ORIGINAL

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY

In the Matter of:

JOINT APPLICATION OF	)	
BIG RIVERS ELECTRIC CORPORATION AND	)	
MEADE COUNTY RURAL ELECTRIC	)	
COOPERATIVE CORPORATION FOR APPROVAL	)	**Case No.**
OF CONTRACTS FOR ELECTRIC SERVICE WITH	)	**2019-00365**
NUCOR CORPORATION and APPLICATION OF	)	
BIG RIVERS ELECTRIC CORPORATION FOR	)	
APPROVAL OF TARIFF	)	

Responses to Commission Staff's
Second Request for Information
dated
December 20, 2019

FILED: January 10, 2020

ORIGINAL

BIG RIVERS ELECTRIC CORPORATION

JOINT APPLICATION OF
BIG RIVERS ELECTRIC CORPORATION AND
MEADE COUNTY RURAL ELECTRIC COOPERATIVE CORPORATION
FOR APPROVAL OF CONTRACTS FOR ELECTRIC SERVICE WITH
NUCOR CORPORATION and APPLICATION OF BIG RIVERS ELECTRIC
CORPORATION FOR APPROVAL OF TARIFF
CASE NO. 2019-00365

VERIFICATION

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

Mark J. Eacret

Mark J. Eacret

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Mark J. Eacret on this the 10th day of January, 2020.

Kathleen R. Ley

Notary Public, Kentucky State at Large

My Commission Expires October 31, 2020

BIG RIVERS ELECTRIC CORPORATION

JOINT APPLICATION OF
BIG RIVERS ELECTRIC CORPORATION AND
MEADE COUNTY RURAL ELECTRIC COOPERATIVE CORPORATION
FOR APPROVAL OF CONTRACTS FOR ELECTRIC SERVICE WITH
NUCOR CORPORATION and APPLICATION OF BIG RIVERS ELECTRIC
CORPORATION FOR APPROVAL OF TARIFF
CASE NO. 2019-00365

VERIFICATION

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

Paul Smith
____
Paul G. Smith

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Paul G. Smith on this the 10th day of January, 2020.

Kathe Robey
____
Notary Public, Kentucky State at Large

My Commission Expires October 31, 2020

JOINT APPLICATION OF
BIG RIVERS ELECTRIC CORPORATION AND
MEADE COUNTY RURAL ELECTRIC COOPERATIVE CORPORATION
FOR APPROVAL OF CONTRACTS FOR ELECTRIC SERVICE WITH
NUCOR CORPORATION and APPLICATION OF BIG RIVERS ELECTRIC
CORPORATION FOR APPROVAL OF TARIFF
CASE NO. 2019-00365

Response to Commission Staff's
Second Request for Information
dated December 20, 2019

January 10, 2020

Item 1) ***Refer to BREC's response to Commission Staff's First Request for Information (Staff's First Request), Item 2.***

a. ***Refer to the confidential Excel file PSC 1-2 (MJE CNF) – Nucor Pricing Sheet, the Calculations Worksheet, Column N, Line 3. Explain how the discount rate was determined.***

b. ***State when BREC will make the decision to minimize the potential exposure discussed in the last paragraph of the response.***

Response)

a. The discount rate is roughly equal to the weighted average cost of Big Rivers' long-term debt. Note, however, that the margin calculations are not very sensitive to changes in the discount rate assumed.

For instance, [redacted]

b. Big Rivers will actively seek to hedge its exposure after all required regulatory approvals are received for the Nucor agreements and the

Louisville Gas and Electric Company settlement, and when market depth and prices permit.

Witness) Mark J. Eacret

BIG RIVERS ELECTRIC CORPORATION

**JOINT APPLICATION OF
BIG RIVERS ELECTRIC CORPORATION AND
MEADE COUNTY RURAL ELECTRIC COOPERATIVE CORPORATION
FOR APPROVAL OF CONTRACTS FOR ELECTRIC SERVICE WITH
NUCOR CORPORATION and APPLICATION OF BIG RIVERS ELECTRIC
CORPORATION FOR APPROVAL OF TARIFF
CASE NO. 2019-00365**

**Response to Commission Staff's
Second Request for Information
dated December 20, 2019**

January 10, 2020

Item 2) ***Refer to BREC's response to Staff's First Request, Item 4, Attachment 1.4.a., page 1 of 4.***

a. Explain how the present value percentage was determined.

b. Explain the difference(s) in how the discount rate discussed in Item 1.a. above was determined and how the present value percentage was determine.

Response)

a. Big Rivers' existing cost of debt ranges from 3.69% to 6.00%, and its current incremental cost of debt is approximately [redacted]. For purposes of the cost/benefit analysis, [redacted]

b. The discount rates discussed in Item 1a. of these responses, and in Item 4a. of Staff's First Request, represent the average cost of debt and the incremental cost of debt, respectively.

Witness) Paul G. Smith

BIG RIVERS ELECTRIC CORPORATION

JOINT APPLICATION OF
BIG RIVERS ELECTRIC CORPORATION AND
MEADE COUNTY RURAL ELECTRIC COOPERATIVE CORPORATION
FOR APPROVAL OF CONTRACTS FOR ELECTRIC SERVICE WITH
NUCOR CORPORATION and APPLICATION OF BIG RIVERS ELECTRIC
CORPORATION FOR APPROVAL OF TARIFF
CASE NO. 2019-00365

Response to Commission Staff's
Second Request for Information
dated December 20, 2019

January 10, 2020

Item 3) ***Refer to BREC's response to Staff's First Request, Item 7.***

a. ***Provide copies of the feedback BREC received from the credit rating agencies***

b. ***Explain any changes in BREC's investment-grade ratings since the management audit was completed through the current date.***

Response)

a. Copies of the following rating agency reports, with feedback indicating that the diversification of Big Rivers' generation portfolio would likely reduce Big Rivers' risk profile and be viewed favorably, are provided as attachments to this response. The applicable sections of each report are highlighted in green.

- Attachment 1 – S&P Global Ratings report dated June 14, 2016;
- Attachment 2 – S&P Global Ratings report dated September 29, 2017;
- Attachment 3 – S&P Global Ratings report dated January 16, 2019;
- Attachment 4 – Moody's report dated November 13, 2019; and
- Attachment 5 – Fitch Ratings report dated December 4, 2019.

b. A summary of all changes in Big Rivers' credit ratings, since the management audit was completed through the current date, is listed below.

- July 7, 2017 – Fitch Ratings affirmed its 'BB' rating on Big Rivers' Series 2010A Bonds and revised its rating outlook to Positive from Stable.
- August 16, 2017 – Moody's Investors Service affirmed its 'Ba2' rating on Big Rivers' Series 2010A Bonds and revised its rating outlook to Positive from Stable.
- September 29, 2017 – S&P Global Ratings upgraded its rating on Big Rivers and the Series 2010A Bonds to 'BB' from 'BB-'. The rating outlook remained Stable.
- July 5, 2018 – Fitch Ratings upgraded its rating on Big Rivers' Series 2010A Bonds to 'BBB-' from 'BB' and revised its rating outlook to Stable from Positive.
- July 26, 2018 – Moody's Investors Service upgraded its rating on Big Rivers' Series 2010A Bonds to 'Ba1' from 'Ba2' and revised its rating outlook to Stable from Positive.

- January 16, 2019 – S&P Global Ratings upgraded its rating on Big Rivers and the Series 2010A Bonds to 'BB+' from 'BB'. The rating outlook remained Stable.
- November 12, 2019 – Moody's Investors Service affirmed its 'Ba1' rating on Big Rivers' Series 2010A Bonds and revised its rating outlook to Positive from Stable.

Witness) Paul G. Smith

Standard & Poor's Rating Agency Report – June 14, 2016
Item 3 – Attachment 1

S&P Global Ratings

RatingsDirect®

Summary:

Big Rivers Electric Corp., Kentucky; Rural Electric Coop

Primary Credit Analyst:
David N Bodek, New York (1) 212-438-7969; david.bodek@spglobal.com

Secondary Contact:
Jeffrey M Panger, New York (1) 212-438-2076; jeff.panger@spglobal.com

Table Of Contents

Summary:

Big Rivers Electric Corp., Kentucky; Rural Electric Coop

Credit Profile		
Big Rivers Electric Corp. ICR		
Long Term Rating	BB-/Stable	Affirmed
Ohio Cnty, Kentucky		
Big Rivers Electric Corp., Kentucky		
Ohio Cnty (Big Rivers Electric Corp.) RURELCCOO		
Long Term Rating	BB-/Stable	Affirmed

Rationale

S&P Global Ratings affirmed its 'BB-' issuer credit rating on Big Rivers Electric Corp., Ky. (BREC) and its 'BB-' rating on Ohio County, Ky.'s $83.3 million pollution control refunding revenue bonds, series 2010A (Big Rivers Electric Corp. Project) issued for Big Rivers' benefit. The outlook is stable.

The ratings reflect our opinion of the following exposures:

- In 2015 debt service coverage dropped to 1.15x from 1.53x in 2014 and 1.35x in 2013, due to weak wholesale market prices.
- Based on BREC's financial forecast that assumes relatively flat energy sales and no base rate adjustments in 2016, we have calculated the potential for coverage to remain at 1.1x in 2016, which we view as an exposure given the company's forecast of continuing meaningful dependence on revenues from nonmember sales, which we view as limiting the utility's power to steer its financial performance.
- BREC is a price-taker that is exposed to market prices when it sells its power plants' output to non-members through competitive markets transactions. We also view the inability to set prices for competitive market sales as limiting some of the financial forecast's predictive value.
- BREC's average revenue per megawatt-hour from non-member sales in 2015 was 10% lower than 2014's.
- Because BREC's membership base lost its two largest retail customers in 2013 and 2014, 2014's member energy sales were 60% lower than 2013's and energy sales declined another 11% in 2015.
- Energy sales to nonmembers jumped to 62% of 2014-2015's total energy sales, up from 13% in 2012. At the same time, nonmember revenues jumped to 42% of operating revenues in 2015, up from 8% in 2012 and 15% in 2013.
- BREC depends almost exclusively on coal units for its energy production, which exposes the utility to increasingly stringent emissions regulations that might limit power plant output and market sales opportunities.
- The utility's market activities compete with natural gas-fired resources that are benefitting from the fuel's low prices to the detriment of coal-fired units' dispatch opportunities.
- Slightly more than one-third of BREC's debt does not amortize before maturity, which defers principal payments and boosts debt service coverage metrics relative to those of other cooperative utilities with amortizing debt.
- Although annual 2016-2019 principal repayments average $25 million, they will spike to $71 million in 2020 and $67 million in 2021, which will require cash flows sufficient to retire these maturities or market access to refund the

1655634 | 300019859

maturities. Moreover, because of a back-loaded amortization schedule, BREC projects that 2022-2023 principal payments will average $34 million and will be $47 million to $56 million during 2024-2028.

