

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF DUKE)
ENERGY KENTUCKY, INC. FOR AN)
ADJUSTMENT TO RIDER NM RATES AND FOR) CASE NO. 2023-00413
TARIFF APPROVAL)

**SUPPLEMENTAL REQUESTS FOR INFORMATION TO DUKE ENERGY
KENTUCKY, INC. FROM JOINT INTERVENORS KENTUCKY SOLAR
ENERGY SOCIETY AND KENTUCKIANS FOR THE COMMONWEALTH**

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Dated: February 21, 2024

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. "Company", "Duke Energy", or "Duke", means Duke Energy Kentucky, Inc., and/or any of its officers, directors, employees, or agents who may have knowledge of the matter addressed, and affiliated companies including Duke Energy Corporation.
12. "Joint Intervenors" or "Joint Movants" means the Kentucky Solar Energy Society and Kentuckians for the Commonwealth, who have moved for 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 Company.

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 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 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.

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Joint Movants for Joint Intervention hereby tender the following supplemental requests for information to the Company:

- 1.1. Please refer to numerical paragraph 20 of the Company's Application in this case and explain what "minimum bill provisions of the standard rate schedule" are referred to.

- 1.2. Please refer to numerical paragraph 9 of the Company's Application and the Direct Testimony of direct testimony of Bruce L. Sailors on Behalf of Duke Energy Kentucky, Inc. at page 4 (PDF 6), lines 2-6, and answer the following questions:
 - a. How many customers have applied for but are not yet receiving service under the current Rider NM ("Rider NM I" in the application)?
 - b. What is the average time between application for and receipt of service under Rider NM? Please provide any supporting data in Excel spreadsheet format with all formulas and cell references intact.
 - c. What is the average time for processing applications for service under tariff NM?
 - d. Will customers who have applied for service under current Rider NM prior to the Commission-approved effective date of Rider NM II be grandfathered into Rider NM I?

- 1.3. Please refer to the Direct Testimony of Bruce L. Sailors on Behalf of Duke Energy Kentucky, Inc. at page 6, line 9 to page 7, line 8; and the Company's response to Joint Intervenors initial request for information number 1-13.c., and answer the following questions:
 - a. How did "The Company consider[] forum participant inputs"? Specifically, did the Company consider:
 - i. Retaining "monthly kWh netting since it smooths out variations in net metering benefits among customers with different load profiles"?
 - ii. Did the Company "consider the impacts of new technology such as smart inverters and battery storage, along with ways to improve the interconnection process"?
 - iii. Did the Company consider ways to simplify rules, "considering the need to educate prospective customer-generators"?

- iv. Did the Company consider the impact of “[t]ransition periods and grandfathering [as] important considerations for significant program changes”?
 - v. Did the Company consider “the future potential for rooftop solar to be complemented or augmented with energy efficiency, demand response, rate design, thermostats, and/or battery storage in an expandable, sustainable program”?
 - b. Were any changes made to this application as a result of the input received?
- 1.4. Please refer to the Direct Testimony of Bruce L. Sailors on Behalf of Duke Energy Kentucky, Inc., Tables 1 and 2, and the Company’s response to Joint Intervenors initial request for information number 1-1.d., and answer the following questions:
 - a. Please explain the difference between the number of “participants” listed in Table 1, and the number of “Residential Customer- generators” listed in Table 2 and the totals listed in the Company’s response to 1-1.d.
 - b. Please confirm if the difference means that more than 500 participants/residential customer-generators were added between 2021 (“current residential customer-generators for 15 the year 2022 who had twelve full months of interval data”) and 2023. If not confirmed, please explain.
- 1.5. Please refer to the Direct Testimony of Bruce L. Sailors on Behalf of Duke Energy Kentucky, Inc., at page 19, lines 18-20, and page 20, lines 16-20, and the Company’s response to Joint Intervenors initial request for information numbers 1-16.a. and 1-17.a. and answer the following questions:
 - a. What “transmission planning principles” are being referred to?
 - b. What “distribution planning principles” are being referred to?
 - c. Please refer also to the Company’s response to Joint Intervenors initial request for information number 1.1.a. and attachments thereto.
 - i. Explain how rooftop solar exports are “random.”
 - ii. Does the Company also consider customer demand as represented by “delivered to” values “random”?
- 1.6. Please refer to the Company’s response to Joint Intervenors initial request for information number 1-4.a. and explain how the Company’s review of customer-generators as a utility system or supply side resource was “appropriately adjusted for the Company’s system.”

