COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC 2020 INTEGRATED RESOURCE PLAN OF BIG RIVERS ELECTRIC CORPORATION	)))	CASE NO. 2020-00299

COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION TO BIG RIVERS ELECTRIC CORPORATION

Big Rivers Electric Corporation (BREC), pursuant to 807 KAR 5:001, is to file with the Commission an electronic version of the following information. The information requested herein is due on May 11, 2021. The Commission directs BREC to the Commission's March 16, 2020 and March 24, 2020 Orders in Case No. 2020-00085[1] regarding filings with the Commission. The Commission expects the original documents to be filed with the Commission within 30 days of the lifting of the current state of emergency. All responses in paper medium shall be appropriately bound, tabbed, and indexed. Electronic documents shall be in portable document format (PDF), shall be searchable, and shall be appropriately bookmarked.

Each response shall include the name of the witness responsible for responding to the questions related to the information provided. Each response shall be answered under oath or, for representatives of a public or private corporation or a partnership or association or a governmental agency, be accompanied by a signed certification of the preparer or the

[1] Case No. 2020-00085, *Electronic Emergency Docket Related to the Novel Coronavirus COVID-19* (Ky. PSC Mar. 16, 2020), Order at 5–6. Case No. 2020-00085, *Electronic Emergency Docket Related to the Novel Coronavirus COVID-19* (Ky. PSC Mar. 24, 2020), Order at 1–3.

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.

BREC shall make timely amendment to any prior response if BREC obtains information that indicates the response was incorrect when made or, though correct when made, is now incorrect in any material respect. For any request to which BREC fails or refuses to furnish all or part of the requested information, BREC shall provide a written explanation of the specific grounds for its failure to completely and precisely respond.

Careful attention shall be given to copied material to ensure that it is legible. When the requested information has been previously provided in this proceeding in the requested format, reference may be made to the specific location of that information in responding to this request. When applicable, the requested information shall be separately provided for total company operations and jurisdictional operations. When filing a paper containing personal information, BREC shall, in accordance with 807 KAR 5:001, Section 4(10), encrypt or redact the paper so that personal information cannot be read.

1. Refer to BREC's response to Staff's First Request for Information (Staff's First Request), Item 4. BREC responds to the condition that no additional solar would be added as a supply side option and discusses 100 percent solar capacity. Also refer to page 13 of BREC's IRP. BREC states that the total capacity available is 1,374 MW, therefore 260 MW of solar represents 19 percent of total capacity.

a. Explain how adding additional supply side needs via solar implies 100 percent solar capacity.

b. Explain whether BREC believes solar penetration above 20 percent is not advisable.

2. Refer to BREC's response to Staff's First Request, Item 8. Also refer to Tariff Sheet PSC KY No. 27 Original Sheet No. 23.05, DSM-14 Low-Income Weatherization Support Program Pilot. The tariff states an eligible member can receive up to $1,500 per project for the cost of completed health and safety measures and up to $1,500 per project for residential HVAC improvements.

a. Explain why BREC spent $1,702.51 on the Energy Star Ducted Air Handler – HVAC.

b. Explain why BREC listed health and safety measures with the new HVAC system listing.

3. Refer to BREC's response to Staff's First Request, Item 11.

a. Provide the forecasted rate of inflation used by BREC.

b. Explain whether or not BREC continues to support the assumption that the forecasted price of electricity will continue to grow at a lower rate than the forecasted rate of inflation.

4. Refer to BREC's response to Staff's First Request, Item 13. Further explain the financial hedging products, such as future and forward contracts, or methods utilized to supply BREC's nonmember commitments.

5. Refer to BREC's response to Staff's First Request, Item 13, page 3, lines 1–3. Explain why BREC does not use financial hedging products or strategies against the Kentucky Municipal Energy Association (KYMEA) contract, despite the consumption being more volatile than Owensboro Municipal Utilities (OMU).

6. Refer to BREC's response to Staff's First Request for Information, Item 19. Explain whether or not BREC would consider other budget scenarios for DSM programs.

