

**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) Case No. 2025-00002
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)**

**SIERRA CLUB’S FIRST REQUEST FOR INFORMATION TO
DUKE ENERGY KENTUCKY, INC.**

Sierra Club submits this First Set of Requests for Information (“RFI”) to Duke Energy Kentucky, Inc. (“Duke”). Sierra Club requests that Duke provide the following information and answer the following questions under oath. Please answer the questions and sub-questions in the order in which they are listed and in sufficient detail to provide a complete and accurate answer to the question. These question(s) are continuing in nature, and if there is a relevant change in circumstances, submit an amended answer, under oath, as a supplement to your original answer. Please state the name of the witness in this proceeding who will sponsor the answer to the question.

Responses to the RFIs should be served on the following individuals no later than February 25, 2025, or as modified by order in this case:

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DEFINITIONS

Unless otherwise specified in each individual interrogatory or request, “you,” “your,” the “Company,” or “Duke,” refers to Duke Energy Kentucky, Inc., and its affiliates, directors, officers, employees, consultants, attorneys, and authorized agents.

“And” and “or” shall be construed either conjunctively or disjunctively as required by the context to bring within the scope of these interrogatories and requests for production of documents any information which might be deemed outside their scope by another construction.

“Any” means all, each and every example of the requested information.

“Communication” means any transmission or exchange of information between two or more persons, whether orally or in writing, and includes, without limitation, any conversation or discussion by means of letter, telephone, note, memorandum, telegraph, telex, telecopy, cable, email, or any other electronic or other medium.

“Control” means, without limitation, that a document is deemed to be in your control if you have the right to secure the document or a copy thereof from another person or public or private entity having actual possession thereof. If a document is responsive to a request, but is not in your possession or custody, identify the person with possession or custody. If any document was in your possession or subject to your control, and is no longer, state what

disposition was made of it, by whom, the date on which such disposition was made, and why such disposition was made.

“Document” refers to written matter of any kind, regardless of its form, and to information recorded on any storage medium, whether in electrical, optical or electromagnetic form, and capable of reduction to writing by the use of computer hardware and software, and includes all copies, drafts, proofs, both originals and copies either (1) in the possession, custody or control of the Company regardless of where located, or (2) produced or generated by, known to or seen by the Company, but now in their possession, custody or control, regardless of where located whether or still in existence. Such “documents” shall include, but are not limited to, applications, permits, monitoring reports, computer printouts, contracts, leases, agreements, papers, photographs, tape recordings, transcripts, letters or other forms of correspondence, folders or similar containers, programs, telex, TWX and other teletype communications, memoranda, reports, studies, summaries, minutes, minute books, circulars, notes (whether typewritten, handwritten or otherwise), agenda, bulletins, notices, announcements, instructions, charts, tables, manuals, brochures, magazines, pamphlets, lists, logs, telegrams, drawings, sketches, plans, specifications, diagrams, drafts, books and records, formal records, notebooks, diaries, registers, analyses, projections, email correspondence or communications and other data compilations from which information can be obtained (including matter used in data processing) or translated, and any other printed, written, recorded, stenographic, computer-generated, computer-stored, or electronically stored matter, however and by whomever produced, prepared, reproduced, disseminated or made. For purposes of the production of “documents,” the term shall include copies of all documents being produced, to the extent the copies are not identical to

the original, thus requiring the production of copies that contain any markings, additions or deletions that make them different in any way from the original.

“Identify” means:

- a. With respect to a person, to state the person’s name, address and business relationship (e.g., “employee”) vis-à-vis the Company;
- b. With respect to a document, to state the nature of the document in sufficient detail for identification in a request for production, its date, its author, and to identify its custodian. If the information or document identified is recorded in electrical, optical or electromagnetic form, identification includes a description of the computer hardware or software required to reduce it to readable form.

“Person” means, without limitation, every natural person, corporate entity, partnership, association (formal or otherwise), joint venture, unit operation, cooperative, municipality, commission, governmental body or agency.

“Relating to” or “concerning” means and includes pertaining to, referring to, or having as a subject matter, directly or indirectly, expressly or implied, the subject matter of the specific request.

“Workpapers” are defined as original, electronic, machine-readable, unlocked, in native format, and with formulae and links intact.

INSTRUCTIONS

1. The Definitions, Instructions, and Claim of Privilege set out in this Request for Information apply to these questions.

