COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC 2024 JOINT INTEGRATED RESOURCE PLAN OF KENTUCKY UTILITIES COMPANY AND LOUISVILLE GAS AND ELECTRIC COMPANY	))))	CASE NO. 2024-00326

SUPPLEMENTAL REQUESTS FOR INFORMATION OF KENTUCKIANS FOR THE COMMONWEALTH, KENTUCKY SOLAR ENERGY SOCIETY, METROPOLITAN HOUSING COALITION, AND MOUNTAIN ASSOCIATION TO LOUISVILLE GAS & ELECTRIC COMPANY AND KENTUCKY UTILITIES COMPANY

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DEFINITIONS

1. “Document” means the original and all copies (regardless of origin and whether or not including additional writing thereon or attached thereto) of any memoranda, reports, books, manuals, instructions, directives, records, forms, notes, letters, or notices, in whatever form, stored or contained in or on whatever medium, including digital media.

2. “Study” means any written, recorded, transcribed, taped, filmed, or graphic matter, however produced or reproduced, either formally or informally, a particular issue or situation, in whatever detail, whether or not the consideration of the issue or situation is in a preliminary stage, and whether or not the consideration was discontinued prior to completion.

3. “Person” means any natural person, corporation, professional corporation, partnership, association, joint venture, proprietorship, firm, or the other business enterprise or legal entity.

4. A request to identify a natural person means to state his or her full name and business address, and last known position and business affiliation at the time in question.

5. A request to identify a document means to state the date or dates, author or originator, subject matter, all addressees and recipients, type of document (e.g., letter, memorandum, telegram, chart, etc.), identifying number, and its present location and custodian. If any such document was but is no longer in the Company’s possession or subject to its control, state what disposition was made of it and why it was so disposed.

6. A request to identify a person other than a natural person means to state its full name, the address of its principal office, and the type of entity.

7. “And” and “or” should be considered to be both conjunctive and disjunctive, unless specifically stated otherwise.

8. “Each” and “any” should be considered to be both singular and plural, unless specifically stated otherwise.

9. Words in the past tense should be considered to include the present, and words in the present tense include the past, unless specifically stated otherwise.

10. “You” or “your” means the person whose filed testimony is the subject of these data requests and, to the extent relevant and necessary to provide full and complete answers to any request, “you” or “your” may be deemed to include any other person with information relevant to any interrogatory who is or was employed by or otherwise associated with the witness or who assisted, in any way, in the preparation of the witness’ testimony.

11. “Companies”, “Louisville Gas & Electric Company and Kentucky Utilities Company”, or “LG&E-KU ”, means Louisville Gas & Electric Company and Kentucky Utilities Company, their parents or subsidiaries, and/or any of its officers, directors, employees or agents who may have knowledge of the particular matter addressed, and affiliated companies including member cooperatives.

12. “Joint Intervenors” means Kentuckians for the Commonwealth, Kentucky Solar Energy Society, Metropolitan Housing Coalition, and Mountain Association who have been granted the status of full intervention as joint intervenors in this matter.

13. Unless otherwise specified in each individual request the term “tariff” means the tariff as filed in this matter by LG&E-KU .

14. “AMI” means advanced metering infrastructure.

15. “BYOD” means bring your own device.

16. “CCR” means coal combustion residuals.

17. “CCRMU” means CCR management unit.

18. “Updated CCR rule” means the final EPA “Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals From Electric Utilities; Legacy CCR Surface Impoundments” rule published in the Federal Register May 08, 2024.

19. “CPCN” means certificate of public convenience and necessity.

20. “DER” means distributed energy resource.

21. “DR” means demand response.

22. “DSM” means demand side management.

23. “EE” means energy efficiency.

24. “EIR” means the Energy Infrastructure Reinvestment Program created by the IRA.

25. “EPIC” means the Energy Planning and Inventory Commission.

26. “EV” means electric vehicle.

27. “IRA” means the Inflation Reduction Act of 2022.

