

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

ELECTRONIC 2023 INTEGRATED)
RESOURCE PLANNING REPORT OF)
BIG RIVERS ELECTRIC CORPORATION)

Case No. 2023-00310

ATTORNEY GENERAL’S COMMENTS

The intervenor, the Attorney General of the Commonwealth of Kentucky, through his Office of Rate Intervention [“OAG”], tenders the following Comments regarding Big Rivers Electric Corporation’s [“BREC,” or “the Company”] 2023 Integrated Resource Plan [“IRP”]:

I. SUMMARY OF IRP

A. Background and Existing System

BREC is a generation and transmission cooperative that owns, operates and maintains electric generation and transmission facilities, and purchases, transmits and sells electricity at the wholesale level.¹ BREC’s primary purpose is to sell power to its member owners: Jackson Purchase Energy Corporation (“JPEC”), Kenergy Corp. and Meade County Rural Electric Cooperative Corporation (“MCRECC”). The three Member-Owners supply retail electric service to 121,000 end-use customers located in 22 western Kentucky counties.

In 2010, the Public Service Commission (“Commission”) approved BREC’s petition to join the Midcontinent Independent System Operator (“MISO”),² a regional transmission organization (“RTO”) that operates transmission facilities and markets in multiple midwestern states and parts of Canada. Although much of BREC’s generation capacity is

¹ IRP § 2 at 15.

² See Case No. 2010-00043, Order dated Nov. 1, 2010.

devoted to serving its native load, the Company also sells and purchases power through MISO's markets, and sells power through bilateral sales contracts.³

BREC has a total of 1,114 MW of total generation capacity, derived from the following supply-side resources: (a) the D.B. Wilson pulverized coal unit with a net generating capacity of 417 MW; (b) the Robert D. Green plant, consisting of two (2) gas-fired turbines with net generating capacities of 231 MW and 223 MW, respectively;⁴ (c) the Robert A. Reid combustion turbine rated at 65 MW of capacity; (d) 178 MW of contracted hydropower capacity from the Southeastern Power Administration ("SEPA"); and (e) seven (7) small demonstration-scale solar arrays with a combined maximum output of approximately 98 kW (165 MWh annually).⁵ Additionally, BREC has entered into a purchase power agreement ("PPA") to obtain all of the capacity, energy, ancillary services and environmental attributes from Unbridled Solar, LLC, which will construct a 160 MW solar facility in Henderson/Webster Counties.⁶ When the Unbridled Solar project becomes commercially operable in 2025, BREC's total generation resource capacity will increase to 1,274 MW.

Finally, BREC's demolition of six (6) retired coal-fired generating units is either nearing completion, or has been completed.⁷

B. BREC Load Growth

³ IRP § 2 at 17.

⁴ The two Green units were originally coal-fired, but due to pending EPA regulations, the Commission in 2021 granted BREC's request to convert the two units to natural gas-firing. *In Re: 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*, Case No. 2021-00079, Order dated June 11, 2021.

⁵ *Id.* at 18-19.

⁶ Approved in Case Nos. 2020-00183 (Order dated Sept. 28, 2020; and as modified in Case No. 2022-00296 (Order dated June 13, 2023).

⁷ IRP § 6 at 91. The plants were the three Coleman units, the two HMP&L units, and the Robert A. Reid coal-fired unit.

As depicted in Table 4.4(a),⁸ BREC's total system energy requirements have increased nearly 10% in the previous five years. Since 2019, BREC has had robust non-member energy requirements, which are projected to continue through at least approximately 2028.⁹ Moreover, the lion's share of BREC's system growth appears to be in direct serve (primarily on-system industrial load) and auxiliary sales,¹⁰ which has grown approximately 10.5% over the past five years, and is projected to grow approximately 19% over the next five years.¹¹

BREC's projection for increased direct serve sales is supported by a significant increase in actual requests for information ("RFI") from prospective economic development projects that the Company has received since 2020.¹² In fact, from 2020 to the most recent data available in 2023, RFIs increased from 14 to 36, an increase of 157% over that four-year period. As depicted in Table 2.2.7 (a), the developers of the economic projects represented therein, if they all come to fruition, would bring nearly \$30 billion in new capital investment, over 20,000 jobs and new load growth of over 4 GW.¹³

Even when BREC's load projection is separated into solely native load, the same growth trend appears in the Large Industrial class, which contributed 29% of BREC's member kWh sales in 2022 but which is projected to grow to 47% of member kWh sales by 2042.¹⁴ BREC's member system energy and peak demand requirements are projected to increase at average compound rates of 2.0% and 1.20% respectively, per year from 2023 to 2042, with

⁸ IRP § 4.4 at 69.