- 1.7. Please refer to the Company's response to Joint Intervenors initial request for information number 1-4.c. What is the Company's plan to include compliance with future environmental regulations that are not finalized? In other words, on what timeline does the Company anticipate updating NMS-II compensation rates after significant new regulations affecting avoided costs are finalized?
- 1.8. Please refer to the Direct Testimony of Bruce L. Sailors on Behalf of Duke Energy Kentucky, Inc., at page 4 and table 4.
 - a. Please confirm that under Rider NM II, the cost to serve residential customer-generators will be reduced by more than the billed amount will be reduced. If other than confirmed, please explain.
 - b. Please provide the average billed amount reduction for customers under current Rider NM.
 - c. Please confirm the change in cost to serve is the same for current Rider NM customers as shown in table 4. If other than confirmed, please explain.
- 1.9. Please refer to the Direct Testimony of Bruce L. Sailors on Behalf of Duke Energy Kentucky, Inc., at page 15 lines 3-7.
 - a. Please provide a redlined version of any proposed changes to Rider FAC.
 - b. How does the company currently collect for the excess generation provided to the Company under Rider NM?
- 1.10. Please refer to the Direct Testimony of Bruce L. Sailors on Behalf of Duke Energy Kentucky, Inc., at page 17, lines 9-14; and the Direct Testimony of direct testimony of Matthew Kalemba at page 5, lines 12-18. How are avoided capital costs of pollution controls included in the avoided cost calculations? If they are not, why not?
- 1.11. Please refer to the Direct Testimony of Bruce L. Sailors on Behalf of Duke Energy Kentucky, Inc., at page 18, lines 8-12 and page 19, lines 3-14; the Direct Testimony of direct testimony of Matthew Kalemba at page 7, lines 5-14; and the Company's response to Commission Staff's First Request for Information number 6.
 - a. Did the Company consider or evaluate any other methodology for calculating avoided capacity? Please provide any alternative evaluations and supporting documentation and calculations.

- b. Does the the statement regarding PJM's Net CONE that "[t]hese items are not consistent with the Company's view of the marginal unit to be built by the Company for capacity need" reflect a change in the Company's position in its most recent IRP that the Company intends to potentially replace the East Bend generating facility with a natural gas combined cycle (NGCC) unit?¹ If the answer is anything but yes, please explain.
- 1.12. Please refer to the Direct Testimony of Bruce L. Sailors on Behalf of Duke Energy Kentucky, Inc., at page 9, lines 17-19, and provide the electronic workpapers in Excel or other native format supporting the cost-of-service study developed from and consistent with the Company's October 12, 2023, electric rate case order in Case No. 2022-00372.
- 1.13. Please refer to Direct Testimony of Bruce L. Sailors on Behalf of Duke Energy Kentucky, Inc., at page 11, lines 10-20, what would be total change in annual revenues from adopting Rider NM II?
- a. How much will this change the monthly bills for DEK's other customers on a total dollar basis and a percentage basis?
- 1.14. Please refer to Direct Testimony of Bruce L. Sailors on Behalf of Duke Energy Kentucky, Inc., at page 19, line 13, please describe in narrative detail, DEK' "FRR, Fixed Resource Requirements, participation status in PJM."
- a. Please provide the total FRR for the past 10 years or the length of time the FRR has been in force, whichever is shorter.
- 1.15. Please refer to Direct Testimony of Bruce L. Sailors on Behalf of Duke Energy Kentucky, Inc., at page 20, and provide the workpapers used in calculating the DSM avoided cost in footnote 4, "In the Matter of the Electronic Application of Duke Energy Kentucky, Inc. to Amend its Demand Side Management Programs, Case No. 2022-00251, Duke Energy Kentucky's