- We believe BREC's few, vintage, coal-fired generation assets present operational exposures that can affect financial performance.

Our rating also incorporates these mitigating factors:

- The utility projects it will maintain relatively stable debt balances of about $850 million through 2019 as it proceeds with nearly $100 million of capital investments.
- BREC's 65% debt-to-capitalization ratio is favorable for a cooperative utility.
- Supportive regulatory rate decisions from the Kentucky Public Service Commission (KPSC) in 2013 and 2014.

Henderson, Ky.-based Big Rivers is a generation and transmission cooperative that produces and procures electricity for sale to its three distribution cooperative members -- Kenergy Corp., Jackson Purchase Energy, and Meade County Rural Electric Cooperative -- and their approximately 115,000 retail customers. The members serve in 22 counties. The state's median household income levels are nearly 20% below the nation's, which could limit ratemaking flexibility.

The KPSC must approve the rate adjustment requests of the utility and its member distribution cooperatives, which distinguishes these utilities from many other cooperative utilities that have autonomous ratemaking authority. Although the regulator has provided rate adjustments that support adequate financial performance, the utility is greatly exposed to the vicissitudes of competitive wholesale markets where the utility cannot exert price-setting authority over its customers. The commission allows the utility to use a fuel adjustment clause to capture changes in variable costs. We believe this tool helps reduce financial volatility, but does not sufficiently compensate for the utility's exposure to non-members for 60% of energy sales and 40% of revenues.

The commission granted a 15.6% rate increase in October 2013 and a 14.1% increase in April 2014. Its latter decision provided only about half of the utility's 26.5% requested increase. Moreover, the utility is depleting the reserve balances it has been using as a rate stabilization fund to soften the impacts of the commission-approved rate adjustments on customers. In mid-2015, the utility depleted reserves benefitting commercial and industrial customers. Residential customers will lose the benefits of the balance of the reserves in mid-to-late 2016. Because it is exhausting reserves, BREC projects that residential rates will rise 23% in 2016 and 10% in 2017, without base rate adjustments.

To temper the severity of the fixed cost reallocations flowing from its customer losses, BREC is remarketing some of the generation output that previously served those customers. We believe that market sales partially transform the utility into a merchant generator that faces the risks inherent in facing volatile market demand and prices. Moreover, we do not view the short-term contracts for its plants' output as a solution commensurate with the tenor of the utility's debt. The utility reported $855 million of debt as of Dec. 31, 2015. Debt consisted of Rural Utilities Service loans, the Ohio County bonds, and the $537 million loan Big Rivers closed with CoBank ACB and National Rural Utilities Cooperative Finance Corp. in July 2012.

The utility's generation portfolio provides little diversity. It includes the 443 megawatt (MW), coal-fired Coleman power plant, the 417 MW, coal-fired Wilson plant, the 454 MW, coal-fired Green station, and 130 MW from multiple units at the coal and oil-fired Reid Station. We believe that Big Rivers' concentration in coal resources exposes the utility to the potential financial and operational effects of the Environmental Protection Agency's (EPA) power plant emissions regulations. Until litigations challenging the EPA's Clean Power Plan (CPP) are resolved and state implementation plans are developed, we are unable to ascertain the CPP's financial impact and the extent to which the utility's financial flexibility can accommodate those costs.

In March 2015, the utility entered into a $130 million secured, three-year, revolving credit facility with National Rural Utilities Cooperative Finance Corporation, CoBank, ACB, Fifth Third Bank, KeyBank N.A., and Regions Bank. We consider the syndication's banks' commitments as demonstrating access to capital markets and providing liquidity for working capital, capital expenditures, other general corporate purposes, and letters of credit. As of Dec. 31, 2015, $98 million of the line's capacity remained available to the utility.

Ohio County sold bonds in 2010 for the benefit of BREC, which used bond proceeds to refund auction-rate securities. We understand that the financing structure obligates the utility to unconditionally pay the county's bonds' debt service. Big Rivers issued a note to the county that provides it with a security interest in the utility's assets under its mortgage indenture. The county's bonds' security interest is on par with BREC's senior secured debt.

Outlook

The stable outlook reflect the utility's maintaining adequate debt service coverage under adverse market conditions, its access to liquidity, and the rate relief that the KPSC provided in 2013 and 2014.

Upside scenario

We do not expect to raise the ratings within our two-year outlook horizon because prospects for a more secure revenue stream appear remote. The utility projects that it will continue to make more than half of its energy sales to non-members and will derive nearly half of revenues from customers over whom it cannot exert the price setting authority that we typically associate with the sound credit quality of other electric cooperative utilities. Furthermore, because residential customers will face sharply higher rates as the utility depletes rate stabilization reserves and we consider service area income levels to be weak, we believe the utility's ability to respond to higher costs and rising debt service might be limited.

Downside scenario

We could lower the ratings if the utility cannot sustain sound financial performance because of weak market conditions or poor plant performance. Similarly, if BREC's members' financial profiles erode, we could lower the ratings.

Related Criteria And Research

Related Criteria

- USPF Criteria: Applying Key Rating Factors To U.S. Cooperative Utilities, Nov. 21, 2007
- USPF Criteria: Methodology: Definitions And Related Analytic Practices For Covenant And Payment Provisions In U.S. Public Finance Revenue Obligations, Nov. 29, 2011
- USPF Criteria: Assigning Issue Credit Ratings Of Operating Entities, May 20, 2015
- Criteria: Use of CreditWatch And Outlooks, Sept. 14, 2009

Certain terms used in this report, particularly certain adjectives used to express our view on rating relevant factors, have specific meanings ascribed to them in our criteria, and should therefore be read in conjunction with such criteria. Please see Ratings Criteria at www.standardandpoors.com for further information. Complete ratings information is available to subscribers of RatingsDirect at www.globalcreditportal.com. All ratings affected by this rating action can be found on the S&P Global Ratings public website at www.standardandpoors.com. Use the Ratings search box located in the left column.

Standard & Poor's Rating Agency Report – September 29, 2017
Item 3 – Attachment 2

S&P Global Ratings

RatingsDirect®

Summary:

Big Rivers Electric Corp., Kentucky; Rural Electric Coop

Primary Credit Analyst:
David N Bodek, New York (1) 212-438-7969; david.bodek@spglobal.com

Secondary Contact:
Doug Snider, Centennial 303-721-4709; doug.snider@spglobal.com

Table Of Contents

Summary:

Big Rivers Electric Corp., Kentucky; Rural Electric Coop

Credit Profile		
Big Rivers Electric Corp. ICR		
Long Term Rating	BB/Stable	Upgraded
Ohio Cnty, Kentucky		
Big Rivers Electric Corp., Kentucky		
Ohio Cnty (Big Rivers Electric Corp.) RURELCCOO		
Long Term Rating	BB/Stable	Upgraded

Rationale

S&P Global Ratings raised its issuer credit rating on Big Rivers Electric Corp., Ky. (BREC) to 'BB' from 'BB-'. At the same time, S&P Global Ratings raised its rating on Ohio County, Ky.'s $83.3 million pollution control refunding revenue bonds, series 2010A (Big Rivers Electric Corp. Project), issued for BREC, to 'BB' from 'BB-'. The outlook is stable.

The upgrade reflects our view of the following developments:

- The cooperative has added more contracts with nonmembers for the sale of surplus portions of generation capacity output following the loss of two aluminum smelters that represented its members' two principal industrial customers. We believe these contracts add more predictability to the revenue stream and mitigate the utility's and its lenders' vulnerability to default. Debt service coverage (DSC) levels were essentially stable in 2015 and 2016 at nearly 1.2x. Nevertheless, a mismatch remains between the duration of the utility's debt and the shorter tenor of the contracts. For the most part, the nonmember contracts will expire five-to-eight years before the maturity of nearly $200 million of the utility's amortizing and nonamortizing debt outstanding. This figure compares with $814 million of long-term debt that the utility reported as of Dec. 31, 2016.
- Following the customer departures, the Kentucky Public Service Commission (KPSC) approved rate adjustments in 2013 and 2014 that allocate a greater share of fixed costs to BREC's members' remaining native load customers. We believe that these rate actions temper, but do not eliminate, the utility's dependence on nonmember sales for margins and fixed cost recovery.

The ratings also reflect our opinion of the following exposures:

- BREC's contracts for the sale of surplus energy to nonmembers do not cover a meaningful portion of the utility's long generation position, leaving it exposed to competitive market forces.
- BREC is a price-taker that is exposed to market prices when it sells its power plants' output to nonmembers through competitive markets transactions. Also, the negotiated prices in nonmembers contracts reflect market conditions. We view the inability to set prices for competitive market sales as limiting some of the financial forecast's predictive value.

