



COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY

In the Matter of:

**AN ELECTRONIC EXAMINATION OF THE)
APPLICATION OF THE FUEL ADJUSTMENT CLAUSE) Case No.
OF BIG RIVERS ELECTRIC CORPORATION) 2022-00268
FROM NOVEMBER 1, 2021 THROUGH APRIL 30, 2022)**

**Responses to Commission Staff's First Request for Information
in Appendix B of the Commission's Order
dated September 13, 2022**

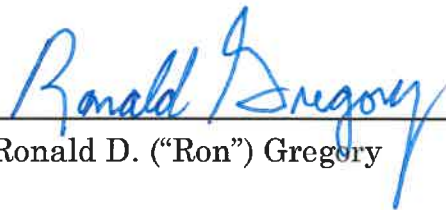
FILED: September 30, 2022

BIG RIVERS ELECTRIC CORPORATION

**AN ELECTRONIC EXAMINATION OF
THE APPLICATION OF THE FUEL ADJUSTMENT CLAUSE
OF BIG RIVERS ELECTRIC CORPORATION
FROM NOVEMBER 1, 2021 THROUGH APRIL 30, 2022
CASE NO. 2022-00268**

VERIFICATION


I, Ronald D. ("Ron") Gregory, 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 D. ("Ron") Gregory

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Ronald D. ("Ron") Gregory on this the 30 day of September, 2022.




Notary Public, Kentucky State at Large
Kentucky ID Number KYNP43026
My Commission Expires 01-14-2026

BIG RIVERS ELECTRIC CORPORATION

**AN ELECTRONIC EXAMINATION OF
THE APPLICATION OF THE FUEL ADJUSTMENT CLAUSE
OF BIG RIVERS ELECTRIC CORPORATION
FROM NOVEMBER 1, 2021 THROUGH APRIL 30, 2022
CASE NO. 2022-00268**

VERIFICATION


I, Jennifer M. Stone, 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.



Jennifer M. Stone

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Jennifer M. Stone on this the 30 day of September, 2022.

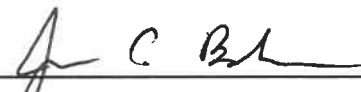


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Kentucky ID Number KYNP43026
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BIG RIVERS ELECTRIC CORPORATION
AN ELECTRONIC EXAMINATION OF
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VERIFICATION

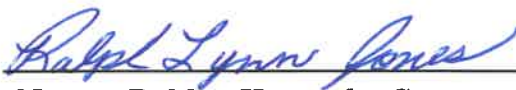
I, Jason C. Burden, verify, state, and affirm that the data request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



Jason C. Burden

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Jason C. Burden on this the 30 day of September, 2022.



Notary Public, Kentucky State at Large
Kentucky ID Number KYNP43026
My Commission Expires 01-14-2026

BIG RIVERS ELECTRIC CORPORATION
AN ELECTRONIC EXAMINATION OF
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CASE NO. 2022-00268

VERIFICATION

I, Natalie R. Hankins, 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.



Natalie R. Hankins

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

30 SUBSCRIBED AND SWORN TO before me by Natalie R. Hankins on this the
day of September, 2022.



Notary Public, Kentucky State at Large

Kentucky ID Number KYNP43026

My Commission Expires 01-14-2026

BIG RIVERS ELECTRIC CORPORATION
AN ELECTRONIC EXAMINATION OF
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CASE NO. 2022-00268

VERIFICATION

I, Vicky L. Payne, 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.



Vicky L. Payne

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Vicky L. Payne on this the 30 day of September, 2022.



Notary Public, Kentucky State at Large

Kentucky ID Number

KYNP43026

My Commission Expires

01-14-2026

BIG RIVERS ELECTRIC CORPORATION

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September 30, 2022

1 **Item 1)** *For the period under review, provide the amount of coal*
2 *purchased in tons and the percentage of purchases that were spot versus*
3 *contract.*

4

5 **Response)** Please see the schedules below.

For the Period from November 1, 2021, through April 30, 2022

Purchase Vendor	Fuel Type	Purchase Tonnage	Contract Type
ACNR ¹ (BRE-19-002A)	Coal	108,491.78	Contract
Alliance (BRE-19-003A)	Coal	210,800.00	Contract
ACNR (BRE-20-001A)	Coal	286,392.10	Contract
ACNR (BRE-22-001)	Coal	138,397.82	Contract
Alliance (BRE-22-002)	Coal	48,081.11	Contract
Foresight (BRE-21-001)	Coal	189,990.82	Spot
Knight Hawk Coal, LLC (BRE-21-003)	Coal	74,452.40	Spot
Alliance (BRE-21-005)	Coal	34,035.07	Spot

6

¹ ACNR = American Consolidated Natural Resources, Inc.

BIG RIVERS ELECTRIC CORPORATION

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For the Period from November 1, 2021, through April 30, 2022
(Continued)

Purchase Vendor	Fuel Type	Purchase Tonnage	Contract Type
Coal Network (BRE-21-006)	Coal	22,043.56	Spot
Coal Network (BRE-21-007)	Coal	24,517.19	Spot
Alliance (BRE-21-009)	Coal	132,277.00	Spot
Oxbow Energy (BRE-21-011)	Petcoke	7,470.83	Spot
Total Tonnage		<u>1,276,949.68</u>	

For the Period from November 1, 2021, through April 30, 2022

Percentage Spot Purchase Tons	37.96 %
Percentage Contract Purchase Tons	62.04 %
Percentage Total Purchase Tons	<u>100.00 %</u>

1

2

3 **Witness)** Vicky L. Payne

BIG RIVERS ELECTRIC CORPORATION

**AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL
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September 30, 2022

- 1 **Item 2)** *For the period under review, list each coal purchase made under*
2 *a long-term contract (one year or greater). For each purchase, list:*
- 3 *a. Contract or purchase order number;*
 - 4 *b. The supplier's name;*
 - 5 *c. The location(s) of production facilities from which the coal is*
6 *sourced;*
 - 7 *d. The method of delivery, (i.e., barge, truck, rail, other);*
 - 8 *e. The actual quantity received during the review period;*
 - 9 *f. The tonnage requirement for the review period; and*
10 *g. The current price paid per ton.*

11

12 **Response)** Please see the attached schedule.

13

14

15 **Witness)** Vicky L. Payne

16

Big Rivers Electric Corporation
Case No. 2022-00268
Long-Term Fuel Contract Information

American Consolidated Natural Resources, Inc. (“ACNR”)

A. CONTRACT NUMBER:	BRE-19-002 / BRE-19-002A ¹				
B. SUPPLIER’S NAME / ADDRESS:	American Consolidated Natural Resources, Inc. 46226 National Road St. Clairsville, OH 43950				
C. PRODUCTION FACILITY:	ACNR Pride Mine				
D. METHOD OF DELIVERY:	Truck and/or Barge				
E. ACTUAL TONNAGE RECEIVED:					
	<i>During Review Period</i>	2021	–	81,984 Tons	<i>(Nov 1-Dec.30)</i>
		2021	–	26,508 Option Tons	<i>(Jan 1-Apr 30)</i>
F. ACUTAL TONNAGE REQUIREMENTS:					
		2021	–	83,335 Tons	<i>(Nov 1-Dec.30)</i>
		2021	–	20,835 Option Tons	<i>(Jan 1-Apr 30)</i>
G. CURRENT PRICE PAID					
	<i>(Base)</i>	2021	–	\$ 42.85 per Ton	
	<i>(Contract)</i>	2021	–	\$ 43.45 per Ton ²	
	Option Price (Contract)	2021	–	\$44.85 per Ton	

¹ On September 10, 2020, the Western Kentucky Consolidated Resources, LLC (“WKCR”) Agreement (BRE-19-002) was assumed by ACNR and assigned Contract Number BRE-19-002A.

² Price increased in by \$0.60 per ton, governmental imposition (Black Lung tax).

Big Rivers Electric Corporation
Case No. 2022-00268
Long-Term Fuel Contract Information

Alliance Coal, LLC

A. CONTRACT NUMBER: BRE-19-003 / BRE-19-003A³

B. SUPPLIER'S NAME / ADDRESS: Alliance Coal, LLC
1717 South Boulder, Suite 400
Tulsa, OK 74119

C. PRODUCTION FACILITY: River View Coal, LLC (*upon assignment*)
River View Mine, Union County, Kentucky

D. METHOD OF DELIVERY: Barge

E. ACTUAL TONNAGE RECEIVED:

<i>During Review Period</i>	2021	-	78,025	Tons	<i>(Nov 1-Dec 31)</i>
	2022	-	132,775	Tons	<i>(Jan 1- Apr 30)</i>

F. ACUTAL TONNAGE REQUIREMENTS:

	2021	-	83,335	Tons	<i>(Nov 1-Dec 31)</i>
	2022	-	166,668	Tons	<i>(Jan 1- Apr 30)</i>

G. CURRENT PRICE PAID

<i>(Base)</i>	2021	-	\$ 40.10	per Ton	<i>(Jan 1-Nov 14)</i>
	2021	-	\$ 39.43	per Ton	<i>(Nov 15-Dec 31)</i>
	2022	-	\$ 40.70	per Ton	
<i>(Contract)</i>	2021	-	\$ 40.10	per Ton	<i>(Jan 1-Nov 14)</i>
	2021	-	\$ 39.43	per Ton	<i>(Nov 15-Dec 31)</i>
	2022	-	\$ 40.70	per Ton	

³ Assigned from Rhino Energy LLC to Alliance Coal on September 6, 2019. Referenced following assignment as Rhino/Alliance (BRE-19-003A).

Big Rivers Electric Corporation
Case No. 2022-00268
Long-Term Fuel Contract Information

American Consolidated Natural Resources, Inc. (“ACNR”)

A. CONTRACT NUMBER:	BRE-20-001 / BRE-20-001A ⁴				
B. SUPPLIER’S NAME / ADDRESS:	American Consolidated Natural Resources, Inc. 46226 National Road St. Clairsville, OH 43950				
C. PRODUCTION FACILITY:	ACNR Pride Mine (<i>Current Source</i>)				
D. METHOD OF DELIVERY:	Truck and/or Barge				
E. ACTUAL TONNAGE RECEIVED:					
	<i>During Review Period</i>				
	2021	–	57,545	Tons	<i>(Nov 1- Dec 31)</i>
	2021	–	0	Option Tons	<i>(Nov 1- Dec 31)</i>
	2022	–	151,466	Tons	<i>(Jan 1- Apr 30)</i>
	2022	–	77,381	Option Tons	<i>(Jan 1-Apr 30)</i>
F. ACTUAL TONNAGE REQUIREMENTS:					
	2021	–	66,667	Tons	<i>(Nov 1- Dec 31)</i>
	2021	–	16,667	Option Tons	<i>(Nov 1- Dec 31)</i>
	2022	–	133,332	Tons	<i>(Jan 1- Apr 30)</i>
	2022	–	33,332	Option Tons	<i>(Jan 1-Apr 30)</i>
G. CURRENT PRICE (<i>Base</i>):	2021	–	\$ 43.25	per Ton	
	2022	–	\$ 43.70	per Ton	
CURRENT PRICE (<i>Contract</i>):	2021	–	\$ 43.85	per Ton ⁵	
	2022	–	\$ 43.70	per Ton	
OPTION PRICE (<i>Contract</i>):	2021	–	\$ 44.50	per Ton	
	2022	–	\$ 44.35	per Ton	

⁴ On September 10, 2020, the WKCR Agreement was assumed by ACNR and assigned Contract Number BRE-20-001A.

⁵ Price increased in 2021 by \$0.60 per ton, governmental imposition (Black Lung tax).

Big Rivers Electric Corporation
Case No. 2022-00268
Long-Term Fuel Contract Information

American Consolidated Natural Resources, Inc. (“ACNR”)

A. CONTRACT NUMBER: BRE-22-001

B. SUPPLIER’S NAME / ADDRESS: American Consolidated Natural Resources, Inc.
46226 National Road
St. Clairsville, OH 43950

C. PRODUCTION FACILITY: ACNR Pride Mine

D. METHOD OF DELIVERY: Truck

E. ACTUAL TONNAGE RECEIVED:
2022 – 138,398 Tons (*through Apr 30*)

F. ACTUAL TONNAGE REQUIREMENTS:
2022 – 166,668 Tons (*through Apr 30*)

G. CURRENT PRICE (Base) 2022 – \$42.85 per Ton
CURRENT PRICE (Contract) 2022 – \$42.85 per Ton

Big Rivers Electric Corporation
Case No. 2022-00268
Long-Term Fuel Contract Information

Alliance Coal, LLC

A. CONTRACT NUMBER: BRE-22-002

B. SUPPLIER'S NAME / ADDRESS: Alliance Coal, LLC
1717 South Boulder, Suite 400
Tulsa, OK 74119

C. PRODUCTION FACILITY: River View Coal, LLC
River View Mine, Union County, Kentucky

D. METHOD OF DELIVERY: Barge

E. ACTUAL TONNAGE RECEIVED:
2022 - 48,081 Tons *(through Apr 30)*

F. ACTUAL TONNAGE REQUIREMENTS:
2022 - 91,668 Tons *(through Apr 30)*

G. CURRENT PRICE (Base) 2022 - \$42.00 per Ton
CURRENT PRICE (Contract) 2022 - \$42.00 per Ton

BIG RIVERS ELECTRIC CORPORATION

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September 30, 2022

- 1 **Item 3)** *As of the last day of the review period:*
- 2 *a. State the coal inventory level in tons and in number of days' supply.*
- 3 *Provide this information by generating station and in the*
- 4 *aggregate.*
- 5 *b. Describe the criteria used to determine number of days' supply.*
- 6 *c. State the target coal inventory level for each generating station, and*
- 7 *for the total system.*
- 8 *d. If actual coal inventory exceeds the target inventory by ten days'*
- 9 *supply, state the reasons for the excess inventory.*
- 10 *e. State whether any significant changes in the current coal inventory*
- 11 *target are expected within the next 12 months. If so, state the*
- 12 *expected change and the reasons for this change.*

13

14

BIG RIVERS ELECTRIC CORPORATION

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September 30, 2022

1 **Response)**

2 a. As of April 30, 2022, Big Rivers' generating stations individually, and in
3 the aggregate, had the inventory levels and days' supply shown in the table
4 below.

5

Total System / Station	Inventory Level (Tons) ¹	Number of Days' Supply ²	Preceding Six-Month Operating Duration (In Days)	Preceding 6 Months Burn (In Tons)
Big Rivers Electric System	321,405.39	34	118	1,112,327.69
Green Station	00.00	00	94	411,126.73
Wilson Station	321,405.39	76	165	701,200.96

6

7 b. Number of Days' Supply =

$$\frac{\text{Current Inventory (Tons)}}{\text{Preceding 6 Months Burn (Tons)}} \times \text{Duration (In Days)}$$

8

¹ Green Station and Wilson Stations each had a pet coke inventory of zero tons as of April 30, 2022.

² Number of days' supply is rounded to reflect whole days.

BIG RIVERS ELECTRIC CORPORATION

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- 1 c. Big Rivers Electric Corporation's Target Supply is the following range for
2 each Station in days based on the projected annual fuel burn:

**Big Rivers Electric Corporation
Coal Inventory Target Ranges**

Total System	30 – 60 Days
Green	0 Days
Wilson	30 – 60 Days

3

- 4 d. Actual coal inventory exceeds the target inventory for Wilson Station by
5 more than ten days' supply during the period under review. Big Rivers is
6 choosing to nominate maximum tonnage on all lower price long-term
7 contracts.

- 8 e. No.

9

10 **Witness)** Vicky L. Payne

11

BIG RIVERS ELECTRIC CORPORATION

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September 30, 2022

Item 4) *List each written coal supply solicitation issued during the period under review.*

- a. For each solicitation, provide the date of the solicitation, the type of solicitation (contract or spot), the quantities solicited, a general description of the quality of coal solicited, the period over which deliveries were requested, and the generating unit(s) for which the coal was intended.***
- b. For each solicitation, state the number of vendors to whom the solicitation was sent, the number of vendors who responded, and the selected vendor. Provide the bid tabulation sheet or corresponding document that ranked the proposals. (This document should identify all vendors who made offers.) State the reasons for each selection. For each lowest-cost bid not selected, explain why the bid was not selected.***

BIG RIVERS ELECTRIC CORPORATION

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September 30, 2022

Response)

a. and b.

There were no written coal-supply solicitations issued during the period under review, *i.e.*, November 1, 2021 through April 30, 2022.

Witness) Vicky L. Payne

BIG RIVERS ELECTRIC CORPORATION

**AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL
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September 30, 2022

1 **Item 5)** *List each oral coal supply solicitation issued during the period*
2 *under review.*

3 *a. For each solicitation, state why the solicitation was not written, the*
4 *date(s) of the solicitation, the quantities solicited, a general*
5 *description of the quality of coal solicited, the period over which*
6 *deliveries were requested, and the generating unit(s) for which the*
7 *coal was intended.*

8 *b. For each solicitation, identify all vendors solicited and the vendor*
9 *selected. Provide the tabulation sheet or other document that ranks*
10 *the proposals. (This document should identify all vendors who*
11 *made offers.) State the reasons for each selection. For each lowest-*
12 *cost bid not selected, explain why the bid was not selected.*

13

14

BIG RIVERS ELECTRIC CORPORATION

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1 **Response)**

2 a. and b.

3 There were no oral coal-supply solicitations issued during the period under
4 review, *i.e.*, November 1, 2021 through April 30, 2022.

5

6 **Witness)** Vicky L. Payne

BIG RIVERS ELECTRIC CORPORATION

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1 **Item 6)** *For the period under review, list each vendor from whom natural*
2 *gas was purchased for generation and the quantities and the nature of each*
3 *purchase (i.e., spot or contract).*

4

5 **Response)** Please see the listing on the following page for vendors from whom
6 natural gas was purchased for generation and the quantity and nature of each
7 purchase from November 1, 2021, through April 30, 2022.

8 Starting in July 2010, Big Rivers began purchasing natural gas under a North
9 American Energy Standard Board ("NAESB") base contract for sale and purchase of
10 natural gas. Actual purchases of gas are made using transaction confirmations that
11 are governed by the NAESB contract. Big Rivers also entered into a contract with
12 Texas Gas Transmission, LLC for the transportation and storage and borrowing of
13 gas to Big Rivers' delivery point, the Reid Combustion Turbine. All of these contracts
14 are on file with the Kentucky Public Service Commission.

15

BIG RIVERS ELECTRIC CORPORATION

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1

For the Period from November 1, 2021, through April 30, 2022

Purchase Vendor	Fuel Type	MCF	Contract Type
CIMA Energy, LTD	Natural Gas	32,022.00	Spot
Tenaska Marketing Ventures	Natural Gas	46.00	Spot
		<u>32,068.00</u>	

2

3

4 **Witness)** Vicky L. Payne

5

BIG RIVERS ELECTRIC CORPORATION

**AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL
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September 30, 2022

1 **Item 7)** *For the period under review, state whether there were any*
2 *instances in which a natural gas generating unit could not be operated when*
3 *it otherwise would have run due to pipeline constraints or natural gas being*
4 *unavailable.*

5

6 **Response)** There were no instances during this review period that Big Rivers' gas
7 generating unit could not be operated when it otherwise would have run, due to
8 pipeline constraints or natural gas being unavailable.

9

10

11 **Witness)** Vicky L. Payne

12

BIG RIVERS ELECTRIC CORPORATION

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1 **Item 8)** *State whether there have been any changes to hedging activities*
2 *for coal or natural gas purchases used for generation since the previous FAC*
3 *review proceeding. If so, describe the changes in detail.*

4

5 **Response)** Big Rivers does not engage in financial hedging activities regarding its
6 coal or natural gas purchases used for generation. Big Rivers does, however, stagger
7 its purchases of coal to create a natural hedge on price volatility pursuant to Policy
8 No. 111 – Hedge Policy. There have been no changes to these hedging activities since
9 the previous FAC review.

10

11

12 **Witness)** Vicky L. Payne

13

BIG RIVERS ELECTRIC CORPORATION

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1 **Item 9)** *State whether BREC has audited any of its fuel or transportation*
2 *contracts during the period under review. If so, for each audited contract:*

3 *a. Identify the contract;*

4 *b. Identify the auditor; and*

5 *c. State the results of the audit, and describe the actions that BREC*
6 *took as a result of the audit.*

7

8 **Response)**

9 a. Yes. Big Rivers audited two of its coal supply source mine operations
10 during the Review Period: Rhino/Alliance and Alliance contracts BRE-19-
11 003 and BRE-22-002 (source: River View Mine) on January 6, 2022, and
12 ACNR's Pride⁴ mining operations for contracts BRE-20-001A and BRE-22-
13 001 on January 27, 2021. Big Rivers did not audit any of its transportation
14 contracts during that same time period.

⁴ ACNR = American Consolidated Natural Resources, Inc.

BIG RIVERS ELECTRIC CORPORATION

**AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL
ADJUSTMENT CLAUSE OF BIG RIVERS ELECTRIC CORPORATION
FROM NOVEMBER 1, 2021 THROUGH APRIL 30, 2022
CASE NO. 2022-00268**

**Responses to Commission Staff's First Request for Information
in Appendix B of the Commission's Order
dated September 13, 2022**

September 30, 2022

- 1 b. Associated Engineers, Inc. of Madisonville, Kentucky (“Associated
2 Engineers”) conducted the mine review, and some of Big Rivers’ employees
3 attended a tour of both mining operations.
- 4 c. Associated Engineers did not report any operational issues from either
5 mine audited.

6

7

8 **Witness)** Vicky L. Payne

9

BIG RIVERS ELECTRIC CORPORATION

**AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL
ADJUSTMENT CLAUSE OF BIG RIVERS ELECTRIC CORPORATION
FROM NOVEMBER 1, 2021 THROUGH APRIL 30, 2022
CASE NO. 2022-00268**

**Responses to Commission Staff's First Request for Information
in Appendix B of the Commission's Order
dated September 13, 2022**

September 30, 2022

1 **Item 10)**

2 **a. *State whether BREC is currently involved in any litigation with its***
3 ***current or former fuel suppliers or transportation vendors. If so, for***
4 ***each litigation:***

5 ***(1) Identify the supplier or vendor;***

6 ***(2) Identify the contract involved;***

7 ***(3) State the potential liability or recovery to BREC;***

8 ***(4) List the issues presented; and***

9 ***(5) Provide a copy of the complaint or other legal pleading that***
10 ***initiated the litigation and any answers or counterclaims. If***
11 ***a copy has previously been filed with the Commission, provide***
12 ***the date on which it was filed and the case in which it was***
13 ***filed.***

14 **b. *State the current status of all litigation with suppliers or vendors.***

15

16

BIG RIVERS ELECTRIC CORPORATION

**AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL
ADJUSTMENT CLAUSE OF BIG RIVERS ELECTRIC CORPORATION
FROM NOVEMBER 1, 2021 THROUGH APRIL 30, 2022
CASE NO. 2022-00268**

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in Appendix B of the Commission's Order
dated September 13, 2022**

September 30, 2022

1 **Response)**

2 a. No. Big Rivers is not currently involved in any litigation with its current
3 or former fuel suppliers or transportation vendors.

4 b. Not applicable.

5

6

7 **Witness)** Vicky L. Payne

8

BIG RIVERS ELECTRIC CORPORATION

**AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL
ADJUSTMENT CLAUSE OF BIG RIVERS ELECTRIC CORPORATION
FROM NOVEMBER 1, 2021 THROUGH APRIL 30, 2022
CASE NO. 2022-00268**

**Responses to Commission Staff's First Request for Information
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September 30, 2022

1 **Item 11)**

2 *a. For the period under review, state whether there have been any*
3 *changes to BREC's written policies and procedures regarding its*
4 *fuel procurement. If yes:*

5 *(1) Describe the changes;*

6 *(2) Provide the written policies and procedures as changed;*

7 *(3) State the date(s) the changes were made; and*

8 *(4) Explain why the changes were made.*

9 *b. If no, provide the date BREC's current fuel procurement policies and*
10 *procedures were last changed, provide the date when they were last*
11 *provided to the Commission, and identify the proceeding in which*
12 *they were provided.*

13

14

BIG RIVERS ELECTRIC CORPORATION

**AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL
ADJUSTMENT CLAUSE OF BIG RIVERS ELECTRIC CORPORATION
FROM NOVEMBER 1, 2021 THROUGH APRIL 30, 2022
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September 30, 2022

1 **Response)**

2 a. Yes, during the period under review, i.e., November 1, 2021, through
3 April 30, 2022, Big Rivers made changes to Policy No. 105 "Energy Related
4 Transaction Authority Policy," Appendix A to Policy No. 105, and Policy No. 111
5 "Hedging Policy."

6 Copies of the current Policy No. 105, Appendix A to Policy No. 105, and Policy
7 No. 111 are attached, along with redline mark-ups thereof showing the changes from
8 the prior version. Policy No. 105 Appendix A has been revised three (3) times since
9 the last review period. The attached redline of Appendix A to Policy No. 105 is the
10 current version (Revision 19) compared against Revision 16. The reasons for the
11 changes are described at the end of each policy.

12

13 b. Big Rivers' other fuel procurement policies and procedures were not
14 changed during the period under review, i.e., November 1, 2021 through April 30,
15 2022. In the table on the following page, Big Rivers lists these other written policies
16 and procedures regarding fuel procurement, the date of their last changes, and the
17 proceedings in which Big Rivers provided them to the Commission.

BIG RIVERS ELECTRIC CORPORATION

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1 b. *(continued)*

Big Rivers Electric Corporation Policies and Procedures for Fuel Procurement				
Number	Name	Date Last Change	Provided In	Date Provided
105	Energy-Related Transaction Authority Policy	2020-11-20	Case No. 2021-00297	2021-09-21
105	Appendix A: Energy-Related Transaction Authority Policy	2020-03-17	Case No. 2020-00250	2020-09-02
111	Hedge Policy	2020-08-21	Case No. 2021-00058	2021-03-22
120	Fuel Procurement – Policies and Procedures	2021-09-17	Case No. 2022-00041	2022-04-14
121	Solid Fuel Inventory Policy	2019-08-16	Case No. 2020-00009	2020-02-25
122	Energy-Related Transaction Credit Policy	2017-11-17	Case No. 2018-00221	2018-08-24

2

3

4 **Witness)** Vicky L. Payne

5

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	12/17/2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/17/2021	

1. Policy Purpose

The purpose of this policy is to define the authority granted by the Big Rivers Electric Corporation (“Big Rivers”) Board of Directors (“Board”) to the President & Chief Executive Officer (“CEO”) to execute, or to delegate authority to execute energy-related transactions. Furthermore, it sets forth clarity and empowerment among those with transaction authority and is designed to encourage communication among individuals with transaction authority and the Board.

2. Objective

The objective of Big Rivers’ Energy Related Transaction Authority Policy is to define:

- Who has authority to execute transactions,
- The commodities and products that can be transacted,
- The authorized lead-time and term for each transaction,
- The authorized maximum price and volume,
- Counterparty contract and credit requirements,
- The process for approving new commodities, products or locations,
- Big Rivers’ intention regarding hedging and speculating,
- Other relevant factors associated with due diligence in authorizing transactions to be executed.

3. Procedural Requirements

The following defines the procedural requirements that apply to all commodities and products transacted pursuant to this policy.

Execution Authority

Execution Authority is outlined by commodity in the authority matrix sections found below. All column limits in these matrices are applied independently of one another for each authority level, in that no individual column limit may be exceeded without authorization, regardless of whether a transaction does not exceed another column limit for that same authority level. Limits for each level of authority are cumulative, and include all column limits up to and including that level. The authority granted in this policy should not violate any other policy limits.

The transaction limits apply to both purchases and sales.

This policy identifies Board-authorized levels for the CEO and explicitly gives the CEO the authority to delegate authority levels to Big Rivers’ staff and ACES Power Marketing (“ACES”). The CEO has the authority to modify delegated authority levels (noted in Appendix A) at his sole discretion as long as the delegated authority does not exceed his own authority per this policy.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	12/17/2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/17/2021	

Contract Requirements

Transactions with counterparties shall only be permitted if Big Rivers has either:

- An active, valid, and executed agreement enabling such transaction activity with that counterparty,
- Long-form confirmations may be used as a valid agreement in lieu of a permanent agreement, when necessary if approved in writing by the Big Rivers CEO.

Credit Requirements

Credit limits for each counterparty shall not be intentionally exceeded. *(Note: Since credit exposures are a function of not only positions transacted, but also a function of market pricing and volatility, credit exposure to counterparty may unintentionally exceed a credit limit purely due to changes in the forward market.)*

Entering into unsecured transactions with a counterparty that has total credit exposure greater than or equal to its open line of credit and the total of any security currently provided will not be allowed unless approved in writing by the Big Rivers CEO.

Credit Slewing

All slewing transactions for credit purposes shall be approved by the CEO. *(Note: Slewing is an arrangement where a more financially reputable entity acts as middleman for a smaller, undercapitalized entity in the purchase or sale of power.)*

Contract Slewing

This policy does not prohibit Big Rivers from being positioned between another member or customer of ACES and an external counterparty in order to bridge a contract gap that exists. The sleeve must:

- Be only for physical power, transmission or natural gas, not transportation,
- Be only for terms of one month or less.

