferson County Metro Government ("Louisville Metro") propounds the following data requests upon the Applicant Louisville Gas & Electric ("LG&E"). LG&E shall respond to these requests in accordance with the provisions of the Commission's December 9, 2020, Order, applicable regulations, and the instructions set forth below.

INSTRUCTIONS

1. Please provide written responses, together with any and all exhibits pertaining thereto, separately indexed and tabbed by each response.
2. The responses provided should restate Louisville Metro's request and also identify the witness(es) responsible for supplying the information.
3. If any request appears confusing, please request clarification directly from counsel for Louisville Metro.

4. Please answer each designated part of each information request separately. If you do not have complete information with respect to any item, please so state and give as much information as you do have with respect to the matter inquired about, and identify each person whom you believe may have additional information with respect thereto.

5. To the extent that the specific document, workpaper, or information does not exist as requested, but a similar document, workpaper, or information does exist, provide the similar document, workpaper, or information.

6. To the extent that any request may be answered by way of a computer printout, please identify each variable contained in the printout which would not be self-evident to a person not familiar with the printout.

7. If LG&E objects to any request on any grounds, please notify counsel for Louisville Metro as soon as possible.

8. For any document withheld on the basis of privilege, state the following: date; author; addressee; blind copies; all persons to whom distributed, shown, or explained; and, the nature and legal basis for the privilege asserted.

9. In the event any document called for has been destroyed or transferred beyond the control of the company, state the following: the identity of the person by whom it was destroyed or transferred, and the person authorizing the destruction or transfer; the time, place, and method of destruction or transfer; and, the reason(s) for its destruction or transfer. If destroyed or disposed of by operation of a retention policy, state the retention policy.

10. These requests shall be deemed continuing so as to require further and supplemental responses if the company receives or generates additional information within the

scope of these requests between the time of the response and the time of any hearing conducted hereon.

Respectfully submitted,



STURGILL, TURNER, BARKER & MOLONEY, PLLC

James W. Gardner

M. Todd Osterloh

333 W. Vine Street, Suite 1500

Lexington, Kentucky 40507

Telephone No.: (859) 255-8581

Facsimile No.: (859) 231-0851

jgardner@sturgillturner.com

tosterloh@sturgillturner.com

and

MICHAEL J. O'CONNELL

JEFFERSON COUNTY ATTORNEY

Jeff Derouen

Lauren Givhan

Assistant County Attorneys

First Trust Centre

200 S. 5th St. Suite 200N

Louisville, KY 40202

Phone: (502) 574-6331

Jeff.Derouen@louisvilleky.gov

Lauren.Givhan@louisvilleky.gov

Attorneys for Louisville Metro

CERTIFICATE OF SERVICE

In accordance with 807 KAR 5:001, Section 8, I certify that the January 8, 2021, electronic filing of this document is a true and accurate copy of the same document being filed in paper medium; that the electronic filing will be transmitted to the Commission on January 8, 2021; that there are currently no parties that the Commission has excused from participation by electronic means in this proceeding; and that an original paper medium of the Petition for Confidential Treatment will be delivered to the Commission within 30 days after the lifting of the State of Emergency.



Counsel for Louisville Metro

1. Please refer to Exhibit WSS-4:
 - a. Please provide a comprehensive breakdown of the Total Installed Cost for each LED lighting offering.
 - b. Please explain how LG&E or Mr. Seelye calculated the Fixed Carrying Charge.
 - c. Please explain the justification for the Fixed Carrying Charge.
 - d. Please provide all work papers supporting the estimated investment per unit for each type of LED fixture and underground pole.
2. Please refer to Exhibit WSS-5.
 - a. Explain how the Company estimated the NBV for Poles.
 - b. Explain how the Company estimated the NBV for Fixtures.
 - c. Explain how and provide the calculation on how the Company determined the NBV per fixture.
 - d. Please provide detail to support the answer to “c”.
 - e. Please provide detail to support the “salvage portion” of conversion fee, which is identified as \$3.29 for KU and \$4.62 for LG&E.
 - f. Please provide detail to support the “revenue portion” of conversion fee, which is identified as \$1.72 for KU and \$2.46 for LG&E.
 - g. What is the “salvage portion” and “revenue portion” of the Annual Conversion fee?
 - h. Please provide a breakdown of the remaining costs for both annual and monthly conversion fees.
 - i. Provide all work papers to support the information provided in Exhibit WSS-5.
3. Does KU, LG&E, or its corporate affiliates receive any form of rebates or reimbursement from LED manufactures, distributors, or retailers? If so, how and where is that revenue booked?
4. Does the Company track expenses for new installation separate from repairs and the type of repair be known (e.g. problem related to wiring, fixture, pole, etc.)? Why or why not?
5. For the period after September 2018 to the present, please provide any Company internal and external business plans, presentations, marketing material, feasibility studies, lighting conversion financial analyses, customer economic studies, conversion financial models, and correspondence to senior leadership as created or prepared by or for the Company as it relates to street lighting. Bookmark the following documents in your response:
 - a. Technical specifications or metrics established by the Company that were used to select LED lighting types, such as lumen output, lumens-per-watt, warranty, L70, kelvin, etc.

