

**COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION**

In the matter of: :

ELECTRONIC JOINT APPLICATION OF KENTUCKY : CASE NO. 2022-00402  
UTILITIES COMPANY AND LOUISVILLE GAS AND :  
ELECTRIC COMPANY FOR CERTIFICATES OF  
PUBLIC CONVENIENCE AND NECESSITY AND SITE :  
COMPATIBILITY CERTIFICATES AND APPROVAL :  
OF A DEMAND SIDE MANAGEMENT PLAN :  
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**KENTUCKY COAL ASSOCIATION’S FIRST REQUEST FOR INFORMATION TO  
KENTUCKY UTILITY COMPANY AND LOUISVILLE GAS & ELECTRIC COMPANY**

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The Kentucky Coal Association (KCA) intervener in this action, respectfully requests the applicant, Kentucky Utilities Company and Louisville Gas and Electric Company (collectively, the “Companies”), to respond to the First Request of Information in accordance with the Order of Procedure entered herein.

Additional Instructions

A. Each request for information shall be accorded a separate answer on a separate piece of paper, and each subpart thereof shall be accorded a separate answer. Each request or subpart thereof shall be specifically admitted or denied, and information inquiries or subparts thereof should not be combined for the purpose of supplying a common answer.

B. Restate the information inquiry immediately preceding each response.

C. Identify the name, title, and business address of each person(s) providing each response and provide the data on which the response was created.

D. In answering these requests, utilize all information and documents that are available to you, including information in the possession of any of your agents, employees or attorneys, or otherwise subject to your custody or control.

E. If you object to any part of a request, answer all parts of such interrogatories or requests to which you do not object, and as to each part to which you do object, separately set forth the specific basis for the objection.

F. If you claim any form of privilege or other protection from disclosure as a ground for withholding information responsive to a request, please explain your claim with sufficient specificity to permit KCA to make a full determination as to whether your claim is valid.

G. In each instance, the request shall be construed so as to require the most inclusive answer or production.

H. Please attach written material to any answer for which written material is requested and/or available. If such written material is not available, state where it may be obtained. Please label the written material with the number of the request to which it pertains.

#### Definitions

As used in these Requests for Information, the following terms have the meaning as set forth below:

1. "You" or "your" means the Companies or the witness, as the context requires.
2. "List", "describe", "explain", "specify" or "state" shall mean to set forth fully, in detail, and unambiguously each and every fact of which the Companies or their officers, employees, agents or representatives, have knowledge which is relevant to the answer called for by the request.
3. The terms "document" or "documents" as used herein shall have the same meaning and scope as in Rule 34 of the Kentucky Rules of Civil Procedure and shall include, without limitation, any writings and documentary material of any kind whatsoever, both originals and copies (regardless of origin and whether or not including additional writing thereon or

attached thereto), and any and all drafts, preliminary versions, alterations, modifications, revisions, changes and written comments of and concerning such material, including but not limited to: correspondence, letters, memoranda, notes, reports, directions, studies, investigations, questionnaires and surveys, inspections, permits, citizen complaints, papers, files, books, manuals, instructions, records, pamphlets, forms, contracts, contract amendments or supplements, contract offers, tenders, acceptances, counteroffers or negotiating agreements, notices, confirmations, telegrams, communications sent or received, print-outs, diary entries, calendars, tables, compilations, tabulations, charts, graphs, maps, recommendations, ledgers, accounts, worksheets, photographs, tape recordings, movie pictures, videotapes, transcripts, logs, work papers, minutes, summaries, notations and records of any sort (printed, recorded or otherwise) of any oral communication whether sent or received or neither, and other written records or recordings, in whatever form, stored or contained in or on whatever medium including computerized or digital memory or magnetic media that:

(a) are now or were formerly in your possession, custody or control; or

(b) are known or believed to be responsive to these requests, regardless of who has or formerly had custody, possession or control.

4. The terms "identify" and "identity" when used with respect to an entity mean to state its full name and the address of its principal place of business.

5. The term to "state the basis" for an allegation, contention, conclusion, position or answer means (a) to identify and specify the sources therefore, and (b) to identify and specify all facts on which you rely or intend to rely in support of the allegation, contention, conclusion, position or answer, and (c) to set forth and explain the nature and application to the relevant facts of all pertinent legal theories upon which you rely for your knowledge, information and/or belief

that there are good grounds to support such allegation, contention, conclusion, position or answer.