Contract slewing on behalf of Big Rivers is approved when it is either the only or the most economical path to pursue at the discretion of ACES, with prompt after-the-fact notice to the Big Rivers CEO.

Transaction Communications

All communications for bilateral electric power transactions must be transacted via a recorded communication method. Examples include, but are not limited to, voice recorded communication, instant messaging, email or via an online broker account. Recorded communications must be maintained and controlled by personnel who are independent of the transaction function.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	12/17/2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/17/2021	

Deal Capture

Power transactions executed by a Big Rivers employee must be promptly forwarded to ACES after the deal execution.

Speculation

Speculation refers to a purchase or sale transaction in which the intent was to realize a profit without an underlying long or short generation position. No speculative transaction activities shall be permitted, and no speculative transaction positions shall be initiated. Transactions will be permitted only for purposes of hedging and portfolio optimization.

Non-Standard Products

The Board must pre-approve any transaction that involves commodities or products not listed in this policy.

Transactions Requiring Board Approval

Transactions which meet any of the following criteria must be pre-approved by the Board prior to execution:

- The transaction is a new commodity or within the list of commodities not previously transacted by Big Rivers,
- The transaction is at a location in which no transactions are permitted,
- The transaction is for something other than: physical spot or forward electricity, natural gas, fuel oil, solid fuel, ancillary services, capacity, power transmission, financial transmission rights, gas transportation, gas imbalance and storage, solid fuel transportation, exchange transacted energy products, over-the-counter (OTC) financial energy transactions, OTC energy options, federal SO₂ or NO_x emission allowances, renewable energy credits or a unit outage insurance product.

Examples of new instruments would include the use of derivatives with different risk characteristics or the use of derivatives to implement different business strategies or goals. New instruments or locations would also include those instruments or locations that may be transacted on a “one-off” basis, which would be implementation of a derivative instrument or entry into a commodity market that, despite the anticipation of being transacted just once, would still fit the definition of a new instrument or location.

The purpose of defining a process for such transactions as noted above is to ensure that the exposures associated with them are thoroughly reviewed and understood by the Board and appropriate transaction controls are in place. The Board must approve the use of such transactions prior to execution using the process defined below:

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	12/17/2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/17/2021	

- a) Transaction Proposal - The proposal is the responsibility of the person or business group proposing the transaction. The proposal should address the business need, risks, transaction controls, valuation methodology, accounting methodology, operations workflow/ methodology, and assessment of legal and regulatory issues.

- b) Board Review - The Board will perform a review of the benefits and risks of the proposed transaction. The Board will assess the proposed transaction and make a determination whether to add the proposed transaction to the approved list.

- c) Approval (Pilot Program) – The Board may approve limited use of the proposed transaction to ensure that proper controls are in place to monitor the activity. The Board may approve the proposed transaction without instituting a Pilot Program if the proposed transaction is going to be used once (one off), where it would not be prudent to test it in a shorter time frame or smaller quantity due to constraints such as liquidity or length of term of product. The Board will use more scrutiny in approval of one-off transactions.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	12/17/2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/17/2021	

4. Bilateral Energy, Capacity and Transmission Purchases and Sales Transaction Authority

The following outlines transaction limits, definitions, and procedural requirements for energy, capacity and transmission transactions.

Purchases		Per Transaction Limits (up to)				Aggregate Limits (up to)	
Title	Product	Term	Lead Time	MW Size	Max. \$	Total Volume	Total \$
Board	Energy, Capacity and Transmission	No Limit	No Limit	No Limit	No Limit	No Limit	No Limit
CEO	Energy	≤ 2 Years	≤ 3 Years	≤ 400	≤ \$150/MWh	7,008,000 MWh	\$350.4 million
	Capacity	≤ 3 Years	≤ 4 Years	≤ 100	≤ \$6/kW-Mo	1200 MW-Year	\$86.4 million
	Transmission	≤ 2 Years	≤ 3 Years	≤ 100	Tariff	200 MW-Year	Tariff

Sales		Per Transaction Limits (up to)				Aggregate Limits (up to)	
Title	Product	Term	Lead Time	MW Size	Min. \$	Total Volume	Total \$
Board	Energy, Capacity and Transmission	No Limit	No Limit	No Limit	No Limit	No Limit	No Limit
CEO	Energy	≤ 2 Years	≤ 3 Years	≤ 400	No Limit	11,100,000 MWh	No Limit
	Capacity	≤ 2 Years	≤ 3 Years	≤ 500	No Limit	1500 MW-Year	No Limit
	Transmission	≤ 2 Years	≤ 3 Years	≤ 100*	No Limit	300 MW-Year	No Limit

*Lesser of 100 MW or rights to transmission capacity owned by Big Rivers.

Energy, Capacity and Transmission Authority Matrix Explanations

- Transaction limits represent the MW volume per hour and dollars/MWH for each transaction executed.
- Aggregate Limits represent the sum total MWH volume and dollars for all physical and financial forward transactions, excluding options.
- Lead time represents the time period from the date the transaction is executed to the start of the transaction.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	12/17/2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/17/2021	

- Authorized products include energy both forwards and options, transmission and capacity, including both physical and financial derivatives. Options may only be entered into by the Big Rivers CEO or his designee.
- Authority for PJM and MISO products is defined in the authority matrices below.

Delivery Locations

Transactions at delivery locations outside the eastern interconnect are not permitted, unless approved by the CEO. Transaction at delivery locations that are normal to the daily course of business for Big Rivers, to the extent transmission is available, are authorized as follows:

Unrestricted Delivery Locations

- SERC Reliability Region
- MISO
- PJM
- RFC Reliability Region
- SPP

Transaction at any other delivery locations within the eastern interconnection shall be restricted as follows:

Restricted Delivery Locations

Other eastern interconnection locations only with approval by the Big Rivers CEO.

Firmness of Energy

The product firmness of all transactions must be provided for in an executed agreement between Big Rivers and the appropriate counterparty. Sales commitments must never be more firm than the supply source, including the purchase side of back-to-back sales, swaps, sleeves or spreads unless the Big Rivers CEO gives explicit written authority to sell power that is more firm than the supply source. Energy purchased as firm liquidated damages may be resold as such.

Transmission Firmness and Volume

Transmission purchases need to be of equal firmness and volume to the energy component that such transmission purchase is associated with, unless pre-approved otherwise by the Big Rivers CEO. (Note: Purchasing small percentages of additional transmission to cover transmission losses is permitted.) In addition, transmission may be reserved but not utilized if an energy schedule is not confirmed prior to scheduling deadlines outside of Big Rivers' or ACES's control. When this occurs it is not considered a violation of this policy.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	12/17/2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/17/2021	

5. MISO Transaction Authority

The following outlines transaction limits, definitions, and procedural requirements for MISO products.

		MISO Per Transaction Limits (up to)			
Title	Product	Delivery Lead Time	Term	MW Size	\$/MWh
Board	All MISO Products	No Limit	No Limit	No Max	No Max
CEO	Generation Awards	As Required by MISO	1 Operating Day	No Max	MISO Price Cap
	Demand Awards				
	Ancillary Service Awards				
	Capacity	≤ 3 Years	≤ 3 Years	500	
	Financial Transmission Rights	≤ 4 Years	≤ 4 Years	425	\$20
	Virtual Transaction Awards Imports/Exports	As Required by MISO	1 Operating Day	No Max	MISO Price Cap

MISO Authority Matrix Explanations

- Virtual transaction award limits are per each bid/offer nodal point. Virtual purchase awards and virtual sales awards are monitored separately.
- Imports and exports are per location and are monitored separately.
- Generation Award Limits are per generating unit.
- Demand Award Limits are per each load nodal point.
- Limits for Ancillary Service Awards apply to the Regulation and Operating (Spinning and Supplemental) Reserve Market only.
- Capacity limits apply to capacity transacted via the MISO Capacity Auction for each generating unit and excludes the capacity required for Big Rivers' native load.
- Only Financial Transmission Rights that are bought and sold via the annual and monthly auctions or in the secondary market are monitored per the limits above. Participation in the Annual Allocation of financial transmission rights is not considered a transaction subject to this Policy.
- Delivery lead time represents the time period between trade execution and start of flow.

Note that all MISO day-ahead transactions, such as price-sensitive offers and bids for importing and exporting from MISO, are financially firm. Hence an exception from the firmness of power for adjustments to these day ahead transactions intraday is acceptable due to the fact that these adjustments are hourly and non-firm.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	12/17/2021	Approved by BOARD
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6. PJM Transaction Authority (Non-Bilateral)

The following outlines transaction limits, definitions, and procedural requirements for PJM products.

		PJM Per Transaction Limits (up to)			
Title	Product	Delivery Lead Time	Term	MW Size	\$/MWh
Board	All PJM Products	No Limit	No Limit	No Max	No Max
CEO	Generation Awards	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted
	Demand Awards				
	Ancillary Service Awards				
	Capacity	≤ 4 Years	≤ 4 Years	425	\$20
	Financial Transmission Rights				
	Virtual Transaction Awards				
Imports/Exports	As Required by PJM	1 Operating Day	No Max	PJM Price Cap	

PJM Authority Matrix Explanations

- Virtual transaction award limits are per each bid/offer nodal point. Incremental purchase awards and decremental sales awards are monitored separately.
- Imports and exports are per location and are each monitored separately.
- Only financial transmission rights that are bought and sold via the annual and monthly auctions or in the secondary market are monitored per the limits above. Participation in the Annual Allocation of financial transmission rights is not considered a transaction subject to this Policy.

Note that PJM RTO day-ahead transactions, such as price-sensitive offers and bids for importing and exporting from PJM are financially firm. Hence an exception from the firmness of power for adjustments to these day ahead transactions intraday is acceptable due to the fact that these adjustments are hourly and non-firm.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	12/17/2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/17/2021	

7. Natural/Synthetic Gas and Transportation Transaction Authority

The following outlines transaction limits, definitions, and procedural requirements for natural/synthetic gas (Gas) and transportation transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Physical Volume per Day Mcf	\$/Mcf	Total Physical Volume Mcf	Total \$
Board	Gas Products	No Limit	No Limit	No Max.	No Max.	No Max.	No Max.
CEO	Physical	> 1 Year ≤ 2 Years	≤ 2 Years	150,000	\$15	5 million	\$75 million
		≤ 1 Year		No Max.	No Max.		

Gas Authority Matrix Explanations

- Transaction limits represent the physical Mcf volume per day and dollars/Mcf for each transaction executed.
- Aggregate limits represent the total physical Mcf volume and dollars for all forward transactions.
- Lead time represents the time period from the date a transaction is executed to the start of the transaction.
- The dollar limits are based upon commodity gas only and do not include transportation, however, the term, lead time, and volume limits do apply to transportation.
- Gas products include physical gas, as well as transportation, imbalance and storage. The above authority matrix applies to both exchange transacted and OTC derivative products.

Gas Firmness

The product firmness of all transactions must be provided for in an executed agreement between Big Rivers and the appropriate counterparty. Sales commitments of Gas must never be more firm than the Gas supply source unless pre-approved by the Big Rivers CEO.

Transportation Firmness and Volume

Transportation purchases need to be of equal firmness and volume to the Gas component that such transportation purchase is associated with, unless pre-approved otherwise by the Big Rivers CEO.

Delivery Locations

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	12/17/2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/17/2021	

Gas transactions may only be executed at the following locations:

- Pipelines and hubs that serve Big Rivers' gas powered generation unit(s).

Physical Gas transactions may only be executed at other locations upon approval of the Big Rivers CEO and such transactions must support the hedging needs of Big Rivers.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	12/17/2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/17/2021	

8. Renewable Energy Credits Trading Authority

The following outlines transaction limits, definitions, and procedural requirements for renewable energy credit transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Total Volume MWh	\$/MWh	Total Volume MWh	Total \$
Board of Directors	Renewable Energy Credits	No Limit	No Limit	No Max.	No Max.	No Max.	No Max.
CEO	Renewable Energy Credits	≤ 3 Years	≤ 4 Years	400,000	\$15	800,000	\$12 Million

Renewable Energy Credits Trading Authority Matrix Explanations

- The authority matrix above addresses authority for Renewable Energy Credits (RECs).
- Transaction Limits represent the total MWh volume and dollars/MWh for each REC transaction executed.
- Aggregate Limits represent the sum total MWh volume and dollars for all forward transactions.
- Term limits only apply to forward transactions, not spot transactions.
- Lead time represents the time period between trade execution and delivery of the RECs. Lead time limits only apply to forward transactions and not to spot transactions.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	12/17/2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/17/2021	

9. Fuel Oil Transaction Authority

The following outlines transaction limits, definitions, and procedural requirements for physical fuel oil transactions.

Fuel oil hedging will be conducted to hedge price risk associated with fuel oil used for plant start-up or to hedge potential fuel oil or diesel fuel price risk contained within solid fuel contracts.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Physical - Volume Gallons	\$/Gallon	Total Physical - Volume Gallons	Total \$
Board	Physical Fuel Oil	No Limit	No Limit	No Max	No Max	No Max	No Max
CEO	Physical Fuel Oil	> 1 Year	≤ 2 Years	1,000,000	\$6	6,000,000	\$36 million
		≤ 3 Years		No Max	No Max		
		≤ 1 Year					

Fuel Oil Authority Matrix Explanations

- Transaction limits represent the total gallons and dollars/gallon for each transaction executed.
- Aggregate limits represent the sum total gallon volume and dollars for all forward transactions.
- Lead time represents the time period from the date a transaction is executed to the start of the transaction.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	12/17/2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/17/2021	

10. Solid Fuel Transaction Authority

The following outlines transaction limits, definitions, and procedural requirements for solid fuel transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/MMBtu	Total Volume Tons	Total \$
Board	Physical Solid Fuel	No Limit	No Limit	No Max	No Max	No Max	No Max
CEO	Physical Solid Fuel	> 3 Months ≤ 3 Years	≤ 2 Years	2,500,000	\$6.00	4 million	\$240 million
		≤ 3 Months		200,000	No Max		

Solid Fuel Authority Matrix Explanations

- Authorized products include physical spot and forward transactions and options on physical forwards.
- Per transaction limits represent the total quantity in tons and dollars/MMBtu for each transaction executed.
- Aggregate limits represent the sum total quantity in tons and dollars for all forward transactions.
- Lead time represents the time period from the date a transaction is executed to the start of the transaction.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	12/17/2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/17/2021	

11. Transportation Transaction Authority

The following outlines transaction limits, definitions, and procedural requirements for transportation transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/Ton	Total Volume Tons	Total \$
Board	Barge, Rail or Truck Transportation	No Limit	No Limit	No Max	No Max	No Max	No Max
CEO	Barge, Rail or Truck Transportation	> 1 Year ≤ 3 Years	≤ 2 Years	3 million	\$25	6 million	\$150 million
		≤ 1 Year		No Max	No Max		

Transportation Authority Matrix Explanations

- Authorized products include barge, rail and truck transportation transactions.
- Per transaction limits represent the total quantity in tons and dollars/ton for each transaction executed.
- Aggregate limits represent the sum total quantity in tons and dollars for all forward transactions.
- Lead time represents the time period from the date a transaction is executed to the start of the transaction.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	12/17/2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/17/2021	

12. Emission Allowances Transaction Authority*

The following outlines transaction limits, definitions, and procedural requirements for emissions transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/Ton	Total Volume Tons	Total \$
Board	Federal SO ₂ and NO _x Emission Allowances	No Limit	No Limit	No Max	No Max	No Max	No Max
CEO	Federal SO ₂ Emission Allowances	> 1 Year ≤ 2 Years	≤ 2 Years	5,000	\$500	20,000	\$10 million
		≤ 1 Year		No Max	No Max		
	Federal NO _x Emission Allowances	> 1 Year ≤ 2 Years		2,500	\$2,500	12,500	\$30 million
		≤ 1 Year		No Max	No Max		

Emission Allowance Authority Matrix Explanations

- The authority matrix above represents authority for SO₂ and NO_x emission allowances.
- Per transaction limits represent the total quantity in tons and dollars/ton for each transaction executed.
- Aggregate limits represent the sum total quantity in tons and dollars for all forward transactions.
- Lead time represents the time period from the date a transaction is executed to the start of the transaction.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	12/17/2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/17/2021	

13. Limestone Reagent Transaction Authority

The following outlines transaction limits, definitions, and procedural requirements for limestone reagent transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/Ton	Total Volume Tons	Total \$
Board	Physical Limestone Reagent	No Limit	No Limit	No Max	No Max	No Max	No Max
CEO	Physical Limestone Reagent	> 3 Months ≤ 3 Years	≤ 2 Years	750,000	\$30	1.50 million	\$30 million
		≤ 3 Months		No Max	No Max		

Limestone Reagent Authority Matrix Explanations

- Authorized products include physical spot and forward transactions and options on physical forwards.
- Per transaction limits represent the total quantity in tons and dollars for each transaction executed.
- Aggregate limits represent the sum total quantity in tons and dollars for all forward transactions.
- Lead time represents the time period from the date a transaction is executed to the start of the transaction.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	12/17/2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/17/2021	

14. Bulk Lime and Lime Hydrate Reagent Transaction Authority

The following outlines transaction limits, definitions, and procedural requirements for bulk lime and lime hydrate reagent transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/Ton	Total Volume Tons	Total \$
Board	Physical Lime Reagent	No Limit	No Limit	No Max	No Max	No Max	No Max
CEO	Physical Lime Reagent	> 3 Months ≤ 3 Years	≤ 2 Years	750,000	\$200	750,000	\$150 million
		≤ 3 Months		No Max	No Max		

Bulk Lime and Lime Hydrate Reagent Authority Matrix Explanations

- Authorized products include physical spot and forward transactions and options on physical forwards.
- Per transaction limits represent the total quantity in tons and dollars for each transaction executed.
- Aggregate limits represent the sum total quantity in tons and dollars for all forward transactions.
- Lead time represents the time period from the date a transaction is executed to the start of the transaction.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	12/17/2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/17/2021	

15. MATS Reagent Transaction Authority

The following outlines transaction limits, definitions, and procedural requirements for MATS reagent transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/Ton	Total Volume Tons	Total \$
Board	MATS Reagent	No Limit	No Limit	No Max	No Max	No Max	No Max
CEO	MATS Reagent	> 3 Months ≤ 3 Years	≤ 2 Years	25,000	\$4,000	25,000	\$100 million
		≤ 3 Months		No Max	No Max		

MATS Reagent Authority Matrix Explanations

- Authorized products include physical spot and forward transactions and options on physical forwards.
- Per transaction limits represent the total quantity in tons and dollars for each transaction executed.
- Aggregate limits represent the sum total quantity in tons and dollars for all forward transactions.
- Lead time represents the time period from the date a transaction is executed to the start of the transaction.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	12/17/2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/17/2021	

16. Acknowledgements

Clear Authority and Staff and ACES Authority Delegations

Where authority is further downward delegated, it must be approved by written signature of the next authority level up prior to any execution. In no case will the delegation of authority to Big Rivers' staff or ACES exceed that of the Big Rivers CEO.

Violations and Sanctions

Violations of this Authority Policy must not occur. Any person covered by this policy who becomes aware of a violation of the Authority Policy has an affirmative duty to report the violation to their immediate supervisor and to the Director Strategic Planning and Risk Management who in turn shall inform the Big Rivers CEO. However, if it is believed that the Big Rivers CEO is involved, then the Big Rivers Chairman of the Board shall be notified. The responsible party (ies) will be sanctioned according to Big Rivers Risk Management Sanctions Policy (for Big Rivers Employees only, ACES employees are governed by the ACES Power Marketing Trading Sanctions Policy).

Policy Effective

This Transaction Authority Policy is in effect upon the Board's approval and shall remain in effect until a revised policy has been approved by the Board.

Responsibility

It shall be the responsibility of the Board, the CEO, the Big Rivers-IRMC and the ACES-IRMC to ensure compliance with this policy.

Number	Date	Notes	Approved by
		Replaced Risk Management Policy for Power Supply	Board
Original	06/15/2007	Trading Authority Policy w/o matrices	Board
Rev 1	10/16/2009	Name change to Energy Related Transaction Authority Policy with matrices	Board
Rev 2	11/19/2010	MISO Transaction Authority added	Board
Rev 3	12/17/2010	Updated Solid Fuel Transaction Authority	Board
Rev 4	03/18/2011	Added limestone and lime, general cleanup	Board
Rev 5	02/21/2012	Made revisions to account for retirement of Senior VP Energy Services	Board

Energy Related Transaction Authority Policy

Original Effective Date	06/15/2007	Date Last Reviewed	12/17/2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/17/2021	

Rev 6	02/14/2013	Changed VP Production to Chief Operating Officer. Changed Vice President of Governmental Relations and Enterprise Risk Management to Director Enterprise Risk Management/Strategic Planning. Under MISO, changed Aggregate Planning Resource Credits to Zonal Resource Credits.	
Rev 7	03/21/2014	Add date last reviewed line and correct section 4 to comply with Appendix	Board
Rev 8	08/15/2014	Remove reference to Chief Operating Officer	Board
Rev 9	02/20/2015	Added MATS reagents transaction authority; updated transaction authority for bilateral electric power and transmission and lime reagent; general clean up.	Board
Rev 10	02/23/2016	Made changes to clarify transaction authority for purchases and sales for energy, capacity and transmission. Changes implemented to be inclusive of transportation for items shipped in bulk by barge, rail and truck. Updated transaction authority amounts for various lime and MATS reagents.	Board
Rev 11	12/16/2016	Made changes to clarify language for speculation. Eliminated daily limits for both bilateral energy, capacity and transmission purchases and sales transactions and natural/synthetic gas and transportation transactions.	Board
Rev 12	8/16/2019	Added Renewable Energy Credits trading authority	Board
Rev 13	08/21/2020	Punctuation Changes	Board
Rev 14	11/20/2020	Updated capacity purchase transaction trading authority limits and revised units for capacity and transmission transactions	Board
Rev 15	12/17/21	Update authority limits to reflect current market conditions	Board

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	112 / 2017 / 2021 0	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	124 / 2017 / 2021 0	

1. Policy Purpose

The purpose of this policy is to define the authority granted by the Big Rivers Electric Corporation (“Big Rivers”) Board of Directors (“Board”) to the President & Chief Executive Officer (“CEO”) to execute, or to delegate authority to execute energy-related transactions. Furthermore, it sets forth clarity and empowerment among those with transaction authority and is designed to encourage communication among individuals with transaction authority and the Board.

2. Objective

The objective of Big Rivers’ Energy Related Transaction Authority Policy is to define:

- Who has authority to execute transactions,
- The commodities and products that can be transacted,
- The authorized lead-time and term for each transaction,
- The authorized maximum price and volume,
- Counterparty contract and credit requirements,
- The process for approving new commodities, products or locations,
- Big Rivers’ intention regarding hedging and speculating,
- Other relevant factors associated with due diligence in authorizing transactions to be executed.

3. Procedural Requirements

The following defines the procedural requirements that apply to all commodities and products transacted pursuant to this policy.

Execution Authority

Execution Authority is outlined by commodity in the authority matrix sections found below. All column limits in these matrices are applied independently of one another for each authority level, in that no individual column limit may be exceeded without authorization, regardless of whether a transaction does not exceed another column limit for that same authority level. Limits for each level of authority are cumulative, and include all column limits up to and including that level. The authority granted in this policy should not violate any other policy limits.

The transaction limits apply to both purchases and sales.

This policy identifies Board-authorized levels for the CEO and explicitly gives the CEO the authority to delegate authority levels to Big Rivers’ staff and ACES Power Marketing (“ACES”). The CEO has the authority to modify delegated authority levels (noted in Appendix A) at his sole discretion as long as the delegated authority does not exceed his own authority per this policy.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	112/2017/20210	Approved by
Original Approval Date	06/15/2007	Date Last Revised	124/2017/20210	BOARD

Contract Requirements

Transactions with counterparties shall only be permitted if Big Rivers has either:

- An active, valid, and executed agreement enabling such transaction activity with that counterparty,
- Long-form confirmations may be used as a valid agreement in lieu of a permanent agreement, when necessary if approved in writing by the Big Rivers CEO.

Credit Requirements

Credit limits for each counterparty shall not be intentionally exceeded. *(Note: Since credit exposures are a function of not only positions transacted, but also a function of market pricing and volatility, credit exposure to counterparty may unintentionally exceed a credit limit purely due to changes in the forward market.)*

Entering into unsecured transactions with a counterparty that has total credit exposure greater than or equal to its open line of credit and the total of any security currently provided will not be allowed unless approved in writing by the Big Rivers CEO.

Credit Slewing

All slewing transactions for credit purposes shall be approved by the CEO. *(Note: Slewing is an arrangement where a more financially reputable entity acts as middleman for a smaller, undercapitalized entity in the purchase or sale of power.)*

Contract Slewing

This policy does not prohibit Big Rivers from being positioned between another member or customer of ACES and an external counterparty in order to bridge a contract gap that exists. The sleeve must:

- Be only for physical power, transmission or natural gas, not transportation,
- Be only for terms of one month or less.

Contract slewing on behalf of Big Rivers is approved when it is either the only or the most economical path to pursue at the discretion of ACES, with prompt after-the-fact notice to the Big Rivers CEO.

Transaction Communications

All communications for bilateral electric power transactions must be transacted via a recorded communication method. Examples include, but are not limited to, voice recorded communication, instant messaging, email or via an online broker account. Recorded communications must be maintained and controlled by personnel who are independent of the transaction function.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	11/2/2017 / 2021 <u>0</u>	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/4/2017 / 2021 <u>0</u>	

Deal Capture

Power transactions executed by a Big Rivers employee must be promptly forwarded to ACES after the deal execution.

Speculation

Speculation refers to a purchase or sale transaction in which the intent was to realize a profit without an underlying long or short generation position. No speculative transaction activities shall be permitted, and no speculative transaction positions shall be initiated. Transactions will be permitted only for purposes of hedging and portfolio optimization.

Non-Standard Products

The Board must pre-approve any transaction that involves commodities or products not listed in this policy.

Transactions Requiring Board Approval

Transactions which meet any of the following criteria must be pre-approved by the Board prior to execution:

- The transaction is a new commodity or within the list of commodities not previously transacted by Big Rivers,
- The transaction is at a location in which no transactions are permitted,
- The transaction is for something other than: physical spot or forward electricity, natural gas, fuel oil, solid fuel, ancillary services, capacity, power transmission, financial transmission rights, gas transportation, gas imbalance and storage, solid fuel transportation, exchange transacted energy products, over-the-counter (OTC) financial energy transactions, OTC energy options, federal SO₂ or NO_x emission allowances, renewable energy credits or a unit outage insurance product.

Examples of new instruments would include the use of derivatives with different risk characteristics or the use of derivatives to implement different business strategies or goals. New instruments or locations would also include those instruments or locations that may be transacted on a “one-off” basis, which would be implementation of a derivative instrument or entry into a commodity market that, despite the anticipation of being transacted just once, would still fit the definition of a new instrument or location.

The purpose of defining a process for such transactions as noted above is to ensure that the exposures associated with them are thoroughly reviewed and understood by the Board and appropriate transaction controls are in place. The Board must approve the use of such transactions prior to execution using the process defined below:

Energy Related Transaction Authority Policy

Original Effective Date	06/15/2007	Date Last Reviewed	11/2/2017 / <u>2021</u> 0	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/4/2017 / <u>2021</u> 0	

- a) Transaction Proposal - The proposal is the responsibility of the person or business group proposing the transaction. The proposal should address the business need, risks, transaction controls, valuation methodology, accounting methodology, operations workflow/ methodology, and assessment of legal and regulatory issues.

- b) Board Review - The Board will perform a review of the benefits and risks of the proposed transaction. The Board will assess the proposed transaction and make a determination whether to add the proposed transaction to the approved list.

- c) Approval (Pilot Program) – The Board may approve limited use of the proposed transaction to ensure that proper controls are in place to monitor the activity. The Board may approve the proposed transaction without instituting a Pilot Program if the proposed transaction is going to be used once (one off), where it would not be prudent to test it in a shorter time frame or smaller quantity due to constraints such as liquidity or length of term of product. The Board will use more scrutiny in approval of one-off transactions.

Energy Related Transaction Authority Policy							
Original Effective Date	06/15/2007	Date Last Reviewed	112/2017/20210	Approved by			
Original Approval Date	06/15/2007	Date Last Revised	124/2017/20210	BOARD			

4. Bilateral Energy, Capacity and Transmission Purchases and Sales Transaction Authority

The following outlines transaction limits, definitions, and procedural requirements for energy, capacity and transmission transactions.

