

SULLIVAN, MOUNTJOY, STAINBACK & MILLER PSC

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Mary L. Moorhouse

July 6, 2012

**Via Federal Express**

Jeff DeRouen  
Executive Director  
Public Service Commission  
211 Sower Boulevard, P.O. Box 615  
Frankfort, Kentucky 40602-0615

RECEIVED

JUL 06 2012

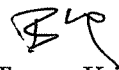
PUBLIC SERVICE  
COMMISSION

Re: *In the Matter of: Application of Big Rivers Electric Corporation for Approval of its 2012 Environmental Compliance Plan, for Approval of its Amended Environmental Cost Recovery Surcharge Tariff, for Certificates of Public Convenience and Necessity, and for Authority to Establish a Regulatory Account, P.S.C. Case No. 2012-00063*

Dear Mr. DeRouen:

Enclosed for filing are an original and ten copies of Big Rivers Electric Corporation's (i) response to the Public Service Commission's second request for information, (ii) response to the Attorney General's second request for information, (iii) response to Kentucky Industrial Utility Customers' second request for information, (iv) response to Sierra Club's second request for information, (v) response to Kentucky Industrial Utility Customers' third request for information, (vi) response to Sierra Club's third request for information, (vii) a petition for confidential treatment for certain documents being filed with the responses, and (viii) a motion to deviate from the requirement that all documents filed in response to requests for information be furnished in paper form. Copies of this letter and all enclosures have been served on each of the persons listed on the attached service list. A copy of the information for which confidential treatment is sought has also been served on each party that has entered into Big Rivers' confidentiality agreement.

Sincerely yours,



Tyson Kamuf

TAK/ej  
Enclosures

Telephone (270) 926-4000

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cc: Mark A. Bailey  
Albert Yockey

100 St. Ann Building

PO Box 727

Owensboro, Kentucky

42302-0727

Service List  
PSC Case No. 2012-00063

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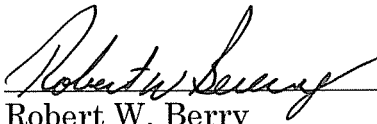
**BIG RIVERS ELECTRIC CORPORATION**

**THE APPLICATION OF BIG RIVERS ELECTRIC CORPORATION FOR APPROVAL OF ITS 2012 ENVIRONMENTAL COMPLIANCE PLAN AND REVISIONS TO ITS ENVIRONMENTAL SURCHARGE TARIFF, FOR CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY, AND FOR AUTHORITY TO ESTABLISH A REGULATORY ACCOUNT**

**CASE NO. 2012-00063**

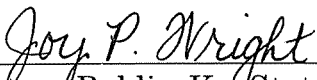
**VERIFICATION**

I, Robert W. Berry, verify, state, and affirm that I prepared or supervised the preparation of the data responses filed with this Verification, and that those data responses are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

  
Robert W. Berry

COMMONWEALTH OF KENTUCKY )  
COUNTY OF HENDERSON )

3<sup>rd</sup> SUBSCRIBED AND SWORN TO before me by Robert W. Berry on this the  
day of July, 2012.

  
Notary Public, Ky State at Large  
My Commission Expires \_\_\_\_\_

Notary Public, Kentucky State-At-Large  
My Commission Expires: July 3, 2014  
ID 421951

**BIG RIVERS ELECTRIC CORPORATION**

**THE APPLICATION OF BIG RIVERS ELECTRIC CORPORATION FOR  
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AUTHORITY TO ESTABLISH A REGULATORY ACCOUNT**

**CASE NO. 2012-00063**


**VERIFICATION**

I, David G. Crockett, verify, state, and affirm that I prepared or supervised the preparation of my data responses filed with this Verification, and that those data responses are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

  
\_\_\_\_\_  
David G. Crockett

COMMONWEALTH OF KENTUCKY     )  
COUNTY OF HENDERSON         )

SUBSCRIBED AND SWORN TO before me by David G. Crockett on this the 3<sup>rd</sup> day  
of July, 2012.

  
\_\_\_\_\_  
Notary Public, Ky. State at Large  
My Commission Expires 1-12-13

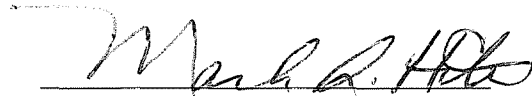
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**CASE NO. 2012-00063**

**VERIFICATION**

I, Mark A. Hite, verify, state, and affirm that I prepared or supervised the preparation of the data responses filed with this Verification, and that those data responses are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



Mark A. Hite

COMMONWEALTH OF KENTUCKY )  
COUNTY OF HENDERSON )

SUBSCRIBED AND SWORN TO before me by Mark A. Hite on this the 3<sup>rd</sup>  
day of July, 2012.



Notary Public, Ky. State at Large  
My Commission Expires 1-12-13


**BIG RIVERS ELECTRIC CORPORATION**

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**CASE NO. 2012-00063**


**VERIFICATION**

I, Thomas L. Shaw, verify, state, and affirm that I prepared or supervised the preparation of the data responses filed with this Verification, and that those data responses are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

  
Thomas L. Shaw

COMMONWEALTH OF KENTUCKY )  
COUNTY OF HENDERSON )

SUBSCRIBED AND SWORN TO before me by Thomas L. Shaw on this the  
3<sup>rd</sup> day of July, 2012.

  
Notary Public, Ky. State at Large  
My Commission Expires 1-12-13

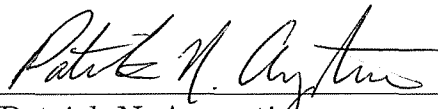
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**CASE NO. 2012-00063**


**VERIFICATION**

I, Patrick N. Augustine, verify, state, and affirm that I prepared or supervised the preparation of the data responses filed with this Verification, and that those data responses are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

  
Patrick N. Augustine

COMMONWEALTH OF VIRGINIA    )  
COUNTY OF FAIRFAX            )

SUBSCRIBED AND SWORN TO before me by Patrick N. Augustine on this  
the 2 day of July, 2012.

  
Notary Public, Commonwealth of  
Virginia  
My Commission Expires June 30, 2013  
# 7251149

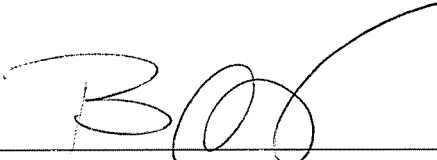
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**CASE NO. 2012-00063**

**VERIFICATION**

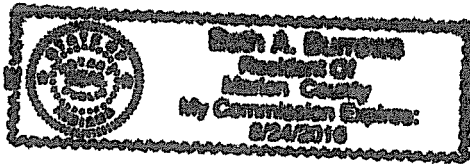
I, Brian J. Azman, verify, state, and affirm that I prepared or supervised the preparation of the data responses filed with this Verification, and that those data responses are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

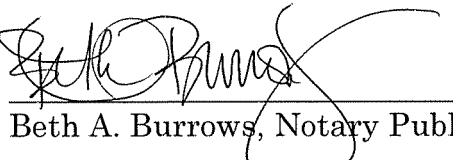
  
\_\_\_\_\_

Brian J. Azman

STATE OF INDIANA                             )  
   )  
COUNTY OF HAMILTON                     )

SUBSCRIBED AND SWORN TO before me by Brian J. Azman on this the 2nd day of July, 2012.



  
\_\_\_\_\_

Beth A. Burrows, Notary Public



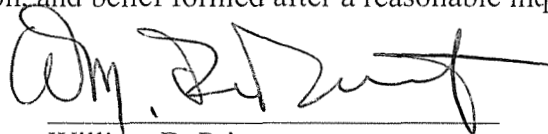
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REGULATORY ACCOUNT**

**CASE NO. 2012-00063**

**VERIFICATION**


I, William DePriest, verify, state, and affirm that I prepared or supervised the preparation of the data responses filed with this Verification, and that those data responses are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



William DePriest

STATE OF ILLINOIS                    )  
COUNTY OF COOK                 )

*June* <sup>(7/5)</sup> SUBSCRIBED AND SWORN TO before me by William DePriest on this the 28<sup>th</sup> day of ~~July~~, 2012.



Notary Public,  
State of Illinois

My Commission Expires 5/4/2015

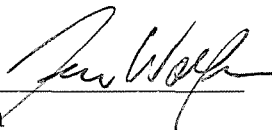
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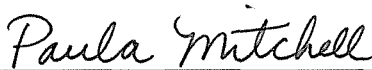
**VERIFICATION**

I, John Wolfram, verify, state, and affirm that I prepared or supervised the preparation of the data responses filed with this Verification, and that those data responses are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

  
\_\_\_\_\_  
John Wolfram

COMMONWEALTH OF KENTUCKY )  
COUNTY OF HENDERSON )

SUBSCRIBED AND SWORN TO before me by John Wolfram on this the 3<sup>rd</sup>  
day of July, 2012.

  
\_\_\_\_\_  
Notary Public, Ky. State at Large  
My Commission Expires 1-12-13



**BIG RIVERS ELECTRIC CORPORATION**

**APPLICATION OF BIG RIVERS ELECTRIC CORPORATION FOR APPROVAL OF ITS 2012 ENVIRONMENTAL COMPLIANCE PLAN, FOR APPROVAL OF ITS AMENDED ENVIRONMENTAL COST RECOVERY SURCHARGE TARIFF, FOR CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY, AND FOR AUTHORITY TO ESTABLISH A REGULATORY ACCOUNT  
CASE NO. 2012-00063**

**Responses to the Kentucky Industrial Utility Customers' and Sierra Club's  
Second Requests for Information dated June 22, 2012**

**July 6, 2012**

**Information filed on USB Drive accompanying responses**

KIUC 2-7 - EV of KIUC 1-2d - PV of BR Mbr Rev Stream
KIUC 2-3 - Supporting Documents
KIUC 2-25 - CSAPR MATS Rate Impact rev (02-14-12) ES Allocation Scenarios
KIUC 2-25 - Rate Comparison 2016
SC 2-3c - CSAPR and MATS Cash Flow
<b><i>Folders included on this USB Drive:</i></b>
SC 2-27cii - Integrated Resource Plan

**ORIGINAL**



Your Touchstone Energy® Cooperative 

**RECEIVED**

**JUL 06 2012**

**PUBLIC SERVICE  
COMMISSION**

**COMMONWEALTH OF KENTUCKY**

**BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY**

**In the Matter of:**

**APPLICATION OF BIG RIVERS ELECTRIC )  
CORPORATION FOR APPROVAL OF ITS )  
2012 ENVIRONMENTAL COMPLIANCE )  
PLAN, FOR APPROVAL OF ITS AMENDED )  
ENVIRONMENTAL COST RECOVERY )  
SURCHARGE TARIFF, FOR CERTIFICATES )  
OF PUBLIC CONVENIENCE AND )  
NECESSITY, AND FOR AUTHORITY TO )  
ESTABLISH A REGULATORY ACCOUNT )**

**Case No.  
2012-00063**

**Response to Commission Staff's  
Second Request for Information  
Dated June 22, 2012**

**FILED: July 6, 2012**

**ORIGINAL**



**BIG RIVERS ELECTRIC CORPORATION**

**APPLICATION OF BIG RIVERS ELECTRIC CORPORATION  
FOR APPROVAL OF ITS 2012 ENVIRONMENTAL COMPLIANCE PLAN,  
FOR APPROVAL OF ITS AMENDED ENVIRONMENTAL COST  
RECOVERY SURCHARGE TARIFF, FOR CERTIFICATES OF PUBLIC  
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CASE NO. 2012-00063**

**Response to Commission Staff's  
Second Request for Information  
Dated June 22, 2012**

**July 6, 2012**

1 **Item 1)** *Refer to the Application, the Direct Testimony of John*  
2 *Wolfram, Exhibit Wolfram-6. A note at the bottom of the page states that*  
3 *the Smelter adjusted rates in the exhibit to reflect the removal of the TIER*  
4 *Adjustment Charge. According to the exhibit, the TIER Adjustment*  
5 *Charge appears to be \$2.95 per MWh for the Base 2012, \$1.36 per MWh for*  
6 *the Base 2016, and \$2.46 per MWh for the Build 2016. Explain the reason*  
7 *for the differences in the TIER Adjustment Charge for each of the*  
8 *scenarios.*

9  
10 **Response)** The TIER Adjustment Charge is a mechanism in the smelter  
11 contracts under which the smelters pay a charge (up to a specified ceiling) if and  
12 to the extent Big Rivers' margins are insufficient for Big Rivers to earn a 1.24  
13 TIER (as defined in the smelter contracts). In both the Base Case and the Build  
14 Case, Big Rivers projects that it will not earn a 1.24 contract TIER in 2012, and  
15 thus, Big Rivers projects that the smelters will be required to pay a TIER  
16 Adjustment Charge in 2012 for both cases. Based on Big Rivers' projected  
17 margins in 2012, the TIER Adjustment Charge for 2012 in both the Base Case and  
18 the Build Case is projected to be the maximum contractual charge for 2012 of  
19 \$2.95 per MWh.