28. “IRP” means integrated resource plan.

29. “LPO” means the U.S. Department of Energy’s Loan Programs Office.

30. “PURPA” means the Public Utility Regulatory Policies Act of 1978.

31. “QF” means qualifying facility under PURPA.

32. “RFP” means request for proposals.

33. “UPC” means use-per-customer.

INSTRUCTIONS

1. If any matter is evidenced by, referenced to, reflected by, represented by, or recorded in any document, please identify and produce for discovery and inspection each such document.

2. These requests for information are continuing in nature, and information which the responding party later becomes aware of, or has access to, and which is responsive to any request is to be made available to Joint Intervenors. Any studies, documents, or other subject matter not yet completed that will be relied upon during the course of this case should be so identified and provided as soon as they are completed. The Respondent is obliged to change, supplement and correct all answers to interrogatories to conform to available information, including such information as it first becomes available to the Respondent after the answers hereto are served.

3. Unless otherwise expressly provided, each data request should be construed independently and not with reference to any other interrogatory herein for purpose of limitation.

4. The answers provided should first restate the question asked and also identify the person(s) supplying the information.

5. Please answer each designated part of each information request separately. If you do not have complete information with respect to any interrogatory, 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.

6. In the case of multiple witnesses, each interrogatory should be considered to apply to each witness who will testify to the information requested. Where copies of testimony, transcripts, or depositions are requested, each witness should respond individually to the information request.

7. Wherever the response to a request consists of a statement that the requested information is already available to Joint Intervenors, please provide a detailed citation to the document that contains the information. This citation shall include the title of the document, relevant page number(s), and, to the extent possible, paragraph number(s) and/or chart/table/figure number(s).

8. If you claim a privilege including, but not limited to, the attorney-client privilege or the work product doctrine, as grounds for not fully and completely responding to any discovery request, please describe the basis for your claim of privilege in sufficient detail so as to permit Joint Intervenors or the Commission to evaluate the validity of the claim. With respect to documents for which a privilege is claimed, please produce a “privilege log” that identifies the author, recipient, date, and subject matter of the documents or interrogatory answers for which you are asserting a claim of privilege and any other information pertinent to the claim that would enable Joint Intervenors or the Commission to evaluate the validity of such claims.

9. Whenever the documents responsive to a discovery request consist of modeling files (including inputs or output) and/or workpapers, the files and workpapers should be provided in machine-readable electronic format (e.g., Microsoft Excel), with all formulas and cell references intact.

10. The interrogatories are to be answered under oath by the witness(es) responsible for the answer.

SUPPLEMENTAL DATA REQUESTS PROPOUNDED TO LOUISVILLE GAS & ELECTRIC COMPANY AND KENTUCKY UTILITIES COMPANY BY JOINT INTERVENORS

Joint Intervenors hereby tender the following supplemental requests for information to the Companies:

2.1. Please refer to the Companies' IRP, Vol. I, page 7-22, stating: "After the 1% cap is hit, the payment for excess generation drops to the QF repayment rate. This lessens the benefits of selling back to the grid, so it is assumed that customers will be less likely to overbuild their solar installations."

a. By the same logic, do the Companies agree that the lower QF repayment rate could or would improve a customer's return on investment for battery storage? Please explain the basis for your agreement or disagreement, and provide supporting workpapers, if any.

b. Please define the term "overbuild" as used in the referenced statement. For example, is the term intended to describe a scenario where a customer does not use all energy produced by their behind-the-meter solar resource at every moment; a scenario where a customer's behind-the-meter solar resource is capable of producing more than the customer's annual energy use; or something else.