Purchases		Per Transaction Limits (up to)				Aggregate Limits (up to)	
Title	Product	Term	Lead Time	MW Size	Max. \$	Total Volume	Total \$
Board	Energy, Capacity and Transmission	No Limit	No Limit	No Limit	No Limit	No Limit	No Limit
CEO	Energy	≤ 2 Years	≤ 3 Years	≤ 400	≤ \$150/MWh	7,008,000 MWh	\$350.4 million
	Capacity	≤ 3 Years	≤ 4 Years	≤ 100	≤ \$6/kW-Mo	1200 MW-Year	\$86.4 million
	Transmission	≤ 2 Years	≤ 3 Years	≤ 100	Tariff	200 MW-Year	Tariff

Sales		Per Transaction Limits (up to)				Aggregate Limits (up to)	
Title	Product	Term	Lead Time	MW Size	Min. \$	Total Volume	Total \$
Board	Energy, Capacity and Transmission	No Limit	No Limit	No Limit	No Limit	No Limit	No Limit
CEO	Energy	≤ 2 Years	≤ 3 Years	≤ 400	No Limit	11,100,000 MWh	No Limit
	Capacity	≤ 2 Years	≤ 3 Years	≤ 500	No Limit	1500 MW-Year	No Limit
	Transmission	≤ 2 Years	≤ 3 Years	≤ 100*	No Limit	300 MW-Year	No Limit

*Lesser of 100 MW or rights to transmission capacity owned by Big Rivers.

Energy, Capacity and Transmission Authority Matrix Explanations

- Transaction limits represent the MW volume per hour and dollars/MWH for each transaction executed.
- Aggregate Limits represent the sum total MWH volume and dollars for all physical and financial forward transactions, excluding options.
- Lead time represents the time period from the date the transaction is executed to the start of the transaction.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	11/2/2017 / 2021 <u>0</u>	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/4/2017 / 2021 <u>0</u>	

- Authorized products include energy both forwards and options, transmission and capacity, including both physical and financial derivatives. Options may only be entered into by the Big Rivers CEO or his designee.
- Authority for PJM and MISO products is defined in the authority matrices below.

Delivery Locations

Transactions at delivery locations outside the eastern interconnect are not permitted, unless approved by the CEO. Transaction at delivery locations that are normal to the daily course of business for Big Rivers, to the extent transmission is available, are authorized as follows:

Unrestricted Delivery Locations

- SERC Reliability Region
- MISO
- PJM
- RFC Reliability Region
- SPP

Transaction at any other delivery locations within the eastern interconnection shall be restricted as follows:

Restricted Delivery Locations

Other eastern interconnection locations only with approval by the Big Rivers CEO.

Firmness of Energy

The product firmness of all transactions must be provided for in an executed agreement between Big Rivers and the appropriate counterparty. Sales commitments must never be more firm than the supply source, including the purchase side of back-to-back sales, swaps, sleeves or spreads unless the Big Rivers CEO gives explicit written authority to sell power that is more firm than the supply source. Energy purchased as firm liquidated damages may be resold as such.

Transmission Firmness and Volume

Transmission purchases need to be of equal firmness and volume to the energy component that such transmission purchase is associated with, unless pre-approved otherwise by the Big Rivers CEO. (Note: Purchasing small percentages of additional transmission to cover transmission losses is permitted.) In addition, transmission may be reserved but not utilized if an energy schedule is not confirmed prior to scheduling deadlines outside of Big Rivers' or ACES's control. When this occurs it is not considered a violation of this policy.

Energy Related Transaction Authority Policy					
Original Effective Date	06/15/2007	Date Last Reviewed	112/2017/20210	Approved by	
Original Approval Date	06/15/2007	Date Last Revised	124/2017/20210	BOARD	

5. MISO Transaction Authority

The following outlines transaction limits, definitions, and procedural requirements for MISO products.

		MISO Per Transaction Limits (up to)			
Title	Product	Delivery Lead Time	Term	MW Size	\$/MWh
Board	All MISO Products	No Limit	No Limit	No Max	No Max
CEO	Generation Awards	As Required by MISO	1 Operating Day	No Max	MISO Price Cap
	Demand Awards				
	Ancillary Service Awards				
	Capacity	≤ 3 Years	≤ 3 Years	500	
	Financial Transmission Rights	≤ 4 Years	≤ 4 Years	425	\$20
	Virtual Transaction Awards Imports/Exports	As Required by MISO	1 Operating Day	No Max	MISO Price Cap

MISO Authority Matrix Explanations

- Virtual transaction award limits are per each bid/offer nodal point. Virtual purchase awards and virtual sales awards are monitored separately.
- Imports and exports are per location and are monitored separately.
- Generation Award Limits are per generating unit.
- Demand Award Limits are per each load nodal point.
- Limits for Ancillary Service Awards apply to the Regulation and Operating (Spinning and Supplemental) Reserve Market only.
- Capacity limits apply to capacity transacted via the MISO Capacity Auction for each generating unit and excludes the capacity required for Big Rivers' native load.
- Only Financial Transmission Rights that are bought and sold via the annual and monthly auctions or in the secondary market are monitored per the limits above. Participation in the Annual Allocation of financial transmission rights is not considered a transaction subject to this Policy.
- Delivery lead time represents the time period between trade execution and start of flow.

Note that all MISO day-ahead transactions, such as price-sensitive offers and bids for importing and exporting from MISO, are financially firm. Hence an exception from the firmness of power for adjustments to these day ahead transactions intraday is acceptable due to the fact that these adjustments are hourly and non-firm.

Energy Related Transaction Authority Policy					
Original Effective Date	06/15/2007	Date Last Reviewed	112/2017/20210	Approved by	
Original Approval Date	06/15/2007	Date Last Revised	124/2017/20210	BOARD	

6. PJM Transaction Authority (Non-Bilateral)

The following outlines transaction limits, definitions, and procedural requirements for PJM products.

Title	Product	PJM Per Transaction Limits (up to)			
		Delivery Lead Time	Term	MW Size	\$/MWh
Board	All PJM Products	No Limit	No Limit	No Max	No Max
CEO	Generation Awards	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted
	Demand Awards				
	Ancillary Service Awards				
	Capacity	≤ 4 Years	≤ 4 Years	425	\$20
	Financial Transmission Rights				
	Virtual Transaction Awards				
Imports/Exports	As Required by PJM	1 Operating Day	No Max	PJM Price Cap	

PJM Authority Matrix Explanations

- Virtual transaction award limits are per each bid/offer nodal point. Incremental purchase awards and decremental sales awards are monitored separately.
- Imports and exports are per location and are each monitored separately.
- Only financial transmission rights that are bought and sold via the annual and monthly auctions or in the secondary market are monitored per the limits above. Participation in the Annual Allocation of financial transmission rights is not considered a transaction subject to this Policy.

Note that PJM RTO day-ahead transactions, such as price-sensitive offers and bids for importing and exporting from PJM are financially firm. Hence an exception from the firmness of power for adjustments to these day ahead transactions intraday is acceptable due to the fact that these adjustments are hourly and non-firm.

Energy Related Transaction Authority Policy							
Original Effective Date	06/15/2007	Date Last Reviewed	11/2/2017 / 20210	Approved by			
Original Approval Date	06/15/2007	Date Last Revised	124/2017 / 20210	BOARD			

7. Natural/Synthetic Gas and Transportation Transaction Authority

The following outlines transaction limits, definitions, and procedural requirements for natural/synthetic gas (Gas) and transportation transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Physical Volume per Day McfMBtu	\$/McfMBtu	Total Physical Volume McfMBtu	Total \$
Board	Gas Products	No Limit	No Limit	No Max.	No Max.	No Max.	No Max.
CEO	Physical	> 1 Year	≤ 2 Years	150,000 25,000	\$15	1.25 million	\$1875 million
		≤ 1 Year		No Max.	No Max.		

Gas Authority Matrix Explanations

- Transaction limits represent the physical McfMBtu volume per day and dollars/McfMBtu for each transaction executed.
- Aggregate limits represent the total physical McfMBtu volume and dollars for all forward transactions.
- Lead time represents the time period from the date a transaction is executed to the start of the transaction.
- The dollar limits are based upon commodity gas only and do not include transportation, however, the term, lead time, and volume limits do apply to transportation.
- Gas products include physical gas, as well as transportation, imbalance and storage. The above authority matrix applies to both exchange transacted and OTC derivative products.

Gas Firmness

The product firmness of all transactions must be provided for in an executed agreement between Big Rivers and the appropriate counterparty. Sales commitments of Gas must never be more firm than the Gas supply source unless pre-approved by the Big Rivers CEO.

Transportation Firmness and Volume

Transportation purchases need to be of equal firmness and volume to the Gas component that such transportation purchase is associated with, unless pre-approved otherwise by the Big Rivers CEO.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	12/2017/20210	Approved by
Original Approval Date	06/15/2007	Date Last Revised	124/2017/20210	BOARD

Delivery Locations

Gas transactions may only be executed at the following locations:

- Pipelines and hubs that serve Big Rivers' gas powered generation unit(s).

Physical Gas transactions may only be executed at other locations upon approval of the Big Rivers CEO and such transactions must support the hedging needs of Big Rivers.

Energy Related Transaction Authority Policy							
Original Effective Date	06/15/2007	Date Last Reviewed	11/2/2017 / 2021 <u>0</u>	Approved by			
Original Approval Date	06/15/2007	Date Last Revised	124/2017 / 2021 <u>0</u>	BOARD			

8. Renewable Energy Credits Trading Authority

The following outlines transaction limits, definitions, and procedural requirements for renewable energy credit transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Total Volume MWh	\$/MWh	Total Volume MWh	Total \$
Board of Directors	Renewable Energy Credits	No Limit	No Limit	No Max.	No Max.	No Max.	No Max.
CEO	Renewable Energy Credits	≤ 3 Years	≤ 4 Years	400,000	\$15	800,000	\$12 Million

Renewable Energy Credits Trading Authority Matrix Explanations

- The authority matrix above addresses authority for Renewable Energy Credits (RECs).
- Transaction Limits represent the total MWh volume and dollars/MWh for each REC transaction executed.
- Aggregate Limits represent the sum total MWh volume and dollars for all forward transactions.
- Term limits only apply to forward transactions, not spot transactions.
- Lead time represents the time period between trade execution and delivery of the RECs. Lead time limits only apply to forward transactions and not to spot transactions.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	11/2/2017 / 2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/4/2017 / 2021	

9. Fuel Oil Transaction Authority

The following outlines transaction limits, definitions, and procedural requirements for physical fuel oil transactions.

Fuel oil hedging will be conducted to hedge price risk associated with fuel oil used for plant start-up or to hedge potential fuel oil or diesel fuel price risk contained within solid fuel contracts.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Physical - Volume Gallons	\$/Gallon	Total Physical - Volume Gallons	Total \$
Board	Physical Fuel Oil	No Limit	No Limit	No Max	No Max	No Max	No Max
CEO	Physical Fuel Oil	> 1 Year	≤ 2 Years	1,000,000	\$6	6,000,000	\$36 million
		≤ 3 Years		No Max	No Max		
		≤ 1 Year					

Fuel Oil Authority Matrix Explanations

- Transaction limits represent the total gallons and dollars/gallon for each transaction executed.
- Aggregate limits represent the sum total gallon volume and dollars for all forward transactions.
- Lead time represents the time period from the date a transaction is executed to the start of the transaction.

Energy Related Transaction Authority Policy							
Original Effective Date	06/15/2007	Date Last Reviewed	11/2/2017 / 2021 <u>0</u>	Approved by			
Original Approval Date	06/15/2007	Date Last Revised	12/4/2017 / 2021 <u>0</u>	BOARD			

10. Solid Fuel Transaction Authority

The following outlines transaction limits, definitions, and procedural requirements for solid fuel transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/MMBtu	Total Volume Tons	Total \$
Board	Physical Solid Fuel	No Limit	No Limit	No Max	No Max	No Max	No Max
CEO	Physical Solid Fuel	> 3 Months ≤ 3 Years	≤ 2 Years	2,500,000	\$6.00 2.50	4 million	\$240 million
		≤ 3 Months		200,000	No Max \$2.85		

Solid Fuel Authority Matrix Explanations

- Authorized products include physical spot and forward transactions and options on physical forwards.
- Per transaction limits represent the total quantity in tons and dollars/MMBtu for each transaction executed.
- Aggregate limits represent the sum total quantity in tons and dollars for all forward transactions.
- Lead time represents the time period from the date a transaction is executed to the start of the transaction.

Energy Related Transaction Authority Policy							
Original Effective Date	06/15/2007	Date Last Reviewed	11/2/2017 / 2021	Approved by			
Original Approval Date	06/15/2007	Date Last Revised	12/4/2017 / 2021	BOARD			

11. Transportation Transaction Authority

The following outlines transaction limits, definitions, and procedural requirements for transportation transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/Ton	Total Volume Tons	Total \$
Board	Barge, Rail or Truck Transportation	No Limit	No Limit	No Max	No Max	No Max	No Max
CEO	Barge, Rail or Truck Transportation	> 1 Year ≤ 3 Years	≤ 2 Years	3 million	\$25	6 million	\$150 million
		≤ 1 Year		No Max	No Max		

Transportation Authority Matrix Explanations

- Authorized products include barge, rail and truck transportation transactions.
- Per transaction limits represent the total quantity in tons and dollars/ton for each transaction executed.
- Aggregate limits represent the sum total quantity in tons and dollars for all forward transactions.
- Lead time represents the time period from the date a transaction is executed to the start of the transaction.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	11/2/2017 / 2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/4/2017 / 2021	

12. Emission Allowances Transaction Authority*

The following outlines transaction limits, definitions, and procedural requirements for emissions transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/Ton	Total Volume Tons	Total \$
Board	Federal SO ₂ and NO _x Emission Allowances	No Limit	No Limit	No Max	No Max	No Max	No Max
CEO	Federal SO ₂ Emission Allowances	> 1 Year ≤ 2 Years	≤ 2 Years	5,000	\$500	20,000	\$10 million
		≤ 1 Year		No Max	No Max		
	Federal NO _x Emission Allowances	> 1 Year ≤ 2 Years		2,500	\$2,500	12,500	\$30 million
		≤ 1 Year		No Max	No Max		

Emission Allowance Authority Matrix Explanations

- The authority matrix above represents authority for SO₂ and NO_x emission allowances.
- Per transaction limits represent the total quantity in tons and dollars/ton for each transaction executed.
- Aggregate limits represent the sum total quantity in tons and dollars for all forward transactions.
- Lead time represents the time period from the date a transaction is executed to the start of the transaction.

Energy Related Transaction Authority Policy							
Original Effective Date	06/15/2007	Date Last Reviewed	11/2 / 2017 / 2021 <u>0</u>	Approved by			
Original Approval Date	06/15/2007	Date Last Revised	12/4 / 2017 / 2021 <u>0</u>	BOARD			

13. Limestone Reagent Transaction Authority

The following outlines transaction limits, definitions, and procedural requirements for limestone reagent transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/Ton	Total Volume Tons	Total \$
Board	Physical Limestone Reagent	No Limit	No Limit	No Max	No Max	No Max	No Max
CEO	Physical Limestone Reagent	> 3 Months ≤ 3 Years	≤ 2 Years	750,000	\$3020	1.50 million	\$30 million
		≤ 3 Months		No Max	No Max		

Limestone Reagent Authority Matrix Explanations

- Authorized products include physical spot and forward transactions and options on physical forwards.
- Per transaction limits represent the total quantity in tons and dollars for each transaction executed.
- Aggregate limits represent the sum total quantity in tons and dollars for all forward transactions.
- Lead time represents the time period from the date a transaction is executed to the start of the transaction.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	11/2/2017 / 2021 0	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/4/2017 / 2021 0	

14. Bulk Lime and Lime Hydrate Reagent Transaction Authority

The following outlines transaction limits, definitions, and procedural requirements for bulk lime and lime hydrate reagent transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/Ton	Total Volume Tons	Total \$
Board	Physical Lime Reagent	No Limit	No Limit	No Max	No Max	No Max	No Max
CEO	Physical Lime Reagent	> 3 Months ≤ 3 Years	≤ 2 Years	750,000	\$200	750,000	\$150 million
		≤ 3 Months		No Max	No Max		

Bulk Lime and Lime Hydrate Reagent Authority Matrix Explanations

- Authorized products include physical spot and forward transactions and options on physical forwards.
- Per transaction limits represent the total quantity in tons and dollars for each transaction executed.
- Aggregate limits represent the sum total quantity in tons and dollars for all forward transactions.
- Lead time represents the time period from the date a transaction is executed to the start of the transaction.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	11/2/2017 / 2021 19	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/4/2017 / 2021 19	

15. MATS Reagent Transaction Authority

The following outlines transaction limits, definitions, and procedural requirements for MATS reagent transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/Ton	Total Volume Tons	Total \$
Board	MATS Reagent	No Limit	No Limit	No Max	No Max	No Max	No Max
CEO	MATS Reagent	> 3 Months ≤ 3 Years	≤ 2 Years	25,000	\$4,000	25,000	\$100 million
		≤ 3 Months		No Max	No Max		

MATS Reagent Authority Matrix Explanations

- Authorized products include physical spot and forward transactions and options on physical forwards.
- Per transaction limits represent the total quantity in tons and dollars for each transaction executed.
- Aggregate limits represent the sum total quantity in tons and dollars for all forward transactions.
- Lead time represents the time period from the date a transaction is executed to the start of the transaction.

Energy Related Transaction Authority Policy				
Original Effective Date	06/15/2007	Date Last Reviewed	11/2/2017 / 2021 0	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/4/2017 / 2021 0	

16. Acknowledgements

Clear Authority and Staff and ACES Authority Delegations

Where authority is further downward delegated, it must be approved by written signature of the next authority level up prior to any execution. In no case will the delegation of authority to Big Rivers' staff or ACES exceed that of the Big Rivers CEO.

Violations and Sanctions

Violations of this Authority Policy must not occur. Any person covered by this policy who becomes aware of a violation of the Authority Policy has an affirmative duty to report the violation to their immediate supervisor and to the Director Strategic Planning and Risk Management who in turn shall inform the Big Rivers CEO. However, if it is believed that the Big Rivers CEO is involved, then the Big Rivers Chairman of the Board shall be notified. The responsible party (ies) will be sanctioned according to Big Rivers Risk Management Sanctions Policy (for Big Rivers Employees only, ACES employees are governed by the ACES Power Marketing Trading Sanctions Policy).

Policy Effective

This Transaction Authority Policy is in effect upon the Board's approval and shall remain in effect until a revised policy has been approved by the Board.

Responsibility

It shall be the responsibility of the Board, the CEO, the Big Rivers-IRMC and the ACES-IRMC to ensure compliance with this policy.

Number	Date	Notes	Approved by
		Replaced Risk Management Policy for Power Supply	Board
Original	06/15/2007	Trading Authority Policy w/o matrices	Board
Rev 1	10/16/2009	Name change to Energy Related Transaction Authority Policy with matrices	Board
Rev 2	11/19/2010	MISO Transaction Authority added	Board
Rev 3	12/17/2010	Updated Solid Fuel Transaction Authority	Board
Rev 4	03/18/2011	Added limestone and lime, general cleanup	Board
Rev 5	02/21/2012	Made revisions to account for retirement of Senior VP Energy Services	Board

Energy Related Transaction Authority Policy

Original Effective Date	06/15/2007	Date Last Reviewed	112/2017/20210	Approved by
Original Approval Date	06/15/2007	Date Last Revised	124/2017/20210	BOARD

Rev 6	02/14/2013	Changed VP Production to Chief Operating Officer. Changed Vice President of Governmental Relations and Enterprise Risk Management to Director Enterprise Risk Management/Strategic Planning. Under MISO, changed Aggregate Planning Resource Credits to Zonal Resource Credits.	
Rev 7	03/21/2014	Add date last reviewed line and correct section 4 to comply with Appendix	Board
Rev 8	08/15/2014	Remove reference to Chief Operating Officer	Board
Rev 9	02/20/2015	Added MATS reagents transaction authority; updated transaction authority for bilateral electric power and transmission and lime reagent; general clean up.	Board
Rev 10	02/23/2016	Made changes to clarify transaction authority for purchases and sales for energy, capacity and transmission. Changes implemented to be inclusive of transportation for items shipped in bulk by barge, rail and truck. Updated transaction authority amounts for various lime and MATS reagents.	Board
Rev 11	12/16/2016	Made changes to clarify language for speculation. Eliminated daily limits for both bilateral energy, capacity and transmission purchases and sales transactions and natural/synthetic gas and transportation transactions.	Board
Rev 12	8/16/2019	Added Renewable Energy Credits trading authority	Board
Rev 13	08/21/2020	Punctuation Changes	Board
Rev 14	11/20/2020	Updated capacity purchase transaction trading authority limits and revised units for capacity and transmission transactions	Board
<u>Rev 15</u>	<u>12/17/21</u>	<u>Update authority limits to reflect current market conditions</u>	<u>Board</u>

Appendix A to Policy 105 - Energy Related Transaction Authority				
Original Effective Date	11/4/2009	Date Last Reviewed	8/4/2022	Approved by CEO
Original Approval Date	11/4/2009	Date Last Revised	8/4/2022	

1. Purpose

The purpose of this appendix is to define the authority granted by the Big Rivers CEO (“CEO”) to Big Rivers’ staff and ACES to execute energy-related transactions.

2. Objective

The objective of this appendix is to extend authority within Policy 105 to Big Rivers’ internal staff and ACES.

3. Procedural Requirements

As an appendix to Policy 105, all requirements and criteria stated within Policy 105 apply to this appendix.

Delegation of authority regarding Contract Requirements

The CEO delegates his authority to use a long form confirmation as a valid agreement in lieu of a master agreement when necessary to the VP Energy Services, the Director of Resources and Forecasting, Senior Power Portfolio Optimization Analyst, and Manager Power Marketing and Member Relations.

Appendix A to Policy 105 - Energy Related Transaction Authority				
Original Effective Date	11/4/2009	Date Last Reviewed	8/4/2022	Approved by CEO
Original Approval Date	11/4/2009	Date Last Revised	8/4/2022	

4. Bilateral Energy and Capacity Purchases Transaction Authority

The following outlines Big Rivers’ staff and ACES bilateral transaction limits for energy and capacity transactions.

Purchases		Per Transaction Limits (up to)				Aggregate Limits	
Title	Product	Term	Lead Time	MW Size	Min. \$/MWH	Total Volume MWH	Total \$
VP Energy Services	Energy	≤ 1 Year	≤ 2 Years	≤ 200	No Limit	1,752,000	\$87,600,000
	Capacity	≤ 1 Year	≤ 1 Year	≤ 100	No Limit	878,400	\$2,400,000
Director Resources & Forecasting	Energy	≤ 3 Months	≤ 1 Year	≤ 100	No Limit	220,800	\$11,100,000
Senior Power Portfolio Optimization Analyst or Manager Power Marketing & Member Relations	Energy	≤ 1 Week	≤ 1 Month	≤ 200	No Limit	33,600	\$1,680,000
ACES	Energy	≤ 1 Day*	≤ 1 Week	≤ 200	No Limit	9,600	\$480,000

Appendix A to Policy 105 - Energy Related Transaction Authority				
Original Effective Date	11/4/2009	Date Last Reviewed	8/4/2022	Approved by CEO
Original Approval Date	11/4/2009	Date Last Revised	8/4/2022	

5. Bilateral Energy and Capacity Sales Transaction Authority

The following outlines Big Rivers’ staff and ACES bilateral transaction limits for energy and capacity transactions.

Sales		Per Transaction Limits (up to)				Aggregate Limits	
Title	Product	Term	Lead Time	MW Size	Min. \$/MWH	Total Volume MWH	Total \$
VP Energy Services	Energy	≤ 1 Year	≤ 2 Years	≤ 200	No Limit	3,508,800	No Limit
	Capacity	≤ 1 Year	≤ 1 Year	≤ 200	No Limit	1,756,800	No Limit
Director Resources & Forecasting	Energy	≤ 3 Months	≤ 1 Year	≤ 200	No Limit	1,756,800	No Limit
	Capacity	≤ 3 Months	≤ 1 Year	≤ 200	No Limit	1,756,800	No Limit
Senior Power Portfolio Optimization Analyst or Manager Power Marketing & Member Relations	Energy	≤ 1 Week	≤ 1 Month	≤ 200	No Limit	148,800	No Limit
ACES	Energy	≤ 1 Day*	≤ 1 Week	≤ 200	No Limit	33,600	No Limit

* ≤ 1 Day will be a transaction that runs through hour ending 24 of the following business day, as such this would encompass all weekends and holidays for trading so long as the lead time and aggregate limits are followed.

Delegation of authority regarding Firmness of Power

The CEO delegates his authority to sell power that is more firm than the supply source to the VP Energy Services.

Appendix A to Policy 105 - Energy Related Transaction Authority				
Original Effective Date	11/4/2009	Date Last Reviewed	8/4/2022	Approved by CEO
Original Approval Date	11/4/2009	Date Last Revised	8/4/2022	

Delegation of authority regarding Restricted Delivery Locations

The CEO delegates his authority to execute transactions at other Eastern interconnection locations to the VP Energy Services.

Appendix A to Policy 105 - Energy Related Transaction Authority				
Original Effective Date	11/4/2009	Date Last Reviewed	8/4/2022	Approved by CEO
Original Approval Date	11/4/2009	Date Last Revised	8/4/2022	

6. MISO Transaction Authority

The following outlines Big Rivers’ staff and ACES transaction limits for MISO products.

		MISO Per Transaction Limits (up to)			
Title	Product	Delivery Lead Time	Term	MW Size	\$/MWh
VP Energy Services	Generation Awards	As Required by MISO	1 Operating Day	425	MISO Price Cap
	Demand Awards			1750	
	Ancillary Service Awards			425	
	Capacity	≤ 2 Years	≤ 2Years	425	\$150/MW-day
	Financial Transmission Rights	≤ 1 Year	≤ 1 Year	425	\$20/MWh
	Virtual Transaction Awards	As Required by MISO	1 Operating Day	No Max	MISO Price Cap
Imports/Exports	No Max				
Director Resources & Forecasting	Generation Awards	As Required by MISO	1 Operating Day	425	MISO Price Cap
	Demand Awards			1700	
	Ancillary Service Awards			425	
	Capacity	≤ 1 Year	≤ 1Year	425	CONE
	Financial Transmission Rights	≤ 6 months	≤ 6 months	425	\$12/MWh
	Virtual Transaction Awards	As Required by MISO	1 Operating Day	400	MISO Price Cap
Imports/Exports	500				
Manager Power Marketing & Member Relations	Capacity	≤ 1 Year	≤ 1Year	425	CONE
Senior Power Portfolio Optimization Analyst or Manager Power Marketing & Member Relations	Generation Awards	As Required by MISO	1 Operating Day	425	MISO Price Cap
	Demand Awards			1675	
	Ancillary Service Awards			425	
	Financial Transmission Rights	< 6 Months	< 6 Months	425	\$10/MWh
	Virtual Transaction Awards	As Required by MISO	1 Operating Day	400	MISO Price Cap
Imports/Exports	450				
Energy Services Analyst	Demand Award	As Required by MISO	1 Operating Day	1675	MISO Price Cap
ACES	Generation Awards	As Required by MISO	1 Operating Day	425	MISO Price Cap
	Demand Awards			1650	
	Ancillary Service Awards			425	
	Financial Transmission Rights	≤ 6 Months	≤ 6 Months	425	\$10/MWh
	Virtual Transaction Awards	As Required by MISO	1 Operating Day	400	MISO Price Cap
	Imports/Exports			400	

Appendix A to Policy 105 - Energy Related Transaction Authority					
Original Effective Date	11/4/2009	Date Last Reviewed	8/4/2022	Approved by CEO	
Original Approval Date	11/4/2009	Date Last Revised	8/4/2022		

7. PJM Transaction Authority (Non-Bilateral)

The following outlines Big Rivers' staff and ACES transaction limits for PJM products.

Title	Product	PJM Per Transaction Limits (up to)			
		Delivery Lead Time	Term	MW Size	\$/MWh
VP Energy Services	Generation Awards	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted
	Demand Awards				
	Ancillary Service Awards				
	Capacity	≤ 1 Year	≤ 1 Year	210	\$20
	Financial Transmission Rights				
	Virtual Transaction Awards				
Imports/Exports	As Required by PJM	1 Operating Day	No Max	PJM Price Cap	
Director Resources & Forecasting	Generation Awards	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted
	Demand Awards				
	Ancillary Service Awards				
	Capacity	≤ 1 Year	≤ 3 months	105	\$12
	Financial Transmission Rights				
	Virtual Transaction Awards				
Imports/Exports	As Required by PJM	1 Operating Day	400	PJM Price Cap	
			500		
Senior Power Portfolio Optimization Analyst or Manager Power Marketing & Member Relations	Generation Awards	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted
	Demand Awards				
	Ancillary Service Awards				
	Capacity	Not Authorized	Not Authorized	Not Authorized	Not Authorized
	Financial Transmission Rights				
	Virtual Transaction Awards				
Imports/Exports	As Required by PJM	1 Operating Day	400	PJM Price Cap	
			450		
ACES	Generation Awards	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted
	Demand Awards				
	Ancillary Service Awards				
	Capacity	Not Authorized	Not Authorized	Not Authorized	Not Authorized
	Financial Transmission Rights				
	Virtual Transaction Awards				
Imports/Exports	As Required by PJM	1 Operating Day	400	PJM Price Cap	
			400		

Appendix A to Policy 105 - Energy Related Transaction Authority				
Original Effective Date	11/4/2009	Date Last Reviewed	8/4/2022	Approved by CEO
Original Approval Date	11/4/2009	Date Last Revised	8/4/2022	

8. SPP Transaction Authority

(SPP transaction authority is granted here for the purpose of fulfilling the Nebraska Contracts approved by Big Rivers Board of Directors on December 20, 2013.)