7. Refer to BREC's response to Staff's First Request, Item 20, page 3, lines 1–3, and to the IRP, Chapter 8, Section 8.2.2, page 156. Explain the 0.5 percent difference in discount rate used for the NPV calculation in the TRC Test Ratio (5.0 percent) vs. the discount rate in the NPV evaluation for BREC's IRP ST Plan (4.5 percent), and explain how BREC arrived at these discount rates.

8. Refer to BREC's response to Staff's First Request, Item 21.

a. Explain which avoided cost components make up the ACES Power Marketing forward price curves for both capacity and energy in the Midcontinent Independent System Operator (MISO) Zone 6.

b. Explain whether there are other cost elements that could be included through an adjustment to the forward price curves, but are not. For example, since the forecasts are made from the distribution cooperative level, distribution line losses could be included in avoided costs.

9. Refer to BREC"s response to Staff's First Request, Item 29a, Attachment bullet points, pages 7–8. In an era of widely divergent state energy policies, declining reserve margins and the many implications of the trends discussed on Mr. Bear's testimony, MISO can no longer be confident about a number of things.

a. It is not clear exactly why the issues enumerated in the bullet points create operational issues for MISO. Provide additional explanation from an engineering perspective that highlights the problems.

b. Provide additional explanation for each of the bullet points including subparts as to whether the issues that MISO can no longer be confident in pertains to BREC in any way. If so, provide a specific example (operational, financial, or planning) of how BREC is affected and, if possible, how BREC will handle the problem.

10. Refer to BREC's response Staff's First Request, Item 30. Explain the operational characteristics of the referenced customer's 50 MW of co-generation capability and how it affects BREC"s operations and its interactions with the MISO energy, capacity, ancillary services or other markets.

11. Refer to BREC's response Staff's First Request, Item 34. Confirm that the four-year transmission system construction work plan is updated and submitted to MISO annually.

12. Refer to BREC's response to Staff's First Request, Item 37, page 1. Provide the current Enterprise Risk Management Policy adopted by BREC's Board.

13. Refer to BREC's response to Staff's First Request, Item 39.

a. Explain the rationale for setting the LT Plan hourly blocks at six hours rather than at four hours to match the Southeastern Power Administration (SEPA) dispatch minimum.

b. Explain what ST Plan options (including specific modeling assumptions) and the various option results BREC evaluated that led to the determination that the SEPA contract should be included in the optimal solution.

c. Explain whether once BREC determined that the SEPA contract should be part of the LT Plan optimal solution, if the LT Plan was run again with the SEPA contract as a required component and the program left to determine all other components.

If not, explain how the LT Plan arrived at the optimal solution that included the SEPA contract.

14. Refer to BREC's response Staff's First Request, Items 40d, 41e, and 41f, and also refer to Case No. 2021-00079,[2] Application, paragraph 17, page 6 of 15. Item 40d states that the natural gas combined cycle (NGCC) unit needs to be at least 600 MW capacity to achieve a cost effective heat rate. The Application in Case 2021-0079 at paragraph 17 states that the total capacity of the two Green units post conversion will be reduced from the current 454 MW to 414 MW.

a. With the conversion of the two Green units to NGCC, explain whether that obviates the need per the LT Plan for 90 MW of a new 592 MW NGCC unit.

b. If not already addressed, explain how the two Green unit conversions to NGCC affects the ST Plan and the LT Plan.

c. Explain whether the Green units as NGCC will be able to provide any ancillary services within the MISO markets.

d. Explain whether the Green units as NGCC will have black start capability.

15. Refer to BREC's response to Staff's First Request, Item 41b. BREC states that it would exit the SEPA contract if it were beneficial to its Member-Owners. Also refer to BREC's response to Staff's First Request, Item 39. BREC states that the LT Plan's least-cost solution included exiting the SEPA contract. Reconcile these two statements.

[2] Case No. 2021-00079, *Electronic Application of Big Rivers Electric Corporation for a Certificate of Public Convenience and Necessity Authorizing the Conversion of Green Station Units to Natural Gas-Fired Units and an Order Approving the Establishment of a Regularity Asset* (filed Mar. 1, 2021).

