DATA REQUEST

JI_SDR_01 The National Standard Practice Manual for Benefit-Cost Analysis ("BCA") of Distributed Energy Resources ("DER"), (hereinafter "NSPM-DER") available at https://www.nationalenergyscreeningproject.org/national-standard-practice-manual/, provides a comprehensive framework for cost-effectiveness assessment of distributed energy resources including distributed generation, distributed storage, demand response, and energy efficiency. The NSPM-DER also provides guidance on addressing multiple DERs and rate impacts and cost shifts.
a. Is the Company aware of and familiar with the NSPM-DER?
b. Did the Company review or rely upon the NSPM-DER in developing its proposal for a new net metering tariff? Please explain why or why not.

RESPONSE

a. The Company is aware of the NSPM-DER.

b. No, it did not. As the Company has previously stated in discovery responses in this proceeding, it relied upon the decades of cost of service, cost allocation, rate design and tariff experience of its regulatory pricing team to design the Company's NMS II proposal.

DATA REQUEST

JI_SDR_02 The NSPM-DER sets out eight guiding principles for conducting BCA for DERs. Please indicate and explain in detail for each of these principles how the Company's process in developing a proposed compensation rate for net metered generation aligned with or differed from these best-practice NSPM-DER principles. Additionally, if the Company disagrees with a principle, explain in detail the basis for the disagreement.
a. Principle 1 - Treat DERs as a Utility System Resource DERs are one of many energy resources that can be deployed to meet utility/power system needs. DERs should therefore be compared with other energy resources, including other DERs, using consistent methods and assumptions to avoid bias across resource investment decisions.
b. Principle 2 - Align with Policy Goals

Jurisdictions invest in or support energy resources to meet a variety of goals and objectives. The primary cost-effectiveness test should therefore reflect this intent by accounting for the jurisdiction's applicable policy goals and objectives.

c. Principle 3 - Ensure Symmetry

Asymmetrical treatment of benefits and costs associated with a resource can lead to a biased assessment of the resource. To avoid such bias, benefits and costs should be treated symmetrically for any given type of impact.

d. Principle 4 - Account for Relevant, Material Impacts

Cost-effectiveness tests should include all relevant (according to applicable policy goals), material impacts including those that are difficult to quantify or monetize.

e. Principle 5 - Conduct Forward-Looking, Long-term, Incremental Analyses

Cost-effectiveness analyses should be forward-looking, long-term, and incremental to what would have occurred absent the DER. This helps ensure that the resource in question is properly compared with alternatives.

f. Principle 6 - Avoid Double-Counting Impacts

Cost-effectiveness analyses present a risk of double-counting benefits and/or costs. All impacts should therefore be clearly defined and valued to avoid double-counting.

g. Principle 7 - Ensure Transparency

Transparency helps to ensure engagement and trust in the BCA process and decisions. BCA practices should therefore be transparent, where all relevant assumptions, methodologies, and results are clearly documented

and available for stakeholder review and input. h. Principle 8 - Conduct BCAs Separately from Rate Impact Analyses Cost-effectiveness analyses answer fundamentally different questions from rate impact analyses, and therefore should be conducted separately from rate impact analyses.

RESPONSE

a-h: The Company objects to this data request. The information sought it is not relevant and not reasonably calculated to lead to the discovery of admissible evidence. KRS 278.466(5) provides that net metering rates are to be established "using the ratemaking process provided by …" Chapter 278 of the Kentucky Revised Statutes. KRS 278.030(1) mandates that rates be "fair, just, reasonable." Further, under Kentucky law it is the result reached and not the methodology employed that controls in determining the reasonableness of rates. *National-Southwire Aluminum Co. v. Big Rivers Electric Corp.*, 785 S.W.2d 503, 512 (Ky. App. 1990). The NMS II rates proposed by Kentucky Power are fair, just, and reasonable. Further, the NSPM-DER have not been adopted by the Commission and the Company's agreement or disagreement with the broad principles stated in them is not relevant and not reasonably calculated to lead to the discovery of admissible evidence.

Without waiving these objections, please refer to the Company's response to JI supplemental 1. Please also refer to the direct and rebuttal testimonies of Company Witness Vaughan.

