

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC JOINT APPLICATION OF	)	
LOUISVILLE GAS AND ELECTRIC COMPANY	)	
AND KENTUCKY UTILITIES COMPANY FOR A	)	CASE NO.
CERTIFICATE OF PUBLIC CONVENIENCE AND	)	2018-00005
NECESSITY FOR FULL DEPLOYMENT OF	)	
ADVANCED METERING SYSTEMS	)	

COMMISSION STAFF'S FIRST REQUEST FOR INFORMATION  
TO LOUISVILLE GAS AND ELECTRIC COMPANY AND  
KENTUCKY UTILITIES COMPANY

Louisville Gas and Electric Company ("LG&E") and Kentucky Utilities Company ("KU") (jointly "the Companies"), pursuant to 807 KAR 5:001, are to file with the Commission the original and an electronic version of the following information. The information requested herein is due on April 13, 2018. Responses to requests for information in paper medium shall be appropriately bound, tabbed, and indexed.

Each response shall include the name of the witness responsible for responding to the questions related to the information provided. Each response shall be answered under oath or, for representatives of a public or private corporation or a partnership or association or a governmental agency, be accompanied by a signed certification of the preparer or the person supervising the preparation of the response on behalf of the entity that the response is true and accurate to the best of that person's knowledge, information, and belief formed after a reasonable inquiry.

The Companies shall make timely amendment to any prior response if they obtain information which indicates that the response was incorrect when made or, though correct when made, is now incorrect in any material respect. For any request to which the Companies fail or refuse to furnish all or part of the requested information, they shall provide a written explanation of the specific grounds for their failure to completely and precisely respond.

Careful attention shall be given to copied material to ensure that it is legible. When the requested information has been previously provided in this proceeding in the requested format, reference may be made to the specific location of that information in responding to this request. When applicable, the requested information shall be separately provided for total company operations and jurisdictional operations. When filing a paper containing personal information, the Companies shall, in accordance with 807 KAR 5:001, Section 4(10), encrypt or redact the paper so that personal information cannot be read.

1. Refer to the Application, paragraph 11. Explain why the Companies have determined that now is the appropriate time for full deployment of the program.

2. Refer to the Application, paragraph 11. Explain how the Companies determined the 0.8 percent projected opt-out rate.

3. Refer to the Application, paragraph 11. Explain why only 900,000 of the meters will have remote service switching capabilities.

4. Refer to the Application, paragraph 13. Provide the weighted-average remaining service life of KU and LG&E's electric meters.

5. Refer to the Application, paragraph 14. State the number and percentage of removed meters the Companies intend to retain and not immediately dispose of, how those meters will be chosen, the purpose of retaining those meters, and the cost associated with retaining the meters.

6. Refer to the Application paragraphs 21 and 22.

a. Explain whether there is overlap between LG&E electric and gas service territories.

b. Explain what costs will be incurred by the Company if a customer of both LG&E electric and gas opts out of AMS.

c. If a customer opts out of both the electric and gas meters, explain whether would there be two separate visits to a customer's location to read the meters.

d. Since gas meters will not provide the capability for remote connect/disconnect, explain whether opting out of a gas AMS meter will necessitate the need for an additional visit should a customer need to be connected/disconnected.

7. Refer to the Application, paragraph 24. The section the Companies are requesting to be waived only applies to fraudulent use by a customer. Explain whether the Companies have a protocol for an improper installation of a meter by the Companies.

8. Refer to the Application, paragraph 27. State whether the Companies intend to test any of the removed meters, pursuant to 807 KAR 5:041, Section 15(3), and, if so, the number and percentage of meters that will be tested, and how these meters will be chosen.

