

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC 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.

1_1

RESPONSE

Please see the Company's response to KPSC 1_8 for the requested information.

Witness: Gregory J. Soller

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Describe in detail Liberty's involvement in the development of the IRP in
1_2 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.

RESPONSE

Liberty participated in the IRP stakeholder process, and its input was considered, along with the input of other stakeholders. Liberty did not have decision-making authority related to the process to prepare the IRP or with respect to the IRP's content. All decisions were made by Kentucky Power. There are no functions or activities performed by Liberty that would be reflected in a chronological timeline of the preparation of the IRP.

Witness: Brian K. West

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Provide a list of each Liberty employee/consultant, position and company
1_3 affiliation for each employee/consultant, and each employee/consultant's
role in the development of the IRP.

RESPONSE

The Company prepared the IRP. No Liberty employees or consultants hired by Liberty participated directly in its preparation or analysis. The Company engaged Charles River Associates to assist in preparing the IRP on behalf of the Company. This decision was made by the Company, not Liberty. See the Company's response to AG-KIUC 1-2.

Witness: Brian K. West

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Provide a copy of Liberty’s objectives, directives, positions, and/or
1_4 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.

RESPONSE

The Company objects to this request on the basis that it seeks information that is neither relevant to this proceeding nor reasonably calculated to lead to the discovery of admissible evidence. Notwithstanding these objections, Kentucky Power does not have any of the requested documents in its possession or control. See also the Company's responses to AG-KIUC 1-2 and 1-3.

Witness: Brian K. West

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Provide a copy of all agreements between Liberty, AEP, and/or the
1_5 Company for Liberty to participate in the development of the IRP and/or
to share information.

RESPONSE

Kentucky Power does not have any such requested documents in its possession or control.

Witness: Brian K. West

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Refer to the following narrative in the IRP report at 24:
1_6

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.

RESPONSE

a. and b. The PCBA was contingent on the sale to Liberty occurring. Since the sale to Liberty has been terminated, the PCBA never went into effect. The Company relies on its participation in the existing Power Coordination Agreement (PCA) for the 2023/24 PJM Delivery Year. For PJM Delivery Years 2024/25 and 2025/26, the Company has bilateral contracts for capacity with a third party.

Witness: Brian K. West

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Explain whether the termination of Liberty's acquisition of Kentucky
1_7 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.

RESPONSE

The termination of Liberty's acquisition of Kentucky Power did not change any of the assumptions or conclusions of the IRP and no modifications are required.

Witness: Brian K. West

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Confirm that the Company evaluated only owned solar and did not
1_8 evaluate PPA solar resources. If confirmed, explain why it did not
 evaluate PPA solar resources.

RESPONSE

As discussed in Section 5.4.2 of the IRP, the Company modeled two different tiers of solar resources to reflect the range of potential RFP responses that might be received. The analysis of a specific PPA offering would be completed during an RFP process.

Witness: Gregory J. Soller

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC 1_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.

RESPONSE

For IRP planning purposes, the Company assumes the total cost profile of a PPA and a company-owned resource to be the same. Please see AG_KIUC 1_8 for the Company's approach to modeling solar resources in this IRP.

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Refer to Figure 41 in the IRP report. Provide a schedule showing the
1_10 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.

RESPONSE

Please see KPCO_R_KPSC_1_8_Attachment9 under the tab "ELCC".

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Refer to Figure 42 in the IRP report. Provide a schedule showing the
1_11 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.

RESPONSE

Please see KPCO_R_KPSC_1_8_Attachment9 under the tab "ELCC".

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Indicate whether the Company has identified potential on shore wind
1_12 resource sites in Kentucky.

RESPONSE

The identification of specific resources was not done as part of this IRP.

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Indicate whether the Company has identified potential off shore wind
1_13 resource sites in Kentucky.

RESPONSE

The identification of specific resources was not done as part of this IRP.

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Indicate whether the Company has identified potential on shore wind
1_14 resource sites in states other than Kentucky.