2. In answering these questions, furnish all information that is available to you, including information in the possession of your agents, employees, and representatives, all others from whom you may freely obtain it, and your attorneys and their investigators.
3. Please answer each question based upon your knowledge, information, or belief, and any answer that is based upon information or belief should state that it is given on that basis.
4. If you have possession, custody, or control of the originals of these documents requested, please produce the originals or a complete copy of the originals and all copies that are different in any way from the original, whether by interlineation, receipt stamp, or notation.
5. If you do not have possession, custody, or control of the originals of the documents requested, please produce copies of the documents, however made, in your possession, custody, or control. If any document requested is not in your possession or subject to your control, please explain why not, and give the present location and custodian of any copy or summary of the document.
6. If any question appears confusing, please request clarification from the undersigned counsel.
7. In providing your responses, please start each response on a separate page and type, at the top of the page, the question that is being answered.
8. As part of the response to each question, please state, at the bottom of the answer, the name and job position of each person who participated in any way, other than providing clerical assistance, in the preparing of the answer. If the question has sub-parts, please identify the person or persons by sub-part. Please also state the name of the witness in this docket who will sponsor the answer to the question and who can vouch for the truth

of the answer. If the question has sub-parts, please identify the witness or witnesses by sub-part.

9. Rather than waiting to provide all of the responses at the same time, please provide individual responses as each becomes available.
10. Wherever the response to a request for information consists of a statement that the requested information is already available to Sierra Club, please provide a detailed citation to the document that contains the information. The citation shall include the title of the document, relevant page number(s), and to the extent possible paragraph number(s) and/or chart(s)/table(s)/figure number(s).
11. In the event that any document referred to in response to any request for information has been destroyed, specify the date and the manner of such destruction, the reason for such destruction, the person authorizing the destruction and the custodian of the document at the time of its destruction.
12. These questions are continuing in nature. If there is a change in circumstances or facts or if you receive or generate additional information that changes your answer between the time of your original response and the time of the hearings, then you should submit, under oath, a supplemental response to your earlier answer.
13. If you consider any question to be unduly burdensome, or if the response would require the production of a voluminous amount of material, please call the undersigned counsel as soon as possible in order to discuss the situation and to try to resolve the problem. Likewise, if you object to any of the questions on the grounds that the question seeks confidential information, or on any other grounds, please call the undersigned counsel as soon as possible.

14. If the response to any question is voluminous, please provide separately an index to the materials contained in the response.
15. If the information requested is included in previously furnished exhibits, workpapers, or responses to other discovery inquiries or otherwise, in hard copy or electronic format, please furnish specific references thereto, including Bates Stamp page citations and detailed cross-references.
16. Data should be provided in native electronic format including active EXCEL workbooks and all linked workbooks, with all formulas, cell references, links, etc., intact, functioning, and complete for all tables, figures, and attachments in the testimony.
17. To the extent that a question asks for the production of copyrighted material, it is sufficient to provide a listing of such material, indicating the title, publisher, author, edition, and page references relied on or otherwise relevant to the question.
18. Sierra Club reserves the right to serve supplemental, revised, or additional information requests as permitted in this proceeding.

PRIVILEGE

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 request for information or request for production, describe the basis for your claim of privilege in sufficient detail so as to permit meaningful evaluation of the validity of the claim. With respect to documents for which a privilege is claimed, 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 likewise enable evaluation of the validity of such claims.

INFORMATION REQUESTS

- 1-1. Please identify any substantive changes in the Application and Testimony filed by Duke in this docket with the corresponding Application and Testimony filed by Duke in case no. 2024-00152.
- 1-2. Both Witness Donner, page 9, lines 18–20, and Witness Verderame, page 15, lines 5–9, identify MATS compliance as a benefit of the proposed limestone reagent conversion project. If the most recent MATS standards are rescinded by U.S. EPA, does Duke still intend to go forward with the proposed project? Please explain why or why not.
- 1-3. Please refer to the Direct Testimony of Witness Donner, page 9, lines 18-20, where it states, “Additionally, maintaining the status quo will still result in capital expenditures to comply with MATS without the added benefit of lower on-going reagent operating expenses.” Please provide the total capital expenditures required for East Bend to comply with MATs regulations.
- 1-4. Please refer to the Direct Testimony of Witness Verderame, page 17, lines 3-12. Please provide the cost of the contract, in \$/MWH, that Duke agreed to with its MEL supplier.
- 1-5. Please refer to the Direct Testimony of Witness Verderame, page 17, lines 1-4. Please provide the supporting workbooks, with all formulas and links intact, used to develop the project savings for fuel and purchase power costs, reagent costs, and non-native off-system sales.
- 1-6. Please refer to the Direct Testimony of Witness Verderame, page 17, lines 9-19.
 - a. Please provide the years over which the stochastic production cost modeling was performed.
 - b. Please provide the supporting workbooks, with all formulas and links intact, that support the stochastic production cost modeling.
- 1-7. Please refer to the Direct Testimony of Witness Verderame, page 15, lines 5–9, where it states, “These upgrades have the added benefit of allowing the Company to meet the newly enacted MATS revision with a stricter standard for fPM. Put another way, if the Company did not pursue the Limestone Conversion Project, a significant portion of the conversion work scope would still need to occur to meet this new