6. The terms "and" and "or" have both conjunctive and disjunctive meanings as necessary to bring within the scope of the request any information or documents that might otherwise be construed to be outside their scope; "all" and "any" mean both "each" and "every".

7. The terms "relates to" or "relating to" mean referring to, concerning, responding to, containing, regarding, discussing, describing, reflecting, analyzing, constituting, disclosing, embodying, defining, stating, explaining, summarizing, or in any way pertaining to.

8. The term "including" means "including, but not limited to."

#### **FIRST REQUEST FOR INFORMATION OF KCA**

Q. 1-1 Please provide all supporting workpapers, in excel format where available, used to develop all modeling results from the 2022 Resource Assessment in a readable form with assumptions clearly laid out. (*See*, SAW testimony, exhibit-1)

Q. 1-2 Please provide draft pipeline agreements for Firm Transportation (*See*, Mr. Bellar Direct Testimony, pages 5-7).

Q. 1-3 Please provide the agreements for Marion County Solar facility referenced in Mr. Bellar's direct testimony, page 18.

Q. 1-4 Please refer to Crockett Direct Testimony, pages 8 and 9, please provide the application to the Department of Energy for conducting a Front-End Engineering Design for carbon capture at Cane Run #7 and related status reports.

Q. 1-5 Please provide all work papers and documents, in excel format where available, developed in response to the City of Louisville's 100 Percent Clean Energy Resolution, including but not limited to, the 2019 Highlands Study, the October 31, 2019 Presentation by Mr. David Sinclair to the Louisville Metro Council, and all work papers and analyses documenting the "technology and economic" challenges ahead for the City of Louisville.

Q. 1-6 Please provide the work papers and documents produced by the Companies and others, regarding the construction and operating costs, test results and evaluations of the operational performance from Electric Power Research Institute (EPRI's) utility scale storage systems, namely the 1 MW lithium ion battery, the 1 MW smart power inverter and the advanced control system, located at EW Brown.

Q. 1-7 Please provide all comments to the EPA by the Companies and by the Midwest Ozone Group (MOG) on behalf of the Companies on the good neighbor rule (GNR) including, but not limited to, the proposed rule published December 30, 2019 at 84 FR 71854 and the October 30, 2020 Notice of Proposed Rulemaking for the Revised CSAPR Update at 85 FR 68964, 68981.

Q. 1-8 Please provide any documents/notes from meetings of the Companies, the Utility Information Exchange of Kentucky, and MOG with the Kentucky Energy and Environment Cabinet during development of the January 11, 2019 Kentucky State Implementation (SIP) submittal to EPA Addressing Regional Ozone Transport for the 2015 Ozone National Ambient Air Quality Standard.

Q. 1-9 Please refer to page 8 of the Joint Application and reconcile why the certificate of public need and necessity (CPCN) Application states that the Good Neighbor Rule was promulgated when it has not been.

Q. 1-10 Please indicate whether the Companies have previously filed CPCN requests for compliance with EPA regulations that have not yet been promulgated. If yes, please provide such filings or case numbers.

Q. 1-11 Please provide the Title V construction permit applications as filed with the Louisville Metro Air Pollution Control District for the Mill Creek NGCC and with the Kentucky Division for Air Quality for the EW Brown NGCC. (*See*, Mr. Imber Exhibits' PAI-1 and PAI-2).

Q. 1-12 Please provide the KPDES permit renewal application to add the discharge of process wastewater from the Mill Creek NGCC. (*See*, Mr. Imber Exhibit PAI-1)

Q. 1-13 Please provide the Cumulative Environment Assessment filings to the Kentucky Energy and Environment Cabinet for both the Mill Creek NGCC and the EW Brown NGCC. (*See*, Mr. Imber Exhibits' PAI-1 and PAI-2)

Q. 1-14 Please confirm that the comments the Companies provided to EPA on the GNR state that the Companies could not comply with proposed rule unless it retrofit Selective Catalytic Reduction (SCR) on Mill Creek 2 and Ghent 2 or idled these units during the ozone season? (Please refer to Mr. Imber Direct Testimony, Page 5, Lines 1-7)

Q. 1-15 With respect to the Companies' response to the previous question please identify how the Companies' will provide replacement capacity and energy related to the idling of the Mill Creek 2 and Ghent 2 during the 2026 and 2027 ozone seasons.