9. Refer to the Direct Testimony of John P. Malloy (“Malloy Testimony”), page
  - a. Provide any data relied upon by the Companies which would support an expected 20-year lifespan.
  - b. Explain any rate implications if the Commission were to ultimately approve a shorter service life for the AMS meters and gas indices.
10. Refer to Malloy Testimony, page 10.
  - a. State whether the electric AMS meters will have a second radio that allows for direct communication to the customer of real-time data (e.g., 8 second).
  - b. If so, state whether the Companies will make this data available to customers.
  - c. If the Companies were to make real-time data available to their customers, explain what the estimated costs would be to the Companies, and to their customers.
11. Refer to the Malloy Testimony, page 17. Explain how the Companies determined that 60 percent of non-technical losses would be identified and billed.
12. Refer to Malloy, pages 18–21.
  - a. Explain whether the savings shown are due solely to customers accessing and viewing information via ePortal, or whether there are additional savings included arising from third-party access and analysis of the data (with the customer’s consent).
  - b. If there are no savings from third-party access included, explain whether the Companies foresee allowing energy efficiency vendors to access the customer’s data if the customer wants these third parties to have access.

c. If any savings from third-party access are not included in the savings estimation, estimate what those savings would be.

13. Refer to the Malloy Testimony, page 20. State whether any commercial or industrial customers currently have access to MyMeter data similar to what is available for the Companies' residential customers.

14. Refer to the Malloy Testimony, page 28. This page states that customers will be allowed to opt out of AMS deployment "subject to the Companies' operational and safety requirements."

a. Provide a detailed list of instances in which a customer will not be allowed to opt out, and explain the reasons for not allowing a customer to opt out.

b. Identify, by job title or characteristics, the individual(s) responsible for making the determination that customers will not be allowed to opt out.

c. Explain what type of electric meter will be used to serve customers electing to opt out of AMS.

d. Explain how the decision that customers cannot opt out will be communicated to customers.

15. Refer to the Malloy Testimony, pages 30–31. Explain whether the AMS meters installed as part of the Companies' Demand-Side Management AMS offering have remote service switching capabilities installed.

16. Refer to Exhibit JPM-1, page 16 of 64.

a. Describe what alternatives to the Companies' build-out of their own communication network were considered versus use of an existing or other third-party network.

b. Explain whether the costs and benefits of each alternative were quantified.

c. State whether the upgrade and maintenance costs of the communication network have been estimated and included in the cost of the AMS program.

d. Explain how the operational communications systems are designed to lower the incremental cost of adding future functionality.

17. Refer to Exhibit JPM-1, page 17 of 64, which states “in approximately 1,500 instances, LG&E will either replace the index or the entire gas meter because they have an odometer-style index that is not compatible with the AMS gas index module.”

a. Explain whether this sentence means that LG&E only has approximately 1,500 gas meters with odometer-type indices in service, or that LG&E will need to replace approximately 1,500 gas meters.

b. Refer to LG&E’s response to Commission Staff’s Second Request for Information in Case No. 2016-00371, Item 63.a.<sup>1</sup> This response states that LG&E has 46,743 incompatible gas meter indices. Explain how many gas indices LG&E anticipates it will replace in conjunction with its current AMS proposal, and how many gas meters LG&E anticipates will need to be replaced.

18. Refer to Exhibit JPM-1, page 17 of 64, which states “energy consumption data can be transmitted back to the AMS head-end three to four times a day . . .” State

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<sup>1</sup> 2016-00371, *Application of Louisville Gas and Electric company for an Adjustment of Its Electric and Gas Rates and for Certificates of Public Convenience and Necessity* (filed Jan. 25, 2017), Response of Louisville Gas and Electric Company to Commission Staff’s Second Request for Information, Item 63.a.

whether data transmission four times per day will be the upper limit. If not, provide the maximum number of times per day data will be transmitted.

19. Refer to Exhibit JPM-1, page 18 of 64.

a. Provide details of, and plans for, Zigbee communication through in-home devices.

b. Explain what types of in-home devices are available commercially to the Companies' customers.

c. Do studies exist or has there been market research to discuss whether customers want real-time access to data and integration with appliances through the deployment of home area networks (HANs)?

