

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

**ELECTRONIC 2023 INTEGRATED)
RESOURCE PLANNING REPORT OF)
BIG RIVERS ELECTRIC CORPORATION)**

Case No. 2023-00310

**ATTORNEY GENERAL’S FIRST REQUEST FOR INFORMATION TO
BIG RIVERS ELECTRIC CORPORATION**

Comes now the intervenor, the Attorney General of the Commonwealth of Kentucky, through his Office of Rate Intervention (“Attorney General”), and submits his First Request for Information to Big Rivers Electric Cooperative, Inc. (hereinafter “Big Rivers” or the “Company”) to be answered by January 5, 2023, and 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 company receives or generates 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 for the Office of Attorney General.

(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 the Office of the Attorney General 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.

(16) “Affordable” shall mean “able to be afforded; having a cost that is not too high.”

(17) “Reliable” shall mean “suitable or fit to be relied on; giving the same result on successive trials.”

(18) “Sustainable” shall mean “of, or relating to, or being a method of using resources so that the resource is not depleted or permanently damaged.”

Respectfully submitted,

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Certificate of Service and Filing

Pursuant to the Commission's Orders and in accord with all other applicable law, Counsel certifies that the foregoing electronic filing was transmitted to the Commission on December 8, 2023, and there are currently no parties that the Commission has excused from participation by electronic means in this proceeding.

This 8th day of December, 2023.

A handwritten signature in blue ink, consisting of a stylized 'M' followed by a horizontal line.

Assistant Attorney General

1. Provide a copy of any communications to Clearspring Energy Advisors, LLC and 1898 & Co. regarding objectives, directives, positions, and/or decisions regarding the development of the IRP, including assumptions not identified in the IRP, resource alternatives, modeling alternatives, identification and selection of the reference and alternative cases communicated in writing to the Company. Such communications, include, but are not limited to, emails, presentations, notes made by Clearspring Energy Advisors, LLC and 1898 & Co. and/or Company personnel, and other documents.
2. Refer to Section 3.5, State Regulatory Events, 2023 Integrated Resource Plan, page 45. Confirm that utility owned solar and purchase power agreements (“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.
 - a. Confirm that all cost and supply projections and assumptions reflect this difference.
 - b. Provide a copy of all the materials, studies, and/or other resources used in modeling the projections and assumptions from the PPA.
3. Refer to Section 2.2.5, Solar Resources, 2023 Integrated Resource Plan, page 23, 106. Big Rivers has “contracted to purchase all of the capacity, energy, ancillary services and environmental attributes of a 160 MW solar facility, Unbridled Solar, LLC.” Big Rivers states that this PPA is modeled to be operational in June of 2024,

however, footnote 73 states that “in-service... solar has been delayed to 2025 at the time of this IRP filing.”

- a. Explain, in detail, how this delay impacts each aspect of Big Rivers IRP, including but not limited to, specifically identifying by section and page each assumption, projection, and analysis in the IRP that will be impacted by the delay.
 - b. Explain, in detail, why Big Rivers was incorrect in its assumption that Unbridled Solar, LLC would be operational in June of 2024.
 - c. Explain whether the completion of the facility is delayed until 2025. If so, explain when the commercial operations date or “in-service” capability will begin, and at what date Unbridled Solar, LLC’s power will be added to Big River’s base portfolio. Please provide all documentation to support your assessment.
 - d. Confirm that the Unbridled Solar, LLC is at this time still being constructed with the capacity of producing 160 MW. Please support your answer with documentation.
 - e. If you are unable to affirmatively answer subsection (d) of this Request, please confirm that Big Rivers has no indication that Unbridled Solar, LLC will not be able to provide 160 MW once the facility is complete.
4. Indicate whether the Company has identified potential on-shore wind resource sites in Kentucky. If so, please include any studies or materials relied on in analyzing the same.

5. Indicate whether the Company has identified potential on-shore wind resource sites in states other than Kentucky. If so, please include any studies or materials relied on analyzing the same.
 - a. If so: (i) explain whether any studies have been conducted regarding additional transmission costs that would be incurred in the event Big Rivers should enter into a PPA with the owner of the wind project; and (ii) provide copies of all such studies.
 - b. Reference IRP Section 7.4.2. Confirm the following statement at p. 156: “Big Rivers considers wind not economically feasible, as there were no wind resources proposed in our recent all source RFP, and the intermittent operation of wind remote to Big Rivers’ load brings the risk of congestion costs which are hard to quantify and/or hedge.”
6. Indicate whether Big Rivers has considered adding a new coal-fired unit to the Company’s generating fleet.
 - a. If not, explain why the Company has not analyzed this as a needed asset to meet its obligations of reliability.
 - b. If so, explain why the Company chose not to pursue this option, and provide the documents utilized in making this assessment.
 - c. For the existing Wilson coal-fired unit, have you considered locking in a long-term coal supply contract given the current cost is particularly low.
7. Describe specifically the evaluation and decision process, including the decision criteria, and the modeling processes utilized to determine the size and timing of the wind resources reflected in the Company’s IRP and each alternative portfolio

- studied in preparation of the same. 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.
8. Given the inclusion of, and reliance on, 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.
 9. 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.
 10. Refer to Section 7.2.1, Assumptions: Inputs and Constraints, 2023 Integrated Resource Plan, pages 135 & 135. Please provide a copy of the charts that are fully visible.
 11. Refer to Section 7.2.4, Assumptions: Resource Options, 2023 Integrated Resource Plan, page 120. 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 Big River’s 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.

