

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matters of:

ELECTRONIC APPLICATION OF KENTUCKY)	
UTILITIES COMPANY FOR AN ADJUSTMENT)	
OF ITS ELECTRIC RATES, A CERTIFICATE)	
OF PUBLIC CONVENIENCE AND NECESSITY)	CASE NO.
TO DEPLOY ADVANCED METERING)	2020-00349
INFRASTRUCTURE, APPROVAL OF CERTAIN)	
REGULATORY AND ACCOUNTING)	
TREATMENTS, AND ESTABLISHMENT OF A)	
ONE-YEAR SURCREDIT)	

ELECTRONIC APPLICATION OF LOUISVILLE)	
GAS AND ELECTRIC COMPANY FOR AN)	
ADJUSTMENT OF ITS ELECTRIC AND GAS)	
RATES, A CERTIFICATE OF PUBLIC)	CASE NO.
CONVENIENCE AND NECESSITY TO DEPLOY)	2020-00350
ADVANCED METERING INFRASTRUCTURE,)	
APPROVAL OF CERTAIN REGULATORY AND)	
ACCOUNTING TREATMENTS, AND)	
ESTABLISHMENT OF A ONE-YEAR SURCREDIT)	

**KENTUCKY SOLAR INDUSTRIES ASSOCIATION, INC.
COMBINED POST-HEARING REQUESTS FOR INFORMATION TO
KENTUCKY UTILITIES COMPANY AND
LOUISVILLE GAS AND ELECTRIC COMPANY**

Comes now the Kentucky Solar Industries Association, Inc. (KYSEIA), by and through counsel, and in accordance with the Public Service Commission's Order dated May 3, 2021, submits its combined post-hearing requests for information to Kentucky Utilities Company (KU) and Louisville Gas and Electric Company (LG&E) (collectively – “Companies”).

- 1) In each case in which a request seeks information provided in response to a request of Commission Staff, reference to the Companies' response to the appropriate Staff request will be deemed a satisfactory response.
- 2) Please identify the Companies' witness who will be prepared to answer questions concerning the request during an evidentiary hearing.
- 3) These requests shall be deemed continuing so as to require further and supplemental responses if the Companies receive or generate additional information within the scope of these request between the time of the response and the time of any evidentiary hearing held by the Commission.
- 4) If any request appears confusing, please request clarification directly from Counsel for KYSEIA.
- 5) To the extent that the specific document, workpaper, or information as requested does not exist, but a similar document, workpaper, or information does exist, provide the similar document, workpaper, or information.
- 6) To the extent that any request may be answered by way of a computer printout, please identify each variable contained in the printout which would not be self-evident to a person not familiar with the printout.
- 7) If the Companies have any objections to any request on the grounds that the requested information is proprietary in nature, or for any other reason, please notify Counsel for KYSEIA as soon as possible.
- 8) For any document withheld on the basis of privilege, state the following: Date; author; addressee; indicated or blind copies; all person to whom distributed, shown, or explained; and the nature and legal basis for the privilege asserted.

- 9) In the event that any document called for has been destroyed or transferred beyond the control of the Companies, state: The identity of the person by whom it was destroyed or transferred and the person authorizing the destruction or transfer; the time, place, and method of destruction or transfer; and, the reason(s) for its destruction or transfer. If destroyed or disposed of by operation of a retention policy, state the policy.
- 10) As the Companies discover errors in its filing and/or responses, please provide an update as soon as reasonable that identifies such errors and provide the document to support any changes.

WHEREFORE, KYSEIA respectfully submits its combined post-hearing requests for information to the Companies.

Respectfully submitted,

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NOTICE AND CERTIFICATION FOR FILING

Undersigned counsel provides notice that the electronic version of the paper has been submitted to the Commission by uploading it using the Commission's E-Filing System on this 5th day of May 2021, and further certifies that the electronic version of the paper is a true and accurate copy of each paper filed in paper medium. Pursuant to the Commission's March 16, 2020, and March 24, 2020, Orders in Case No. 2020-00085, *Electronic Emergency Docket Related to the Novel Coronavirus Covid-19*, the paper, in paper medium, will be filed at the Commission's offices within 30 days of the lifting of the state of emergency.

/s/ David E. Spenard
David E. Spenard

NOTICE REGARDING SERVICE

The Commission has not yet excused any party from electronic filing procedures for this case.