⁹ *Id.*

¹⁰ BREC also has Commission-approved bilateral sale agreements with entities in Nebraska, Owensboro Municipal Utilities, and the Kentucky Municipal Energy Agency. IRP § 2.2.2 at 17-18.

¹¹ *Id.*

¹² IRP § 2.2.7, Table 2.2.7 (a) at 25.

¹³ *Id.* Clearly, only a fraction of the projects represented in these RFIs will be built, but the striking growth in the mere number of RFIs lends credibility to the load forecast's system growth projections.

¹⁴ IRP § 2.2.8 at 26.

member peak requirements projected to increase from 752 MW in 2023 to 896 MW by 2042.¹⁵ Finally, the updated forecast reflects the addition of up to 314 MW of new industrial load, which includes a new steel mill, a paper mill, and a crypto currency facility.¹⁶

C. Demand-Side Resources

As part of the IRP, BREC undertook the 2023 DSM Study to examine and analyze the potential for initiating a suite of demand-side management (“DSM”) and demand response (“DR”) programs to reduce consumption and peak demand.¹⁷ The 2023 DSM Study provided the technical, economic, achievable and program potential for residential and non-residential sectors in BREC’s service territory.¹⁸ The Study found that approximately 10% of sales would fall into the achievable category by 2033. In terms of energy efficiency, the Study found that in a program lasting from 2024-2033, approximately 109,000 MWh of cumulative annual energy savings could be achieved in the residential class (15 MW in terms of cumulative annual demand savings), while cumulative annual savings in the non-residential classes could total approximately 121,000 MWh (26 MW in terms of cumulative annual demand savings).¹⁹ The identified programs would have a Total Resource Cost (“TRC”) score of 3.1, making them very effective. BREC is continuing to evaluate these programs for cost-effectiveness, and innovative new technologies entering the market.²⁰ The highest potential for residential energy efficiency programs lies in HVAC programs, followed by water heating,

¹⁵ *Id.* at 30.

¹⁶ IRP § 3.1 at 40.

¹⁷ IRP § 5.

¹⁸ *Id.* at 78-79.

¹⁹ *Id.* The figures regarding energy and demand savings are applicable only to achievable potential.

²⁰ *Id.* at 80-81.

while non-residential programs showing the highest potential were appliances, followed by lighting and HVAC.²¹

The DSM Study also analyzed approximately 20 DR programs for cost-effectiveness under the TRC analysis.²² As forward capacity prices in MISO have increased significantly over the past decade, the cost/benefit of DR programs has consequently risen.²³ The Study found seven (7) DR programs passed the TRC test.²⁴

The DSM Study recommended that BREC take the following measures: (1) work with the Member-Owners to evaluate energy efficiency measures in both the residential and non-residential sectors; (2) Maintain residential and non-residential education for the Member-Owners staff and provide onsite efficiency evaluations for commercial and industrial members; (3) Continue to monitor opportunities for DR, looking for reductions in costs or increases in the value of avoided cost; and (4) Monitor the opportunity for new technologies that may provide peak demand reduction benefits at a lower cost than current programs evaluated.²⁵

BREC also modelled the DSM program as a future resource. Although the modelling showed the DSM program could provide load reduction under some portfolios, it was not shown to be a viable resource alternative for the BREC fleet.²⁶

D. Federal Regulatory Challenges

²¹ *Id.* at 83-85.

²² *Id.* at 87.

²³ *Id.* at 88.

²⁴ The programs are: Air conditioning Cycling and Control; Level 2 Charger Control; Residential Load Control; Non-Residential Load Control; Fleet Charging Control; Peak-Time Rebate; and Time-of-Use and Critical Peak Pricing.

²⁵ *Id.* at 89.

²⁶ IRP § 7.3.3 at 146-147.