The following outlines Big Rivers’ staff and ACES transaction limits for SPP products.

		SPP Per Transaction Limits (up to)			
Title	Product	Delivery Lead Time	Term	MW Size	\$/MWh
VP Energy Services	Generation Awards	As Required by SPP	1 Operating Day	30	SPP Price Cap
	Demand Awards			110	
	Virtual Transaction Awards	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted
	Ancillary Service Awards				
	Imports/Exports	As Required by SPP	1 Operating Day	No Max	SPP Price Cap
	Transmission Congestion Rights	≤ 1 Year	≤ 1 Year	80	\$20/MWh
Director Resources & Forecasting	Generation Awards	As Required by SPP	1 Operating Day	30	SPP Price Cap
	Demand Awards			110	
	Virtual Transaction Awards	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted
	Ancillary Service Awards				
	Imports/Exports	As Required by SPP	1 Operating Day	110	SPP Price Cap
	Transmission Congestion Rights	≤ 6 months	≤ 6 months	80	\$12/MWh
Senior Power Portfolio Optimization Analyst or Manager Power Marketing & Member Relations	Generation Awards	As Required by SPP	1 Operating Day	30	SPP Price Cap
	Demand Awards			110	
	Virtual Transaction Awards	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted
	Ancillary Service Awards				
	Imports/Exports	As Required by SPP	1 Operating Day	110	SPP Price Cap
	Transmission Congestion Rights	< 6 Months	< 6 Months	80	\$10/MWh
Energy Services Analyst	Generation Awards	None			
	Demand Award	As Required by SPP	1 Operating Day	110	SPP Price Cap
	Virtual Transaction Awards	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted
	Ancillary Service Awards				
	Imports/Exports	As Required by SPP	1 Operating Day	110	SPP Price Cap
	Transmission Congestion Rights	None			

Appendix A to Policy 105 - Energy Related Transaction Authority				
Original Effective Date	11/4/2009	Date Last Reviewed	8/4/2022	Approved by CEO
Original Approval Date	11/4/2009	Date Last Revised	8/4/2022	

ACES	Generation Awards	As Required by SPP	1 Operating Day	30	SPP Price Cap
	Demand Awards			110	
	Virtual Transaction Awards	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted
	Ancillary Service Awards				
	Imports/Exports	As Required by SPP	1 Operating Day	110	SPP Price Cap
	Transmission Congestion Rights	≤ 6 Months	≤ 6 Months	80	\$10/MWh

SPP Authority Matrix Explanations

- Generation Award Limits are per generating unit.
- Demand Award Limits are per each load location.
- Only Transmission Congestion Rights (TCRs) that are bought and sold via the annual and monthly auctions are monitored per the limits above. Participation in the Annual Allocation of TCRs is not considered a transaction subject to this Policy.
- Delivery lead time represents the time period between trade execution and start of flow.
- Transaction Limits represent the MW volume per hour and dollars/MWh for each transaction executed.
- Bilateral Settlement Schedules are not monitored. Bilateral power trades are monitored per the limits identified in the Bilateral Energy, Capacity and Transmission Purchases and Sales Transaction Authority Matrix.

Appendix A to Policy 105 - Energy Related Transaction Authority				
Original Effective Date	11/4/2009	Date Last Reviewed	8/4/2022	Approved by CEO
Original Approval Date	11/4/2009	Date Last Revised	8/4/2022	

9. Natural/Synthetic Gas and Transportation Transaction Authority

The following outlines Big Rivers’ staff and ACES transaction limits for natural/synthetic gas (Gas) and transportation transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Physical mmBTU Volume per Day	\$/mmBTU	Total Physical Volume mmBTU	Total \$
Chief Operating Officer	Physical	> 1 Month ≤ 1 Year	≤ 1 Year	144,000	\$12	3.6 million	\$43.2 million
		≤ 1 Month		No Max	No Max		
Manager Fuels Procurement	Physical	> 1 Week ≤ 1 Month	≤ 1 Year	144,000	\$12	2.9 million	\$34.8 million
		≤ 1 Week		≤ 1 Month	No Max.		
ACES	Physical*	≤ 1 Week	≤ 1 Week	144,000	\$12	1 million	\$12.1 million
	Pipeline Payback			144,000	\$12	1 million	\$12.1 million

***Excludes purchases for pipeline payback. Purchases for pipeline payback are addressed separately in the row below.**

Delegation of authority regarding Gas Firmness

The CEO delegates his authority to sell gas that is more firm than the supply source and/or is excess to the Chief Operating Officer.

Delegation of authority regarding Transportation Firmness and Volume

The CEO delegates his authority to execute transportation purchases not of equal firmness and volume to the gas component that such transportation purchase is associated with to the Chief Operating Officer.

Appendix A to Policy 105 - Energy Related Transaction Authority				
Original Effective Date	11/4/2009	Date Last Reviewed	8/4/2022	Approved by CEO
Original Approval Date	11/4/2009	Date Last Revised	8/4/2022	

10. Renewable Energy Credits Trading Authority

The following outlines transaction limits, definitions, and procedural requirements for renewable energy credit transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Total Volume MWh	\$/MWH	Total Volume MWh	Total \$
VP Energy Services	Renewable Energy Credits	≤ 2 Years	≤ 3 Years	200,000	\$10	400,000	\$4 Million
Director Resources & Forecasting	Renewable Energy Credits	<1 Year	<18 Months	100,000	\$5	200,000	\$1 Million
ACES	Renewable Energy Credits	As Directed	As Directed	As Directed	As Directed	As Directed	As Directed

Renewable Energy Credits Trading Authority Matrix Explanations

- The authority matrix above addresses authority for Renewable Energy Credits (REC's).
- Transaction Limits represent the total MWh volume and dollars/MWH for each REC transaction executed.
- Aggregate Limits represent the sum total MWh volume and dollars for all forward transactions.
- Term limits only apply to forward transactions, not spot transactions.
- Lead time represents the time period between trade execution and delivery of the REC's. Lead time limits only apply to forward transactions and not to spot transactions.

Appendix A to Policy 105 - Energy Related Transaction Authority				
Original Effective Date	11/4/2009	Date Last Reviewed	8/4/2022	Approved by CEO
Original Approval Date	11/4/2009	Date Last Revised	8/4/2022	

11. Fuel Oil Transaction Authority

The following outlines Big Rivers’ staff transaction limits for fuel oil transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Physical Volume Gallons	\$/Gallon	Total Volume Gallons	Total \$
Chief Operating Officer	Physical Fuel Oil	> 1 Month ≤ 1 Year	≤ 1 Year	750,000	\$6	4,000,000	\$24 Million
		≤ 1 Month		No Max	No Max		
Manager Fuels Procurement	Physical Fuel Oil	> 1 Week ≤ 1 Month	≤ 1 Year	500,000	\$6	1,000,000	\$6 million
		≤ 1 Week	≤ 1 Month	No Max	No Max		

Appendix A to Policy 105 - Energy Related Transaction Authority				
Original Effective Date	11/4/2009	Date Last Reviewed	8/4/2022	Approved by CEO
Original Approval Date	11/4/2009	Date Last Revised	8/4/2022	

12. Solid Fuel Transaction Authority

The following outlines Big Rivers' staff transaction limits for solid fuel.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/MMBtu	Total Volume Tons	Total \$
Chief Operating Officer	Physical Solid Fuel	> 3 Months ≤ 1 Year	≤ 1 Year	500,000	\$2.50	1.0 million	\$60 million
		≤ 3 Months		100,000	\$2.85		
Manager Fuels Procurement	Physical Solid Fuel	> 3 Months ≤ 6 Months	≤ 1 Year	250,000	\$2.50	500,000	\$30 million
		≤ 3 Months		50,000	\$2.85		

Appendix A to Policy 105 - Energy Related Transaction Authority				
Original Effective Date	11/4/2009	Date Last Reviewed	8/4/2022	Approved by CEO
Original Approval Date	11/4/2009	Date Last Revised	8/4/2022	

13. Transportation Transaction Authority

The following outlines Big Rivers' staff transaction limits for transportation transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/Ton	Total Volume Tons	Total \$
Chief Operating Officer	Barge, Rail or Truck Transportation	> 3 Months ≤ 1 Years	≤ 1 Year	1 million	\$25	2 million	\$50 million
		≤ 3 Months		No Max	No Max		
Manager Fuels Procurement	Barge, Rail or Truck Transportation	> 1 Month ≤ 6 Months	≤ 1 Year	500,000	\$25	1 million	\$25 million
		≤ 1 Month	≤ 1 Month	No Max	No Max		

Appendix A to Policy 105 - Energy Related Transaction Authority				
Original Effective Date	11/4/2009	Date Last Reviewed	8/4/2022	Approved by CEO
Original Approval Date	11/4/2009	Date Last Revised	8/4/2022	

14. Emission Allowance Transaction Authority

The following outlines Big Rivers’ staff and ACES transaction limits for emission allowance transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/Ton	Total Volume Tons	Total \$
Chief Administrative Officer	Federal SO2 Emission Allowances	≤ 1 Year	≤ 1 Year	2,500	\$300	10,000	\$3 million
	Federal NOx Emission Allowances	≤ 1 Year		1,250	\$2,000	5,000	\$10 million
ACES	Federal SO2 Emission Allowances	As directed	As directed	As directed	As directed	As directed	As directed
	Federal NOx Emission Allowances	As directed		As directed	As directed		

Appendix A to Policy 105 - Energy Related Transaction Authority				
Original Effective Date	11/4/2009	Date Last Reviewed	8/4/2022	Approved by CEO
Original Approval Date	11/4/2009	Date Last Revised	8/4/2022	

15. Limestone Reagent Transaction Authority

The following outlines Big Rivers' staff transaction limits for limestone reagent transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/Ton	Total Volume Tons	Total \$
Chief Operating Officer	Physical Limestone Reagent	≤ 1 Year	≤ 1 Year	187,500	\$18	375,000	\$6.75 million
Manager Fuels Procurement	Physical Limestone Reagent	≤ 3 Months	≤ 1 Year	93,750	\$18	187,500	\$3.375 million

Appendix A to Policy 105 - Energy Related Transaction Authority				
Original Effective Date	11/4/2009	Date Last Reviewed	8/4/2022	Approved by CEO
Original Approval Date	11/4/2009	Date Last Revised	8/4/2022	

16. Bulk Lime and Lime Hydrate Reagent Transaction Authority

The following outlines Big Rivers’ staff transaction limits for bulk lime and lime hydrate reagent transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/Ton	Total Volume Tons	Total \$
Chief Operating Officer	Physical Lime Reagent	≤ 1 Year	≤ 1 Year	250,000	\$200	250,000	\$50 million
Manager Fuels Procurement	Physical Lime Reagent	≤ 3 Months	≤ 1 Year	62,500	\$200	62,500	\$12.5 million

Appendix A to Policy 105 - Energy Related Transaction Authority				
Original Effective Date	11/4/2009	Date Last Reviewed	8/4/2022	Approved by CEO
Original Approval Date	11/4/2009	Date Last Revised	8/4/2022	

17. MATS Reagent Transaction Authority

The following outlines Big Rivers' staff transaction limits for MATS reagent transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/Ton	Total Volume Tons	Total \$
Chief Operating Officer	MATS Reagent	≤ 1 Year	≤ 1 Year	8,500	\$4,000	8,500	\$ 34 million
Manager Fuels Procurement	MATS Reagent	≤ 3 Months	≤ 1 Year	3,000	\$4,000	3,000	\$ 12 million

Appendix A to Policy 105 - Energy Related Transaction Authority				
Original Effective Date	11/4/2009	Date Last Reviewed	8/4/2022	Approved by CEO
Original Approval Date	11/4/2009	Date Last Revised	8/4/2022	

18. Acknowledgements

Violations and Sanctions

Violations of this Authority Policy must not occur. Any person covered by this policy who becomes aware of a violation of the Authority Policy has an affirmative duty to report the violation to the department head in which the violation occurred and to the General Counsel who in turn shall inform the Big Rivers CEO. However, if it is believed that the Big Rivers CEO is involved then the Big Rivers Chairman of the Board shall be notified. The responsible party(ies) will be sanctioned according to Big Rivers Risk Management Sanctions Policy (for Big Rivers Employees only, ACES employees are governed by the ACES Power Marketing Trading Sanctions Policy).

Appendix Effective

This Transaction Authority Appendix is in effect upon the CEO’s approval and shall remain in effect until a replacement appendix has been approved by the CEO.

Responsibility

It shall be the responsibility of the CEO, VP Energy Services, Chief Operating Officer and the Big Rivers-IRMC and the ACES-IRMC to ensure compliance with this policy.

Appendix A to Policy 105 - Energy Related Transaction Authority				
Original Effective Date	11/4/2009	Date Last Reviewed	8/4/2022	Approved by CEO
Original Approval Date	11/4/2009	Date Last Revised	8/4/2022	

Revisions

Big Rivers Policy 105/Appendix A Revision Record			
Number	Date	Notes	Approved by
Rev. 0	11-04-2009	Energy Related Trans	Mark Bailey
Rev. 1	11-22-2010	MISO and other misc. updates	Mark Bailey
Rev. 2	01-04-2011	Updated Solid Fuel Transaction Authority	Mark Bailey
Rev. 3	03-18-2011	Added Limestone and Lime, general cleanup	Mark Bailey
Rev. 4	12-05-2011	Update Bi-Lateral and Emission limits, add authority for PJM FTRs, add VP of Production	Mark Bailey
Rev. 5	05-07-2012	Remove Senior VP Energy Services from document due to retirement/elimination of role	Mark Bailey
Rev. 6	07-12-2012	Change Director of Power Portfolio Optimization to Managing Director Energy Services	Mark Bailey
Rev. 7	02-01-2013	Updated MISO capacity and Natural Gas limits, changed VP Production to Chief Operating Officer, changed Managing Director Energy Services to VP Energy Services, added Manager Power Supply & Market Operations, changed Power Scheduling Analyst to Power Portfolio Optimization Analyst and added Energy Services Analyst	Mark Bailey
Rev. 8	12-18-2013	Updated aggregate limits for VP Energy Services, increased offer price caps for capacity, updated VP Energy Services gas authorization to ensure ability to execute standard Texas Gas contracts, changed Power Portfolio Optimization Analyst title to reflect Senior status, replaced Manager Power Supply & Market Operations with Director Power Supply & Market Operations	Mark Bailey
Rev. 9	07-21-2014	Allocate authority previously held by Chief Operating Officer to VP Energy Services and VP Production	Robert W. Berry

Appendix A to Policy 105 - Energy Related Transaction Authority				
Original Effective Date	11/4/2009	Date Last Reviewed	8/4/2022	Approved by CEO
Original Approval Date	11/4/2009	Date Last Revised	8/4/2022	

Rev. 10	04-05-2016	Updated table under Section 4 to reflect new bilateral sales limits and deleted purchase authority, combined transaction authority for transportation, added to lime to be bulk lime and lime hydrate, and added MATS reagent limits.	Robert W. Berry
Rev. 11	04-15-2016	Added a footnote to the table in Section 4 to clearly define Big Rivers' interpretation for ACES pertaining to ≤ 1 Day.	Robert W. Berry
Rev. 12	12-21-2016	Updated to reflect changes in Policy 105 adopted by the Board on December 16, 2016.	Robert W. Berry
Rev. 13	12-18-2017	Added SPP matrix to convey CEO's authority granted by Board resolution to Big Rivers' staff and ACES to conduct daily transactions for the Nebraska contracts.	Robert W. Berry
Rev. 14	10-31-2019	Added renewable energy credits trading authority added to Policy 105 adopted by the Board on August 16, 2019. Added bilateral energy and capacity purchases transaction authority & modified limits on sales. Removed Director Power Supply & Market Operations. Added Manager Marketing & Member Relations to authority matrix.	Robert W. Berry
Rev. 15	03-17-20	Changed authority for as transactions to Executive VP Operations. Also, changed title of VP Production to Executive VP Operations throughout appendix.	Robert W. Berry
Rev. 16	04-12-21	Changed title of Executive VP Operations to VP Production throughout appendix.	Robert W. Berry
Rev. 17	12-17-21	Change of titles; update authority limits to reflect current market conditions; grammatical fixes	Robert W. Berry
Rev. 18	05-26-22	Change titles; update authority limits to reflect current market conditions along with usage limits for gas conversion; change gas unit of measure from mcf to mmbtu	Robert W. Berry
Rev. 19	08-04-22	Change titles; update MISO per transaction authority limits to reflect how MISO market operates	Robert W. Berry



CEO POLICY

Policy Number: 105 Appendix A

Appendix A to Policy 105 - Energy Related Transaction Authority				
Original Effective Date	11/4/2009	Date Last Reviewed	8/4/2022	Approved by CEO
Original Approval Date	11/4/2009	Date Last Revised	8/4/2022	

Approved by CEO

CEO Signature:

Robert W. Seery

Approval Date:

9-15-22

Appendix A to Policy 105 - Energy Related Transaction Authority				
Original Effective Date	11/4/2009	Date Last Reviewed	04/12/2021 8/4/2022	Approved by CEO
Original Approval Date	11/4/2009	Date Last Revised	04/12/2021 8/4/2022	

1. Purpose

The purpose of this appendix is to define the authority granted by the Big Rivers CEO (“CEO”) to Big Rivers’ staff and ACES to execute energy-related transactions.

2. Objective

The objective of this appendix is to extend authority within Policy 105 to Big Rivers’ internal staff and ACES.

3. Procedural Requirements

As an appendix to Policy 105, all requirements and criteria stated within Policy 105 apply to this appendix.

Delegation of authority regarding Contract Requirements

The CEO delegates his authority to use a long form confirmation as a valid agreement in lieu of a master agreement when necessary to the VP Energy Services, the Director of Resources and Forecasting, Senior Power Portfolio Optimization Analyst, and Manager Power Marketing and Member Relations.

Appendix A to Policy 105 - Energy Related Transaction Authority				
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4. Bilateral Energy and Capacity Purchases Transaction Authority

The following outlines Big Rivers’ staff and ACES bilateral transaction limits for energy and capacity transactions.

Purchases		Per Transaction Limits (up to)				Aggregate Limits	
Title	Product	Term	Lead Time	MW Size	Min. \$/MWH	Total Volume MWH	Total \$
VP Energy Services	Energy	≤ 1 Year	≤ 2 Years	≤ 200	No Limit	1,752,000	\$87,600,000
	Capacity	≤ 1 Year	≤ 1 Year	≤ 100	No Limit	878,400	\$2,400,000
Director Resources & Forecasting	Energy	≤ 3 Months	≤ 1 Year	≤ 100	No Limit	220,800	\$11,100,000
Senior Power Portfolio Optimization Analyst or Manager Power Marketing & Member Relations	Energy	≤ 1 Week	≤ 1 Month	≤ 200	No Limit	33,600	\$1,680,000
ACES	Energy	≤ 1 Day*	≤ 1 Week	≤ 200	No Limit	9,600	\$480,000

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5. Bilateral Energy and Capacity Sales Transaction Authority

The following outlines Big Rivers’ staff and ACES bilateral transaction limits for energy and capacity transactions.

Sales		Per Transaction Limits (up to)				Aggregate Limits	
Title	Product	Term	Lead Time	MW Size	Min. \$/MWH	Total Volume MWH	Total \$
VP Energy Services	Energy	≤ 1 Year	≤ 2 Years	≤ 200	No Limit	3,508,800	No Limit
	Capacity	≤ 1 Year	≤ 1 Year	≤ 200	No Limit	1,756,800	No Limit
Director Resources & Forecasting	Energy	≤ 3 Months	≤ 1 Year	≤ 200	No Limit	1,756,800	No Limit
	Capacity	≤ 3 Months	≤ 1 Year	≤ 200	No Limit	1,756,800	No Limit
Senior Power Portfolio Optimization Analyst or Manager <u>Power</u> Marketing & Member Relations	Energy	≤ 1 Week	≤ 1 Month	≤ 200	No Limit	148,800	No Limit
ACES	Energy	≤ 1 Day*	≤ 1 Week	≤ 200	No Limit	33,600	No Limit

* ≤ 1 Day will be a transaction that runs through hour ending 24 of the following business day, as such this would encompass all weekends and holidays for trading so long as the lead time and aggregate limits are followed.

Delegation of authority regarding Firmness of Power

The CEO delegates his authority to sell power that is more firm than the supply source to the VP Energy Services.

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Delegation of authority regarding Restricted Delivery Locations

The CEO delegates his authority to execute transactions at other Eastern interconnection locations to the VP Energy Services.

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6. MISO Transaction Authority

The following outlines Big Rivers’ staff and ACES transaction limits for MISO products.

Title	Product	MISO Per Transaction Limits (up to)			
		Delivery Lead Time	Term	MW Size	\$/MWh
VP Energy Services	Generation Awards	As Required by MISO	1 Operating Day	425	MISO Price Cap
	Demand Awards			1750	
	Ancillary Service Awards			425	
	Capacity	≤ 2 Years	≤ 2Years	425	\$150/MW-day
	Financial Transmission Rights	≤ 1 Year	≤ 1 Year	425	\$20/MWh
	Virtual Transaction Awards	As Required by MISO	1 Operating Day	No Max	MISO Price Cap
Imports/Exports	No Max				
Director Resources & Forecasting	Generation Awards	As Required by MISO	1 Operating Day	425	MISO Price Cap
	Demand Awards			1700	
	Ancillary Service Awards			425	
	Capacity	≤ 1 Year	≤ 1Year	425	\$150/MW-day CONE
	Financial Transmission Rights	≤ 6 months	≤ 6 months	425	\$12/MWh
	Virtual Transaction Awards	As Required by MISO	1 Operating Day	400	MISO Price Cap
Imports/Exports	500				
<u>Manager Power Marketing & Member Relations</u>	<u>Capacity</u>	<u>≤ 1 Year</u>	<u>< 1Year</u>	<u>425</u>	<u>CONE</u>
Senior Power Portfolio Optimization Analyst or Manager <u>Power Marketing & Member Relations</u>	Generation Awards	As Required by MISO	1 Operating Day	425	MISO Price Cap
	Demand Awards			1675	
	Ancillary Service Awards			425	
	Financial Transmission Rights	< 6 Months	< 6 Months	425	\$10/MWh
	Virtual Transaction Awards	As Required by MISO	1 Operating Day	400	MISO Price Cap
	Imports/Exports			450	
Energy Services Analyst	Demand Award	As Required by MISO	1 Operating Day	1675	MISO Price Cap
ACES	Generation Awards	As Required by MISO	1 Operating Day	425	MISO Price Cap
	Demand Awards			1650	
	Ancillary Service Awards			425	
	Financial Transmission Rights	≤ 6 Months	≤ 6 Months	425	\$10/MWh
	Virtual Transaction Awards	As Required by MISO	1 Operating Day	400	MISO Price Cap
Imports/Exports	400				

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7. PJM Transaction Authority (Non-Bilateral)

The following outlines Big Rivers’ staff and ACES transaction limits for PJM products.

		PJM Per Transaction Limits (up to)			
Title	Product	Delivery Lead Time	Term	MW Size	\$/MWh
VP Energy Services	Generation Awards	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted
	Demand Awards				
	Ancillary Service Awards				
	Capacity	≤ 1 Year	≤ 1 Year	210	\$20
	Financial Transmission Rights	As Required by PJM	1 Operating Day	No Max	PJM Price Cap
	Virtual Transaction Awards			No Max	
Director Resources & Forecasting	Generation Awards	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted
	Demand Awards				
	Ancillary Service Awards				
	Capacity	≤ 1 Year	≤ 3 months	105	\$12
	Financial Transmission Rights	As Required by PJM	1 Operating Day	400	PJM Price Cap
	Virtual Transaction Awards			500	
Senior Power Portfolio Optimization Analyst or Manager Power Marketing & Member Relations	Generation Awards	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted
	Demand Awards				
	Ancillary Service Awards				
	Capacity	Not Authorized	Not Authorized	Not Authorized	Not Authorized
	Financial Transmission Rights	As Required by PJM	1 Operating Day	400	PJM Price Cap
	Virtual Transaction Awards			450	
ACES	Generation Awards	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted
	Demand Awards				
	Ancillary Service Awards				
	Capacity	Not Authorized	Not Authorized	Not Authorized	Not Authorized
	Financial Transmission Rights	As Required by PJM	1 Operating Day	400	PJM Price Cap
	Virtual Transaction Awards			400	
Imports/Exports					

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8. SPP Transaction Authority

(SPP transaction authority is granted here for the purpose of fulfilling the Nebraska Contracts approved by Big Rivers Board of ~~Director's~~**Directors** on December 20, 2013.)

The following outlines Big Rivers' staff and ACES transaction limits for SPP products.

		SPP Per Transaction Limits (up to)			
Title	Product	Delivery Lead Time	Term	MW Size	\$/MWh
VP Energy Services	Generation Awards	As Required by SPP	1 Operating Day	30	SPP Price Cap
	Demand Awards			110	
	Virtual Transaction Awards	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted
	Ancillary Service Awards				
	Imports/Exports	As Required by SPP	1 Operating Day	No Max	SPP Price Cap
	Transmission Congestion Rights	≤ 1 Year	≤ 1 Year	80	\$20/MWh
Director Resources & Forecasting	Generation Awards	As Required by SPP	1 Operating Day	30	SPP Price Cap
	Demand Awards			110	
	Virtual Transaction Awards	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted
	Ancillary Service Awards				
	Imports/Exports	As Required by SPP	1 Operating Day	110	SPP Price Cap
	Transmission Congestion Rights	≤ 6 months	≤ 6 months	80	\$12/MWh
Senior Power Portfolio Optimization Analyst or Manager Power Marketing & Member Relations	Generation Awards	As Required by SPP	1 Operating Day	30	SPP Price Cap
	Demand Awards			110	
	Virtual Transaction Awards	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted
	Ancillary Service Awards				
	Imports/Exports	As Required by SPP	1 Operating Day	110	SPP Price Cap
	Transmission Congestion Rights	< 6 Months	< 6 Months	80	\$10/MWh
Energy Services Analyst	Generation Awards	None			
	Demand Award	As Required by SPP	1 Operating Day	110	SPP Price Cap
	Virtual Transaction Awards	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted
	Ancillary Service Awards				

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	Imports/Exports	As Required by SPP	1 Operating Day	110	SPP Price Cap
	Transmission Congestion Rights	None			
ACES	Generation Awards	As Required by SPP	1 Operating Day	30	SPP Price Cap
	Demand Awards			110	
	Virtual Transaction Awards	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted	Not Presently Transacted
	Ancillary Service Awards				
	Imports/Exports	As Required by SPP	1 Operating Day	110	SPP Price Cap
Transmission Congestion Rights	≤ 6 Months	≤ 6 Months	80	\$10/MWh	

SPP Authority Matrix Explanations

- Generation Award Limits are per generating unit.
- Demand Award Limits are per each load location.
- Only Transmission Congestion Rights (TCRs) that are bought and sold via the annual and monthly auctions are monitored per the limits above. Participation in the Annual Allocation of TCRs is not considered a transaction subject to this Policy.
- Delivery lead time represents the time period between trade execution and start of flow.
- Transaction Limits represent the MW volume per hour and dollars/MWh for each transaction executed.
- Bilateral Settlement Schedules are not monitored. Bilateral power trades are monitored per the limits identified in the Bilateral Energy, Capacity and Transmission Purchases and Sales Transaction Authority Matrix.

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9. Natural/Synthetic Gas and Transportation Transaction Authority

The following outlines Big Rivers' staff and ACES transaction limits for natural/synthetic gas (Gas) and transportation transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Physical MMBtu Volume mBTU per Day	\$/MMBtu mmBTU	Total Physical Volume MMBtu mmBTU	Total \$
VP Production Chief Operating Officer	Physical	> 1 Month ≤ 1 Year	≤ 1 Year	20 144,000	\$15 12	400,000 3.6 million	\$643.2 million
		≤ 1 Month		No Max	No Max		
Director Manager Fuels Procurement	Physical	> 1 Week ≤ 1 Month	≤ 1 Year	40 144,000	\$15 12	200,000 2.9 million	\$334.8 million
		≤ 1 Week		≤ 1 Month	No Max.		
ACES	Physical*	≤ 1 Week	≤ 1 Week	20 144,000	\$15 12	10 1 million	\$12.15 million
	Pipeline Payback			60 144,000	\$15 12	60,000 1 million	\$900,000 2.1 million

***Excludes purchases for pipeline payback. Purchases for pipeline payback are addressed separately in the row below.**

Delegation of authority regarding Gas Firmness

The CEO delegates his authority to sell gas that is more firm than the supply source and/or is excess to the ~~VPProduction Chief Operating Officer~~.

