COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

ELECTRONIC 2022 INTEGRATED	**)**	
RESOURCE PLANNING REPORT	**)**	**Case No. 2023-00092**
OF KENTUCKY POWER COMPANY	**)**	

INITIAL DATA REQUESTS OF THE ATTORNEY GENERAL AND KIUC

Come now the intervenors, the Attorney General of the Commonwealth of Kentucky, by his Office of Rate Intervention ("Attorney General") and Kentucky Industrial Utility Customers ("KIUC"), and submit these Data Requests to Kentucky Power Company (hereinafter "Kentucky Power" or "company") to be answered by June 23, 2023, in accord with the following:

(1) In each case where a request seeks data provided in response to a staff request, reference to the appropriate requested item will be deemed a satisfactory response.

(2) Identify the witness who will be prepared to answer questions concerning each request.

(3) Repeat the question to which each response is intended to refer.

(4) 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 requests between the time of the response and the time of any hearing conducted hereon.

(5) Each response shall be answered under oath or, for representatives of a public

or private corporation or a partnership or association, be accompanied by a signed certification of the preparer or person supervising the preparation of the response on behalf of the entity that the response is true and accurate to the best of that person's knowledge, information, and belief formed after a reasonable inquiry.

(6) If you believe any request appears confusing, please request clarification directly from undersigned Counsel.

(7) 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.

(8) 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.

(9) If the company has objections to any request on the grounds that the requested information is proprietary in nature, or for any other reason, notify undersigned Counsel as soon as possible, and in accordance with Commission direction.

(10) As used herein, the words ''document'' or ''documents'' are to be construed broadly and shall mean the original of the same (and all non-identical copies or drafts thereof) and if the original is not available, the best copy available. These terms shall include all information recorded in any written, graphic or other tangible form and shall include, without limiting the generality of the foregoing, all reports; memoranda; books or notebooks; written or recorded statements, interviews, affidavits and depositions; all letters or correspondence; telegrams,

cables and telex messages; contracts, leases, insurance policies or other agreements; warnings and caution/hazard notices or labels; mechanical and electronic recordings and all information so stored, or transcripts of such recordings; calendars, appointment books, schedules, agendas and diary entries; notes or memoranda of conversations (telephonic or otherwise), meetings or conferences; legal pleadings and transcripts of legal proceedings; maps, models, charts, diagrams, graphs and other demonstrative materials; financial statements, annual reports, balance sheets and other accounting records; quotations or offers; bulletins, newsletters, pamphlets, brochures and all other similar publications; summaries or compilations of data; deeds, titles, or other instruments of ownership; blueprints and specifications; manuals, guidelines, regulations, procedures, policies and instructional materials of any type; photographs or pictures, film, microfilm and microfiche; videotapes; articles; announcements and notices of any type; surveys, studies, evaluations, tests and all research and development (R&D) materials; newspaper clippings and press releases; time cards, employee schedules or rosters, and other payroll records; cancelled checks, invoices, bills and receipts; and writings of any kind and all other tangible things upon which any handwriting, typing, printing, drawings, representations, graphic matter, magnetic or electrical impulses, or other forms of communication are recorded or produced, including audio and video recordings, computer stored information (whether or not in printout form), computer-readable media or other electronically maintained or transmitted information regardless of the media or format in which they are stored, and all other rough drafts, revised drafts (including all handwritten notes or other marks on the same) and copies of documents as hereinbefore defined by whatever means made.

(11) For any document withheld on the basis of privilege, state the following: date; author; addressee; indicated or blind copies; all persons to whom distributed, shown, or explained; and, the nature and legal basis for the privilege asserted.

(12) In the event any document called for has been destroyed or transferred beyond the control of the company, please 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 retention policy.

(13) Provide written responses, together with any and all exhibits pertaining thereto, in one or more bound volumes, separately indexed and tabbed by each response, in compliance with Kentucky Public Service Commission Regulations.

(14) "And" and "or" should be considered to be both conjunctive and disjunctive, unless specifically stated otherwise.

(15) "Each" and "any" should be considered to be both singular and plural, unless specifically stated otherwise.