BREC's IRP notes that it is compelled to comply with numerous, onerous environmental rules and regulations promulgated by the U.S. Environmental Protection Agency ("EPA"):

" . . . Big Rivers necessarily devotes a significant amount of effort to the evaluation of existing and anticipated environmental regulations. Indeed, it may be impossible to overstate the influence of environmental regulation on the Company and its strategic assets, in particular the generation portfolio it has built and will build to serve its Members-Owners. In light of a complex and ever-evolving framework of state and federal rules, Big Rivers chooses each day to seek and act on the best available information, remaining focused on compliance and responsibility, reliability, and cost-effectiveness."²⁷

One such rule, the EPA's proposed new greenhouse gas ("GHG") emissions standards for fossil fuel-fired electric generating units ("EGUs")(the "Proposed GHG Rule"), is certain to lead to major rate increases for all electric utilities.²⁸ The Proposed GHG Rule concludes that technologies such as carbon capture and sequestration/storage ("CCS") and low Greenhouse Gas Hydrogen ("Green Hydrogen") co-firing are the "best system of emission reduction" ("BSER") for the purpose of improving emissions performance.²⁹ BREC notes that, ". . . [the] EPA concludes that both CCS and Green hydrogen cofiring will be commercially available by 2030, despite the fact that neither technology is currently in operation at any electric generating unit in the United States."³⁰ The Proposed GHG Rule requires that coal-fired EGUs anticipated to be retired after 2040 must have CCS in service and operating by January 1, 2030. As BREC states, "Since the publication of the rule, EPA has received over one million comments, many of which are focused on the assertion that

²⁷ IRP § 6 at 91.

²⁸ *Id.* at 92-94.

²⁹ As BREC notes, § 111 of the Clean Air Act requires the application of BSER to EGUs, taking into account costs, energy requirements and other statutory factors. *Id.* at 93.

³⁰ *Id.* at 93.

neither CCS nor Green hydrogen cofiring is currently available or affordable.”³¹ BREC further points out that adding CCS to both the Wilson plant and the new combined-cycle plant will significantly reduce the net outputs of both plants, increase heat rates (thus making the plants more inefficient), while also adding significant costs.³²

BREC, like many utilities heavily reliant upon fossil-fueled generation, thus faces the Hobson’s choice of either spending billions of dollars on unproven technology that does not exist, or be put out of business by the federal government. In order to address this unprecedented regulatory risk, BREC has submitted a Letter of Interest to obtain funding under the Empowering Rural America Program (“NewERA”), available only to rural electric cooperatives, for the purpose of installing and operating a CCS project at the Wilson plant.³³

E. Reliability

BREC asserts that reliability remains a cornerstone of its planning activities.³⁴ BREC pointed to the testimony of NERC President and CEO James B. Robb before the U.S. Senate Committee on Energy and Natural Resources on June 1, 2023, in which he stated that, “NERC is concerned that the pace of change is overtaking the reliability needs of the system.”³⁵ As BREC notes, “Mr. Robb concluded that bulk power system reliability is at an

³¹ *Id.* at 94.

³² IRP § 7.3.2 at 145-146.

³³ IRP § 3.8 at 56-57. In its unredacted response to Joint Intervenor DR-2-56, BREC stated that the total estimated cost of CCS projects at both Wilson and the new combined-cycle unit would be approximately \$2.5 billion. BREC states that the RUS has set a maximum limit of \$950 million available to any single borrower under the NewERA program. In addition, BREC states that it believes it could obtain approximately \$1.98 billion in § 45Q tax credits for the CCS projects, which when combined with the NewERA funding would make the projects cost neutral, or slightly cost positive. *See* BREC responses to JI-DR-1-13, JI-DR-56, and JI-DR-2-57.

³⁴ IRP § 3.10 at 58.

³⁵ *Id.* at 59, *citing* “The Reliability and Resiliency of Electric Service in the United States in Light of Recent Reliability Assessments and Alerts” at <https://www.energy.senate.gov/services/files/D47C2B83-A0A7-4E0B-ABF2-9574D9990C11> (last accessed March 8, 2024).

inflection point—NERC assessments demonstrate that the electric grid is operating ever closer to the edge where reliability is at risk. The central challenge is to calibrate the pace of change with the reliability needs of a system that must remain reliable and resilient at all times and under all conditions.”³⁶ BREC also cites to NERC’s concerns regarding: (a) new environmental rules restricting power plant emissions which will limit the operation of coal-fired plants in 23 states; (b) low inventories of transformers; (c) supply chain issues which delay new resource additions; (d) unexpected tripping of wind and solar photovoltaic resources during grid disturbances; (e) curtailment of electricity transfers to areas in need during periods of high regional demand; and (f) resource outages will continue to present challenges in many areas during “near-peak” demand conditions that occur in spring and fall.³⁷