Q. 1-16 Please identify and provide any documents, workpapers or plans prepared if the Companies' proposal is not approved and/or there are delays in implementing the replacement strategy?

Q. 1-17 Please refer to the previous question and please indicate whether the Companies expect to recover costs related to such delays and cost overruns or will they be borne by the Companies' shareholders.

Q. 1-18 Please confirm that while the Companies' integrated resource plan (IRP) only considered "large frame single cycle combustion turbine (SCCTs) without carbon capture and sequestration (CCS), natural gas combined cycle with CCS, four- and eight- hour batteries, and utility scale solar and wind located in Kentucky"<sup>1</sup>, the subsequent Resource Assessment, however, did not consider NGCC with CCS. If confirmed, please explain why it did not consider NGCC with CCS. If not confirmed, please provide such analyses, work papers and documents addressing NGCC and CCS.

Q. 1-19 Please confirm that the 2022 Resource Assessment did not consider the cost of a scenario in which Mill Creek 2 and Ghent 2 were not operated during the 2026 and 2027 ozone seasons but remained online. If that is not the case, please provide that analysis.

Q. 1-20 Please provide a complete explanation related to the EW Brown 3 overhaul including whether this was previously scheduled and a routine major maintenance outage. Please provide when the Companies initially scheduled the dates for this overhaul to occur.

Q. 1-21 If the work discussed in Mr. Sinclair's Direct Testimony page 4 on EW Brown 3 is performed, how long could EW Brown 3 continue to operate? If not beyond 2028, please provide the reasons for that in detail and what investments and correlating costs would allow for continued operation.

Q. 1-22 Please identify the status of Effluent Limitation Guideline compliance at EW Brown, Ghent and Mill Creek.

Q. 1-23 Please confirm that the amortization period for Cane Run 7 is 50 years as appears to be the case in the Companies November 2022 Analysis of Avenues for Reducing Undepreciated Fossil-Fuel Generation Assets at Retirement.<sup>2</sup> If not the case, please provide the amortization period.

Q. 1-24 Please explain that while the Companies state that PPL Corporation has a net-zero emissions target by 2050, this was not a driving force behind the CPCN filing?

Q. 1-25 Please list all facilities in the PPL generation portfolio along with their carbon emissions in 2022.

Q. 1-26 Please provide the amortization period assumed in the 2022 Resource Assessment for the new NGCCs?

Q. 1-27 Refer to Question 1-24, is it the Companies' position that the depreciation period does not need to reflect the 2050 net zero target? If not, please explain.

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<sup>1</sup> Commission Order in Case No. 2021-00393, page 25 (September 16, 2022).

<sup>2</sup> [https://psc.ky.gov/psccef/2020-00349/rick.lovekamp%40lge-ku.com/11302021040019/2-LGE\\_KU\\_Future\\_Fossil\\_Fuel\\_Gen\\_Analysis.pdf](https://psc.ky.gov/psccef/2020-00349/rick.lovekamp%40lge-ku.com/11302021040019/2-LGE_KU_Future_Fossil_Fuel_Gen_Analysis.pdf)

Q. 1-28 Please provide the undepreciated capital for Mill Creek 2, Ghent 2, and EW Brown 3 at their respective retirement dates proposed in the CPCN. Please separate the investment in the plant and environmental upgrades to the plant. In addition, please provide the undepreciated capital for all the air, water, and waste projects, approved by the Commission under the Environmental Cost Recovery mechanism for these units.

Q. 1-29 Please provide by scenario, the Companies' forecasted earnings on all undepreciated capital assuming none of the assets are securitized.

Q. 1-30 Please provide the application and any workpapers to the Department of Energy (DOE) for conducting a Front-End Engineering Design (FEED) for carbon capture at the Cane Run #7 which is referenced in Crockett Direct Testimony, pages 8 and 9.

Q. 1-31 Please provide the status and timing of this effort as well as any status reports on the FEED study.

Q. 1-32 Please explain the Companies role in the DOE grant effort including the amount of the Companies' financial contribution. Please indicate whether the Companies are looking to recover these costs from customers?