Respectfully submitted,

DANIEL J. CAMERON
ATTORNEY GENERAL

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J. MICHAEL WEST
LAWRENCE W. COOK
ANGELA M. GOAD
JOHN G. HORNE II
ASSISTANT ATTORNEYS GENERAL
1024 CAPITAL CENTER DRIVE, SUITE 200
FRANKFORT, KY40601-8204
PHONE: (502) 696-5433
FAX: (502) 564-2698
Michael.West@ky.gov
Larry.Cook@ky.gov
Angela.Goad@ky.gov
John.Horne@ky.gov

/s/ Michael L. Kurtz
Michael L. Kurtz, Esq.
Kurt J. Boehm, Esq.
Jody Kyler Cohn, Esq.
BOEHM, KURTZ & LOWRY
36 East Seventh Street, Suite 1510
Cincinnati, Ohio 45202
Ph: 513.421.2255 fax: 513.421.2764
mkurtz@bkllawfirm.com
kboehm@BKLlawfirm.com
jkylercohn@BKLlawfirm.com

Certificate of Service and Filing

Pursuant to the Commission's Orders and in accord with all other applicable law, Counsel certifies that, on May 22, 2023, an electronic copy of the foregoing was served via the Commission's electronic filing system.

this 22nd day of May, 2023.

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Assistant Attorney General

Data Requests

1. Provide a copy of all schedules, tables, figures, and all other assumptions, data, calculations, and results addressed and/or presented in the IRP report and the Appendix Exhibits in Excel live format and with all formulas intact. This includes all Excel workbooks and other analyses that were used as inputs to these Excel workbooks and other analyses developed and/or used for the schedules, tables, and figures in the IRP report and the Appendix Exhibits.

2. Describe in detail Liberty's involvement in the development of the IRP in each phase of the process. This includes, but is not limited to, a chronological timeline, along with a description of the functions and activities performed by Liberty, and its decision-making role vis-a-vis AEP and/or the Company.

3. Provide a list of each Liberty employee/consultant, position and company affiliation for each employee/consultant, and each employee/consultant's role in the development of the IRP.

4. Provide a copy of Liberty's objectives, directives, positions, and/or decisions regarding the development of the IRP, including assumptions, resource alternatives, modeling, identification and selection of the reference and alternative cases communicated in writing to AEP and/or the Company. Such communications, include, but are not limited to, emails, presentations, notes made by AEP and/or Company personnel, and other documents.

5. Provide a copy of all agreements between Liberty, AEP, and/or the Company for Liberty to participate in the development of the IRP and/or to share information.

6. Refer to the following narrative in the IRP report at 24:

> No further changes to the PCA are under consideration at this time. Pending an assumed completion of a transfer of Kentucky Power from AEP to Liberty Power, the Company will participate as a member of the Power Coordination Bridge Agreement (PCBA) through the 2023/2024 PJM Planning Year. The Company will then look to source bilateral capacity agreements as needed to support any capacity needs not fulfilled by its own firm resources.

a. Now that the Liberty acquisition has been terminated, provide a revised version of this narrative or explain in detail why it does not need to be revised. In addition, provide a copy of all source documents and other support relevant to and/or relied on for your response.

b. Describe in detail the Company's current plan to continue participation as a member of the PCBA beyond the 2023/2024 planning year and explain what effect that will have on its resource decisions, including the preferred plan and alternatives considered in the IRP report in this proceeding.

7. Explain whether the termination of Liberty's acquisition of Kentucky Power will change any of the assumptions or conclusions of the IRP. If so, explain whether this will require any modifications to the IRP filing.

8. Confirm that the Company evaluated only owned solar and did not evaluate PPA solar resources. If confirmed, explain why it did not evaluate PPA solar resources.

9. Confirm that owned solar and PPA solar resources have different cost and revenue requirement profiles, e.g., owned solar typically has declining cost curve and similar revenue requirement profiles, while PPA solar typically has variations of levelized or escalating levelized cost curve and similar revenue requirement profiles.

10. Refer to Figure 41 in the IRP report. Provide a schedule showing the forecast PJM capacity credit percentages by year and/or season assumed separately for solar fixed and tracking resources. Provide a link and/or copy of all other source documents relied on for the forecasts.

