



**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 Commission Staff's  
First Request for Information**

**dated January 26, 2023**

**FILED: February 10, 2023**

**ORIGINAL**

**BIG RIVERS ELECTRIC CORPORATION**

**ELECTRONIC APPLICATION OF  
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1 **Item 1)** *Refer to the Application, page 2, lines 18–20 and page 3, lines 1–*  
2 *2. In Case No. 2020-00183<sup>1</sup>, the three contracts were entered into as part of*  
3 *BREC's need fulfill its wholesale obligations and to supply renewable*  
4 *energy to its owner member distribution cooperatives and Meade County*  
5 *RECC's contract with Nucor corporation.<sup>2</sup> With the termination or expected*  
6 *termination of the Community Energy Solar contracts, explain what actions*  
7 *BREC is taking to replace the renewable energy wholesale and renewable*  
8 *energy obligations to its owner members.*

9

10 **Response)** The two Community Energy contracts have been officially terminated  
11 by the counterparty on those agreements. The 160 MW Henderson Solar project  
12 exceeds the [REDACTED] obligation to Nucor Corporation. Big Rivers is currently  
13 evaluating solar projects in preparation of its 2023 Integrated Resource Plan.

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<sup>1</sup> Case No. 2020-00183, Electronic Application of Big Rivers Electric Corporation for Approval of Solar Power Contracts (filed June 24, 2020).

<sup>2</sup> See Case No. 2020-00183, Sept. 28, 2020 Order at 5.

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2 **Witness)** Ronald R. Repsher

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1 **Item 2)** *Refer to the Application, page 5. Explain how BREC calculates*  
2 *the economic benefit as “significantly more” than the credit support*  
3 *including any supporting calculations. Explain how the “Network Upgrade*  
4 *Costs” impact the analysis.*

5

6 **Response)** Please refer to Exhibit 7 for calculations of economic benefit. Economic  
7 benefit in Exhibit 7 was calculated to be [REDACTED] dollars. Credit support in the  
8 original PPA is [REDACTED] before commercial operation.

9

10 The assumption for the estimated value of network upgrades of \$5 million is already  
11 factored into this value of [REDACTED].

12

13 **Witness)** Ronald R. Repsher

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1 **Item 3)**      *Refer to the Direct Testimony of Mark Eacret (Eacret*  
2 *Testimony), page 11, lines 5–8. Explain which measure of inflation is being*  
3 *reported. If not already provided, explain what the inflation measure is for*  
4 *the building and construction industry and, if known, inflation in the solar*  
5 *manufacturing and construction industry. Include any supporting*  
6 *documentation.*

7

8 **Response)** Footnote 19 contains the source of the inflation stated in Mark Eacret's  
9 testimony. I am not aware of what the proper inflation rate is for the building and  
10 construction industry, nor the solar manufacturing industry.

11

12 **Witness)**      Ronald R. Repsher

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1 **Item 4) Refer to the Eacret Testimony, page 12, lines 7–9.**

2 **a. Explain whether there were tariffs on solar crystalline silicon**  
3 **photovoltaic (CSP) cells already in place prior to the US Department**  
4 **of Commerce investigation.**

5 **b. Explain whether President Biden's executive order nullifies any**  
6 **retroactive tariffs applicable to the two-year waiver.**

7 **c. If President Biden's executive order waived tariffs from the four**  
8 **countries for two years, and it has had little effect, explain whether**  
9 **the solar developers were already having trouble importing CSPs and,**  
10 **if so, explain what other issues were impeding the importation of**  
11 **CSPs.**

12 **Response)**

13 a. There were tariffs on solar crystalline silicon photovoltaic (CSP) cells  
14 already in place prior to the US Department of Commerce investigation. See  
15 Attachment 1 to this response, a copy of the February 4, 2022, article "A  
16 *Proclamation to Continue Facilitating Positive Adjustment to Competition from*

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1        *Imports of Certain Crystalline Silicon Photovoltaic Cells (Whether or Not*  
2        *Partially or Fully Assembled into Other Products)*” found at  
3        [www.whitehouse.gov](http://www.whitehouse.gov).

4        b.        According to a U.S. Department of Commerce press release,  
5        “Independent of Commerce’s final determination, the Presidential  
6        Proclamation issued on June 6, 2022, provides that duties will not be collected  
7        on any solar module and cell imports from these four countries until June 2024,  
8        as long as the imports are consumed in the U.S. market within six months of  
9        the termination of the President’s Proclamation.” See Attachment 2 to this  
10       response, a copy of the December 2, 2022, article “*Department of Commerce*  
11       *Issues Preliminary Determination of Circumvention Inquiries of Solar Cells*  
12       *and Modules Produced in China,*” found at [www.commerce.gov/news/press-](http://www.commerce.gov/news/press-releases/2022/12/department-commerce-issues-preliminary-determination-circumvention)  
13       [releases/2022/12/department-commerce-issues-preliminary-determination-](http://www.commerce.gov/news/press-releases/2022/12/department-commerce-issues-preliminary-determination-circumvention)  
14       [circumvention](http://www.commerce.gov/news/press-releases/2022/12/department-commerce-issues-preliminary-determination-circumvention) .