Delegation of authority regarding Transportation Firmness and Volume

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The CEO delegates his authority to execute transportation purchases not of equal firmness and volume to the gas component that such transportation purchase is associated with to the ~~VPProduction~~Chief Operating Officer.

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10. Renewable Energy Credits Trading Authority

The following outlines transaction limits, definitions, and procedural requirements for renewable energy credit transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Total Volume MWh	\$/MWh	Total Volume MWh	Total \$
VP Energy Services	Renewable Energy Credits	≤ 2 Years	≤ 3 Years	200,000	\$10	400,000	\$4 Million
Director Resources & Forecasting	Renewable Energy Credits	<1 Year	<18 Months	100,000	\$5	200,000	\$1 Million
ACES	Renewable Energy Credits	As Directed	As Directed	As Directed	As Directed	As Directed	As Directed

Renewable Energy Credits Trading Authority Matrix Explanations

- The authority matrix above addresses authority for Renewable Energy Credits (REC's).
- Transaction Limits represent the total MWh volume and dollars/MWh for each REC transaction executed.
- Aggregate Limits represent the sum total MWh volume and dollars for all forward transactions.
- Term limits only apply to forward transactions, not spot transactions.
- Lead time represents the time period between trade execution and delivery of the REC's. Lead time limits only apply to forward transactions and not to spot transactions.

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11. Fuel Oil Transaction Authority

The following outlines Big Rivers’ staff transaction limits for fuel oil transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Physical Volume Gallons	\$/Gallon	Total Volume Gallons	Total \$
VP Production Chief Operating Officer	Physical Fuel Oil	> 1 Month ≤ 1 Year	≤ 1 Year	750,000	\$6	4,000,000	\$24 Million
		≤ 1 Month		No Max	No Max		
Director Manager Fuels Procurement	Physical Fuel Oil	> 1 Week ≤ 1 Month	≤ 1 Year	500,000	\$6	1,000,000	\$6 million
		≤ 1 Week	≤ 1 Month	No Max	No Max		

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12. Solid Fuel Transaction Authority

The following outlines Big Rivers’ staff transaction limits for solid fuel.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/MMBtu	Total Volume Tons	Total \$
VP Production Chief Operating Officer	Physical Solid Fuel	> 3 Months ≤ 1 Year	≤ 1 Year	500,000	\$2.50	1.0 million	\$60 million
		≤ 3 Months		100,000	\$2.85		
Director Manager Fuels Procurement	Physical Solid Fuel	> 3 Months ≤ 6 Months	≤ 1 Year	250,000	\$2.50	500,000	\$30 million
		≤ 3 Months		50,000	\$2.85		

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13. Transportation Transaction Authority

The following outlines Big Rivers’ staff transaction limits for transportation transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/Ton	Total Volume Tons	Total \$
VP <u>Production Chief Operating Officer</u>	Barge, Rail or Truck Transportation	> 3 Months ≤ 1 Years	≤ 1 Year	1 million	\$25	2 million	\$50 million
		≤ 3 Months		No Max	No Max		
Director <u>Manager</u> Fuels Procurement	Barge, Rail or Truck Transportation	> 1 Month ≤ 6 Months	≤ 1 Year	500,000	\$25	1 million	\$25 million
		≤ 1 Month	≤ 1 Month	No Max	No Max		

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14. Emission Allowance Transaction Authority

The following outlines Big Rivers’ staff and ACES transaction limits for emission allowance transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/Ton	Total Volume Tons	Total \$
VP Energy Services <u>Chief Administrative Officer</u>	Federal SO2 Emission Allowances	≤ 1 Year	≤ 1 Year	2,500	\$300	10,000	\$3 million
	Federal NOx Emission Allowances	≤ 1 Year		1,250	\$2,000	5,000	\$10 million
Director Resources & Forecasting	Federal SO2 Emission Allowances	≤ 1 Year	≤ 6 months	2,000	\$275	5,000	\$1 million
	Federal NOx Emission Allowances	≤ 1 Year		500	\$1,500	2,000	\$3 million
ACES	Federal SO2 Emission Allowances	As directed	As directed	As directed	As directed	As directed	As directed
	Federal NOx Emission Allowances	As directed		As directed	As directed		

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15. Limestone Reagent Transaction Authority

The following outlines Big Rivers' staff transaction limits for limestone reagent transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/Ton	Total Volume Tons	Total \$
VP Production Chief of Operating Officer	Physical Limestone Reagent	≤ 1 Year	≤ 1 Year	187,500	\$18	375,000	\$6.75 million
Director Manager Fuels Procurement	Physical Limestone Reagent	≤ 3 Months	≤ 1 Year	93,750	\$18	187,500	\$3.375 million

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16. Bulk Lime and Lime Hydrate Reagent Transaction Authority

The following outlines Big Rivers' staff transaction limits for bulk lime and lime hydrate reagent transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/Ton	Total Volume Tons	Total \$
VP Production Chief Operating Officer	Physical Lime Reagent	≤ 1 Year	≤ 1 Year	250,000	\$200	250,000	\$50 million
Director Manager Fuels Procurement	Physical Lime Reagent	≤ 3 Months	≤ 1 Year	62,500	\$200	62,500	\$12.5 million

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17. MATS Reagent Transaction Authority

The following outlines Big Rivers’ staff transaction limits for MATS reagent transactions.

Title	Product	Per Transaction Limits (up to)				Aggregate Limits (up to)	
		Term	Lead Time	Volume Tons	\$/Ton	Total Volume Tons	Total \$
VP Production Chief Operating Officer	MATS Reagent	≤ 1 Year	≤ 1 Year	8,500	\$4,000	8,500	\$ 34 million
Director Manager Fuels Procurement	MATS Reagent	≤ 3 Months	≤ 1 Year	3,000	\$4,000	3,000	\$ 12 million

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18. Acknowledgements

Violations and Sanctions

Violations of this Authority Policy must not occur. Any person covered by this policy who becomes aware of a violation of the Authority Policy has an affirmative duty to report the violation to the department head in which the violation occurred and to the ~~Director of Enterprise Risk Management and Strategic Planning~~**General Counsel** who in turn shall inform the Big Rivers CEO. However, if it is believed that the Big Rivers CEO is involved then the Big Rivers Chairman of the Board shall be notified. The responsible party(ies) will be sanctioned according to Big Rivers Risk Management Sanctions Policy (for Big Rivers Employees only, ACES employees are governed by the ACES Power Marketing Trading Sanctions Policy).

Appendix Effective

This Transaction Authority Appendix is in effect upon the CEO’s approval and shall remain in effect until a replacement appendix has been approved by the CEO.

Responsibility

It shall be the responsibility of the CEO, VP Energy Services, ~~VP Production~~**Chief Operating Officer** and the Big Rivers-IRMC and the ACES-IRMC to ensure compliance with this policy.

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Revisions

Big Rivers Policy 105/Appendix A Revision Record			
Number	Date	Notes	Approved by
Rev. 0	11-04-2009	Energy Related Trans	Mark Bailey
Rev. 1	11-22-2010	MISO and other misc. updates	Mark Bailey
Rev. 2	01-04-2011	Updated Solid Fuel Transaction Authority	Mark Bailey
Rev. 3	03-18-2011	Added Limestone and Lime, general cleanup	Mark Bailey
Rev. 4	12-05-2011	Update Bi-Lateral and Emission limits, add authority for PJM FTRs, add VP of Production	Mark Bailey
Rev. 5	05-07-2012	Remove Senior VP Energy Services from document due to retirement/elimination of role	Mark Bailey
Rev. 6	07-12-2012	Change Director of Power Portfolio Optimization to Managing Director Energy Services	Mark Bailey
Rev. 7	02-01-2013	Updated MISO capacity and Natural Gas limits, changed VP Production to Chief Operating Officer, changed Managing Director Energy Services to VP Energy Services, added Manager Power Supply & Market Operations, changed Power Scheduling Analyst to Power Portfolio Optimization Analyst and added Energy Services Analyst	Mark Bailey
Rev. 8	12-18-2013	Updated aggregate limits for VP Energy Services, increased offer price caps for capacity, updated VP Energy Services gas authorization to ensure ability to execute standard Texas Gas contracts, changed Power Portfolio Optimization Analyst title to reflect Senior status, replaced Manager Power Supply & Market Operations with Director Power Supply & Market Operations	Mark Bailey

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Rev. 9	07-21-2014	Allocate authority previously held by Chief Operating Officer to VP Energy Services and VP Production	Robert W. Berry
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<u>Rev. 17</u>	<u>12-17-21</u>	<u>Change of titles; update authority limits to reflect current market conditions; grammatical fixes</u>	<u>Robert W. Berry</u>

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Original Effective Date	11/4/2009	Date Last Reviewed	04/12/2021 8/4/2022	Approved by CEO
Original Approval Date	11/4/2009	Date Last Revised	04/12/2021 8/4/2022	

<u>Rev. 18</u>	<u>05-26-22</u>	<u>Change titles; update authority limits to reflect current market conditions along with usage limits for gas conversion; change gas unit of measure from mcf to mmbtu</u>	<u>Robert W. Berry</u>
<u>Rev. 19</u>	<u>08-04-22</u>	<u>Change titles; update MISO per transaction authority limits to reflect how MISO market operates</u>	<u>Robert W. Berry</u>

Approved by CEO

CEO Signature: _____

Approval Date: _____

Hedge Policy				
Original Effective Date	07/16/2009	Date Last Reviewed	12/17/2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/17/2021	

1. Objective

The Big Rivers Electric Corporation (“Big Rivers”) Hedge Policy will guide disciplined hedging of forward natural gas, solid fuel, fuel oil and purchased power resources (“Commodity/Commodities”). This Hedge Policy is designed to reduce Member-Owners’ wholesale rate volatility and to maintain rates within desired tolerances. The primary purpose of this policy is to identify specific time and volume (as a percent of total projected generation) criteria for procuring projected Commodity-related needs.

This policy largely employs a price-averaging strategy of declining percentage of Commodity supply positions held over forward time periods. This strategy protects Big Rivers from potential adverse impacts that could result in either significant Commodity price increases or decreases. The strategy also maintains some elements of procurement flexibility. For example, during times of extremely attractive market conditions, this policy allows for increasing the amount of forward Commodities hedged above the stated ranges with the concurrence of the Board of Directors (“Board”). A key component of the policy is a monthly compliance report for the Board, which is outlined herein.

Although this document is primarily concerned with managing Commodity costs and risks, a limited amount of discussion on capacity adequacy, transmission congestion risk, emission allowances and fuel transportation based on similar principles is included.

2. Hedge Policy Criteria

The hedging criteria identified within this policy address the primary Commodity supply portfolio components that affect rates and reliability the most. Accordingly, the hedge criteria in the following sections represent the risk tolerance of Big Rivers and identify the processes Big Rivers will employ to manage these key Commodity supply risks.

a. Volumetric and Lead Time Criteria for Hedging

This policy employs a total Commodity hedging methodology whereby the MWh equivalent of all Commodity hedges are compared to the expected generation of Big Rivers. To apply as a Commodity hedge, fuel purchases must be combined with physical generation ownership or contracted capacity. The MWh equivalent hedge from fuel purchases will be the volume of mmBTUs of fuel procured for the unit or contract divided by the expected average heat rate of the generation unit or contract divided by 1,000. The total Commodity hedge is the MWh equivalent of the sum of fuel purchases and electricity purchases.

Rolling Monthly Hedge Ranges

One criteria of this policy is to have Commodities procured within defined volumetric ranges during the following rolling timeframes. These ranges identify the percentage of Big Rivers’ projected total Commodity needs that will be procured with fixed price Commodities over a given time period. For purposes of this policy, Commodity needs are considered hedged or procured to the extent that the projected need is met by 1) authorized purchase transactions as defined in the Big Rivers Energy Related Transaction Authority Policy (Board Policy 105), or 2) authorized fuel transactions combined with physical generation unit ownership, heat rate transactions, or physical capacity transactions.

Hedge Policy				
Original Effective Date	07/16/2009	Date Last Reviewed	12/17/2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/17/2021	

Additionally, Commodity option transactions with out of the money strike prices may be used to hedge forward volumes, provided that they do not account for more than 15 percent of the projected Commodity needs in any given month, and they are not more than 50 percent out of the money at the time of the transaction.

Lead Time	Months 1 thru 3	Months 4 thru 12	Quarters 5 thru 8	Quarters 9 thru 12	Years 4 thru 5
Measurement Period	Rolling	Rolling	Rolling	Rolling	Calendar Year
Hedging Frequency	Monthly	Monthly	Quarterly	Quarterly	Annual
Range (%)	75-100	50-100	25-75	0-75	0-50

For the above table, Big Rivers will hedge projected Commodity needs based on the following criteria:

- Lead Time: The amount of time from the current period. Defined in months, quarters, or years.
- Measurement Period: This is the mechanism under which this volumetric range is measured. There are two measures - rolling, where the measurement period changes monthly and calendar year, where the measurement period is only changed at the change of a calendar year. In the case of conflict, the rolling criterion has precedence over calendar year.
- Hedging Frequency: This is primarily useful in conjunction with the rolling measurement period. This is the frequency that the rolling measurement period changes for policy compliance reporting purposes. The hedging frequency period prevents, for example, a situation where the transaction execution staff would have to hedge month 36 (the last month of quarter 12) at a time where monthly purchases are very illiquid (not readily available).
- Range: This is the range of overall Commodity needs that will be hedged with fixed price Commodities, of which up to 15 percent may be covered with options.

Commodity procurements that deviate from the stated range will require approval of the Board, and will be part of the regular reporting to the Board.

Commodity hedging will be a complementary hedging activity since Big Rivers has natural gas and coal-fired generation. Big Rivers may also hedge with Commodities if it enters a transaction that uses a natural gas, fuel oil, or coal index price to derive its electricity cost. Such natural gas, fuel oil, and coal-related generation or purchase transactions, while considered capacity, would not be considered Commodity hedges until the projected Commodity volumes are procured. In order to allow flexibility in overall Commodity hedging decisions, specific sub-targets for natural gas hedging are not set within this policy.

Hedge Policy				
Original Effective Date	07/16/2009	Date Last Reviewed	12/17/2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/17/2021	

b. MISO Resource Adequacy Requirements

Big Rivers will comply with all MISO capacity requirement rules.

c. Congestion Hedging with Financial Transmission Rights (FTR)

It will be Big Rivers’ policy to actively participate in the MISO FTR allocation and auction process with a prudent and predetermined strategy for addressing the planning year congestion risk.

Big Rivers will target to mitigate a minimum of 50% of congestion risk (measured by annual native load and non-member sales requirements) prior to or by the end of the MISO annual FTR auction.

Big Rivers will target to mitigate a minimum of 70% of congestion risk prior to the month of delivery.

d. Emission Allowance Hedging

This hedging policy calls for the establishment of an emission allowance procurement process to meet expected future requirements. Fixed price hedges for emission allowances include 1) actual or expected emission allowances allocated to Big Rivers from the EPA, 2) fixed price allowance purchases and sales, and 3) projected, budgeted, and Board-approved emission control equipment additions. Big Rivers will price average into its emission allowance position when purchasing emission allowances. Emission allowance needs will be managed similar to its approach for Commodities. Big Rivers will maintain fixed price allowance hedges based on the following table.

Lead Time	Current Calendar Year	Calendar Year Two	Calendar Year Three
Minimum (%)	80	70	60

Per applicable regulatory requirements, Big Rivers will hold enough allowances in all compliance accounts to cover emissions for the current reporting period. Specifically, all compliance accounts shall be populated with sufficient allowances to cover emissions for the current reporting period prior to the accounts being closed by the EPA, which is currently two (2) consecutive calendar months after the end of the reporting period. Furthermore, the Designated Representative will ensure that all compliance accounts have an adequate number of allowances prior to running “Final Compliance True up” after the accounts have been closed by the EPA.

Big Rivers will not buy emission allowances from the market for any given year if it results in emission allowances that exceed 105 percent of its expected needs without prior CEO approval.

e. Risk Measurement and Compliance Reporting

Risk measurement and policy compliance within the volumetric and lead time criteria will be provided to Big Rivers’ Board monthly. This report will generally cover five years of projections.

Hedge Policy				
Original Effective Date	07/16/2009	Date Last Reviewed	12/17/2021	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	12/17/2021	

Responsibility

It shall be the responsibility of the Board, CEO and IRMC to ensure compliance with this policy. Implementation of this policy shall adhere to the authority granted in the Energy Related Transaction Authority Policy (Board Policy 105).

Number	Date	Notes	Approved by
Original	06/15/2007	Approved to be effective at close of unwind	Board
Rev 1	03/16/2012	Update out-of-date language (joining MISO, old policy reference), general cleanup	Board
Rev 2	09/18/2015	Update terminology (I.E. energy to Commodity, coal to solid fuel, electricity to purchased power), removed Appendix A (out-of-date examples) and Appendix B (no longer applicable), updated emission allowance section to be more concise and clarified resource diversity language.	Board
Rev 3	09/16/2016	Clarified Policy Reference	Board
Rev 4	08/10/2018	Removed capacity resources from resource diversity management	Board
Rev 5	08/16/2019	Modified the resource diversity management requirements	Board
Rev 6	08/21/2020	Coal hedge percentage changes	Board
Rev 7	12/17/2021	Update to reflect limited number of suppliers in current fuel market	Board

Hedge Policy				
Original Effective Date	07/16/2009	Date Last Reviewed	0812/2117/20210	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	0128/2117/20210	

1. Objective

The Big Rivers Electric Corporation (“Big Rivers”) Hedge Policy will guide disciplined hedging of forward natural gas, solid fuel, fuel oil and purchased power resources (“Commodity/Commodities”). This Hedge Policy is designed to reduce Member-Owners’ wholesale rate volatility and to maintain rates within desired tolerances. The primary purpose of this policy is to identify specific time and volume (as a percent of total projected generation) criteria for procuring projected Commodity-related needs.

This policy largely employs a price-averaging strategy of declining percentage of Commodity supply positions held over forward time periods. This strategy protects Big Rivers from potential adverse impacts that could result in either significant Commodity price increases or decreases. The strategy also maintains some elements of procurement flexibility. For example, during times of extremely attractive market conditions, this policy allows for increasing the amount of forward Commodities hedged above the stated ranges with the concurrence of the Board of Directors (“Board”). A key component of the policy is a monthly compliance report for the Board, which is outlined herein.

Although this document is primarily concerned with managing Commodity costs and risks, a limited amount of discussion on capacity adequacy, transmission congestion risk, emission allowances and fuel transportation based on similar principles is included.

2. Hedge Policy Criteria

The hedging criteria identified within this policy address the primary Commodity supply portfolio components that affect rates and reliability the most. Accordingly, the hedge criteria in the following sections represent the risk tolerance of Big Rivers and identify the processes Big Rivers will employ to manage these key Commodity supply risks.

a. Volumetric and Lead Time Criteria for Hedging

This policy employs a total Commodity hedging methodology whereby the MWh equivalent of all Commodity hedges are compared to the expected generation of Big Rivers. To apply as a Commodity hedge, fuel purchases must be combined with physical generation ownership or contracted capacity. The MWh equivalent hedge from fuel purchases will be the volume of mmBTUs of fuel procured for the unit or contract divided by the expected average heat rate of the generation unit or contract divided by 1,000. The total Commodity hedge is the MWh equivalent of the sum of fuel purchases and electricity purchases.

Rolling Monthly Hedge Ranges

One criteria of this policy is to have Commodities procured within defined volumetric ranges during the following rolling timeframes. These ranges identify the percentage of Big Rivers’ projected total Commodity needs that will be procured with fixed price Commodities over a given time period. For purposes of this policy, Commodity needs are considered hedged or procured to the extent that the projected need is met by 1) authorized purchase transactions as defined in the Big Rivers Energy Related Transaction Authority Policy (Board Policy 105), or 2) authorized fuel transactions combined with physical generation unit ownership, heat rate transactions, or physical capacity transactions.

Hedge Policy					
Original Effective Date	07/16/2009	Date Last Reviewed	0812/2117/20210	Approved by	
Original Approval Date	06/15/2007	Date Last Revised	0128/2117/20210	BOARD	

Additionally, Commodity option transactions with out of the money strike prices may be used to hedge forward volumes, provided that they do not account for more than 15 percent of the projected Commodity needs in any given month, and they are not more than 50 percent out of the money at the time of the transaction.

Lead Time	Months 1 thru 3	Months 4 thru 12	Quarters 5 thru 8	Quarters 9 thru 12	Years 4 thru 5
Measurement Period	Rolling	Rolling	Rolling	Rolling	Calendar Year
Hedging Frequency	Monthly	Monthly	Quarterly	Quarterly	Annual
Range (%)	75-100	50-100	25-75	0-75	0-50

For the above table, Big Rivers will hedge projected Commodity needs based on the following criteria:

- Lead Time: The amount of time from the current period. Defined in months, quarters, or years.
- Measurement Period: This is the mechanism under which this volumetric range is measured. There are two measures - rolling, where the measurement period changes monthly and calendar year, where the measurement period is only changed at the change of a calendar year. In the case of conflict, the rolling criterion has precedence over calendar year.
- Hedging Frequency: This is primarily useful in conjunction with the rolling measurement period. This is the frequency that the rolling measurement period changes for policy compliance reporting purposes. The hedging frequency period prevents, for example, a situation where the transaction execution staff would have to hedge month 36 (the last month of quarter 12) at a time where monthly purchases are very illiquid (not readily available).
- Range: This is the range of overall Commodity needs that will be hedged with fixed price Commodities, of which up to 15 percent may be covered with options.

Commodity procurements that deviate from the stated range will require approval of the Board, and will be part of the regular reporting to the Board.

Commodity hedging will be a complementary hedging activity since Big Rivers has natural gas and coal-fired generation. Big Rivers may also hedge with Commodities if it enters a transaction that uses a natural gas, fuel oil, or coal index price to derive its electricity cost. Such natural gas, fuel oil, and coal-related generation or purchase transactions, while considered capacity, would not be considered Commodity hedges until the projected Commodity volumes are procured. In order to allow flexibility in overall Commodity hedging decisions, specific sub-targets for natural gas hedging are not set within this policy.

Hedge Policy				
Original Effective Date	07/16/2009	Date Last Reviewed	0812/2117/20210	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	0128/2117/20210	

b. MISO Resource Adequacy Requirements

Big Rivers will comply with all MISO capacity requirement rules.

c. Congestion Hedging with Financial Transmission Rights (FTR)

It will be Big Rivers’ policy to actively participate in the MISO FTR allocation and auction process with a prudent and predetermined strategy for addressing the planning year congestion risk.

Big Rivers will target to mitigate a minimum of 50% of congestion risk (measured by annual native load and non-member sales requirements) prior to or by the end of the MISO annual FTR auction.

Big Rivers will target to mitigate a minimum of 70% of congestion risk prior to the month of delivery.

d. Emission Allowance Hedging

This hedging policy calls for the establishment of an emission allowance procurement process to meet expected future requirements. Fixed price hedges for emission allowances include 1) actual or expected emission allowances allocated to Big Rivers from the EPA, 2) fixed price allowance purchases and sales, and 3) projected, budgeted, and Board-approved emission control equipment additions. Big Rivers will price average into its emission allowance position when purchasing emission allowances. Emission allowance needs will be managed similar to its approach for Commodities. Big Rivers will maintain fixed price allowance hedges based on the following table.

Lead Time	Current Calendar Year	Calendar Year Two	Calendar Year Three
Minimum (%)	80	70	60

Per applicable regulatory requirements, Big Rivers will hold enough allowances in all compliance accounts to cover emissions for the current reporting period. Specifically, all compliance accounts shall be populated with sufficient allowances to cover emissions for the current reporting period prior to the accounts being closed by the EPA, which is currently two (2) consecutive calendar months after the end of the reporting period. Furthermore, the Designated Representative will ensure that all compliance accounts have an adequate number of allowances prior to running “Final Compliance True up” after the accounts have been closed by the EPA.

Big Rivers will not buy emission allowances from the market for any given year if it results in emission allowances that exceed 105 percent of its expected needs without prior CEO approval.

~~**e. Resource Diversity Management**~~

~~Big Rivers will manage its resource diversity concentration risks on a rolling 12-month basis by diversifying its Commodity supply resources as follows:~~

Hedge Policy				
Original Effective Date	07/16/2009	Date Last Reviewed	0812/2117/20210	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	0128/2117/20210	

~~Fuel supply contracts will be diversified such that no more than 60 percent (but not more than 1.5 million tons) will be from a single supplier that has the ability to source coal from multiple coal mining operations to supply Big Rivers for any rolling 12-month period. For fuel suppliers that have the ability to source coal from a single mining operation, no more than 35% (but not more than 1.0 million tons) will be from such supplier to supply Big Rivers for any rolling 12-month period.~~

~~Exceptions to these limits shall require approval of Big Rivers' Board.~~

f.e. Risk Measurement and Compliance Reporting

Risk measurement and policy compliance within the volumetric and lead time criteria will be provided to Big Rivers' Board monthly. This report will generally cover five years of projections.

Responsibility

It shall be the responsibility of the Board, CEO and IRMC to ensure compliance with this policy. Implementation of this policy shall adhere to the authority granted in the Energy Related Transaction Authority Policy (Board Policy 105).

Number	Date	Notes	Approved by
Original	06/15/2007	Approved to be effective at close of unwind	Board
Rev 1	03/16/2012	Update out-of-date language (joining MISO, old policy reference), general cleanup	Board
Rev 2	09/18/2015	Update terminology (I.E. energy to Commodity, coal to solid fuel, electricity to purchased power), removed Appendix A (out-of-date examples) and Appendix B (no longer applicable), updated emission allowance section to be more concise and clarified resource diversity language.	Board
Rev 3	09/16/2016	Clarified Policy Reference	Board
Rev 4	08/10/2018	Removed capacity resources from resource diversity management	Board
Rev 5	08/16/2019	Modified the resource diversity management requirements	Board
Rev 6	08/21/2020	Coal hedge percentage changes	Board
<u>Rev 7</u>	<u>02-18-22</u>	<u>Update to reflect limited number of suppliers in current fuel market</u>	

Hedge Policy

Original Effective Date	07/16/2009	Date Last Reviewed	0812/2117/20210	Approved by BOARD
Original Approval Date	06/15/2007	Date Last Revised	0128/2117/20210	

BIG RIVERS ELECTRIC CORPORATION

**AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL
ADJUSTMENT CLAUSE OF BIG RIVERS ELECTRIC CORPORATION
FROM NOVEMBER 1, 2021 THROUGH APRIL 30, 2022
CASE NO. 2022-00268**

**Responses to Commission Staff's First Request for Information
in Appendix B of the Commission's Order
dated September 13, 2022**

September 30, 2022

1 **Item 12)** *For the period under review, list all firm power commitments for*
2 *(a) purchases and (b) sales. This list shall identify the electric utility, the*
3 *amount of commitment in megawatts, and the purpose of the commitment*
4 *(i.e., peaking, emergency).*

5

6 **Response)**

7 (a) Purchases:

8 Big Rivers has a contract with Southeastern Power Administration
9 ("SEPA") to purchase up to 178 MWs of energy. Additional purchases are
10 shown on the tables on the following pages. Please note, the purchases listed
11 were made to support firm Off-System Sales and to adjust the amount of sales
12 in selected months. The listed purchases were not passed through Big Rivers'
13 FAC, with the exception of transactions related to hedging activities
14 surrounding the Nucor Corporation contract. One fifty MW purchase was
15 executed with an effective date of January 1, 2022, intended to align with the

BIG RIVERS ELECTRIC CORPORATION

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1 initial Nucor Service Commencement date, which was later revised and the
2 purchase was reversed.