20 Big Rivers projects the Base Case TIER Adjustment Charge  
21 decreases to \$1.36 per MWh in 2016 primarily as the result of projected increased  
22 off-system sales volume and price. The projected increased revenue from off-

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1 system sales in the Base Case from 2012 to 2016 means Big Rivers needs less  
2 revenue from the TIER Adjustment Charge to achieve the 1.24 contract TIER  
3           The Build Case has a comparable off-system sales price to the Base  
4 Case in 2016; however, the Build Case projects lower off-system sales volume in  
5 2016 than the Base Case (since, due to the costs of the 2012 Environmental  
6 Compliance Plan, Big Rivers clears the market less in the Build Case than in the  
7 Base Case). Big Rivers also projects increased environmental compliance costs, a  
8 portion of which is allocated to off-system sales, in 2016 for the Build Case over  
9 the Base Case. The lower off-system sales volumes and increased environmental  
10 compliance costs for the Build Case in 2016 mean that Big Rivers projects less off-  
11 system sales revenues and margins than the Base Case. Thus, Big Rivers projects  
12 that it needs more revenue in 2016 in the Build Case from the TIER Adjustment  
13 Charge than in the Base Case. So, although the TIER Adjustment Charge in the  
14 Build Case decreases from 2012 to 2016, it does not decrease by as much as the  
15 Base Case. It should also be noted that both cases project a base rate increase of  
16 3% on January 1, 2014, which would also serve to decrease the TIER Adjustment  
17 Charge.

18  
19

20 **Witness)** Mark A. Hite

21





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CASE NO. 2012-00063**

**Response to Commission Staff's  
Second Request for Information  
Dated June 22, 2012**

**July 6, 2012**

1 **Item 2) Refer to the Application, the Direct Testimony of Robert W.**  
2 **Berry, Exhibit Berry-2, page 1. Please provide an explanation for the FGD**  
3 **cost estimate of \$139 million. This estimate is significantly below the cost**  
4 **estimates included in the Environmental Protection Agency ("EPA") Base**  
5 **Case V.4.10, Chapter 5, Table 5-4, page 5-6.<sup>1</sup>**

6  
7 **Response)** In Exhibit Berry-2 of the direct testimony of Robert W. Berry in this  
8 proceeding, on page 1 of 2, the \$139 million cost estimate for the Wilson FGD is for  
9 the Absorber Island, ID Fans and Chimney Liner only. The cost estimate found in  
10 Chapter 5 of the EPA Base Case v.4.10 table 5-4 for an LSFO FGD for a 500 MW  
11 plant with 10,000 btu/kwh heat rate burning 3 lb/mmbtu bituminous coal is  
12 \$496/kW, or \$248 million. This estimate includes the Absorber Island, Reagent  
13 Preparation, Waste Handling, and Balance of Plant items including "new wet  
14 chimneys," "ID and booster fans," "piping ductwork," "minor waste water  
15 treatment," "auxiliary power modifications," and "other electrical upgrades." Big  
16 Rivers intends to use its existing reagent preparation and waste handling  
17 equipment, existing new wet chimney that was built for Wilson Unit 2, existing  
18 waste water treatment facilities, and as much of the existing piping, ductwork,  
19 auxiliary power and electrical equipment as possible to reduce the cost of the  
20 project.

---

<sup>1</sup> The EPA Base Case v.4.10, Chapter 5, can be accessed at  
<http://www.epa.gov/airmarkets/progsregs/epa-ipm/docs/v410/Chapter5.pdf>.

**BIG RIVERS ELECTRIC CORPORATION**

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**Response to Commission Staff's  
Second Request for Information  
Dated June 22, 2012**

**July 6, 2012**

1 **Witnesses)** Robert W. Berry and William DePriest

2



**BIG RIVERS ELECTRIC CORPORATION**

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**Response to Commission Staff's  
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Dated June 22, 2012**

**July 6, 2012**

1 **Item 3)** *Refer to Big Rivers' response to Item 5 of Commission Staffs*  
2 *Initial Request for Information ("Staffs First Request"), page 1 at lines 16-*  
3 *21. Provide the analysis that was utilized to justify the \$1.2 million gas*  
4 *conversion of Reid Unit 1. Given the age and condition of this Unit and*  
5 *the resultant impact on Unit heat rate, provide an analysis of other*  
6 *options that were considered.*

7

8 **Response)** S&L used a net present value analysis that accounted for capital,  
9 O&M and emission allowance credit costs to justify the gas conversion of Reid  
10 Unit 1. Gas conversion of Reid Unit 1 was the most economic option for the Big  
11 Rivers fleet for SO<sub>2</sub> reduction on a \$/ton basis and was therefore chosen as part of  
12 the SO<sub>2</sub> compliance strategy. Impact on unit heat rate was not considered and  
13 would require an additional engineering study to evaluate its impacts although it  
14 is not expected to impact the recommendation. A quantitative analysis was not  
15 completed for other compliance options at Reid due to the conclusion that the  
16 relatively low cost of completing the unit conversion to natural gas was the best  
17 and most cost effective option for Reid and the overall compliance strategy.

18

19

20 **Witness)** Robert W. Berry

21



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**Response to Commission Staff's  
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Dated June 22, 2012**

**July 6, 2012**

1 **Item 4)** *Refer to Big Rivers' response to Staffs First Request, Item 9.*  
2 *Prepare an analysis of the impact of the EPA's proposed regulations*  
3 *pertaining to the Clean Water Act - Water Intake Fish Impingement*  
4 *(316b), Waste Water Discharge and Coal Combustion Residuals costs*  
5 *based on the estimates in part b of the response. The analysis should*  
6 *include a re-run of Big Rivers' financial model and a comparison of the*  
7 *build, partial build and buy alternatives if these costs are included in the*  
8 *analysis. Provide an estimate of the impact on rates when the costs to*  
9 *comply with the proposed regulations are included in the analysis.*

10

11 **Response)** Big Rivers performed an analysis of the Build, Partial Build, and Buy  
12 alternatives with the inclusion of costs for compliance with the EPA's proposed  
13 regulations pertaining to the Clean Water Act - Water Intake Fish Impingement  
14 (316b), Waste Water Discharge and Coal Combustion Residuals costs, as described  
15 in the response to Item 9 of the Staff's First Request.

16 Because a complete re-run of all modeling -- including the effect of  
17 the proposed regulations on wholesale energy market prices, individual unit  
18 operating characteristics, and overall Big Rivers dispatch -- could take weeks, Big  
19 Rivers prepared a streamlined analysis based on the scenarios already provided  
20 and on the costs described in the referenced response. Big Rivers assumed that  
21 any changes to the production cost model (including prices for fuel, energy, and/or

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1 emission allowances) would be negligible for the purposes of comparing the Build,  
2 Partial Build, and Buy alternatives on a relative basis. Big Rivers also  
3 determined that the fixed costs for compliance with the Clean Water Act - Water  
4 Intake Fish Impingement (316b), Waste Water Discharge and Coal Combustion  
5 Residuals requirements would apply equally to the Build, Partial Build, and Buy  
6 scenarios, because the same investments are required in each case in order for Big  
7 Rivers to continue to be able to operate its generating units. The variable costs do  
8 not apply equally to each case because the energy produced at Big Rivers' plants  
9 differs in each scenario. Big Rivers assumed that the additional capital  
10 investment would not change the interest rate of 5.5% for the financing of the  
11 plan, although the specific timing of certain borrowings was changed to reflect the  
12 timing of the additional compliance requirements.

13           The analysis shows that the Build case remains the most cost  
14 effective alternative. See the attached analysis of the NPVRR.

15           The rate impact of the plan including these additional costs is  
16 summarized in the attachment. The rate impact is shown for the year 2020,  
17 which is the first year in which all of the additional compliance projects are  
18 complete.

19           It is important to note that because the requirements are not yet  
20 final, the assumptions pertaining to the additional projects are speculative. This  
21 applies to the assumed compliance deadlines, the timing of cash flows, the impact

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1 of any final rules on prices, and other aspects of Big Rivers' evaluation of the cost  
2 effectiveness of compliance alternatives.

3

4

5 **Witnesses)** Robert W. Berry and Mark A. Hite

6



**Big Rivers Electric Corporation**  
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**Present Value of Revenue Requirements**

	2012	2013	2014	2015	2016	2017
Base Case	297.17	282.95	266.73	250.20	232.86	207.37
<u>Environmental Compliance Options</u>						
Build	301.93	285.91	277.08	265.34	258.98	234.16
Partial Build	301.93	285.28	281.85	271.50	267.63	247.94
Buy	317.24	315.37	303.91	293.87	288.84	290.07
Build - Including CCR & 316b	301.93	285.96	277.17	265.91	258.30	240.72
Partial Build - Including & CCR 316b	301.93	285.32	281.93	272.06	266.21	254.34
Buy - Including CCR & 316b	317.24	315.38	304.00	294.43	289.10	296.17

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**Present Value of Revenue Requirements**

	2018	2019	2020	2021	2022	2023
Base Case	196.42	178.33	173.77	159.45	153.33	138.75
<u>Environmental Compliance Options</u>						
Build	220.82	202.97	195.61	181.68	173.31	158.82
Partial Build	240.12	220.07	214.04	200.73	191.88	177.15
Buy	281.29	270.92	255.51	250.18	226.09	216.80
Build - Including CCR & 316b	226.99	208.72	201.71	187.36	178.58	163.73
Partial Build - Including & CCR 316b	246.13	225.68	220.00	206.28	197.04	181.96
Buy - Including CCR & 316b	287.05	276.25	261.26	255.50	231.07	221.43

**Big Rivers Electric Corporation**  
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**Present Value of Revenue Requirements**

	2024	2025	2026	Present Value	Net Present Value
Base Case	140.51	128.67	133.93	<b>2,940.44</b>	
<u>Environmental Compliance Options</u>					
Build	158.14	146.15	149.48	<b>3,210.38</b>	<b>(269.94)</b>
Partial Build	176.78	164.60	168.87	<b>3,410.37</b>	<b>(469.93)</b>
Buy	204.72	209.28	196.70	<b>3,920.79</b>	<b>(980.35)</b>
Build - Including CCR & 316b	162.71	150.41	153.42	<b>3,263.62</b>	<b>(323.18)</b>
Partial Build - Including & CCR 316b	181.24	168.77	172.73	<b>3,461.62</b>	<b>(521.18)</b>
Buy - Including CCR & 316b	209.04	213.28	200.44	<b>3,971.64</b>	<b>(1,031.20)</b>

**Big Rivers Electric Corporation  
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Percentage Rate Increase - 2020**

	Rate (\$/MWh)		Increase (%)
	Base 2020	Build 2020	Relative to 2020
<b><u>Without CCR &amp; 316b</u></b>			
Rural	59.90	64.39	7.5%
Large Industrial	52.82	56.30	6.6%
Smelter	56.41	60.31	6.9%
<b><u>With CCR &amp; 316b</u></b>			
Rural	59.90	65.54	9.4%
Large Industrial	52.82	57.32	8.5%
Smelter	56.41	61.36	8.8%



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1 **Item 5)** *Refer to Big Rivers' response to Item 10 of Staffs First Request,*  
2 *page 1 at lines 11-14. Provide a summary of major availability detractors*  
3 *that have impacted the following units over the past 5 years:*

4

5

*a. Coleman Unit 1,*

6

*b. Coleman Unit 2,*

7

*c. Coleman Unit 3,*

8

*d. Wilson Unit 1,*

9

*e. Green Unit 1,*

10

*f. Green Unit 2,*

11

*g. Henderson Unit 1,*

12

*h. Henderson Unit 2, and*

13

*i. Reid Unit 1.*

14

15 **Response)** A table showing the Equivalent Availability Factor ("EAF") for Big  
16 Rivers' units for the last five years is shown on the following page.

17

18

19

20

21

22

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1

<b>Big Rivers Electric Corporation Equivalent Availability Factor ("EAF") for Units 2007 through 2011</b>					
<b>Unit</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
<b>Coleman 1</b>	90.8	69.6	95.3	95.0	92.9
<b>Coleman 2</b>	81.1	96.4	96.0	86.6	93.6
<b>Coleman 3</b>	95.4	96.3	85.2	95.6	92.3
<b>Green 1</b>	82.6	92.8	95.4	94.2	91.3
<b>Green 2</b>	94.8	93.5	82.2	99.0	97.5
<b>HMP&amp;L 1</b>	89.0	82.3	76.3	94.9	91.0
<b>HMP&amp;L 2</b>	85.7	88.4	95.9	87.9	88.5
<b>Wilson 1</b>	89.4	84.7	77.6	93.3	94.8
<b>Reid 1</b>	88.4	79.9	89.9	90.9	92.6

2

3 Most of the major availability detractors are due to planned outages.

4

5

a. Coleman Unit 1:

6

i. Planned outage from 4/22/08 thru 7/22/08 (1,176 POH and  
7 996 Extended POH) for turbine blade repair. POH =  
8 Planned Outage Hours.