- The utility's aging generation fleet is largely coal-based, faces emissions remediation issues, and competes in the markets in which the Midcontinent Independent System Operator Inc. operates where there are many newer, gas-fired assets that are often more efficient.
- The company forecasts continuing meaningful dependence on nonmember revenues for about a third of its revenues through 2020, which we view as limiting the utility's power to steer its financial performance. BREC projects that its member energy sales will remain close to current levels during those years, which we view as an exposure given the significant size of principal repayments the utility is deferring to later years through its use of non-amortizing debt and inclining principal amortization for its amortizing debt.
- Members' residential revenues, which we consider to generally represent the most stable and predictable revenue stream, accounted for only one-third of members' 2017 revenues. Large commercial and industrial revenues accounted for half of their revenues.
- Although DSC reached 1.19x in 2016, we view DSC levels as only adequate relative to the business risks the utility faces. In 2015 accrual DSC dropped to 1.15x from 1.53x in 2014 and 1.35x in 2013, due to the weak wholesale market prices BREC received for its surplus power sales.
- Because more than one-third of BREC's debt does not amortize before maturity, it skews DSC metrics upward relative to those of other cooperative utilities with amortizing debt.
- BREC's average revenue per megawatt-hour from nonmember sales remained anemic in 2016 at about $32. Annual principal repayments will spike to $72 million in 2020 and $67 million in 2021, which will require cash flows sufficient to retire these maturities or market access to refund the maturities. However, BREC was able to secure financing in 2017 to retire a $26 million bridge facility borrowing to fund emissions remediation projects. We view the refinancing as a favorable development.
- The member distribution cooperatives' 2016 residential customers' retail rates were between 44% and 59% higher than they were in 2011, which we view as potentially limiting financial flexibility. Overall, rates are competitive with state averages, but we believe the sharp increases that were needed to temper the loss of the smelter roads might erode the regulator's and customers' appetite for further increases.
- We believe BREC's few, vintage, coal-fired generation assets present operational exposures that can affect financial performance.

Our ratings also incorporate these mitigating factors:

- The utility projects its debt balances will remain relatively stable through 2020 as it pursues nearly $170 million of capital investments.
- BREC's 64% debt-to-capitalization ratio is favorable for a generation-owning, cooperative utility.

Henderson, Ky.-based BREC is a generation and transmission cooperative that produces and procures electricity for sale to its three distribution cooperative members--Kenergy Corp., Jackson Purchase Energy, and Meade County Rural Electric Cooperative--and their approximately 116,000 retail customers. The members serve in 22 counties. The state's median household income levels are nearly 20% below the nation's, which could limit ratemaking flexibility.

The KPSC must approve the rate adjustment requests of the utility and its member distribution cooperatives, which distinguishes these utilities from many other cooperative utilities that have autonomous ratemaking authority. Although the regulator has provided rate adjustments that support adequate financial performance, we consider the financial margins to be weak relative to the magnitude of the utility's exposure to the vicissitudes of competitive wholesale markets where the utility cannot exert price-setting authority over its customers. The commission allows the utility to use a fuel adjustment clause to capture changes in variable costs, which we view as a positive factor. We believe this tool helps reduce financial volatility, but does not sufficiently compensate for the utility's exposure to nonmembers for about one-third of revenues.

The commission granted a 15.6% rate increase in October 2013 and a 14.1% increase in April 2014. Its latter decision provided only about half of the utility's 26.5% requested increase. Moreover, the utility depleted the reserve balances it had used as a rate stabilization fund to soften the impacts of the commission-approved rate adjustments on customers. The loss of large industrial loads whose high load factors historically absorbed a substantial portion of the utility's fixed costs, coupled with the depletion of the reserves translate into retail rates that are much higher than they were five years ago. The service territory's low income levels exacerbate the limits that such sharp increases might place on future increases.

To temper the severity of the fixed cost reallocations flowing from its customer losses, BREC is remarketing some of the generation output that previously served those customers. We believe that market sales partially transform the utility into a merchant generator that faces the risks inherent in facing volatile market demand and prices. Moreover, we believe that the mismatch between the tenor of the contracts and the maturity schedule for the utility's debt distinguishes this cooperative utility from others that tend to align debt maturities with the duration of all-requirements power sale contracts. The utility reported $814 million of long-term debt and $26 million of draws on credit lines as of Dec. 31, 2016.

The utility's generation portfolio provides little fuel diversity. It includes the 443-megawatt (MW), coal-fired Coleman power plant; the 417-MW, coal-fired Wilson plant; the 454-MW, coal-fired Green station; and 130 MWs from multiple units at the coal- and gas-fired Reid Station. Although the cooperative also has an allocation of 154 MWs of Southeastern Power Administration hydroelectric power, coal represents the dominant energy source. In 2016, BREC's coal-fired Green and Wilson plants produced 77% of the energy it sold. BREC sourced another 13% of its 2016 energy supply from its rights to the output of the coal-fired Henderson Municipal Power & Light Station 2 power plant. We believe that BREC's concentration in coal resources exposes the utility to the potential financial and operational effects of emissions regulations and coal combustion residuals regulations.

BREC's Coleman station has been idle since the loss of the smelter loads in 2014. The Reid plant's coal capacity can only operate if the utility remediates the plant's emissions.

Ohio County sold $83.3 million of bonds in 2010 for the benefit of BREC, which used bond proceeds to refund auction-rate securities. The bonds do not amortize and have a 2031 bullet maturity. We understand that the financing structure obligates the utility to unconditionally pay the county's bonds' debt service. BREC issued a note to the county that provides it with a security interest in the utility's assets under its mortgage indenture. The county's bonds' security interest is on par with BREC's senior secured debt.

Outlook

The stable outlook reflect the utility's ability to maintain adequate DSC under adverse market conditions, its access to liquidity, the rate relief that the KPSC provided in 2013 and 2014, and the addition of nonmember contracts that provide more predictability to the revenue stream.

Upside scenario

We do not expect to raise the ratings within our two-year outlook horizon without prospects for a more secure revenue stream that is better aligned with debt maturities. Furthermore, residential customers are shouldering sharply higher rates that we view as potentially limiting ratemaking flexibility. We also consider the utility's reliance of coal-fired resources to support 90% of BREC's 2016 energy sales as a significant hurdle. We view DSC levels as only adequate relative to these exposures.

Downside scenario

We could lower the ratings if the utility cannot sustain sound financial performance because of weak market conditions or poor plant performance. Similarly, if BREC's members' financial profiles erode, we could lower the ratings.

Certain terms used in this report, particularly certain adjectives used to express our view on rating relevant factors, have specific meanings ascribed to them in our criteria, and should therefore be read in conjunction with such criteria. Please see Ratings Criteria at www.standardandpoors.com for further information. Complete ratings information is available to subscribers of RatingsDirect at www.globalcreditportal.com. All ratings affected by this rating action can be found on the S&P Global Ratings' public website at www.standardandpoors.com. Use the Ratings search box located in the left column.

Standard & Poor's Rating Agency Report – January 16, 2019
Item 3 – Attachment 3

S&P Global
Ratings

RatingsDirect®

Summary:

Big Rivers Electric Corp., Kentucky; Rural Electric Coop

Primary Credit Analyst:
David N Bodek, New York (1) 212-438-7969; david.bodek@spglobal.com

Secondary Contact:
Doug Snider, Centennial + 1 (303) 721 4709; doug.snider@spglobal.com

Table Of Contents

Summary:

Big Rivers Electric Corp., Kentucky; Rural Electric Coop

Credit Profile		
Big Rivers Electric Corp. ICR		
Long Term Rating	BB+/Stable	Upgraded
Ohio Cnty, Kentucky		
Big Rivers Electric Corp., Kentucky		
Ohio Cnty (Big Rivers Electric Corp.) RURELCCOO		
Long Term Rating	BB+/Stable	Upgraded

Rationale

S&P Global Ratings raised its issuer credit rating on Big Rivers Electric Corp. (BREC), Ky. to 'BB+' from 'BB'. At the same time, S&P Global Ratings raised its rating on Ohio County, Ky.'s $83.3 million pollution control refunding revenue bonds, series 2010A (Big Rivers Electric Corp. Project), issued for BREC, to 'BB+' from 'BB'. The outlook is stable.

The upgrade reflects our view of the following factors:

- The cooperative utility has entered into five contracts with nonmember public power utilities for the sale of the output from surplus portions of its generation capacity. Excess generation capacity followed the loss of two aluminum smelters that represented its members' two principal industrial customers.
- We believe the nonmember contracts, together with the idling of the utility's uneconomical Coleman power plant, and the cessation of the utility's obligation to purchase output from a Henderson Municipal Power And Light power plant, should better align BREC's 1,200 megawatts (MW) of generation resources with load through 2026. These developments should also add more predictability to the revenue stream and mitigate the utility's and its lenders' vulnerability to default.
- Although the nonmember contract purchasers will not reach their peak requirements until 2022, Big Rivers projects that adding the portfolio of about 340 MW of nonmember contracts will reduce its exposure to market revenues from 37% in 2017 to 9% in 2022. The utility also projects that its gross margins will increase as it migrates from market sales to contracted sales.
- The utility reports that the association representing its members' industrial electric customers has agreed to support the utility's plans to apply to the Kentucky Public Service Commission in late 2020 for the recovery of investments in retired generation assets.
- The utility projects debt balances will remain relatively stable through 2022 as it pursues about $250 million of capital investments.
- In 2017 and 2018, BREC reduced market access risk by retiring with cash, $80 million of debt maturing in 2019-2021. It plans to use cash to retire about 40% of a $245 million 2023 bullet maturity and refinance the balance

of that bullet. The utility is exploring options for its $83 million 2031 bullet maturity.