RESPONSE

The identification of specific resources was not done as part of this IRP.

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Indicate whether the Company has identified potential off shore wind
1_15 resource sites in states other than Kentucky.

RESPONSE

The identification of specific resources was not done as part of this IRP.

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

**AG_KIUC
1_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.

RESPONSE

The IRP does not specify the location of selected resources. Please refer to the Company's response to KPSC 1_42 for the assumptions associated with the generic transmission related costs included for the resources modeled. The identification of specific transmission facilities is not within the scope of the IRP.

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Indicate if AEP has an unregulated renewables generation business
1_17 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.

RESPONSE

The Company objects to this request to the extent it seeks information not in the possession, custody, or control of the Company. The Company further objects to this request to the extent it seeks information about affiliates of Kentucky Power that are not subject to the jurisdiction of the Commission. The Company further objects on the ground that the request seeks information that is not relevant to these IRP proceedings nor reasonably calculated to lead to the discovery of admissible evidence. The Company further objects to this request on the basis that the terms "unregulated renewable generation business" and "regulated utilities" are ambiguous and overbroad. Kentucky Power's affiliates and non-affiliate utilities are subject to regulatory oversight and requirements under a wide variety of federal and state rules, which change from time to time, making the terms "unregulated renewable generation business" and "regulated utilities" unintelligible without a determination of the regulatory scope applicable to each entity and the time period concerning the request. Without waiving these objections, the Company states as follows:

Affiliates of Kentucky Power from time to time have developed (and/or may have the ability to develop) solar, wind, and/or other renewable electric generation resources and either sell the facilities, services related to the facilities, or their output to one or more Kentucky Power affiliates or to unaffiliated third parties, pursuant to power purchase agreements (PPAs) or other agreements, subject to a wide variety of regulatory requirements at the state and federal level, when applicable. Currently Kentucky Power does not have a PPA or other form of agreement with such an affiliate to acquire renewable electric generation resources or their output.

Witness: Brian K. West

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

**AG_KIUC
1_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.

RESPONSE

Please see response to KPSC 1_45.

Witness: Gregory J. Soller

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Describe specifically the evaluation and decision process, including the
1_19 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.

RESPONSE

Please see response to KPSC 1_45.

Witness: Gregory J. Soller

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC 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.
1_20

RESPONSE

The IRP relied on EIA estimated resource costs from the AEO 2022 report for modeling that is publicly available online at https://www.eia.gov/outlooks/aeo/assumptions/pdf/table_8.2.pdf.

The IRP does not make assumptions about sources, availability and prices of panels.

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Given the inclusion of significant levels of renewable generation in the
1_21 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.

RESPONSE

In this IRP, the criteria referenced in the question were not selection criteria for IRP resources. The IRP criteria for resource selection relied on the PJM published planning installed reserved margin, as discussed in Section 3.2 of the IRP.

In addition, the IRP assumes Kentucky Power has access to the transmission grid operated by PJM.

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC In Case No. 2022-00402, LG&E/KU refer to the “execution” risk related
1_22 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.

RESPONSE

The Company objects to the request on the ground that the term "'Execution' risk" is
ambiguous and susceptible to multiple interpretations.

For this IRP, the various types of resources modeled for potential selection are assumed
to be available from the market as modeled. The IRP included assumptions about (a) the
timing when solar resources can first be made available, and (b) the annual and
cumulative quantities that can be added, as discussed in Section 5.4.2 of the IRP.

Witness: Gregory J. Soller

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

- AG_KIUC
1_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.

RESPONSE

- a. Please see KPCO_R_AG_KIUC_1_23_Attachment1.
The depreciation expense for the existing generating resources includes depreciation associated with the base unit and the depreciation associated with ongoing Capital Expenditure, including the continued operation of Big Sandy Unit 1. The Fixed O&M includes modeled operational and maintenance costs. The capital charge reflects the assumed recovery of fixed costs incurred by Kentucky Power.
- b. The IRP includes assumptions about the availability of the Mitchell Plant as a Kentucky Power resource. The IRP does not make an assumption about the ownership of Kentucky Power's interest in the Mitchell Plant.

