

**COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION**

In the Matter of:

ELECTRONIC 2022 INTEGRATED)
RESOURCE PLAN OF KENTUCKY)
POWER COMPANY) CASE NO. 2023-00092
)

**SUPPLEMENTAL DATA REQUESTS OF JOINT INTERVENORS
MOUNTAIN ASSOCIATION, APPALACHIAN CITIZENS' LAW CENTER,
KENTUCKIANS FOR THE COMMONWEALTH,
AND KENTUCKY SOLAR ENERGY SOCIETY**

Tom FitzGerald
Ashley Wilmes
Byron Gary
Kentucky Resources Council
P.O. Box 1070
Frankfort, KY 40602
(502) 551-3675
FitzKRC@aol.com
Ashley@kyrc.org
Byron@kyrc.org

*Counsel for Joint Intervenors
Mountain Association, Appalachian
Citizens' Law Center, Kentuckians for the
Commonwealth, and Kentucky Solar
Energy Society*

Dated: July 24, 2023

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. Unless otherwise specified in each individual interrogatory or request, the terms "you," "your," "Kentucky Power," "KY Power," "KPCo," or "KP" refer collectively to Kentucky Power Company, including any parent or affiliated companies, predecessors-in-interest, employees, authorized agents, outside consultants or contractors, or other

representatives.

11. "Kentucky Power," "KY Power," "KPCo," or "KP" means Kentucky Power Company and/or any of their officers, directors, employees, or agents who may have knowledge of the particular matter addressed, and any parent or affiliated companies (including but not limited to American Electric Power Company ("AEP") and its affiliated entities).

12. "The Company" means Kentucky Power.

13. "Joint Intervenors" or "JI" means the Mountain Association, Appalachian Citizens' Law Center, Kentuckians For The Commonwealth, and Kentucky Solar Energy Society, who were granted the status of full joint intervention in this matter.

14. "Commission" or "PSC" or "KPSC" or "Staff" means the Kentucky Public Service Commission, including its Commissioners, personnel, and offices.

15. "Unless otherwise specified in each individual interrogatory or request, the term "IRP" means the integrated resource plan, as filed in this matter by Kentucky Power."

16. "AG" means the Attorney General of the Commonwealth of Kentucky.

17. "DOE" means U.S. Department of Energy.

18. "DSM" means Demand Side Management.

19. "EE" means Energy Efficiency.

20. "EIA" means U.S. Energy Information Administration.

21. "FRR" means Frequency Restoration Reserve.

22. "ITC" means Investment Tax Credit.

23. "KIUC" means Kentucky Industrial Utility Customers.

24. "MPS" means Market Potential Survey.

25. "NGCC" means Natural Gas Combined Cycle.

26. "NGCT" means Natural Gas Combustion Turbine.

27. "O&M" means Operation and Maintenance.

28. "PTC" means Production Tax Credit.

29. "RFP" means Request for Proposals.

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 Movants. 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. 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.
5. The answers provided should first restate the question asked and also identify the person(s) supplying the information.
6. 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.
7. Wherever the response to a request consists of a statement that the requested information is already available to Joint Movants, 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 Movants 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. 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.

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

**SUPPLEMENTAL DATA REQUESTS PROPOUNDED TO
KENTUCKY POWER COMPANY BY JOINT INTERVENORS**

- 2.1. Please refer to Kentucky Power's responses to Joint Intervenors' Initial Requests 1.29(b) and 1.29(c), which state, *inter alia*, that the Company anticipated that the MPS will be completed by the end of June 2023, and filed with the Commission in Case No. 2022-00392.
- a. Was the MPS completed by the end of June 2023?
 - i. If yes, please produce a copy of the MPS, if it has not yet been filed with the Commission.
 - ii. If not, please explain in full why the MPS was not completed on the anticipated timeline.
 - iii. If not, please explain when Kentucky Power anticipates receiving the completed MPS.
 - b. Has the MPS been filed in Case No. 2022-00392? If not, please explain in detail why not.
 - c. Assuming that the MPS is complete at the time of your response to this question, please state the date when it was completed.
- 2.2. In reference to the MPS and the potential for DSM programs, please explain whether the Company has assessed the employment and training levels of industries (i.e., electrical, energy audits, and HVAC) in its service territory that would support DSM programs.
- a. If so, please share the findings from the assessment.
 - b. Please indicate whether the Company would provide training to such industries if there were a gap in either employment needs or training.
- 2.3. Please explain whether the Company has evaluated the economic development that could be derived from the investment into DSM. If yes, please indicate the level of projected economic development, including investment and jobs. If not, please explain in detail why not.
- 2.4. Please indicate whether Kentucky Power would implement DSM programs internally or whether it would issue a request for proposal for a third-party implementer, and please explain the reasons why in detail.

