

ORIGINAL



Your Touchstone Energy® Cooperative 

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

In the Matter of:

ELECTRONIC APPLICATION OF)	
BIG RIVERS ELECTRIC CORPORATION)	Case No.
FOR APPROVAL OF SOLAR POWER CONTRACTS)	2020-00183

**Response to Commission Staff's
Supplemental Request for Information
dated August 28, 2020**

FILED: September 10, 2020

ORIGINAL

BIG RIVERS ELECTRIC CORPORATION
ELECTRONIC APPLICATION OF
BIG RIVERS ELECTRIC CORPORATION
FOR APPROVAL OF SOLAR POWER CONTRACTS
CASE NO. 2020-00183

VERIFICATION

I, Michael W. (Mike) Chambliss, verify, state, and affirm that the information 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.



Michael W. (Mike) Chambliss

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

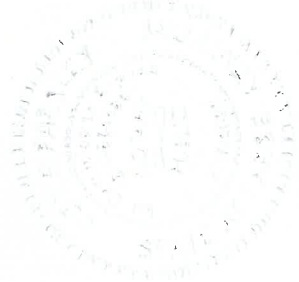
SUBSCRIBED AND SWORN TO before me by Michael W. (Mike) Chambliss on this the 9th day of September, 2020.



Notary Public, Kentucky State at Large

My Commission Expires _____

Notary Public, Kentucky State-At-Large
My Commission Expires: July 10, 2022
ID: 604480



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VERIFICATION

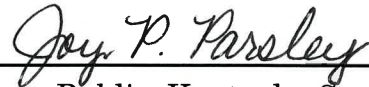
I, Mark J. Eacret, verify, state, and affirm that the information request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



Mark J. Eacret

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

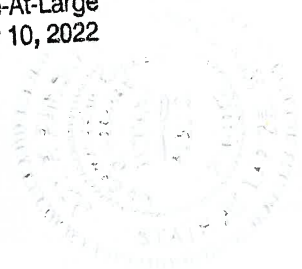
9th SUBSCRIBED AND SWORN TO before me by Mark J. Eacret on this the
_____ day of September, 2020.



Notary Public, Kentucky State at Large

My Commission Expires _____

Notary Public, Kentucky State-At-Large
My Commission Expires: July 10, 2022
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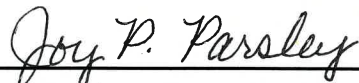
I, Paul G. Smith, verify, state, and affirm that the supplemental data request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



Paul G. Smith

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

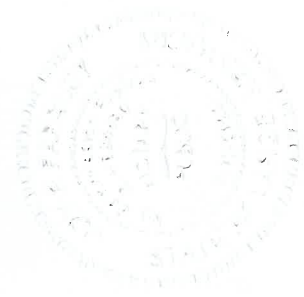
9th SUBSCRIBED AND SWORN TO before me by Paul G. Smith on this the
day of September, 2020.



Notary Public, Kentucky State at Large

My Commission Expires _____

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1 Item 1) *Refer to the definition of "Ancillary Services" at page 2 of the*
2 *Power Purchase Agreement with Henderson Solar, LLC (Henderson Solar)*
3 *stating that "Ancillary Services does not include any cost recovery available*
4 *to Seller from the Transmission Provider, Electric System Authority or other*
5 *similar authority under a FERC-filed reactive power rate (and rights to such*
6 *cost recovery shall remain with Seller)," and the description of the "Contract*
7 *Price" at Section 5.1 of the same contract, and the "Power factor*
8 *requirements" at Exhibit 6.1.*

9 a. *State whether there is any provision in BREC's contract with*
10 *Henderson Solar that requires Henderson Solar to delivery reactive*
11 *power to BREC with the 160 MW of real power, and explain each*
12 *basis for BREC's response with reference to any relevant contract*
13 *provision.*

14 b. *State whether BREC will be required to purchase any reactive power*
15 *it takes from Henderson Solar at a cost in addition to the Contract*
16 *Price. If so, provide an estimate of the cost of that reactive power,*
17 *and state whether BREC will be required to take the reactive power*

