

**Big Rivers Electric Corporation**  
**Case No. 2017-00345**  
**Calculation of Rate of Return on Environmental Compliance Rate Base**  
**For the Expense Months: June 2016 - May 2017**

**Calculation of Monthly Rate of Return**

| Expense Month   | <u>Jun-16</u>            | <u>Jul-16</u>            | <u>Aug-16</u>            | <u>Sep-16</u>            | <u>Oct-16</u>            | <u>Nov-16</u>            |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <b>Month-to-Date Interest Expense on Long-Term Debt:</b>                    |                          |                          |                          |                          |                          |                          |
| RUS - Series A Note   | \$ 383,559.54            | \$ 396,408.14            | \$ 396,410.24            | \$ 383,622.82            | \$ 396,472.13            | \$ 383,689.12            |
| RUS - Series B Note   | \$ 746,911.31            | \$ 782,935.81            | \$ 782,935.81            | \$ 757,679.82            | \$ 794,347.74            | \$ 768,723.62            |
| CoBank - Series 2012A Notes   | \$ 738,263.74            | \$ 755,022.37            | \$ 755,022.37            | \$ 730,666.83            | \$ 747,078.99            | \$ 722,979.67            |
| CFC - Series 2012B Refinance Note   | \$ 923,148.37            | \$ 952,896.51            | \$ 952,912.49            | \$ 915,585.53            | \$ 945,334.23            | \$ 915,585.54            |
| CFC - Series 2012B Equity Note  | \$ 169,547.36            | \$ 169,547.36            | \$ 169,547.35            | \$ 167,855.57            | \$ 167,855.57            | \$ 167,855.56            |
| Series 2010A P.C. Bonds   | \$ 416,500.00            | \$ 416,500.00            | \$ 416,500.00            | \$ 416,500.00            | \$ 416,500.00            | \$ 416,500.00            |
| <b>(a) Total Monthly Interest Expense on Long-Term Debt</b>                 | <b>\$ 3,377,930.32</b>   | <b>\$ 3,473,310.19</b>   | <b>\$ 3,473,328.26</b>   | <b>\$ 3,371,910.57</b>   | <b>\$ 3,467,588.66</b>   | <b>\$ 3,375,333.51</b>   |
| Total Outstanding Long-Term Debt (Beginning of Month)                       | \$ 822,622,949.58        | \$ 822,768,506.56        | \$ 822,781,736.47        | \$ 819,474,802.89        | \$ 819,653,104.33        | \$ 819,666,967.63        |
| Total Outstanding Long-Term Debt (End of Month)                             | \$ 822,768,506.56        | \$ 822,781,736.47        | \$ 819,474,802.89        | \$ 819,653,104.33        | \$ 819,666,967.63        | \$ 816,330,442.17        |
| <b>(b) Average Outstanding Long-Term Debt during Month</b>                  | <b>\$ 822,695,728.07</b> | <b>\$ 822,775,121.52</b> | <b>\$ 821,128,269.68</b> | <b>\$ 819,563,953.61</b> | <b>\$ 819,660,035.98</b> | <b>\$ 817,998,704.90</b> |
| <b>(c) Number of Days During Year</b>                                       | <b>366</b>               | <b>366</b>               | <b>366</b>               | <b>366</b>               | <b>366</b>               | <b>366</b>               |
| <b>(d) Number of Days During Month</b>                                      | <b>30</b>                | <b>31</b>                | <b>31</b>                | <b>30</b>                | <b>31</b>                | <b>30</b>                |
| <b>(e) Average Cost of Debt [(a) ÷ (b)] x [(c) ÷ (d)]</b>                   | <b>5.01%</b>             | <b>4.98%</b>             | <b>4.99%</b>             | <b>5.02%</b>             | <b>4.99%</b>             | <b>5.03%</b>             |
| <b>(f) Applicable TIER <sup>1</sup></b>                                     | <b>1.24</b>              | <b>1.24</b>              | <b>1.24</b>              | <b>1.24</b>              | <b>1.24</b>              | <b>1.24</b>              |
| <b>(g) Rate of Return on Environmental Compliance Rate Base [(e) x (f)]</b> | <b>6.21%</b>             | <b>6.18%</b>             | <b>6.19%</b>             | <b>6.22%</b>             | <b>6.19%</b>             | <b>6.24%</b>             |

<sup>1</sup> Applicable Times Interest Earned Ratio (TIER) for calculating the Rate of Return on Environmental Compliance Rate Base per Big Rivers' ES Tariff approved by Order of the Commission dated October 1, 2012, in Case No. 2012-00063.