Witness: Alex E. Vaughan

DATA REQUEST

JI_SDR_03 The NSPM-DER (referenced in Question 1-) sets out a five-step process for developing and conducting BCA for DERs. Please indicate and explain in detail for each of these steps how the Company's process in developing a proposed compensation rate for net metered generation aligned with or differed from these best-practice NSPM-DER process. Additionally, if the Company disagrees with any step in the process outlined in the NSPM-DER, explain in detail the basis for the disagreement.

a. STEP 1 - Articulate Applicable Policy Goals

Articulate the jurisdiction's applicable policy goals related to DERs. b. STEP 2 - Include All Utility System Impacts

Identify and include the full range of utility system impacts in the primary test, and all BCA tests.

c. STEP 3 - Decide Which Non-Utility System Impacts to Include Identify those non-utility system impacts to include in the primary test based on applicable policy goals identified in Step 1:

• Determine whether to include host customer impacts, low-income impacts, other fuel and water impacts, and/or societal impacts. d. STEP 4 - Ensure that Benefits and Costs are Properly Addressed Ensure that the impacts identified in Steps 2 and 3 are properly addressed, where:

- Benefits and costs are treated symmetrically.
- Relevant and material impacts are included, even if hard to quantify.
- Benefits and costs are not double counted.
- Benefits and costs are treated consistently across DER types.

e. STEP 5 - Establish Comprehensive, Transparent Documentation Establish comprehensive, transparent documentation and reporting, whereby:

• The process used to determine the primary test is fully documented.

• Reporting requirements and/or use of templates for presenting assumptions and results are developed.

RESPONSE

a-e: The Company objects to this data request. The information sought it is not relevant and not reasonably calculated to lead to the discovery of admissible evidence. KRS 278.466(5) provides that net metering rates are to be established "using the ratemaking

process provided by ..." Chapter 278 of the Kentucky Revised Statutes. KRS 278.030(1) mandates that rates be "fair, just, reasonable." Further, under Kentucky law it is the result reached and not the methodology employed that controls in determining the reasonableness of rates. *National-Southwire Aluminum Co. v. Big Rivers Electric Corp.*, 785 S.W.2d 503, 512 (Ky. App. 1990). The NMS II rates proposed by Kentucky Power are fair, just, and reasonable. Further, the NSPM-DER have not been adopted by the Commission and the Company's agreement or disagreement with the broad principles stated in them is not relevant and not reasonably calculated to lead to the discovery of admissible evidence.

Without waiving these objections, please refer to the Company's response to JI supplemental 1.

Witness: Alex E. Vaughan

DATA REQUEST

- JI_SDR_04 The NSPM-DER (referenced in Question 1-) identifies the following electric utility system potential impacts. Please indicate and explain in detail for each, whether the Company evaluated and quantified these impacts over the life of an installed customer generation facility in developing its proposal for a new net metering tariff. Please provide copies of any and all such evaluation and quantification. If the company did not evaluate and quantify these impacts, please explain in detail why it did not do so.
 - a. Generation Energy generation
 - b. Generation Capacity
 - c. Generation Environmental compliance
 - d. Generation RPS/CES compliance
 - e. Generation Market price effects
 - f. Generation Ancillary services
 - g. Transmission Transmission capacity
 - h. Transmission Transmission system losses
 - i. Distribution Distribution capacity
 - j. Distribution Distribution system losses
 - k. Distribution Distribution operations and maintenance
 - m. Distribution Distribution voltage
 - n. General Financial incentives
 - o. General Program administration
 - p. General Utility performance incentives
 - q. General Credit and collection
 - r. General Risk
 - s. General Reliability
 - t. General Resilience

RESPONSE

a-t: The Company objects to this data request. The information sought it is not relevant and not reasonably calculated to lead to the discovery of admissible evidence. KRS 278.466(5) provides that net metering rates are to be established "using the ratemaking process provided by …" Chapter 278 of the Kentucky Revised Statutes. KRS 278.030(1) mandates that rates be "fair, just, reasonable." Further, under Kentucky law it is the result reached and not the methodology employed that controls in determining the reasonableness of rates. *National-Southwire Aluminum Co. v. Big Rivers Electric Corp.*, 785 S.W.2d 503, 512 (Ky. App. 1990). The NMS II rates proposed by Kentucky Power

are fair, just, and reasonable. Further, the NSPM-DER have not been adopted by the Commission and the Company's agreement or disagreement with the broad principles stated in them is not relevant and not reasonably calculated to lead to the discovery of admissible evidence.

Without waiving these objections, please refer to the Company's response to JI supplemental 1. Furthermore, these items are specifically addressed in the rebuttal testimony of Company Witness Vaughan.