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1 *at an additional cost or whether it will simply have the option to do*
2 *so. Explain each basis for BREC's response with reference to any*
3 *relevant contract provision.*

4 *c. Explain in detail how BREC intends to supply or obtain the reactive*
5 *power, if any, necessary to balance and transmit the real power*
6 *supplied by Henderson Solar pursuant to the contract, and provide*
7 *an estimate of the cost.*

8 *d. Explain why the definition of "Ancillary Services" was changed in*
9 *the Henderson Solar contract as compared to the Meade County*
10 *Solar, LLC (Meade Solar) and the McCracken County Solar, LLC*
11 *(McCracken Solar) contracts.*

12 *e. Explain why the facilities that will be provided by Henderson Solar*
13 *are not defined in Exhibit 6.1 as they are in the other contracts, and*
14 *explain how the contract provides any assurance that the facilities*
15 *will produce energy that meets.*

16

17

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1 **Response)**

2 a. In accordance with 6.2.1 of the agreement, Big Rivers can require the
3 generator to meet specific voltage requirements at the point of
4 interconnection. Big Rivers or MISO may require the solar facilities to
5 generate or absorb reactive power within the design limitations.

6 b. There are no provisions in the contract that would require Big Rivers to
7 purchase reactive power from Henderson Solar.

8 c. Big Rivers is not required to supply or obtain reactive power for the
9 Henderson Solar project.

10 d. Geronimo Energy negotiated for the change in the language.

11 e. Geronimo is in the process of developing the Description of Facility and
12 Premises. As the project development moves forward, additional details
13 will become available and this document will be updated to reflect as-built
14 status of the generation. Geronimo must meet the Output Guaranty
15 described in Section 6.12 of the solar agreement or pay damages.

16

17 **Witness)** Mark J. Eacret

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1 Item 2) *Refer to the definition of Ancillary Services" at page 2 of the*
2 *Meade Solar Power Purchase Agreement and the McCracken Solar Power*
3 *Purchase Agreement, respectively, and the description of the "Contract Price"*
4 *at Section 5.1 and the "Power factor requirements" at Exhibit 6.1 of each*
5 *contract.*

6 a. *State whether there is any provision in BREC's contracts with Meade*
7 *Solar and McCracken Solar that requires them to delivery reactive*
8 *power to BREC, and explain each basis for BREC's response with*
9 *reference to any relevant contract provision.*

10 b. *State whether BREC contends that any reactive power produced by*
11 *the Meade Solar and McCracken Solar projects and taken by BREC*
12 *would be covered by the Contract Price, and explain each basis for*
13 *BREC's response with reference to any relevant contract provision.*

14 c. *State whether BREC anticipates having to obtain any reactive*
15 *power from other sources, to balance or transmit the real power*
16 *supplied by the Meade Solar and McCracken Solar projects, and if*

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1 *so, explain how it anticipates obtaining such reactive power and the*
2 *provide an estimate of the cost.*

3 *d. Explain who will control the power factor of the energy supplied by*
4 *the facilities to be constructed by Meade Solar and McCracken Solar*
5 *and whether there are limits placed on the power factor in the*
6 *contracts for the energy supplied by those facilities.*

7

8 **Response)**

9 a. In accordance with 6.2.1 of the agreement, Big Rivers can require the
10 generator to meet specific voltage requirements at the point of
11 interconnection. Big Rivers or MISO may require the solar facilities to
12 generate or absorb reactive power within the design limitations.

13 b. Yes. Section 5.1 of the solar agreement specifically provides, “The Contract
14 Price provided for in Section 5.1.2 and the price for Test Energy provided
15 for in Section 5.1.1 include the consideration to be paid by Buyer to Seller
16 for all Net Output, RECs, Ancillary Services and Capacity Rights.”

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- 1 c. Big Rivers does not anticipate a requirement to obtain any reactive power
2 from other sources, to balance or transmit the real power supplied by the
3 Meade Solar and McCracken Solar projects.
- 4 d. All interconnected generation to the Big Rivers system must adhere to
5 established voltage schedules and operate as directed by Big Rivers. Big
6 Rivers or MISO may require the solar facilities to generate or absorb
7 reactive power within the design limitations.