8

9

b. Coleman Unit 2:

10

i. Planned outage from 5/4/07 thru 6/23/07 (1,155 POH).

11

ii. Planned outage from 10/2/10 thru 10/29/10 (664 POH).

12

c. Coleman Unit 3:

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- 1                   i. Planned outage from 5/25/09 thru 6/27/09 (790 POH).  
2           d. Wilson Unit 1:  
3                   i. Planned outage from 4/27/07 thru 5/4/07 (150 POH).  
4                   ii. Forced outage to repair a superheater tube leak from 2/3/07  
5                   to 2/9/07 (152 FOH). FOH = Forced Outage Hours.  
6                   iii. Planned outage from 3/1/08 thru 3/30/08 (703 POH).  
7                   iv. Planned outage from 2/6/09 thru 2/11/09 (109 POH).  
8                   v. Planned outage from 10/3/09 thru 12/2/09 (1,461 POH).  
9           e. Green Unit 1:  
10                   i. Planned outage from 3/2/07 thru 4/21/07 (1,193 POH).  
11           f. Green Unit 2:  
12                   i. Planned outage from 3/27/09 thru 5/25/09 (1,224 POH and  
13                   165 Extended POH).  
14           g. HMP&L Unit 1:  
15                   i. Planned outage from 9/28/07 thru 10/19/07 (504 POH).  
16                   ii. Forced outage for turbine blade repair from 11/24/08 thru  
17                   2/7/09 (895 FOH in 2008, 906 FOH in 2009).  
18                   iii. Planned outage from 2/20/09 thru 3/16/09 (555 POH and 7  
19                   Extended POH).  
20           h. HMP&L Unit 2:  
21                   i. Planned outage from 10/5/07 thru 11/7/07 (432 POH and  
22                   352 Extended POH).



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- 1                   ii. Planned outage from 9/21/08 thru 10/22/08 (744 POH and  
2                   14 Extended POH).  
3                   iii. Planned outage from 4/2/10 to 4/22/10 (474 POH).  
4                   iv. In 2011 had several small outages and derates (398 FOH,  
5                   236 MOH, and 370 EFDH) that resulted in a low EAF  
6                   value. None of these outages were greater than 5 days in  
7                   duration. MOH = Maintenance Outage Hours; EFDH =  
8                   Equivalent Forced Derate Hours.  
9                   i. Reid Unit 1:  
10                  i. In 2007 had several small outages (513 FOH and 370 MOH)  
11                  that resulted in a low EAF value. None of these outages  
12                  were greater than 5 days in duration.  
13                  ii. Maintenance outage to replace the auxiliary transformer  
14                  from 5/1/08 thru 5/15/08 (343 MOH)  
15                  iii. Planned outage from 11/1/08 thru 11/22/08 (514 POH).  
16                  iv. Forced outage from 2/9/09 thru 2/17/09 (196 FOH) due to  
17                  opacity/precipitator problems.  
18                  v. Had forced outages from 10/5/09 thru 11/3/09 (674 FOH)  
19                  mainly due to front standard and generator seal oil issues.  
20  
21

22 **Witness)** Robert W. Berry



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1 **Item 6)** *Refer to Big Rivers' response to Staffs First Request, Item 10.b,*  
2 *the Burns and McDonnell Depreciation Study, page ES-3. Provide a*  
3 *summary of the ongoing creep stress analysis and testing that has been*  
4 *completed on each of the following units. Include in the summary an*  
5 *analysis of the high energy piping system to include the analysis of flow*  
6 *accelerated corrosion.*

7

- 8           a. *Coleman Unit 1,*  
9           b. *Coleman Unit 2,*  
10          c. *Coleman Unit 3,*  
11          d. *Wilson Unit 1,*  
12          e. *Green Unit 1,*  
13          f. *Green Unit 2,*  
14          g. *Henderson Unit 1,*  
15          h. *Henderson Unit 2, and*  
16          i. *Reid Unit 1.*

17

18 **Response)** Big Rivers is providing a multi-page table summarizing the latest  
19 ongoing creep stress analysis and testing, which has been completed on Big  
20 Rivers' generating units, on a CONFIDENTIAL CD which is filed under a Petition  
21 for Confidential Treatment.

22

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1 Witness) Robert W. Berry



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1 **Item 7)** *Refer to Big Rivers' response to Staffs First Request, Item 10.b,*  
2 *the Burns and McDonnell Depreciation Study, Table II-6, page 11-14.*  
3 *What are the major reasons for the excessively high EFOR on Reid Unit 1?*

4

5 **Response)** Reid Unit 1 is utilized as a peaking unit and has less service hours  
6 than other Big Rivers' coal units. Equivalent Forced Outage Rate ("EFOR") is  
7 calculated by totaling a unit's forced outage hours ("FOH") and equivalent forced  
8 derated hours ("EFDH") then dividing by the sum of a units service hours ("SH")  
9 and forced outage hours ("FOH").

10

11 
$$\text{EFOR} = (\text{FOH} + \text{EFDH}) / (\text{SH} + \text{FOH})$$

12

13 Since Reid Unit 1 has far less service hours, any forced outage or forced derate  
14 will magnify the EFOR values than a base running unit. For example, two units  
15 have an 80 hour forced outage but one unit has 720 service hours while the other  
16 unit has 7,920 service hours. The EFOR impact of this 80 hour forced outage on  
17 the unit with 720 service hours is 10.0%:  $80/(720+80)$  while the EFOR impact for  
18 the unit with 7,920 service hours is 1.0%:  $80/(7,920+80)$ .

19

Due to the low service hours, the EFOR values for Reid Unit 1 will be high.

20

21

22 **Witness)** Robert W. Berry



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1 **Item 8)** *Refer to Big Rivers' response to Staffs First Request, Item 10.b,*  
2 *the Burns and McDonnell Depreciation Study, page II-16. What are the*  
3 *results of the 2011 oiler chemical cleaning on Wilson Unit 1?*

4

5 **Response)** The boiler chemical cleaning referred to in the Burns & McDonnell  
6 Depreciation Study that was scheduled for the 2011 planned outage at Wilson was  
7 deferred until the next planned outage in 2013 to allow Big Rivers to reduce  
8 expenses in an effort to meet the minimum MFIR requirements of its loan  
9 covenants.

10

11

12 **Witness)** Robert W. Berry

13





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1 **Item 9)** *Refer to Big Rivers' response to Staffs First Request, Item 10.b,*  
2 *the Burns and McDonnell Depreciation Study, page II-19. Provide a*  
3 *summary of the Coleman Unit 3 turbine/generator overhaul that was*  
4 *scheduled for 2012.*

5

6 **Response)** Due to lower than expected off system sales prices and the inability  
7 to acquire the needed and requested revenue (requested \$39.5 million as revised;  
8 granted \$26.7 million) in its last rate case, Big Rivers had to reduce expenses in  
9 order to achieve the minimum MFIR requirements of its loan covenants. The  
10 turbine/generator overhaul referred to in the Burns & McDonnell Depreciation  
11 Study that was scheduled for the 2012 planned outage on Coleman Unit 3 was  
12 deferred until the next planned outage in 2013.

13

14

15 **Witness)** Robert W. Berry

16



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1 **Item 10)** *Refer to Big Rivers' response to Item 18 of Staffs First Request,*  
2 *page 2 at lines 1-4, that describes the multi-prime methodology that Big*  
3 *Rivers' plans for managing the environmental compliance plan projects.*  
4 *Provide a detailed organization plan for the prescribed project*  
5 *management team, including specific relevant skill sets and experience.*

6  
7 **Response)** Overall project management responsibility within Big Rivers will be  
8 assigned to Eric Robeson, Vice President of Environmental Services and  
9 Construction. Mr. Robeson was hired in 2011 specifically to lead Big Rivers'  
10 efforts in this area. The majority of his 30-plus years of utility experience is in  
11 project management. A more detailed listing of Mr. Robeson's project  
12 management experience is attached hereto.

13 Big Rivers will engage outside engineering firms to assist in this  
14 effort. Big Rivers anticipates a single firm will be selected for the project  
15 management role. This firm will be selected based on demonstrated experience  
16 and expertise in managing large pollution control projects in the utility industry.  
17 In addition, the firm will have successfully demonstrated contract administration,  
18 cost control, scheduling, process knowledge start up and turnover experience in  
19 addition to construction management expertise.

20 An overall project manager will be established by the A/E firm. He or  
21 she will be responsible for communicating with Big Rivers on overall project  
22 status including cost, schedule and safety. The project manager will be assisted

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1 by subject matter experts. Skills required to accomplish this task will include  
2 design review, cost control, scheduling, constructability review and promotion of a  
3 safe workplace. This person should have over 20+ years in project management  
4 experience.

5           There will be overall monthly project meetings between Big Rivers,  
6 the selected project management firm, and the various equipment suppliers and  
7 contractors that make up the project team. In addition, weekly updates will occur  
8 for each project among the relevant parties. Finally, daily observations and  
9 communications will take place among those assigned to each plant.

10           In addition, Big Rivers will utilize experienced engineers at each of  
11 its plants to serve as a liaison between the project management team and the  
12 plant. These engineers possess in depth knowledge of local conditions and can  
13 facilitate interfaces between project personnel (contractor, supplier, construction  
14 management, and HQ personnel) and plant personnel. They will also be  
15 knowledgeable of plant safety practices including lock out tag out procedures to  
16 ensure that the projects are safely integrated into the existing facility.

17

18

19 **Witness)** Robert W. Berry

20

**Big Rivers Electric Corporation**  
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**Professional Project Management Experience of Eric Robeson**

**Eric Robeson, Vice President of Environmental Services and Construction**, graduated from Rose Hulman Institute of Technology in 1977 with a Bachelor of Science in Mechanical Engineering and Ball State University in 1988 with a Masters of Business Administration. He is a registered Professional Engineer in the State of Indiana. Mr. Robeson worked at Vectren (and its predecessor company Sigeco) from 1980 to 2011. He served a variety of engineering and managerial positions including Plant Manager, Director of Generation Planning, and Director of Infrastructure Services. He joined Big Rivers in 2011 as Vice President of Construction overseeing environmental compliance efforts and assumed his current position in February 2012.

Relevant Project Management experience includes:

<b>Projects</b>	<b>Years</b>	<b>Amount</b>
Vectren Corporate HQ	2005	\$28.0 M
Culley FGD System	1993	\$100.0 M
Culley Low NOx Burner	1992	\$5.0 M
Culley CEMS Installation	1992	\$3.0 M
Vectren Wagner Operations Center	1988	\$12.0 M
Vectren Central Warehouse	1986	\$5.0 M
Warrick Demineralizer	1988	\$5.0 M
Brown FGD Upgrade	1982	\$5.0 M
Annual Outage Scheduling and Coordination	1982-1995	



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- 1 **Item 11)**     *Refer to the response to Item 28 of Staffs First Request.*  
2  
3             *a. The response states that there are “other cases in*  
4             *which the Commission approved an applicant’s*  
5             *request to establish a regulatory asset, where such*  
6             *treatment is consistent with the Commission’s*  
7             *practice of amortizing prudently incurred but*  
8             *extraordinary expenses over a three-year period for*  
9             *ratemaking purposes? Provide the case numbers for*  
10            *the cases referred to in this response. For each case*  
11            *cited, if the decision in the case does not address the*  
12            *amortization period, provide the case number of the*  
13            *subsequent rate case in which the amortization*  
14            *period was addressed.*  
15            *b. KRS 278.183 expressly permits the recovery of the cost*  
16            *of a Commission-hired consultant through the*  
17            *environmental surcharge. Other utilities have*  
18            *included these costs for recovery in the environmental*  
19            *surcharge as they were incurred as opposed to*  
20            *recording them as a regulatory asset. Clarify whether*  
21            *Big Rivers believes it is necessary to include the costs*



**BIG RIVERS ELECTRIC CORPORATION**

**APPLICATION OF BIG RIVERS ELECTRIC CORPORATION  
FOR APPROVAL OF ITS 2012 ENVIRONMENTAL COMPLIANCE PLAN,  
FOR APPROVAL OF ITS AMENDED ENVIRONMENTAL COST  
RECOVERY SURCHARGE TARIFF, FOR CERTIFICATES OF PUBLIC  
CONVENIENCE AND NECESSITY, AND FOR AUTHORITY TO  
ESTABLISH A REGULATORY ACCOUNT  
CASE NO. 2012-00063**

**Response to Commission Staff's  
Second Request for Information  
Dated June 22, 2012**

**July 6, 2012**

1                    *of the Commission-hired consultant in a regulatory*  
2                    *asset.*

3

4     **Response)**

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- a. To clarify the response to Item 28 of the Staff's First Request, it has been the Commission's practice to amortize rate case expenses over a three-year period and to amortize other types of "extraordinary" expenses over a five-year period. With respect to the latter, historically the Commission has exercised its discretion to approve regulatory assets where a utility has incurred (1) an extraordinary, nonrecurring expense which could not have reasonably been anticipated or included in the utility's planning; (2) an expense resulting from a statutory or administrative directive; (3) an expense in relation to an industry sponsored initiative; or (4) an extraordinary or nonrecurring expense that over time will result in a saving that fully offsets the cost.<sup>2</sup> Some examples include expenses related to storm damage, workforce reduction initiatives, write-offs for retired mechanical meters, and post-merger retirement/benefit packages.