16. Refer to BREC's response to Staff's First Request, Item 41h. Since BREC has committed to converting the two Green units to NGCC, explain whether natural gas will be procured on a firm or spot basis and whether pipeline transportation will be on a firm or spot basis.

17. Refer to BREC's response to Staff's First Request, Item 41k. Explain whether wind resources are not economically feasible due to the BREC board's preference for resources to be owned by BREC, or insufficient wind potential in BREC's service territory, or wheeling costs from a remote location, or some other reason.

18. Refer to BREC's response to Staff's First Request, Item 42. Compare and contrast how BREC anticipates running the Green units as NGCC units as opposed to how the Green units as coal fired units actually ran over the last three years.

19. Refer to BREC's response to Staff's First Request, Item 43c.

a. The response gives the impression that BREC does not need to plan for Non-Member sales. Explain what is the most cost efficient approach to fulfilling Non-Member load obligations. Include in the response the degree to which BREC's massive amount of excess capacity being utilized by the Non-Member load obligations affects its response.

b. Refer to BREC's response to Staff's First Request, Item 43c, page 3 of 4, lines 1–4.

(1) Explain how this paragraph addresses differences in the tables.

(2) Since the Green unit conversions result in a slight reduction in generation capacity from that provided by coal, explain how the Green unit conversions allow BREC to retain flexibility in the resource options to meet its long term needs.

c. Transmission losses necessitate additional resource requirements to compensate for the losses. From the explanation, it is not clear why transmission losses should not have been included in the base case as part of the forecasted resource requirements. Provide additional explanation.

20. Refer to BREC's response to Staff's First Request, Item 44a. Explain why and how converting the two Green units to NGCC lowers the inherent risk of securing capacity through the MISO market.

21. Refer to BREC's response to Staff's First Request, Item 47, pages 5–6 of 6. It appears that multiple household and commercial electric appliance categories, that are estimated to experience efficiency gains over the forecast period, are not included in the econometric models.

a. Provide a list of the appliance categories that are included in the BREC/Member residential survey, the appliance categories that are not included in the models, the estimated saturation appliance levels, and the average annual kWh of each category.

b. Explain whether collectively, they do not account for large proportion of household energy consumption and, therefore, their omission from the analysis does not represent a significant effect on the forecasted energy and demand results.

22. Refer to BREC's response to Staff's First Request, Item 48c. Explain whether the price variable is the only variable in log form in the regression equation. If so,

explain why that is appropriate and mathematically show how the regression equation was derived such that only a single variable is in log form.

23. Refer to BREC's response to Staff's First Request, Item 51.

a. Refer to Items 51a and 51b(3). Explain whether there was missing or inconsistent data for each of the Member systems and what is meant by "customer values."

b. Refer to Item 51c. A 15-year weather normalization period appears to be shorter than many periods chosen by other utilities to fully capture weather effects on energy and demand. It is still not clear why a 15-year period was judged to be the appropriate weather normalization time interval. The response seems to indicate only that additional work would have been needed to calculate a longer time period and, that from an energy perspective, differences between 10-, 15-, and 20-year intervals were minimal, and so a 15-year period was chosen. There is no mention of demand impacts. Explain why a 15-year weather normalization period was selected and why it is judged to be superior to a 20 or 30 year normalization period.

24. Refer to Direct Testimony of Michael T. Pullen in Case No. 2020-00079[3] at page 12, line 5, through page 13, line 6.

a. Confirm that MISO will include BREC's member load and any load it has contracted to provide in a given period when calculating BREC's Planning Reserve Margin Requirement (PRMR).

[3] Case No. 2021-00079, *Electronic Application of Big Rivers Electric Corporation for a Certificate of Public Convenience and Necessity Authorizing the Conversion of the Green Station Units to Natural Gas-Fired Units and an Order Approving the Establishment of a Regulatory Asset* (filed Mar. 1, 2021), Application, Exhibit B.

b. Explain why BREC contends that it can effectively analyze its generation needs during the planning period without accounting for all generation capacity it is obligated to provide during that period, including portions thereof.

c. Confirm that BREC's evaluation of its generation capacity requirements in its IRP is no longer valid given BREC's stated need and intention to re-fire the Green units as proposed in Case No. 2021-00079, and if BREC is not able to confirm, please explain why it is not able to do so.