8

9

10 **Witness)** Mark J. Eacret

11

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1 **Item 3)** *Refer to BREC's response to Commission Staff's First Request*
2 *(Staff's First Request), Items 2 and 30. Confirm that BREC would only sell*
3 *the Renewable Energy Credits to customers requesting renewable energy and*
4 *not enter bilateral contracts to pass through the solar Purchase Power*
5 *Agreement price. If this cannot be confirmed, explain whether these bilateral*
6 *contracts would increase or decrease costs to nonparticipating customers.*

7

8 **Response)** Currently, Big Rivers plans to sell Renewable Energy Certificates
9 through the process described in Big Rivers' response to Item 12 of the Attorney
10 General's Second Request for Information. Big Rivers does not anticipate entering
11 into bilateral contracts that pass through the solar purchase power price. Any such
12 arrangement would only be considered if it created a net benefit for the non-
13 participating Members.

14

15

16 **Witness)** Mark J. Eacret

17

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1 **Item 4)** *Refer to BREC's response to Staff's First Request, Item 17. If any*
2 *of the three Solar PPA purchase costs were ever to become uneconomic,*
3 *explain how BREC intends to recover the uneconomic portions of those costs*
4 *through the FAC.*

5

6 **Response)** Big Rivers does not expect the Solar PPA purchases to become
7 uneconomic during the terms of the respective contracts. However, if any of the three
8 Solar PPA purchase energy costs do become uneconomic, Big Rivers would recover,
9 through its FAC, only the lower of (a) the actual energy cost of the uneconomic energy
10 purchased or (b) the fuel cost that it would have otherwise incurred if it had generated
11 the energy at its own highest cost generating unit available.

12

13

14 **Witness)** Paul G. Smith

15

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1 **Item 5)** *Refer to BREC's response to Staff's First Request, Item 23.*
2 *Explain why shadow settlement is necessary if BREC will receive separately*
3 *metered settlement info from MISO.*

4

5 **Response)** A shadow settlement is the process of a market participant verifying the
6 accuracy of their settlement statements, using the charge type formulas published by
7 the Independent System Operator (“ISO”). Generally, a market participant will
8 either license vendor software for their shadow settlement system or will use in-house
9 built systems. The shadow settlement system independently calculates the charge
10 type amounts, and the settlement analyst then compares them to the settlement
11 statements.

12 Shadow settlements benefit the market participant by automatically flagging
13 differences between the shadow settlement calculation and the ISO’s settlement files.
14 When the settlement analyst believes that material financial discrepancies between
15 the shadow settlement calculation and the ISO settlement statements are due to an
16 error in the ISO’s settlement statements, then the market participant generally
17 disputes the errors on their settlement statements with the ISO. If the ISO

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1 determines that they have made an error, they will then approve the dispute and
2 issue a correction to the next settlement statement re-publication for the operating
3 date. Thus, shadow settlements benefit market participants by both automating the
4 verification of their settlement statements, as well as the identification of settlement
5 statement disputes, possibly leading to recovery of payments due to the market
6 participant, which may have otherwise not been caught without a shadow settlement
7 system.¹

8

9

10 **Witness)** Mark J. Eacret

11

¹ See: <https://powersettlements.com/869/blog/shadow-settlements-iso-rto-power-markets>.

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1 **Item 6)** *Provide an analysis quantifying the potential savings to be*
2 *achieved from the use of the solar power purchase agreements as part of*
3 *BREC's hedging efforts.*

4

5 **Response)** Per revised Exhibit 15 to my testimony, the present value of the
6 economic benefit of the solar contracts is between [REDACTED],
7 depending on the forward prices assumed for capacity and renewable energy
8 certificates. The portion of that present value through [REDACTED]
9 [REDACTED]. [REDACTED]

10 [REDACTED] That range represents the savings created by hedging a
11 portion of the Nucor agreement with the solar contracts rather than at market.

12

13

14 **Witness)** Mark J. Eacret

15