2.2. Refer to the Companies' IRP, Vol. 1, page 8-49, which states "On May 8, 2024, the most recent modification expanded the scope of the regulation to include Legacy CCR surface impoundments and CCR management units ("CCRMU"). While the companies had anticipated the regulation of legacy CCR surface impoundments, the addition of CCRMUs broadens the Companies' exposure to the rule at each of its owned current and former generating facilities because of the Companies' past beneficial use of CCR, especially for fill materials. Many of the known CCRMU locations are beneath buildings or infrastructure. This will create challenges during the investigative process and may inhibit the closure process for individual CCRMUs if the removal of CCRs are necessary for rule compliance." Please respond to the following requests:

a. List each Companies' Legacy CCR surface impoundments and CCRMUs affected or potentially affected by the updated CCR rule by location.

b. What investigations have the Companies performed regarding necessary measures for compliance with the updated CCR rule? Please list the investigations and produce any documentation.

c. What efforts do the Companies believe will be necessary for compliance with the updated CCR rule for each location, and what are the estimated costs of compliance?
d. How would the Companies' preferred portfolio affect compliance efforts, particularly for continued operation of facilities that are co-located with a Legacy CCR surface impoundment or CCRMU?

2.3. Please refer to the Companies' IRP, Vol. III at Section 4.4.2.3, which states "ELG compliance via zero liquid discharge is least-cost in all load scenarios at the Ghent and Trimble County stations," and provide the Companies' planned methods for and estimates of the costs of compliance with the ELG rule for Ghent and Trimble County stations.

2.4. Do the Companies anticipate the filing of a base rate case in the three-year period 2025-2027? Please explain.

2.5. Please refer to the Companies' response to Joint Intervenors Initial Request for Information 1.1.a. ("JI 1.1."), stating that beyond the first quarter of 2025 "there are no definite plans regarding future CPCN applications" and Volume I of the Companies' IRP ("Vol. I") at 4-1, which states "[t]his report is filed with the Public Service Commission of Kentucky in compliance with the aforementioned regulation [807 KAR 5:058]." Explain how the response complies with the requirement in 807 KAR 5:058 Section 5(5) requiring integrated resource plans ("IRPs") to contain "[s]teps to be taken during the next three (3) years to implement the plan."

2.6. Please refer to the Companies' response to JI 1.2., stating "[t]he Companies do not anticipate filing any such notices in the first half of 2025. Beyond that, there are no definite plans regarding any such retirement notices." Explain how this complies with the requirement in 807 KAR 5:058 Section 5(5).

2.7. Please refer to the Companies' response to JI 1.3. Stating "[i]t is premature to answer definitely at this time as the Companies are only in year one of a seven-year DSM-EE plan" and answer the following questions:
a. Explain how this complies with the requirement in 807 KAR 5:058 Section 5(5).
b. Do the Companies generally anticipate the filing of any updates to their DSM-EE plan in the three-year period from 2025-2027? Please explain.

2.8. Please refer to the Companies' response to JI 1.4.a., and provide each referenced RFP and responses thereto. Indicate which response was selected by the Companies and the stage of implementation for each.

2.9. Please refer to the Companies' response to JI 1.4.c.
   a. If the Companies do not issue RFPs for distribution projects, does that mean that the Companies do not competitively bid those projects? Please explain.
   b. Please list distribution projects undertaken in the last three years and cost per project.

2.10. Please refer to the Companies' response to JI 1.4.d.
   a. If the Companies do not issue RFPs for transmission projects, does that mean that the Companies do not competitively bid those projects? Please explain.
   b. Please list transmission projects undertaken in the last three years and cost per project.

2.11. Please refer to the Companies' response to JI 1.5., and specifically to footnote 1, stating "The Companies assume such bidding processes and results for projects the Companies are pursuing, rather than RFPs for projects 'that may be pursued,' are not within the scope of this request." Provide each RFP and response thereto, for projects the Companies *are* pursuing.

2.12. Please refer to the Companies' response to JI 1.10., stating "[b]eyond those legal timelines and deadlines, any number of factors can affect the timing of a retirement," and explain what factors may affect the following:
   a. The timing of a retirement;
   b. The timing of a filing with the Energy Planning and Inventory Commission (EPIC); and
   c. The timing of a filing with the Public Service Commission.