25. Provide BREC's projected PRMR, as that term is defined by MISO, for MISO Zone 6 for each year from 2022-2023 through 2042-2043.

26. Provide the Zonal Resource Credits (ZRCs), separately for each facility, BREC will receive from MISO for the D.B. Wilson Plant (Wilson Station), the natural gas fired turbine at Reid Station (Reid CT), BREC's stake in hydroelectric capacity from SEPA, and each of the three solar PPAs in each year from 2022-2023 through 2042-2043 using MISO's current Business Practice Manual, and separately under any proposed changes and projected changes to the manner in which MISO calculates ZRCs, if any, and explain any proposed changes and projected changes to the calculation of ZRCs.

27. Provide the ZRCs BREC will receive from MISO for its portion of the NGCC it intends to propose when it is placed in service using MISO's current Business Practice Manual, and separately under any proposed changes and projected changes to the manner in which MISO calculates ZRCs, if any, and explain any proposed changes and projected changes to the calculation of ZRCs.

28. Identify and explain the extent to which BREC will have insufficient ZRCs to meet its PRMR for MISO Zone 6 if the re-fired Green units are taken out of service at the

end of useful life of seven years BREC proposed in Case No. 2021-00079 even if with Wilson Station, Reid CT, BREC's stake in the hydroelectric capacity from SEPA, the solar PPAs, and BREC's share in the NGCC it intends to propose.

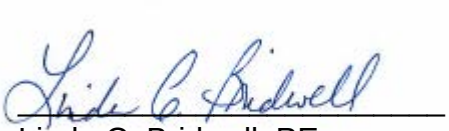
29. a. Explain how a decision by the Commission granting BREC's request for a Certificate of Public Convenience and Necessity (CPCN) to re-fire the Green units would change BREC's projections in the IRP regarding its generation needs.

b. Explain how a decision by the Commission denying BREC's request for a CPCN to re-fire the Green units would change BREC's projections in the IRP regarding its generation needs.

30. When analyzing the size of any stake BREC needs in the NGCC it intends to propose and the timing of any such need, state what useful life BREC anticipates using for the re-fired Green units and explain why.

31. State whether BREC has had any discussions with OMU or KYMEA regarding whether they intend to renew their contracts upon expiration or otherwise have an interest in continuing to obtain generation from BREC, and describe the current state of such discussions.

32. Explain whether BREC has performed a study how average usage compares to usage for low income customers.



Linda C. Bridwell, PE
Executive Director
Public Service Commission
P.O. Box 615
Frankfort, KY 40602

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cc: Parties of Record

*Angela M Goad
Assistant Attorney General
Office of the Attorney General Office of Rate
700 Capitol Avenue
Suite 20
Frankfort, KENTUCKY 40601-8204

*Roger Hickman
Big Rivers Electric Corporation
201 Third Street
P. O. Box 24
Henderson, KY 42420

*Joe F. Childers
Childers & Baxter PLLC
300 Lexington Building, 201 West Sho
Lexington, KENTUCKY 40507

*Tyson Kamuf
Corporate Attorney
Big Rivers Electric Corporation
201 Third Street
P. O. Box 24
Henderson, KY 42420

*John G Horne, II
Office of the Attorney General Office of Rate
700 Capitol Avenue
Suite 20
Frankfort, KENTUCKY 40601-8204

*Larry Cook
Assistant Attorney General
Office of the Attorney General Office of Rate
700 Capitol Avenue
Suite 20
Frankfort, KENTUCKY 40601-8204

*Matthew Miller
Sierra Club
50 F Street, NW, Eighth Floor
Washington, DISTRICT OF COLUMBIA 20001

*J. Michael West
Office of the Attorney General Office of Rate
700 Capitol Avenue
Suite 20
Frankfort, KENTUCKY 40601-8204

*Big Rivers Electric Corporation
201 Third Street
P. O. Box 24
Henderson, KY 42420