- b. Product data sheets for the new LED lighting offerings and LED equipment supply options.
6. Identify the useful life for each type of fixture within the proposed Restricted Lighting Service tariff.
7. LED fixtures service lives typically range from 50,000 to 100,000, and may extend as high as 250,000 hours or 12.5, 25, or 62 years respectively. As such these extended life spans, should lead to projections of lower annual O&M costs as a component of rate construction. Yet the projected LED LS rates remain at, near, or even higher than the RLS they are replacing.
 - a. Is there a projected timeframe or LED saturation level where the Company expects these O&M levels to begin to go down to reflect the reduced O&M costs of LED fixtures?
 - b. If the Company does not believe increased deployment of LED fixtures will reduce the O&M costs for leased lighting please elaborate why?
 - c. Additionally, public entities have seen a drastic reduction in the cost of outdoor area lighting on the scale of 50% or greater in the past several years, while efficiency continues to increase. Again, the current LED LS rate constructions appear not to reflect this significant downward trend in fixture costs. Please explain the Company's experience in LED fixture costs over the past several years?
8. What is the percentage of street lights throughout the Company's system that is an LED light?
9. Does the Company have any systematic plans to convert restricted lighting to LED, such as geography or rate code?
10. In a prior rate case, the Company defined the end of service life for an LED fixture when the fixture fails completely or lumen output is reduced below 70% (L70) of initial output rating.
 - a. Does the Company still use the same definition for end of service life for an LED fixture?
 - b. What are the Company's plans for service/maintenance for LED lights when they near or reach the end of service?
 - c. When sourcing or purchasing LED fixtures, does the Company have a minimum allowable/acceptable L70 rating for fixtures in hours? If so, what is that rating?
 - d. Please provide the L70 rating for each LS LED fixture/rate code currently in use.
11. The Energy Policy Act of 2005 – Section 135 H.R. 6-39 states that “Mercury vapor lamp ballasts . . . shall not be manufactured or imported after January 1, 2008.”
 - a. What is the status of the Company's inventory for mercury vapor replacement?
 - b. When is conversion to from mercury vapor to LED anticipated?
 - c. Since lamp replacements for these MV fixtures are not consistent with the 2005 Act. Has the Company used a different projection methodology for the

replacement of these fixtures? If so, when does the Company anticipate all MV fixtures will be converted?

12. Please refer to the RLS Tariff. It states: "In the event restricted fixtures/poles fail and replacements are unavailable, Customer will be given the choice of having Company remove the failed fixture/pole or replacing the failed fixture/pole with other available fixture/pole." The range of lumen output in the new rates contemplates a photometric study.
 - a. How will the Company assist municipalities in evaluating roadway illumination for the new LS rate options?
 - b. Please provide an updated cross-reference table (excel) that associates all existing RLS rate codes with their LS LED equivalent(s). Please ensure the cross reference table includes the RLS and LS cost, and if applicable for LS rates the pole category and charges.
13. Please state how many new public street lights were installed by LG&E for each of the past three years, indicating the types of lights installed and the number of these lights which replaced previously existing street lights, for the following: Louisville Metro and LG&E's entire system.
14. For each of the past three years, please provide the number of street lights that LG&E had planned on replacing prior to that year, and a summary of the actual number replaced that year for the following: Louisville Metro (extrapolate if needed) and LG&E's entire system.
15. Please explain in detail the Company's current policies, procedures, practices, and/or guidelines for maintaining street lights within Louisville Metro and provide copies of the same.
 - a. Does the Company regularly inspect individual street lights or the collective street lighting in Louisville Metro?
 - b. Do these inspections take place only upon the receipt by the Company of a complaint regarding a particular street light?
 - c. What is the average response time to replace a non-working street light in Louisville Metro?
 - d. Does this information differ depending upon the type of street light? If so, please provide a detailed explanation.
 - e. Would AMI deployment as proposed in the Company's application provide information to the Company that would improve any of the response times or costs related to lighting?
16. Please describe in detail all maintenance that must be performed by the Company on each type of street light to ensure that it operates properly and provide a list of each component of the required maintenance and its monthly cost.
17. Please provide both the number and type of public street lights for Louisville Metro accounts for which service or maintenance was performed in each of the last three