11. Refer to Figure 42 in the IRP report. Provide a schedule showing the forecast PJM capacity credit percentages by year and/or season assumed separately for on shore and off shore wind resources. Provide a link and/or copy of all other source documents relied on for the forecasts.

12. Indicate whether the Company has identified potential on shore wind resource sites in Kentucky.

13. Indicate whether the Company has identified potential off shore wind resource sites in Kentucky.

14. Indicate whether the Company has identified potential on shore wind resource sites in states other than Kentucky.

15. Indicate whether the Company has identified potential off shore wind resource sites in states other than Kentucky.

16. If the Company has identified any generation resources located outside of Kentucky Power's service territory, explain whether any new transmission facilities would have to be constructed in order to transmit the power from all such generation resources into Kentucky Power's service territory. If so, explain whether the projects have been included in PJM's RTEP process.

17. Indicate if AEP has an unregulated renewables generation business whereby it develops solar, wind, and/or other renewables resources and sells the output to regulated utilities pursuant to PPAs. If so: (i) identify each such business and the contracts presently in place between the specific AEP unregulated affiliate and the specific regulated utility; and (ii) indicate whether AEP intends to retain or sell any such affiliates, and if it intends to sell any such affiliate, then describe all such plans, including timing.

18. Describe specifically the evaluation and decision process, including the decision criteria, and the modeling processes utilized by AEP and/or the Company to determine the size and timing of the solar resources reflected in the Company's preferred plan and each alternative portfolio studied by AEP and/or the Company. In your response, address, among all other issues relevant to the evaluation and decision process, how the base rate and other rate impacts were specifically considered as a decision criterion.

19. Describe specifically the evaluation and decision process, including the decision criteria, and the modeling processes utilized by AEP and/or the Company to determine the size and timing of the wind resources reflected in the Company's preferred plan and each alternative portfolio studied by AEP and/or the Company. In your response, address, among all other issues relevant to the evaluation and decision process, how the base rate and other rate impacts were specifically considered as a decision criterion.

20. Provide the Company's most recent assessment as to the sources, availability, and prices of the panels, inverters, and other components necessary to construct solar resources. Provide a link and/or copies of all other sources and/or documents relied on for this assessment.

21. Given the inclusion of significant levels of renewable generation in the IRP, explain to what extent the Company considered the need for synchronous assets and/or grid-forming technologies to maintain system voltage and frequency support, and the costs thereof.

22. In Case No. 2022-00402, LG&E/KU refer to the "execution" risk related to solar resources, meaning that there is a risk of failure to acquire planned resources due to the potential unavailability of components when needed and/or at the prices assumed. Indicate whether the Company agrees that it faces execution risk associated with its proposed solar resources and that there is a probability of failure, potentially a high probability of failure. Explain your response and provide all evidence relied on to inform and/or otherwise relied on for your response.

23. Refer to the following narrative in the IRP Report at 26: "A key assumption in the 2019 Preferred Plan that is not included in the current IRP was the continued stake in the Mitchell coal plant (780 MW), which is now divested in 2028." In addition, refer to Exhibit E2 at 225, specifically to the columns entitled "Existing Depreciation," "Capital Charge," and "Fixed O&M."

    a. Describe the amounts in each column and provide the depreciation expense, capital charge, and fixed O&M by year for each existing generating resource. In addition, provide the Company's calculations and/or all other support for the amounts included in each of these columns for each existing generating resource.

    b. Describe the Company's assumptions with respect to the disposition of the Company's ownership in the Mitchell plant in 2028, including the transition of the Company's ownership in the plant to Wheeling Power Company or Appalachian Power Company and the price the purchaser will pay the Company for its ownership in the plant.