The ratings also reflect our opinion of these exposures:

- The tenor of the contracts with nonmembers provides only near-term revenue stream security and predictability, which constrains the ratings. The contracts expire in 2026 and 2029 and if they are not renewed or replaced, their expiration will expose about one-third of the utility's generation capacity to competitive markets. Therefore, we continue to consider long-term financial performance as vulnerable because 240 MW of the contracted capacity will roll off in 2026 and another 100 MW in 2029.
- BREC is a price-taker when it sells its power plants' output in competitive markets. The utility's 2017 energy production was almost exclusively from aging coal units that face emissions remediation issues. Self-production accounted for about two-thirds of BREC's 2017 energy sales.
- Members' residential revenues accounted for only one-third of members' 2017 revenues. Large commercial and industrial revenues accounted for half of their revenues. We consider residential revenues as generally representing the most stable and predictable revenue stream,
- Because 40% of BREC's debt does not amortize before maturity, the deferred principal amortization skews debt service coverage (DSC) metrics upward relative to those of other cooperative utilities with amortizing debt. Accrual DSC levels were essentially stable in 2015 and 2016 at nearly 1.2x. Accrual DSC declined to 1.0x in 2017, but cash from operations coverage was nearly 1.6x. That year's diverging cash and accrual coverage reflects, in part, timing differences relating to the recording of interest expense.
- BREC's average revenue per megawatt-hour from nonmember sales were anemic at $32 in 2016, $34 in 2017, and an estimated $30 in 2018.
- In 2017, the member distribution cooperatives' residential customers' retail rates were 12%-16% higher than the state average. Moreover, each of the members' residential rates in 2017 were at least 69% higher than in 2011, because the utility allocated costs from the lost smelter loads to its remaining customers. The sharp increases, the rate disparity relative to state average, and the low income levels might limit financial flexibility.
- We believe BREC's few vintage, coal-fired generation assets present operational exposures that can affect financial performance.

Henderson, Ky.-based BREC is a generation and transmission cooperative that produces and procures electricity for sale to its three distribution cooperative members--Kenergy Corp., Jackson Purchase Energy, and Meade County Rural Electric Cooperative--and their approximately 117,000 retail customers. The members serve in 22 counties. The state's median household income levels are nearly 20% below that of the nation, which could limit ratemaking flexibility. The utility reported $804 million of debt as of Dec. 31, 2017. In April, BREC reduced its debt balances by retiring a $65 million 2021 bullet maturity. BREC's 63% debt-to-capitalization ratio is favorable for a generation-owning, cooperative utility.

The Kentucky Public Service Commission must approve the utility's rate adjustment requests and those of its member distribution cooperatives, which distinguishes these utilities from many other cooperative utilities that have autonomous ratemaking authority. Although the regulator has provided rate adjustments that support adequate financial performance, we consider the financial margins to be weak relative to the magnitude of the utility's exposure to industrial loads and the vicissitudes of competitive wholesale markets where the utility cannot exert price-setting authority over its customers. The commission allows the utility to use a fuel adjustment clause to capture changes in variable costs, which we view as a positive factor. We believe this tool helps reduce financial volatility. Contracts with new loads should contribute to stable financial performance for a number of years, but the specter of volatility remains because substantial debt will remain after the contracts expire.

The utility's generation portfolio provides little fuel diversity. It includes the idled 443-MW, coal-fired Coleman power plant; the 417-MW, coal-fired Wilson plant; the 454-MW, coal-fired Green station; and 130 MWs from multiple units at the coal- and gas-fired Reid station. The cooperative also has an allocation of 178 MWs of Southeastern Power Administration hydroelectric power. Coal represents the dominant energy source and we believe that BREC's concentration in coal resources exposes the utility to the potential financial and operational effects of regulations governing power plant emissions and coal combustion residuals.

BREC's Coleman station has been idle since the loss of the smelter loads in 2014. The Reid plant's coal capacity can only operate if the utility remediates the plant's emissions.

Ohio County sold $83.3 million of bonds in 2010 for the benefit of BREC, which used bond proceeds to refund auction-rate securities. The bonds do not amortize and have a 2031 bullet maturity. We understand that the financing structure obligates the utility to unconditionally pay the county's bonds' debt service. BREC issued a note to the county that provides it with a security interest in the utility's assets under its mortgage indenture. The security interest on the county's bonds is on par with that on BREC's senior secured debt.

Outlook

The stable outlook reflects improved prospects for stable financial performance through the term of the contracts to sell surplus power to nonmember public power utilities. We view the contracts as reducing the revenue stream's exposure to competitive market forces during the life of the contracts.

Upside scenario

We do not expect to raise the ratings within our two-year outlook horizon without prospects for a more secure long-term revenue stream that aligns predictable revenues with debt maturities. We view several additional exposures as constraining the ratings. These include recent years' sharp rate increases relative to low income levels, an almost exclusively coal-fired generation portfolio and its potential exposure to more stringent emissions regulations, DSC levels that are only adequate relative to these exposures, and the presence of nonamortizing debt, which we believe distorts DSC coverage levels relative to utilities with greater percentages of amortizing debt.

Downside scenario

We could lower the ratings if the utility cannot sustain sound financial performance because of poor prospects for renewing or replacing nonmember contracts, weak market conditions, or poor plant performance. Similarly, if the financial profiles of BREC's members erode, we could lower the ratings.

Certain terms used in this report, particularly certain adjectives used to express our view on rating relevant factors, have specific meanings ascribed to them in our criteria, and should therefore be read in conjunction with such criteria.

Please see Ratings Criteria at www.standardandpoors.com for further information. Complete ratings information is available to subscribers of RatingsDirect at www.capitaliq.com. All ratings affected by this rating action can be found on S&P Global Ratings' public website at www.standardandpoors.com. Use the Ratings search box located in the left column.

Moody's Investors Service Report – November 13, 2019
Item 3 – Attachment 4

MOODY'S
INVESTORS SERVICE

CREDIT OPINION
13 November 2019

Update

Rate this Research

Contacts

Kevin G. Rose 212-553-0389
VP-Senior Analyst
kevin.rose@moodys.com

A.J. Sabatelle 212-553-4136
Associate Managing Director
angelo.sabatelle@moodys.com

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454

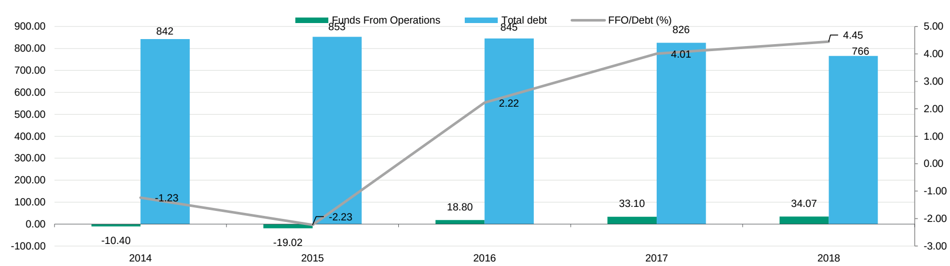
Big Rivers Electric Corporation

Update following outlook change to positive

Summary

Big Rivers Electric Corporation's (Ba1 positive) credit profile reflects improving prospects for mitigating the challenges posed by its ownership of a significant excess of mostly coal-fired generation capacity, some of which is idled, and its increasing regulatory asset balances. Big Rivers' credit profile considers the fact that it is a rate regulated electric generation and transmission cooperative as compared to its peers, but this consideration is balanced by a series of credit supportive decisions from the Kentucky Public Service Commission (KPSC) which has underpinned its strengthened financial metrics for 2016-18. Big Rivers' credit profile benefits from the ability to secure steadily increasing replacement loads following the termination of contracts with two aluminum smelters, including contracts that will continue to be phased in through 2022. Additionally, the cooperative is undertaking strategies to mitigate future refinancing risk relating to two long-term debt issues with bullet maturities due in 2023 and 2031 and to seek assurances for cost recovery relating to its increasing regulatory assets in a rate neutral manner through regulatory filings with the KPSC.

Exhibit 1
Historical FFO, Total Debt and FFO to Total Debt
($ in millions)



Source: Moody's Financial Metrics

Credit Strengths

» Contracted sales of excess capacity are being phased in over the next several years, including sales to a prospective steel plate manufacturing plant to be built by Nucor Corporation

» Limited new debt financing needs to support a moderate capital program, reliable net margins and no patronage capital returns to members support a strong balance sheet

» Regulatory support for timely and substantial recovery of existing costs of service bodes well for sustaining stronger financial metrics

- Long term wholesale power contracts with three member owners through 2043 produce a steady and predictable revenue stream from electricity sold to rural residential and other non-smelter industrial customers

Credit Challenges

- Maintaining customer satisfaction as bill credits have expired and the full impact of increases to the members' wholesale power rate has increased retail rates for members' customers
- Increasing regulatory assets pose potential cost recovery and write-off risks if not adequately addressed as expected through regulatory proceedings
- Elevated carbon transition risk because of significant dependence on mostly coal-fired, carbon-emitting, owned generation capacity, including idled capacity
- Executing strategies to address refinancing risk relating to two bullet maturities of long-term debt and sizable debt maturities beyond the term of certain existing power sales agreements with replacement loads following termination of contracts with the two aluminum smelters
- Local economic dependence on industrial activity, including two operating aluminum smelters and the prospective steel plate manufacturing plant to be built by Nucor

Rating Outlook

The positive rating outlook reflects a prevailing credit supportive regulatory environment and Big Rivers' improving prospects for sustaining its financial metrics at the stronger levels attained during 2016-18 while continuing to achieve better than expected progress in reducing its significant excess capacity created by the lost smelters load several years ago. The positive outlook also considers the cooperative's good prospects for reducing refinancing risk and limited new debt financing needs during the next three years, and incorporates the likelihood that the smelters will continue to operate and that the Nucor load will materialize, thus providing support for the local economy, including employment levels.