- years and the same information for LG&E entire system. In addition, please provide the basis for generating the above repair or maintenance order (i.e., referral from 311, customer complaint, LG&E) for each of the above.
18. Provide the average time to repair a malfunctioning street light from the time of discovery, either by public reporting or Company representative, initiation of work order; to the time the light is restored to operation, work order is closed.
 19. Provide a chart of maintenance and repair calls for each street light for Louisville Metro and the total cost for each call, including both materials and labor.
 20. Provide separately the number of calls from the public regarding street lights paid for by Louisville Metro and the rest of the Company's system.
 21. Provide any internal policies or procedures with regards to street light maintenance, repair and replacement.
 22. Is LG&E able to ascertain, at any given time, the number of street lights paid for by Louisville Metro that are actually in proper working order? If so, please provide a detailed explanation, and further explain:
 - a. How many street lights (on average) are actually in proper working order at any given time;
 - b. Whether the Louisville Metro is charged the monthly tariff rate for non-working street lights for the periods of time within which such street lights are non-operational or not working properly;
 - c. The amount of time it takes (on average) to bring such street lights into working order; and
 - d. Whether this information differs among different types of street lights. If so, please provide this information for each type of light.
 23. Please state how many existing street lights are scheduled (or anticipated) to be replaced by the Company over the next five years for which Louisville Metro currently and/or in the future will pay a monthly rate. Please provide the quantity of each type of light being removed and the quantity and type of light that will replace it.
 24. Please estimate based on historical maintenance how many existing street lights are anticipated to be replaced by the Company over the next five years within Louisville Metro. Please provide an anticipated breakdown by rate code based on historical failures and replacements.
 25. In numerous portions of the filing, the Company makes reference to improving communications with the public, including improvements to the web pages and mobile applications. There does not appear to be any indication that the Company will include the ability to use the mobile application to report and "Geo-Tag" inoperable or malfunctioning street lighting.
 - a. Does the Company plan to include this capability in any mobile application upgrades, specifically the ability to "Geo-Tag" or more precisely locate the street light?

- b. Currently the Company website has a very limited ability to report street light outages, will this be improved as part of the proposed community engagement improvements?
26. Please refer to Seelye testimony, page 39, line 6, at which he states, "Accounting for the effect of eliminating the ECR projects and the increases in charges for LED fixtures and poles, an increase of approximately 16.57% was required for each RLS fixture and pole to produce an overall increase for Rate LS and RLS of 11.90%."
 - a. How does a 16.57% increase in RLS fixtures require an increase to the LS lighting tariff?
 - b. Why does KU not have the same issue with increased lighting cost?
 - c. Can LG&E obtain same benefits or establish same procedures?
 - d. How are the pole costs allocated between LS and RLS tariffs??
27. For Public Street & Highway Lighting, LG&E Tab 62 Schedule I-2 shows a 17% increase in revenues from base year to test year. Please elaborate on why the test year increase is considerably higher than the approximately 11% increase in overall lighting rates.
28. For Public Street & Highway Lighting, LG&E Tab 62 Schedule I-2, how much of the \$ 2,461,370 base year revenue is associated with Louisville Metro accounts? How many of the 778 customers are Louisville Metro? Why does the number of customers increase to 883 in the test year?
29. The highest, by cost, light in Louisville Metro's portfolio is RC209. The LED equivalent is the RC492. Please confirm this replacement combination and the cost difference that Louisville Metro will incur as these lights are eventually converted. Will Louisville Metro pay more or less as the fixtures are converted? Please express the difference in both dollar value and as a percent.
30. Will the monthly LED conversion fee for previously converted LEDs change to the new rate of \$7.37 per month or remain at \$7.08 for the remainder of their 60 month term?
31. Would the Company recognize cost savings if a customer committed to converting large numbers of traditional street lighting to LED street lighting?
32. Please provide the number (quantity), rate type, type description, and location (by street address) of each street light located in Jefferson County, Kentucky for which Louisville Metro currently pays rates to the Company.
33. The 2021 Business Plan Electric Load Forecast (Tab 16, Item C, p.5-6) indicates 2021BP consumption of 14,635 GWh for R/C/I customers, decreasing at least -500 GWh per year through 2025. The downward trend is not reflected in the R/C/I rates used for capital construction in Tab 26. Please explain why the R/C/I values differ between Tab 16 and Tab 26. Which is considered more reliable as a forecast?
34. Please quantify the contribution of hydro and solar for the years shown in the 2021 Business Plan Generation & OSS Forecast (Tab 16, Item H, p.10). Does the utility

- have plans to increase renewable energy production beyond 2025 to help achieve the corporate goal of reducing CO2 emissions by 70%, relative to 2005, by 2040 (Thompson testimony, p.19)? If so, please quantify.
35. Please Refer to Figure 14 in the PPL Corporate Climate Assessment Report, which is identified in footnote 6 of Thompson’s testimony. The Figure shows the curve for the Low load forecast. Please provide the LGE/KU Distributed Solar Penetration curve applicable to the Base load forecast, include the numerical values for the years 2020 through 2030.
 36. Did the utility conduct a literature review of studies seeking to evaluate the impact of distributed generation on peak day loading from jurisdictions having measurable solar market penetration?
 37. Under how many different types of customer rate codes does Louisville Metro currently make payments to the Company? For each type of class, please provide the following information:
 - a. The type of customer rate code;
 - b. The number of Louisville Metro accounts in each such rate code;
 - c. The total amount paid by the Louisville Metro for each such rate code during the last 12 month period; and
 - d. The total net projected impact for each such rate code under the proposed rate increase.
 38. For each separate Louisville Metro account please provide a detailed analysis showing the impact of the proposed rate versus the existing rate using the most recent 12 month actual usage and billing data. Please also provide a detailed explanation of the formula that was used to obtain this information. In particular, please show the formula or calculations indicating the total fiscal impact, including the application of the fees and all applicable adjustments (Environmental, DSM, Fuel, etc.).
 39. Please provide a schedule showing the following information for each current Metro-Louisville account for 2018, for 2019 and the first 10 months of 2020 separately by year and not added together.
 - a. Applicable tariff.
 - b. Other tariffs that could be applicable to this account.
 - c. Total sum paid.
 40. Does the Company have an estimate or general or specific information on how much revenue is derived from Louisville Metro customers? If so, please provide by customer class for each of the last three years as well as a comparison of the percentage of revenue that this constitutes in relation to all revenues.
 41. [This item intentionally left blank.]
 42. Please refer to Bellar testimony, page 55, Line 20, regarding “Status Quo alternative which assumes replacing existing meters as they fail with non-communicating electronic meters.” Describe:

