



COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY

In the Matter of:

**ELECTRONIC APPLICATION OF)
BIG RIVERS ELECTRIC CORPORATION) Case No. 2022-00296
FOR APPROVAL OF AMENDMENT TO)
POWER PURCHASE AGREEMENT)**

Big Rivers Electric Corporation's

**Response to the Supplemental Data Requests
of the Attorney General dated February 23, 2023**

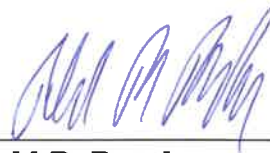
FILED: March 10, 2023

BIG RIVERS ELECTRIC CORPORATION

**ELECTRONIC APPLICATION OF
BIG RIVERS ELECTRIC CORPORATION
FOR APPROVAL OF AMENDMENT TO
POWER PURCHASE AGREEMENT
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VERIFICATION

I, Ronald R. Repsher, verify, state, and affirm that the data request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



Ronald R. Repsher

COMMONWEALTH OF KENTUCKY)
COUNTY OF DAVIESS)

SUBSCRIBED AND SWORN TO before me by Ronald R. Repsher on this the 9th day of March, 2023.



Notary Public, Kentucky State at Large

Kentucky ID Number

KYNP16841

My Commission Expires

October 31, 2024

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1 **Item 1)** See Response to AG 1-4. Did BREC study building its own solar
2 facility? Is so, discuss the costs of the project and provide documentation related to
3 any cost studies that were developed. If not, discuss why not.

4

5 **Response)** No, Big Rivers did not conduct a formal study. Prior to the new direct
6 pay provisions of the Inflation Reduction Act (“IRA”), cooperatives generally could not
7 take advantage of any financial incentives, such as tax credits, that were available to
8 entities with different tax structure than cooperatives. This often led cooperatives,
9 by default, to enter into power purchase agreements where the cooperative purchased
10 the capacity and energy, while the counterparty optimized the financial incentives.
11 Big Rivers is now evaluating self-build opportunities as they arise.

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13 **Witness)** Ronald R. Repsher

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1 **Item 2)** Discuss the capitalization of Unbridled Solar, LLC.

2

3 **Response)** Big Rivers does not have that information.

4

5 **Witness)** Ronald R. Repsher

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1 **Item 3)** See Section 14 of the Power Purchase Agreement (“PPA”) where it
2 states, “Force Majeure includes... epidemic; pandemic[.]”

3 a. Have the parties discussed the operation of this provision in light of
4 global events related to COVID-19?

5

6 **Response)** The addition of “pandemic” as a force majeure event in Section 14 was
7 discussed during the negotiations of the PPA in the spring of 2020, and was
8 implemented to address potential risks associated with COVID-19. There have been
9 no further discussion related to this provision.

10

11 **Witness)** Ronald R. Repsher

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1 **Item 4)** Does the PPA provide protections for BREC and its ratepayers in the
2 event that the market price for solar energy falls over the period of the PPA?

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4 **Response)** The PPA provides a fixed price over the life of the contract.

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6 **Witness)** Ronald R. Repsher

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1 **Item 5)** Discuss the technology of the solar panels to be utilized here. Further,
2 discuss the useful life, rate of degradation, and any impact to the operation of facility
3 over time?

4

5 **Response)** Per information from National Grid, the Unbridled project is expected
6 to utilize First Solar Series 7 thin-film solar panels for the entirety of the project.

7 More specific information can be found at:

8 <https://www.firstsolar.com/en/Products/Series-7>. The useful life of these panels is
9 expected to be about 40 years¹ with an annual degradation rate of about 0.4% per
10 year.

11

12 **Witness)** Ronald R. Repsher

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¹ See *In the Matter of: Electronic Application of Unbridled Solar, LLC for a Certificate of Construction for an Approximately 160 Megawatt Merchant Electric Solar Generating Facility and Nonregulated Electric Transmission Line in Henderson, and Webster Counties, Kentucky, P.S.C. Case No. 2020-00242.*

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1 **Item 6)** Explain whether the Company has investigated the potential use of:

2 a. Cadmium telluride panels (sometimes referred to as “thin film” solar cells)

3 as an alternative to panels utilizing metallurgical-grade silicon wafers.

4 b. Bifacial panels and a tracker rack system.

5

6 **Response)** Big Rivers does not have the contractual right to choose the panels

7 under the Unbridled PPA. In general, Big Rivers is aware of the emergence of bifacial

8 panels with tracker systems, but has not performed any material investigation.