Factors that Could Lead to an Upgrade

- A rating upgrade is possible if credit supportive regulatory treatment remains intact and there is future regulatory support for cost recovery of the increasing regulatory asset account which would avoid potential future write-offs while maintaining reasonably competitive rates
- Achieving further successful financial results through ongoing strategies to mitigate refinancing risk and to better align the cooperative's capacity supply and load profile on a sustainable basis could also contribute to upward rating pressure
- Achieving stronger metrics to balance unique business and financial risks; for example, funds from operations (FFO) coverage of interest and debt improving to 2.4x and in a range of 6%-7%, respectively, with the debt service coverage (DSC) ratio tracking at close to 1.2x or better on a sustained basis

Factors that Could Lead to a Downgrade

- A negative rating action is unlikely in the next two years because of the positive outlook; However, a negative rating action could result if there was a shift to a less credit supportive regulatory environment or if liquidity unexpectedly deteriorates
- The pressure for a negative rating action would also increase if substantial and timely assurance for recovery of environmental compliance costs and increasing regulatory assets over time do not occur as expected under the KPSC approved environmental cost recovery mechanism and future KPSC regulatory proceedings

- A scenario under which either or both of the smelters discontinued operations or if the Nucor Corporation load does not materialize would be credit negative because of the potential residual negative effects on the local economy
- In terms of metrics, FFO to debt and DSC ratios below 4% and 1.2x, respectively, for a sustained period would pressure the rating

Key Indicators

Exhibit 2
Big Rivers Electric Corporation
Key Indicators

	2014	2015	2016	2017	2018
Times Interest Earned Ratio (TIER)	1.6x	1.3x	1.1x	1.3x	1.4x
DSC (Debt Service Coverage)	1.5x	1.2x	1.2x	1.2x	1.2x
FFO / Debt	-1.2%	-2.2%	2.2%	4.0%	4.4%
(FFO + Interest Expense) / Interest Expense	0.7x	0.5x	1.5x	1.8x	1.9x
Equity / Total Capitalization	34.9%	35.3%	36.0%	37.2%	39.6%

Source: Moody's Financial Metrics

Obligor Profile

Big Rivers is an electric generation and transmission cooperative headquartered in Henderson, Kentucky and owned by its three member system distribution cooperatives -- Jackson Purchase Energy Corporation; Kenergy Corp (Kenergy); and Meade County Rural Electric Cooperative Corporation (Meade County). These member system cooperatives provide retail electric power and energy to more than 116,000 residential, commercial, and industrial customers in 22 Western Kentucky counties.

In aggregate, Big Rivers owns 1,444 net MWs of coal-fired generating capacity at four stations, including Robert D. Green (454 MWs), Robert A. Reid ((130 MWs), D.B. Wilson (417 MWs) and Kenneth C. Coleman (443 MWs), which has been idled since May 2014. Including about 178 MWs of contracted hydro capacity from the Southeastern Power Administration (SEPA) and taking into account the decision to cease operations at the Henderson Municipal Power and Light (HMPL) Station Two plant thus eliminating its rights to about 187 MWs of coal-fired capacity from that plant, the cooperative's total power capacity is 1,622 MWs.

Big Rivers' owned transmission system includes 1,298 miles of transmission lines and 24 substations. The cooperative also has about 25 transmission interconnections to link its system with several surrounding utilities. Unlike most of its peers, Big Rivers is subject to rate regulation by the KPSC.

Detailed Credit Considerations

Good progress on mitigating credit challenges resulting from loss of aluminum smelters' load

Big Rivers has been making good progress towards replacing the roughly two-thirds of its annual energy sales from two aluminum smelters. While initial worst case expectations contemplated the prospect that both smelters would cease operations upon the expiration of their respective power contracts, regulatory approvals of the smelters' definitive agreements with Big Rivers and Kenergy enable the continued operations of both smelters with energy demands met by open market purchases of electricity. Big Rivers is addressing the long generation capacity position created by the absence of both smelters' load through both supply-side and demand-side strategies, as well as by reducing staff and controlling other expenses where feasible without compromising reliability.

Supply-side strategies taken to another level during 2018-2019

Big Rivers' supply-side initiatives included idling its 443-MWs Coleman plant in May 2014 and terminating its operating agreement with HMPL during 2018, which led to the closure of the HMPL Station Two plant on January 31, 2019. The latter steps reduced the cooperative's excess capacity by eliminating its rights to about 187 MWs of competitively challenged coal-fired capacity from the HMPL Station Two plant.

The settlement agreement to end the operating agreement with HMPL, which was approved by the KPSC on an expedited basis during 2018, provides Big Rivers the ability to apply regulatory asset treatment for its approximately $90 million of net book value relating to its past investments in the Station Two plant as part of the operating agreement. The settlement also established a times interest earned ratio (TIER) credit, which allows Big Rivers to apply any 2019 and 2020 margins in excess of a 1.45 TIER as an initial amortization of its regulatory asset balance. It is management's intent to seek recovery of the regulatory assets in regulatory proceedings likely to be filed at the KPSC no later than early 2020.

Although the Coleman plant was idled in May 2014, it is being maintained to permit restart should market conditions become economically feasible. By idling the Coleman plant, Big Rivers achieved overall cost savings of about $26 million annually. Big Rivers is reporting internal load growth and longer term opportunities are arising for sales of electricity, resulting from economic development activity in its service territory. For example, Big Rivers has an industrial customer utilizing the cooperative's economic development incentive rate in its business expansion, which will contribute significant growth to the cooperative's load. Also, in March 2019 Nucor Corporation (Baa1 stable) announced it plans to construct a steel plate manufacturing mill in Meade County's service territory. More recently, in September 2019 Meade County, Big Rivers and Nucor all signed a long-term power purchase agreement that will add about 200 MWs of load by 2022 to be served by Big Rivers, effectively establishing Nucor as one of Meade County's members. The Nucor plant will also provide additional economic stimulus within the service territory.

Also, Big Rivers is considering the transfer of some environmental control equipment at the Coleman plant to its Wilson plant. If this strategy is successfully implemented, it is likely to reduce the financial impact of a potential write-off or the need for regulatory asset recovery if management elects to permanently shutter the Coleman plant in the future. The current net book value of the Coleman plant, including deferred depreciation, is estimated at $181 million. The net book value includes approximately $73 million of investments in scrubbers. The remaining amounts of net investment in both the Coleman and Station Two plants represent potential write-off risks to Big Rivers' common equity if the cooperative is not able to recover the remaining costs from its customers as a regulatory asset.

The fact that the HMPL Station Two settlement was unanimously supported by the Attorney General (AG) and the Kentucky Industrial Utility Customers (KIUC) is a credit positive. In doing so, the AG and KIUC agreed to support recovery of Station Two and Wilson Station regulatory assets in Big Rivers' next base rate case, with the AG's support contingent on any proposed rate impact being 0% or less. Also, the KIUC has agreed to support recovery of the Coleman Station regulatory asset, while the AG indicated neither support nor opposition to such recovery.

Demand-side strategies are phasing in according to plans and are enhanced by the signing of the contract with Nucor

Big Rivers' demand-side strategies include securing medium-term contracts for the sale of capacity and energy to load serving municipal-distribution entities in Nebraska and Kentucky, making short-term off system sales and participating in the capacity markets.

In addition, the Nucor contract, which is still subject to various regulatory approvals, would add to the three nine-year contracts that the cooperative already has in place to sell capacity and energy to three Nebraska entities which will grow to about 85 MWs. Power being provided under the contract with the Nebraska entities began flowing in 2018 and is scheduled to reach full output in 2022. Also, Big Rivers has executed a 10-year contract to transmit as much as 100 MWs from its coal-fired Wilson Station to Kentucky Municipal Energy Agency (KyMEA) and sales to KyMEA began in May 2019. Also, in June 2018, the City of Owensboro awarded its full-requirements contract, approximating 180 MWs to Big Rivers, which together with other supply-side efforts, helps to further balance Big Rivers' generation capacity and load requirement. The contract with the City of Owensboro covers a term of June 2020 through December 2026 to provide the municipal utility's full annual energy requirements estimated at 825,000 megawatt hours and annual peak load of about 155 MWs, net of its 25 MWs provided through a contract with the Southeast Power Administration.

These contracts are credit positive for Big Rivers because they lock up some of its substantial excess capacity and energy with load-serving municipal-distribution entities for multiple year periods, helping the cooperative replenish the smelter load lost during 2013-14. The contracts are likely to prove beneficial for Big Rivers' long-term financial performance and provide a reliable source of recovery for Big Rivers' fixed and variable costs and contribute to its overall competitiveness through better rates for its members. Also, the contracts allow Big Rivers to become less dependent on the wholesale power market for incremental revenues and helps diversify the cooperative's revenue stream, which historically was heavily dependent on the aluminum industry, to one that is less volatile and more predictable.

Setting aside the still idled Coleman capacity and considering the effects of terminating the operating agreement with HMPL, BREC has just under 1,200 MWs of capacity and awaits the outcome of its RFP for up to 250 MWs of solar capacity. This level of capacity compares with average member peak load of 650 MWs and when combined with additional aforementioned contracted capacity sales of about 550 MWs phasing in through 2022 and allocating about 150 MWs for an approximate 15% reserve margin, moves Big Rivers very close to achieving supply and demand balance.

Smelters continue to operate and the Hawesville smelter moves closer to operating at full capacity

Since canceling their respective contracts, both of the smelters continue to operate. We understand that the Hawesville smelter has gradually ramped up operations in recent years because of some economic aid and improved commodity pricing for aluminum and currently is operating at about 80% of its capacity with four of its five pot lines operating. Also, the Hawesville smelter is continuing work during 2019 to get the fifth pot line operational. The Sebree smelter has been operating at near full production capacity for several years. When compared to the alternative scenario of having both smelters permanently shut down, this outcome is positive particularly since Big Rivers and Kenergy are being reimbursed for any incremental costs to their members of the smelters' continued operation and there are residual benefits to the local economy.

Rate case decisions and ongoing cost recovery mechanisms remain credit positive factors

Big Rivers has approval from the US Department of Agriculture's Rural Utilities Service (RUS) for loans to be funded no later than December 2023 which would provide reimbursement for certain transmission asset investments already made and to refinance half of its Series B Note which has a $245.5 million balloon payment due in December 2023, while it intends to repay the other half of the Series B Note with cash. Additional refinancing strategies are likely to include a reoffering of its $83.3 million of County of Ohio, Kentucky Pollution Control Refunding Revenue Bonds (Big Rivers Electric Corporation Project) in July 2020 to achieve an estimated net present value of $20 million interest expense savings. The pollution control bonds have a July 2020 call date.