2.5. Please refer to Kentucky Power's response to Staff's Initial Request 1.52(b) and answer the following requests.

- a. At any time in the last three years, did Kentucky Power reevaluate the terms of either of its two demand response tariffs, Rider D.R.S. and Tariff C.S.-I.R.P.? For example, did Kentucky Power consider whether adjustment(s) to any term(s) or condition(s) might increase or reduce participation, system costs, or system benefits?
 - i. If so, please explain each such reevaluation process, including identification of the timing, contributors, and conclusions.
 - ii. If not, please explain why not.
- b. For each of the demand response tariffs identified in response to Staff's Initial Request 1.52(b), please state whether aggregators may participate on behalf of customers.
 - i. If aggregators may not participate, please state whether and when Kentucky Power anticipates revisions to allow aggregation.
- c. For each of the demand response tariffs identified in response to Staff's Initial Request 1.52(b), please explain whether Kentucky Power has considered allowing customers to select definite notification windows (e.g., notification at least 120 minutes before order to reduce demand).

2.6. Please refer to Kentucky Power's response to Staff's Initial Request 1.52(b).

- a. Please detail why at a time when the Company is capacity short that it did not evaluate the potential for:
 - i. Residential demand reductions
 - ii. Expansion of the commercial and industrial demand response programs.
- b. The Company notes that it wanted to reduce the cost of the MPS. Please provide the level of cost estimated to provide the demand response portion of the MPS.

2.7. Please refer to Kentucky Power's response to Staff's Initial Request 1.52(b) and answer the following requests.

- a. Please provide Kentucky Power's most-recent study of demand response potential among its industrial customers.
- b. Please provide Kentucky Power's most-recent study of demand response potential among its commercial customers.

- 2.8. Please refer to Kentucky Power's response to Joint Intervenors' Initial Request 1.38, explaining that the 6.2 MW of peak DR capability reported in the IRP (page 62 of 1182), comes from participation in Rider D.R.S and Tariff C.S.-I.R.P.
- a. Please state the number of participating customers and aggregate load participating in Rider D.R.S.
 - b. Please state the number of participating customers and aggregate load participating in Tariff C.S.-I.R.P.
- 2.9. Please refer to Kentucky Power's response to Joint Intervenors' Initial Request 1.52(b) and answer the following requests.
- a. Since performing its IRP modeling, what analysis has Kentucky Power undertaken concerning sites within its service territory that likely would qualify for the energy community adder to the PTC and ITC? Please explain in full.
 - b. Has Kentucky Power reviewed the interactive mapping tool available through the Interagency Working Group on Coal & Power Plant Communities & Economic Revitalization? (<https://energycommunities.gov/energy-community-tax-credit-bonus/>)?
 - i. If yes, does Kentucky Power agree that substantial portions of its service territory would be eligible for the energy communities tax credit bonus? If you disagree, please explain in full.
 - ii. If not, please explain in detail why not.
- 2.10. Please refer to Kentucky Power's response to AG/KIUC Initial Request 1.5, which asked Kentucky Power to "[p]rovide a copy of all agreements between Liberty, AEP, and/or the Company for Liberty to participate in the development of the IRP and/or to share information", Kentucky Power states it "does not have any such requested documents in its possession or control."
- a. Is Kentucky Power aware of any such documents that exist outside of the Company's possession or control? If yes, please identify the documents and explain why they are not in the Company's possession or control.
- 2.11. Please refer to Kentucky Power's Response to Joint Intervenors' Initial Request 1.18, Public and Confidential Attachments 1 and 2.
- a. Please confirm that the level of the Ebon load included in the load forecasts modeled for the IRP is [REDACTED].
 - b. Please confirm that Kentucky Power included [REDACTED] [REDACTED] in the IRP load forecast for Ebon (Confidential Attachment 2) [REDACTED] [REDACTED] (Confidential Attachment 1).
 - c. Please explain [REDACTED] these two numbers.