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1           c.       Big Rivers does not have sufficient information or knowledge to explain  
2           whether the solar developers were already having trouble importing CSPs or  
3           if so, what other issues were impeding the importation of CSPs.

4

5 **Witness)**    Ronald R. Repsher

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1 **Item 5) Refer to the Eacret Testimony, page 14, lines 15–19 and page 15,**

2 **lines 1–**

3 **a. If BREC were to be responsible for network upgrade costs, explain**  
4 **what those costs would entail.**

5 **b. Explain whether BREC normally conducts preliminary studies**  
6 **as a part of its own due diligence in cases of interconnection requests.**

7 **c. Based upon BREC's experience with network transmission**  
8 **facilities and its own preliminary studies, explain whether MISO's**  
9 **network interconnection studies results are different from BREC's**  
10 **results. Cite to specific examples.**

11 **d. If BREC does have to undertake network upgrades, explain**  
12 **whether the upgrades will have benefits beyond the immediate**  
13 **interconnection of Unbridled Solar. Provide any supporting**  
14 **documentation or examples.**

15

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1 **Response)**

2 a. As part of the MISO Generator Interconnection process, MISO and  
3 other neighboring utilities will perform transmission studies to determine  
4 any transmission infrastructure that will need to be upgraded or newly built  
5 to accommodate the output of the new generation resource. The studies may  
6 show the new generation can be accommodated without network upgrades. If  
7 network upgrades are found to be needed, these improvements and the  
8 associated cost could range from items as minimal as replacing a switch, to as  
9 involved as new transmission lines.

10 b. Due to the volume of requests, Big Rivers does not conduct preliminary  
11 studies for all generator interconnection requests. Instead, Big Rivers  
12 participates in the MISO study process that includes a Big Rivers review of  
13 MISO study results. If a generator interconnection request has the potential to  
14 significantly impact Big Rivers, then Big Rivers will conduct preliminary studies  
15 to assess that impact. Internal studies prepared by Big Rivers typically utilize  
16 MISO models. Therefore, the Big Rivers results are generally consistent with

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1 MISO study results. However, some differences can be seen due to the  
2 treatment of other planned interconnection projects and the overall  
3 generation dispatch used in the studies. MISO continually updates the  
4 models as the status of earlier queue position generator interconnection  
5 requests and network upgrades are determined. Due to timing, the  
6 preliminary studies performed by Big Rivers may not include the same  
7 projects and generation dispatch included in subsequent MISO studies.  
8 Therefore, the study results can and do differ to some extent.

9 c. See the above response to subpart (b).

10 d. Big Rivers does not know yet what network upgrades may be required.  
11 This is because the MISO generation interconnection process is not finalized.  
12 The Definitive Planning Phase 1 is schedule to be released March 27, 2023 as  
13 of the time of the testimony. This will be the first insight into officially what  
14 network upgrades may be required and the potential benefits those upgrades  
15 may provide.

16

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2 **Witness)** Christopher S. Bradley

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1 *Item 6) Refer to the Eacret Testimony, page 18, lines 20–21.*

2 *a. Explain whether Community Energy Solar had credit support*  
3 *amounts tied to the two solar projects and whether any amounts accrue*  
4 *to BREC.*

5 *b. In light of the two canceled solar projects, explain the options*  
6 *BREC has in relation to providing the necessary renewable energy to*  
7 *Nucor.*

8

9 **Response:**

10 a. Community Energy Solar did have credit support obligations for the two  
11 solar contracts. It is undetermined at this time whether any amounts will  
12 accrue to Big Rivers.

13 b. [REDACTED]  
14 [REDACTED]  
15 [REDACTED]. The energy from the  
16 National Grid contract would satisfy this requirement.

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3 **Witness)** Ronald R. Repsher

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1 *Item 7) Refer to the Eacret Testimony, page 12, lines 14–18 and Exhibit*  
2 *Eacret-8. If solar developers are having trouble completing projects,*  
3 *presumably there is less solar and renewable energy generally being*  
4 *developed. Explain the reasons for the value of the renewable energy credits*  
5 *declining.*

6

7 **Response)** The market for renewable energy credits is very illiquid at this time.  
8 Price can be affected by the supply/demand balance that occurs when large buyers  
9 (such as large corporations) are suddenly in the market to purchase, or no longer in  
10 the market. I am not able to confirm or deny that REC prices are declining.

11

12

13 **Witness)** Ronald R. Repsher

14

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1 *Item 8) Refer to the Eacret Testimony, page 18, lines 1–2. Explain the*  
2 *circumstances under which BREC would draw on the credit support and*  
3 *what eventually happens to the credit support provided by Unbridled Solar,*  
4 *a wholly owned subsidiary of Geronimo Energy, Inc., a National Grid*  
5 *Renewables (NGR) company.*

6

7 **Response)** Please see Section 11 of the original contract and as may be amended in  
8 the Amendment for discussion of defaults and remedies, which includes credit  
9 support. Under that section, Big Rivers is entitled to draw on the credit support in  
10 the event of any uncured breach of the agreement, which would include, among other  
11 events, the failure to deliver the required output and the failure to pay any amounts  
12 due for Delay Damages or Buyer's Cost to Cover.