Also, Big Rivers' credit profile benefits from credit supportive rate case decisions rendered by the KPSC in October 2013 and April 2014, which resulted in approval of a combined wholesale power rate increase of about $90.4 million. As part of these decisions, residual cash, set aside in restricted accounts, was supportive to Big Rivers' liquidity after the loss of the smelter load. Specifically, cash in the restricted accounts was used to provide bill credits during 2014-16, which minimized the rate shock to ratepayers until September 2015 for large industrial/business (non-smelter) customers and until August 2016 for rural (residential) customers. With the expiration of bill credits in 2016, the full effects of the wholesale power rate increases are now being fully borne by Big Rivers' members and, in turn, the members' retail customers.

Overall credit positive impact from KPSC mandated independent management audit

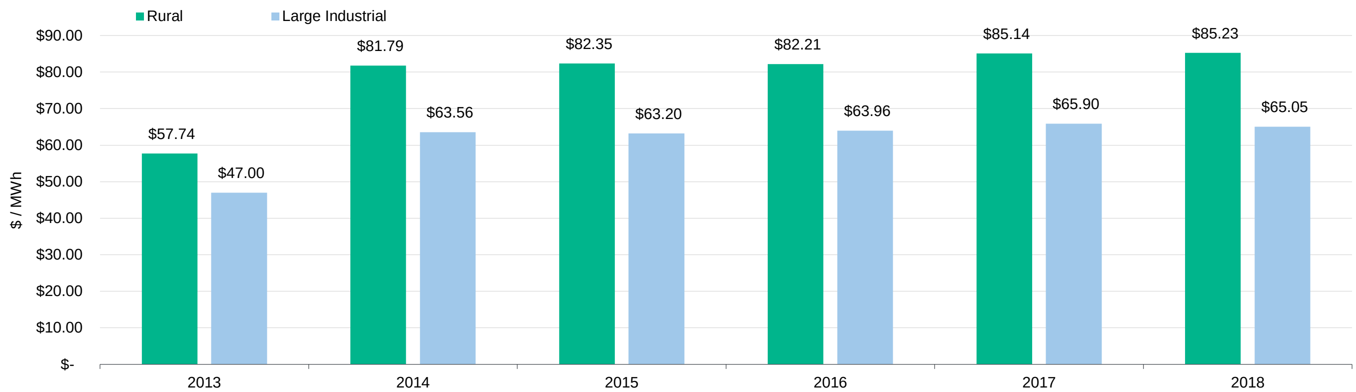
The KPSC ordered independent consultant's comprehensive management audit is credit positive for Big Rivers since it incorporates a combination of many supportive or neutral findings about Big Rivers' past decisions and future plans, as well as five specific, seemingly manageable, recommendations. Of those five recommendations, four were already in process as of the report date, including those relating to increasing expertise regarding the MISO market, pursuing new energy sales and analyzing the best use of the currently idled Coleman plant. Three of the five action items have been closed by the KPSC, including an agreement that the recommendation of adding a new board member with energy expertise is not warranted, that Big Rivers was sufficiently pursuing new energy sales, and that Big Rivers has sufficiently added staff resources focusing on enhancing internal expertise in production cost and financial modeling to further leverage its association as a member of ACES.

The remaining two items yet to be closed by the KPSC relate to: (1) the executed amendments made to Big Rivers' debt documents to address restrictions around the sale or early retirement of the Coleman plant, and (2) completion of the study of the sale, retirement or redevelopment of the Coleman plant.

Reasonably competitive position maintained

As depicted in exhibit three below, although Big Rivers' rates have increased following the loss of the smelter loads, the economics of power produced from Big Rivers' generation sources have enabled it to still maintain a reasonable competitive position in the region.

Exhibit 3
Historical Average Member Rates



Source: Big Rivers Electric Corporation

Base rate increases from 2013 and 2014 and other strategic initiatives are driving improved financial performance and this trend is likely to be sustained

The outcomes in Big Rivers' last two rate cases and other mitigation strategies have supported steady margins for the past three fiscal years in a range of approximately $12.9 - $15.2 million. The net margin for fiscal year ended December 31, 2018 was $15.2 million, representing modest improvement over the prior two years and produced a 1.39x TIER, a contractual margins for interest (MFI) ratio of 1.39x and a DSC ratio of 1.22x, all as defined in the cooperative's debt documents.

Despite mild weather and soft wholesale market pricing, Big Rivers margins for the six months ended June 30, 2019 were $18.9 million compared to $15.6 million in the same period of 2018, primarily reflecting the cost savings from the January 31, 2019 closure of the Station Two plant. Net margin and cash flow benefits from the Station Two plant closure are likely to continue throughout fiscal year 2019 and beyond.

For fiscal years 2016-18 (including Moody's standard adjustments), Big Rivers' FFO coverage of interest, FFO to debt and DSC ratios averaged in the "Baa", "Baa" and "A" rating categories, respectively, for the ratios covered under the Rating Methodology for U.S. Electric G&T Cooperatives. For example, Big Rivers' three year average FFO coverage of interest, FFO to Debt, and DSC for 2016-18 were 1.7x, 3.5%, and 1.2x, respectively.

Big Rivers' FFO coverage of interest and debt ratios strengthened during fiscal years 2016-18 and prospectively are likely to be sustained to support the cooperative's credit quality as power sales agreements with entities in Nebraska and Kentucky and the recent long-term contract with Nucor help compensate for the substantial overcapacity at Big Rivers.

Liquidity

We expect that Big Rivers will maintain ample liquidity over the next 12-18 months.

Big Rivers supplements its existing cash on hand and internally generated cash flow with a multi-year $100 million syndicated senior secured credit agreement with five financial institutions, led by National Rural Utilities Cooperative Finance Corporation (NRUCFC), which expires September 18, 2020. Big Rivers plans to negotiate prior to the expiration date for either an amend and extend agreement or a new facility for at least the same amount and under similar terms and conditions for at least a three-year term.

As of June 30, 2019, Big Rivers had a cash and temporary investments balance of about $48.8 million and $92.3 million available under the NRUCFC credit agreement. Big Rivers is likely to have very limited need for new debt financing for the next eight quarters because of a modest capital spending program for maintenance of existing infrastructure and manageable debt maturities over the period. The debt maturities are largely comprised of scheduled amortizations of long-term debt to be paid at roughly $8 million - $10 million per quarter for the next eight quarters.

Terms of the NRUCFC credit agreement provide a good quality source of alternate liquidity in the form of a syndicated credit agreement. The facility does not have any onerous financial covenants, which are largely consistent with the financial covenants in existing debt documents. The syndicated agreement does, however, separately require Big Rivers to maintain a minimum equity balance at each fiscal quarter-end and year-end of $375 million plus 50% of the cooperative's cumulative positive net margins for each of the preceding fiscal years, beginning with the fiscal year ended December 31, 2015. Big Rivers is comfortably in compliance with those covenants. Additionally, the credit agreement benefits from no ongoing material adverse change (MAC) clause. The syndicated credit agreement does not have any rating triggers, just a pricing grid based on Big Rivers' rating.

Debt Structure

As part of the unwinding of various transactions completed in 2009, Big Rivers replaced the previously existing RUS mortgage with a senior secured indenture. Under the senior secured indenture RUS and all senior secured debt holders, including the $83.3 million of County of Ohio, Kentucky Pollution Control Refunding Revenue Bonds (Big Rivers Electric Corporation Project; cusip number 677288AG7), are on equal footing in terms of priority of claim and lien on assets. The current senior secured indenture provides Big Rivers with the flexibility to access public debt markets without first obtaining a case specific RUS lien accommodation, while retaining the right to request approval from the RUS for additional direct borrowings under the RUS loan program, if they choose to do so. Given persistent questions about the availability of funds under the federally subsidized RUS loan program, the added flexibility of the current senior secured indenture is credit positive.

Other Considerations

Big Rivers' mapping under Moody's U.S. Electric Generation & Transmission Cooperative Rating Methodology scorecard below is based on historical data through December 31, 2018.

The scorecard-indicated outcome for Big Rivers' senior most obligations under the Methodology is currently Baa2. However, Big Rivers' actual senior secured rating of Ba1 reflects several of the unique risks at Big Rivers and the challenges facing the cooperative in mitigating these risks, including further implementation of its load mitigation strategies following the smelter contract terminations and addressing issues surrounding its increasing regulatory asset accounts and idled Coleman plant. The differential between the scorecard indicated outcome and the actual Ba1 senior secured rating is also reflected in the recent revision to a positive outlook to incorporate progress in addressing these challenges.