Big Rivers Electric Corporation Power Purchases NOVEMBER 1, 2021 THROUGH APRIL 30, 2022			
Date	Electric Utility	MW Commitment	Purpose
Nov - Dec, 2021		25 mws - 7x24 - 36,600 total	off system sales adjustments
Nov - Dec, 2021		25 mws - 7x24 - 36,600 total	off system sales adjustments
Nov - Dec, 2021		50 mws - 7x24 - 73,200 total	off system sales adjustments
Jan - Apr, 2022		25 mws - 7x24 - 72,000 total	off system sales adjustments
Jan - Apr, 2022		50 mws - 7x24 - 144,000 total	off system sales adjustments
Jan - Apr, 2022		25 mws - 7x24 - 72,000 total	off system sales adjustments
Apr, 2022		100 mws - on peak - 33,600 total	off system sales adjustments
Feb, 2022		100 mws - 7x24 - 28,800 total	off system sales adjustments
Jan - Apr, 2022		50 mws - 7x24 - 144,000 total	off system sales adjustments
Nov - Dec, 2021	MISO	50 mws - on peak - 35,200 total	purchases for off system sales
Nov - Dec, 2021	MISO	50 mws - on peak - 35,200 total	purchases for off system sales

3

BIG RIVERS ELECTRIC CORPORATION

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1 a. Purchases: (continued)

Big Rivers Electric Corporation Power Purchases NOVEMBER 1, 2021 THROUGH APRIL 30, 2022			
Date	Electric Utility	MW Commitment	Purpose
Nov - Dec, 2021	MISO	50 mws - on peak - 35,200 total	purchases for off system sales
Nov - Dec, 2021	MISO	100 mws - 7x24 - 146,400 total	purchases for off system sales
Nov - Dec, 2021	MISO	50 mws - 7x24 - 73,200 total	purchases for off system sales
Nov - Dec, 2021	MISO	50 mws - off peak - 38,000 total	purchases for off system sales
Jan - Feb, 2022	MISO	50 mws - off peak - 38,000 total	purchases for off system sales
Jan - Feb, 2022	MISO	50 mws - on peak - 32,800 total	purchases for off system sales
Jan - Feb, 2022	MISO	50 mws - on peak - 32,800 total	purchases for off system sales
Jan, 2022	MISO	50 mws - 7x24 - 37,200 total	purchases for off system sales
Jan - Feb, 2022	MISO	50 mws - 7x24 - 70,800 total	purchases for off system sales
Feb, 2022	MISO	200 mws - 7x24 - 134,400 total	purchases for off system sales
Feb, 2022	MISO	25 mws - 7x24 - 16,800 total	purchases for off system sales
Mar, 2022	MISO	100 mws - 7x24 - 74,400 total	purchases for off system sales

2

BIG RIVERS ELECTRIC CORPORATION

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1 a. Purchases: (continued)

2

Big Rivers Electric Corporation Power Purchases NOVEMBER 1, 2021 THROUGH APRIL 30, 2022			
Date	Electric Utility	MW Commitment	Purpose
Apr, 2022	MISO	50 mws - on peak - 16,800 total	purchases for off system sales
Jan, 2022	MISO	100 mws - 7x24 - 74,400 total	purchases for off system sales
Apr, 2022	MISO	50 mws - 7x24 - 36,000 total	purchases for off system sales
Jan - Apr, 2022	MISO	50 mws - 7x24 - 144,000 total	purchases for off system sales

3

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1 (a) Sales:

2 Big Rivers has contracts with three public power entities in Nebraska with
3 about 90 MWs of load to provide partial requirements service, balancing
4 what they receive from their incumbent supplier, Western Area Power
5 Administration, and a wind farm with their load. Any purchases to hedge
6 this transaction shown in sub-part (a) do not pass through Big Rivers' FAC.

7 Big Rivers has a contract to [REDACTED] to the Kentucky
8 Municipal Energy Agency ("KYMEA"). KYMEA uses this as a baseload
9 resource.

10 Big Rivers has a second contract to [REDACTED] to
11 KYMEA. KYMEA uses this agreement for economic energy, when the
12 contract price is below the cost of their other resources.

13 On June 1, 2020, Owensboro Municipal Utilities ("OMU") began
14 taking energy from Big Rivers under a contract in which Big Rivers
15 supplies full requirements service, net of OMU's SEPA allocation of
16 capacity and energy. The price is contractually specified.

BIG RIVERS ELECTRIC CORPORATION

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1 (b) Sales: (continued)

Big Rivers Electric Corporation Firm Off-System Sales NOVEMBER 1, 2021 THROUGH APRIL 30, 2022			
Date	Electric Utility	MW Commitment	Purpose
Nov - Dec, 2021		50 mws - on peak - 35,200 total	off system sales
Nov - Dec, 2021		50 mws - on peak - 35,200 total	off system sales
Nov - Dec, 2021		50 mws - on peak - 35,200 total	off system sales
Nov - Dec, 2021		100 mws - 7x24 - 146,400 total	off system sales
Nov - Dec, 2021		50 mws - 7x24 - 73,200 total	off system sales
Nov - Dec, 2021		50 mws - off peak - 38,000 total	off system sales
Jan - Feb, 2022		50 mws - off peak - 38,000 total	off system sales
Jan - Feb, 2022		50 mws - on peak - 32,800 total	off system sales
Jan - Feb, 2022		50 mws - on peak - 32,800 total	off system sales
Jan, 2022		50 mws - 7x24 - 37,200 total	off system sales
Jan - Feb, 2022		50 mws - 7x24 - 70,800 total	off system sales
Feb, 2022		200 mws - 7x24 - 134,400 total	off system sales

BIG RIVERS ELECTRIC CORPORATION

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1 (b) Sales: (continued)

Big Rivers Electric Corporation Firm Off-System Sales (continued) NOVEMBER 1, 20221 THROUGH APRIL 30, 2022			
Date	Electric Utility	MW Commitment	Purpose
Feb, 2022		25 mws - 7x24 - 16,800 total	off system sales
Mar, 2022		100 mws - 7x24 - 74,400 total	off system sales
Apr, 2022		50 mws - on peak - 16,800 total	off system sales
Jan, 2022		100 mws - 7x24 - 74,400 total	off system sales
Apr, 2022		50 mws - 7x24 - 36,000 total	off system sales
Jan - Apr, 2022		50 mws - 7x24 - 144,000 total	off system sales
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Nov - Dec, 2021	MISO	25 mws - 7x24 - 36,600 total	off system sales
Nov - Dec, 2021	MISO	50 mws - 7x24 - 73,200 total	off system sales
Jan - Apr, 2022	MISO	25 mws - 7x24 - 72,000 total	off system sales
Jan - Apr, 2022	MISO	50 mws - 7x24 - 144,000 total	off system sales

2

BIG RIVERS ELECTRIC CORPORATION

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September 30, 2022

1 (b) Sales: (continued)

Big Rivers Electric Corporation Firm Off-System Sales (continued) NOVEMBER 1, 2021 THROUGH APRIL 30, 2022			
Date	Electric Utility	MW Commitment	Purpose
Jan - Apr, 2022	MISO	25 mws - 7x24 - 72,000 total	off system sales
Apr, 2022	MISO	100 mws - on peak - 33,600 total	off system sales
Feb, 2022	MISO	100 mws - 7x24 - 28,800 total	off system sales
Jan - Apr, 2022	MISO	50 mws - 7x24 - 144,000 total	off system sales

2

3

4 **Witness)** Natalie R. Hankins

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**AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL
ADJUSTMENT CLAUSE OF BIG RIVERS ELECTRIC CORPORATION
FROM NOVEMBER 1, 2021 THROUGH APRIL 30, 2022
CASE NO. 2022-00268**

**Responses to Commission Staff's First Request for Information
in Appendix B of the Commission's Order
dated September 13, 2022**

September 30, 2022

1 **Item 13)** *Provide a monthly billing summary of sales to all electric*
2 *utilities for the period under review.*

3

4 **Response)** Please see the attached monthly billing summaries for sales to all
5 electric utilities for the period November 1, 2021, through April 30, 2022.

6

7

8 **Witness)** Jennifer M. Stone

9

**Big Rivers Electric Corporation
Monthly Billing Summary
Sales to Members - December 2021**

	KW Billed (a)	kWh (b)	Demand Revenue (c)	Base Energy Revenue (d)	Total Demand & Energy (e) = (c) + (d)
1 Member Billing November 2021					
2					
3 JP RURALS	95,825	48,723,966	1,322,864.13	\$ 2,192,578.47	\$ 3,515,442.60
4 KENERGY	191,072	88,516,156	2,637,748.96	3,983,227.02	6,620,975.98
5 MEADE CO. RURALS	96,805	40,746,108	1,336,393.03	1,833,574.86	3,169,967.89
6					
7 TOTAL RURALS	383,702	177,986,230	\$ 5,297,006.12	\$ 8,009,380.35	\$ 13,306,386.47
8					
	4,717	2,259,687	50,542.66	\$ 85,981.09	\$ 136,523.75
	40,800	18,103,300	437,172.00	688,830.57	1,126,002.57
	1,620	499,431	17,358.30	19,003.35	36,361.65
	15,000	10,789,816	160,725.00	410,552.50	571,277.50
	163	99,594	1,746.55	3,789.55	5,536.10
	100	20,572	1,071.50	782.76	1,854.26
	20,000	11,191,750	214,300.00	425,846.09	640,146.09
	3,372	1,488,323	36,130.98	56,630.69	92,761.67
	40	0	428.60	-	428.60
	7,401	4,188,938	79,301.72	159,389.09	238,690.81
	11,768	6,147,191	126,094.12	233,900.62	359,994.74
	2,286	1,240,156	24,494.49	47,187.94	71,682.43
	929	170,546	9,954.24	6,489.28	16,443.52
	150	12,967	1,607.25	493.39	2,100.64
	180	18,516	1,928.70	704.53	2,633.23
	2,500	184,375	26,787.50	7,015.47	33,802.97
25					
26 TOTAL INDUSTRIALS	111,026	56,415,162	\$ 1,189,643.61	\$ 2,146,596.92	\$ 3,336,240.53
27					
28 GRAND TOTAL	494,728	234,401,392	\$ 6,486,649.73	\$ 10,155,977.27	\$ 16,642,627.00

**Big Rivers Electric Corporation
Monthly Billing Summary
Sales to Members - December 2021**

	Net Green Power (f)	Power Factor Penalty (g)	Billing Adjustment (h)	Fuel Adjustment Clause (FAC) (i)	Environmental Surcharge (ES) (j)
1 Member Billing November 2021					
2					
3 JP RURALS	\$ 6.00	\$ -	\$ -	\$ 313,343.83	\$ 326,632.70
4 KENERGY	-	-	-	569,247.40	612,780.75
5 MEADE CO. RURALS	-	-	-	262,038.22	292,179.80
6					
7 TOTAL RURALS	\$ 6.00	\$ -	\$ -	\$ 1,144,629.45	\$ 1,231,593.25
8					
	\$ -	\$ -	\$ -	\$ 14,532.05	\$ 12,956.08
	-	-	(31,370.31)	116,422.32	103,869.61
	-	-	-	3,211.84	3,375.14
	-	-	-	69,389.31	55,198.67
	-	300.02	-	640.49	531.25
	-	-	-	132.30	168.50
	-	-	-	71,974.14	61,189.75
	-	-	-	9,571.41	8,768.36
	-	-	-	-	35.44
	-	-	-	26,939.06	22,827.50
	-	-	-	39,532.59	34,302.67
	-	-	-	7,975.44	6,842.27
	-	-	-	1,096.78	1,485.50
	-	-	30.03	83.39	183.26
	-	-	150.17	119.08	231.40
	-	-	720.51	1,185.72	2,931.10
26 TOTAL INDUSTRIALS	\$ -	\$ 300.02	\$ (30,469.60)	\$ 362,805.92	\$ 314,896.50
27					
28 GRAND TOTAL	\$ 6.00	\$ 300.02	\$ (30,469.60)	\$ 1,507,435.37	\$ 1,546,489.75

**Big Rivers Electric Corporation
Monthly Billing Summary
Sales to Members - December 2021**

1	Member Billing November 2021	Non-FAC PPA (k)	Revenue (l) = \sum (e) to (k)	MRSM - ER Adjustment (m)	Revenue Net of MRSM Adjustments (n) = (l) + (m)
2					
3	JP RURALS	\$ 121,468.85	\$ 4,276,893.98	\$ (239,470.60)	\$ 4,037,423.38
4	KENERGY	220,670.78	8,023,674.91	(435,042.92)	7,588,631.99
5	MEADE CO. RURALS	101,580.05	3,825,765.96	(200,260.68)	3,625,505.28
6					
7	TOTAL RURALS	\$ 443,719.68	\$ 16,126,334.85	\$ (874,774.20)	\$ 15,251,560.65
8					
		\$ 5,633.40	\$ 169,645.28	\$ (9,657.17)	\$ 159,988.11
		45,131.53	1,360,055.72	(72,619.53)	1,287,436.19
		1,245.08	44,193.71	(2,134.41)	42,059.30
		26,899.01	722,764.49	(46,112.18)	676,652.31
		248.29	7,256.15	(425.64)	6,830.51
		51.29	2,206.35	(87.92)	2,118.43
		27,901.03	801,211.01	(47,829.91)	753,381.10
		3,710.39	114,811.83	(6,360.61)	108,451.22
		-	464.04	-	464.04
		10,443.02	298,900.39	(17,902.16)	280,998.23
		15,324.95	449,154.95	(26,271.10)	422,883.85
		3,091.71	89,591.85	(5,300.03)	84,291.82
		425.17	19,450.97	(728.85)	18,722.12
		32.33	2,429.65	(55.41)	2,374.24
		46.16	3,180.04	(79.13)	3,100.91
		459.65	39,099.95	(787.95)	38,312.00
26	TOTAL INDUSTRIALS	\$ 140,643.01	\$ 4,124,416.38	\$ (236,352.00)	\$ 3,888,064.38
27					
28	GRAND TOTAL	\$ 584,362.69	\$ 20,250,751.23	\$ (1,111,126.20)	\$ 19,139,625.03

**Big Rivers Electric Corporation
Monthly Billing Summary
Sales to Members - December 2021**

	KW Billed (a)	kWh (b)	Demand Revenue (c)	Base Energy Revenue (d)	Total Demand & Energy (e) = (c) + (d)
1 Member Billing December 2021					
2					
3 JP RURALS	96,473	48,706,822	1,331,809.77	\$ 2,191,806.99	\$ 3,523,616.76
4 KENERGY	177,971	87,862,054	2,456,889.66	3,953,792.43	6,410,682.09
5 MEADE CO. RURALS	91,981	39,531,430	1,269,797.71	1,778,914.35	3,048,712.06
6					
7 TOTAL RURALS	366,425	176,100,306	\$ 5,058,497.14	\$ 7,924,513.77	\$ 12,983,010.91
8					
	4,687	1,939,282	50,221.21	\$ 73,789.68	\$ 124,010.89
	40,800	19,884,047	437,172.00	756,587.99	1,193,759.99
	1,665	484,744	17,840.48	18,444.51	36,284.99
	15,000	12,768,743	160,725.00	485,850.67	646,575.67
	163	85,844	1,746.55	3,266.36	5,012.91
	100	21,809	1,071.50	829.83	1,901.33
	20,000	12,212,750	214,300.00	464,695.14	678,995.14
	3,334	1,173,463	35,723.81	44,650.27	80,374.08
	0	0	-	-	-
	7,583	4,178,500	81,251.85	158,991.93	240,243.78
	11,858	6,242,822	127,058.47	237,539.38	364,597.85
	2,206	1,124,266	23,637.29	42,778.32	66,415.61
	914	186,485	9,793.51	7,095.75	16,889.26
	150	22,438	1,607.25	853.77	2,461.02
	180	9	1,928.70	0.34	1,929.04
	2,500	125,469	26,787.50	4,774.10	31,561.60
26 TOTAL INDUSTRIALS	111,140	60,450,671	\$ 1,190,865.12	\$ 2,300,148.04	\$ 3,491,013.16
27					
28 GRAND TOTAL	477,565	236,550,977	\$ 6,249,362.26	\$ 10,224,661.81	\$ 16,474,024.07

**Big Rivers Electric Corporation
Monthly Billing Summary
Sales to Members - December 2021**

	Net Green Power (f)	Power Factor Penalty (g)	Billing Adjustment (h)	Fuel Adjustment Clause (FAC) (i)	Environmental Surcharge (ES) (j)
1 Member Billing December 2021					
2					
3 JP RURALS	\$ 6.00	\$ -	\$ -	\$ 297,647.39	\$ 394,959.98
4 KENERGY	-	-	-	536,925.01	717,920.67
5 MEADE CO. RURALS	-	-	-	241,576.57	339,477.94
6					
7 TOTAL RURALS	\$ 6.00	\$ -	\$ -	\$ 1,076,148.97	\$ 1,452,358.59
8					
	\$ -	\$ -	\$ -	\$ 11,850.95	\$ 14,094.30
	-	-	(31,370.31)	121,511.41	133,580.89
	-	-	-	2,962.27	4,052.66
	-	-	-	78,029.79	75,776.36
	-	171.44	-	524.59	576.16
	-	-	-	133.27	209.26
	-	-	-	74,632.12	78,544.77
	-	396.46	-	7,171.03	9,062.91
	-	-	-	-	-
	-	-	-	25,534.81	27,667.96
	-	-	-	38,149.89	41,904.42
	-	-	-	6,870.39	7,622.21
	-	-	-	1,139.61	1,852.62
	-	-	30.03	137.12	265.87
	-	-	30.04	0.05	193.25
	-	-	933.99	766.74	3,269.83
26 TOTAL INDUSTRIALS	\$ -	\$ 567.90	\$ (30,376.25)	\$ 369,414.04	\$ 398,673.47
27					
28 GRAND TOTAL	\$ 6.00	\$ 567.90	\$ (30,376.25)	\$ 1,445,563.01	\$ 1,851,032.06

**Big Rivers Electric Corporation
Monthly Billing Summary
Sales to Members - December 2021**

1	Member Billing December 2021	Non-FAC PPA (k)	Revenue (l) = \sum (e) to (k)	MRSM - ER Adjustment (m)	Revenue Net of MRSM Adjustments (n) = (l) + (m)
2					
3	JP RURALS	\$ 121,426.11	\$ 4,337,656.24	\$ (241,950.02)	\$ 4,095,706.22
4	KENERGY	219,040.10	7,884,567.87	(436,452.73)	7,448,115.14
5	MEADE CO. RURALS	98,551.85	3,728,318.42	(196,371.47)	3,531,946.95
6					
7	TOTAL RURALS	\$ 439,018.06	\$ 15,950,542.53	\$ (874,774.22)	\$ 15,075,768.31
8					
		\$ 4,834.63	\$ 154,790.77	\$ (7,760.85)	\$ 147,029.92
		49,570.93	1,467,052.91	(74,007.84)	1,393,045.07
		1,208.47	44,508.39	(1,939.91)	42,568.48
		31,832.48	832,214.30	(51,099.43)	781,114.87
		214.01	6,499.11	(343.54)	6,155.57
		54.37	2,298.23	(87.28)	2,210.95
		30,446.39	862,618.42	(48,874.40)	813,744.02
		2,925.44	99,929.92	(4,696.10)	95,233.82
		-	-	-	-
		10,417.00	303,863.55	(16,722.00)	287,141.55
		15,563.36	460,215.52	(24,983.24)	435,232.28
		2,802.80	83,711.01	(4,499.22)	79,211.79
		464.91	20,346.40	(746.29)	19,600.11
		55.94	2,949.98	(89.79)	2,860.19
		0.02	2,152.40	(0.03)	2,152.37
		312.79	36,844.95	(502.11)	36,342.84
25					
26	TOTAL INDUSTRIALS	\$ 150,703.54	\$ 4,379,995.86	\$ (236,352.03)	\$ 4,143,643.83
27					
28	GRAND TOTAL	\$ 589,721.60	\$ 20,330,538.39	\$ (1,111,126.25)	\$ 19,219,412.14

**Big Rivers Electric Corporation
Monthly Billing Summary
Sales to Members - December 2021**

	KW Billed (a)	kWh (b)	Demand Revenue (c)	Base Energy Revenue (d)	Total Demand & Energy (e) = (c) + (d)
1 Member Billing January 2022					
2					
3 JP RURALS	121,407	66,287,236	1,676,023.64	\$ 2,982,925.62	\$ 4,658,949.26
4 KENERGY	228,694	120,281,142	3,157,120.67	5,412,651.39	8,569,772.06
5 MEADE CO. RURALS	118,340	58,151,812	1,633,683.70	2,616,831.54	4,250,515.24
6					
7 TOTAL RURALS	468,441	244,720,190	\$ 6,466,828.01	\$ 11,012,408.55	\$ 17,479,236.56
8					
	4,619	1,861,094	49,492.58	\$ 70,814.63	\$ 120,307.21
	1,817	646,925	19,469.15	24,615.50	44,084.65
	2,350	1,173,953	25,180.25	44,668.91	69,849.16
	40,800	20,491,846	437,172.00	779,714.74	1,216,886.74
	21,000	12,948,937	225,015.00	492,707.05	717,722.05
	171	89,891	1,832.26	3,420.35	5,252.61
	100	28,316	1,071.50	1,077.42	2,148.92
	31,406	11,637,453	336,515.29	442,805.09	779,320.38
	150	12,990	1,607.25	494.27	2,101.52
	180	3,986	1,928.70	151.67	2,080.37
	2,500	101,906	26,787.50	3,877.52	30,665.02
	901	233,359	9,654.22	8,879.31	18,533.53
	3,394	1,440,644	36,366.71	54,816.50	91,183.21
	7,469	4,329,500	80,030.33	164,737.48	244,767.81
	10,621	5,496,050	113,804.01	209,124.70	322,928.71
27 TOTAL INDUSTRIALS	127,478	60,496,850	\$ 1,365,926.75	\$ 2,092,780.44	\$ 3,667,831.89
28					
29 GRAND TOTAL	595,919	305,217,040	\$ 7,832,754.76	\$ 13,105,188.99	\$ 21,147,068.45

**Big Rivers Electric Corporation
Monthly Billing Summary
Sales to Members - December 2021**

	Net Green Power (f)	Power Factor Penalty (g)	Billing Adjustment (h)	Fuel Adjustment Clause (FAC) (i)	Environmental Surcharge (ES) (j)
1 Member Billing January 2022					
2					
3 JP RURALS	\$ 6.00	\$ -	\$ -	\$ 632,380.23	\$ 477,884.75
4 KENERGY	-	-	-	1,147,482.09	877,293.73
5 MEADE CO. RURALS	-	-	-	554,768.29	433,540.85
6					
7 TOTAL RURALS	\$ 6.00	\$ -	\$ -	\$ 2,334,630.61	\$ 1,788,719.33
8					
	\$ -	\$ -	\$ -	\$ 17,754.84	\$ 12,497.75
	-	-	-	6,171.66	4,542.67
	-	-	-	11,199.51	7,354.52
	-	-	(31,370.31)	195,492.21	125,422.12
	-	-	-	123,532.86	76,503.88
	-	150.01	-	857.56	554.75
	-	-	-	270.13	218.04
	-	-	-	111,021.30	80,516.53
	-	-	90.10	123.92	197.74
	-	-	-	38.03	186.40
	-	-	273.29	972.18	2,793.02
	-	-	-	2,226.24	1,869.08
	-	-	-	13,743.74	9,503.99
	-	-	-	41,303.43	25,999.25
	-	-	-	52,432.32	34,073.91
27 TOTAL INDUSTRIALS	\$ -	\$ 150.01	\$ (31,006.92)	\$ 577,139.93	\$ 348,159.74
28					
29 GRAND TOTAL	\$ 6.00	\$ 150.01	\$ (31,006.92)	\$ 2,911,770.54	\$ 2,136,879.07

**Big Rivers Electric Corporation
Monthly Billing Summary
Sales to Members - December 2021**

1	Member Billing January 2022	Non-FAC PPA (k)	Revenue (l) = \sum (e) to (k)	MRSM - ER Adjustment (m)	Revenue Net of MRSM Adjustments (n) = (l) + (m)
2					
3	JP RURALS	\$ 165,254.08	\$ 5,934,474.32	\$ (321,258.58)	\$ 5,613,215.74
4	KENERGY	299,860.89	10,894,408.77	(582,938.00)	10,311,470.77
5	MEADE CO. RURALS	144,972.47	5,383,796.85	(281,830.56)	5,101,966.29
6					
7	TOTAL RURALS	\$ 610,087.44	\$ 22,212,679.94	\$ (1,186,027.14)	\$ 21,026,652.80
8					
		\$ 4,639.71	\$ 155,199.51	\$ (8,418.86)	\$ 146,780.65
		1,612.78	56,411.76	(2,926.44)	53,485.32
		2,926.66	91,329.85	(5,310.50)	86,019.35
		51,086.17	1,557,516.93	(86,105.34)	1,471,411.59
		32,281.70	950,040.49	(65,520.91)	884,519.58
		224.10	7,039.03	(406.63)	6,632.40
		70.59	2,707.68	(128.09)	2,579.59
		29,012.17	999,870.38	(52,643.25)	947,227.13
		32.38	2,545.66	(58.76)	2,486.90
		9.94	2,314.74	(18.03)	2,296.71
		254.05	34,957.56	(460.98)	34,496.58
		581.76	23,210.61	(1,055.62)	22,154.99
		3,591.53	118,022.47	(6,516.91)	111,505.56
		10,793.44	322,863.93	(19,584.95)	303,278.98
		13,701.65	423,136.59	(24,861.96)	398,274.63
27	TOTAL INDUSTRIALS	\$ 150,818.63	\$ 4,747,167.19	\$ (274,017.23)	\$ 4,473,149.96
28					
29	GRAND TOTAL	\$ 760,906.07	\$ 26,959,847.13	\$ (1,460,044.37)	\$ 25,499,802.76

**Big Rivers Electric Corporation
Monthly Billing Summary
Sales to Members - December 2021**

1	Member Billing February 2022	KW Billed (a)	kWh (b)	Demand Revenue (c)	Base Energy Revenue (d)	Total Demand & Energy (e) = (c) + (d)
2						
3	JP RURALS	106,376	54,811,359	1,468,520.68	\$ 2,466,511.15	\$ 3,935,031.83
4	KENERGY	202,280	97,029,553	2,792,475.40	4,366,329.88	7,158,805.28
5	MEADE CO. RURALS	99,836	45,524,351	1,378,235.98	2,048,595.79	3,426,831.77
6						
7	TOTAL RURALS	408,492	197,365,263	\$ 5,639,232.06	\$ 8,881,436.82	\$ 14,520,668.88
8						
		4,536	1,548,406	48,603.24	\$ 58,916.85	\$ 107,520.09
		1,778	580,534	19,051.27	22,089.32	41,140.59
		2,236	1,093,781	23,958.74	41,618.37	65,577.11
		40,800	18,378,750	437,172.00	699,311.44	1,136,483.44
		18,000	11,820,452	192,870.00	449,768.20	642,638.20
		179	79,730	1,917.99	3,033.73	4,951.72
		100	25,857	1,071.50	983.86	2,055.36
		20,000	10,441,172	214,300.00	397,286.59	611,586.59
		150	20,385	1,607.25	775.65	2,382.90
		180	20,750	1,928.70	789.54	2,718.24
		2,500	84,031	26,787.50	3,197.38	29,984.88
		980	217,000	10,500.70	8,256.85	18,757.55
		3,515	1,443,467	37,663.23	54,923.92	92,587.15
		7,568	4,107,937	81,091.12	156,307.00	237,398.12
		9,921	4,903,734	106,303.52	186,587.08	292,890.60
		1,000	631,277	10,715.00	24,020.09	34,735.09
27						
28	TOTAL INDUSTRIALS	113,443	55,397,263	\$ 1,215,541.76	\$ 1,897,258.70	\$ 3,323,407.63
29						
30	GRAND TOTAL	521,935	252,762,526	\$ 6,854,773.82	\$ 10,778,695.52	\$ 17,844,076.51

**Big Rivers Electric Corporation
Monthly Billing Summary
Sales to Members - December 2021**

	Net Green	Power	Power Factor	Billing Adjustment	Fuel	Environmental
	(f)		Penalty	(h)	Adjustment Clause	Surcharge (ES)
			(g)		(FAC)	(j)
					(i)	
1 Member Billing February 2022						
2						
3 JP RURALS	\$	6.00	\$ -	\$ -	\$ 636,907.99	\$ 506,649.30
4 KENERGY		-	-	-	1,127,483.41	917,642.68
5 MEADE CO. RURALS		-	-	-	528,992.96	437,863.35
6						
7 TOTAL RURALS	\$	6.00	\$ -	\$ -	\$ 2,293,384.36	\$ 1,862,155.33
8						
		-	\$ -	\$ -	\$ 17,992.48	\$ 13,920.66
		-	-	-	6,745.81	5,308.36
		-	-	-	12,709.74	8,717.17
		-	-	(31,370.31)	213,561.08	146,821.01
		-	-	-	137,353.65	87,098.89
		-	150.01	(0.01)	926.46	653.89
		-	-	-	300.46	260.43
		-	-	-	121,326.42	81,663.15
		-	-	29.97	236.87	287.36
		-	-	0.05	241.12	324.00
		-	-	345.38	976.44	3,354.02
		-	-	-	2,521.54	2,347.87
		-	-	(0.01)	16,773.09	12,154.50
		-	-	0.06	47,734.23	31,782.53
		-	-	0.04	56,981.39	38,962.07
		-	-	103,535.20	7,335.44	4,696.18
28 TOTAL INDUSTRIALS	\$	-	\$ 150.01	\$ 72,540.37	\$ 643,716.22	\$ 394,693.84
29						
30 GRAND TOTAL	\$	6.00	\$ 150.01	\$ 72,540.37	\$ 2,937,100.58	\$ 2,256,849.17