Witness: Brian K. West

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023
Page 1 of 2

DATA REQUEST

AG_KIUC 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).

1_24

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.

RESPONSE

a) Confirmed.

b) To model the CC Portfolio, the Company used the same assumptions as the Reference Case with the only exception that the CC resource was forced in as a resource in 2029.

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023
Page 2 of 2

The model was run to select the balance of optimized resources to meet the Company's capacity obligation.

c) Please see response to KPSC_1_45 for a description of how the Company identified the Preferred Plan. The Preferred Plan incorporates elements of two optimized portfolios that included the renewable and storage resources selected in the CC portfolio.

Witness: Gregory J. Soller

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC 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.
1_25

RESPONSE

The 50MW stand-alone storage resource was selected first in 2035 in the CC Portfolio modeling. This storage was retained in the Preferred Plan (PP) considering additional potential capacity benefit it would provide under a winter construct in the long-term.

Witness: Gregory J. Soller

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

**AG_KIUC
1_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.

RESPONSE

The IRP does not specify the location of selected resources. Please refer to the Company's response to KPSC 1_42 for the assumptions associated with the generic transmission related costs included for the resources modeled. The identification of specific transmission facilities is not within the scope of the IRP.

Witness: Gregory J. Soller

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023
Page 1 of 2

DATA REQUEST

**AG_KIUC
1_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.

RESPONSE

a and b) This was a general assumption made to account for a potential future scenario with emissions cost in this range. It can be treated as a sensitivity metric. Given a number of previous federal proposals to regulate carbon emissions, this can be seen as a proxy for several different potential pathways for legislative action or executive regulation.

c) Please see KPCO_R_KPSC_1_8_Attachment9, CO2 Emission Price worksheet.

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023
Page 2 of 2

- d) The high carbon price in ECR begins one year earlier to account for risk of more stringent timing of emissions regulation, in addition to more stringent price level.
- e) To support different scenarios and to explore a broader range of possible portfolios, a moderate and a high CO2 price views are escalated at different rates annually. In the moderate view, CO2 price begins in 2030 at \$13.6/short ton (nominal), escalating at a rate of 3.5% per annum on a nominal basis, while for the high view, CO2 price begins in 2029 at \$36.3/short ton (nominal), escalating at 5% per annum on a nominal basis. The High view escalation was higher to reflect greater incentive to reduce emissions. Once the nominal trajectories are calculated on nominal prices, these are deflated to real \$2021, resulting in the trajectories presented in the report.
- f) Please see KPCO_R_KPSC_1_8_Attachment9, CO2 Emission Prices worksheet.

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC 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.
1_28

RESPONSE

Please see response to KPSC_1_45.

Witness: Gregory J. Soller

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Reference the IRP, p. 13. Of the four customer and corporate objectives
1_29 identified therein (customer affordability, rate stability, maintaining
reliability, and sustainability), explain whether any priority or rank-order
exists.

RESPONSE

No priority or rank-order was applied to the different objectives and metrics identified in the IRP scorecard.

Witness: Brian K. West

Witness: Gregory J. Soller

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

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

1_30

- 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.

RESPONSE

a. Please refer to KPCO_R_AG KIUC_1_23 Attachment1 for the projected O&M costs included in the IRP model for the Mitchell Plant.

b. The new DSM resources selected by the model for the IRP are proxy energy efficiency resources identified in the benchmarking analysis described in section 4.1. For this IRP, the model selected 15MW of residential bundles and 16MW of Commercial & Industrial bundles in 2027. In addition, 1MW of Income Qualified bundles were included in all portfolios in 2027. Actual DSM programs would be identified as part of the Company's upcoming DSM filing. Please also see the Company's response to KPSC 1-52.