BREC also cites to additional reliability challenges from: (a) the significantly-different attributes which replacement resources have compared with those of the replaced resources, and the impact they pose for modelling and planning cycles; (b) emerging technologies which show promise for addressing challenges, but are not yet commercially viable at scale; (c) the growing movement to electrify space and water heating, and the penetration of EVs; (d) the accelerated pace of retirements for fossil-fueled resources.³⁸

F. Electric Integration Analysis and Modelling

BREC’s IRP was developed based on a 15-year planning horizon, and was modelled using multiple scenarios and input variables. BREC’s analysis assumed the following: (a)

³⁶ *Id.* at 59.

³⁷ *Id.* at 60.

³⁸ *Id.* at 61-63.

Wilson remains coal-fired and in operation throughout the planning period; (b) the Green gas units could either retire in June 2029 or continue operations through 2043; (c) the Reid combustion turbine remains operational throughout the study period and would be dispatched when economically viable; (d) the existing SEPA hydropower contract continues in operation; and (e) the Unbridled Solar Facility modeled as a PPA is operational in June of 2025.³⁹ The Company's IRP evaluated a range of resource options, including various types of gas-fired units, reciprocating engines, and intermittent resources.

BREC's modelling produced an Optimal Plan that resulted in the following Base Portfolio: (a) the retirement of the two Green units in 2029; (b) adding a 635 MW combined-cycle gas unit upon the retirement of the Green gas units; (c) keeping the Wilson plant as a coal-fired unit; (d) retaining the Reid CT as a natural gas-fired peaking unit; (e) retaining the SEPA hydropower contract; and (f) subject to procuring federal financing, a self-owned 100-MW solar facility coupled with a 50-MW battery energy storage system.⁴⁰

II. OAG COMMENTS

A. Reliability

The OAG agrees with BREC's concerns regarding the reliability of the electric grid. In fact, the OAG believes the nation is facing a looming reliability crisis.⁴¹ The grid operates

³⁹ IRP § 7 at 105-106.

⁴⁰ IRP § 7.2.3 at 140. The self-owned 100 MW solar plus storage facility would be financed under the Inflation Reduction Act's Powering Affordable Clean Energy Program ("PACE"). Under PACE, the Rural Utilities Service will forgive up to 40% of loans for renewable energy projects. BREC faces competition from other utilities for this funding.

⁴¹ The OAG has consistently raised the alarm about the energy policies that seek to remove fossil fuels as an energy source for Kentucky and the nation. *See, e.g.*, OAG brief in Case No. 2022-00402, *In Re: Joint Application Of Kentucky Utilities Company And Louisville Gas And Electric Company For Certificates Of Public Convenience And Necessity And Site Compatibility Certificates And Approval Of A Demand Side Management Plan And Approval Of Fossil Fuel-Fired Generating Unit Retirements; Electronic 2020 Integrated Resource Plan Of Big Rivers Electric Corporation*, Case No. 2020-00299; *Electronic 2021 Integrated Resource Plan Of Duke Energy Kentucky, Inc.*, Case No. 2021-00245;

on absolute principles of physics and engineering—dispatchable thermal generation acts within those parameters.⁴² Historically, policy makers in the Commonwealth and throughout most of the nation demonstrated stalwart commitment to fostering policies necessary for the electric grid to thrive and grow. Unfortunately, that commitment is waning, such that many recent environmental and economic policies are driving thermal generation off the grid. The reality is that BREC, the Commonwealth and the entire nation will need dispatchable thermal resources until they can be replaced at scale, which given the current state of technology, is impossible. A reliable grid requires a continuous, sustainable flow of electrons. Renewable resources, by themselves, cannot do that. While renewable energy resources will doubtlessly play an increasing role in America’s energy future, policy makers should carefully note that if Kentucky’s electric grid is to maintain its overall current state of reliability, that role—for the foreseeable future—is limited. By their very nature, solar and wind resources are intermittent, which carries an inherent and unavoidable reliability risk. Moreover, Kentucky’s climate is not conducive to sustained, high capacity solar or wind generation, thus making these resources less cost-competitive and even less reliable.