/s/ David. E. Spenard
David E. Spenard

KENTUCKY SOLAR INDUSTRIES ASSOCIATION, INC.
COMBINED POST-HEARING REQUESTS FOR INFORMATION
TO KU AND LG&E

1. Reference: Seelye hearing testimony regarding a lithium-ion battery.
 - a. State whether it is Mr. Seelye's position that a lithium-ion battery can be discharged or charged at a rate that is below its maximum charging or discharging rate.
 - b. State whether the duration for which a lithium-ion battery can provide a given amount of continuous capacity is a function of its energy storage capacity and maximum discharge capacity. (For example, that a 5 kW/20kWh battery can provide 5kW for four hours if discharged at the maximum capacity but could provide 2.5 kW for 8 hours if the discharge rate is reduced.) If it is Mr. Seelye's position that duration is not a function of the battery's energy storage capacity and maximum discharge capacity as described above, then state the reason(s) for disagreement.
2. Reference: Seelye hearing testimony regarding MISO and capacity value.
 - a. State whether it is Mr. Seelye's position that MISO does not attribute any capacity value to solar resources.
 - b. State whether it is Mr. Seelye's position that MISO has not conducted a specific study to develop a default solar capacity credit for new resources based on actual solar resources in service in the MISO footprint.
 - c. Confirm that MISO currently assigns a capacity credit of 50 percent of nameplate to solar facilities within its footprint as a default value for new solar resources. If this assertion is denied, please provide specific references to MISO materials serving as the basis for the denial.
 - d. Confirm that once a solar facility has an operational history of three years, MISO BPM 11 provides that the capacity credit will be determined by the 3-year historical average output for the hours ending 15, 16, and 17 for June through August.
3. Reference: Seelye hearing testimony regarding net metering class cost of service study and class load shapes.
 - a. Provide the AMI data that Mr. Seelye used in developing the residential net metering class load shapes for each customer, with each customer clearly identified as either a KU or LG&E customer.
 - b. Provide the workpapers used by Mr. Seelye to develop the KU and LG&E residential net metering class load shapes based on this AMI data. Confirm that Mr. Seelye used statistically valid data for the KU net metering class load shapes based on this AMI data.
 - c. Provide the formulas, with each variable in the formulas clearly described and explained, used by Mr. Seelye to conduct T Test and Wilcoxon Tests

- to determine the statistical validity of the AMI data used for the net metering class cost of service studies.
- d. Identify each of the statistical assumptions that underlie the T Test and Wilcoxon Test that must be satisfied for these tests to provide unbiased and efficient estimators and be relied upon to provide valid results. Explain whether the use of non-random sampling would violate any of the foregoing assumptions.
 - e. Confirm that Seelye used near-statistically valid data for the LG&E net metering class load shapes. If confirmed, explain the basis for why the LG&E data was not found to be statistically valid.
 - f. Identify the sampling method (e.g., random sampling, stratified random sampling, etc.) and sample size used by and for KU and LG&E to develop representative class load shapes for each of its classes used in the class cost of service studies.
4. Reference: Seeley workpaper "2020_Rebuttal_Testimony_Seelye_Workpapers_-_KU_LGE_Residential_Class_Shapes_20210326.xlsx," worksheet "LGE_Consumption_Shape," column J "NM_Residential,".
- a. Confirm that these values are the actual values measured by the AMI meter and aggregated for the residential net metering customer class for which LG&E has AMI data. If your response is anything other than an unqualified confirmation, please explain where these values came from and/or how they were derived.
 - b. When this column is sorted from the highest value to the lowest value, there appear to be repetitions in the data that would be extremely unlikely to occur when measuring and aggregating total net metering customer net usage, as there are fluctuations in net consumption across customers across time. For example, the highest three values (occurring on 8/11 at hour 18, 8/12 at hour 18, and 8/17 at hour 18) are all exactly "4315.12173380257" (i.e., *identical* to 11 decimal places). The next three-highest values (occurring on 8/11 at hour 19, 8/12 at hour 19, and 8/17 at hour 19) are all exactly "4096.50106476733" -- identical to 11 decimal places. Similar repeating patterns are evident throughout this data.
 - i. Please explain why these patterns are evident in the underlying data, and
 - ii. Whether these patterns are a cause of concern as to the reliability of the data used, given that it would seem to be statistically impossible for net metering customers to have *exactly* the same measured net peak load to 11 decimal places on three separate days in a given month in a given year.
5. Reference: Conroy hearing testimony. Is it Mr. Conroy's position that the Companies are storing the solar generation from net metering facilities using batteries and/or other energy storage technologies and providing the same electricity back to the net metering customer when the customer needs it? If Mr.