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<sup>2</sup> Case No. 2008-00436, The Application of East Kentucky Power Cooperative, Inc. for an Order Approving Accounting Practices to Establish a Regulatory Asset Related to Certain Replacement Power Costs Resulting from Generation Forced Outages, Order dated December 23, 2008, page 4.

**BIG RIVERS ELECTRIC CORPORATION**

**APPLICATION OF BIG RIVERS ELECTRIC CORPORATION  
FOR APPROVAL OF ITS 2012 ENVIRONMENTAL COMPLIANCE PLAN,  
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RECOVERY SURCHARGE TARIFF, FOR CERTIFICATES OF PUBLIC  
CONVENIENCE AND NECESSITY, AND FOR AUTHORITY TO  
ESTABLISH A REGULATORY ACCOUNT  
CASE NO. 2012-00063**

**Response to Commission Staff's  
Second Request for Information  
Dated June 22, 2012**

**July 6, 2012**

1                   Big Rivers believes it is appropriate for the Commission to  
2                   allow Big Rivers to establish a regulatory asset to recover its costs  
3                   incurred in this proceeding as an extraordinary expense “resulting  
4                   from a statutory or administrative directive” because Big Rivers  
5                   would not be able to construct the equipment it plans to construct  
6                   to comply with EPA regulations without (i) obtaining certificates  
7                   of public convenience and necessity (“CPCNs”) and (ii) having a  
8                   way to recover the cost of the construction. The costs Big Rivers  
9                   incurs in this proceeding are necessary to obtain the CPCNs and  
10                  cost recovery, and as such, the Commission should allow Big  
11                  Rivers to establish a regulatory asset for these costs.

12                  Although the amortization period for such “extraordinary”  
13                  expenses is ordinarily five years, Big Rivers requested a three  
14                  year amortization period because the costs here (which are costs  
15                  for outside services related to the preparation of an application  
16                  and the prosecution of a case in which the applicant seeks rate  
17                  recovery from its ratepayers) closely resembles rate case expenses,  
18                  which are ordinarily amortized over three years.

19                  A summary of cases is provided in the attachment. For  
20                  each case cited, if the decision in the case does not address the  
21                  amortization period, the case number of the subsequent rate case

**BIG RIVERS ELECTRIC CORPORATION**

**APPLICATION OF BIG RIVERS ELECTRIC CORPORATION  
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RECOVERY SURCHARGE TARIFF, FOR CERTIFICATES OF PUBLIC  
CONVENIENCE AND NECESSITY, AND FOR AUTHORITY TO  
ESTABLISH A REGULATORY ACCOUNT  
CASE NO. 2012-00063**

**Response to Commission Staff's  
Second Request for Information  
Dated June 22, 2012**

**July 6, 2012**

1                   in which the amortization period was addressed is also included in  
2                   the table (if such recovery has been sought yet by the Applicant).  
3                   b. Big Rivers does not believe it is necessary to include the costs of the  
4                   Commission-hired consultant in the regulatory asset. Big Rivers  
5                   proposes to include those costs for recovery in the environmental  
6                   surcharge as they are incurred.  
7  
8  
9                   **Witness)   John Wolfram**  
10

**Big Rivers Electric Corporation  
Case No. 2012-00063  
Cases Related to Regulatory Assets**

#	Case No.	Applicant	Description	Regulatory Asset Established?	Ratemaking Amortization Period
1	6220	LG&E	1974 Tornado storm damage	Yes	5 years
2	2001-00169	KU & LG&E	“VDT” Workforce reduction costs	Yes	5 years *
3	2003-00434	KU	March 2003 Ice storm damage	Yes	5 years *
4	2007-00089	Delta Natural Gas	Rate case expenses	Yes	3 years *
5	2008-00456 (deferral) 2009-00175 (deferral) 2009-00549 (ratemaking)	LG&E	2008 Hurricane Ike & 2009 Winter Storm	Yes	10 years *
6	2009-00549	LG&E	Rate case expenses	Yes	3 years *
7	2008-00457 (deferral) 2009-00174 (deferral) 2009-00548 (ratemaking)	KU	2008 Hurricane Ike and 2009 Winter Storm	Yes	10 years *
8	2009-00548	KU	Rate case expenses	Yes	3 years *
9	2008-00436 (deferral) 2008-00409 (ratemaking)	EKPC	Replacement Power Costs From Generation Forced Outages	Yes	3 years *
10	2008-00376	Taylor County RECC	Write-off of Retired Mechanical Meters	Yes	TBD

**Big Rivers Electric Corporation**  
**Case No. 2012-00063**  
**Cases Related to Regulatory Assets**

#	Case No.	Applicant	Description	Regulatory Asset Established?	Ratemaking Amortization Period
11	2010-00116	Delta Natural Gas	Rate case expenses	Yes	3 years
12	2010-00449 (deferral)	EKPC	Amount Expended on Canceled Smith 1 Generating Unit	Yes	TBD
13	2011-00096	South Kentucky RECC	Write-off of Retired Mechanical Meters	Yes	15 years
14	2011-00036	Big Rivers	Rate case expenses	Yes	3 years
15	2011-00380	LG&E	August 2011 Wind Storm damage	Yes	TBD
16	2011-00422	Columbia Gas of Kentucky	OPEB Expenses	Yes	TBD
17	2012-00102	Shelby Energy Cooperative	Write-off of Retired Mechanical Meters	Yes	5 years

\*Resolved by Commission-approved Settlement or Stipulation Agreement



**BIG RIVERS ELECTRIC CORPORATION**

**APPLICATION OF BIG RIVERS ELECTRIC CORPORATION  
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FOR APPROVAL OF ITS AMENDED ENVIRONMENTAL COST  
RECOVERY SURCHARGE TARIFF, FOR CERTIFICATES OF PUBLIC  
CONVENIENCE AND NECESSITY, AND FOR AUTHORITY TO  
ESTABLISH A REGULATORY ACCOUNT  
CASE NO. 2012-00063**

**Response to Commission Staff's  
Second Request for Information  
Dated June 22, 2012**

**July 6, 2012**

1 **Item 12)** *Refer to the response to Items 34 and 35 of Staffs First Request.*  
2 *Provide revised tariff pages and ES Form pages to reflect the text changes*  
3 *discussed in the responses to Items 34.a, 34.c, 35.a, and 35.b.*

4

5 **Response)** See the attached revisions to Exhibit Wolfram-2 (Proposed Big Rivers  
6 ES Tariff and Other Tariff Sheets), Exhibit Wolfram-3 (Proposed Big Rivers ES  
7 Tariff and Other Tariff Sheets – Redline) and Exhibit Wolfram-5 (Proposed Big  
8 Rivers ES Monthly Reports), consistent with Big Rivers' responses to Items 34 and  
9 35 of the Staff's First Request for Information. For convenience, each exhibit is  
10 provided in full (not just the pages that have been revised).

11

12

13 **Witness)** John Wolfram

14

Case No. 2012-00063

Revised Exhibit Wolfram-2 – Proposed Big Rivers ES Tariff (*Start*)



For All Territory Served By  
 Cooperative's Transmission System  
 P.S.C. KY. No. 24

First Revised SHEET NO. 3

Big Rivers Electric Corporation  
 (Name of Utility)

CANCELLING P.S.C. KY. No. 24

Original SHEET NO. 3

**RATES, TERMS AND CONDITIONS – SECTION 1**

**STANDARD RATE – RDS – Rural Delivery Service  
 Billing Form**

[T]  
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BIG RIVERS ELECTRIC CORP. INVOICE  
 P. O. BOX 24  
 MONTH ENDING mm/dd/yy HENDERSON, KY 42419-0024

TO: Member's Name	ACCOUNT		BILLED PEAK	mm/dd	Time		
SERVICE FROM: mm/dd/yyyy	THRU	mm/dd/yyyy					
SUBSTATION	BILLED KW	KWH	L.F. COIN	PREVIOUS READING	PRESENT READING	DIFF.	KW / KWH MULT.
Name	0,000	0,000,000	00.00	000000.000	000000.000	000000.000	1000
Name	0,000	0,000,000	00.00	000000.000	000000.000	000000.000	1000
TOTAL	0,000	0,000,000					

ACTUAL DEMAND			kW TIMES	\$0.00	EQUALS	\$00.00
ADJUSTMENT			kW TIMES	\$0.00	EQUALS	\$00.00
ENERGY			kWh TIMES	\$0.00	EQUALS	\$00.00
FUEL ADJUSTMENT CLAUSE			kWh TIMES	\$0.00	EQUALS	\$00.00
NSNFP			kWh TIMES	\$0.00	EQUALS	\$00.00
SUBTOTAL						\$00.00
ENVIRONMENTAL SURCHARGE	\$00.00		TIMES	0.00%	EQUALS	\$00.00
POWER FACTOR PENALTY			kW TIMES	\$0.00	EQUALS	\$00.00
UNWIND SURCREDIT			kWh TIMES	\$0.00	EQUALS	\$00.00
MEMBER RATE STABILITY MECHANISM			AMOUNT			\$00.00
REBATE ADJUSTMENT			AMOUNT			\$00.00
RURAL ECONOMIC RESERVE			AMOUNT			\$00.00
CSR			AMOUNT			\$00.00
RRES			kWh TIMES	\$0.00	EQUALS	\$00.00
ADJUSTMENT			kWh TIMES	\$0.00	EQUALS	\$00.00
TOTAL AMOUNT DUE						\$00.00

[T]  
↓

[T]  
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LOAD FACTOR		POWER FACTOR			MILLS PER KWH
COIN	BILLED	BASE	AVERAGE	@ PEAK	00.00
00.00%	00.00%	00.00%	00.00%	00.00%	

DUE IN IMMEDIATELY AVAILABLE FUNDS ON OR BEFORE THE FIRST WORKING DAY AFTER THE 24<sup>TH</sup> OF THE MONTH

DATE OF ISSUE April 2, 2012 DATE EFFECTIVE October 2, 2012

ISSUED BY *Mark A. Bailey*

Mark A. Bailey, President and Chief Executive Officer  
 Big Rivers Electric Corporation, 201 Third Street, Henderson, KY 42420

For All Territory Served By  
 Cooperative's Transmission System  
 P.S.C. KY. No. 24

First Revised SHEET NO. 8

Big Rivers Electric Corporation  
 (Name of Utility)

CANCELLING P.S.C. KY. No. 24

Original SHEET NO. 8

**RATES, TERMS AND CONDITIONS – SECTION 1**

**STANDARD RATE – LIC – Large Industrial Customer  
 Billing Form**

BIG RIVERS ELECTRIC CORP.		INVOICE P. O. BOX 24		HENDERSON, KY 42419-0024		
		MONTH ENDING mm/dd/yy				
TO:	Member's Name	ACCOUNT				
SUBSTATION	Substation Name	SERVICE FROM		mm/dd/yy	THRU	mm/dd/yy
USAGE	DEMAND	TIME	DAY	METER	MULT	KW DEMAND
		00:00 A (or P)	Mm/dd		1000	00,000
	POWER FACTOR	BASE	PEAK	AVERAGE	BILLED	
		00.00%	00.00%	00.00%	PEAK	
ENERGY		PREVIOUS	PRESENT	DIFFERENCE	MULT	KWH USED
		00000.000	00000.000	0000.000	1000	00,000,000
ACTUAL DEMAND	0,000	KW TIMES	\$00.00000000		EQUALS	\$ 00,000.00
ADJUSTMENT	0,000	KW TIMES	\$00.00000000		EQUALS	\$ 00,000.00
				SUB-TOTAL		\$ 00,000.00
ENERGY	0,000,000	kWh TIMES	\$0.00000000		EQUALS	\$ 00,000.00
FUEL ADJUSTMENT CLAUSE	0,000,000	kWh TIMES	\$0.00000000		EQUALS	\$ 00,000.00
NSNFP	0,000,000	kWh TIMES	\$0.00000000		EQUALS	\$ 00,000.00
				SUB-TOTAL		\$ 00,000.00
ENVIRONMENTAL SURCHARGE	\$0,000.00	TIMES	00%		EQUALS	\$ 00,000.00
POWER FACTOR PENALTY	0,000	KW TIMES	\$00.00000000		EQUALS	\$ 00,000.00
UNWIND SURCREDIT	0,000,000	kWh TIMES	\$0.00000000		EQUALS	\$ 00,000.00-
MEMBER RATE STABILITY MECHANISM	0,000,000	AMOUNT				0,000.00-
CSR	0,000,000	AMOUNT				\$ 00,000.00
RRES	0,000,000	kWh TIMES	\$0.00000000		EQUALS	\$ 00,000.00
REBATE ADJUSTMENT	0,000,000	AMOUNT				\$ 00,000.00
ADJUSTMENT	0,000,000	kWh TIMES	\$0.00000000		EQUALS	\$ 00,000.00
				SUB-TOTAL		\$ 00,000.00
						TOTAL AMOUNT DUE \$ 00,000.00