24. In the Company's preferred plan, "the Big Sandy steam gas unit operates for an additional 10 years through mid-2041 . . . 800 MW of new solar and 700 MW of new wind by 2037 . . . 480 MW of new gas CT units in 2029 . . . 70-80 MW of short-term capacity purchases are made through 2026 and 407 MW in 2028 to bridge between the retirement of Mitchell and the addition of gas CT units . . . [and] 50

MW of 4-hour lithium-ion battery storage is added in 2035." (IRP report at 15). In comparison, the Company's "CC portfolio adds 418MW of 1x1 Combined Cycle, 700MW of wind, 800MW of solar, and 50MW of storage by 2037. This portfolio also includes the extension of operations for the Big Sandy gas unit until 2041. Short-Term Market Purchases (STMP) are utilized with up to 78 MW annually through 2026 and 407 MW in 2028 to fully satisfy near-term adequacy. (IRP report at 159).

a. Confirm that the only difference in the CC portfolio compared to the Company's preferred plan is the substitution of 418 mW of NGCC capacity for the 480 mW of NGCT capacity and that all other resources are the same between the CC portfolio and the Company's preferred plan. If this is not correct, then provide a corrected statement.

b. The Company states that "The CC portfolio was modeled following Stakeholder feedback and included the same assumptions as the Reference portfolio. In this portfolio, a CC was assumed to be built in 2029 in place of the CT from the Reference portfolio, and optimization was performed around this assumption." Describe how the Company performed this "optimization." Identify all constraints introduced in the CC portfolio, such as designated/forced renewables and storage resource selections, compared to the optimization modeling and resource selections utilized to develop the Company's preferred plan.

c. Explain why there is no reduction in the new solar, wind, and storage resources in the CC portfolio compared to the Company's preferred plan.

25. Provide and describe in detail all reasons why the Company included the storage resource in its preferred plan. If one reason is that the Company believes it is economic, then provide all support for this conclusion. If it is not economic, then provide all support for this conclusion and explain why the Commission should provide a CPCN for a resource that is not economic.

26. Reference the IRP at p. 15, regarding the proposed 50 MW, 4-hour lithium-ion battery. Explain whether a physical location for this potential resource has been identified. If it would not be located within the KPCo service territory, explain whether any new transmission facilities or upgrades would be required. If so, explain whether cost estimates for all such transmission projects were factored into the analysis, and identify where they can be found.

27. Refer to the IRP report at 127 wherein it states: "Under the Reference scenario policymakers enact measures that put moderate pressure on the economy to reduce greenhouse gas emissions in the form of a carbon price starting in 2030 . . . Under this scenario, a national cap on carbon is instituted starting in 2029 with prices starting at approximately $30/Ton (real $2021) and rising to around $43/Ton by 2037." Refer also to Figure 48 in the IRP report at 128 wherein the Company graphically presents its carbon cost estimate in real dollars per short ton.

    a. Provide a link to and/or all other documentation relied on for the $30/ton in real $2021 used in the ECR scenarios.

    b. Provide a link to and/or all other documentation relied on for the $10/ton used in the scenarios other than the ECR and NCR scenarios.

    c. Provide the data used in Figure 48.

    d. Explain why the high carbon tax begins in 2028 and the low carbon tax begins in 2029 as shown in Figure 48.

    e. Explain why the $30/ton (real $2021) increases to $43/ton in 2037 as shown on Figure 48, while the $10/ton (real $2021) increases to $11/ton or $12/ton in 2037.

    f. Provide a table showing the carbon assumptions in nominal dollars as escalated and incorporated in the Company's modeling by year for each of the five scenarios. In addition, provide the escalation of the carbon assumptions by year in an Excel spreadsheet in live format and with all formulas intact.

28. Provide a narrative explanation of why the Company included additional solar and wind resources in the preferred plan based on the CC scenario compared to the Reference portfolio, but retained the NGCT resource in the preferred plan from the Reference portfolio, despite the fact that the additional solar increases the CPW in the preferred plan compared to the Reference portfolio.

29. Reference the IRP, p. 13. Of the four customer and corporate objectives identified therein (customer affordability, rate stability, maintaining reliability, and sustainability), explain whether any priority or rank-order exists.

30. Reference the IRP p. 14, Fig. ES-2.

a. Provide Kentucky Power's share of projected O&M costs for the Mitchell plant for the period 2023-2027.

b. Describe the new DSM resources that the Company envisions for 2027.

31. Reference the IRP at p. 15. Explain what measures and additional capex, if any, would be required to extend the operating life of the Big Sandy gas plant through mid-2041.

a. Explain whether the Big Sandy plant would be the subject of a New Source Review if its operating life was extended.