- a. What is failure rate of current meters?
 - b. When does the Company believe the current meters in use would be completely replaced by the “non – communicating electronic meters”?
 - c. In detail, what type of “non-communicating electronic” meters would be used?
 - d. Explain why the Company cannot replace the existing meters, as they fail, with AMI meters?
43. Refer to Exhibit LEB-3. Does the Status Quo scenario include costs already embedded in existing rates? For example, Table 4 identifies costs associated with meter reading and field service, yet these costs are generally associated with customer base charges.
44. Refer to Exhibit LEB-3, Appendix D. With regards to Conservation Voltage Reduction potential, will additional support be available for customers to diagnose issues with the utility? If problems are encountered, will the utility disable “dynamic” CVR to address end-use compatibility problems?
45. Would Conservation Voltage Reduction ever be used to increase voltage within the tolerance band?
46. Please refer to Blake testimony on Page 16, line 19, regarding “The Companies would expect to use the amortization of the regulatory assets and liabilities associated with the AMI project to address this up-front cost and long-term benefit issue such that customers would never see an increase in revenue requirements associated with implementing AMI” and Exhibit KWB-2.
- a. Does page 2 of Exhibit KWB-2 reflect the 15-year allocation of the AMI costs pursuant to the statement beginning on page 16, line 9?
 - b. Would the rate impact of this allocation be zero, or even positive for ratepayers, because of this allocation?
 - c. What, specifically, would the rate impact of this allocation be for Residential, Consumer, industrial, lighting for each year between 2026 and 2046?
 - d. If the answer to c indicates any increase rate in any year for any class, how does that comport with the statement that “customers would never see an increase in revenue requirements”?
 - e. How are customers protected against rate increases if actual costs come in above the expectations shown in Exhibits KWB-1 and KWB-2?
 - f. Is the Company willing to accept in the CPCN case that there will be no rate impact to the AMI proposal?
 - g. If there is no revenue requirement or rate impact to the AMI project, why are the companies seeking a CPCN?
47. Regarding the new AMI Meters proposed in the CPCN.
- a. How long have these meters been in use?
 - b. What other utilities have used them?
 - c. What is the failure rate of the proposed new AMI meters?

- d. Does the company that provides these meters warrant their operations? For how long?
 - e. What are replacement costs of these new meters?
 - f. What network communications protocols do these proposed new meters use?
48. Will the proposed AMI meters use capacitor or battery technology as a backup power source to support communication reporting during outages?
- a. What is the anticipated time the backup power source will be able to report?
 - b. What is the anticipated life expectancy of the capacitor or battery?
 - c. Has this proposal included maintenance or replacement costs for this critical piece of the infrastructure?
 - d. What backup power sources will be utilized for the other critical points in the communications network, at the transformers, repeaters, sub-stations, etc?
 - e. Has maintenance and lifecycle replacement costs for the backup power components been included in your proposal, if so please indicate where and how much?
49. Accurate meter locations are fundamental to proper billing. Please describe the capabilities of the proposed asset inventory system for AMI with regards to geo-coding meter locations against a visible characteristic such as serial number or barcode number.
50. Exhibit JKW-2 alludes to potential overlap between information coming from AMI and existing SCADA systems. Does the utility anticipate the retirement of SCADA, or similar, legacy systems as part of AMI? If so, are these beneficial savings part of the analysis in Exhibit LEB-3?
51. A number of the claimed benefits associated with AMI are improved communications and notifications. Wolfe testimony from EPRI Exhibit JKW-2 says there can be communications issues for customers with multiple accounts. Louisville Metro is a major customer with numerous accounts in the Residential, and General Service rates.
- a. How will you address communications and notification issues for major customers to avoid confusion or to assist in identifying which account has the issue?
 - b. Also, the current MyMeter website utilizes a pull down menu if you have multiple accounts, as Louisville Metro does. What changes or improvements are proposed to assist major clients when accessing the MyMeter interface, i.e. finding one of many accounts in a pulldown?
52. How will information received from AMI meters be received, processed, and then made available via the MyMeter web portal?
- a. Currently this process results in an approximate 24 hour delay. Will the expansion of AMI reduce this average time, or will the increased amount of data being processed increase this time?