Methodology

Exhibit 4

Big Rivers Electric Corporation

Big Rivers Electric Corporation, KY -Private

U.S. Electric Generation & Transmission Cooperatives Industry Scorecard [1][2]	Current FY 12/31/2018		Moody's 12-18 Month Forward View As of Publication Date [3]	
Factor 1: Long-Term Wholesale Power Supply Contracts and Regulatory Status (20.0%)	**Measure**	**Score**	**Measure**	**Score**
a) % Member Load Served under Regulatory Status	Ba	Ba	Ba	Ba
Factor 2: Rate Flexibility (20.0%)				
a) Board Involvement / Variable Cost Adjustment Mechanisms	Baa	Baa	Baa	Baa
b) Purchased Power / Total MWh Sales (%)	17.9%	Aa	20% - 30%	A
c) New Build Exposure (% Net PP&E)	A	A	A	A
d) Potential for Rate Shock Exposure	B	B	B	B
Factor 3: Member / Owner Profile (10.0%)				
a) Residential Sales / Total Sales (%)	36.9%	Ba	25% - 35%	Ba
b) Members' Consolidated Equity / Capitalization (%)	37.8%	Baa	37% - 40%	Baa
Factor 4: 3-Year Average G&T Financial Metrics (40.0%)				
a) TIER (3 Year Avg)	1.3x	A	1.3x - 1.5x	Aa
b) DSC (3 Year Avg)	1.2x	A	1.2x - 1.5x	A
c) FFO / Debt (3 Year Avg)	3.5%	Baa	4% - 7%	Baa
d) (FFO + Interest) / Interest Expense (3 Year Avg)	1.7x	Baa	2x - 2.5x	A
e) Equity / Total Capitalization (3 Year Avg)	37.6%	Aa	37% - 41%	Aa
Factor 5: G&T Size (10.0%)				
a) Megawatt hour sales (Millions of MWhs)	6.4	Baa	7 - 10	Baa
b) Net PP&E (USD Billions)	$1.0	A	$0.9	Baa
Rating:				
a) Indicated Outcome from Scorecard		Baa2		Baa1
b) Actual Rating Assigned (Senior Secured)		Ba1		Ba1

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
[2] As of 12/31/2018; Source: Moody's Financial Metrics™
[3] This represents Moody's forward view; not the view of the issuer; and unless noted in the text, does not incorporate significant acquisitions and divestitures.
Source: Moody's Investor Service

RATINGS

BIG RIVERS ELECTRIC CORPORATION, KY

Rating: County of Ohio, Kentucky Pollution Control Refunding Revenue Bonds (Big Rivers Electric Corporation Project; cusip number 677288AG7)	Ba1
Outlook	Positive

REPORT NUMBER 1198918

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454

Fitch ratings Report – December 4, 2019
Item 3 – Attachment 5

FitchRatings

Fitch Affirms Big Rivers Electric Corp. at 'BBB-'; Outlook Stable

Fitch Ratings - New York - 04 December 2019:

Fitch Ratings has affirmed the ratings on the following bonds issued by Big Rivers Electric Corporation (BREC) at 'BBB-':

--$83 million County of Ohio pollution control revenue bonds, series 2010A.

--Issuer Default Rating (IDR).

ANALYTICAL CONCLUSION

The 'BBB-' rating and IDR on Big Rivers Electric Corporation reflects the corporation's elevated but improving leverage profile in relation to its midrange revenue defensibility and strong operating risk profile. Fitch assesses Big River's three members to have midrange credit quality, which coupled with the absence of independent rate-setting authority, constrains the corporation's overall revenue defensibility.

The rating also reflects the corporation's consistently low operating cost burden and supportive regulatory regime. Lastly, Fitch views favorably the re-balancing of Big River's previously long resource position through a combination of greater contracted non-member sales and the retiring and/or idling of existing capacity, which should allow financial margins to remain stable and operating costs low. If margins remain strong and leverage declines further, upward rating movement is possible.

CREDIT PROFILE

Big Rivers Electric Corporation, a non-profit generation and transmission (G&T) cooperative formed in 1961, provides all-requirements wholesale electric and transmission service to three electric distribution cooperatives pursuant to all-requirements contracts through Dec. 31, 2043. The three members provide service to a total of approximately 117,000 retail customers located in 22 western Kentucky counties. Financial performance of the three distribution systems is satisfactory and provides sufficient support for the rating.

KEY RATING DRIVERS

Revenue Defensibility:: 'bbb'

Strong Contractual Framework, Midrange Member Credit Quality

Revenue defensibility is midrange despite otherwise very strong revenue source characteristics provided by all-requirements contracts. The midrange assessment principally reflects the credit quality of the three member utilities along with the regulatory framework within which Big Rivers and its customers operate. While the regulatory regime has been constructive historically, neither Big Rivers nor its three customers have autonomy over rate-setting.

Operating Risk:: 'a'

Coal-Dominated Resource Base, Low Cost Burden

The strong operating risk assessment begins with a low operating cost burden that has averaged 4.85 cents/KWh over the past five years. Operating cost flexibility assessment is neutral as Big River's has idled or retired 695 MWs of coal capacity over the past few years. As a result, reliance on coal-fired capacity is lower than historical amounts and sits just below Fitch's threshold for a neutral assessment. Management expects to add some renewable (solar) capacity over the next several years, which will further diversify the resource base.

Financial Profile:: 'bbb'

Improved Margins, Leverage to Decline

Big River's midrange financial profile reflects elevated but improving leverage ratios. The solid financial results achieved in fiscals 2017 and 2018 are expected to continue as Big Rivers provides contracted energy and capacity to Kentucky Municipal Energy Agency and the city of Owensboro, KY in 2019 and 2020, respectively. In addition, Fitch anticipates lower operating expenses from the reduction in capacity over the past few years coupled with higher non-cash expenses (depreciation) will lead to a further improvement in leverage over the next few years.

Asymmetric Additional Risk Considerations

There are no additional asymmetric risks affecting the rating.

RATING SENSITIVITIES

Improved Leverage: Big Rivers Electric Corporation's ratings and IDR could be upgraded if the financial profile is sustained and leverage continues its positive trend downward over time.

Member Credit Quality: The rating is also sensitive to changes in the credit quality of its three member customers. A shift in member credit quality in either direction could result in a change in Fitch's assessment of revenue defensibility and could lead to a change in the rating.

SECURITY

The bonds are secured by a mortgage lien on substantially all of the Big Rivers' owned tangible assets, which include the revenue generated from the wholesale sale or transmission of electricity.

Revenue Defensibility

Strong Contractual Framework

Revenue source characteristics are very strong. All three of Big Rivers' customers are signed to long-term, all-requirements, take-and-pay power contracts. All costs associated with the delivery of power and energy/services, including debt service on the bonds, are billed to the customers on a monthly basis. There are no step-up provisions in the contracts for non-payment. However, given there are only three members, the rating on the bonds is heavily correlated to the credit quality of all three customers.

Rates are Regulated

The Kentucky Public Service Commission (KPSC) is charged with approving the wholesale and retail rates of Big Rivers' and its members. Wholesale rates charged to the members consist of a demand charge and an energy charge per kWh consumed as approved by KPSC. Big Rivers has certain approved riders including a fuel adjustment clause and an environmental surcharge, which helps provide timely pass-through of variable charges. Supportive regulatory policies and successful rate recovery efforts historically point to a constructive regulatory environment.

Big Rivers' last rate order, received in 2014, approved rates at levels that allowed it to cover total fixed costs on a self-sustaining basis. On the member level, rates are set for full cost recovery. However, while the regulatory environment for rate recovery has been supportive, approval of rate cases by an outside entity could result in delayed revenue recovery, potentially higher revenue variability and weaker overall revenue defensibility compared to non-regulated entities, and thus limits rate flexibility in Fitch's view.

Beginning in 2018, member rates have been set to allow Big Rivers to fully recover its costs from the members (i.e., there are no longer any deferred revenues), which is an important rating factor that underpins the investment grade rating. Fitch believes the stronger margins are sustainable over the intermediate term as Big Rivers begins to benefit for newly contracted sales. The average wholesale power cost to members declined in 2018 to $71/MWh from about $76/MWh the previous year. The member rate for 2019 is up to $72.50 and is forecast to rise again in 2020 to just over $73.00 but remain at this level for the next few years.

Midrange Purchaser Credit Quality

Revenue defensibility primarily reflects the member (purchaser) credit quality as evaluated using Fitch's purchaser credit index (PCI), which reflects the weighted average credit quality of the relevant obligors. Fitch's PCI score of 3.05 is based on an evaluation of all three member cooperatives; Meade County Rural Cooperative Corporation (Meade), KY comprising 16% of Big River's revenues; Kenergy Corporation, KY (Kenergy, 63% of revenues); and Jackson Purchase Energy Corporation, KY (Jackson, 21% of revenues). The overall scoring for each cooperative ranged from relatively strong to relatively weak.

The PCI takes into account the strength of the member's service area, retail rate competitiveness and ability to absorb rate increases through an analysis of its service area, as well as 2018 financial performance. Fitch assessed the service area characteristics for the two largest members to be midrange based on the relatively low median household income (MHI) and average to above average unemployment rates.

Contributing to Kenergy's midrange score are its proportionally low amount of revenues derived from residential users (23% of total coop revenues) and MHI that is just 84% of the US average. In addition, 2018 financial performance was weak. On the positive side, Kenergy's customer base is slowly growing and retail rates are very affordable. The weak score for Jackson is rooted in its even lower MHI (74% of the U.S. average), relatively high unemployment rate of 6.1%, high retail rates, and very weak 2018 margin and cash cushion. Meade's score was assessed to be the highest of the three, although as the smallest of Big Rivers' members, its strong overall credit profile factors less into the overall PCI.

The three member cooperatives serve small to mid-sized cities and counties, and are geographically located on Kentucky's western border. Economic activity throughout the state is relatively diverse but weighted more heavily in manufacturing and natural resources. Locally, growth in the population and customer base has been steady and the unemployment levels for the communities, while varied, are mostly moderate ranging from 4.4% to as high as 6.1%. A fairly robust transportation network provides access to larger metropolitan areas including Nashville, TN (to the south) and Louisville, KY as well as to St. Louis, MO (northwest) and Indianapolis, IN (north).

Operating Risk

Big River's strong operating risk assessment reflects a consistently low operating cost burden of about 5 cents/KWh since at least 2014. Operating costs are anticipated to remain low as resource capacity is expected to remain sufficient to meet existing member and newly added customer load and capital needs are manageable. In addition, power is supplied mainly by low-cost vintage generating units and contracted purchases, all of which is further supported by access to the MISO market.

Operating Cost Flexibility

Fitch assesses Big River's operating cost flexibility as neutral as its past reliance on coal-fired generation has declined. The assessment takes into account the corporation's current resource base that includes four owned generating facilities (all coal) as well as contracted hydroelectric capacity. In 2019, approximately 78% of total capacity is coal-fired, followed by hydro capacity at 16% and a small amount of natural gas.

Big Rivers currently owns and operates 1,000 MWs of net generating capacity consisting of the following coal-fired facilities: Green generating station, a two-unit 454 MW facility that has the ability to burn high Sulphur, low cost coal; Wilson generating station, a 417 MW single unit facility; and the smallest of BR's generating assets - Reid Station (130 MW). In addition, Big Rivers also receives power through contract with Southeastern Power

Administration (SEPA) for 178 MWs of hydroelectric capacity, bringing total current capacity to over 1,100 MWs. Big Rivers' 2017 decision to idle the 443 MW three-unit Coleman Station has helped improve its resource mix.