2.13. Please refer to the Companies' response to JI 1.13., regarding the increase in capacity at the Cane Run Generating station, and provide the following:
   a. The Companies' evaluation of the project for New Source Review applicability referenced in response to JI 1.13.c.; and
   b. The System Impact Study referenced in 1.13.e.
   c. Once prepared, the Facilities Study referenced in 1.13.e.

2.14. Please refer to the Companies' response to JI 1.14., and respond to the following requests:
   a. Provide the source for the assumed cost of utility-scale solar ($60.18/MWh).
   b. Provide all results of the evaluation conducted for including customer-owned battery storage within the BYOD program.
   c. Have the Companies conducted any analysis comparing utility-scale battery storage to customer-sited battery storage, including multiple deployment options (e.g. programs to incentivize customer purchase of batteries and

participation in a DR program; or programs in which the utility owns the battery and leases it to the customer; etc.), evaluating each as supply resources? Please provide all data, worksheets, and analysis.

2.15. Please refer to the Companies' Responses to JI 1.14 and 1.45. Have the Companies evaluated or caused to be evaluated the potential for distributed capacity procurement or virtual power plants? If so, please provide the results of such evaluation, including supporting workpapers. If not, please explain why not.

2.16. Please provide an updated response to request JI 1.16.d., and for each data center project referenced provide the following:
   a. The phase of the project;
   b. Size, in MW;
   c. Which Company is working with the project;
   d. Location, if known, with as much specificity as known; and
   e. Any engineering or transmission interconnections studies.

2.17. Please provide any economic development or other special contract entered into within the last five years, including those referenced in the Companies' response to JI 1.18., and any entered into since, on a continuing basis.

2.18. Please refer to the Companies' response to JI 1.20.a., and answer the respond to the following requests:
   a. Explain at what degree of specificity Companies can estimate the number of customers that would have "heavy resistive loads" and the demand of such loads;
   b. Provide that information at the greatest level of specificity the Companies are able; and
   c. If some greater level of specificity is anticipated in the future explain when and how.

2.19. Please refer to the Companies' response to JI 1.26., and respond to the following requests:
   a. Referencing the Companies' response to JI 1.26.f. confirm the Companies do not track planned outages. If anything other than confirmed explain and provide tracked data.
   b. Referencing the Companies' response to JI 1.26.h. confirm the Companies do not track or assign a capacity value for its generating resources.
      i. If confirmed, please explain how Companies determine the reliability and availability of their resources for resource planning purposes, and provide data on any metrics used.
      ii. If anything but confirmed explain and provide tracked data.

c. Please provide the data in 1.26.b.-d. and p.-s. on an hourly basis, or at the most refined temporal scale available.

2.20. Please refer to the Companies' response to JI 1.28.h., and respond to the following requests:
   a. Please provide the information in the able on a unit-level basis, (or plant-level if unit level is unavailable);
   b. Please define "Fully Dispatchable Resources".
   c. Please explain why "Fully Dispatchable Resources" are forecast to achieve a 100% capacity contribution, given the information in in Table 14 of the Resource Adequacy Analysis in Volume III.
      i. Please explain why "Solar" is forecast to achieve 0% Winter Capacity Contribution.

2.21. Please provide an updated response to JI 1.50 for potential new loads in the "imminent" and "announced" stages.

2.22. Please refer to the Confidential Attachment provided in response to JI 1.64.
   a. Please explain the basis for the estimated cost per kWh provided on Slide 9.
   b. Please explain the basis for the estimated cost for the service provided on Slide 9.