13 Unbridled is required to provide credit support during the entire term of the  
14 agreement.

15

16 **Witness)** Ronald R. Repsher



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1 *Item 9) Refer to the Eacret Testimony, Exhibit Eacret-7.*

2 *a. Provide the Exhibit in Excel spreadsheet format with all*  
3 *formulas, rows, and columns unprotected and fully accessible.*

4 *b. For pages 1–4, explain the meaning and derivation of the terms*  
5 *“Generation Weighted Adjustment,” “BREC.BREC Adjustment,” “ZRC*  
6 *Adjustment Factor,” and “Henderson Year 2 160.”*

7 *c. Explain the meaning and derivation of the term “Nucor-Adjusted*  
8 *Total.”*

9 *d. On page 5, explain why there are potential reductions in value.*

10 *e. On page 5, explain the assumptions behind and the meaning of*  
11 *the row headings “Forward Curve \$/kw-month,” “Alternative Capacity*  
12 *Value,” and Reduction From Base Assumption.”*

13 *f. For the analyses on pages 9–12, explain the purpose of the*  
14 *analyses, how it fits in with the overall analysis, and how it relates to*  
15 *the analyses contained on pages 4–8.*

16

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1 **Response)**

2 a. See the Excel file provided with this response.

3 b. "Generated Weighted Adjustment" is the ratio of the weighted average  
4 LMP for the project in relation to the average Day-Ahead Price at Indiana Hub.

5 "BREC.BREC Adjustment" is the ratio of the average DA LMP for  
6 BREC.BREC Load Zone in relation to the average Day-Ahead Price at Indiana  
7 Hub.

8 "ZRC Adjustment Factor" is a series of calculations that lowers the  
9 nameplate capacity by the ELCC, so it can properly value the capacity benefit.  
10 MISO does not give 100% credit for the capacity of renewables with  
11 intermittent output.

12 "Henderson Year 2 160" is the effective capacity that Big Rivers can  
13 expect benefit from in MISO. It is calculated by multiplying the nameplate  
14 capacity of the project and the ELCC factor.

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1 c. "Nucor-Adjusted Total" is the total value of the project after accounting  
2 for Nucor using [REDACTED] of the 160 MWs of the Project. It is the "Total Value  
3 less Cost" times [REDACTED] 160.

4 d. The reduction in value section is calculating alternative scenarios of  
5 capacity prices and REC prices that are different than the basic assumptions.

6 e. "Forward Curve \$/kw-month" on page 5 is an alternative Capacity Price  
7 assumption. Instead of assuming \$3.80/KW-Mo, the assumption is a lower  
8 Auction Clearing Price of \$1/KW-Mo.

9 "Alternative Capacity Value" is the value of the Solar Capacity  
10 assuming an Auction Clearing Price of \$1/KW-Mo.

11 "Reduction from Base Assumption" is the delta between the value of  
12 Capacity, priced at \$1/KW-Mo, versus the value of Capacity, priced at  
13 \$3.80/KW-Mo.

14 f. The analyses on pages 9-12 changes the assumption on the value of  
15 Renewable Energy Credits (RECs). It assumes that the facility is able to  
16 qualify as Ohio Certified Solar, which currently commands a premium to

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1 Green-E RECs. The analysis on pages 5-8 assumes that the solar is just Green-  
2 E Listed.

3

4

5 **Witness)** Ronald R. Repsher

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**Attachment to Big Rivers' Response to  
Item No. 9**

**FILED WITH MOTION FOR  
CONFIDENTIAL TREATMENT**

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1 *Item 10) Refer to the Eacret Testimony, Exhibit Eacret-8.*

2 *a. Explain the term "Value to Nucor." Include in the response*  
3 *whether Nucor had any part in the renegotiation of the contract with*  
4 *Unbridled Solar. Provide all supporting documentation.*

5 *b. Explain the drivers behind the increased forecast of energy*  
6 *prices. Provide all supporting documentation.*

7

8 **Response)**

9 a. For purposes of the analysis presented in Exhibit Eacret-8, Big Rivers  
10 assumed that [REDACTED]

11 [REDACTED]

12 [REDACTED] "Value to Nucor"

13 refers to the output that is assumed to be assigned to Nucor. Nucor was not  
14 involved in the negotiations of the proposed Amendment.

15 b. Power prices are largely influenced by the price of natural gas. This is  
16 due to a significant portion of electric generation being fueled by natural gas.

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1 In the summer of 2021, natural gas prices began increasing to much higher  
2 levels than in recent past. Power prices subsequently increased as well. The  
3 drivers of the increase in natural gas prices are tied to fundamental supply and  
4 demand effects including demand from industry such as production, natural  
5 gas demand, storage levels across the country, and the strong growth in LNG  
6 exports.

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9 **Witness)** Ronald R. Repsher

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