Witness: Alex E. Vaughan

DATA REQUEST

- JI_SDR_05 The NSPM-DER (referenced in Question 1-) identifies the following host customer potential impacts. Please indicate and explain in detail for each, whether the Company evaluated and quantified these impacts over the life of an installed customer generation facility in developing its proposal for a new net metering tariff. Please provide copies of any and all such evaluation and quantification. If the company did not evaluate and quantify these impacts, please explain in detail why it did not do so. a. Host Customer - Host portion of DER costs
 - b. Host Customer Host transaction costs
 - c. Host Customer Interconnection fees
 - d. Host Customer Risk
 - e. Host Customer Reliability
 - f. Host Customer Resilience
 - g. Host Customer Tax incentives
 - h. Host Customer Non-energy impacts
 - i. Host Customer Low-income customer non-energy impacts

RESPONSE

a-i: The Company objects to this data request. The information sought it is not relevant and not reasonably calculated to lead to the discovery of admissible evidence. KRS 278.466(5) provides that net metering rates are to be established "using the ratemaking process provided by …" Chapter 278 of the Kentucky Revised Statutes. KRS 278.030(1) mandates that rates be "fair, just, reasonable." Further, under Kentucky law it is the result reached and not the methodology employed that controls in determining the reasonableness of rates. *National-Southwire Aluminum Co. v. Big Rivers Electric Corp.*, 785 S.W.2d 503, 512 (Ky. App. 1990). The NMS II rates proposed by Kentucky Power are fair, just, and reasonable. Further, the NSPM-DER have not been adopted by the Commission and the Company's agreement or disagreement with the broad principles stated in them is not relevant and not reasonably calculated to lead to the discovery of admissible evidence.

Without waiving these objections, please refer to the Company's response to JI supplemental 1. Furthermore, financial and non-financial "host customer" impacts for items that do not reside in the Company's cost of electric service should not be included in any sort of rate or cost/benefit analysis as they logically should have no impact on non-participating (other) customers.

Witness: Alex E. Vaughan

DATA REQUEST

JI_SDR_06 The NSPM-DER (referenced in Question 1-) identifies the following societal potential impacts. Please indicate and explain in detail for each, whether the Company evaluated and quantified these impacts over the life of an installed customer generation facility in developing its proposal for a new net metering tariff. Please provide copies of any and all such evaluation and quantification. If the company did not evaluate and quantify these impacts, please explain in detail why it did not do so. a. Societal - Resilience impacts beyond those experienced by utilities or host customers

b. Societal - Greenhouse gas emissions created by fossil-fueled energy resources

c. Societal - Other air emissions, solid waste, land, water, and other environmental impacts

d. Societal - Incremental economic development and job impacts e. Societal - Health impacts, medical costs, and productivity affected by health

f. Societal - Poverty alleviation, environmental justice, and reduced home foreclosures

g. Societal - Energy imports and energy independence

RESPONSE

a-g: The Company objects to this data request. The information sought it is not relevant and not reasonably calculated to lead to the discovery of admissible evidence. KRS 278.466(5) provides that net metering rates are to be established "using the ratemaking process provided by …" Chapter 278 of the Kentucky Revised Statutes. KRS 278.030(1) mandates that rates be "fair, just, reasonable." Further, under Kentucky law it is the result reached and not the methodology employed that controls in determining the reasonableness of rates. *National-Southwire Aluminum Co. v. Big Rivers Electric Corp.*, 785 S.W.2d 503, 512 (Ky. App. 1990). The NMS II rates proposed by Kentucky Power are fair, just, and reasonable. Further, the NSPM-DER have not been adopted by the Commission and the Company's agreement or disagreement with the broad principles stated in them is not relevant and not reasonably calculated to lead to the discovery of admissible evidence.

Without waiving these objections, please refer to the Company's response to JI supplemental 1.

Witness: Alex E. Vaughan

DATA REQUEST

JI_SDR_07 Please provide a detailed explanation and quantification of any intraclass subsidies and of any interclass subsidies that the Company alleges to result from the current net metering service tariff. Please explain:a. How the alleged cross subsidy has been measured.

b. Whether measurements have been taken for some or all net metering customers, the duration and frequency of measurement, and other factors impacting the quantification of the alleged cross subsidy.

c. The academic, professional, technical, and any other basis for the assertion that cross subsidies exist or occur, within a class or among classes of customers, under net metering.

d. The alleged magnitude of the alleged subsidy on non-participating customers, per customer, per year, and per future projected year resulting from the alleged cross subsidy.

