

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF DUKE ENERGY )  
KENTUCKY, INC. FOR A CERTIFICATE OF )  
PUBLIC CONVENIENCE AND NECESSITY TO )  
CONVERT ITS WET FLUE GAS )  
DESULFURIZATION SYSTEM FROM A )  
QUICKLIME REAGENT PROCESS TO A )  
LIMESTONE REAGENT HANDLING SYSTEM AT )  
ITS EAST BEND GENERATING STATION AND )  
FOR APPROVAL TO AMEND ITS )  
ENVIRONMENTAL COMPLIANCE PLAN FOR )  
RECOVERY BY ENVIRONMENTAL )  
SURCHARGE MECHANISM )

CASE NO.  
2024-00152

COMMISSION STAFF'S FIRST REQUEST FOR INFORMATION  
TO DUKE ENERGY KENTUCKY, INC.

Duke Energy Kentucky, Inc., (Duke Kentucky), pursuant to 807 KAR 5:001, shall file with the Commission an electronic version of the following information. The information requested is due on September 6, 2024. The Commission directs Duke Kentucky to the Commission's July 22, 2021 Order in Case No. 2020-00085<sup>1</sup> regarding filings with the Commission. Electronic documents shall be in portable document format (PDF), shall be searchable, and shall be appropriately bookmarked.

Each response shall include the question to which the response is made and 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

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<sup>1</sup> Case No. 2020-00085, *Electronic Emergency Docket Related to the Novel Coronavirus COVID-19* (Ky. PSC July 22, 2021), Order (in which the Commission ordered that for case filings made on and after March 16, 2020, filers are NOT required to file the original physical copies of the filings required by 807 KAR 5:001, Section 8).

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.

Duke Kentucky shall make timely amendment to any prior response if Duke Kentucky obtains information that indicates the response was incorrect or incomplete when made or, though correct or complete when made, is now incorrect or incomplete in any material respect.

For any request to which Duke Kentucky fails or refuses to furnish all or part of the requested information, Duke Kentucky shall provide a written explanation of the specific grounds for its failure to completely and precisely respond.

Careful attention shall be given to copied and scanned 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, Duke Kentucky 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 Direct Testimony of John A. Verderame (Verderame Direct Testimony), page 6, lines 14-16.

- a. Explain whether the current supplier of magnesium enhanced lime (MEL) is a supplier of the lime product envisioned in the Limestone Conversion project.
  - b. If the Limestone Conversion project is approved, explain whether there are multiple providers of the lime product necessary for the new process.
  - c. Explain the state of the market for the alternate lime product necessary for the Limestone Conversion project.
2. Refer to the Verderame Direct Testimony, page 16, lines 22-24 and page 17, lines 1-8.
    - a. Compare and contrast the assumptions used in the production cost modeling of the two scenarios.
    - b. Explain whether the forecast PJM energy and capacity market prices modeled in the present proceeding are the same as those used in Duke Kentucky's Integrated Resource Plan Case No. 2024-00197.<sup>2</sup> If not, explain any differences and the reasons for those differences in the assumptions used.
    - c. Explain how the recent results of the PJM 2024/2025 Base Residual Auction affect Duke Kentucky's analysis in the present proceeding.
    - d. Explain how, if at all, the Duke Energy Ohio Kentucky (DEOK) PJM Load Zone being constrained affects Duke Kentucky's ability to acquire replacement capacity if the Limestone Conversion project is not approved.
3. Refer to the Verderame Direct Testimony, page 17, lines 12-14.

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<sup>2</sup> Case No. 2024-00197, *Electronic 2024 Integrated Resource Plan of Duke Energy Kentucky, Inc.* (filed June 21, 2024).

a. Explain whether the modeled PJM purchase volume prices are premised on no other generator in the DEOK PJM Load Zone having the same MEL issues, and thus, PJM energy prices are not affected by this particular environmental reagent issue.

b. In addition to reducing higher cost PJM energy purchase volumes, explain what other factors will lead to an estimated \$1.48/MWh decline in the system average fuel rate.

c. Confirm that reagent costs are recovered in the environmental surcharge rate and not the fuel adjustment clause. If not confirmed, explain why not.

4. Refer to the Verderame Direct Testimony, page 18, lines 7-9.

a. Explain the approximate timing of the three-month outage and the steps Duke Kentucky plans to take to mitigate possible high energy purchase prices during the outage.

b. Explain whether Duke Kentucky will be required to obtain capacity to fulfill its PJM obligations during the three-month outage and, if necessary, whether the recent Base Residual Auction capacity clearing prices will have an impact on that purchase.

5. Refer to the Duke Kentucky Application, page 5, Item 12.

a. Explain the specific additional limitations to MEL supply that are referred to here.

b. Explain how the limitations may lead to material cost increases and a risk in availability of supply alternatives.