¹ In the Matter of: *Electronic 2021 Integrated Resource Plan Of Duke Energy Kentucky, Inc.*, Case No. 2021-00245, Duke Energy Kentucky 2021 Integrated Resource Plan - Public Version, at page 4 ("The 2021 IRP reflects replacement of East Bend capacity with a Firm Dispatchable Resource (FDR) that would be capable of flexible operations over long periods of time to ensure reliable capacity performance and emit significantly less carbon dioxide (CO2) and other emissions relative to East Bend. The FDR was modeled with operational characteristics and costs of a natural gas combined cycle as a placeholder, recognizing the opportunity to revisit technology selection prior to the Certificate of Public Convenience and Necessity (CPCN) process when the most recent information would be available regarding technology advancements and federal regulations or expansion of clean energy incentives.")

- 1.16. Please describe in detail how the energy savings from rooftop solar differ from the intermittent use of energy appliances, devices, heating, ventilation, and air conditioning (HVAC) targeted in DSM programs?
- 1.17. When building transmission, is the capacity sized to deliver power from a specific generator or a collection of generators to a specific substation?
 - a. What portion in dollars of invested capital of DEK's transmission is built for delivering power from generators to substations compared to the portion built for interconnection to other service territories?
- 1.18. Please refer to Direct Testimony of Bruce L. Sailors on Behalf of Duke Energy Kentucky, Inc., at page 21, is the Company aware of the National Renewable Energy Laboratory's JEDI model (<https://www.nrel.gov/analysis/jedi/>) which estimates the economic consequences and job creation from different generation resources including rooftop solar? If not, why not?
- 1.19. Please refer to Direct Testimony of Matthew Kalemba on Behalf of Duke Energy Kentucky, Inc., at page 3, what is the modeling assumption about the creation of scarcity prices above the direct fuel costs for the market price setting generator at each LMP?
- 1.20. Please refer to Direct Testimony of Matthew Kalemba on Behalf of Duke Energy Kentucky, Inc., does the Company meet its incremental peak capacity requirements solely with Company-owned generation assets or does it acquire at least a portion of those resources through power purchase agreements?
- 1.21. Please refer to Direct Testimony of Matthew Kalemba on Behalf of Duke Energy Kentucky, Inc., how many years into the future was the Company's system modeled for developing the avoided costs used in this filing.
 - a. Given that the length of the tariff term is 25 years for each customer location, was the model run out for 25 years to reflect the long-term certainty for acquired rooftop solar resource? If not, why not?

- 1.22. Please refer to the Company's response to Joint Intervenors initial request for information number, number 1-4.d., and answer the following questions:
- a. Is the Company aware of the cap-and-trade programs that include the electricity sector in California, Washington, and the Regional Greenhouse Gas Initiative that covers 12 eastern states?
 - b. Would the Company consider a cap-and-trade program to operate in a similar manner to a carbon tax by adding a cost component to fuel use based on the carbon-equivalent content of that fuel?
 - c. Does the Company consider those cap-and-trade programs to be purely duplicative to the IRA and therefore ineffective and of no incremental value to reducing GHG emissions? If so, please provide the empirical studies and evidence to support that assertion.
 - d. Did the Company evaluate the impact of a CO₂ tax on avoided costs? If so, please provide the results and underlying analysis of any such evaluation.
 - e. Please refer to the Company's most recent IRP filed in Commission Case No. 2021-0245 at page 15. Does the Company still "believe[] that a constraint or price on carbon is likely to be imposed at some future date" and "continue to escalate to provide a greater incentive to build resources that reduce carbon emissions"?
 - f. How do the locational marginal prices (LMPs) developed by Mr. Kalemba incorporating the anticipated impacts of the IRA compare to the impacts of constraints or prices on carbon emissions in the different scenarios modeled in the Company's most recent IRP at page 13?
- 1.23. Please refer to the Company's response to Joint Intervenors initial request for information number, number 1-5., the correct links for the NSPM-DER is now: <https://www.nationalenergyscreeningproject.org/national-standard-practice-manual/>, and the supporting *Methods, Tools and Resource: A Handbook for Quantifying Distributed Energy Resource Impacts for Benefit-Cost Analysis* is at: <https://www.nationalenergyscreeningproject.org/methods-tools-and-resources/>. Did the Company review the updated NSPM-DER and supporting documentation in developing its proposal for a new net metering tariff?
- 1.24. Please refer to the Company's response to the Office of the Attorney General First Request for Information number 3, and provide a the full workpapers in