Q. 1-33 Please confirm that the Companies believe there are limited sequestration options for captured CO<sub>2</sub> near Cane Run 7 based upon a 2013 study performed by the Kentucky Geological Survey that is referenced in a report produced by the Companies in November 2021 entitled Analysis of Reducing Undepreciated Fossil-Fuel Generation Assets at Retirement. Please provide any subsequent work papers prepared or performed by the Companies or third parties that either support or dispute this finding.

Q. 1-34 With respect to the previous question, please confirm that the same limited sequestration options would exist at Mill Creek?

Q. 1-35 Please confirm that the Companies understand absent "discovery" of additional sequestration options, the Companies would be required to develop markets for the captured CO<sub>2</sub> in order to rely upon the Cane Run 7 plant as a fully dispatchable plant. If not the case, please explain?

Q. 1-36 Please confirm that the Companies are aware that there are approximately 5,000 miles of operating super critical CO<sub>2</sub> pipelines in the U.S. today and that it may be feasible from the Companies' facilities to transport CO<sub>2</sub> to suitable storage. If confirmed, please provide the analyses, work papers and documents prepared by the Companies or third parties on their behalf regarding CO<sub>2</sub> pipelines as an option in deciding that carbon capture technology was not viable for their coal plants.

Q. 1-37 Please confirm the Companies position that CO<sub>2</sub> markets could justify investment in carbon capture. If confirmed, please provide supporting studies, documents and workpapers that the Companies or third parties have prepared on their behalf.

Q. 1-38 Please indicate whether the Companies are interested in investing in industries/companies that utilize CO<sub>2</sub>. If yes, please provide a description of efforts to date.

- Q. 1-39 Please confirm that the Companies understand carbon capture on a coal plant would produce significantly more CO<sub>2</sub> than carbon capture on a natural gas plant.
- Q. 1-40 Please provide the analyses performed by the Companies or third parties on the Companies' behalf that reflect the timing, term, and size of the current § 45Q tax credits for utilization included in the Inflation Reduction Act (IRA).
- Q. 1-41 Please provide whether the Companies' position assumes a further extension of the § 45Q tax credits or whether the CO<sub>2</sub> market would be sufficiently lucrative without tax credits to pursue.
- Q. 1-42 Please confirm in the discussion of hydrogen in Mr. Crockett's Direct Testimony, page 8, that it references "green" hydrogen. If that is not the case, please explain why conversion to anything but green hydrogen would achieve target carbon emissions without carbon capture.
- Q. 1-43 Please explain the timing associated with the comments about hydrogen and carbon capture in the Crockett Direct Testimony (*see*, page 8). Specifically, when do the Companies believe green hydrogen and carbon capture will be available as commercial options for the proposed Mill Creek NGCC and EW Brown NGCC.
- Q. 1-44 Please provide the documents, studies and work papers that the Companies are assuming and relying upon as to the cost and availability of green hydrogen.
- Q. 1-45 Please provide statements from the referenced original equipment manufacturers (OEMs) that the NGCC plants being proposed for Mill Creek and EW Brown will be "designed to combust hydrogen in the future" (*See*, Mr. Bellar Direct Testimony, Page 11, Lines 21-23).
- Q. 1-46 Please provide the costs associated with the conversion of these NGCC plants in the 2022 Resource Assessment.
- Q. 1-47 Please confirm and document that this conversion referenced in Q 1-46 would be to 100 percent hydrogen. If not confirmed, please provide the maximum hydrogen that could be burned according to the OEMs.
- Q. 1-48 Please refer to the previous question and provide the OEM cost estimates for 100% conversion.
- Q. 1-49 Please refer to the previous question and please provide the OEM expected derates with partial or full conversion.
- Q. 1-50 Please provide the date by which the Companies assume green hydrogen availability in the Resource Assessment. Please provide the forecast cost at that time.
- Q. 1-51 Please provide the Firm Transportation (FT) costs assumed in the Companies' analyses indicating annual/monthly costs and term.
- Q. 1-52 Please indicate whether pipeline capacity additions would be needed to support the addition of either of the two NGCC's.