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Reference the IRP at p. 15. Explain what measures and additional capex,
1_31 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.

RESPONSE

The Company objects to subsection (a) of this request to the extent it seeks legal analysis, a legal opinion or legal strategy, which are not the appropriate subject of discovery. Without waiving these objections, the company states as follows.

For purposes of the IRP, additional Capex to support extending operation of the Big Sandy unit 1 for an additional 10 years is estimated at \$2.5 million in 2031 and includes work for a routine turbine inspection and maintenance cycle.

a. The continued operation of the Big Sandy unit 1 is not expected to be the subject of a New Source Review as estimated work is expected to be of routine maintenance and capital expenditures.

Witness: Gregory J. Soller

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Explain whether Kentucky Power intends to offer an RFP. If so, provide
1_32 all details.

RESPONSE

The Company objects to this request to the extent it seeks information that is irrelevant to these IRP proceeding and not reasonably calculated to lead to the discovery of admissible evidence. Without waiving these objections, the Company states as follows:
See the Company's response to KPSC 1_50.

Witness: Brian K. West

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Reference the IRP at p. 16, the first full paragraph, the following sentence:
1_33 “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.

RESPONSE

- a. Yes, it refers to one customer.

- b. Please see KPCO_R_AG_KIUC_1_33_ConfidentialAttachment1 for the requested information.

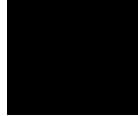
Witness: Glenn R. Newman

**Kentucky Power Company
Commercial Large Customer Addition**

KPSC Case No. 2023-00092
AG_KIUC's First Set of Data Requests
Dated May 22, 2023
Item No. 33
Public Attachment 1
Page 1 of 1

Load Addition in 2023

Load Addition in 2024 and Beyond



Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Reference the IRP at p. 64, item no. 3. Given the abandonment of the sale
1_34 of Kentucky Power to Liberty, discuss how the Company will approach
VVO and demand response programs going forward.

RESPONSE

The Company will continue to evaluate possible future installations of VVO on its circuits. See also the Company's response to KPSC 1-52.

Witness: Brian K. West

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Reference the IRP at p. 67. Provide an update on the progress of the
1_35 transmission line projects in Perry and Leslie Counties.

RESPONSE

The transmission line projects discussed on IRP page 67 are part of the transmission network in the Hazard-Wooton area.

The Wooton – Stinnett 161kV rebuild construction is planned to start in the 2nd quarter of 2024, with planned in-service dates (ISD) of November 2024 for Wooton-Leslie and November 2025 for Leslie-Stinnett.

The ISD for Stinnett – Pineville 161kV rebuild project has been postponed to 2030.

Witness: Kamran Ali

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023
Page 1 of 2

DATA REQUEST

- AG_KIUC** Refer to Figure 12 in the IRP report.
1_36
- 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.

RESPONSE

The Company objects to this request to the extent it seeks legal analysis, a legal opinion, or a discussion of the Company's legal strategy, which are not the appropriate subject of discovery. Without waiving this objection, the Company states as follows:

- a) The IRP is based on PJM's annual capacity accreditation construct and has not been prepared on a monthly basis.
- b) For purposes of the IRP, because the Mitchell Plant is assumed not to be a resource available to the Company after December 31, 2028, the period between May 31, 2028

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023
Page 2 of 2

and December 31, 2028 would be insufficient to satisfy the Company's PJM capacity requirements for the PJM 28/29 Planning year. A resource is required starting June 1, 2028 that would count towards satisfying the Company's capacity requirements for the entire 28/29 PJM Planning year.

c) For purposes of the IRP, the Mitchell Plant is insufficient to satisfy Kentucky Power's PJM capacity requirements for the PJM Planning Year 2028/2029. Please see response to subsection (b). The availability of the Mitchell capacity is represented in Figure 12 in the 2027 data point, which represents the PJM planning year 2027/2028.