9

10 **Witness)** Ronald R. Repsher

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1 **Item 7)** Provide Nucor's anticipated demand for energy over the entirety of the
2 PPA.

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4 **Response)** Per contract, Nucor's maximum Contract Demand is 

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6 **Witness)** Ronald R. Repsher

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1 **Item 8)** Which BREC assets will serve the Nucor load during the evening
2 hours when intermittent resources are unavailable?

3

4 **Response)** The Nucor load will be served by the overall MISO system. Big Rivers'
5 assets are dispatched into the same MISO system, but are not specifically tied to or
6 directly serving Nucor. The participation of Big Rivers' assets into the MISO
7 system provides a revenue stream that serves to hedge, or cap, its load costs that
8 are purchased from MISO.

9

10 **Witness)** Ronald R. Repsher

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1 **Item 9)** Which BREC assets will serve the Nucor load when the intermittent
2 resources are unavailable due to weather conditions?

3

4 **Response)** See Big Rivers' response for Item 8 of this request for information.

5

6 **Witness)** Ronald R. Repsher

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1 **Item 10)** Provide an analysis demonstrating, during the term of the PPA,
2 whether revenues generated by the rates charged of Nucor will be sufficient to cover
3 the cost of the entire 160 MW PPA and all other generation needed to serve the
4 Nucor load.

5

6 **Response)** Please see the attached copy of the confidential attachment to Big
7 Rivers' response to Item No. 2 of the Commission Staff's First Request for
8 Information in Case No. 2019-00365.¹

9

10 **Witness)** Ronald R. Repsher

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¹ *In the Matter of: Electronic Joint Application of Big Rivers Electric Corporation and Meade County Rural Electric Cooperative Corporation for (1) Approval of Contracts for Electric Service with Nucor Corporation; and (2) Approval of Tariff, P.S.C. Case No. 2019-00365*



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**Response to the Supplement Data Requests
of the Attorney General dated February 23, 2023**

**Attachment to Big Rivers' Response to
Item No. 10**

**FILED WITH MOTION FOR
CONFIDENTIAL TREATMENT**

FILED: March 10, 2023

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1 **Item 11)** In Case No. 2020-00183, Order of September 28, 2021, in its order
2 approving the contracts, the Commission stated:

3 “BREC acknowledged that it was contracting for the output of
4 solar facilities with nameplate capacity that exceeded that
5 required by the Nucor Contract, but it indicated that the
6 capacity was needed to meet its capacity requirements for a
7 number of years and to diversify its generation portfolio.
8 Specifically, BREC indicated that with the Nucor load it will
9 have insufficient capacity to meet the demands of its native load
10 and the loads it is obligated to provide pursuant to the OMU and
11 KyMEA contracts. If either the OMU or the KyMEA contracts
12 are not renewed at the expiration of their term, then BREC will
13 be long on capacity even with Nucor’s load. BREC also indicated
14 that the Solar Contracts allow BREC to hedge the price risk of
15 the energy delivered to Nucor and will add more diversity to its
16 power supply portfolio by reducing its dependence on coal-fired
17 generation from 78 percent of its portfolio to 63 percent of its
18 portfolio. BREC argued that diversifying its portfolio would
19 reduce the risk of changes in environmental regulations often
20 cited by credit ratings agencies arising from BREC’s heavy
21 dependence on coal-fired generation.”

22
23 a. Discuss whether reducing dependence on coal-fired generation from 78
24 percent to 63 percent of BREC’s portfolio will present reliability risks.

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1 b. Discuss whether reliability risks in MISO have increased since the
2 Commission's original approval the contracts in 2021, making BREC
3 less able to rely on market purchases as a reliability backstop.

4 **Response)**

5 a. This stated percentage reduction of coal-fired generation as part of Big
6 Rivers' portfolio is the mathematical result of the addition of the solar
7 energy. The expected energy from coal hasn't changed. With the
8 addition of the solar generation to the Big Rivers portfolio, the
9 percentage as a whole for coal-fired energy naturally goes down but
10 does not present any directly related reliability risks to the Big Rivers
11 system.

12 b. MISO, other RTO's, and other balancing authorities have all
13 experienced an increasing number of reliability issues over the recent
14 years. Volatile extreme weather coupled with the retirement of
15 traditional thermal resources often being replaced by intermittent

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1 resources are key drivers of this trend. Valid concerns exist on the
2 reliability of the country's electric system.

3

4 **Witness)** Ronald R. Repsher

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