2.23. Please refer to the Residential End Use Survey Report, provided as Attachment 1 in response to JI 1.47.
   a. Were the results of this survey only used for load forecasting, or were they also used to inform DSM-EE planning? Please explain.
   b. Page 1 of Attachment 1 to JI1.47 states that a quota method was used to ensure representation of low income customers. Clarify how this quota was met:
      i. What was the definition of "low income"
      ii. How was the size of the quota determined? Does it reflect the proportion of "low income" customers in KU/LGE territory?
      iii. Clarify recruitment of low income customers i.e. Were all KU/LGE customers contacted to participate, and then respondents were classified by their income, and recruitment continued until the quota was met? Or, were all customers previously identified as low income sent a request to participate? Were there some additional criteria used to select among low-income customers to be recruited?
      iv. Does the percent of the sample by income bracket, displayed in Figure 21, reflect the percentages of people at each income bracket in KU/LGE territory?

c. In the analysis of home size by energy use, please specify what housing types are included in this analysis (e.g., based on single-family homes only?).
d. Footnote 12 on page 5 says that housing type was not considered in your analysis of energy usage. Please explain why not.
e. In figures 7 and 8, are renters and customers in multi-family dwellings included in these analyses?
f. Please state whether the analyses in figures 7 through 10 with respect to thermostats, energy efficiency measures, and thermostat settings were done on the basis of income?
    i. If those analyses were done on the basis of income, please explain why.
    ii. To the extent known, how would those analyses change if performed on the basis of housing type? Please explain.
    iii. To the extent known, how would those analyses change if performed on the occupant type, i.e., owner- or renter-occupied.
    iv. Are the Companies able to provide the analysis of thermostat settings by age of house? If such an analysis has been performed, please provide the results of that analysis, with supporting workpapers, if any.
g. Section 2.6.2 discusses “Overgeneration” by customer-owned solar. Please clarify the meaning of that term as used in the referenced section. For example, does Overgeneration refer to any and all energy ever fed to the grid at any moment by a customer’s panels, does this refer to energy fed to the grid over and above the amount of energy taken from the utility by the end of the billing period, or something else?

2.24. Please describe the data that the Companies have available on housing type and housing ownership (e.g., owner- or renter-occupied), and answer the following requests.
a. To the extent known, please provide the average energy intensity of each residential housing type (e.g., single family, multifamily, manufactured home).
b. To the extent known, please provide the average monthly energy usage of each residential housing type (e.g., single family, multifamily, manufactured home) over at least one twelve-month period.
c. To the extent known, please provide the average monthly energy usage for each of owner- and renter-occupied housing units over at least one twelve-month period.

2.25. Regarding the data center project recently announced for west Louisville by PowerHouse Data Centers and Poe Companies,[1] please answer the following questions:

a. Will the Companies' customer be PowerHouse Data Centers, Poe, Companies, or some other entity?
b. Who will be paying for the new LG&E switch station and on-site substation?
c. Have the Companies entered an economic development or other special contract with the customer? If yes, provide that contract; if no, please explain under what tariff the customer will be taking service.
d. To the extent not already provided in response to initial data requests, please provide the engineering studies, transmission-interconnection studies, and evaluation of site characteristics conducted by or for the Companies.
e. Will the data center participate in the Companies' "Green Tariffs"? If unknown, please explain at what stage in the process of negotiating the customer that the Companies would be aware of interest in the Green Tariffs?
f. To the extent known, what is the likelihood that the customer would be interested in participating in demand response programs. If unknown, please explain at what stage in the process of negotiating with the customer that the Companies would be aware of interest in demand response programs?
g. To the extent known, what is the likelihood that the customer will rely on behind-the-meter resources, including solar, battery storage, and fuel-dependent generators.

2.26. Have the Companies conducted or caused to be conducted any economic analysis or forecasts of customer adoption of batteries specifically for back-up power purposes? If so, please provide the results of each such analysis and supporting workpapers. If not, please explain why not.

2.27. Please refer to the Companies' Response to Staff Request 1.14.b., which refers to an article in the journal *Energies*, that concluded that "moderate amounts of regionally dispersed solar PV generation, up to approximately 20%, could be integrated into the current portfolio at low costs without significant imbalances."[2] The article also states, "[d]eep decarbonization and renewable integration, from 20 to 80%, can be achieved with the replacement of older coal-fired units, which

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[1] *See* https://www.prnewswire.com/news-releases/lge-announces-first-major-data-center-electric-customer-302353539.html.