d) For purposes of the IRP, it is assumed that the Company fulfills its PJM capacity obligations through PJM's Fixed Resource Requirement alternative. Under PJM's rules such an election is done three years in advance of the 12-month period applicable to the capacity auction, which is usually from June of one year to May from the following year. The IRP assumes that a resource is required to be available for an entire PJM planning year in order to count toward satisfying the Company's capacity requirements as an FRR entity for the applicable period. The results of the analysis does not change by introducing a resource that is only available for a partial PJM Planning Year. The modeling evaluates resource capacity contributions to the Company's PJM obligations only for resource available from June 1 through May 31 of the following year.

e) New capacity resources are expected to begin operations on January 1st of each respective year in the IRP model.

Witness: Brian K. West

Witness: Gregory J. Soller

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Indicate whether the Company plans to make a filing to retire or transfer
1_37 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.

RESPONSE

The Company objects to this request to the extent it seeks legal analysis or a legal opinion, or a discussion of the Company's legal strategy, none of which is the appropriate subject of discovery.

Without waving this objection, the Company states as follows: Please refer to the Company's response JI 1_7.

Witness: Brian K. West

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

**AG_KIUC
1_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.

RESPONSE

Please refer to the Company's response JI 1_7. The IRP identified a mix of resources to meet its PJM capacity obligation with an assumption that the Mitchell Plant capacity was not part of the plan after PJM Planning Year 2027/2028. All the resources identified would be considered as part of the solution to meet the Company's capacity obligation.

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Explain to what extent the Preferred Plan's choices for carbon-free supply
1_39 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.

RESPONSE

The Company objects to this request to the extent the terms "AEP corporate policy to link top executive's annual incentive pay with the adoption of non-emitting generation resources" as stated in the question are ambiguous and overly broad, as the request makes no reference to any specific time period, location, or scope. Without waiving these objections, the Company states as follows: To no extent are the Preferred Plan's choices for carbon-free supply side generation resources the result of any AEP corporate policy to link top executive's annual incentive pay with the adoption of non-emitting generation resources. The IRP does not make an assumption regarding any AEP corporate policy regarding the adoption of non-emitting generation resources, their timing, location, or scope.

Witness: Brian K. West

Witness: Gregory J. Soller

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC See Section 7.4.4.2, Table 22 of the IRP on page 170. Every portfolio
1_40 yields a result of 74% CO2 reduction in 2027 relative to 2005. Further,
every portfolio yields a result of 86% to 94% CO2 reduction in 2037
relative to 2005.

- a. Was a target CO2 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 CO2 value was included as a constraint in the modeling, provide all available justification for selecting that constraint.

RESPONSE

- a) No

- b) N/A

- c) N/A

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC See SB 192; 2023 Ky. Acts Ch. 72. Discuss whether this new law will
1_41 allow for the Company's plan to be implemented as filed.

RESPONSE

The Company objects to the request to the extent it calls for legal analysis or opinions, which are not the appropriate subject of discovery.

Witness: Counsel

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC See Section 7.3.1 of the IRP at page 160 where the contents of the “No
1_42 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?”

RESPONSE

The Company understands this statement is referring to Section 7.4.1.2 on page 162.

The exclusion of wind eliminated the relative capacity and energy value of that resource. Solar resources were selected as part of an optimized portfolio that excluded wind resources as an option. The wording in the IRP suggesting solar resources are "required" is better stated as less economic resources (for example, solar or storage) would be required in place of wind if wind is not available.

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Kentucky Power's entitlement to Mitchell capacity runs through at least
1_43 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.

RESPONSE

The modeling assumed the replacement capacity would be needed for the PJM Planning
Year 2028/2029 that begins June 1, 2028.

Witness: Thomas Haratym

Kentucky Power Company
KPSC Case No. 2023-00092
AG-KIUC's First Set of Data Requests
Dated May 22, 2023

DATA REQUEST

AG_KIUC Kentucky Power's entitlement to Mitchell capacity runs through at least
1_44 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.