**Big Rivers Electric Corporation
Monthly Billing Summary
Sales to Members - December 2021**

1	Member Billing February 2022	Non-FAC PPA (k)	Revenue (l) = \sum (e) to (k)	MRSM - ER Adjustment (m)	Revenue Net of MRSM Adjustments (n) = (l) + (m)
2					
3	JP RURALS	\$ 136,644.72	\$ 5,215,239.84	\$ (329,377.94)	\$ 4,885,861.90
4	KENERGY	241,894.68	9,445,826.05	(583,079.76)	8,862,746.29
5	MEADE CO. RURALS	113,492.21	4,507,180.29	(273,569.51)	4,233,610.78
6					
7	TOTAL RURALS	\$ 492,031.61	\$ 19,168,246.18	\$ (1,186,027.21)	\$ 17,982,218.97
8					
		\$ 3,860.18	\$ 143,293.41	\$ (9,563.41)	\$ 133,730.00
		1,447.27	54,642.03	(3,558.27)	51,083.76
		2,726.80	89,730.82	(6,680.05)	83,050.77
		45,818.22	1,511,313.44	(104,173.27)	1,407,140.17
		29,468.39	896,559.13	(65,386.54)	831,172.59
		198.77	6,880.84	(489.24)	6,391.60
		64.46	2,680.71	(158.22)	2,522.49
		26,029.84	840,606.00	(63,998.48)	776,607.52
		50.82	2,987.92	(119.71)	2,868.21
		51.73	3,335.14	(116.92)	3,218.22
		209.49	34,870.21	(519.49)	34,350.72
		540.98	24,167.94	(1,325.53)	22,842.41
		3,598.56	125,113.29	(8,757.42)	116,355.87
		10,241.09	327,156.03	(25,045.72)	302,110.31
		12,225.01	401,059.11	(30,073.48)	370,985.63
		1,573.77	151,875.68	(3,492.00)	148,383.68
28	TOTAL INDUSTRIALS	\$ 138,105.38	\$ 4,616,271.70	\$ (323,457.75)	\$ 4,292,813.95
29					
30	GRAND TOTAL	\$ 630,136.99	\$ 23,784,517.88	\$ (1,509,484.96)	\$ 22,275,032.92

**Big Rivers Electric Corporation
Monthly Billing Summary
Sales to Members - December 2021**

	KW Billed (a)	kWh (b)	Demand Revenue (c)	Base Energy Revenue (d)	Total Demand & Energy (e) = (c) + (d)
1 Member Billing March 2022					
2					
3 JP RURALS	98,665	46,374,116	1,362,070.32	\$ 2,086,835.22	\$ 3,448,905.54
4 KENERGY	188,425	82,864,704	2,601,207.13	3,728,911.68	6,330,118.81
5 MEADE CO. RURALS	92,740	37,170,028	1,280,275.70	1,672,651.26	2,952,926.96
6					
7 TOTAL RURALS	379,830	166,408,848	\$ 5,243,553.15	\$ 7,488,398.16	\$ 12,731,951.31
8					
	4,596	1,883,438	49,246.14	\$ 71,664.82	\$ 120,910.96
	1,754	591,266	18,794.11	22,497.67	41,291.78
	2,251	1,124,012	24,119.47	42,768.66	66,888.13
	40,800	17,447,281	437,172.00	663,869.04	1,101,041.04
	15,000	10,270,044	160,725.00	390,775.17	551,500.17
	151	64,680	1,617.96	2,461.07	4,079.03
	100	25,351	1,071.50	964.61	2,036.11
	33,868	13,166,656	309,695.62	502,739.49	812,435.11
	150	18,620	1,607.25	708.49	2,315.74
	180	21,655	1,928.70	823.97	2,752.67
	2,500	78,213	26,787.50	2,976.00	29,763.50
	882	222,234	9,450.63	8,456.00	17,906.63
	3,447	1,794,586	36,934.60	68,284.00	105,218.60
	7,636	4,539,063	81,819.74	172,711.35	254,531.09
	10,277	5,524,338	110,118.05	210,201.06	320,319.11
	13,536	6,920,424	10,715.00	28,271.15	38,986.15
28 TOTAL INDUSTRIALS	137,128	63,691,861	\$ 1,281,803.27	\$ 1,951,700.34	\$ 3,471,975.82
29					
30 GRAND TOTAL	516,958	230,100,709	\$ 6,525,356.42	\$ 9,440,098.50	\$ 16,203,927.13

**Big Rivers Electric Corporation
Monthly Billing Summary
Sales to Members - December 2021**

	Net Green Power (f)	Power Factor Penalty (g)	Billing Adjustment (h)	Fuel Adjustment Clause (FAC) (i)	Environmental Surcharge (ES) (j)
1	Member Billing March 2022				
2					
3	\$ 6.00	\$ -	\$ -	\$ 889,177.30	\$ 238,708.89
4	-	-	-	1,588,847.83	435,512.82
5	-	-	-	712,698.12	201,436.67
6					
7	\$ 6.00	\$ -	\$ -	\$ 3,190,723.25	\$ 875,658.38
8					
	-	-	-	36,113.04	8,667.83
	-	-	-	11,336.93	2,899.80
	-	-	-	21,551.81	4,890.39
	-	-	(31,370.31)	334,534.17	77,593.82
	-	-	-	196,917.82	41,485.96
	-	214.30	-	1,240.17	293.74
	-	-	-	486.08	138.57
	-	-	150.00	252,457.46	58,843.43
	-	-	30.03	357.02	145.74
	-	-	-	415.21	172.69
	-	-	295.56	1,499.66	1,686.09
	-	-	-	4,261.11	1,217.84
	-	-	-	34,409.39	7,723.57
	-	-	-	87,031.99	18,913.59
	-	-	-	105,923.66	23,583.90
	-	-	265,994.21	14,246.28	2,952.43
28	\$ -	\$ 214.30	\$ 235,099.49	\$ 1,102,781.80	\$ 224,673.06
29					
30	\$ 6.00	\$ 214.30	\$ 235,099.49	\$ 4,293,505.05	\$ 1,100,331.44

**Big Rivers Electric Corporation
Monthly Billing Summary
Sales to Members - December 2021**

1	Member Billing March 2022	Non-FAC PPA (k)	Revenue (l) = \sum (e) to (k)	MRSM - ER Adjustment (m)	Revenue Net of MRSM Adjustments (n) = (l) + (m)
2					
3	JP RURALS	\$ 115,610.67	\$ 4,692,408.40	\$ (330,517.06)	\$ 4,361,891.34
4	KENERGY	206,581.71	8,561,061.17	(590,592.36)	7,970,468.81
5	MEADE CO. RURALS	92,664.88	3,959,726.63	(264,917.79)	3,694,808.84
6					
7	TOTAL RURALS	\$ 414,857.26	\$ 17,213,196.20	\$ (1,186,027.21)	\$ 16,027,168.99
8					
		\$ 4,695.41	\$ 170,387.24	\$ (10,007.70)	\$ 160,379.54
		1,474.03	57,002.54	(3,141.72)	53,860.82
		2,802.16	96,132.49	(5,972.47)	90,160.02
		43,496.07	1,525,294.79	(85,839.58)	1,439,455.21
		25,603.22	815,507.17	(54,570.16)	760,937.01
		161.25	5,988.49	(343.68)	5,644.81
		63.20	2,723.96	(134.70)	2,589.26
		32,824.47	1,156,710.47	(69,961.39)	1,086,749.08
		46.42	2,894.95	(98.94)	2,796.01
		53.99	3,394.56	(115.06)	3,279.50
		194.99	33,439.80	(415.59)	33,024.21
		554.03	23,939.61	(1,180.85)	22,758.76
		4,473.90	151,825.46	(9,535.58)	142,289.88
		11,315.88	371,792.55	(24,118.44)	347,674.11
		13,772.17	463,598.84	(29,353.72)	434,245.12
		1,852.30	324,031.37	(3,947.95)	320,083.42
28	TOTAL INDUSTRIALS	\$ 143,383.49	\$ 5,204,664.29	\$ (298,737.53)	\$ 4,905,926.76
29					
30	GRAND TOTAL	\$ 558,240.75	\$ 22,417,860.49	\$ (1,484,764.74)	\$ 20,933,095.75

**Big Rivers Electric Corporation
Monthly Billing Summary
Sales to Members - December 2021**

	KW Billed (a)	kWh (b)	Demand Revenue (c)	Base Energy Revenue (d)	Total Demand & Energy (e) = (c) + (d)
1 Member Billing April 2022					
2					
3 JP RURALS	75,410	40,655,011	1,041,035.05	\$ 1,829,475.49	\$ 2,870,510.54
4 KENERGY	146,137	73,168,854	2,017,421.28	3,292,598.43	5,310,019.71
5 MEADE CO. RURALS	69,734	31,768,675	962,677.87	1,429,590.38	2,392,268.25
6					
7 TOTAL RURALS	291,281	145,592,540	\$ 4,021,134.20	\$ 6,551,664.30	\$ 10,572,798.50
8					
	4,627	2,026,250	49,578.31	\$ 77,098.81	\$ 126,677.12
	1,685	565,503	18,054.78	21,517.39	39,572.17
	2,050	959,406	21,965.75	36,505.40	58,471.15
	40,800	18,615,066	437,172.00	708,303.26	1,145,475.26
	15,000	10,800,000	160,725.00	410,940.00	571,665.00
	120	57,727	1,285.80	2,196.51	3,482.31
	100	22,328	1,071.50	849.58	1,921.08
	33,781	13,005,281	308,763.41	505,610.56	814,373.97
	150	13,163	1,607.25	500.85	2,108.10
	180	7,312	1,928.70	278.22	2,206.92
	2,500	89,688	26,787.50	3,412.63	30,200.13
	888	198,488	9,514.92	7,552.47	17,067.39
	3,379	1,811,265	36,205.99	68,918.63	105,124.62
	7,159	4,089,125	76,708.69	155,591.21	232,299.90
	10,971	5,190,828	117,554.26	197,511.01	315,065.27
	18,135	10,678,717	10,715.00	27,320.39	38,035.39
28 TOTAL INDUSTRIALS	141,525	68,130,147	\$ 1,279,638.86	\$ 1,999,275.52	\$ 3,503,745.78
29					
30 GRAND TOTAL	432,806	213,722,687	\$ 5,300,773.06	\$ 8,550,939.82	\$ 14,076,544.28

**Big Rivers Electric Corporation
Monthly Billing Summary
Sales to Members - December 2021**

	Net Green Power (f)	Power Factor Penalty (g)	Billing Adjustment (h)	Fuel Adjustment Clause (FAC) (i)	Environmental Surcharge (ES) (j)
1	Member Billing April 2022				
2					
3	\$ 6.00	\$ -	\$ -	\$ 619,053.85	\$ 233,889.80
4	-	-	-	1,114,142.14	430,310.60
5	-	-	-	483,741.61	192,483.77
6					
7	\$ 6.00	\$ -	\$ -	\$ 2,216,937.60	\$ 856,684.17
8					
	-	\$ -	\$ -	\$ 30,853.71	\$ 10,589.59
	-	-	-	8,610.91	3,230.17
	-	-	-	14,608.88	4,915.76
	-	-	-	283,451.61	96,094.01
	-	-	-	164,451.60	49,699.70
	-	278.59	-	879.01	293.44
	-	-	-	339.99	150.90
	-	-	150.00	198,031.41	68,063.28
	-	-	63.07	200.43	152.50
	-	-	-	111.34	152.18
	-	-	327.35	1,365.68	2,070.56
	-	-	-	3,022.38	1,340.75
	-	-	-	27,580.13	8,937.66
	-	-	-	62,265.11	19,850.10
	-	-	-	79,040.74	26,512.47
	-	-	776,929.40	10,933.18	3,306.10
28	\$ -	\$ 278.59	\$ 777,469.82	\$ 885,746.11	\$ 265,540.60
29					
30	\$ 6.00	\$ 278.59	\$ 777,469.82	\$ 3,102,683.71	\$ 1,122,224.77

**Big Rivers Electric Corporation
Monthly Billing Summary
Sales to Members - December 2021**

1	Member Billing April 2022	Non-FAC PPA (k)	Revenue (l) = \sum (e) to (k)	MRSM - ER Adjustment (m)	Revenue Net of MRSM Adjustments (n) = (l) + (m)
2					
3	JP RURALS	\$ 101,352.94	\$ 3,824,813.13	\$ (331,184.20)	\$ 3,493,628.93
4	KENERGY	182,409.95	7,036,882.40	(596,048.75)	6,440,833.65
5	MEADE CO. RURALS	79,199.31	3,147,692.94	(258,794.26)	2,888,898.68
6					
7	TOTAL RURALS	\$ 362,962.20	\$ 14,009,388.47	\$ (1,186,027.21)	\$ 12,823,361.26
		\$ 5,051.44	\$ 173,171.86	\$ (10,458.12)	\$ 162,713.74
		1,409.80	52,823.05	(2,918.73)	49,904.32
		2,391.80	80,387.59	(4,951.80)	75,435.79
		46,407.36	1,571,428.24	(96,078.30)	1,475,349.94
		26,924.40	812,740.70	(55,742.25)	756,998.45
		143.91	5,077.26	(297.95)	4,779.31
		55.66	2,467.63	(115.24)	2,352.39
		32,422.17	1,113,040.83	(65,622.90)	1,047,417.93
		32.82	2,556.92	(67.94)	2,488.98
		18.23	2,488.67	(37.74)	2,450.93
		223.59	34,187.31	(462.91)	33,724.40
		494.83	21,925.35	(1,024.46)	20,900.89
		4,515.48	146,157.89	(9,348.52)	136,809.37
		10,194.19	324,609.30	(21,105.28)	303,504.02
		12,940.73	433,559.21	(26,791.52)	406,767.69
		1,790.01	830,994.08	(3,706.02)	827,288.06
28	TOTAL INDUSTRIALS	\$ 145,016.42	\$ 5,607,615.89	\$ (298,729.68)	\$ 5,308,886.21
29					
30	GRAND TOTAL	\$ 507,978.62	\$ 19,617,004.36	\$ (1,484,756.89)	\$ 18,132,247.47

**Big Rivers Electric Corporation
 Monthly Billing Summary
 Sales to Members - December 2021**

1	November 2021 - Other Sales	MWH	REVENUE
2			
3	SPECIAL SALES - ENERGY		
4	[REDACTED]	7,489	\$ 558,546.47
5	[REDACTED]	4,199	\$ 278,312.36
6	MISO	226,568	\$ 14,113,074.98
7	[REDACTED]		\$ (280,637.96)
8	[REDACTED]	57,240	\$ 2,160,933.96
9	[REDACTED]		\$ (30,364.09)
10	[REDACTED]		\$ (7,532.95)
11	[REDACTED]	72,000	\$ 3,171,015.00
12			
13			
14	TOTAL SPECIAL SALES - ENERGY	367,496	\$ 19,963,347.77
15			
16	SPECIAL SALES - BILATERAL		
17	[REDACTED]		\$ 1,105,440.00
18	[REDACTED]		\$ (1,482,300.00)
19	MISO - CONTRA REVENUE		\$ (6,701,932.55)
20	[REDACTED]		\$ 1,707,300.00
21	[REDACTED]		\$ 2,347,680.00
22			
23	TOTAL SPECIAL SALES - BILATERAL		\$ (3,023,812.55)
24			

**Big Rivers Electric Corporation
 Monthly Billing Summary
 Sales to Members - December 2021**

1	November 2021 - Other Sales	MWH	REVENUE
2	_____	_____	_____
25	SPECIAL SALES - CAPACITY		
26	MISO - CAPACITY SALES		\$ (13,310.70)
27	<div style="background-color: black; width: 300px; height: 15px;"></div>		\$ 364,500.00
28	<div style="background-color: black; width: 300px; height: 15px;"></div>		\$ 49,635.00
29		_____	_____
30	TOTAL SPECIAL SALES - BILATERAL		\$ 400,824.30
31			
32	TOTAL	<u>367,496</u>	<u>\$ 17,340,359.52</u>
33			

**Big Rivers Electric Corporation
 Monthly Billing Summary
 Sales to Members - December 2021**

1	December 2021 - Other Sales	MWH	REVENUE
2			
3	SPECIAL SALES - ENERGY		
4	[REDACTED]	3,137	\$ 163,339.41
5			
6	MISO	114,267	\$ 6,042,228.61
7	[REDACTED]		\$ 22,829.73
8		58,903	\$ 2,339,205.85
9			\$ (27,802.93)
10			\$ (21,546.07)
11		74,400	\$ 3,225,496.00
12			
13			
14	TOTAL SPECIAL SALES - ENERGY	250,707	\$ 11,743,750.60
15			
16	SPECIAL SALES - BILATERAL		
17	[REDACTED]		\$ 1,210,720.00
18			\$ (1,531,710.00)
19	MISO - CONTRA REVENUE		\$ (5,185,670.63)
20	[REDACTED]		\$ 1,764,210.00
21			\$ 2,430,200.00
22			
23	TOTAL SPECIAL SALES - BILATERAL		\$ (1,312,250.63)


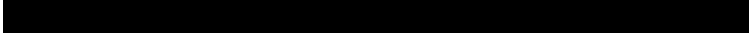
**Big Rivers Electric Corporation
 Monthly Billing Summary
 Sales to Members - December 2021**

1	December 2021 - Other Sales	MWH	REVENUE
2	_____	_____	_____
24			
25	SPECIAL SALES - CAPACITY		
26	MISO - CAPACITY SALES		\$ (13,754.39)
27	<div style="background-color: black; width: 300px; height: 15px;"></div>		\$ 364,500.00
28	<div style="background-color: black; width: 300px; height: 15px;"></div>		\$ 49,635.00
29			
30		_____	_____
31	TOTAL SPECIAL SALES - BILATERAL		\$ 400,380.61
32			
33	TOTAL	<u>250,707</u>	<u>\$ 10,831,880.58</u>
34			

**Big Rivers Electric Corporation
 Monthly Billing Summary
 Sales to Members - December 2021**

1	January 2022 - Other Sales	MWH	REVENUE
2			
3	SPECIAL SALES - ENERGY		
4	[REDACTED]	2,047	\$ 118,590.34
5	[REDACTED]	0	\$ -
6	MISO	109,101	\$ 6,093,709.83
7	[REDACTED]		\$ (80,497.23)
8	[REDACTED]	65,468	\$ 2,509,713.82
9	[REDACTED]		\$ (4,977.81)
10	[REDACTED]		\$ 8,775.42
11	[REDACTED]	73,350	\$ 3,706,200.50
12			
13			
14	TOTAL SPECIAL SALES - ENERGY	249,966	\$ 12,351,514.87
15			
16	SPECIAL SALES - BILATERAL		
17	[REDACTED]		\$ 701,400.00
18	[REDACTED]		\$ 6,660,660.00
19	[REDACTED]		\$ (277,890.00)
20	MISO - CONTRA REVENUE		\$ (6,916,583.62)
21	[REDACTED]		\$ 544,980.00
22	[REDACTED]		\$ 642,600.00
23			
24			
25	TOTAL SPECIAL SALES - BILATERAL		\$ 1,355,166.38
26			

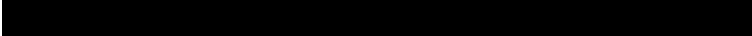
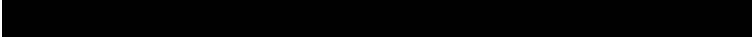
**Big Rivers Electric Corporation
 Monthly Billing Summary
 Sales to Members - December 2021**

1	January 2022 - Other Sales	MWH	REVENUE
2	_____	_____	_____
27	SPECIAL SALES - CAPACITY		
28			
29	MISO - CAPACITY SALES		\$ (13,754.39)
30			\$ 364,500.00
31			\$ 49,635.00
32			
33		_____	_____
34	TOTAL SPECIAL SALES - BILATERAL		\$ 400,380.61
35			
36	TOTAL	<u>249,966</u>	<u>\$ 14,107,061.86</u>

**Big Rivers Electric Corporation
 Monthly Billing Summary
 Sales to Members - December 2021**

1	February 2022 - Other Sales	MWH	REVENUE
2			
3	SPECIAL SALES - ENERGY		
4	[REDACTED]	1,268	\$ 68,439.36
5	MISO	44,285	\$ 1,970,230.31
6	[REDACTED]		\$ 33,189.58
7	[REDACTED]	57,598	\$ 2,123,199.23
8	[REDACTED]		\$ 10,755.08
9	[REDACTED]		\$ 18,213.95
10	[REDACTED]	66,075	\$ 3,678,171.52
11			
12			
13	TOTAL SPECIAL SALES - ENERGY	169,226	\$ 7,902,199.03
14			
15	SPECIAL SALES - BILATERAL		
16	[REDACTED]		\$ 7,479,200.00
17	[REDACTED]		\$ (216,520.00)
18	MISO - CONTRA REVENUE		\$ (7,227,672.64)
19	[REDACTED]		\$ 1,533,840.00
20	[REDACTED]		\$ 554,400.00
21			
22			
23	TOTAL SPECIAL SALES - BILATERAL		\$ 2,123,247.36
24			

**Big Rivers Electric Corporation
 Monthly Billing Summary
 Sales to Members - December 2021**

1	February 2022 - Other Sales	MWH	REVENUE
2	_____	_____	_____
25	SPECIAL SALES - CAPACITY		
26			
27	MISO - CAPACITY SALES		\$ (12,423.32)
28			\$ 364,500.00
29			\$ 49,635.00
30			
31		_____	_____
32	TOTAL SPECIAL SALES - BILATERAL		\$ 401,711.68
33			
34	TOTAL	<u>169,226</u>	<u>\$ 10,427,158.07</u>
35			

**Big Rivers Electric Corporation
 Monthly Billing Summary
 Sales to Members - December 2021**

1	March 2022 - Other Sales	MWH	REVENUE
2			
3	SPECIAL SALES - ENERGY		
4	[REDACTED]	7,046	\$ 373,584.70
5	[REDACTED]	21,381	\$ 1,138,156.99
6	MISO	103,304	\$ 5,104,926.01
7	[REDACTED]		\$ (171,679.55)
8	[REDACTED]	58,685	\$ 2,271,831.56
9	[REDACTED]		\$ 115,550.63
10	[REDACTED]		\$ 91,363.86
11	[REDACTED]	74,400	\$ 3,813,255.50
12			
13	TOTAL SPECIAL SALES - ENERGY	264,816	\$ 12,736,989.70
14			
15	SPECIAL SALES - BILATERAL		
16			
17	[REDACTED]		\$ (979,290.00)
18	MISO - CONTRA REVENUE		\$ 15,987.13
19	[REDACTED]		\$ (1,045,320.00)
20	[REDACTED]		\$ 4,211,040.00
21			
22	TOTAL SPECIAL SALES - BILATERAL		\$ 2,202,417.13
23			

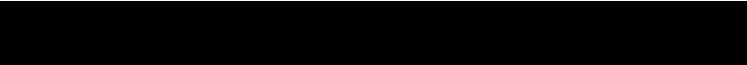

**Big Rivers Electric Corporation
 Monthly Billing Summary
 Sales to Members - December 2021**

1	March 2022 - Other Sales	MWH	REVENUE
2			
24	SPECIAL SALES - CAPACITY		
25	MISO - CAPACITY SALES		\$ (13,754.39)
26	<div style="background-color: black; width: 300px; height: 15px;"></div>		\$ 364,500.00
27	<div style="background-color: black; width: 300px; height: 15px;"></div>		\$ 49,635.00
28			
29			
30	TOTAL SPECIAL SALES - BILATERAL		\$ 400,380.61
31			
32	TOTAL	264,816	\$ 15,339,787.44
33			

**Big Rivers Electric Corporation
 Monthly Billing Summary
 Sales to Members - December 2021**

1	April 2022 - Other Sales	MWH	REVENUE
2			
3	SPECIAL SALES - ENERGY		
4	[REDACTED]	6,905	\$ 462,026.64
5	[REDACTED]	8,199	\$ 586,985.20
5	MISO	24,895	\$ 1,967,622.68
6	[REDACTED]		\$ (64,584.53)
7	[REDACTED]	55,230	\$ 2,176,132.56
8	[REDACTED]		\$ 98,155.55
9	[REDACTED]		\$ 75,146.90
10	[REDACTED]	72,000	\$ 3,714,615.00
11			
12			
13	TOTAL SPECIAL SALES - ENERGY	167,230	\$ 9,016,100.00
14			
15	SPECIAL SALES - BILATERAL		
16	[REDACTED]		\$ (260,400.00)
17	[REDACTED]		\$ (1,010,700.00)
18	MISO - CONTRA REVENUE		\$ 3,804,858.53
18	[REDACTED]		\$ (1,011,600.00)
19	[REDACTED]		\$ 1,949,400.00
20			
21	TOTAL SPECIAL SALES - BILATERAL		\$ 3,471,558.53
22			

**Big Rivers Electric Corporation
 Monthly Billing Summary
 Sales to Members - December 2021**

1	April 2022 - Other Sales	MWH	REVENUE
2			
3	SPECIAL SALES - CAPACITY		
4	MISO - CAPACITY SALES		\$ (13,310.70)
4			\$ 364,500.00
5			\$ 49,635.00
6			
7			
8	TOTAL SPECIAL SALES - BILATERAL		\$ 400,824.30
9			
10	TOTAL	<u>167,230</u>	<u>\$ 12,888,482.83</u>

BIG RIVERS ELECTRIC CORPORATION

**AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL
ADJUSTMENT CLAUSE OF BIG RIVERS ELECTRIC CORPORATION
FROM NOVEMBER 1, 2021 THROUGH APRIL 30, 2022
CASE NO. 2022-00268**

**Responses to Commission Staff's First Request for Information
in Appendix B of the Commission's Order
dated September 13, 2022**

September 30, 2022

1 **Item 14)** *Describe the effect on the FAC calculation of line losses related*
2 *to:*

3 *a. Intersystem sales when using a third-party transmission system;*
4 *and*

5 *b. Intersystem sales when not using a third-party transmission system.*

6

7 **Response)**

8 a. Big Rivers had no intersystem sales during the period under review which
9 used a third-party transmission system.

10 b. Line losses related to intersystem sales, which did not use a third-party
11 transmission system, are included in Big Rivers' total System Losses
12 reported on page 3 of its monthly Form A filing. Big Rivers calculates an
13 overall system average fuel cost per kWh each month by dividing (1) the
14 total cost of fuel for generation by (2) the net kWh generated less total
15 System Losses. The overall system average fuel cost per kWh (which
16 accounts for total System Losses, including losses related to intersystem

Case No. 2022-00268

Response to PSC 1-14

Witnesses: Natalie R. Hankins (a. only) and

Jennifer M. Stone (b. only)

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BIG RIVERS ELECTRIC CORPORATION

**AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL
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FROM NOVEMBER 1, 2021 THROUGH APRIL 30, 2022
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September 30, 2022

1 sales) is multiplied by the total intersystem sales volume to calculate the
2 cost of fuel allocated to intersystem sales in Big Rivers' FAC calculation.

3

4

5 **Witnesses)** Natalie R. Hankins (*a. only*) and

6 Jennifer M. Stone (*b. only*)

7

BIG RIVERS ELECTRIC CORPORATION

**AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL
ADJUSTMENT CLAUSE OF BIG RIVERS ELECTRIC CORPORATION
FROM NOVEMBER 1, 2021 THROUGH APRIL 30, 2022
CASE NO. 2022-00268**

**Responses to Commission Staff's First Request for Information
in Appendix B of the Commission's Order
dated September 13, 2022**

September 30, 2022

1 **Item 15)** *Provide a list, in chronological order, showing by unit any*
2 *scheduled, actual, and forced outages for the period under review.*

3

4 **Response)** Please see the attached summary for the requested information
5 regarding scheduled ("S"), actual ("A"), and forced ("F") outages.