6. Refer to the Verderame Direct Testimony, page 10, line 14.

- a. Provide a description of the Company's Fixed Resource Requirement (FRR) Plan.
  - b. Provide a copy of the FRR Plan.
7. Refer to the Verderame Direct Testimony, page 12, lines 8-12.
  - a. Explain the basis for the assumption that "replacement specific-unit capacity cannot be found."
  - b. Explain whether it is conceivable that a lesser amount of specific-unit capacity could be available.
  - c. If so, explain how this would affect the analysis.
8. Refer to the Verderame Direct Testimony, page 13, lines 3-5. Provide support for the assumptions used for this calculation.
9. Refer to the Verderame Direct Testimony, page 14, line 21 and page 15, line 8, where two alternatives to the proposed project were discussed.
  - a. Explain whether any other alternatives were considered beyond these.
  - b. If so, list those alternatives and discuss why they were not included here.
10. The JAV-1 Attachment is referenced in the Verderame Direct Testimony but has not been provided. Provide a copy of the JAV-1 Attachment.
11. Refer to the Direct Testimony of J. Michael Geers (Geers Direct Testimony), page 13, lines 18-19.
  - a. Provide the latest status of the filed application.

b. Provide a monthly update on the status of this application during the tenure of this case.

12. Provide a copy of the current Duke Kentucky Integrated Resource Plan.

13. Explain, in detail, the current planned retirement date of the East Bend Station.

14. Provide a copy of the Engineering, Procurement and Construction (EPC) contract with AECOM.

15. For the past five years, provide a performance profile for the East Bend Station outlining the following:

- a. Equivalent availability factor.
- b. Equivalent forced outage rate.
- c. NERC GADS reports.
- d. List of the top 10 major availability detractors.
- e. Capacity factor.
- f. Heat rate.
- g. Variable Operating and Maintenance costs \$/MWH.
- h. Rated maximum load capability.
- i. Rated dependable minimum load capability.

16. For the past five years, provide a summary of any major forced outages at the East Bend Station and provide the associated root cause analysis for each.

17. Provide an analysis of the impact a major forced outage of the East Bend Station has had on fuel cost and purchased power costs.

18. If the completion of the Limestone Conversion project is approved, explain whether the by-products of the wet flue gas desulphurization (WFGD) will be landfilled or whether they can be beneficially utilized.

19. Provide a detailed description of the East Bend Station's fly ash, bottom ash and gypsum beneficial use program.

20. Provide copies of the most recent condition assessment of the East Bend Station WFGD Absorbers (3).

21. Refer to the Application, page 6, paragraph 14. Provide the analysis that was conducted to support the impact the higher cost of lime-based reagent has on the unit's capacity factor.

22. Refer to the Application, page 6, paragraph 15. Provide a detailed financial and benefit/cost analysis for each of the three alternatives that were considered for the Limestone Conversion Project.

23. Refer to Geers Direct Testimony, page 13, lines 4-14. Explain whether Duke Kentucky included the beneficial use of the new by-product of the WFGD in its analysis.

24. Refer to Geers Direct Testimony, page 8, lines 12-15. Describe how the East Bend Station will comply with the May 9, 2024, New Source Performance Standards for Greenhouse Gas emissions.

25. Refer to the Duke Kentucky East Bend Station Title V Minor Permit Revision Table on Page 3. Provide a description of the "Baseline", "Future W – Limestone" and "Future W/O – Quicklime" operating modes.

26. Refer to the Verderame Direct Testimony, page 10, line 8.

a. Provide specific details supporting the \$166.1 million risk assessment that is utilized against the \$125.8 million cost.

b. Explain what financial mechanism was used to develop this risk assessment.


27. Refer to the Verderame Direct Testimony, page 16, line 16. Provide details that support the \$18.6 million in annual reagent savings. Include any supporting documentation or calculations.

28. Refer to the Verderame Direct Testimony, page 10, lines 15-19.

a. Explain how to avoid the approximate \$166.1 million in potential penalties, capacity, and energy replacement costs.

b. Explain whether the Company has considered transitioning away from its FRR Plan to the PJM Reliability Pricing Model (RPM) to participate in the Base Residual Auction (BRA). If not, explain why.

29. Refer to the Sarah E. Lawler Direct Testimony, Attachment SEL-1, page 1, line 10. Explain how Duke Kentucky determined its Pretax Rate of Return of 8.822%. Include any supporting documentation or calculations.



for  
Linda C. Bridwell, PE  
Executive Director  
Public Service Commission  
P.O. Box 615  
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DATED   AUG 23 2024  

cc: Parties of Record



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