**Big Rivers Electric Corporation**  
**Case No. 2017-00345**  
**Calculation of Rate of Return on Environmental Compliance Rate Base**  
**For the Expense Months: June 2016 - May 2017**

**Calculation of Monthly Rate of Return**

| Expense Month   | <u>Dec-16</u>            | <u>Jan-17</u>            | <u>Feb-17</u>            | <u>Mar-17</u>            | <u>Apr-17</u>            | <u>May-17</u>            |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <b>Month-to-Date Interest Expense on Long-Term Debt:</b>                    |                          |                          |                          |                          |                          |                          |
| RUS - Series A Note   | \$ 396,478.77            | \$ 397,626.66            | \$ 359,152.64            | \$ 397,633.27            | \$ 384,865.57            | \$ 397,701.21            |
| RUS - Series B Note   | \$ 794,347.74            | \$ 808,134.02            | \$ 729,927.50            | \$ 808,134.02            | \$ 793,247.16            | \$ 819,688.73            |
| CoBank - Series 2012A Notes   | \$ 747,078.99            | \$ 739,041.28            | \$ 667,521.15            | \$ 738,782.00            | \$ 707,330.44            | \$ 730,908.12            |
| CFC - Series 2012B Refinance Note   | \$ 937,708.59            | \$ 937,708.59            | \$ 848,460.82            | \$ 930,019.13            | \$ 900,269.25            | \$ 930,019.19            |
| CFC - Series 2012B Equity Note  | \$ 166,141.14            | \$ 166,141.14            | \$ 166,141.15            | \$ 164,403.79            | \$ 164,403.79            | \$ 164,403.80            |
| Series 2010A P.C. Bonds   | \$ 416,500.00            | \$ 416,500.00            | \$ 416,500.00            | \$ 416,500.00            | \$ 416,500.00            | \$ 416,500.00            |
| <b>(a) Total Monthly Interest Expense on Long-Term Debt</b>                 | <b>\$ 3,458,255.23</b>   | <b>\$ 3,465,151.69</b>   | <b>\$ 3,187,703.26</b>   | <b>\$ 3,455,472.21</b>   | <b>\$ 3,366,616.21</b>   | <b>\$ 3,459,221.05</b>   |
| Total Outstanding Long-Term Debt (Beginning of Month)                       | \$ 816,330,442.17        | \$ 816,517,136.27        | \$ 816,530,909.17        | \$ 813,164,517.58        | \$ 813,314,211.12        | \$ 813,327,918.51        |
| Total Outstanding Long-Term Debt (End of Month)                             | \$ 816,517,136.27        | \$ 816,530,909.17        | \$ 813,164,517.58        | \$ 813,314,211.12        | \$ 813,327,918.51        | \$ 809,931,385.00        |
| <b>(b) Average Outstanding Long-Term Debt during Month</b>                  | <b>\$ 816,423,789.22</b> | <b>\$ 816,524,022.72</b> | <b>\$ 814,847,713.38</b> | <b>\$ 813,239,364.35</b> | <b>\$ 813,321,064.82</b> | <b>\$ 811,629,651.76</b> |
| <b>(c) Number of Days During Year</b>                                       | <b>366</b>               | <b>365</b>               | <b>365</b>               | <b>365</b>               | <b>365</b>               | <b>365</b>               |
| <b>(d) Number of Days During Month</b>                                      | <b>31</b>                | <b>31</b>                | <b>28</b>                | <b>31</b>                | <b>30</b>                | <b>31</b>                |
| <b>(e) Average Cost of Debt [(a) ÷ (b)] x [(c) ÷ (d)]</b>                   | <b>5.00%</b>             | <b>5.00%</b>             | <b>5.10%</b>             | <b>5.00%</b>             | <b>5.04%</b>             | <b>5.02%</b>             |
| <b>(f) Applicable TIER <sup>1</sup></b>                                     | <b>1.24</b>              | <b>1.24</b>              | <b>1.24</b>              | <b>1.24</b>              | <b>1.24</b>              | <b>1.24</b>              |
| <b>(g) Rate of Return on Environmental Compliance Rate Base [(e) x (f)]</b> | <b>6.20%</b>             | <b>6.20%</b>             | <b>6.32%</b>             | <b>6.20%</b>             | <b>6.25%</b>             | <b>6.22%</b>             |

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Attachment for Response to Staff Item 4

Witness: Nicholas R. Castlen

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