[2] Donovin D. Lewis, et al., *Decarbonization Analysis for Thermal Generation and Regionally Integrated Large-Scale Renewables Based on Minutely Optimal Dispatch with a Kentucky Case Study*, Energies at 18 (Feb. 17, 2023), *available at* https://engr.uky.edu/sites/default/files/PEIK/2023%20Energies%20UK%20SPARK%20Decarbonization%20Optimal%20Dispatch%20Regional%20Kentucky%20Author's%20Manuscript.pdf

are unable to effectively adjust output for variable generating resources, with new natural gas generation…. Complete decarbonization between 80 and 100% necessitates the implementation of higher cost, emerging technologies, such as large-scale energy storage, potentially from EVs in V2G operation, large-scale demand response and electric power distribution virtual power plants, advanced nuclear, carbon capture, or renewable green hydrogen sources."[3]

Considering the context of this IRP, in which potential coal retirements, new natural gas generation, large-scale battery storage, and demand response programs are contemplated, why didn't the Companies' consider that much higher percentages of renewable integration would be possible? Please explain.

2.28. Please provide data on the impact of electrifying large sectors of the U.S. economy over the period of the IRP and the implications for low-income customer affordability and access. What steps are the Companies taking to ensure equitable distribution of benefits and costs on low-income customers? Please provide any and all analysis. Please provide data by census tract and zip code, if available.

2.29. Please provide any and all energy burden analysis considered as a part of the Integrated Resource Plan (IRP) process. Please provide any and all internal analysis and discussion materials from the Companies of these studies.

2.30. Please provide any and all strategy screens the Companies applied during the development of the proposed Integrated Resource Plan (IRP) process to advance equity and the outcomes from applying these strategy screens. Please provide any and all internal analysis and discussion materials from the Companies of these studies.

2.31. Please provide the following data, and any and all internal analysis and discussion materials, on how this influenced the preparation of the proposed Integrated Resource Plan (IRP) and how COVID-19 pandemic data impacted the analysis in anticipating future pandemic instability, if at all:

a. Please provide data for the number of people who are eligible for gas or electric disconnection by census tract.
b. Please provide data on the number of people who are behind on their gas or electric payments by census tracts.
c. Please provide data on the average amount owed on past due bills by census tract.

[3] *Id.* at 18-19.

d. Please provide data on the number of people who have a signed repayment plan by census tract.
e. Please provide data on the number of people who are behind on their payments, but do not have a signed payment plan in place by census tract.
f. Please provide data on the number of people who have a signed payment plan who are currently on that payment plan by census tract.
g. Please provide data on the number of people who have a signed payment plan who have missed one or more payments by census tract.
h. Are the people who have missed one or more payments on their payment plan included in the overall number of people who are eligible for disconnection? Please explain.
i. Please provide data on the number of people who have received support from pandemic utility assistance programs by census tract.
j. Please provide data on the amount of money received by the Companies from pandemic utility assistance programs.
k. How many households have the companies disconnected from electrical service since February 2020? Including multiple disconnections to households, how many total disconnections have been carried out?
    i. What was the average length of these disconnections?
l. Which ten zip codes (or census tracts in Louisville/Lexington) had the highest disconnection rates?
    i. How much would it have cost to forgive those arrearages instead of making those disconnections?

2.32. Please describe what concrete actions the Companies are taking to ensure and increase universal access to electricity, especially to underserved communities such as low-income households and communities of color?

2.33. How are the companies helping low-income households and communities of color access DER's to lower their energy bills? Are the companies encouraging more accessible and equitable solar policy like the monetization of tax incentives, virtual net metering, third-party ownership, etc? If not, why?

2.34. Please provide data on programmatic DSM charges and disbursements (incentives, rebates, and weatherization assistance) for low-income and communities of color, either by census tract or zip code.