- d. Please explain in detail why Public Attachment 2 states that the three existing customers and the proposed customer “A” were not included in the IRP load forecast.
 - e. Please explain in detail why Public Attachment 2 states that the proposed Ebon facility was included in the IRP load forecast even though Ebon’s special contract has not yet been approved by the Commission (see pending Case No. 2022-00387).
 - f. Please confirm that the Company did not perform any Aurora modeling runs for this IRP that did not include the Ebon load. If you are unable to confirm, please explain in detail why not.
- 2.12. Please refer to Kentucky Power’s Response to AG/KIUC Initial Request 1.6, in which Kentucky Power responded, “For PJM Delivery Years 2024/25 and 2025/26, the Company has bilateral contracts for capacity with a third party.”
- a. Please identify the third party with whom Kentucky Power has the referenced capacity contract.
 - b. Please identify the type of resource or combination of resources that are providing said capacity.
 - c. Please state the amount for which capacity was contracted.
 - d. Please state the price(s) for which the capacity was contracted.
 - e. Please produce a copy of each of the contracts.
- 2.13. Is Kentucky Power developing plans to construct a NGCC or NGCT at the Big Sandy site?
- a. Please explain in detail the status of any such planning, including the potential timeframe when Kentucky Power anticipates proposing construction and the anticipated timeframe that Kentucky Power will propose for the NGCC or NGCT to begin operation.
 - b. Please produce copies of any documents in the Company’s possession concerning any plans to construct a NGCC or NGCT at the Big Sandy site.

- 2.14. Please refer to Joint Intervenors' Initial Request 1.4, which refers to IRP Section 5.7. addressing "Short-Term Market Purchase". Joint Intervenors' Initial Request 1.4(a) requested the workpaper(s) underlying Figure 35, titled "PJM Capacity Price Outlook." Joint Intervenors' Initial Request 1.4(b) requested that Kentucky Power identify and describe the source for the Company's forecasted price levels in the PJM Reliability Pricing Mechanism. Kentucky Power's response directed Joint Intervenors to the response to Staff's Initial Request 1.13, which concerns calculation of avoided capacity and energy cost.
- a. Please explain the relationship between the requested data and the response to Staff's Initial Request 1.13.
 - b. Please produce the requested workpaper(s) underlying Figure 35.
 - c. Please identify and describe the source for the Company's forecasted price levels in the PJM Reliability Pricing Mechanism.
- 2.15. Please refer to Footnote 15 on page 87 of the IRP. The footnote indicates the consideration of partial ownership for the NGCC option modeled. Please explain if the Company is also considering partial ownership of the NGCT option modeled in Aurora.
- 2.16. Please refer to Figure 14 on page 88 of the IRP. Please provide the source of the capital costs for the NGCC options modeled in Aurora.
- 2.17. Please refer to Figure 15 on page 89 of the IRP. Please provide the source of the capital costs for the NGCT modeled in Aurora.
- 2.18. For the new NGCC and NGCT resource options modeled in Aurora, please explain if the Company will need to invest in any new gas pipeline capital expenditures for those resources.
- a. If yes, please explain if the Company incorporated those costs into the Aurora model and provide the supporting workbooks, with all formulas and links intact, used to develop those costs.
- 2.19. Please explain if firm gas transportation costs were assumed for either the NGCC or NGCT options modeled in Aurora. If firm transportation costs were modeled, please provide the source and dollar amount of those costs.
- 2.20. Please refer to the Companies response to Joint Intervenors' Initial Request 1.51. Please provide the supporting workbook, with all formulas intact, used to develop the \$18.9/kW interconnection cost.

