



COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY

In the Matter of:

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

DIRECT TESTIMONY

OF

**NATALIE R. HANKINS
SENIOR POWER PORTFOLIO OPTIMIZATION ANALYST
ENERGY SERVICES**

ON BEHALF OF

BIG RIVERS ELECTRIC CORPORATION

**PURSUANT TO THE ORDERING PARAGRAPH NO. 9
TO THE COMMISSION'S SEPTEMBER 13, 2022 ORDER**

FILED: September 30, 2022

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

VERIFICATION

I, Natalie R. Hankins, verify, state, and affirm that I prepared or supervised the preparation of the Direct Testimony filed with this Verification, and that Direct Testimony is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



Natalie R. Hankins

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

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



Notary Public, Kentucky State at Large

Kentucky ID Number KVNP43026

My Commission Expires 01-14-2026

**DIRECT TESTIMONY
OF
NATALIE R. HANKINS**

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Q. Please state your name, business address, and position.

A. My name is Natalie R. Hankins. I am employed by Big Rivers Electric Corporation (“Big Rivers” or “the Company”), 201 Third Street, Henderson, Kentucky 42420, as a Senior Power Portfolio Optimization Analyst in Energy Services. I report to Ron Repsher, Big Rivers’ Vice President Energy Services.

Q. Please describe your job responsibilities.

A. As Senior Power Portfolio Optimization Analyst in Energy Services, I am responsible for long-term energy and capacity marketing and short-term energy hedging activities at Big Rivers. I am also responsible for coordination of daily Midcontinent Independent System Operator, Inc. (“MISO”) market activities that include unit offer strategy, interface with ACES Power Marketing, and oversight of the market Awards Process. Other responsibilities include scheduling Southeast Power Administration (“SEPA”) energy and capacity, natural gas account management, contract management, interface with the MISO Independent Market Monitor, and performing a variety of official roles within the MISO structure.

1 **Q. Briefly describe your education and work experience.**

2 A. I earned a Bachelor of Science degree in Biology from Murray State
3 University, and a Master of Public Health degree from Saint Louis
4 University with dual concentrations in Epidemiology and Environmental and
5 Occupational Health. I began my career at Big Rivers in November 2007 as
6 a planning analyst, and I assumed my current position in late 2013.

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8 **Q. Have you previously testified before this Commission?**

9 A. Yes. I testified in Big Rivers' most recent six-month fuel adjustment clause
10 ("FAC") review,¹ as well as the two year review in Case No. 2021-00058.² I
11 also sponsored responses to information requests in Case No. 2020-00250³
12 and in Case No. 2020-00009.⁴

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¹ *In the Matter of: An Electronic Examination of the Application of the Fuel Adjustment Clause of Big Rivers Electric Corporation From May 1, 2021 through October 30, 2021*. P.S.C. Case No. 2021-00041.

² *In the Matter of: An Electronic Examination of the Application of the Fuel Adjustment Clause of Big Rivers Electric Corporation from November 1, 2018 through October 31, 2020*, P.S.C. Case No. 2021-00058.

³ See *In the Matter of: An Electronic Examination of the Application of the Fuel Adjustment Clause of Big Rivers Electric Corporation from November 1, 2019 Through April 30, 2019*, Case No. 2020-00250.

⁴ See *In the Matter of: An Electronic Examination of the Application of the Fuel Adjustment Clause of Big Rivers Electric Corporation from May 1, 2019 Through October 31, 2019*, Case No. 2020-00009.

1 **Q. What is the purpose of your testimony in this proceeding?**

2 A. The purpose of my testimony is to respond to Ordering Paragraph No. 9
3 subparts (f) and (g) of the Commission’s Order dated September 13, 2022, in
4 this matter. My testimony will address Big Rivers’ expectations for electric
5 power markets for the next two years, *i.e.*, 2023 and 2024, and their potential
6 impact on Big Rivers’ electric power procurement practices. I will also
7 describe how Big Rivers bids its generating units into Midcontinent
8 Independent System Operator’s (“MISO”) energy markets, including, but not
9 limited to: how Big Rivers determines the manner in which individual
10 generating units are offered into MISO’s day ahead market (must run,
11 economic dispatch etc.); who makes those decisions; and what level of control
12 MISO has over the dispatch of Big Rivers’ generating units.

13 **Q. Discuss Big Rivers’ expectations for electric power markets for the**
14 **next two years, *i.e.*, 2023 and 2024, and their potential impact on Big**
15 **Rivers’ electric power procurement practices.**

16 A. The market is expecting IndyHub prices to remain strong. The energy
17 forward price for 2023 is currently above \$70/MWh and 2024 is above
18 \$50/MWh. Continued coal retirements, high natural gas prices, and delays
19 in approving new generation are the primary drivers.