MATS Rule fPM standard.”

- a. Please provide the cost of the conversion work scope that would still need to occur to meet the new MATs Rule fPM standard.
 - b. Please explain if the portion of the conversion work scope would still be required if East Bend was converted to operate 100% on natural gas.
- 1-8. Please refer to the Direct Testimony of Witness Gagnon, page 3, lines 3-6.
- a. Please provide the EnCompass modeling input and output files for each modeling run performed as part of the 2024 IRP.
 - b. Please provide the supporting workbooks, with all formulas and links intact, used to develop the Present Value of Revenue Requirements (“PVRR”) for each of the modeling runs performed as part of the 2024 IRP.
- 1-9. Please refer to the Direct Testimony of Witness Gagnon, page 10, lines 13 – 21, where it states, “At the time that forecasts and assumptions were developed for the IRP (late 2023), the economics of the conversion project were favorable in comparison to the cost of reagents that would be required without the conversion even if the unit were to stop burning coal by 2030.” Please provide the economics of the conversion project, including capital and operational costs, that were evaluated at the time forecasts and assumptions were developed for the IRP.
- 1-10. Please refer to the Direct Testimony of Witness Verderame, page 5, lines 11-13, and specify the “higher percentage of magnesium oxide” which Duke has actually used in the MEL scrubber, on a monthly basis, for the last 5 years.
- 1-11. Please refer to the Direct Testimony of Witness Verderame, page 6, lines 1-3, and provide the expenses associated with lime reagent stabilization additives and disposal of the waste sludge, on a monthly basis, for the last 5 years.
- 1-12. Please refer to the Direct Testimony of Witness Verderame, page 6, line 14. What is the basis of the expected “significant increase of further cost increases.”
- 1-13. Please refer to the Direct Testimony of Witness Verderame, page 6, line 19. Please specify what is meant by the “correct chemical content.”

- 1-14. Please refer to the Direct Testimony of Witness Verderame, page 6, line 21. Please specify what is meant by “reagents.”
- 1-15. Please refer to the Direct Testimony of Witness Verderame, page 8, lines 4-6. Provide all documents associated with Duke’s attempt to negotiate more competitive pricing structures including alternative contract lengths.
- 1-16. Please refer to the Direct Testimony of Witness Verderame, page 8, line 17. Please provide the names of all members of “My Team.”
- 1-17. Please refer to the Direct Testimony of Witness Verderame, page 9, line 6. Please provide the name of the “current MEL supplier.”
- 1-18. Please refer to the Direct Testimony of Witness Verderame, page 6, lines 21-23. Please provide all documents pertinent to the “discussions” noted in these lines.
- 1-19. Please refer to the Direct Testimony of Witness Verderame, page 10, line 6. What is the “primary source”?
- 1-20. Please refer to the Direct Testimony of Witness Verderame, page 10, lines 7-8. What is the “secondary source”?
- 1-21. Please refer to the Direct Testimony of Witness Verderame, page 10, lines 13-14. What is the expected month/year of the “completion of the conversion project”?
- 1-22. Please refer to the Direct Testimony of Witness Verderame, page 10, lines 22-23. What is Duke’s basis for asserting that there is a “lack of a functioning competitive market”?
- 1-23. Please refer to the Direct Testimony of Witness Verderame, page 11, line 23. What is the basis for the statement that “no alternative MEL supplies were available”?
- 1-24. Please refer to the Direct Testimony of Witness Verderame, page 13, line 4. Please identify the starting month and year for “some time.”
- 1-25. Please refer to the Direct Testimony of Witness Verderame, page 13, line 5. Define “complexity.”
- 1-26. Please refer to the Direct Testimony of Witness Verderame, page 13, lines 10-11. Provide the monthly reagent costs for the last 5 years, or since the time period

denoted by “recent years,” whichever is longer.