RESPONSE

The modeling assumed the replacement capacity would be needed for the PJM Planning
Year 2028/2029 that begins June 1, 2028.

Witness: Thomas Haratym



Soller Verification Form rev1.doc

DocVerify ID: 7DAF9A38-B50A-4A15-B9D9-248EBF121104
 Created: June 16, 2023 04:47:18 -8:00
 Pages: 1
 Remote Notary: Yes/ State: KY

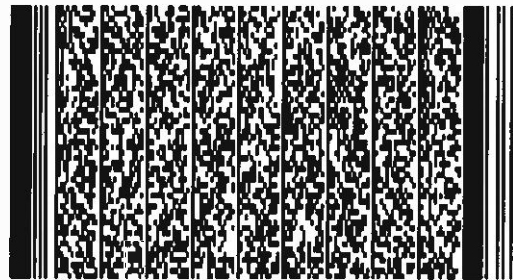
This document is a DocVerify VeriVaulted protected version of the document named above. It was created by a notary or on the behalf of a notary, and it is also a DocVerify E-Sign document, which means this document was created for the purposes of Electronic Signatures and/or Electronic Notary. Tampered or altered documents can be easily verified and validated with the DocVerify veriCheck system. This remote online notarization involved the use of communication technology.

Go to www.docverify.com at any time to verify or validate the authenticity and integrity of this or any other DocVerify VeriVaulted document.

E-Signature Summary

E-Signature 1: Gregory Jerome Soller (GJS)
 June 16, 2023 08:36:37 -8:00 [D48C371F47DA] [167.239.221.106]
 gsoller@aep.com (Principal) (Personally Known)

E-Signature Notary: Jennifer Young (JAY)
 June 16, 2023 08:36:37 -8:00 [84969C7E5A20] [167.239.221.105]
 jayoung1@aep.com
 I, Jennifer Young, did witness the participants named above electronically sign this document.



VERIFICATION

The undersigned, Gregory J. Soller, being duly sworn, deposes and says he is the Resource Planning Manager for American Electric Power Service Corporation, that he has personal knowledge of the matters set forth in the foregoing responses and the information contained therein is true and correct to the best of his information, knowledge, and belief.

Gregory Jerome Soller

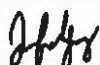
Signed on 2023-06-16 08:36:37 -4:00

Gregory J. Soller

Commonwealth of Kentucky)
)
County of Boyd)

Case No. 2023-00092

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Gregory J. Soller, on June 16, 2023.


Signed on 2023-06-16 08:36:37 -4:00

Notary Public

JENNIFER A. YOUNG
ONLINE NOTARY PUBLIC
STATE AT LARGE KENTUCKY
Commission # KYNP31964
My Commission Expires Jun 21, 2025

Notary Stamp 2023-06-16 08:36:37 PST

Notarial act performed by audio-visual communication

My Commission Expires 06/21/25

Notary ID Number KYNP31964



Haratym Verification Form.doc

DocVerify ID: CB297779-5DB4-4ADA-8EDD-A93C4E6E531A
Created: June 13, 2023 04:55:51 -8:00
Pages: 1
Remote Notary: Yes/ State: KY

This document is a DocVerify VeriVaulted protected version of the document named above. It was created by a notary or on the behalf of a notary, and it is also a DocVerify E-Sign document, which means this document was created for the purposes of Electronic Signatures and/or Electronic Notary. Tampered or altered documents can be easily verified and validated with the DocVerify veriCheck system. This remote online notarization involved the use of communication technology.

Go to www.docverify.com at any time to verify or validate the authenticity and integrity of this or any other DocVerify VeriVaulted document.

E-Signature Summary

E-Signature 1: Tomasz Haratym (TH)
June 13, 2023 06:35:32 -8:00 [3CF9324F0EF6] [99.254.91.240]
tharatym@crai.com (Principal) (Personally Known)

E-Signature Notary: Jennifer Young (JAY)
June 13, 2023 06:35:32 -8:00 [599EDD091FE2] [167.239.221.104]
jayoung1@aep.com
I, Jennifer Young, did witness the participants named above electronically sign this document.