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1 The conversion of the Green Station coal units to natural gas⁵ was originally
2 modeled as a 10% reduction in capacity of those units. This was to be
3 partially offset by the addition of three solar contracts, totaling 260 MW
4 beginning in 2023. However, in post-conversion testing, the Green Gas units
5 were found to have the same net capacity as the when operated on coal (no
6 10% reduction). Big Rivers is currently seeking the Commission’s approval
7 of an amendment (“*Amendment No. 1*”) to the Power Purchase Agreement
8 between Big Rivers and Unbridled Solar, LLC, formerly known as Henderson
9 Solar, LLC, entered on May 26, 2020.⁶ Amendment No. 1, reduces the
10 guaranteed Net Output of energy of the Unbridled Project, originally
11 expected to be a 160 MW facility and changes the commercial operation date.
12 The development of the 100 MW associated with the two solar contracts with
13 Community Energy is at best delayed, and at worst, the developer will not
14 perform at all.⁷ Additionally, Big Rivers will begin serving two large new
15 loads in 2023. Big Rivers will use market purchases of energy and natural
16 gas to hedge the exposure of our members to energy prices.

⁵ *In the Matter of: Electronic Application of Big Rivers Electric Corporation for a Certificate of Public Convenience and Necessity Authorizing the Conversion of the Green Station Units to Natural Gas-Fired Units and an Order Approving the Establishment of a Regulatory Asset*, P.S.C. Case No. 2021-00079.

⁶ *See In the Matter of: Electronic Application of Big Rivers Electric Corporation for Approval of Amendment to Power Purchase Agreement*, P.S.C. Case No. 2022-00296.

⁷ *Id.*, Application Exhibit 3 at page 18, (Sept. 20, 2022).

1 The long-term bilateral capacity markets had already reacted to the
2 potential of higher prices prior to this year. Offers for long-term capacity
3 (three to ten years) were in the \$3.50/kw-month to \$4.00/kw-month range in
4 2020, driving Big Rivers’ decision to repower our Green Station coal units
5 with natural gas. The economic value of that conversion was comparable to
6 market purchases and the conversion provided the added benefits of further
7 diversifying Big Rivers’ generation portfolio and retaining a dispatchable
8 generating resource on the grid, as intermittent renewable generating
9 resources are being added.

10 After the MISO Planning Resource Auction (“PRA”) cleared at the cost
11 of new entry (“CONE”) for the 2022 Planning Year, bilateral capacity price
12 projections rose even further for 2023 and beyond. Zone 6 prices for the 2023
13 Planning Year are in the \$5/kw-month range. The Federal Energy
14 Regulatory Commission’s (“FERC”) approval of MISO’s seasonal capacity
15 construct has added uncertainty to the market. [REDACTED]

16 [REDACTED]

17 [REDACTED]

18 [REDACTED]

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1 **Q. Please describe how Big Rivers bids its generating units into MISO**
2 **energy markets, including, but not limited to:**

3 **a. how Big Rivers determines the manner in which individual**
4 **generating units are offered into MISO’s day ahead market**
5 **(must run, economic dispatch etc.);**

6 **b. who makes those decisions; and**

7 **c. what level of control MISO has over the dispatch of Big**
8 **Rivers’ generating units**

9 a. Big Rivers offers its generating units into the MISO market each day
10 through the Generation Offer process. Big Rivers provides MISO with
11 a great deal of data on each unit’s operating characteristics (minimum
12 and maximum generation levels, ramp rate, start costs, etc.) and a cost
13 curve, which provides a formula for determining the variable
14 operating cost at various points within a unit’s operating range. If a
15 unit is available (i.e. not unavailable due to an outage), the default
16 setting would be to set the Commitment Status⁸ on the Generation
17 Offer to “Economic”, to ensure recovery of costs if MISO commits the
18 unit.

19 For coal units expected to operate economically at a steady state
20 for long periods of time (“Baseload Units”), Big Rivers will frequently

⁸ MISO Commitment Statuses include: Outage, Emergency, Economic, Must-Run, Not Participating, as defined in MISO Business Practice Manual, BPM-002-r22, at 4.2.3.4.6 “Resource Offer Commitment Status.” <https://www.misoenergy.org/legal/business-practice-manuals/>

1 set the Commitment Status to “Must Run.” “Must Run” status is used
2 to minimize starting and stopping the unit and associated increased
3 maintenance costs. Must Run status might also be used to minimize
4 expensive starts, such as when a unit is projected to generate
5 economically on Friday and Monday, but not on the intervening
6 weekend or during any period when prices are volatile and a stop and
7 start is considered operationally problematic. Big Rivers might offer
8 a unit as Must Run if a steady generation level is needed for
9 performance or environmental testing or to manage coal inventories
10 as units approach retirement. Big Rivers also offers Baseload Units
11 as “Must Run” if a long period of elevated Locational Marginal Prices
12 (“LMP’s”) is expected.

13 b. Big Rivers’ Chief Operating Officer Nathan Berry.

14 c. Generation qualifying as capacity for Resource Adequacy purposes
15 has a daily “must offer” requirement. Big Rivers must make its
16 generation available to MISO each day and MISO may call upon that
17 generation for economic or reliability reasons. Big Rivers is free to
18 impose operating restrictions on the unit if it is unavailable or
19 derated, but that will affect the amount of capacity MISO accredits to
20 that unit in the future. The MISO Market Monitor will watch for
21 restrictions that fall outside of established guidelines and question
22 them. Beyond that, MISO is free to operate the unit consistent with

1 the unit's operating characteristics and restrictions. MISO combines
2 Big Rivers' generation offers with those of all other market
3 participants and chooses the combination of assets that meets load
4 while minimizing cost and maintaining reliability.

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6 **Q. Does this conclude your testimony?**

7 **A. Yes.**

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