- b. Will there be differences noted for different customers, i.e. those in rural areas will take longer, currently opt-in accounts in more urban areas tend to update quicker?
- 53. Please refer to Exhibit JKW - 1 at page 35 of 44. Dominion energy utilized advanced analytics from their AMI data to identify individual electrical loads within the individual customer's homes to identify the individual heating system type. Refer to Exhibit ELS-2 KU-LGE Fact sheet sample "MYTH: Advance meters are an invasion of privacy. TRUTH: Advance meters measure how much energy you use, based on time of day, not how you use that energy. Unless you install a home energy management system, advance meters cannot tell whether the energy used is from your oven, air conditioner, or hair dryer." These two exhibits are contradictory, please provide explain the discrepancy.
 - a. Schneider Electrical, Sense, and several other manufactures currently have technology (hardware and software) that can and do utilize advanced analytics to identify specific electrical devices based on load characteristics, i.e. water heater, pump, dishwasher, etc. Thus, the technology exists and is currently in widespread commercial use. The Dominion case cited in Exhibit JKW indicates utilities will have the ability to do this level of analytics. Does the Company acknowledge that the AMI system proposed does not have the capability to measure or perform any advanced analytics?
 - b. Will the Company stipulate that should upgrades to the AMI equipment or software make it possible for advanced analytics in the future, the Company is committed to not utilizing this or any other technology to measure anything other than gross or net energy use over time as stated in this filing?
- 54. One principle factor the Company is promoting for the implementation of AMI is the ability for customers to utilize the information to perform energy management and cost reductions. What observations have KU or LG&E recorded regarding energy consumption changes in the Opt-in pilot group customers?
 - a. Provide all data from the Opt-in pilot group reporting average consumption reductions over time.
 - b. Was this data utilized to project system wide consumption reductions for AMI implementations?
 - c. How will these proposed reductions impact the Company's revenue and generation?
 - d. In Blake's testimony, under other drivers of requested revenue increase; LG&E is requesting an additional \$6,000,000 due to reduction in load and net revenue. It appears based on this precedence that customers may be asked in the future to make up revenue shortfalls that are being shown as a driving factor to benefit the rate payers as a result of customer's energy management activities as a result of AMI implementation? Please explain how this request for additional revenue

driven by load reductions, partially due to the widespread adoption of LED lighting, i.e. rate payer energy management activities will not result in future requests for additional revenue?

55. Refer to Blake testimony Page 18, Line 15 regarding “development of a complete RF mesh network across the Companies’ service territories” and Wolfe Testimony, page 28, line 7, regarding “Using the existing, Company-owned, radio frequency mesh network could provide cost savings not possible without that network”
 - a. Is the RF network referred to by Mr. Blake, the same one referred to by Mr. Wolfe?
 - i. If not, what “development” is needed to meet the needs of the proposed AMI meters
 - ii. If so, why does a new RF mesh network need to be developed?
 - b. Please describe in detail the network needs to meet the AMI proposal that do not currently exist.
56. Please refer to Blake’s Testimony at A-15, at which Blake indicates that the proposed use of remote connect/disconnects will be a source of cost savings. It is unlikely that all future connects/disconnects will be done remotely.
 - a. What percent of each have you used for cost savings projections? What support do you have for these assumptions?
 - b. If these assumptions prove wrong, or there are unforeseen issues that may arise with remote connects/disconnects causing them to be discontinued. Quantify the fiscal impact on future projected savings, if remote connect/disconnect does not meet assumptions.
57. Referring to communications with the proposed AMI meters,
 - a. Why is communication with the proposed AMI meters using RF and not fiber or other wireless communication options?
 - b. Will the proposed AMI meters be compatible with fiber communications?
 - c. Will the proposed AMI meters be compatible with other wireless communications options?
 - d. Would there need to be any additional costs to use fiber communications?
 - e. Would there need to be any additional costs to use other wireless communications options?
 - f. Does current wireless technology in Louisville Metro meet requirement of full use of the proposed AMI technology?
 - i. If the answer to f is “no”, what level of wireless technology will be needed?
58. Please Refer to Application Exhibit #4. The Landis and Gyr AMI equipment indicates is it “Zigbee” enabled for home network.
 - a. Will the Company allow homeowners the option of connecting to this “Zigbee” connection?

- b. Will this allow customers to monitor their energy consumption in “Real time” via the “Zigbee” connection?
 - c. Does the Company anticipate charging a fee for customers to utilize the “Zigbee” connection?
 - d. If the Company will not allow customers to utilize this feature contained within the proposed equipment, what is the reason and justification for not permitting customers to monitor via the meter’s local “Zigbee” connection?
59. Refer to Thompson testimony page 5, line 18, “The Companies have devoted significant resources to assessing potential cybersecurity vulnerabilities with their operational technology infrastructure and are developing a plan for mitigating those vulnerabilities” and various other statements.
- a. Explain in detail the resources allotted to potential cybersecurity vulnerabilities.
 - b. What is the default behavior of the proposed AMI meters when experiencing a service interruption?
 - c. What is the default behavior of the proposed AMI meters when experiencing a cybersecurity attack?
 - d. Do the proposed AMI meters have a physical, mechanical override function?
 - e. How will company inform specific customers of cybersecurity breaches?
 - f. How will company inform the public of cybersecurity breaches?
 - g. Will the company agree to communicate cybersecurity breaches with Louisville Metro?
60. The Company has described AMI System as a series of systems integrated to provide many benefits, application exhibit 3. As such, when the project is complete and cost recovery is sought, estimated to be in 5 years,
- a. Will the Company seek cost recovery across all rate payers, as this system benefits the entire distribution system?
 - b. Will advanced meters become available for Power Service customers, if so when, if not why?
 - c. Currently, The Company’s Power Service meters bill in 15 minute intervals, but do not record any data, thus there is no time stamp available when meter/billing issues arise. Are there any plans to address this issue?
61. Will AMI extend to Time of Day (TOD) Primary and Secondary and Power Service (PS) Primary and Secondary meters/rates?
- a. If PS and TOD meters are not impacted by AMI, will these still be read in person monthly?
 - b. Will all currently required meter inspections and testing that are requested to be waived, modified, or eliminated in this rate case continue or will these be modified even though AMI meters will not be installed on these accounts?
62. Collective billing can result in delays up to 59 days from the meter read date to bill issuance, and/or the availability of detailed use and billing data on the customer web