- 1-27. Please refer to the Direct Testimony of Witness Verderame, page 14, lines 7-10. Provide the breakout of the capital costs just associated with “upgrades to East Bend’s WFGD” that would be needed to meet MATS compliance regardless of the Limestone Conversion Project.
- 1-28. Please refer to the Direct Testimony of Witness Verderame, page 21, lines 17-18. Provide the basis for the assertion that “there was no high calcium quicklime capacity to be found in the market,” including the time period of when this search was conducted and how the search was conducted, including contacts with any/all persons.
- 1-29. Please refer to the Direct Testimony of Witness Verderame, page 21, lines 21-23. Provide the basis for the \$95/ton figure cited.
- 1-30. Please refer to the Direct Testimony of Witness Verderame, page 22, line 2. Provide the basis for the 60,000 tons figure.
- 1-31. Please refer to the Direct Testimony of Witness Verderame, page 24, lines 18-21. Provide the rationale for the “18 months to complete” figure and how that is consistent with the “mid-2026” construction commencement and “Spring 2027” project completion dates.
- 1-32. Please refer to the Direct Testimony of Witness Verderame, page 26, lines 5-7 and page 10, lines 20-23. Please explain the apparently dramatic MEL market shift from a “lack of industry demand” noted in 2020, to a shortage of supply you now refer to as a “scarcity risk,” resulting in “a lack of a functioning competitive market for the MEL product.”
- 1-33. Please refer to the Direct Testimony of Witness Verderame, page 27, line 18. What “co-benefit” would accrue to assist in MATS compliance with the implementation of the Limestone Conversion Project that would not otherwise be possible with the MEL WFGD. Provide each and every such co-benefit, with supporting data.
- 1-34. Please refer to the Direct Testimony of Witness Verderame, page 28, lines 2-3. What is the basis of the “supply chain tightening”?
- 1-35. Please refer to the Direct Testimony of Witness Geers, page 11, lines 6-7.

- a. Provide each project associated with “refurbished and upgraded its ESP precipitator.”
 - b. Provide the timing and costs for each such project and its impact on reducing PM emissions from the ESP.
- 1-36. Please refer to the Direct Testimony of Witness Geers, page 11, line 8. Provide the name of the dry sorbent.
- 1-37. Please refer to the Direct Testimony of Witness Geers, page 11, line 10. Provide the quantity of dry sorbent injected in each of the two locations noted, by day, for the time period beginning July 1, 2021 through June 30, 2023 (i.e., the period covered by the Daily PM data in Exhibit 3.
- 1-38. Please refer to the Direct Testimony of Witness Geers, page 15, lines 3-5.
 - a. Provide details of the upgrades including “replacement of the absorber system,” “new spray equipment” and any others.
 - b. Provide support for how these upgrades will “address the finer particulate created by using limestone-based reagents.”
 - c. Explain whether any such upgrade would be needed to address the “finer particulate created” if the MEL WFGD continued to operate as it does presently.
- 1-39. Please refer to the Direct Testimony of Witness Geers, page 15, lines 8-9. Explain why “a significant portion of the conversion work would still need to occur.”
- 1-40. Please refer to the Direct Testimony of Witness Geers, page 15, lines 20-22, stating “This data uses PM CEMS certification procedures specified in the MATS rule, but these procedures will change under the new rule.” Please specify which “procedures will change” under the new MATS rule.
- 1-41. Please refer to the Direct Testimony of Witness Geers, page 15, line 24. Please explain why it will be “harder to certify and maintain monitors” under the new MATS rule.
- 1-42. Please refer to the Direct Testimony of Witness Geers, page 16, line 15. Please provide detail on what is meant by “any carry over in the flue gas from the WFGD system” and whether the amount of carry over can be accurately predicted at this

time.

- 1-43. Please refer to the Direct Testimony of Witness Geers, page 18, lines 12-13. Provide the basis for why the “current performance of the WFGD is not sufficient to achieve the new MATS fPM limit.”
- 1-44. Please refer to the Direct Testimony of Witness Geers, page 19, line 19. Provide details of the “reduced fixation lime requirements.”

Dated: February 14, 2025

Respectfully submitted,

/s/ Joe F. Childers
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CERTIFICATE OF SERVICE

This is to certify that the foregoing copy of Sierra Club's First Request for Information to Duke Energy Kentucky, Inc. in this action is being electronically transmitted to the Commission on February 14, 2025, and that there are currently no parties that the Commission has excused from participation by electronic means in this proceeding.

/s/ Joe F. Childers
JOE F. CHILDERS