- 2.21. Please refer to Section 2.2.5 of the IRP. Please explain how the Company considers naturally-occurring energy efficiency in its load forecast.
- 2.22. Please refer to page 35 of the IRP where it states, “The saturation forecasts are based on EIA forecasts and analysis by Itron. The efficiency trends are based on DOE forecasts and Itron analysis.”
- Please explain what the analysis is that Itron performed.
 - Please explain which EIA and DOE forecasts were used.
- 2.23. Please refer to the workbook “KPCO_R_JI_1_42_attachment1”.
- Please explain the “Supplemental Eff. Adj. Savings (ENERGY)” calculated in rows 33 to 72 of the worksheet named “SEA”.
 - Please confirm if the energy efficiency savings labeled as “Supplemental Eff. Adj. Savings (ENERGY)” as shown in worksheet “SEA” are the level of savings modeled in Aurora for each energy efficiency bundle.
 - Please explain how the Company developed the percentages calculated in columns X, Y, Z, and AA, in rows 4 to 24 of the worksheet named “SEA”.
 - Please confirm if the Company modeled the cost of new energy efficiency bundles in Aurora based on the costs shown in the worksheet “Summary”.
 - Please confirm if the line loss number is a marginal or average value.
 - Please provide the source of the line loss number.
- 2.24. Please confirm if the new resource costs modeled in Aurora are on a real or nominal basis.
- 2.25. Please explain how the topology was set up in Aurora for the Company’s IRP modeling.
- 2.26. Please refer to the Company’s response to Joint Intervenors’ Initial Request 1.43(b). Please provide supporting documentation for the assumption that lithium-ion batteries have a project life of ten years.
- 2.27. Please refer to page 138 of the IRP where it states that “While price paths are developed for the period 2022-2037, data from 2037 is singled out for the portfolio cost analysis as representative of the study period.” Please explain why 2037 was singled out for the portfolio cost analysis period.
- 2.28. Please refer to Figures 62 and 63 on page 140 of the IRP. Please provide the supporting workbooks, with all formulas and links intact, used to develop Figures 62 and 63.

2.29. Please refer to the workbook “KPCO_R_JI_1_62_Attachment1”, worksheet “Tax Credits” and page 93 of the IRP that references an ITC of 30%.

- a. Please confirm that the ITC value reported in the column labeled “Safe Harbor ITC” is what was modeled for new resources in Aurora.
- b. Please confirm that the PTC values reported in this worksheet are the values modeled in Aurora for new wind and solar resources.
- c. Please explain how the Company treated the ITC for battery storage resources, i.e., if it was treated as a reduction to the capital cost or normalized over the project life.

2.30. Please refer to the workbook “04-KPCO_R_KPCO_R_KPSC_1_8_Attachment1”, worksheet “KPCO Obligation”.

- a. Please confirm if the peak modeled in Aurora is from the forecast labeled “KPCo Coincident Peak” or “KPCo Peak”.
- b. Please explain how the coincidence factors in rows 41, 42, and 43 were developed.

2.31. Please refer to ‘05-KPCO_R_KPSC_1_8_Attachment2”.

- a. Please confirm that the Company used a capital recovery factor to translate the capital costs for all new supply side resources into the \$/MW-week input field in Aurora.
 - i. If the Company did use a capital recovery factor, please provide the supporting workbook, with all formulas and links intact, used to develop the capital recovery factor.

2.32. Please refer to “KPCO_R_KPSC_1_8_ConfidentialAttachment7” worksheet “E2 (financials) + Tables 15_16”.

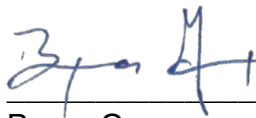
- a. Please provide the version of this worksheet with all formulas and links intact, that

[REDACTED]

2.33. Please refer to “12-KPCO_R_KPSC_1_8_Attachment9”, worksheet “Natural Gas Prices”. Please provide the cell references for the natural gas price forecast modeled in Aurora.

- 2.34. Please refer to Section 5.7 on pages 110–11 of the IRP. Please provide the historical capacity market purchases that the Company has made over the past ten years.
- 2.35. Please refer to Section 8.2 on page 183 of the IRP where it states that initiating an All-Source Request for Proposal is one of the items in the Three-Year Action Plan. Please confirm if the Company is planning to conduct a stakeholder workshop and solicit stakeholder feedback on the RFP before it is released.
- 2.36. Please refer to Kentucky Power’s response to Joint Intervenors’ Initial Request 1.25, which states, “For purposes of the IRP, it is assumed that the Company has access to capacity markets to satisfy its PJM capacity obligations.”
- What do “capacity markets” include “for purposes of the IRP”?
 - As a FRR entity, does the Company have access to PJM’s capacity market?

Respectfully submitted,

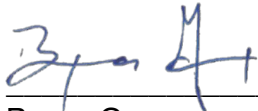


Byron Gary
Tom FitzGerald
Ashley Wilmes
Kentucky Resources Council
P.O. Box 1070
Frankfort, KY 40602
(502) 551-3675
Byron@kyrc.org
FitzKRC@aol.com
Ashley@kyrc.org

*Counsel for Joint Intervenors
Mountain Association, Appalachian Citizens’
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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 July 24, 2023; that the documents in this electronic filing are a true representations 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 Gary