- Q. 1-53 Please disclose whether the costs are based upon a contract that includes a “no-cost” early termination right in the FT Agreements in the event of a conversion to hydrogen or closure. If yes, please provide the expected terms. If no, please confirm that the Companies would be subject to such costs through the entire term regardless of whether the plant is operating.
- Q. 1-54 Please explain how the Companies will meet their corporate carbon targets absent carbon capture or green hydrogen. If the answer includes early retirement of all the NGCC capacity, please indicate what the replacement generation and retirement date would be.
- Q. 1-55 Please indicate whether the Companies will seek recovery of costs if the capital costs for the NGCC exceed the costs represented in the CPCN.
- Q. 1-56 Please provide the monthly and annual gas price forecasts in excel spreadsheet format if available considered in each scenario considered in the Companies’ Resource Assessment?
- Q. 1-57 Please provide the basis for using a Coal-To-Gas (CTG) factor to determine coal prices in the 2022 Resource Assessment.
- Q. 1-58 Please provide examples of other parties using a CTG methodology for determining coal prices.
- Q. 1-59 Please explain how volatility in gas prices is addressed in the 2022 Resource Assessment.
- Q. 1-60 Please provide any analyses, including workpapers and documents, conducted by the Companies or relied upon by the Companies that support the availability of natural gas through the referenced pipelines during the term of the transportation agreements.
- Q. 1-61 Please confirm that the Companies believe that locating the NGCC plants at different locations reduces supply risk. If confirmed, please provide the analysis and work papers supporting this position.
- Q. 1-62 Please indicate whether the Companies considered gas storage options for one or both of the proposed NGCCs. If considered, please provide the analysis and work papers that was performed to proceed without storage.
- Q. 1-63 Please confirm that the costs of the FT agreements are not included in the capital cost assumptions for the proposed NGCCs.
- Q. 1-64 Please provide the results of the gas hedging plan instituted for Cane Run Unit 7 over the last two years including the monthly average prices in excel spreadsheet format.
- Q. 1-65 In the 2022 Resource Assessment modelling, please provide how the undepreciated costs for the proposed retirements are modelled.

Q. 1-66 Please indicate whether the Companies would be willing to cap the costs of the battery energy storage system (BESS) and other replacement assets represented in the CPCN filing, thereby requiring shareholders to assume cost over-runs.

Q. 1-67 Please explain why the BESS is needed if there is coal capacity or NGCC capacity which can provide backup to the solar generation.

Q. 1-68 Please confirm that the Companies did not perform an actual Residential Rate analysis including a cost of service study for each of the scenarios evaluated.

Q. 1-69 Please confirm the Companies' willingness to perform a Residential Rate analysis to be included in this proceeding.

Q. 1-70 Please provide for each scenario considered, the estimated earnings on undepreciated capital for the Companies assuming no securitization.

Q. 1-71 Please confirm that analyses associated with the impact of the CPCN on the economy of the state of Kentucky including the impact of higher rates, the impact on the industries that utilize fly ash for cement production and gypsum for wallboard manufacturing from the affected power plants, the loss of employment, the loss of tax revenues, etc. have not been performed. If not confirmed, please provide all associated analyses. If confirmed, please indicate whether the Companies would be willing to conduct such analyses.

Q. 1-72 Please provide the Companies' budget for its public advertising campaign related to the current CPCN. Please indicate whether the Companies expect to recover these costs from ratepayers.

Respectfully submitted,

/s/Matt Malone

Matthew R. Malone

William H. May, III.

Hurt, Deckard & May PLLC

106 West Vine Street; Suite 401

Lexington, Kentucky 40507

(859) 254-0000 (office)

(859) 254-4763 (facsimile)

[mmalone@hdmfirm.com](mailto:mmalone@hdmfirm.com)

[bmay@hdmfirm.com](mailto:bmay@hdmfirm.com)

Counsel for the Petitioner,

**KENTUCKY COAL ASSOCIATION**

**CERTIFICATE OF SERVICE**

I hereby certify that KCA's February 17, 2023 electronic filing is a true and accurate copy of KCA's pleading and Read 1<sup>st</sup> Document to be filed in paper medium; that the electronic filing has been transmitted to the Commission on February 17, 2023; that an original and one copy of the filing will not be delivered to the Commission based on pandemic orders; that there are currently no parties excused from participation by electronic service; and that, on February 17, 2023, electronic mail notification of the electronic filing is provided to all parties of record:

/s/Matt Malone  
ATTORNEY FOR KCA