- portal. Please elaborate on any changes to collective billing that are proposed or may result from AMI implementation.
- a. Would the proposed AMI system decrease the time from meter reading to bill issuance for collective billing customers?
 - b. Would the decrease apply to all rate codes using collective billing? If not, please identify which rate codes would not benefit. Will deployment of the AMI system result in any changes to customers that currently receive utility billing information via “Flat File”? If yes, please explain what changes are anticipated.
63. Will deployment of the AMI system result in any changes to customers that currently receive utility billing information via “Flat File”? If yes, please explain what changes are anticipated.
64. Regarding Schedule M-1.3, please affirm or clarify whether the lines for “Solar Energy Credit” represent energy exported to the utility grid from privately owned distributed generation systems, and that the total generation received in the base year was 498,348 kWh.
65. Please refer to Seeley testimony at 43 that refers to the Rider SQF that was implemented to comply with Sections 201 and 210 of the Public Utility Regulatory Policies Act of 1978. What is the capacity limit for qualifying facilities under PURPA?
66. Is SQF tariff value equal to the avoided cost to the Companies of providing unneeded energy to the qualifying cogeneration or small power production facilities while these facilities are generating and providing power to the companies’ system?
- a. Please provide the calculations the Company used to compute the existing Standard Rate Rider SQF.
 - b. Do Sections 201 and 210 of the Public Utility Regulatory Policies Act of 1978 require that the SQF tariff be equal to avoided cost? Please provide the reason for your answer.
67. Please refer to Seeley testimony at 54. The DG customer load profile shown in Graph 3 would be impacted by the azimuth of the systems and the relative size of each system.
- a. Please provide the capacity and azimuth of the systems used to derive the DG profile.
 - b. In the absence of such data, is it reasonable to assume that the systems would favor a due-south azimuth?
 - c. Please clarify the Y-axis scaling. Is “Net Metering Load” and average or weighted value whereas “Total Residential Load” is cumulative?
68. The recently amended net metering statute, KRS 278.466, states, in part: “Using the ratemaking process provided by this chapter, each retail electric supplier shall be entitled to implement rates to recover from its eligible customer-generators all costs necessary to serve its eligible customer-generators, including but not limited to fixed

- and demand-based costs, without regard for the rate structure for customers who are not eligible customer-generators.” Please describe in detail how the tariff rate in NMS-2 recovers these “costs”? Does the rate proposed in NMS-2 collect more than these “costs” from the eligible customer-generator?
69. How many total customers of the Company currently take service under NMS?
 70. How many customers began taking service under NMS for the first time in each year from 2010 to 2020?
 71. Please provide a listing of all revenue LG&E/KU received from PJM and MISO (provided separately) by year for the years 2017-2020 by category including but not limited to transmission, energy sales and capacity sales.
 72. Please explain why and how energy and capacity payments would increase by being a member of PJM/MISO from the status quo.
 73. Did the 2018 RTO Membership Analysis include both FRR and RPM for PJM? If yes, please provide the results. If not, why not?
 74. Are there quantifiable cybersecurity and reliability benefits that LG&E/KU would receive for belonging to PJM or MISO? If so, please state what they are and if not, please state why not.
 75. Please provide a current update on the status of SEEM which was described in Mr. Bellar’s testimony.
 - a. Are there any reliability benefits from being a member of SEEM? If yes, please state why and if not, please state why not.
 - b. Has a financial analysis been provided analyzing the financial advantages and disadvantages of membership? If so, please attach a copy of such study.
 76. Is there any cost associated with the SEEM proposal in the current rate case? If yes, identify the amount.
 77. How do the Companies plan to get approval from the PSC for SEEM if they choose to participate?
 78. Are LGE/KU still members of SERTP?
 - a. Does SERTP remove the necessity of LGE/KU belonging to an RTO?
 - b. Did the RTO analysis filed in the 2018 rate case and updated in March 2020 assume that LGE/KU continues to belong to SERTP?
 79. Did the cost of service study prepared by William Steven Seelye for this case include any categories of costs used to determine customer charge which were not included in his 2018 cost-of-service study for the Company? If the answer is yes, please list the nature of the costs and the amount.
 80. Were there any changes in the methodology in the 2020 cost of service study from his 2018 cost of service study? If the answer is yes, please describe the changes.
 81. Why did the customer service charge cost (as reflected in the cost of service study) for gas customers increase from approximately \$0.82 in conjunction with the 2018 rate case to approximately \$0.98 per day in 2020?