[T]  
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[T]  
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LOAD FACTOR		POWER FACTOR			MILLS PER KWH
ACTUAL	BILLED	BASE	AVERAGE	@ PEAK	00.00
00.00%	00.00%	00.00%	00.00%	00.00%	

DUE IN IMMEDIATELY AVAILABLE FUNDS ON OR BEFORE THE FIRST WORKING DAY AFTER THE 24<sup>TH</sup> OF THE MONTH

DATE OF ISSUE April 2, 2012 DATE EFFECTIVE October 2, 2012

*Mark A. Bailey*  
 ISSUED BY

Mark A. Bailey, President and Chief Executive Officer  
 Big Rivers Electric Corporation, 201 Third Street, Henderson, KY 42420

For All Territory Served By  
 Cooperative's Transmission System  
 P.S.C. KY. No. 24

First Revised SHEET NO. 33

**Big Rivers Electric Corporation**  
 (Name of Utility)

CANCELLING P.S.C. KY. No. 24

Original SHEET NO. 33

**RATES, TERMS AND CONDITIONS – SECTION 1**

**STANDARD RATE – LICX – Large Industrial Customer Expansion  
 Billing Form**

BIG RIVERS ELECTRIC CORP		INVOICE P O. BOX 24 MONTH ENDING mm/dd/yy		HENDERSON, KY 42419-0024			[T]
TO: LARGE INDUSTRIAL CUSTOMER EXPANSION		ACCOUNT SERVICE FROM		mm/dd/yy	THRU	mm/dd/yy	↓
DELIVERY POINTS		USAGE:					
USAGE	DEMAND	TIME	DAY	METER	MULT	KW DEMAND	
		00:00 A (or P)	mm/dd		1000	00,000	
POWER FACTOR		BASE	PEAK	AVERAGE		KW DEMAND BILLED	
EXPANSION DEMAND		00.00%	00 00%	00 00%		000,000	
ENERGY		PREVIOUS	PRESENT	DIFFERENCE	MULT	KWH USED	
EXPANSION ENERGY		00000 000	00000 000	0000 000	1000	00,000,000	
<b>EXPANSION DEMAND &amp; EXPANSION ENERGY</b>							
	EXPANSION DEMAND, INCLUDING LOSSES		kw	TIMES	\$	EQUALS	\$
	EXPANSION ENERGY, INCLUDING LOSSES		kWh	TIMES	\$	EQUALS	\$
	OTHER EXPANSION SERVICE CHARGES					EQUALS	\$
	SUBTOTAL						\$
<b>EXPANSION DEMAND TRANSMISSION</b>							
	LOAD RATIO SHARE OF NETWORK LOAD						\$
<b>EXPANSION DEMAND &amp; EXPANSION ENERGY ANCILLARY SERVICES</b>							
	SCHEDULING SYSTEM CONTROL & DISPATCH SERVICE						\$
	REACTIVE SUPPLY & VOLTAGE CONTROL FROM GENERATION SOURCES SERVICE						\$
	REGULATION & FREQUENCY RESPONSIVE SERVICE						\$
	ENERGY IMBALANCE SERVICE						\$
	OPERATING RESERVE – SPINNING RESERVE SERVICE						\$
	OPERATING RESERVE – SUPPLEMENTAL RESERVE SERVICE						\$
	SUBTOTAL						\$
<b>BIG RIVERS ADDER</b>							
	EXPANSION DEMAND		kw	TIMES	\$	EQUALS	\$
FUEL ADJUSTMENT CLAUSE		0,000,000	kWh	TIMES	\$0 0000000	EQUALS	\$
NSNFP		0,000,000	kWh	TIMES	\$0 0000000	EQUALS	\$
	SUBTOTAL						\$
ENVIRONMENTAL SURCHARGE		\$00,000 00		TIMES	00.00%	EQUALS	\$
<b>EXPANSION DEMAND/ENERGY – POWER FACTOR PENALTY</b>							
UNWIND SURCREDIT		0,000,000	kWh	TIMES	\$0 0000000	EQUALS	\$
MEMBER RATE STABILITY MECHANISM		0,000,000		AMOUNT		EQUALS	\$
CSR		0,000,000		AMOUNT		EQUALS	\$
RRES		0,000,000	kWh	TIMES	\$0 0000000	EQUALS	\$
REBATE ADJUSTMENT		0,000,000		AMOUNT		EQUALS	\$
	TOTAL AMOUNT DUE						\$

----- LOAD FACTOR -----  
 ACTUAL BILLED  
 00 00% 00 00%

MILLS PER KWH  
 00 00

DUE IN IMMEDIATELY AVAILABLE FUNDS ON OR BEFORE THE FIRST WORKING DAY AFTER THE 24<sup>TH</sup> OF THE MONTH

DATE OF ISSUE April 2, 2012 DATE EFFECTIVE October 2, 2012

ISSUED BY *Mark A. Bailey*

Mark A. Bailey, President and Chief Executive Officer  
 Big Rivers Electric Corporation, 201 Third Street, Henderson, KY 42420

For All Territory Served By  
Cooperative's Transmission System  
P.S.C. KY. No. 24

First Revised SHEET NO. 46

Big Rivers Electric Corporation  
(Name of Utility)

CANCELLING P.S.C. KY. No. 24

Original SHEET NO. 46

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RATES, TERMS AND CONDITIONS – SECTION 2

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**ES - Environmental Surcharge:** [T]

**Applicability:**  
To all Big Rivers' Members. [T]

**Availability:**  
The Environmental Surcharge ("ES") is mandatory to the Rural Delivery Service, Large Industrial Customer, and Large Industrial Customer Expansion Standard Rate Schedules (Standard Rates RDS, LIC, and LICX, respectively), and to the FAC and the Non-FAC PPA adjustment clauses, including service to the Smelters under the two Wholesale Electric Service Agreements each dated as of July 1, 2009, between Big Rivers and Kenergy with respect to service by Kenergy to the Smelters. [T]  
[T]  
[T]

**Rate:**  
The ES shall provide for monthly adjustments based on a percent of revenues equal to the difference between the environmental compliance costs in the base period and in the current period based on the following formula: [T]  
[T][N]

$$\text{CESF} = \text{Net Jurisdictional } E(m) / \text{Jurisdictional } R(m)$$

$$\text{MESF} = \text{CESF} - \text{BESF}$$

MESF = Monthly Environmental Surcharge Factor  
CESF = Current Environmental Surcharge Factor  
BESF = Base Environmental Surcharge Factor of \$0.00000/kWh

Where E(m) is the total of each approved environmental compliance plan revenue requirement of environmental costs for the current expense month and R(m) is the revenue for the current expense month as set forth below. [T]

**Definitions:** [T][N]

(1)  $E(m) = [(RB/12)(RORORB)] + OE - BAS$

Where:

(a) RB is the Environmental Compliance Rate Base, defined as electric plant in service for applicable environmental projects adjusted for accumulated depreciation, cash working capital, spare parts inventory, and limestone inventory, and emission allowance inventory;

[T]  
↓

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DATE OF ISSUE July 6, 2012 DATE EFFECTIVE October 2, 2012

*Mark A. Bailey*  
ISSUED BY

Mark A. Bailey, President and Chief Executive Officer  
Big Rivers Electric Corporation, 201 Third Street, Henderson, KY 42420

For All Territory Served By  
Cooperative's Transmission System  
P.S.C. KY. No. 24

First Revised SHEET NO. 47

Big Rivers Electric Corporation  
(Name of Utility)

CANCELLING P.S.C. KY. No. 24

Original SHEET NO. 47

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RATES, TERMS AND CONDITIONS – SECTION 2

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**ES - Environmental Surcharge – (continued)**

**Definitions (continued):**

- (b) RORORB is the Rate of Return on the Environmental Compliance Rate Base, designated as the average cost of debt for environmental compliance plan projects approved by the Commission plus application of a Times Interest Earned Ratio of 1.24; [T] ↓
- (c) OE represents the Monthly Pollution Control Operating Expenses, defined as the operating and maintenance expense and emission allowance expense of approved environmental compliance plans; and [T]
- (d) BAS is the net proceeds from By-Products and Emission Allowance Sales. [T]
- (2) Total E(m) is multiplied by the Jurisdictional System Allocation Ratio to arrive at Jurisdictional E(m). The Jurisdictional Allocation Ratio is the ratio of the 12-month total revenue from sales to Members to which the ES will be applied ending with the current expense month, divided by the 12-month total revenue from sales to Members and off-system sales for the current expense month. [T] ↓
- (3) The revenue R(m) is the average monthly revenue, including base revenues and automatic adjustment clause charges or credits less Environmental Cost Recovery Surcharge revenues, for Big Rivers for the twelve months ending with the current expense month. [T] ↓
- (4) Jurisdictional E(m) is adjusted for Over/(Under) Recovery and, if ordered by the Public Service Commission, a Prior Period Adjustment to arrive at Net Jurisdictional E(m). [T]
- (5) The current expense month (m) shall be the second month preceding the month in which the ES is billed. [T]

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DATE OF ISSUE July 6, 2012 DATE EFFECTIVE October 2, 2012

*Mark A. Bailey*  
ISSUED BY

Mark A. Bailey, President and Chief Executive Officer  
Big Rivers Electric Corporation, 201 Third Street, Henderson, KY 42420

Case No. 2012-00063

Revised Exhibit Wolfram-2 – Proposed Big Rivers ES Tariff (*End*)

For All Territory Served By  
 Cooperative's Transmission System  
 P.S.C. KY. No. 24

Big Rivers Electric Corporation  
 (Name of Utility)

First Revised SHEET NO. 3  
 CANCELLING P.S.C. KY. No. 24  
Original SHEET NO. 3

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RATES, TERMS AND CONDITIONS – SECTION 1

**STANDARD RATE – RDS – Rural Delivery Service  
 Billing Form**

[T]  
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BIG RIVERS ELECTRIC CORP INVOICE  
 P. O. BOX 24  
 MONTH ENDING mm/dd/yy HENDERSON, KY 42419-0024

TO: Member's Name	ACCOUNT	BILLED PEAK	Time
SERVICE FROM: mm/dd/yyyy	THRU mm/dd/yyyy	mm/dd	
SUBSTATION	BILLED KWH	KWH	L.F. COIN
Name	0,000	0,000,000	00 00
Name	0,000	0,000,000	00 00
TOTAL	0,000	0,000,000	

PREVIOUS READING	PRESENT READING	DIFF.	KW / KWH MULT.
000000 000	000000 000	00000 000	1000
000000 000	000000 000	00000 000	1000

ACTUAL DEMAND	kw TIMES	\$0.00	EQUALS	\$00.00
ADJUSTMENT	kw TIMES	\$0.00	EQUALS	\$00.00
ENERGY	kWh TIMES	\$0.00	EQUALS	\$00.00
FUEL ADJUSTMENT CLAUSE	kWh TIMES	\$0.00	EQUALS	\$00.00
NSNFP	kWh TIMES	\$0.00	EQUALS	\$00.00
		SUBTOTAL		\$00.00
ENVIRONMENTAL SURCHARGE	TIMES	0.00%	EQUALS	\$00.00
POWER FACTOR PENALTY	kw TIMES	\$0.00	EQUALS	\$00.00
UNWIND SURCREDIT	kWh TIMES	\$0.00	EQUALS	\$00.00
MEMBER RATE STABILITY MECHANISM	AMOUNT			\$00.00
REBATE ADJUSTMENT	AMOUNT			\$00.00
RURAL ECONOMIC RESERVE	AMOUNT			\$00.00
CSR	AMOUNT			\$00.00
RRES	kWh TIMES	\$0.00	EQUALS	\$00.00
ADJUSTMENT	kWh TIMES	\$0.00	EQUALS	\$00.00
TOTAL AMOUNT DUE				\$00.00

[T]  
↓

Deleted: [ POWER FACTOR ] PENALTY

Deleted: kWh TIMES

Deleted: \$0.00

[T]  
↓

Deleted: [ NSNFP ]

LOAD FACTOR: COIN 00 00%, BILLED 00 00%, BASE 00 00%, POWER FACTOR: AVERAGE 00 00%, @ PEAK 00 00%, MILLS PER KWH 00 00

DUE IN IMMEDIATELY AVAILABLE FUNDS ON OR BEFORE THE FIRST WORKING DAY AFTER THE 24<sup>TH</sup> OF THE MONTH

Deleted: December 20, 2011

Deleted: September 1, 2011

Deleted: Issued by Authority of Orders of the Public Service Commission in Case No. 2011-00036 dated November 17, 2011, and December 14, 2011.