native electronic or Excel spreadsheet form for how transmission and distribution avoided capacity costs are developed for its DSM tariffs.

- 1.25. Please refer to the Company's response to the Initial Requests for Information by Kentucky Solar Industries Association, number 12, and provide for each Duke Energy affiliate (e.g., Duke Energy Ohio, Duke Energy Indiana, Duke Energy Midwest, Duke Energy Carolinas, Duke Energy Progress and Duke Energy Florida), the following information:
 - a. The current net energy metering tariff with the provisions for energy use billing and crediting, net exports crediting and the term of tariff eligibility including grandfathering.
 - b. The regulatory commission decision setting the terms for these net energy metering tariffs.
 - c. The supporting testimony by the Duke Energy affiliate and any intervenors referenced in each of those decisions.
- 1.26. Please provide the current PJM transmission rate paid by the Company.
- 1.27. Please provide the FERC transmission revenue requests and rate requests since 2017 inclusive and separately in PDF format for:
 - a. The Company; and
 - b. Any and all Duke utility affiliates within the PJM area; and
 - c. The FERC decision in each of those transmission revenue requirements cases.
- 1.28. Please provide the FERC Form 1 filing in PDF format for each year since 2017 inclusive for:
 - a. The Company, and
 - b. Any and all Duke utility affiliates within the PJM area.
- 1.29. Please provide the historic total system loads each year since 2017 inclusive and separately for:
 - a. The Company, and
 - b. Any and all Duke utility affiliates within the PJM area.

- 1.30. Please provide the historic generation additions by asset type (i.e., fuel and motive, e.g., gas and combustion turbine or renewable and solar) and by ownership/contractual type (i.e., utility owned or PPA) for each year since 2017 inclusive for:
 - a. The Company, and
 - b. Any and all Duke utility affiliates within the PJM area.
- 1.31. Please provide the current state commission authorized weighted average cost of capital for:
 - a. The Company, and
 - b. Any and all Duke utility affiliates within the PJM area.
- 1.32. Please provide the current FERC authorized weighted average cost of capital for:
 - a. The Company, and
 - b. Any and all Duke utility affiliates within the PJM area.
- 1.33. Please provide the discount rate used by the Company in preparing this analysis supporting this filing.
- 1.34. Please provide the capital recovery factor or fixed charge rate (i.e., annual % of capital invested recovered including equity, preferred equity, debt, depreciation, and taxes) for the investment assets of generation, transmission, and distribution for:
 - a. The Company, and
 - b. Any and all Duke utility affiliates within the PJM area.
- 1.35. Please provide a list and description of the time of use periods applied to any and all rate schedules offered by the Company.
- 1.36. Please provide the forecasted energy prices by time of use period for the next 25 years used to either offer to prospective new generation developers, to evaluate offered power purchase agreements, or to evaluate prospective Company generation, energy efficiency or demand response programs.

1.37. Please provide the derived hedging value used by the Company to evaluate non-fossil-fueled generation, demand management and/or storage resources compared to 1) natural gas fired and 2) coal-fired generation.

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 February 21, 2024; 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