82. Are all fixed and demand-based costs necessary to serve residential customers recovered through the Basic Service Charge and the Infrastructure portion of the Energy Charge? If not, where else are they? Why?
83. Please provide a copy of every vegetation management plan employed by LGE/KU during the last 20 years for:
 - a. distribution lines; and
 - b. transmission lines.
84. Please refer to the testimony of Lonnie Bellar in response to the question at line 6, page 5.
 - a. Please provide a copy of all written instructions, directives, and emails sent to employees and/or contractors related to the current 5-year cycled approach.
 - b. Please provide a copy of the Transmission System Infrastructure Plan (“TSIP”) (2016) currently in effect at this time.
 - c. Prior to 2016, did the Company have a written TSIP that included vegetation management? If so, please provide a copy of same.
 - d. Was the 2016 TSIP the first such written plan?
 - e. Please describe the “just-in-time” plan previously in place for transmission line maintenance.
 - f. How are “hazard trees” defined?
85. Please provide a listing by type of trees and number of same removed from transmission lines in Louisville Metro during this five year cycle.
86. By the categories of high voltage and low voltage transmission lines, please provide how many trees and corridor miles in Louisville Metro have been cleared and how many remain to be cleared under the current five year plan.
87. Please refer to the testimony of John K. Wolfe beginning at page 10:
 - a. Please describe the “routine clearing program” for scheduled trimming.
 - b. Please provide the number of customer authorizations LGE/KU required for each year for the past 10 years before tree trimming could occur.
 - c. How long has distribution line maintenance been on a 5-year cycle?
 - d. Please provide a link to the ANSI A300 standards for vegetation management.
 - e. Please provide a list of the number of at-risk trees removed from the distribution system in each year since 2010.
 - f. Please provide the following information separately for (a) Transmission lines and (b) distribution lines: which kind of trees are currently allowed to be planted in the easements and right of ways and which trees are not allowed to be planted.
88. For each year of the current cycle, please provide the number of contractors (individuals) and the number of Company employees engaged in vegetation management in Louisville Metro.
89. By position and duties, please list all Company positions that supervise contractors in vegetation management.

90. Please describe the response that the Company has made to each complaint about tree trimming and vegetation management that the Company has received from Louisville Metro customers and how same were resolved.
91. In the last 20 years has the Company ever recommended that certain type of trees be planted in easements or rights-of-way? If so, please state the date, type of trees and whether any documentation exists.
 - a. Please provide the following information separately for (i) transmission lines and (ii) distribution lines: which kind of trees are currently allowed to be planted in the easements and right of ways and which trees are not allowed to be planted.
 - b. Is the Company aware of or approve of contractors cutting down trees under either line without regard to whether the trees have been approved?
 - c. With respect to type of line (transmission or distribution) what written guidance, laws or regulations require that a particular tree be cleared as opposed to trimming same? Please attach a copy or link to each such written document. Whether such a document exists or not, please detail how the decision is made to clear and not trim and who makes the decision for transmission and distribution lines.
92. For the Reliability and Resiliency Plan attached to the testimony of John K. Wolfe, please provide the following information:
 - a. How much money is budgeted in this rate case for vegetation management separately for distribution and transmission? Additionally provide the same information for the years 2016-2020.
 - b. Please provide a copy of the “integrated management plan” in effect now and for the period covered by the Reliability and Resiliency Plan.
93. Prior to beginning the implementation of TSIP in 2016, did the Company communicate same to any Louisville Metro official?
94. Please provide copies of the RCP work plans for the prior 10 years. Which arborists prepared same plans?
95. Which arborists visually inspected the circuits in Louisville Metro in the last 5 years prior to clear cutting trees? Please state the date of the inspection, the arborists performing the inspection, and the circuits examined.
96. For each arborist employed by the Company in the last 10 years, please state the name of the arborist and the direct supervisor of the arborist and additionally whether the arborist was (a) an ISA Certified Arborist or (b) an ISA Certified Arborist Utility Specialist.
97. [This item intentionally left blank.]
98. [This item intentionally left blank.]
99. Please refer to the Commission’s final Order in Case No. 2018-00295 dated April 30, 2019 at page 11.