2.35. How have the companies engaged stakeholders, including residential customers, in the development of this IRP?

2.36. Please refer to the Companies' response to JI 1.55, and provide:

a. Monthly average number of customers with a past due balance by zip code or census tract.
b. Monthly average past due balance amount by zip code or census tract.

2.37. Please refer to the Companies' response to JI 1.79.
a. Explain the Company's plan to continue stakeholder engagement on implementation of DSM-EE programs offered?
b. Please describe the work of this DSM advisory group since the last IRP, and what recommendations and inputs from stakeholders have been included in this IRP or what recommendations and inputs the companies are currently following or planning to follow in the next 15 years.

2.38. What data and DSM pilot programs will be associated with the implementation of the AMI?
a. Detail possible ways implementation of AMI will lead to energy reductions and to demand impacts and give details of the estimated size of impacts.
b. How does the cost of existing or planned demand side resources compare to the cost of supply side resources in meeting customer demand?

2.39. Please provide all data and analysis performed regarding all DSM programs considered for implementation during the planning period.
a. Please include all Benefit-Cost analyses and all cost tests utilized for each program and identify each program that was evaluated.
b. Did cost benefit analyses include potential avoided transmission or distribution investments? If not, why not?

2.40. Have the Companies evaluated how to provide the greatest benefits to their customers through the strategic utilization of Distributed Energy Resources in all its forms (DERs, including but not limited to DSM, energy efficiency, distributed generation, battery storage, demand response)? Have the Companies evaluated how the benefits of DERs can be shared most broadly among their customers, especially low-income, and historically underserved and marginalized communities?

2.41. Please provide a detailed explanation as to why no analysis was considered during the development of the proposed IRP pertaining to the planning and development of new DSM programs targeted to low- or moderate-income households.

2.42. Please refer to the Companies' response to JI 1-25(b): "The Recommended Resource Plan is the direct result of the modeling summarized in the Resource Assessment for 12 load and environmental scenarios. Given the uncertainty in load and environmental regulations, this is a prudent way to develop a 'no regrets' resource plan that is least-cost across a range of futures."

a. Please provide all modeling assumptions and modeling results associated with the Recommended Resource Plan itself. (For clarity, this is not a request for modeling assumptions and results of portfolios other than the Recommended Resource Plan that provided insight into the Recommended Resource Plan.)

b. In addition, please provide an explanation of how the assumptions associated with the modeling run resulting in the Recommended Resource Plan compare to other modeled portfolios discussed in the IRP.

2.43. Please refer to the Companies' response to JI 1-33: "For clarity, the Companies are aware of the EIR program and have previously engaged with the U.S. Department of Energy's Loan Programs Office ('LPO') concerning possible eligibility for Commission-approved projects from the 2022 CPCN (Case No. 2022-00402)." What steps have the Companies taken in investigating and applying for financing through the EIR program and/or other similar programs administered by the U.S. Department of Energy's LPO? Please provide all relevant materials.

2.44. Please refer to the Companies' response to JI 1-34(a): "In all scenarios, the Companies' PLEXOS model evaluated coal unit retirements on an economic basis for all units starting in 2030." What is the Companies' rationale for evaluating coal unit retirements on an economic basis starting in 2030 rather than allowing the PLEXOS model to evaluate pre-2030 retirement dates?

2.45. Please refer to the Companies' response to JI 1-42(b): "While not modeled as a function of electricity prices, the construction of the low load scenario with high distributed solar, low EVs, accelerated energy efficiency, and low space heating electrification is consistent with high prices. Similarly, high EV adoption alongside low distributed solar and EE adoption in the high load forecast is consistent with low electricity prices."

2.46. Please provide the Companies analysis (any calculations, background materials, and citations) supporting the conclusion that the Companies "low load scenario with high distributed solar, low EVs, accelerated energy efficiency, and low space heating electrification is consistent with high prices".