- a. Confirm that use of batteries results in a 15% energy loss. If so confirmed, confirm that if plans for a battery are approved, the Company's customers would be paying the costs of this 15% energy loss, and getting nothing in return.
- b. Provide the Company's most recent transmission line loss figures.

12. Refer to Section 3.10, A Focus on Reliability, 2023 Integrated Resource Plan, page

61. Big Rivers is a member of the Midcontinent Independent System Operator ("MISO") and cites in its IRP a January 2023 MISO report which states, "that as the transition to different generation resources continues, society must decide how to balance reliability, sustainability, and affordability." In Section 1.0, Executive Summary, 2023 Integrated Resource Plan, page 8, Big Rivers "highlights a path" to "sustainability, reliability, cost-effective generation."

- a. Explain if Big Rivers agrees with any positions MISO has taken on "how to balance reliability, sustainability, and affordability."
- b. Does Big Rivers prioritize, or rank-order, the objectives of reliability, sustainability, and affordability?.
- c. If so, explain how the Company prioritizes these objectives.

13. Refer, generally, to the 2023 Integrated Resource Plan. Relating to MISO, Big Rivers cites changes to the MISO tariff, which impacts capacity requirements, as an uncertainty it must continually evaluate. Further, Big Rivers states it experiences losses in the MISO power market during off-peak hours, has had two PPAs

terminated due to MISO interconnection issues, and cites rapid fleet changes in the MISO region that give rise to urgent and complex reliability challenges. Big Rivers, however, states that through its participation in MISO, it has capitalized on selling its non-native load.

- a. Explain if, and how, membership in MISO has a net-positive financial impact on Big Rivers members.
- b. If applicable, provide the net savings that Big Rivers realized from its MISO membership from the date of its last IRP, and explain how the net savings was calculated.
- c. Explain in detail what significant beneficial operational changes have occurred due to the Company's membership in MISO.
- d. Explain all costs associated with the Company's membership in MISO.
- e. Explain if Big Rivers has considered terminating its membership in MISO, and if so, what was the reasoning for the decision to stay.

14. Refer to Section 3.8, Regulatory Climate, 2023 Integrated Resource Plan, page 57.

Big Rivers states that on September 15, 2023 it submitted a Letter of Intent "to fund a project that will significantly reduce carbon emissions in our service area."

- a. Explain the project in detail.
- b. Explain in detail whether this project is to be funded entirely by The Empowering Rural America Program ("NewERA").
- c. If the project is not funded in its entirety by NewERA, explain what expenses and/or liability Big Rivers will incur if the project is approved.

- d. Explain whether ratepayers would be responsible for paying any portion of this anticipated expense.

- 15. Refer to Section 3.5, State Regulatory Events, 2023 Integrated Resource Plan, page 44. Big Rivers states it has several “regulatory assets on its books arising out of its successful efforts to mitigate the loss of two large aluminum smelters, and each year utilizes its regulatory liability account to further reduce the regulatory assets.” Please list each regulatory asset, and describe how each regulatory asset was acquired.

- 16. Refer to Section 2.2.3, Capacity Resources, 2023 Integrated Resource Plan, page 18. Big Rivers states that it purchases 178 MW hydropower from the federal Southeastern Power Administration (“SEPA”).
 - a. Explain whether Big Rivers has analyzed if and how any drought conditions would affect its purchase of hydropower in the future.
 - b. Explain whether the hydropower provides reliable and continuous electricity to its customers.
 - c. For the hydropower produced provide the cost per MW.
 - d. Explain how Big Rivers would meet the anticipated increase in demand if a drought occurred before the Unbridled Solar, LLC facility is completed.
 - i. And if purchasing power from MISO is the answer, please rectify its above-cited concerns with MISO and why Big Rivers feels this strategy is the most reliable and sustainable.

- 17. Refer to Section 3.8, Regulatory Climate, 2023 Integrated Resource Plan, page 56. Explain whether Big Rivers has received any monies associated with the Inflation

Reduction Act (“IRA”) and/or Infrastructure Investment and Jobs Act (“IIJA”), and if so, identify the amount of money received and what Big Rivers intends to do with the funds.