DATE OF ISSUE April 2, 2012 DATE EFFECTIVE October 2, 2012

ISSUED BY Mark A. Bailey, President and Chief Executive Officer  
 Big Rivers Electric Corporation, 201 Third Street, Henderson, KY 42420

For All Territory Served By  
 Cooperative's Transmission System  
 P.S.C. KY. No. 24

Big Rivers Electric Corporation  
 (Name of Utility)

First Revised SHEET NO. 8

CANCELLING P.S.C. KY. No. 24

Original SHEET NO. 8

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RATES, TERMS AND CONDITIONS – SECTION I

**STANDARD RATE – LIC – Large Industrial Customer  
 Billing Form**

TO: Member's Name		ACCOUNT		INVOICE		
BIG RIVERS ELECTRIC CORP		P. O. BOX 24		HENDERSON, KY 42419-0024		
SUBSTATION		MONTH ENDING mm/dd/yy		THRU mm/dd/yy		
USAGE	DEMAND	TIME	DAY	METER	MULT	KW DEMAND
		00:00 A (or P)	Mm/dd		1000	00,000
POWER FACTOR		BASE	PEAK	AVERAGE	BILLED	
		00 00%	00 00%	00 00%	PEAK	
ENERGY	PREVIOUS	PRESENT	DIFFERENCE	MULT	KWH USED	
	00000 000	00000 000	0000 000	1000	00,000,000	
ACTUAL DEMAND	0,000	KW TIMES	\$00 0000000	EQUALS	\$ 00,000 00	
ADJUSTMENT	0,000	KW TIMES	\$00 0000000	EQUALS	\$ 00,000 00	
				SUB-TOTAL	\$ 00,000 00	
ENERGY	0,000,000	KWh TIMES	\$0 0000000	EQUALS	\$ 00,000 00	
FUEL ADJUSTMENT CLAUSE	0,000,000	KWh TIMES	\$0 0000000	EQUALS	\$ 00,000 00	
NSNFP	0,000,000	KWh TIMES	\$0,0000000	EQUALS	\$ 00,000 00	
				SUB-TOTAL	\$ 00,000 00	
ENVIRONMENTAL SURCHARGE	\$0,000.00	TIMES	00%	EQUALS	\$ 00,000 00	
POWER FACTOR PENALTY	0,000	KW TIMES	\$00 0000000	EQUALS	\$ 00,000 00	
UNWIND SURCREDIT	0,000,000	KWh TIMES	\$0 0000000	EQUALS	\$ 00,000 00-	
MEMBER RATE STABILITY MECHANISM	0,000,000	AMOUNT			0,000 00-	
CSR	0,000,000	AMOUNT			\$ 00,000 00	
RRES	0,000,000	KWh TIMES	\$0 0000000	EQUALS	\$ 00,000 00	
REBATE ADJUSTMENT	0,000,000	AMOUNT			\$ 00,000 00	
ADJUSTMENT	0,000,000	KWh TIMES	\$0 0000000	EQUALS	\$ 00,000 00	
				SUB-TOTAL	\$ 00,000 00	
				TOTAL AMOUNT DUE	\$ 00,000 00	

LOAD FACTOR		POWER FACTOR			MILLS PER KWH
ACTUAL	BILLED	BASE	AVERAGE	@ PEAK	
00 00%	00 00%	00 00%	00 00%	00 00%	00 00

DUE IN IMMEDIATELY AVAILABLE FUNDS ON OR BEFORE THE FIRST WORKING DAY AFTER THE 24<sup>TH</sup> OF THE MONTH

[T]

[T]

Deleted: POWER FACTOR PENALTY

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Deleted: NSNFP

Deleted: December 20, 2011

Deleted: September 1, 2011

Deleted: Issued by Authority of Orders of the Public Service Commission in Case No. 2011-00036 dated November 17, 2011, and December 14, 2011.

DATE OF ISSUE April 2, 2012 DATE EFFECTIVE October 2, 2012

ISSUED BY Mark A. Bailey, President and Chief Executive Officer  
Big Rivers Electric Corporation, 201 Third Street, Henderson, KY 42420



For All Territory Served By  
 Cooperative's Transmission System  
 P.S.C. KY. No. 24

Big Rivers Electric Corporation  
 (Name of Utility)

First Revised SHEET NO. 33  
 CANCELLING P.S.C. KY. No. 24  
Original SHEET NO. 33

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**RATES, TERMS AND CONDITIONS – SECTION 1**

**STANDARD RATE – LICX – Large Industrial Customer Expansion Billing Form**

BIG RIVERS ELECTRIC CORP		INVOICE P O BOX 24		HENNDERSON, KY 42419-0024		
		MONTH ENDING mm/dd/yy				
TO: LARGE INDUSTRIAL CUSTOMER EXPANSION			ACCOUNT			
DELIVERY POINTS			SERVICE FROM mm/dd/yy THRU mm/dd/yy			
USAGE			USAGE:			
USAGE	DEMAND	TIME	DAY	METER	MULT	KW DEMAND
		00:00 A (or P)	mm/dd		1000	00,000
POWER FACTOR	BASE	PEAK		AVERAGE		KW DEMAND BILLED
EXPANSION DEMAND	00 00%	00 00%		00 00%		000.000
ENERGY	PREVIOUS	PRESENT		DIFFERENCE	MULT	KWH USED
EXPANSION ENERGY	00000 000	00000 000		00000 000	1000	00,000.000
<b>EXPANSION DEMAND &amp; EXPANSION ENERGY</b>						
EXPANSION DEMAND, INCLUDING LOSSES				kw	TIMES	\$
EXPANSION ENERGY, INCLUDING LOSSES				kWh	TIMES	\$
OTHER EXPANSION SERVICE CHARGES						\$
SUBTOTAL						\$
<b>EXPANSION DEMAND TRANSMISSION</b>						
LOAD RATIO SHARE OF NETWORK LOAD						\$
<b>EXPANSION DEMAND &amp; EXPANSION ENERGY ANCILLARY SERVICES</b>						
SCHEDULING SYSTEM CONTROL & DISPATCH SERVICE						\$
REACTIVE SUPPLY & VOLTAGE CONTROL FROM GENERATION SOURCES SERVICE						\$
REGULATION & FREQUENCY RESPONSIVE SERVICE						\$
ENERGY IMBALANCE SERVICE						\$
OPERATING RESERVE – SPINNING RESERVE SERVICE						\$
OPERATING RESERVE – SUPPLEMENTAL RESERVE SERVICE						\$
SUBTOTAL						\$
<b>BIG RIVERS ADDER</b>						
EXPANSION DEMAND				kw	TIMES	\$
EQUALS						\$
FUEL ADJUSTMENT CLAUSE				0,000,000	kWh TIMES	\$0 0000000
EQUALS						\$
NSNFP				0,000,000	kWh TIMES	\$0 0000000
EQUALS						\$
SUBTOTAL						\$
ENVIRONMENTAL SURCHARGE						\$00,000.00
EXPANSION DEMAND/ENERGY – POWER FACTOR PENALTY				kw	TIMES	\$0,000,000
EQUALS						\$
UNWIND SURCREDIT				0,000,000	kWh TIMES	\$0 0000000
EQUALS						\$
MEMBER RATE STABILITY MECHANISM				0,000,000	AMOUNT	\$
EQUALS						\$
CSR				0,000,000	AMOUNT	\$
EQUALS						\$
RRES				0,000,000	kWh TIMES	\$0 0000000
EQUALS						\$
REBATE ADJUSTMENT				0,000,000	AMOUNT	\$
EQUALS						\$
TOTAL AMOUNT DUE:						\$

[T]

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 POWER FACTOR PENALTY

[T]

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 Deleted: kWh TIMES  
 Deleted: \$0,000,000  
 Deleted: NSNFP  
 Deleted: December 20, 2011  
 Deleted: September 1, 2011  
 Deleted: Issued by Authority of Orders of the Public Service Commission in Case No. 2011-00036 dated November 17, 2011, and December 14, 2011.

LOAD FACTOR  
 ACTUAL 00 00% BILLED 00 00%

DUE IN IMMEDIATELY AVAILABLE FUNDS ON OR BEFORE THE FIRST WORKING DAY AFTER THE 24<sup>TH</sup> OF THE MONTH

DATE OF ISSUE April 2, 2012 DATE EFFECTIVE October 2, 2012

ISSUED BY Mark A. Bailey, President and Chief Executive Officer  
 Big Rivers Electric Corporation, 201 Third Street, Henderson, KY 42420

For All Territory Served By  
Cooperative's Transmission System  
P.S.C. KY. No. 24

First Revised SHEET NO. 46

Big Rivers Electric Corporation  
(Name of Utility)

CANCELLING P.S.C. KY. No. 24

Original SHEET NO. 46

RATES, TERMS AND CONDITIONS – SECTION 2

**ES - Environmental Surcharge:** [T]

**Applicability:**  
To all Big Rivers' Members. [T]

**Availability:**  
The Environmental Surcharge ("ES") is mandatory to the Rural Delivery Service, Large Industrial Customer, and Large Industrial Customer Expansion Standard Rate Schedules (Standard Rates RDS, LIC, and LICX, respectively), and to the FAC and the Non-FAC PPA adjustment clauses, including service to the Smelters under the two Wholesale Electric Service Agreements each dated as of July 1, 2009, between Big Rivers and Kenergy with respect to service by Kenergy to the Smelters. [T]

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Deleted: listed in Section 1 of the General Index

**Rate:**  
The ES shall provide for monthly adjustments based on a percent of revenues equal to the difference between the environmental compliance costs in the base period and in the current period based on the following formula: [T][N]

$$CESF = \text{Net Jurisdictional } E(m) / \text{Jurisdictional } R(m)$$
$$MESF = CESF - BESF$$

MESF = Monthly Environmental Surcharge Factor  
CESF = Current Environmental Surcharge Factor  
BESF = Base Environmental Surcharge Factor of \$0.00000/kWh

Where E(m) is the total of each approved environmental compliance plan revenue requirement of environmental costs for the current expense month and R(m) is the revenue for the current expense month as set forth below.