20. Refer to Exhibit JPM-1, page 21 of 64, section 5.5.3.2. Explain what is meant by "certain enhanced data analytics algorithms."

21. Refer to JPM-1, page 22, section 5.5.3.3, which states, "Due to increased volume of information associated with AMS data, the capacity to support data warehouse functionality will need to be augmented accordingly." Explain whether there has been any detailed assessment of the extent to which the Data Warehouse will need to be augmented.

22. Refer to Exhibit JPM-1, page 22 of 64, section 5.5.3.3.

a. Explain whether aggregated meter data will be shared with any third party.

b. If the answer to part a. above is yes, explain under what circumstances the meter data will be shared.

23. Refer to Exhibit JPM-1, pages 22–23 of 64, section Green Button Download My Data. Explain whether the Companies considered providing Green Button Connect My Data as well as Green Button Download to customers.

24. Refer to Exhibit JPM-1, page 42 of 64, section 7.1.5.

a. Provide the calculation of the \$402 million recovery of non-technical losses over 20 years. Include any necessary work papers.

b. Provide the warranty period for AMS meters.

25. Refer to Exhibit JPM-1, page 53 of 64, section 8.1. Explain whether, for LG&E's combination customers, both the electric meter and gas index will be replaced at the same time.

26. Refer to Exhibit JPM-1, pages 59–60 of 64, section 9.2.

a. Describe the pre-installation educational initiatives that were considered by the Companies.

b. Explain whether there will be targeted education programs for different types of customers.

c. Provide evidence on the effectiveness of bill inserts (especially in light of customers opting for electronic billing) if any such data exists.

27. Refer to Exhibit JPM-1, pages 62–63 of 64, section 12. Explain whether the Companies view “customer account information” as distinct from “customer usage information.”

28. Referencing Exhibit JPM-1, the Companies refer to Advanced Distribution Management System (“ADMS”) and Distributed Energy Resource Management System

(“DERMS”) as part of the AMS strategy. Provide details of the ADMS and DERMS and their current status.

- a. State whether the Companies have a Volt-Var Optimization strategy.
- b. State whether the Companies have a DER integration strategy.

29. Refer to Exhibit JPM-1, Appendix A-5, page 8 of 15. For LG&E’s combination customers, explain whether LG&E incurs a \$.42 charge to read the electric and a \$.42 charge to read the gas meter, or if it only incurs the charge one time for both meters.

30. Refer to Exhibit JPM-1, Appendix A-5, page 9 of 15. Provide a detailed calculation showing how the \$55.6 million savings were determined.

31. Refer to Exhibit JPM-1, Appendix A-5, page 13 of 15.

- a. State whether the average monthly bills shown are accurate given the rate increases granted in the Companies’ 2016 base rate cases, and the interim rate reductions as a result of Case No. 2018-00034.<sup>2</sup>

- b. This page states that 48 percent of customers used the portal at least once, and that the average energy savings is 3.0 percent. Reconcile these statements, with the Malloy Testimony, page 19, lines 15–18, which state that 70 percent of customers used the portal at least once, and that the energy savings are 3.8 percent.

- c. Explain why the Companies assumed there would only be 0.5 percent bill savings, when the Tetra Tech study suggested 0.9 percent bill savings.

32. Refer to Exhibit JPM-1, Appendix A-9, page 20 of 23. Explain whether there is any evidence that suggests customers are willing to shift usage in response to a price

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<sup>2</sup> Case No. 2018-00034, *Kentucky Industrial Utility Customers, Inc. Complainant V. Kentucky Utilities Company and Louisville Gas and Electric Company Defendants* (Ky. PSC Mar. 28, 2018).

signal/peak periods, when that usage shift has nearly no impact on their existing bill in the short-run.

33. Refer to Direct Testimony of David E. Huff (“Huff Testimony”), pages 7–8. The testimony states that “In addition, a participant suggested that consumer data, including anonymous data, may offer the Companies new revenue opportunities. The participant suggested such revenues could be used to offset costs to customers associated with AMS.” Explain whether this implies that the Companies are contemplating aggregating and anonymizing customer usage data and selling that data to third parties.