- a. Has the Company previously sought recovery of any of the projects removed from the stipulations? If so, please state in what form the Company sought recovery, how much recovery was sought and when the recovery was sought.
 - b. Is the Company seeking recovery of any other projects removed during the previous rate case in this proceeding? If so, for what projects are recovery sought and how much is sought?
100. Following the elimination of certain Gas Line Tracker projects described in William Steven Seelye's testimony at page 83, please state what projects remain and the amount of recovery remaining.
101. Other than the removal of certain projects from the GLT in this proceeding, have there been any other changes made to the GLT since the entry of the final order in 2018-00295? If so, please state the nature of the modifications.
102. Other than the removal of the projects proposed in this case, are any other modifications proposed to the GLT? If so, please state the nature of the modifications.
103. Is LG&E seeking to recover in this case any additional gas line costs with base rates or by inclusion in the GLT? If so, please state the amount of the costs and the nature of the expenditures that led to the costs.
 - a. For the costs specified, please identify LG&E's requested method of recovery (i.e., base rates, GLT, or other). If other, please specify.
104. Please refer to the answers to the question beginning on line 10, page 42 of the testimony of Lonnie Bellar.
 - a. Please detail all of the gas safety measures that LG&E measures.
 - b. For each such safety measure, please describe the measure, the purpose of it and how each such measure is computed.
 - c. For each such measure, please state LG&E's score for each month from January 1, 2018 – October 2020.
105. Please refer to the answers to the question beginning on line 8, page 42 of the testimony of Lonnie Bellar.
 - a. Is the PHMSA Mega Rule Part I fully in effect at the current time? If so, when did it become effective?
 - b. Please provide with specificity each requirement of Mega Rule Part I, when it became effective, the specific measures LG&E has taken and will take in the future and the costs for which LG&E seeks recovery in this case.
 - c. Please detail with specificity the expended set of in-line inspections referred to by Mr. Bellar beginning on line 5, page 43; provide the date of implementation of said tool and the increased costs LG&E seeks to recover in this case. Also please state any additional tools which LG&E expects to implement in the next five (5) years and costs thereto.
 - d. Please refer to line 12, page 43 of Mr. Bellar's testimony concerning the final rule for safety of underground storage facilities. Please list each such facility that

LG&E owns, manages or controls that is affected by the rule. For each such facility, please state the location, the changes to LG&E operations which the rule necessitates and the cost for which recovery is sought in this case for each such compliance measure.

106. Please refer to the answer by Lonnie Bellar to the question beginning on line 18, page 43 of his testimony.
 - a. Are there any costs for which LG&E seeks recovery for compliance with part 2 or part 3 of the Mega Rule? If so, please state the new requirement, the compliance measure, the anticipated costs and whether the costs are sought to be recovered in this case.
 - b. Please state whether there are any other new PHMSA safety provisions and any new non-PHMSA safety provisions required to be implemented, for which the costs of compliance measures are sought in this case.
107. Please refer to the answer to the question beginning at line 15, page 45 of Mr. Bellar's testimony.
 - a. Please attach a copy of the Transmission Modernization Program.
 - b. Is this the same program that formerly was called Transmission Pipeline Program? If so, why was the name changed? What projects are included in this program that are not pipeline?
 - c. Please list each project in the program with specificity as to the nature of the project; if a pipeline, its length; the estimated cost and whether it is within the GLT or base rates; and the incremental cost sought in this rate case.
 - d. Is the 15.5 mile pipeline described beginning on Line 18, page 45 of Mr. Bellar's testimony the same as that described beginning on line 3 on page 46 of Mr. Bellar's testimony?
108. Please refer to Mr. Bellar's testimony beginning on line 15, page 46.
 - a. What is the length of pipelines with more than one diameter; with two diameters; and with more than two diameters?
 - b. Is the installation described by Mr. Bellar the first pipeline with dual diameter in-line inspection? If not, how many miles of pipeline use dual diameter inspection tools? What is the incremental cost of making pipelines dual diameter capable during a pipeline replacement project?
 - c. What is a "data issue" described in line 2, page 47 of Mr. Bellar's testimony? Does LG&E keep records of all "data issues?" If not, why not? How many data issues occurred for each of the years 2015-2020?
109. Please refer to the answer by Mr. Bellar to the question on line 12, page 47.
 - a. Why do the expenses described in the text for the elevated pressure system (\$7.9 million) and steel customer service replacement (\$5.2 million) appear in the chart on page 52, but the city gate expenditures (\$19.4 million) and SCADA update (\$1.0 million) do not?

- b. For each category with a separate cost listed in the page 52 chart, and not previously described in Mr. Bellar's testimony, please describe the project and whether a CPCN was requested and if not, why not, and whether any of the costs are to be recovered in the GLT.
110. Please refer to Mr. Bellar's testimony in response to the questions on line 4 and 14 on page 50.
- a. For each of the 11 new positions, please state the position, the duties, salary and total expenses to LG&E for the position.
 - b. If the total expenses do not equal \$2.1 million, please state why.
 - c. Please state with specificity the costs that comprise the \$4.2 million and \$3.9 million in expenses.
111. Are there any incremental costs in this rate case for the amine replacement program and the new GIS program described on page 51 of Mr. Bellar's testimony?
112. Please see Mr. Bellar's testimony on advanced metering beginning on page 53.
- a. Can connect and disconnect for gas service be done remotely? Can it be done safely?
 - b. Is the reduction in costs for meter reading in AMR-GO the same as if AMI was deployed for gas?
 - c. Because under the proposal meter reading costs will be eliminated, can it ever be cost effective to later to deploy AMI for gas? Is the reason not to propose AMI for GO customers merely a cost difference, or is there a safety/technology issue?
 - d. Please state the names of EPRI members that serve both gas and electric customers that have employed AMI for both gas and electric.
113. Were there any changes in the methodology in the 2020 gas cost of service study? If the answer is yes, please describe the differences.
114. Why did the customer charge for gas customers increase from approximately \$.82 per day in conjunction with the 2018 rate case to \$.98 per day in 2020?