**Definitions:** [T][N]

(1)  $E(m) = [(RB/12)(RORORB)] + OE - BAS$

Deleted: RORB

Where:

(a) RB is the Environmental Compliance Rate Base, defined as electric plant in service for applicable environmental projects adjusted for accumulated depreciation, cash working capital, spare parts inventory, and limestone inventory, and emission allowance inventory;

[T]  
↓

Deleted: April 2, 2012  
Deleted: May 2, 2012

DATE OF ISSUE July 6, 2012 DATE EFFECTIVE October 2, 2012

ISSUED BY Mark A. Bailey, President and Chief Executive Officer  
Big Rivers Electric Corporation, 201 Third Street, Henderson, KY 42420

For All Territory Served By  
Cooperative's Transmission System  
P.S.C. KY. No. 24

First Revised SHEET NO. 47

Big Rivers Electric Corporation  
(Name of Utility)

CANCELLING P.S.C. KY. No. 24

Original SHEET NO. 47

RATES, TERMS AND CONDITIONS – SECTION 2

**ES - Environmental Surcharge – (continued)**

**Definitions (continued):**

- (b) RORORB is the Rate of Return on the Environmental Compliance Rate Base, designated as the average cost of debt for environmental compliance plan projects approved by the Commission plus application of a Times Interest Earned Ratio of 1.24; [T]
- (c) OE represents the Monthly Pollution Control Operating Expenses, defined as the operating and maintenance expense and emission allowance expense of approved environmental compliance plans; and [T]
- (d) BAS is the net proceeds from By-Products and Emission Allowance Sales. [T]
- (2) Total E(m) is multiplied by the Jurisdictional System Allocation Ratio to arrive at Jurisdictional E(m). The Jurisdictional Allocation Ratio is the ratio of the 12-month total revenue from sales to Members to which the ES will be applied ending with the current expense month, divided by the 12-month total revenue from sales to Members and off-system sales for the current expense month. [T]
- (3) The revenue R(m) is the average monthly revenue, including base revenues and automatic adjustment clause charges or credits less Environmental Cost Recovery Surcharge revenues, for Big Rivers for the twelve months ending with the current expense month. [T]
- (4) Jurisdictional E(m) is adjusted for Over/(Under) Recovery and, if ordered by the Public Service Commission, a Prior Period Adjustment to arrive at Net Jurisdictional E(m). [T]
- (5) The current expense month (m) shall be the second month preceding the month in which the ES is billed. [T]

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DATE OF ISSUE July 6, 2012 DATE EFFECTIVE October 2, 2012

ISSUED BY Mark A. Bailey, President and Chief Executive Officer  
Big Rivers Electric Corporation, 201 Third Street, Henderson, KY 42420

**BIG RIVERS ELECTRIC CORP  
ENVIRONMENTAL SURCHARGE REPORT**

**Calculation of Monthly Billed Environmental Surcharge Factor - MESF  
For the Expense Month Ending**

$$\text{MESF} = \text{CESF} - \text{BESF}$$

Where:

CESF = Current Environmental Surcharge Factor  
BESF = Base Environmental Surcharge Factor

Calculation of MESF:

CESF, from ES Form 1.10	=	0.000000
BESF	=	0.000000
MESF	=	0.000000

Effective Date for Billing:

Submitted by: \_\_\_\_\_

Title: Director, Finance  
\_\_\_\_\_

Date Submitted: \_\_\_\_\_

**BIG RIVERS ELECTRIC CORP  
ENVIRONMENTAL SURCHARGE REPORT**

**Calculation of Total E(m) and  
Jurisdictional Surcharge Billing Factor**

**For the Expense Month Ending**

**Calculation of Total E(m)**

- |   |  |       |
|---|--|-------|
| 1 | E(m) = RORB + OE - BAS, where                            | _____ |
|   | OE = Pollution Control Operating Expenses                | _____ |
|   | BAS = Total Proceeds from By-Product and Allowance Sales | _____ |
|   | RORORB = $\{(RB/12)(RORORB)\}$                           | _____ |
| 2 | Rate Base  | _____ |
| 3 | Rate Base / 12   | _____ |
| 4 | Rate of Return   | _____ |
| 5 | Return on Rate Base (RORB)                               | _____ |
| 6 | Operating Expenses                                       | _____ |
| 7 | By-Product and Emission Allowance Sales (BAS)            | _____ |
| 8 | Sub-Total E(m)   | _____ |

**Calculation of Jurisdictional Environmental Surcharge Billing Factor**

- |    |  |       |
|----|--|-------|
| 9  | Member System Allocation Ratio for the Month (Form 3.0)  | _____ |
| 10 | Subtotal E(m) = Subtotal E(m) x Member System Allocation Ratio   | _____ |
| 11 | Adjustment for (Over)/Under Recovery, as applicable  | _____ |
| 12 | E(m) = Subtotal E(m) plus (Over)/Under Recovery  | _____ |
| 13 | R(m) = Average Monthly Member System Revenue for the 12 Months<br>Ending with the Current Expense Month (Form 3.0) | _____ |
| 14 | CESF: E(m) / R(m); as a % of Revenue   | _____ |

**BIG RIVERS ELECTRIC CORP**  
**ENVIRONMENTAL SURCHARGE REPORT**  
 Revenue Requirements of Environmental Compliance Costs  
 For the Expense Month Ending

**RB**

**Determination of Environmental Compliance Rate Base**

Eligible Pollution Control Plant (Gross Plant) \_\_\_\_\_

*Additions:*

Inventory - Spare Parts \_\_\_\_\_

Inventory - Limestone \_\_\_\_\_

Inventory - Emission Allowances \_\_\_\_\_

Cash Working Capital Allowance \_\_\_\_\_

Subtotal \_\_\_\_\_

*Deductions:*

Accumulated Depreciation on Eligible Pollution Control Plant \_\_\_\_\_

Subtotal \_\_\_\_\_

Environmental Compliance Rate Base \_\_\_\_\_

**OE**

**Determination of Pollution Control Operating Expenses**

Monthly Operation & Maintenance Expense \_\_\_\_\_

Monthly Depreciation and Amortization Expense \_\_\_\_\_

Monthly Taxes Other Than Income Taxes \_\_\_\_\_

Monthly Insurance Expense \_\_\_\_\_

Monthly Emission Allowance Expense from ES Form 2.31, 2.32 and 2.33 \_\_\_\_\_

Amortization of Regulatory Asset \_\_\_\_\_

Total Pollution Control Operation Expense \_\_\_\_\_

**BAS**

**Proceeds From By-Product and Allowance Sales**

Allowance Sales \_\_\_\_\_

Scrubber By-Products Sales \_\_\_\_\_

Total Proceeds from Sales \_\_\_\_\_

**True-up Adjustment: Over/(Under) Recovery of Monthly Surcharge**

B. Net Jurisdictional E(m) for two months prior to Expense Month	
D. E(m) recovered in month preceding Expense Month	
E. Over/(Under) Recovery	
Over recovery will be deducted from Jurisdictional E(m); (Under) recovery will be added to Jurisdictional E(m)	

**Big Rivers Electric Corporation**  
**Environmental Surcharge Report**  
 Plant, CWIP, Depreciation, & Taxes and Insurance Expenses  
 For the Month Ending

Form 2.10

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Project No.	Description	Eligible Gross Plant in Service	Eligible Accumulated Depreciation	CWIP Amount	Eligible Net Plant in Service	Monthly Depreciation Expense	Monthly Taxes and Insurance Expense
					(2) - (3) - (4) + (5)		
	<b>Total</b>						

**Big Rivers Electric Corporation**  
**Environmental Surcharge Report**  
 Inventories of Spare Parts and Limestone  
 For the Month Ending

Form 2.20

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Beginning Inventory	Purchases	Other Adjustments	Utilized	Ending Inventory	Reason(s) for Adjustment
					(2)+(3)+(4)-(5)	
<b>Total</b>						



**BIG RIVERS ELECTRIC CORP**  
**ENVIRONMENTAL SURCHARGE REPORT**  
 Inventory and Expense of Emission Allowances

For the Month Ending

Vintage Year	Number of Allowances			Total Dollar Value Of Vintage Year			Comments and Explanations
	SO <sub>2</sub>	NO <sub>x</sub> Annual	NO <sub>x</sub> Ozone Season	SO <sub>2</sub>	NO <sub>x</sub> Annual	NO <sub>x</sub> Ozone Season	
2009							
2010							
2011							
2012							
2013							
2014							
2015							
2016							
2017							
2018							
2019							
2020							
2021							
2022							
2023							
2024							
2025							
2026							
2027							
2028							
2029							
2030							
2031							
2032							
2033							
2034							
2035							
2036							
2037							
2038							
2039							
2040							

Attachment 10

Other than the assignment of allowances by EPA, inventory adjustments include, but are not limited to, purchases, allowances acquired as part of other purchases, and the sale of allowances.

Case No. 2012-00063  
 Response to PSC 2-12  
 Revised Exhibit Wolfram-5)  
 Witness: John Wolfram  
 Page 6 of 16

**BIG RIVERS ELECTRIC CORP**  
**ENVIRONMENTAL SURCHARGE REPORT**  
 Inventory of Emission Allowances (SO<sub>2</sub>) - Current Vintage Year

For the Month Ending

	Beginning Inventory	Allocations/Purchases	Utilized (Coal Fuel)	Utilized (Other Fuels)	Sold	Ending Inventory	Allocation, Purchase, or Sale Date & Vintage Years
<b>TOTAL EMISSION ALLOWANCES IN INVENTORY, ALL CLASSIFICATIONS</b>							
Quantity							
Dollars							
\$/Allowance							
<b>ALLOCATED ALLOWANCES FROM EPA: COAL FUEL</b>							
Quantity							
Dollars							
<b>ALLOCATED ALLOWANCES FROM EPA: OTHER FUELS</b>							
Quantity							
Dollars							
<b>ALLOWANCES FROM PURCHASES:</b>							
From Market:							
Quantity							
Dollars							
\$/Allowance							
From Big Rivers							
Quantity							
Dollars							
\$/Allowance							

Emission Allowance Expense for Other Power Generation is excluded from expense reported on Form 2.00 for recovery through the monthly billing factor

**BIG RIVERS ELECTRIC CORP**  
**ENVIRONMENTAL SURCHARGE REPORT**  
 Inventory of Emission Allowances (NOx) - Ozone Season Allowance Allocation  
 For The Month Ending

	Beginning Inventory	Allocations/Purchases (1)	Utilized (Coal Fuel)	Utilized (Other Fuels)	Sold	Ending Inventory	Allocation, Purchase, or Sale Date & Vintage Years
<b>TOTAL EMISSION ALLOWANCES IN INVENTORY, ALL CLASSIFICATIONS</b>							
Quantity							
Dollars							
\$/Allowance							
<b>ALLOCATED ALLOWANCES FROM EPA: COAL FUEL</b>							
Quantity							
Dollars							
<b>ALLOCATED ALLOWANCES FROM EPA: OTHER FUELS</b>							
Quantity							
Dollars							
<b>ALLOWANCES FROM PURCHASES:</b>							
<b>From Market:</b>							
Quantity							
Dollars							
\$/Allowance							
<b>From Big Rivers:</b>							
Quantity							
Dollars							
\$/Allowance							

1. Emission Allowance Expense for Other Power Generation is excluded from expense reported on Form 2.00 for recovery through the monthly billing factor.

Case No. 2012-00063  
 Response to PSC 2-12  
 (Revised Exhibit Wolfram-5)  
 Witness: John Wolfram  
 Page 8 of 16

**BIG RIVERS ELECTRIC CORP**  
**ENVIRONMENTAL SURCHARGE REPORT**  
 Inventory of Emission Allowances (NOx) - Annual Allowance Allocation

For The Month Ending

	Beginning Inventory	Allocations/Purchases	Utilized (Coal Fuel)	Utilized (Other Fuels)	Sold	Ending Inventory	Allocation, Purchase, or Sale Date & Vintage Years
<b>TOTAL EMISSION ALLOWANCES IN INVENTORY, ALL CLASSIFICATIONS</b>							
Quantity							
Dollars							
\$/Allowance							
<b>ALLOCATED ALLOWANCES FROM EPA: COAL FUEL</b>							
Quantity							
Dollars							
<b>ALLOCATED ALLOWANCES FROM EPA: OTHER FUELS</b>							
Quantity							
Dollars							
<b>ALLOWANCES FROM PURCHASES:</b>							
<b>From Market:</b>							
Quantity							
Dollars							
\$/Allowance							
<b>From Big Rivers:</b>							
Quantity							
Dollars							
\$/Allowance							

Emission Allowance Expense for Other Power Generation is excluded from expense reported on Form 2.00 for recovery through the monthly billing factor.