Conroy's response is anything but an unqualified confirmation, explain how customers can be using the grid as a battery if the Companies are not in fact storing the excess generation and are instead using it to meet the instantaneous demand of other customers.

6. In the event that a customer taking service under the proposed NMS I tariff (a customer with legacy rights) suffers an interruption of service for the customer's eligible electric generating facility through an event such as storm damage, vandalism, or other casualty loss, will the Companies consider the interruption of service a termination of service and forfeiture or loss of legacy rights? Fully explain.
7. Reference: Conroy hearing testimony regarding the Economic Development Rider.
 - a. Clarify what role job creation or retention has in the eligibility, applicability, and benefits provided to customers taking service under this rider.
 - b. Clarify whether Mr. Conroy believes job creation and/or retention are factors the Commission can consider in developing fair, just, and reasonable rates.
8. Reference: Wolfe and/or Conroy hearing testimony regarding the Companies' consideration of Distributed Energy Resource Management Systems (DERMS).
 - a. Explain how the benefits of DERMS realized by the Companies would be impacted if the proposed NMS II tariffs are approved.
 - b. Clarify if the Companies believe that DERMS will still be needed and provide significant value to the Companies if the proposed NMS II tariffs are approved and there is a substantial decrease in the rate of customers taking service through a net metering rider, as shown under the Companies' forecasts of net metering adoption under NMS II.
9. Reference: Seelye workpaper "2020_Rebuttal_Testimony_Seelye_Workpapers_-_KU_LGE_Residential_Class_Shapes_20210326.xlsx," worksheet.
 - a. Confirm that the tabs titled KU_Overgeneration_Shape and LGE_Overgeneration_Shape refer to hourly exports to the grid from net metering customers. If not, please explain in detail what "overgeneration" refers to for these tabs.
 - b. Confirm that Column N (NM_Residential) in the tabs referring to KU_Consumption_Shape and LGE_Consumption_Shape present hourly load data that excludes exports reflected in the KU_Overgeneration_Shape and LGE_Overgeneration_Shape tabs, such that exports to the grid do not reduce the hourly load values in Column N.
 - c. Confirm that if a net metering customer was induced to undertake actions that reduce the amount of electricity the customer exports to the grid during one or more hours, the Consumption Shape would reflect an increase in consumption during those hours.

- d. Confirm that an increase in the Consumption Shape in one or more hours would represent an increase in the cost to serve a net metering customer and the collective hypothetical class of net metering customers.
10. Reference: Mr. Seelye's statement at page 48 of his rebuttal testimony that the "market value" of solar energy is represented by the 20-year fixed price contract at \$27.82/MWh associated with the Rhudes Creek solar project.
- a. Is the price associated with a single transaction typically considered representative of the market value of a product in any other market that Mr. Seelye is aware of? If yes, please specifically identify any other "market" where this would be true and provide specific citations and references indicating that this market is considered competitive and well-functioning by generally accepted metrics of market competitiveness.
 - b. Confirm that the "market value" or "price" is not synonymous with "economic value" in economic theory. If your response is anything other than an unqualified confirmation, please explain in detail with specific references to economic theory and citations to applicable peer-reviewed literature.
 - c. Confirm that the PPA price of \$27.82/MWh was contingent on the availability of a fixed price contract with a 20-year term, and that the price would have been higher if the contract was executed for a shorter term. If your response is anything other than an unqualified confirmation that this is true, please provide supporting evidence and a detailed explanation of why the Company selected this project and this specific contract term as the least-cost option.
 - d. Provide a complete copy of the request for proposals associated with the solicitation that produced the contract for the Rhudes Creek solar project.
 - e. Provide the simple average and weighted average of bid prices for the solicitation that produced the contract for the Rhudes Creek solar project. The weighted average should be calculated according to forecasted annual delivered energy.
 - f. Provide a complete listing of the individual project sizes for all bids provided in response to the solicitation that produced the contract for the Rhudes Creek solar project. For the purposes of this request, the individual projects may be deidentified or otherwise identified anonymously as Project #1, Project #2, etc.
 - g. Provide the simple average and weighted average price of bids if the Company selected the most competitive bids totaling at least 400 MW of solar capacity from the solicitation that produced the Rhudes Creek solar project. The weighted average should be calculated according to forecasted annual delivered energy.