2.47. Please provide the Companies analysis (any calculations, background materials, and citations) supporting the conclusion that “high EV adoption alongside low distributed solar and EE adoption in the high load forecast is consistent with low electricity prices”.

2.48. Please refer to “5. Cost of Service” on page 7-17 in Section 7 of IRP Volume I, in which the Companies provide a range of elasticities used in modeling: Forecast models incorporate class-specific estimates of price elasticity between -0.1 and -0.15, which are supported by estimates from both the EIA and energy consultant Itron.” Rather than a range of values across scenarios, please provide the specific elasticity values used in modeling each scenario.

2.49. Please refer to the Companies’ response to JI 1-44(a), where the Companies provide data related to residential customer counts, usage, and use-per-customer (UPC) by scenario.

2.50. Please provide the calculations, background materials, and citations used to develop these specific rates of customer growth for each scenario.

2.51. Please explain these rates of growth in the context of the IRP description of Kentucky’s rapid increase in housing starts (see page 7-18 in IRP Volume I).

2.52. According to the data provided by the Companies in Attachment to JI 1-44(a)(ii), UPCs are almost identical among the three load scenarios (both absolute and rates of growth). Please provide an explanation of why the mid, low, and high load scenarios all use the same UPC forecasts.

2.53. Why does the rate of change of UPC growth (from year to year) vary widely throughout the modeling period?

2.54. Please refer to the Companies’ response to JI 1-45(a), where they reference PSC Case No 2024-00326 -- LGE-KU 2024 IRP Load Forecasting Workpapers—PUBLIC.zip at IRP_Workpapers\Vol_I_Data\RS_Cust_Growth_CAGR.xlsx.” Are the customer counts provided in “RS_Cust_Growth_CAGR.xlsx” for all customer types or do they only correspond to residential customers? Please provide customer counts by customer type (even if customer counts for some customer types remain constant).

2.55. Please refer to the Companies’ response to JI 1-45(a): “Additionally, for customers served on the Residential Time-of-Day Energy rate, the cost differential between on- and off-peak hours does not provide a significant battery arbitrage opportunity. The NMS-2 rate is similar in that the costs of offsetting

electricity is not materially different than the rate paid for selling electricity back to the grid, so once again there is no significant arbitrage opportunity that a battery provides to NMS-2 customers." Is it the Companies' testimony that their time-of-use (TOU) rates are ineffective in influencing customer demand? If so, what is the purpose of Companies' TOU rates?

2.56. Please refer to the Companies' response to JI 1-45(a): "ROI more accurately reflects the metric that customers would use if comparing distributed batteries to distributed solar." In the Companies' experience, do electric customers have any other motivations, other than ROI, relevant in their decision to adopt behind-the-meter solar and/or storage resources?

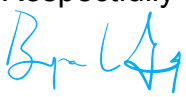
2.57. Please refer to the Companies' response to JI 1-45(b), where they reference separate analyses of solar and storage resources. The original request for JI 1-45(b) asked the Companies to "provide the quantitative comparison of solar and storage resources assumed capabilities and limitations used by the Companies in developing the 2024 IRP." Based on the Companies' response, is it correct to understand that the Companies have not conducted a comparison of these resources?

2.58. Please refer to the Companies' response to JI 1.48.a., and respond to the following requests:

a. Did the Companies also run high and low scenarios for ODP? If so, please provide the files. If not, please explain.
b. The response only provides data on projections for residential customers. Do the Companies have any projections for non-residential customer types (i.e., commercial and industrial) or was space heating electrification only evaluated for residential customers?

[Signature on next page]

Respectfully Submitted,



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CERTIFICATE OF SERVICE

In accordance with the Commission's July 22, 2021 Order in Case No. 2020-00085, *Electronic Emergency Docket Related to the Novel Coronavirus COVID-19*, this is to certify that the electronic filing was submitted to the Commission on January 22, 2025; that the documents in this electronic filing are a true representation of the materials prepared for the filing; and that the Commission has not excused any party from electronic filing procedures for this case at this time.

Byron L. Gary