VERIFICATION

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



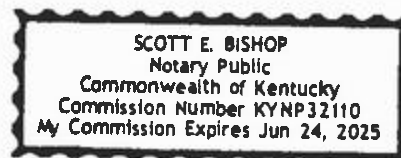
Brian K. West

Commonwealth of Kentucky)
)
County of Boyd)

Case No. 2023-00092

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Brian K. West, on June 15, 2023.

Scott F. Bishop
Notary Public



My Commission Expires June 24, 2025

Notary ID Number KYNP 32110

VERIFICATION

The undersigned, Kamran Ali, being duly sworn, deposes and says he is the Vice President of Transmission Planning and Analysis for American Electric Power Service Corporation, that he has personal knowledge of the matters set forth in the foregoing responses and the information contained therein is true and correct to the best of his information, knowledge, and belief.

Kamran Ali

KamranAli

State of Ohio)
County of Franklin)

Case No. 2023-00092

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Kamran Ali, on June 8th 2023

Brittany Henry
Notary Public



My Commission Expires 09 07 25

Notary ID Number 2020-RE-819525



Newman Verification Form rev1.doc

DocVerify ID: 6D1A12C1-918E-40B9-A620-9405F3961AC3
Created: June 14, 2023 04:56:14 -8:00
Pages: 1
Remote Notary: Yes/ State: KY

This document is a DocVerify VeriVaulted protected version of the document named above. It was created by a notary or on the behalf of a notary, and it is also a DocVerify E-Sign document, which means this document was created for the purposes of Electronic Signatures and/or Electronic Notary. Tampered or altered documents can be easily verified and validated with the DocVerify veriCheck system. This remote online notarization involved the use of communication technology.

Go to www.docverify.com at any time to verify or validate the authenticity and integrity of this or any other DocVerify VeriVaulted document.

E-Signature Summary

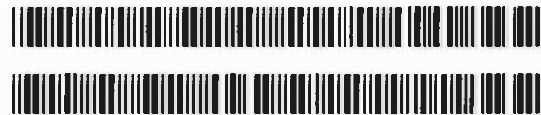
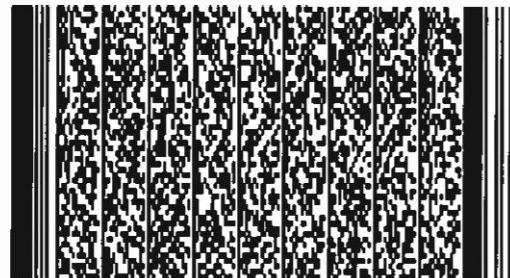
E-Signature 1: Glenn Newman (GN)

June 14, 2023 08:38:19 -8:00 [F27763056967] [167.239.221.105]
rnewman@aep.com (Principal) (Personally Known)

E-Signature Notary: Jennifer Young (JAY)

June 14, 2023 08:38:19 -8:00 [5076D09D8147] [167.239.221.107]
jayoung1@aep.com

I, Jennifer Young, did witness the participants named above electronically sign this document.



VERIFICATION

The undersigned, Glenn R. Newman, being duly sworn, deposes and says he is the Manager of Economic Forecasting for American Electric Power Service Corporation, that he has personal knowledge of the matters set forth in the foregoing responses and the information contained therein is true and correct to the best of his information, knowledge, and belief.


Glenn Newman

Glenn R. Newman

Commonwealth of Kentucky)
)
County of Boyd)

Case No. 2023-00092

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Glenn R. Newman, on June 14, 2023.


Notary Public

JENNIFER A. YOUNG
ONLINE NOTARY PUBLIC
STATE AT LARGE KENTUCKY
Commission # KYNP31964
My Commission Expires Jun 21, 2025

Notarial act performed by audio-visual communication

My Commission Expires 06/21/2025

Notary ID Number KYNP31964