**BIG RIVERS ELECTRIC CORP**  
**ENVIRONMENTAL SURCHARGE REPORT**  
**O&M Expenses and Determination of Cash Working Capital Allowance**

**For the Expense Month Ending**

Eligible O&M Expenses	
11th previous month	
10th previous month	
9th previous month	
8th previous month	
7th previous month	
6th previous month	
5th previous month	
4th previous month	
3rd previous month	
2nd previous month	
Previous month	
Current month	
Total 12 Month O&M	
Average Monthly O&M	

Determination of Working Capital Allowance	
12 Months O&M Expense	
One-Eighth (1/8) of 12 Month O&M Expenses	

**BIG RIVERS ELECTRIC CORP  
ENVIRONMENTAL SURCHARGE REPORT**  
Pollution Control - Operations & Maintenance Expenses  
For the Expense Month Ending

O&M Expense Account	COLEMAN Station	GREEN Station	HMPL SII Station	WILSON Station	REID Station	TOTAL All Stations
<b>2007 Plan</b>						
NOx Plan						
Anhydrous Ammonia						-
Emulsified Sulphur for NOx						-
Individual Expense Account Items						-
Individual Expense Account Items						-
Total NOx Plan O&M Expenses						-
S02 Plan						
Disposal-Bottom Ash						-
Disposal-Fly Ash						-
Off Spec Gypsum						-
Fixation Lime						-
Disposal-Flyash/Bottom Ash/Sludge						-
Reagent-Calcium Oxide (landfill stabilization)						-
Reagent-Limestone						-
Reagent-Lime						-
Emulsified Sulphur for SO2						-
Reagent-DiBasic Acid						-
Reagent-Sodium Bisulfite for SO2						-
Total S02 Plan O&M Expenses						-
S03 Plan						
Hydrated Lime - SO3						-
Individual Expense Account Items						-
Individual Expense Account Items						-
Total S02 Plan O&M Expenses	-	-	-	-	-	-

**BIG RIVERS ELECTRIC CORP**  
**ENVIRONMENTAL SURCHARGE REPORT**  
 Pollution Control - Operations & Maintenance Expenses  
 For the Expense Month Ending

O&M Expense Account	COLEMAN Station	GREEN Station	HMPL SII Station	WILSON Station	REID Station	TOTAL All Stations
<b>2012 Plan</b>						
Project 4 - Wilson FGD						
						-
						-
						-
Total Project 4 O&M Expenses				-		-
Project 5 - Green Unit 2 SCR						
						-
						-
						-
Total Project 5 O&M Expenses			-			-
Project 6 - Reid Unit 1 Conversion						
						-
						-
						-
Total Project 6 O&M Expenses					-	-
Project 7 - HMP&L Recycle Pump & ID Fan Motors						
						-
						-
						-
Total Project 7 O&M Expenses			-			-

Attachment for Response to PSC 2-12  
 (Revised Exhibit Wolfram-5)  
 Witness: John Wolfram  
 Page 12 of 16  
 Case No. 2012-00063

**BIG RIVERS ELECTRIC CORP**  
**ENVIRONMENTAL SURCHARGE REPORT**  
 Pollution Control - Operations & Maintenance Expenses  
 For the Expense Month Ending

O&M Expense Account	COLEMAN Station	GREEN Station	HMPL SII Station	WILSON Station	REID Station	TOTAL All Stations
<b>Project 8 - Coleman Hg</b>						
						-
						-
						-
Total Project 8 O&M Expenses	-					-
<b>Project 9 - Wilson Hg</b>						
						-
						-
						-
Total Project 9 O&M Expenses				-		-
<b>Project 10 - Green Hg</b>						
						-
						-
						-
Total Project 10 O&M Expenses		-				-
<b>Project 11 - HMP&amp;L Hg</b>						
						-
						-
						-
Total Project 11 O&M Expenses			-			-

Attachment for Response to PSC 2-12  
 (Revised Exhibit Wolfram-5)  
 Witness: John Wolfram  
 Page 13 of 16  
 Case No. 2012-00063



**BIG RIVERS ELECTRIC CORP**  
**ENVIRONMENTAL SURCHARGE REPORT**  
 Pollution Control - Operations & Maintenance Expenses  
 For the Expense Month Ending

O&M Expense Account	COLEMAN Station	GREEN Station	HMPL SII Station	WILSON Station	REID Station	TOTAL All Stations
Current Month O&M Expense for All Plans	-	-	-	-	-	-

**Big Rivers Electric Corporation  
Environmental Surcharge Report  
Monthly Average Revenue Computation of R(m)  
For the Month Ended**

Revenues from Member Systems							Total Company Revenues		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Month	Base Rate Revenues	Fuel Clause Revenues	Non-FAC PPA Revenues	Environmental Surcharge Revenues	Total (2)+(3)+(4)+(5)	Total Excluding Environmental Surcharge (6)-(5)	Off-System Sales	Total (6)+(8)	Total Excluding Environmental Surcharge (9)-(5)
Jan									
Feb									
Mar									
Apr									
May									
Jun									
Jul									
Aug									
Sep									
Oct									
Nov									
Dec									
Totals									
Average Monthly Member System Revenues, Excluding Environmental Surcharge, for 12 Months Ending Current Expense Month.									
Member System Allocation Percentage for Current Month (Environmental Surcharge excluded from Calculations): Column (7) / Column (10) =									

Case No. 2012-00063  
 Revised Exhibit Wolfram-5)  
 Attachment for Response to PSC 2-12  
 Witness: John Wolfram  
 Page 15 of 16

**Big Rivers Electric Corporation  
Environmental Surcharge Report  
Monthly Average Revenue Computation of R(m) - Detail**

For the Month Ended

Class	Revenue						Total
	Demand	Energy	Base Rates	FAC	Non-FAC PPA	ES	
Rural			-				-
Large Industrial			-				-
Subtotal	-	-	-	-	-	-	-

Smelter	Base Fixed Energy (KWH)	Revenue					ES	Total
		Surcharge	Base Monthly Energy	Base Monthly Energy Less Surcharge	FAC	Non-FAC PPA		
Alcan				-				-
Century				-				-
Subtotal		-	-	-	-	-	-	-

<b>Total</b>			-	-	-	-	-	-
--------------	--	--	---	---	---	---	---	---



**BIG RIVERS ELECTRIC CORPORATION**

**APPLICATION OF BIG RIVERS ELECTRIC CORPORATION  
FOR APPROVAL OF ITS 2012 ENVIRONMENTAL COMPLIANCE PLAN,  
FOR APPROVAL OF ITS AMENDED ENVIRONMENTAL COST  
RECOVERY SURCHARGE TARIFF, FOR CERTIFICATES OF PUBLIC  
CONVENIENCE AND NECESSITY, AND FOR AUTHORITY TO  
ESTABLISH A REGULATORY ACCOUNT  
CASE NO. 2012-00063**

**Response to Commission Staff's  
Second Request for Information  
Dated June 22, 2012**

**July 6, 2012**

1 **Item 13)** *Refer to the response to Item 36 of Staffs First Request. Does*  
2 *the response indicate that Exhibit Wolfram-6 would not change as a result*  
3 *of removing the effects of Project 6 from the 2012 Environmental*  
4 *Compliance Plan? If no, provide a revised Exhibit Wolfram-6 to reflect the*  
5 *removal of Project 6.*

6

7 **Response)** Yes. Exhibit Wolfram-6 would not change as a result of removing the  
8 effects of Project 6 from the 2012 Plan.

9

10

11 **Witness)** John Wolfram

12



**BIG RIVERS ELECTRIC CORPORATION**

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RECOVERY SURCHARGE TARIFF, FOR CERTIFICATES OF PUBLIC  
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**Response to Commission Staff's  
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Dated June 22, 2012**

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1 **Item 14)** *Refer to Big Rivers' response to Item 22 of the Attorney*  
2 *General's Initial Data Request ("AG's First Request"). Big Rivers*  
3 *responded "[p]rice elasticity analyses are not ordinarily undertaken by*  
4 *Applicants in cases where the proposed rate increases are of the*  
5 *magnitude contemplated in this case." Provide a discussion of what level*  
6 *of proposed rate increases would prompt Big Rivers to perform price*  
7 *elasticity analyses.*

8

9 **Response)** Big Rivers has not performed a study or analysis to determine at  
10 what point price elasticity becomes an issue.

11

12

13 **Witness)** John Wolfram

14





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1 **Item 15)** *Refer to Big Rivers' response to Item 66 of the AG's First*  
2 *Request. Explain whether the depreciation rates reflected in Big Rivers'*  
3 *response are the same depreciation rates presently being used for current*  
4 *capital projects in Accounts 312 A-K and 312 L-P.*

5

6 **Response)** Yes. The depreciation rates reflected in Big Rivers' response to Item  
7 66 of the Office of the Attorney General's Initial Request for Information are the  
8 same depreciation rates presently being used for current capital projects in  
9 Accounts 312 A-K and 312 L-P

10

11

12 **Witness)** Mark A. Hite

13



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1 **Item 16)** *Refer to Big Rivers' response to the Kentucky Industrial Utility*  
2 *Customers, Inch First Set of Data Requests ("KIUC's First Request"), Item*  
3 *26 at line 13. With regard to the \$169 per kW estimate, provide the support*  
4 *for the derivation of the estimate. Are the costs to comply with EPA's*  
5 *proposed regulations pertaining to the Clean Water Act - Water Intake*  
6 *Fish Impingement (316b), Waste Water Discharge and Coal Combustion*  
7 *Residuals, included in this estimate?*

8

9 **Response)** The \$169 per kW estimate is derived by dividing the total capacity of  
10 the Big Rivers system (1,669 MW) by the total estimated cost of the 2012 Plan  
11 (\$283 million). The total system capacity is derived as follows:

12

<b>Plant</b>	<b>MW</b>
Coleman	443
Wilson	417
Green	454
HMP&L	305
Reid	50
<b>Total</b>	<b>1,669</b>

13

14 The costs to comply with EPA's proposed regulations pertaining to the Clean  
15 Water Act - Water Intake Fish Impingement (316b), Waste Water Discharge and  
16 Coal Combustion Residuals are not included in this estimate.

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1

2 **Witness)** Robert W. Berry

3



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1 **Item 17)** *Refer to Big Rivers' response to KIUC's First Request, Item 36,*  
2 *and the July 14, 2011 email concerning EPA Proposed Regulations. Big*  
3 *Rivers' proposed 2012 Environmental Compliance Plan estimates capital*  
4 *expenditures of \$286.14 million. Provide a detailed line item explanation*  
5 *for the differences between the capital expenditure estimates for the 2012*  
6 *Environmental Compliance Plan and the capital expenditure estimates*  
7 *contained in the July 14, 2011 email.*

8

9 **Response)** The July 14, 2011 e-mail was based on an October 28, 2010  
10 presentation to the Public Service Commission. It included a high level estimate  
11 from Big Rivers' internal staff for compliance with the existing potential EPA  
12 regulations CATR, HAPS MACT, CCR and §316a & b. At the time of these  
13 estimates the proposed regulations were not in their final form.

14 The estimates in Big Rivers' 2012 Environmental Compliance Plan  
15 were based on the CSAPR and MATS regulations that had been issued in final  
16 version, and did not include any costs for future regulations. In addition, the cost  
17 estimates contained in the instant filing were prepared by an experienced  
18 engineering firm with significant expertise in developing capital cost estimates.

19 Detailed line-item explanations for the differences are shown in the  
20 table on the following page.

21

22

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1

<b>Explanation of Differences (All Dollars in Millions)</b>			
	<b>Big Rivers ECP Filing</b>	<b>July 14, 2011 E-mail</b>	<b>Explanation</b>
<b>CATR</b>		\$138.0	\$30M to convert Green 1 and 2 to natural gas; \$108M to add SCR at Green 1 and 2; No FGD retrofit at Wilson
<b>CSAPR</b>	\$225.0		
<b>HAPS/ MACT</b>		\$410.0	\$338M-\$846M range (\$200 - \$500/kW); Includes baghouses on all units; Includes precipitator upgrades at all units
<b>MATS</b>	\$58.0		
<b>CCR</b>	0.0	\$237.0	Landfill \$152M; Dry bottom ash \$55M; Dry fly ash \$30M
<b>§316a &amp; b</b>	0.0	\$55.0	Cooling tower at Coleman
<b>GHG</b>	0.0	0.0	
<b>Total</b>	\$283.0	\$840.0	

2

3

4

Witness) Robert W. Berry

5





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1 **Item 18) *Did Big Rivers, as part of the development of its 2012***  
2 ***Environmental Compliance Plan, consider replacing any of its generation***  
3 ***units with natural gas combined cycle units? If so, provide all analysis***  
4 ***and data that support the decision to not replace any existing units with***  
5 ***combined cycle units. If this alternative was not considered, provide a***  
6 ***detailed explanation as well as all analysis and data supporting this***  
7 ***decision to not replace any existing units with combined cycle units.***

8  
9 **Response) Big Rivers did not perform any detailed analysis of replacing existing**  
10 **coal plants with combined cycle natural gas plants as part of its 2012**  
11 **Environmental Compliance Plan. As described in Big Rivers' response to Item 26**  
12 **of the KIUC's Initial Request for Information, the cost of a new combined cycle**  
13 **plant intuitively would have led to higher cost impact to Big Rivers' members than**  
14 **the projects contained in the compliance plan.**

15 **Because of the significant number of generating units involved and**  
16 **the significant unamortized plant balance of the coal units that are being**  
17 **upgraded, retirement of the coal plants or converting them to natural gas would**  
18 **result in the need to recover the unamortized plant balances of the coal plants in**  
19 **addition to any costs of converting the plants to natural gas through rates to Big**  
20 **Rivers' customers. Big Rivers believed that this cost could be avoided by pursuing**  
21 **upgrades that would control emissions and comply with EPA regulations for an**  
22 **average cost of about \$169 per kW compared to an overnight installed cost of \$626**

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1 per kW for an advanced combustion turbine and \$917 per kW for a new combined  
2 cycle unit (Assumptions to the Annual Energy Outlook for 2011, DOE EIA, p.  
3 101). These differences were so large that Big Rivers did not consider it necessary  
4 to evaluate the option of retiring coal plants or converting them to natural gas.

5

6

7 **Witness)** Robert W. Berry

8