Just two weeks ago, MISO issued an update to its report, “MISO’s Response to the Reliability Imperative,” in which MISO CEO John Bear stated:

“We have to face some hard realities. There are immediate and serious challenges to the reliability of our region’s electric grid, and the entire industry — utilities, states and MISO — must work together and move

Electronic Joint Application Of American Electric Power Company, Inc., Kentucky Power Company And Liberty Utilities Co. For Approval Of The Transfer Of Ownership And Control Of Kentucky Power Company, Case No. 2021-00481; Electronic 2021 Joint Integrated Resource Plan Of Louisville Gas And Electric Company And Kentucky Utilities Company, Case No. 2021-00393; Electronic 2022 Integrated Resource Plan Of East Kentucky Power Cooperative, Inc., Case No. 2022-00098; Investigation of the Fuel Adjustment Clause Regulation 807 KAR 5:056, Purchased Power Costs, and Related Cost Recovery Mechanisms, Case No. 2022-00190; Electronic Application Of Big Rivers Electric Corporation For Approval Of Amendment To Power Purchase Agreement, Case No. 2022-00296; and Electronic Application Of Duke Energy Kentucky, Inc. For (1) An Adjustment Of Electric Rates; (2) Approval Of New Tariffs; (3) Approval Of Accounting Practices To Establish Regulatory Assets And Liabilities; And (4) All Other Required Approvals And Relief, Case No. 2022-00372.

⁴² Dispatchable thermal generation is generally recognized as coal, natural gas and nuclear.

faster to address them. MISO and its utility and state partners have been deeply engaged on these challenges for years, and we have made important progress. But the region’s generating fleet is changing even faster and more profoundly than we anticipated, so we all must act with more urgency and resolve. . . . However, the transition that is underway to get to a decarbonized end state is posing material, adverse challenges to electric reliability.”⁴³

In a May 4, 2023 hearing held by the United States Senate Committee on Energy and Natural Resources, the then-four FERC Commissioners provided testimony regarding grid reliability. FERC Chairman Phillips stated that he was extremely concerned about the pace of power plant retirements, and noted, “[w]e face unprecedented challenges to the reliability of our nation’s electric system.”⁴⁴ Commissioner Christie noted:

[T]he United States is heading for a reliability crisis. . . . Dispatchable generating resources are retiring far too quickly and in quantities that threaten our ability to keep the lights on. The problem generally is not the addition of intermittent resources, primarily wind and solar, but the far too rapid subtraction of dispatchable resources, especially coal and gas. . . . In terms of capacity value – which is the amount of power that can be supplied to the grid when needed – one nameplate megawatt of wind or solar is simply not equal to one nameplate megawatt of gas, coal or nuclear. So even if every unit waiting in the PJM interconnection queue was interconnected, that would not solve the reliability problem caused by too-rapid loss of dispatchable generation. The numbers just do not balance. So the red lights are flashing⁴⁵

Commissioner Danly expressed similar concerns:

As an engineering matter, there is no substitute for reliable, dispatchable generation. Intermittent renewable resources like wind and solar are simply incapable, by themselves, of ensuring the

⁴³ MISO’s Response to the Reliability Imperative, February 2024, p. 1. The MISO report stated that the RTO projects a 4.7 GW shortfall beginning as soon as 2028 if the anticipated generator retirements occur, while simultaneously expecting load growth. *Id.* at 6, 9.

⁴⁴ “FERC Commissioners Tell Senators Of Major Grid Reliability Challenges, With Some Blaming Markets,” *Utility Dive*, May 5, 2023, accessible at: <https://www.utilitydive.com/news/ferc-grid-reliability-senate-energy-hearing/649523/> (last accessed March 8, 2024).