RESPONSE

These issues will be addressed in the supplemental testimony to be filed by Company Witness Vaughan and Company Witness Stegall. Please refer to the supplemental testimonies of Company Witnesses Vaughan and Stegall.

DATA REQUEST

JI_SDR_08 Please explain whether the Company views net metering customers as wholesale generators that generate exported or injected energy as energy sold for resale. If so, explain why. If not, explain why not. How does the Company's characterization of net metering customers impact the Company's identification and characterization of revenue impacts and just compensation for exports?

RESPONSE

While net metering customers are not licensed, market facing resources, they act like a wholesale generator when their customer generating system generates in excess of their instantaneous load requirements. Regardless of how they are "characterized," when net metering customers generate excess above their load requirements, the Company avoids an incremental purchase of wholesale energy from PJM, or makes an incremental spot market energy sale to PJM, because the Company's load is now reduced by the amount of the net metering customer's excess generation. Please refer to the direct and rebuttal testimonies of Company Witness Vaughan for discussions and regarding this and the quantification of how this impacts the Company's cost of service.

DATA REQUEST

JI_SDR_09 Please document and quantify the extent and amount to which exported or injected energy from net metering customers must be transported:
a. By the distribution system
b. By the transmission system
Please explain and provide documentation, including metering data, for the responses to "a." and "b."

RESPONSE

Kentucky Power objects to this request as being overly broad and unduly burdensome. The Company does not calculate or maintain this information in the ordinary course of its business and the required study is neither practicable nor reasonable for the reasons set forth below. Moreover, rates established "using the ratemaking process provided by …" Chapter 278 of the Kentucky Revised Statutes, as required by KRS 278.466, are based on average costs and not the individual costs that would be produced by the necessary study.

a.&b. Without waving its objection, Kentucky Power further states that this data request cannot be answered with the necessary level of precision without performing a study for each customer generator. The results will differ for each customer generator based on each customer generator's location and proximity to other other loads on each unique circuit.

Witness: Alex E. Vaughan

DATA REQUEST

JI_SDR_10 Please explain how and when netting occurs under the Company's proposed new net metering tariff. Does netting occur instantaneously or over a billing cycle, or otherwise?

RESPONSE

All net billing kWh and kW in each netting period, accumulated for the billing period, shall be charged at the rates applicable under the Company's standard service tariff under which the customer would otherwise be served, absent the customer's electric generating facility.

Netting occurs over the course of each netting period.

Please refer to the direct and rebuttal testimonies of Company Witness Vaughan and proposed tariff NMS II.

DATA REQUEST

JI_SDR_11 Please explain and document the extent to which Advanced Metering Infrastructure capabilities and interval data have been used by the Company in designing the proposed net metering tariff.

RESPONSE

The Company has not deployed AMI. However its affiliates have and some of the interval load data has been used to verify the Kentucky net metering service customer load shapes used in the Company's NMS II proposal. Please see Company Witness Vaughan's rebuttal testimony at pages R38 and R39.

DATA REQUEST

JI_SDR_12 Please explain and document the extent to which Advanced Metering Infrastructure capabilities and interval data can be used by the Company in improving the precision and accuracy of the proposed net metering tariff.

RESPONSE

AMI metering would be no more or no less precise than the Company's AMR metering for the proposed TOU netting periods in proposed NMS II.

DATA REQUEST

JI_SDR_13 Please explain whether the Company has performed an analysis of and data collection for net metering customers that documents the differences and similarities between net metering customers in the following categories:

a. Gross consumption of energy, including time and date of consumption b. Net consumption of energy, including time and date of consumption c. Coincidence of gross consumption with system peak hours (hours above average demand both before and after the specific peak hour) d. Coincidence of gross consumption with class peak hours (hours above average demand both before and after the specific peak hour) e. Coincidence of net consumption with system peak hours (hours above average demand both before and after the specific peak hour) f. Coincidence of net consumption with system peak hours (hours above average demand both before and after the specific peak hour) g. Gross production of energy, including time and date of consumption h. Net production of energy, including time and date of consumption i. Coincidence of gross production with system peak hours (hours above average demand both before and after the specific peak hour) j. Coincidence of gross production with class peak hours (hours above average demand both before and after the specific peak hour) k. Coincidence of net production with system peak hours (hours above average demand both before and after the specific peak hour) 1. Coincidence of net production with system peak hours (hours above average demand both before and after the specific peak hour) m. Coincidence of exported or injected production with system peak hours (hours above average demand both before and after the specific peak hour)

n. Coincidence of exported or injected production with class peak hours (hours above average demand both before and after the specific peak hour)

RESPONSE

a-n: Yes, the Company has. For this information please refer to the direct, rebuttal and supplemental testimonies and workpapers of Company Witness Vaughan, as well as the direct and supplemental testimonies and workpapers of Company Witness Stegall.