32. Explain whether Kentucky Power intends to offer an RFP. If so, provide all details.

33. Reference the IRP at p. 16, the first full paragraph, the following sentence: "It should be noted that growth for the commercial class is fueled by a large customer addition."

a. Explain whether this refers to a single commercial customer.

b. If the response to subpart a., above is "yes," explain what impact or change on the IRP and its assumptions would occur in the event the large commercial customer referenced therein does not achieve the anticipated load.

34. Reference the IRP at p. 64, item no. 3. Given the abandonment of the sale of Kentucky Power to Liberty, discuss how the Company will approach VVO and demand response programs going forward.

35. Reference the IRP at p. 67. Provide an update on the progress of the transmission line projects in Perry and Leslie Counties.

36. Refer to Figure 12 in the IRP report.

a. Provide a monthly version of this figure for calendar years 2028 and 2029.

b. Confirm that the Company will have its ownership share of Mitchell available for capacity and energy purposes through December 31, 2028. If this is not correct, then provide a corrected statement and a detailed explanation as to why it was necessary to correct the statement.

c. Provide a narrative explanation why the Company excluded the Mitchell capacity from the "going in" position for the entire calendar year 2028. Provide the link(s) and/or all other documentation that the Mitchell capacity should not or cannot be included for the entire calendar year 2028.

d. Refer to the IRP report at 110-111 wherein the Company addresses potential short term market capacity purchases. The Company states it assumed that this resource would have no energy available with the capacity and that it would have a term of one year. Address the Company's ability to buy capacity through the PJM BRA or elsewhere for the months in early 2029 that might be necessary in the event that the Company adds new capacity to replace Mitchell in the spring 2029 to coincide with the start of the new PJM planning year.

e. Refer to Figure 69 through 76 in the IRP report. Indicate the specific month in each year that each new capacity resource is added in the Reference portfolio and each other portfolio.

37. Indicate whether the Company plans to make a filing to retire or transfer through sale or otherwise its ownership share of the Mitchell Plant and if so, when it plans to make such a filing. Indicate whether such a filing would be made pursuant to the new SB 4 statute or pursuant to any other requirement or for any other reason. Explain your response and provide the relevant links or source documents relied on for your response, if any.

38. Indicate which new capacity resources and the MW capacity for each such resource identified in both the Reference portfolio and the Preferred Plan portfolio will be acquired specifically to replace the Mitchell Plant capacity. Indicate each such resource the Company considers to be "dispatchable" and provide the criteria used to make this determination. Provide all support for your response.

39. Explain to what extent the Preferred Plan's choices for carbon-free supply side generation resources are the result of any AEP corporate policy to link top executive's annual incentive pay with the adoption of non-emitting generation resources.

40. See Section 7.4.4.2, Table 22 of the IRP on page 170. Every portfolio yields a result of 74% CO_2 reduction in 2027 relative to 2005. Further, every portfolio yields a result of 86% to 94% CO_2 reduction in 2037 relative to 2005.

    a. Was a target CO_2 value included as a constraint in the modeling?

    b. If a target CO2 value was included as a constraint in the modeling, what were the specific terms of the constraint?

    c. If a target CO_2 value was included as a constraint in the modeling, provide all available justification for selecting that constraint.

41. See SB 192; 2023 Ky. Acts Ch. 72. Discuss whether this new law will allow for the Company's plan to be implemented as filed.

42. See Section 7.3.1 of the IRP at page 160 where the contents of the "No Wind" portfolio are discussed and page 162 where it states, "[t]he No Wind portfolio has the highest cost at $360 million CPW above the Reference portfolio owing in large part to the inability to access low-cost wind resources requiring a shift towards higher cost solar and storage." Why does the exclusion of wind necessarily "requir[e]" the inclusion of "higher cost solar and storage?"

43. Kentucky Power's entitlement to Mitchell capacity runs through at least December 31, 2028 (even though its ownership extends beyond 2028). Did the modeling assume that replacement capacity for Mitchell would be needed beginning January 1, 2029? Please explain.

44. Kentucky Power's entitlement to Mitchell capacity runs through at least December 31, 2028 (even though its ownership extends beyond 2028). Did the modeling assume that replacement capacity for Mitchell would be needed beginning June 1, 2028 (the beginning of the PJM planning year)? Please explain.