Not included in the assessment cost flexibility assessment is the capacity from the coal-fired plant owned by the city of Henderson, KY. Pursuant to a long-standing agreement with Henderson, Big Rivers received the surplus energy from the plant after Henderson's own retail needs were met, which had been roughly equivalent to 180MW-190MW per year. The Henderson plant was no longer capable of providing economical, continuous and reliable operation, leading both parties to agree to de-commission it in early 2019. The retirement of the Henderson plant, which was approved by regulators in late 2018, resulted in the elimination of a net operating loss on the asset of roughly $13 million annually.

Environmental Considerations

The Commonwealth of Kentucky does not currently have a renewable portfolio standard. However, Big Rivers issued a request for proposal to add up to 150 MWs of solar capacity. The expectation is to enter into a 20 year purchase power agreement at a fixed price. A short list of respondents and potential projects is currently being evaluated. The additional capacity is not expected to be available for at least several years. However, once available, capacity from coal resources will decline to around 70%.

Capital Planning and Management

Capital planning and management are assessed to be midrange. Big Rivers has an exceptionally high, Fitch-calculated average age of plant of 49 years in 2018, which indicates high life-cycle needs. This is somewhat offset by capital spending that has averaged 131% of annual depreciation over the past five years and an anticipated acceleration in annual depreciation expense and approval to treat several of its generating facilities as regulatory assets is received over the near term.

The regulatory asset designation will allow Big Rivers to include a larger proportion of the depreciation of these assets in its rating case with regulators for enhanced future cost recovery. Management anticipates capital spending for 2019-2023 to total a fairly sizeable $355 million, which continues a recent trend of sound capital reinvestment undertaken over the past few years. Roughly $250 million in additional debt is expected to be issued to fund the proposed capital spending.

Reduction in Long Generation Portfolio Position

Big Rivers historically provided capacity and energy to its members through a combination of multiple owned generation stations, including a leased facility (Henderson Station 2) and power purchases. After the loss of load attributable to the two large aluminum smelters, system peak demand declined to around 650 MWs, or roughly half of historical demand, leading to a very long resource position. To address this, Big Rivers implemented a mitigation plan with the goal of achieving financial savings and benefits that would help lower member rates. The plan included aggressively marketing the excess power under intermediate-term contracts and through spot sales in MISO.

More recently, growth in the existing customer base coupled with the signing of bi-lateral contracts with Kentucky Municipal Energy Agency (KyMEA, A/Stable), a consortium of Nebraska-based utilities, and full requirements sales to the city of Owensboro, KY (beginning in 2020) significantly increases contracted (non-member) sales and lowers reliance on short-term markets. In addition, the idling of the capacity at Coleman station and de-commissioning of the Henderson plant reduces total capacity to a manageable reserve of around 10% of total expected peak demand by 2020 (1,179 MW of capacity vs 1,026 MW of peak demand).

Operations at the Coleman plant (443 MW) were initially idled in 2014. Coleman is expected to be retired in the near term.

The wholesale customers in Nebraska began receiving energy in 2018, but full requirements capacity and energy totaling 85 MWs will phase in over time. KYMEA's 100 MW of firm purchases began May 1, 2019 and is followed by the city of Owensboro's agreement to purchase full requirements (165 MW) from Big Rivers beginning in mid-2020. The inclusion of these intermediate term contracts brings some predictability to the revenue base, which coupled with the idling and retiring of certain generating assets right-sizes the total resource needs relative to member and contracted demand. Big Rivers is expected to add up to 150 MW of solar in the coming years, 100 MW of which will be used to meet the expected 200 MWs of new demand from Nucor Steel.

Financial Profile

Improved Financial Results

Big Rivers filed a rate case with the Kentucky Public Service Commission (KPSC) in 2013 requesting an increase in rates to levels that would provide full cost recovery of system obligations. The KPSC granted the new rates in 2014, but the full effect of the increases were not realized until fiscal 2017, as previously set aside reserves were used to keep member rates low over several years leading up to 2017.

Fitch-calculated debt service coverage improved to 1.30x in fiscal 2017 (and to 1.36x in 2018) from very weak levels previously, and coverage of full obligations improved to 1.28x by 2018. Audited fiscal year Sept. 30, 2019 results are not expected to be available for several months, but are anticipated to be sound once again. The improved performance over the past few years is largely attributable to the full implementation of the cooperative's risk mitigation strategy and approved rate plan.

However, the mitigation reserves have been fully utilized and Fitch believes the improved leverage ratios that have resulted from a steady decline in net debt and rise in funds available for debt service (FADS) over the past few years is likely to continue. Cash remains near historical norms and at 57 days cash on hand is considered neutral to the financial profile assessment. A $100 million senior secured credit agreement provides added liquidity.

Fitch Analytical Stress Test (FAST) Base and Rating Case Analysis

Fitch's base case is based on Big River's financial pro forma for fiscal years 2019 - 2023, which conservatively incorporates a slight decline in energy and revenues followed by limited growth through the forecast and annual spending for capital improvements totaling $356 million through 2023. The base case assumes $294 million of outstanding principal will be retired (including cash defeasances) although a portion of the capital plan will be funded with additional debt.

The Fitch base case aligns with Big Rivers' forecasted margins, which includes a decline in operating expenses related to the closure of Station 2 in 2019, and regulatory approval to treat station 2 as a regulatory asset, a rise in annual depreciation beginning in 2019, and an expected increase in sales related to Owensboro, KY and the expected opening of a new facility by Nucor Steel in 2022. The base case shows a decline in leverage in year one (2019) to 6.9x followed by a further modest decline in the leverage ratio throughout the remainder of the forward look.

For the rating case, the FAST incorporates a stress in sales in the first two years aggregating to 16% before a return to sales growth in years three through five. The previously mentioned base case assumptions are also applied. The result of the stress is an increase in the leverage ratio to 9.1x in year two before an expected return of sales growth and presumed rate increases that would allow the utility to maintain at least a minimal amount of cash in subsequent years. Fitch believes the above stress-induced leverage ratio would remain fully supportive of the current rating. However, if actual leverage declines as projected in the base case, a higher rating could be warranted.

Debt Profile

The debt profile is neutral to the rating. Big Rivers had approximately $760 million in total outstanding debt as of fiscal year-end 2018. All of the outstanding debt is fixed rate maturing no later than 2032 and includes a large bullet maturity of $245 million due in 2023. Management expects to cash-fund roughly half of this payment and refinance the rest with long-term, fully amortizing bonds.

In addition to the sources of information identified in Fitch's applicable criteria specified below, this action was informed by information from Lumesis.

ESG Considerations

Unless otherwise disclosed in this section, the highest level of ESG credit relevance is a score of 3 - ESG issues are credit neutral or have only a minimal credit impact on the entity, either due to their nature or the way in which they are being managed by the entity.

For more information on Fitch's ESG Relevance Scores, visit www.fitchratings.com/esg.

RATING ACTIONS

ENTITY/DEBT	RATING		PRIOR
Big Rivers Electric Corporation (KY)	LT IDR BBB- Affirmed		BBB-
Big Rivers Electric Corporation (KY) /Senior Secured Obligation/1 LT	LT BBB- Affirmed		BBB-

Additional information is available on www.fitchratings.com

FITCH RATINGS ANALYSTS

Primary Rating Analyst
Andrew DeStefano
Director
+1 212 908 0284
Fitch Ratings, Inc.
Hearst Tower 300 W. 57th Street

New York 10019

Secondary Rating Analyst
Parker Montgomery
Associate Director
+1 212 908 0356

Committee Chairperson
Kathy Masterson
Senior Director
+1 512 215 3730

MEDIA CONTACTS

Sandro Scenga
New York
+1 212 908 0278
sandro.scenga@thefitchgroup.com

Applicable Criteria

U.S. Public Power Rating Criteria (pub. 03 Apr 2019)
Public Sector, Revenue-Supported Entities Rating Criteria (pub. 07 Nov 2019)

Additional Disclosures

Dodd-Frank Rating Information Disclosure Form
Solicitation Status
Endorsement Policy

DISCLAIMER

COPYRIGHT

distribution, Fitch research may be available to electronic subscribers up to three days earlier than to print subscribers.
For Australia, New Zealand, Taiwan and South Korea only: Fitch Australia Pty Ltd holds an Australian financial services license (AFS license no. 337123) which authorizes it to provide credit ratings to wholesale clients only. Credit ratings information published by Fitch is not intended to be used by persons who are retail clients within the meaning of the Corporations Act 2001
Fitch Ratings, Inc. is registered with the U.S. Securities and Exchange Commission as a Nationally Recognized Statistical Rating Organization (the "NRSRO"). While certain of the NRSRO's credit rating subsidiaries are listed on Item 3 of Form NRSRO and as such are authorized to issue credit ratings on behalf of the NRSRO (see https://www.fitchratings.com/site/regulatory), other credit rating subsidiaries are not listed on Form NRSRO (the "non-NRSROs") and therefore credit ratings issued by those subsidiaries are not issued on behalf of the NRSRO. However, non-NRSRO personnel may participate in determining credit ratings issued by or on behalf of the NRSRO.

SOLICITATION STATUS

The ratings above were solicited and assigned or maintained at the request of the rated entity/issuer or a related third party. Any exceptions follow below.

Endorsement Policy

Fitch's approach to ratings endorsement so that ratings produced outside the EU may be used by regulated entities within the EU for regulatory purposes, pursuant to the terms of the EU Regulation with respect to credit rating agencies, can be found on the EU Regulatory Disclosures page. The endorsement status of all International ratings is provided within the entity summary page for each rated entity and in the transaction detail pages for all structured finance transactions on the Fitch website. These disclosures are updated on a daily basis.