34. Refer to the Huff Testimony, page 17, lines 3–5.

a. Explain why LG&E and KU will not be able to avoid the costs the set-up charge is designed to recover.

b. Explain whether LG&E and KU are aware that Duke Energy Kentucky, Inc. (“Duke Kentucky”) does not charge its set-up fee as long as a customer notifies Duke Kentucky prior to the meter being installed.

35. Refer to Exhibit DEH-2, page 52. Explain whether the savings attributed to ePortal are based solely on people changing behavior in response to information from ePortal, or changes enabled by access to data from ePortal.

36. Regarding the Companies’ distribution grid, explain whether the Companies have determined what the most cost-effective deployment strategy is.

a. Explain whether the Companies have considered where on the Companies’ distribution grid the deployment adds the most value.

b. Explain which areas could benefit most, considering short-term and long-term benefits to different customer segments.

37. Explain whether the Companies anticipate regular analysis of customer AMS data to statistically evaluate energy efficiency outcomes.

38. Explain whether the Companies conducted any in-house analysis of customer AMS pilot 15-minute-interval data to aid in the Companies' better understanding of consumption patterns seasonally and geographically and projections of how this information can be utilized into load forecasting, peak demand estimation, etc.

39. a. Describe the estimated long-term IT infrastructure required to adequately process and analyze AMI meter data for use in other areas of the Company such as resource planning, distribution system planning, etc.

b. Explain whether these costs were included in the estimated cost of the AMS system.

40. a. Explain whether the Companies' GIS system will interface with the AMS data.

b. Explain whether the Companies intend to use this opportunity to improve GIS information on the distribution system with the proposed rollout of the AMS meters.

41. Explain whether the Companies' traditional distribution planning using power flow modeling anticipates extracting AMS data in conjunction with GIS data to improve distribution system planning.

42. With AMS, each meter is a sensor. Explain whether the Companies evaluated leveraging the sensing capabilities with GIS for business process improvements such as system visualization with

AMS data, locational voltage optimization potential, and geospatial tracking of distribution system issues to prepare and or predict future issues.

43. One successful use of AMS is the implementation of pre-payment programs, which have been shown both in Kentucky and nationwide to result in energy usage reductions. Explain whether the Companies considered the deployment of pre-payment programs as a tool for addressing affordability concerns for certain customer populations.

44. Explain what metrics the Companies will use to evaluate the performance and outcomes of the AMS deployment.

45. Provide, separately for LG&E and KU, the undepreciated book balances for the Companies' electric meters, and LG&E's gas meters.

46. Discuss any updates that may need to be made to the Application, or to any of the exhibits, to reflect potential outcomes of Case No. 2018-00034.

47. According to a study by the U.S. Department of Energy,<sup>3</sup> a successful AMI project will plan, implement, measure, and evaluate 14 elements, as listed below. However, when reviewing the project cost categories on page 47 of Exhibit JPM-1, it is difficult to determine if all 14 elements have been incorporated into the cost calculation, leading to questions of whether the cost estimates are under-represented. Indicate whether these elements have been incorporated into the project and the cost calculations.

- a. Equipment
- b. Software

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<sup>3</sup> *Modern Distribution Grid, Decision Guide Volume III*, U.S. Department of Energy (dated June 28, 2017).

- c. Integration
- d. Warranty
- e. Data Center
- f. Hosting
- g. Analytics
- h. Support
- i. Consumer Engagement
- j. Business Processes
- k. Cyber Security
- l. Training
- n. Disaster Recovery

48. The application covers both companies jointly and offers no analysis for the individual companies. Fully provide the differences in costs and benefits between LG&E and KU.

49. Fully detail all work that has been performed on the AMS project to date, including the total investment made to date.

Gwen R. Pinson

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DATED APR 02 2018

cc: Parties of Record

CASE NO. 2018-00005

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