DATA REQUEST

JI_SDR_14 As regards to responses in the previous question (Question 1-), please explain the Company's justification for proposing a single net metering compensation rate for all net metering customers despite difference between customers on each of the metrics/factors listed in the question.

RESPONSE

The Company does not propose that all customers receive the same compensation rate for net metering excess generation. Please refer to the rebuttal testimony of Company Witness Vaughan. Furthermore, like groups of customers (similarly situated customers) such as residential net metering customers, paying the same rates for service is a foundational principle of rate design and is required by KRS 278.170.

DATA REQUEST

JI_SDR_15 Please explain whether or why not the Company has conducted any analysis of net metering customers as to whether and by how much the cost to serve those customers differs from other customers within the same class or from the net metering customer's cost of service prior to the installation and operation of distributed generation.

RESPONSE

Yes, please refer to the supplemental testimony of Company Witnesses Vaughan and Stegall.

DATA REQUEST

JI_SDR_16 Please describe all conversations and provide copies of all communications between and among utilities, including (but not limited to) KPC, LGE, and KU relating to approaches and methods for quantifying net metering compensation value and/or designing and proposing net metering tariff designs.

RESPONSE

The Company's response will be provided in accordance with the extension granted by the Commission's Order dated February 18, 2021.

Witness: Alex E. Vaughan

Witness: Brian K. West

DATA REQUEST

JI_SDR_17 In light of the Commission's Order in Case No. 2020-00174 (pp.84-85) please explain the Company's position on the role that cost of service data and analysis can and should play in informing net metering compensation and tariff design.

RESPONSE

The Company agrees that rates should be set on cost of service data analysis in accordance with accepted rate design principles in Kentucky.





Vaughan DR.docx

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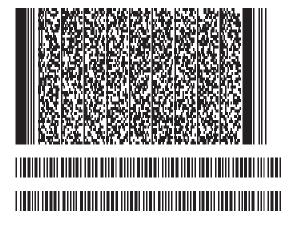
E-Signature 1: Alex E. Vaughan (AEV)

February 22, 2021 04:37:32 -8:00 [14B654CFA87C] [167.239.221.83] aevaughan@aep.com (Principal) (Personally Known)

E-Signature Notary: S. Smithhisler (SRS)

February 22, 2021 04:37:32 -8:00 [75423C57DACE] [167.239.221.83] srsmithhisler@aep.com

I, S. Smithhisler, did witness the participants named above electronically sign this document.



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VERIFICATION

The undersigned, Alex E. Vaughan, being duly sworn, deposes and says he is a Director-Regulatory Pricing & Renewables for American Electric Power Service Corporation that he has personal knowledge of the matters set forth in the forgoing responses and the information contained therein is true and correct to the best of his information, knowledge and belief after reasonable inquiry.

	Alex E. Vaughan	
	Alex E. Vaughan	
STATE OF OHIO)) Case No. 2020-00174)	
COUNTY OF FRANKLIN		

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Alex

E. Vaughan this^{22nd} y of February 2021.



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Signed on 2021/02/22 04	:37:32 -8:00

Notary Public

Notary ID Number: ___2019-RE-775042_____

My Commission Expires: ___April 29, 2024____

VERIFICATION

The undersigned, Brian K. West, being duly sworn, deposes and says he is Vice President, Regulatory & Finance for Kentucky Power Company that he has personal knowledge of the matters set forth in the forgoing responses and the information contained therein is true and correct to the best of his information, knowledge and belief after reasonable inquiry.

Brian K. West

State of Indiana)) ss Case No. 2020-00174 County of Allen)

Subscribed and sworn to before me, a Notary Public, in and for said County and State, Brian K. West this 17th day of February, 2021.

Regiana M. Sistevaris

Digitally signed by Regiana M. Sistevaris Date: 2021.02.17 13:03:35 -05'00'

Regiana M. Sistevaris, Notary Public

My Commission Expires: January 7, 2023