18. Refer to Section 5.1, Demand Side Management (“DSM”), page 75. Provide a general description of how costs savings will be shared between Big Rivers, a wholesale power provider, and its Member-Owners who implement the programming.

a. List and explain all DSM programs Big Rivers and Member-Owners have negotiated and implemented or plan to implement.

19. Given the rising reliability issues facing the Commonwealth of Kentucky, has Big Rivers considered if the benefits of a direct interconnection with East Kentucky Power Cooperative, Inc. (“EKPC”) would not outweigh the costs? Upon belief, the two transmission systems come within a few miles of each other, and EKPC and LGE-KU have over 70 interconnections. Given EKPC interconnects with PJM, and its massive transmission system, this would seemingly interconnect the state’s regulated electric generating utilities, and would enhance state-wide reliability and perhaps offer new opportunities in the form of a much more robust physical hedge against reliability risks of all types. Further, it might enable Big Rivers at some point in the future to join PJM, and provide more interconnections between TVA and PJM. Please explain if Big Rivers has considered this, and if so, explain why the Company decided not to interconnect with EKPC.

a. Given the above, explain whether MISO is developing plans for more interconnections between the MISO and PJM footprints, such as it had

planned a few years ago with the Duff-Coleman project. Include in your response a discussion of whether the Company believes MISO might find value in interconnecting the Company's and EKPC's transmission systems. If so, explain whether the Company believes such an interconnection should be studied.

20. Provide the projected non-native sales forecast for the three-year IRP period.

21. Confirm that all generation resources at Sebree station are gas-fired.

- a. If so confirmed, identify the gas pipeline providing supply to Sebree station.
- b. Explain whether Big Rivers has ever considered dual-fuel capability at Sebree station. If so, provide copies of all relevant studies and analyses that may have been conducted in this regard.
- c. For the existing gas-fired unit, have you considered negotiating any termed supply contracts, or guaranteed delivery contracts, with the pipeline owner that might provide a beneficial hedge against potential increased fuel costs or lack of pipeline capacity?

23. Refer to Section 2.2.7 and Table 2.2.7 (a). Of the entities submitting RFIs, explain how many are data centers or crypto-mining entities that would carry a high fixed load for purposes of running computers, servers and other data processing equipment.

- a. Explain what policies Big Rivers has in place to ensure that an inordinate percentage of the Company's capacity will not be devoted toward meeting

the needs of a few high-load large industrial customers, such as was the situation prior to 2014 when the smelter load left the Big Rivers system.

- b. Are the Company's assumptions concerning economic development in its service area in line with the State's economic development plan, or alternatively, are the Company's assumptions and project economic development growth at a level even with, or greater than, the State's economic development plan?

- 24. Refer to Fig. 2.3 (a) and Table 2.3 (a). Provide the reason(s) for the increased heat rate between 2021-2022. Provide also the heat rate for CY 2023 year-to-date.
- 25. With regard to all anticipated renewable energy projects, provide the proposed accounting treatment for all renewable energy credits (RECs).
- 26. Provide a narrative explanation regarding what efforts the Company has taken and will take to attempt to obtain government grants, loans and incentives such as those provided in the Inflation Reduction Act, for renewable energy projects.
- 27. Refer to Section 7.2.3, Expansion Planning Results, 2023 Integrated Resource Plan, page 140. Regarding the proposed combined cycle plant, explain whether the Company is continuing its efforts to find potential partners / co-owners.
- 28. Do you agree that load and generation should more aligned?
 - a. Does membership in MISO, with its large renewables portfolio, cause uncertainty and a decoupling of GDP and demand, and is the rate-payer ultimately liable for this cost?
- 29. Explain if Big Rivers has analyzed investing in storage to maximize existing asset generation?

- a. If so, detail which storage assets have been analyzed, and describe Big Rivers position on whether the cost of investing in storage and maximizing existing generation capacity would outweigh the cost of building new generation?
 - b. Explain whether Big Rivers believes adding storage assets would help stabilize capacity during peak use?
30. Would you agree that DSM programs are intended to optimize generation?
- a. If so, would you agree that investing in capital resources for storage, as contemplated in Question 29, would more efficiently serve the same purpose as DSM programs, albeit with less impact on the ratepayer?
31. Indicate whether Big Rivers has analyzed adding a nuclear power plant to the Company's generating fleet.
- a. If not, explain why the Company has not analyzed this as a needed asset to meet its obligations of reliability.
 - b. If so, explain if the Company plans to pursue this option, and if the Company has considered any joint ownership/partnership agreements to finance the construction of the resource. Please provide the documents and materials utilized in making this analysis.
32. Big Rivers has successfully generated non-native load sales to the benefit of its Member-Owners. Has Big Rivers analyzed whether adding additional generating resources to its fleet, agnostic of fuel/power source, would be the most effective

and forward-thinking resource plan to ensure Big Rivers is able to supply reliable, sustainable, and affordable power?