6

7

8 **Witness)** Ronald D. Gregory

Big Rivers Electric Corporation
Scheduled ("S"), Actual ("A"), and Forced ("F") Outages
November 1 2021, through April 30 2022

Big Rivers Electric Corporation
Reid Station Unit #2 - Combustion Turbine - Oil/Gas - 65MW Net
 November 1 2021, through April 30 2022

Schedule vs. Actual

MONTH	TYPE	MAINTENANCE				HOURS OF DURATION			REASON FOR DEVIATION FROM SCHEDULED MAINTENANCE OR REASON FOR FORCED OUTAGE AS APPROPRIATE
		Scheduled		Actual		Scheduled	Forced	Actual	
		FROM	TO	FROM	TO				
November 2021		No Outages							
December 2021		No Outages							
January 2022	F			1/3/2022 9:15	2/1/2022 0:00	686:45	686:45		Unit on outage for repairs, due to bearing failure.
February 2022	F			2/1/2022 0:00	3/1/2022 0:00	672:00	672:00		Outage continued from previous month
March 2022	F			3/1/2022 0:00	3/31/2022 23:00	743:00	743:00		Outage continued from previous month
April 2022	F			3/31/2022 23:00	4/30/2022 23:00	720:00	720:00		Outage continued from previous month

Big Rivers Electric Corporation
Scheduled ("S"), Actual ("A"), and Forced ("F") Outages
November 1 2021, through April 30 2022

Big Rivers Electric Corporation
Green Station Unit #1 - Coal/Pet coke - 231MW Net
 November 1 2021, through April 30 2022

Schedule vs. Actual

MONTH	TYPE	MAINTENANCE				HOURS OF DURATION			REASON FOR DEVIATION FROM SCHEDULED MAINTENANCE OR REASON FOR FORCED OUTAGE AS APPROPRIATE
		Scheduled		Actual		Scheduled	Forced	Actual	
		FROM	TO	FROM	TO				
November 2021	F			11/11/2021 12:08	11/11/2021 17:10	5:02	5:02		A and B mains tripped, auto ties transferred and the unit tripped on master fuel trip caused by 86GT relay trip.
	F			11/21/2021 19:08	11/24/2021 5:30	58:22	58:22		Reheat outlet boiler tube failure in the 6th tube back from leading edge in the 23rd panel from the east wall at elevation 608'. A total of five boiler tubes were repaired during this outage.
December 2021		No Outages							
January 2022	F			1/7/2022 1:45	1/8/2022 23:13	45:28	45:28		Unit outage for a waterwall tube leak repair. The tube failure was on the 7th floor east side 5th and 6th tubes from the north east observation port at elevation 512'.
	F			1/29/2022 22:37	1/31/2022 21:36	46:59	46:59		Reheat outlet tube failure in the 3rd tube back from leading edge in the 31rst panel from east wall at elevation 595'. A total of two boiler tubes were repaired during this outage.
February 2022	F			2/7/2022 14:03	2/7/2022 22:49	8:46	8:46		#2 Main Steam Stop Valve servo valve and fast acting solenoid failed causing the valve to go closed.
	F			2/8/2022 7:00	2/9/2022 19:30	36:30	36:30		Reheat outlet tube failure in the 3rd tube back from the leading edge in the 19th panel from the east wall at elevation 606'. A total of four boiler tubes were repaired during this outage.
	S, A	2/14/2022 16:30	2/15/2022 0:00	2/14/2022 16:35	2/15/2022 0:00	7:30	7:25		Maintenance outage to address issues with the opacity monitor.

Big Rivers Electric Corporation
Scheduled ("S"), Actual ("A"), and Forced ("F") Outages
November 1 2021, through April 30 2022

Big Rivers Electric Corporation
Green Station Unit #1 - Coal/Pet coke - 231MW Net
 November 1 2021, through April 30 2022

Schedule vs. Actual

MONTH	TYPE	MAINTENANCE				HOURS OF DURATION			REASON FOR DEVIATION FROM SCHEDULED MAINTENANCE OR REASON FOR FORCED OUTAGE AS APPROPRIATE
		Scheduled		Actual		Scheduled	Forced	Actual	
		FROM	TO	FROM	TO				
March 2022	S, A	3/21/2022 23:00	3/26/2022 3:00	3/21/2022 23:38	3/26/2022 2:36	100:00		98:58	Maintenance outage due to boiler pluggage. A waterwall tube leak was discovered during hydro at elevation 515ft on the south west side. A total of two boiler tubes were repaired during this outage.
April 2022	S, A	4/4/2022 00:00	5/1/2022 0:00	4/4/2022 0:21	5/1/2022 0:00	648:00		647:39	Planned outage for unit conversion from coal to gas.

Big Rivers Electric Corporation
Scheduled ("S"), Actual ("A"), and Forced ("F") Outages
November 1 2021, through April 30 2022

Big Rivers Electric Corporation
Green Station Unit #2 - Coal/Pet coke - 223MW Net
 November 1 2021, through April 30 2022

Schedule vs. Actual

MONTH	TYPE	MAINTENANCE				HOURS OF DURATION			REASON FOR DEVIATION FROM SCHEDULED MAINTENANCE OR REASON FOR FORCED OUTAGE AS APPROPRIATE
		Scheduled		Actual		Scheduled	Forced	Actual	
		FROM	TO	FROM	TO				
November 2021		No Outages							
December 2021		No Outages							
January 2022	F			1/22/2022 18:44	1/23/2022 0:35	5:51	5:51		Unit tripped by control room operator due to loss of (B) & (D) coal mills.
	F			1/23/2022 15:10	1/24/2022 8:22	17:12	17:12		Unit outage to repair a leak at the Main Steam Stop Valve (MOV 3051)
	F			1/30/2022 14:03	1/30/2022 21:49	7:46	7:46		Unit tripped due to loss of (B) & (D) coal mills shortly after startup.
	F			1/30/2022 21:56	1/30/2022 22:38	0:42	0:42		Unit trip due to the control room operator not raising load above minimum before time limit.
February 2022	S, A	2/1/2022 23:00	2/4/2022 23:00	2/1/2022 23:10	2/4/2022 20:36	72:00	69:26		Unit outage to address precipitator issues.
	F			2/5/2022 20:06	2/6/2022 17:33	21:27	21:27		Starting Failure outage, due to not meeting the 16 hour cold start limit for repairs to a Continuous Blowdown line leak.
	F			2/18/2022 07:06	2/18/2022 14:17	7:11	7:11		Unit tripped on drum level, due to loss of D mill which caused a boiler pressure swing.
March 2022	S, A	3/1/2022 00:00	4/1/2022 0:00	3/1/2022 00:00	4/1/2022 00:00	743:00	743:00		Planned outage for unit conversion from coal to gas.
April 2022	S, A	4/1/2022 00:00	4/19/2022 0:00	4/1/2022 00:00	4/29/2022 6:07	432:00	678:07		Planned outage continued from previous month
	S, A	4/29/2022 06:00	5/1/2022 0:00	4/29/2022 06:07	5/1/2022 0:00	42:00	41:53		Electrical and mechanical overspeed testing, during tuning and testing boiler

Big Rivers Electric Corporation
Scheduled ("S"), Actual ("A"), and Forced ("F") Outages
November 1 2021, through April 30 2022

Big Rivers Electric Corporation
Wilson Station - Unit #1 - Coal/Pet Coke - 417MW Net
 November 1 2021, through April 30 2022

Schedule vs. Actual

MONTH	TYPE	MAINTENANCE				HOURS OF DURATION			REASON FOR DEVIATION FROM SCHEDULED MAINTENANCE OR REASON FOR FORCED OUTAGE AS APPROPRIATE
		Scheduled		Actual		Scheduled	Forced	Actual	
		FROM	TO	FROM	TO				
November 2021	F			11/14/2021 13:46	11/16/2021 2:48	37:02	37:02		Tube leak around the nose area west side waterwall
	F			11/16/2021 3:36	11/17/2021 0:53	21:17	21:17		Unit tripped, due to #2 Mill puff during startup and damaged the duct PA duct to the mill.
	F			11/22/2021 1:46	11/22/2021 7:59	6:13	6:13		Unit tripped due to Low backpressure after #2 Circulating Water Pump tripped for motor failure.
December 2021	F			12/10/2021 23:17	12/11/2021 7:48	8:31	8:31		#1 Induced Draft Fan tripped during a major storm event and caused a unit runback. The control room operator (CRO) dropped a mill and then a second mill, but the boiler excess 02 did not recover and the operator had to trip the unit.
January 2022	S, A	1/14/2022 23:00	1/17/2022 23:00	1/14/2022 22:57	1/17/2022 23:51	72:00	72:54		Maintenance outage to address #2 FD fan stalling when raising load and to make repairs to the economizer inlet check valve.
	F			1/18/2022 4:36	1/18/2022 20:43	16:07	16:07		Unit outage to repair a steam leak at the main steam isolation valve HMV-170.
	F			1/19/2022 1:34	1/19/2022 4:42	3:08	3:08		Unit trip, due to Induced Draft Fans trip on over amp condition following a boiler upset caused by loss of the #2 Forced Draft Fan blade pitch indication.
February 2022	S, A	2/5/2022 23:00	2/8/2022 20:00	2/5/2022 22:50	2/8/2022 19:09	69:00	68:19		Maintenance outage to repair a reheat section tube leak.
	F			2/13/2022 13:22	2/15/2022 20:42	55:20	55:20		Outage to repair a tube leak in the penthouse at the Reheat outlet header.

Big Rivers Electric Corporation
Scheduled ("S"), Actual ("A"), and Forced ("F") Outages
November 1 2021, through April 30 2022

Big Rivers Electric Corporation
Wilson Station - Unit #1 - Coal/Pet Coke - 417MW Net
 November 1 2021, through April 30 2022

Schedule vs. Actual

MONTH	TYPE	MAINTENANCE				HOURS OF DURATION			REASON FOR DEVIATION FROM SCHEDULED MAINTENANCE OR REASON FOR FORCED OUTAGE AS APPROPRIATE
		Scheduled		Actual		Scheduled	Forced	Actual	
		FROM	TO	FROM	TO				
March 2022	F			3/15/2022 3:48	3/15/2022 12:53	9:05	9:05		Unit tripped due to an 86G relay trip, when 12A3 feeder breaker was closed to energize USS12B3 transformer
April 2022	S, A	4/7/2022 00:00	4/10/2022 14:00	4/7/2022 0:00	4/10/2022 13:42	86:00		85:42	Maintenance outage to address issues with isolation dampers at the FGD modules.
	F			4/14/2022 10:44	4/14/2022 16:01	5:17	5:17		Unit outage to repair a water leak on the cooling water for the Exciter.

BIG RIVERS ELECTRIC CORPORATION

**AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL
ADJUSTMENT CLAUSE OF BIG RIVERS ELECTRIC CORPORATION
FROM NOVEMBER 1, 2021 THROUGH APRIL 30, 2022
CASE NO. 2022-00268**

**Responses to Commission Staff's First Request for Information
in Appendix B of the Commission's Order
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September 30, 2022

1 **Item 16)** *For the period under review, provide the monthly supporting*
2 *peaking unit equivalent calculations in electronic Excel spreadsheet*
3 *format with all formulas, columns, and rows unprotected and visible*
4 *supporting the forced outage calculations. In addition, provide the*
5 *corresponding amount, if any, of forced outage purchased power collected*
6 *through the purchase power adjustment tariff.*

7

8 **Response:** Please see the attached Excel spreadsheet, showing on the first sheet
9 the highest cost fuel unit (\$/MWH) and the calculation of forced outage purchased
10 power costs recovered through the Non-FAC PPA (\$). Included in the Excel
11 spreadsheet is also the "FuelBurned" calculation for each month under review,
12 which is included in Big Rivers' monthly Form B filings. The highest cost fuel unit
13 (\$/MWH) for each month is the highest \$/MWH cost from column K of the Fuel
14 Burned sheets. The Excel spreadsheet also includes the second page of Big Rivers'
15 Form A filing for each month under review, which contains the inputs for the
16 calculation of the forced outage purchased power costs recovered through the non-
17 FAC PPA.

BIG RIVERS ELECTRIC CORPORATION

**AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL
ADJUSTMENT CLAUSE OF BIG RIVERS ELECTRIC CORPORATION
FROM NOVEMBER 1, 2021 THROUGH APRIL 30, 2022
CASE NO. 2022-00268**

**Responses to Commission Staff's First Request for Information
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September 30, 2022

1

2 **Witness:** Jennifer M. Stone

3

BIG RIVERS ELECTRIC CORPORATION

**AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL
ADJUSTMENT CLAUSE OF BIG RIVERS ELECTRIC CORPORATION
FROM NOVEMBER 1, 2021 THROUGH APRIL 30, 2022
CASE NO. 2022-00268**

**Responses to Commission Staff's First Request for Information
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September 30, 2022

1 **Item 17)** *For the period under review, provide the monthly capacity factor*
2 *at which each generating unit operated.*

3

4 **Response)** Please see the table and the footnotes which follow.

Big Rivers Electric Corporation Monthly Capacity Factor by Generating Unit							
Generating Unit	Metric	Nov-2021	Dec-2021	Jan-2022	Feb-2022	Mar-2022	Apr-2022
Reid Station Unit # 2	GCF ¹	0.4%	1.1%	0.0%	0.0%	0.0%	0.0%
	NCF ²	0.2%	1.0%	-0.1%	0.0%	0.0%	0.0%
Green Station Unit # 1	GCF	84.2%	38.5%	63.5%	28.0%	76.2%	9.6%
	NCF	82.4%	36.3%	61.0%	25.1%	74.5%	8.8%
Green Station Unit # 2	GCF	91.4%	28.9%	58.8%	18.4%	0.0%	0.2%
	NCF	90.3%	26.7%	57.0%	15.4%	-0.6%	-1.0%
Wilson Station Unit # 1	GCF	83.2%	90.1%	81.8%	75.4%	91.5%	84.4%
	NCF	83.0%	90.0%	81.3%	74.7%	91.3%	84.0%

5

1

$$\text{GCF (Gross Capacity Factor)} = \frac{\text{Gross Actual Generation} \times 100\%}{\text{PH (Period Hours)} \times \text{GMC (Gross Maximum Capacity)}}$$

2

$$\text{NCF (Net Capacity Factor)} = \frac{\text{Net Actual Generation} \times 100\%}{\text{PH (Period Hours)} \times \text{NMC (Net Maximum Capacity)}}$$

BIG RIVERS ELECTRIC CORPORATION

**AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL
ADJUSTMENT CLAUSE OF BIG RIVERS ELECTRIC CORPORATION
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September 30, 2022

1

2 **Witness)** Jason C. Burden

3

BIG RIVERS ELECTRIC CORPORATION

**AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL
ADJUSTMENT CLAUSE OF BIG RIVERS ELECTRIC CORPORATION
FROM NOVEMBER 1, 2021 THROUGH APRIL 30, 2022
CASE NO. 2022-00268**

**Responses to Commission Staff's First Request for Information
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September 30, 2022

1 **Item 18)** *For the period under review, explain whether BREC made any*
2 *changes to its maintenance and operation practices or completed any*
3 *specific generation efficiency improvements that affect fuel usage at BREC's*
4 *generation facilities. If so, describe the impact of these changes on BREC's*
5 *fuel usage.*

6

7 **Response)** No. In the period under review, November 1, 2021, through April 30,
8 2022, Big Rivers has not made any changes to its maintenance and operation
9 practices, or completed any specific generation efficiency improvements that affect
10 fuel usage at Big Rivers' generation facilities.

11

12

13 **Witness)** Jason C. Burden

14

BIG RIVERS ELECTRIC CORPORATION

**AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL
ADJUSTMENT CLAUSE OF BIG RIVERS ELECTRIC CORPORATION
FROM NOVEMBER 1, 2021 THROUGH APRIL 30, 2022
CASE NO. 2022-00268**

**Responses to Commission Staff's First Request for Information
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September 30, 2022

1 **Item 19)** *State whether BREC is aware of any violations of its policies and*
2 *procedures regarding fuel procurement that occurred prior to or during the*
3 *period under review.*

4

5 **Response)** Big Rivers is unaware of any violations of its policies and procedures
6 regarding fuel procurement that occurred during the period November 1, 2021,
7 through April 30, 2022. Big Rivers is also unaware of any unreported violation prior
8 to the current period under review.

9

10

11 **Witness)** Vicky L. Payne

12

BIG RIVERS ELECTRIC CORPORATION

**AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL
ADJUSTMENT CLAUSE OF BIG RIVERS ELECTRIC CORPORATION
FROM NOVEMBER 1, 2021 THROUGH APRIL 30, 2022
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**Responses to Commission Staff's First Request for Information
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September 30, 2022

1 **Item 20)** *State whether BREC is aware of any violations of 807 KAR 5:056*
2 *that occurred prior to or during the period under review.*

3

4 **Response)** Big Rivers is unaware of any violations of 807 KAR 5:056 that occurred
5 prior to or during the period under review.

6

7

8 **Witness)** Jennifer M. Stone

9

BIG RIVERS ELECTRIC CORPORATION

**AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL
ADJUSTMENT CLAUSE OF BIG RIVERS ELECTRIC CORPORATION
FROM NOVEMBER 1, 2021 THROUGH APRIL 30, 2022
CASE NO. 2022-00268**

**Responses to Commission Staff's First Request for Information
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September 30, 2022

1 **Item 21)** *State whether all fuel contracts related to commodity and*
2 *transportation have been filed with the Commission. If any contracts have*
3 *not been filed, explain why they have not been filed, and provide a copy.*

4

5 **Response)** Yes. All of Big Rivers' fuel and transportation contracts have been filed
6 with the Commission.

7

8

9 **Witness)** Vicky L. Payne

10

BIG RIVERS ELECTRIC CORPORATION

**AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL
ADJUSTMENT CLAUSE OF BIG RIVERS ELECTRIC CORPORATION
FROM NOVEMBER 1, 2021 THROUGH APRIL 30, 2022
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**Responses to Commission Staff's First Request for Information
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September 30, 2022

1 **Item 22) Refer to KRS 278.277(1) which states that:**

2 *In any review by the commission of any fuel adjustment clause, for any*
3 *contracts entered into on or after July 1, 2021, the commission shall, in*
4 *determining the reasonableness of fuel costs in procurement contracts*
5 *and fuel procurement practices, evaluate the reasonableness of fuel*
6 *costs in contracts and competing bids based on the cost of the fuel less*
7 *any coal severance tax imposed by any jurisdiction.*

8 *a. Provide a listing of any new coal contracts entered into on or since*
9 *November 1, 2021.*

10 *b. For each bid solicitation or potential spot purchase that resulted in*
11 *a new purchase contract on or after November 1, 2021, provide the*
12 *bid evaluation sheets that include:*

13 *(1) The coal severance tax rate being levied, if any;*

14 *(2) The coal severance tax rate per ton or MMBTU, as appropriate,*
15 *being levied;*

16 *(3) The cost per ton or MMBTU, as appropriate, including any*
17 *severance tax; and*

18 *(4) The cost per ton or MMBTU, as appropriate, excluding any*
19 *severance tax.*

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1

2 **Response)**

3 a. and b. A list of all coal contracts entered into since November 1, 2021,
4 along with the other requested information, were provided in Big Rivers'
5 Amended Response to Item No. 21 of the Commission Staff's First Request for
6 Information ("*PSC 1-21*") in Case No. 2022-00041¹ filed May 19, 2022. No new
7 coal contracts have been entered into since that response was filed.

8

9

10 **Witness)** Vicky L. Payne

11

12

¹ *In the Matter of: An Electronic Examination of the Application of the Fuel Adjustment Clause of Big Rivers Electric Corporation from May 1, 2021 through October 31, 2021, P.S.C. Case No. 2022-00041.*

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1 **Item 23)** *State whether any MISO costs were included in BREC's monthly*
2 *FAC filings during the period under review. If yes, provide the amount of the*
3 *costs by month and by type of cost.*

4

5 **Response)** MISO charge types for power purchases currently being recovered
6 through the Fuel Adjustment Clause include "Day Ahead (DA) Asset Energy", "Real
7 Time (RT) Asset Energy", Real Time (RT) Excessive Energy", and "Real Time (RT)
8 Non-Excessive Energy". Please see the attachment to this response for the MISO
9 costs included in the FAC by month and by type of cost.

10

11

12 **Witness)** Jennifer M. Stone

13

Big Rivers Electric Corporation
Detail of MISO Costs Included in Monthly FAC Filings
November 2021 - April 2022

MISO Charge Types	Reason for Purchase					Total ¹
	Scheduled Outages	Unscheduled Outages < 6 Hours	Unscheduled Outages > 6 Hours	Available for System	Cover Load & Lack of Generation	
Nov-21						
DA Asset Energy Amount	\$ -	\$ -	\$ -	\$ 1,044,954	\$ -	\$ 1,044,954
RT Asset Energy Amount ²	\$ -	\$ 43,297	\$ 548,664	\$ -	\$ 2,913	\$ 594,874
Dec-21						\$ -
DA Asset Energy Amount	\$ -	\$ -	\$ -	\$ 2,183,590	\$ -	\$ 2,183,590
RT Energy Amount ²	\$ -	\$ -	\$ 86,437	\$ -	\$ 1,087,536	\$ 1,173,973
Jan-22						\$ -
DA Asset Energy Amount	\$ 718,617	\$ -	\$ -	\$ 1,007,012	\$ -	\$ 1,725,629
RT Energy Amount ²	\$ -	\$ 83,405	\$ 1,074,721	\$ -	\$ 825,230	\$ 1,983,356
Feb-22						\$ -
DA Asset Energy Amount	\$ 1,856,888	\$ -	\$ -	\$ 778,174	\$ -	\$ 2,635,062
RT Energy Amount ²	\$ -	\$ -	\$ 1,405,436	\$ -	\$ 1,861,642	\$ 3,267,078
Mar-22						\$ -
DA Asset Energy Amount	\$ 474,714	\$ -	\$ -	\$ 786,745	\$ -	\$ 1,261,459
RT Energy Amount ²	\$ -	\$ -	\$ 104,312	\$ -	\$ 442,441	\$ 546,753
Apr-22						\$ -
DA Asset Energy Amount	\$ 2,352,952	\$ -	\$ -	\$ 99,420	\$ -	\$ 2,452,372
RT Energy Amount ²	\$ -	\$ 177,065	\$ -	\$ -	\$ 1,868,630	\$ 2,045,695
Total	\$ 5,403,171	\$ 303,767	\$ 3,219,570	\$ 5,899,895	\$ 6,088,392	\$ 20,914,795

¹ The amounts listed above, are included in "Net energy cost - economy purchases" and "Identifiable fuel cost - other purchases" on the Fuel Cost Schedules of the monthly Form A Filings. These amounts represent total energy cost of power purchases from MISO for the respective categories listed.

² The RT Energy amount includes three charge types: RT Asset Energy, RT Excessive Energy, and RT Non-Excessive Energy.

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1 Item 24) *Explain how purchase power costs are accounted for in the*
2 *calculation of the FAC when BREC experiences a planned generation outage*
3 *and purchases power to meet load (i.e., whether the entire amount of the*
4 *purchase power recorded in the calculation, or there is a limit as to the*
5 *amount recorded). If there is a limit, explain the basis for the limitation and*
6 *how it is calculated. If there is no limit, explain the basis for including 100*
7 *percent of the purchase power costs.*

8

9 **Response)** The energy cost of power purchased to meet load requirements during
10 planned generation outages is included in the calculation of Big Rivers' monthly FAC
11 factor in the monthly Form A Filings on page 2, Fuel Cost Schedule, in the Purchases,
12 "Identifiable Fuel Cost – Other Purchases" line item.

13 The cost of these power purchases recovered through the FAC is limited to the
14 \$/kWh cost of Big Rivers' highest cost generating unit during the respective expense
15 month. If the \$/kWh cost of the purchased power exceeds the \$/kWh cost of the
16 highest cost unit, the excess is included in the "Less Purchases Above Highest Cost

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1 Units" line item on page 2 of the Form A Filing and subtracted from the recoverable
2 fuel expense.

3

4

5 **Witness)** Jennifer M. Stone

6

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1 Item 25) *Explain how purchase power costs are accounted for in the*
2 *calculation of the FAC when BREC is not experiencing a generation outage*
3 *but must purchase power in order to meet demand (i.e., whether the entire*
4 *amount of the purchase power recorded in the calculation, or there is a limit*
5 *as to the amount recorded). If there is a limit, explain the basis for the*
6 *limitation and how it is calculated. If there is no limit, explain the basis for*
7 *including 100 percent of the purchase power costs.*

8

9 **Response)** The energy cost of power purchased to meet demand when Big Rivers is
10 not experiencing a generation outage is included in the calculation of Big Rivers'
11 monthly FAC factor in the monthly Form A Filings on page 2, Fuel Cost Schedule, in
12 the Purchases, "Net Energy Cost – Economy Purchases" or "Identifiable Fuel Cost –
13 Other Purchases" line item, depending on the classification of the purchase.

14 The cost of these power purchases recovered through the FAC is limited to the
15 \$/kWh cost of Big Rivers' highest cost generating unit during the respective expense
16 month. If the \$/kWh cost of the purchased power exceeds the \$/kWh cost of the
17 highest cost unit, the excess is included in the "Less Purchases Above Highest Cost

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1 Units" line item on page 2 of the Form A Filing and subtracted from the recoverable
2 fuel expense. Additionally, if the power purchased is non-tariff market rate sales to
3 members or inter-system sales, the amount is included in the "Less Purchases for
4 Non-Tariff Market Rate Sales to Members" or "Inter-System Sales - Including
5 Interchange-out" line item, respectively, and subtracted from the amount recoverable
6 through the FAC.

7

8

9 **Witness)** Jennifer M. Stone

10

BIG RIVERS ELECTRIC CORPORATION

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1 **Item 26)** Provide the amount, by month, of costs excluded from recovery
2 from the FAC related to non-economy purchases.

3 a. State whether BREC otherwise recovers the excluded costs.

4 b. If BREC does recover the excluded costs, explain in detail how
5 those costs are recovered.

6

7 **Response)** Please see the attachment to this response showing the amount, by
8 month, of costs excluded from recovery of the FAC related to non-economy purchases,
9 or purchases above the highest cost unit. These costs are included in the "Less
10 Purchases Above Highest Cost Units" line item on page 2 of Big Rivers' Form A Filing.

11 a. Big Rivers does not recover these costs in the FAC, but recovers the costs
12 in the Non-FAC PPA as defined in the tariff.

13 b. The costs are accumulated in the Regulatory Account through June 30th.

14 The balance at June 30th is divided by the estimated sales for the twelve
15 month service period beginning September 1st of the current year
16 through and including August 31st of the following year. An over- or
17 under- recovery is calculated using actual amounts and is included in

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1 the Regulatory Account balance for recovery in the subsequent period.
2 The Factor is applied to bills for Service beginning September 1st of the
3 current year and remain in place through and including August 31st of
4 the following year, at which time the rate will be updated.

5 **Witness)** Jennifer M. Stone

6

**Big Rivers Electric Corporation
Case No. 2022-00268**

**Attachment for Response to PSC 1-26
Non-Economy Purchased Power
November 2021 - April 2022**

Purchases above highest cost unit

Nov-2021	\$ 1,746
Dec-2021	\$ 34,386
Jan-2022	\$ 215,706
Feb-2022	\$ 50,801
Mar-2022	\$ 285,329
Apr-2022	\$ 1,874,016

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1 **Item 27)** *Explain how BREC's generating units are bid into MISO's*
2 *energy market and the implications for the manner in which the units are*
3 *run when the unit's bid in price is greater than the hourly LMP. For*
4 *example, if the unit is bid in as "must run" and its bid in price is greater*
5 *than the hourly LMP, explain whether the unit is ramped down to its*
6 *economic minimum output level or whether it is run at some level greater*
7 *than that for some other reason such as balancing or voltage support.*

8

9 **Response)** The attached Direct Testimony of Natalie R. Hankins provides a
10 discussion of how Big River's generating units are bid into MISO's energy Market.

11 When Big Rivers offers a unit with a Commitment Status of "Economic,"
12 MISO will select that unit if it is the best unit available to meet load economically
13 and reliably. MISO's selection could be based simply on economics or it could also
14 be driven by transmission issues. When Big Rivers offers a unit with a
15 Commitment Status of "Must Run", Big Rivers may allow MISO to operate the unit
16 between Big Rivers' minimum and maximum generation levels for economics or

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1 reliability or Big Rivers may set a fixed generation level at which the unit must

2 remain.

3

4 **Witness)** Natalie R. Hankins

5

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1 **Item 28)** *If the coal units are available, explain whether they are always*
2 *bid into the energy market as "must run." If not, then explain the*
3 *circumstances under which the units are not bid in as such.*

4

5 **Response)** No. As shown in the attachment to Big Rivers' response below to Item
6 No. 29 (a), if the coal unit is available, it is not always offered as "Must Run." The
7 attached Direct Testimony of Natalie R. Hankins explains that the coal units
8 default Commitment Status is "Economic" and provides a discussion of when the
9 coal units are bid into the energy market as "Must Run." See the discussion of
10 generation offers in the above referenced testimony.

11

12 **Witness)** Natalie R. Hankins

13

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1 **Item 29)** *In an Excel spreadsheet format with all formulas, columns, and*
2 *rows unprotected and fully accessible, for the period under review and*
3 *when the units are available to run,*

4 **a.** *Provide the bid status (i.e. economic dispatch, must-run, etc.),*
5 *by day, of BREC's coal generating units into MISO's day ahead market.*
6 *Explain the reason for each bid status.*

7 **b.** *Provide the price per MWH, by day, of BREC's generating units*
8 *bid into MISO's day ahead market and the corresponding LMP indicating*
9 *whether or not the unit cleared the market.*

10 **c.** *In a separate spreadsheet Tab, provide a graphical*
11 *representation of the information in part b. above.*

12

13 **Response)**

14 **a.** Please see the attached Excel spreadsheet, "PSC 1-29a "

15 **b. and c.** Please see the attached Excel spreadsheet, "PSC 1-29bc"

16

17 **Witness)** Natalie R. Hankins

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1 **Item 30)** For the period under review, explain whether when the units
2 are not on a planned, maintenance, or forced outage, MISO considers the
3 units as being in available status. If not, explain the circumstances under
4 which the units would not be considered in available status.

5

6 **Response)** Yes. There are five possible Commit Status options for offering units
7 into MISO, which are as follows: Must Run, Economic, Outage, Not Participating,
8 and Emergency. MISO considers a unit available if Big Rivers submits it on Must
9 Run, Economic, or Emergency.

10

11

12 **Witness)** Natalie R. Hankins

13