⁴⁵ *Id.* See also, Opening Statement of FERC Comm’r Christie, U.S. Senate Energy and Natural Resources Committee, May 4, 2023, accessible at: <https://www.energy.senate.gov/services/files/1D618EDD-7CED-4BC5-8F09-C8F0668FE608> (last accessed March 8, 2024); and “2 FERC Members Flag Grid Reliability Concerns During US Senate Committee Hearing,” *S&P Global Market Intelligence*, May 4, 2023.

stability of the bulk electric system. As the wholesale markets' prices are distorted by subsidies, the generation assets with the attributes required for system stability will retire and system stability will be imperiled. Given these market failures, there will be, in time, a catastrophic reliability event. None of us wants this to happen, and I fervently hope to be proven wrong. . . .⁴⁶

The nation's largest RTO, PJM, whose footprint borders directly on BREC's service territory, has also *strongly* cautioned that approximately 40 GW of generation, representing 21% of that RTO's current installed capacity, is at heightened risk of retirement over the next 6 years, posing a major reliability risk:

Thermal generators are retiring at a rapid pace due to government and private sector policies as well as economics. Retirements are at risk of outpacing the construction of new resources, due to a combination of industry forces, including siting and supply chain, whose long-term impacts are not fully known. PJM's interconnection queue is composed primarily of intermittent and limited-duration resources. . . . Despite the sizable nameplate capacity of renewables in the interconnection queue (290 GW), the historical rate of completion for renewable projects has been approximately 5%. The projections in this study indicate that the current pace of new entry would be insufficient to keep up with expected retirements and demand growth by 2030.⁴⁷

Elaborating upon PJM's looming reliability concerns, PJM President and CEO

Manu Asthana, in testimony recently before the United States Senate, stated:

. . . the generation fueled by fossil fuels (mostly coal and natural gas) that we rely upon to balance the grid is retiring at a significant rate. Electrification of the transportation, industrial and building sectors is poised to create material load growth. Our region is also experiencing significant data center construction, which is creating major pockets on the system of increasing demand. New generation in the queue is largely intermittent, so we need multiple megawatts to replace one megawatt of retiring generation. And, new generation is coming online slower than anticipated. If these trends

⁴⁶ Written Testimony of FERC Commissioner James P. Danly before the U.S. Senate Committee on Energy & Natural Resources, May 4, 2023, accessible at: <https://www.energy.senate.gov/services/files/0A896B12-2895-4F68-A367-74009F2975C4> (last accessed March 8, 2024).

⁴⁷ "Energy Transition in PJM: Resource Retirements, Replacements & Risks," Feb. 24, 2023, pp. 1-2, 5.

continue, our models show increased risk of having insufficient resources later in this decade to maintain the reliable electric service that consumers expect. . . . Industry and policymakers can take steps now to de-risk the transition [to use of intermittent generation] includ[ing] policies that slow down the retirement or restriction of existing generation until replacement generation is deployed and operational at scale.⁴⁸

Mr. Asthana elaborated further his concerns of the too-fast renewable transition being advocated for in his remarks at NARUC’s Annual Meeting last November in La Quinta California:

This is going to be a messy transition. That’s because the new technologies aren’t quite ready yet. We need to be more cautious about pushing the existing generation off because I don’t know how these two will intersect. Regulation and legislation that are pushing existing generation off our grid at a date certain, are burning our boats. It’s doing it in a way that is creating unacceptable risk. I hope I’m wrong.⁴⁹

In testimony from its Vice-President for State and Member Services Asim Haque, before the Kentucky General Assembly’s Interim Joint Committee on Natural Resources and Energy on August 3, 2023, PJM provided further insight into its rapidly approaching supply-side shortage crisis, driven primarily by thermal plant retirements:⁵⁰

- “We are concerned about being in a supply crunch by the end of this decade”;⁵¹

⁴⁸ U.S. Senate Committee on Energy & Natural Resources, Testimony of Manu Asthana, President and CEO, PJM Interconnection, June 1, 2023. The Commission should also take notice that MISO is facing an even larger capacity shortfall. *See, e.g.*, “MISO: 49 GW Has Received Interconnection Approval, but Projects Face Major Delays,” by Ethan Howland, *Utility Dive*, Sept. 14, 2023, accessible at:

https://www.utilitydive.com/news/midcontinent-miso-interconnection-queue-supply-chain-transmission-expansion-mtep/693652/?utm_source=Sailthru&utm_medium=email&utm_campaign=Issue:%202023-09-14%20Utility%20Dive%20Newsletter%20%5Bissue:54508%5D&utm_term=Utility%20Dive (last accessed March 8, 2024).

⁴⁹ “Operational Challenges in Our Bulk Power System,” by Julie Fedorchak, *et al. Public Utilities Fortnightly*, January 2024, accessible at: <https://www.fortnightly.com/fortnightly/2024/01/operational-challenges-our-bulk-power-system> (last accessed March 4, 2024).

⁵⁰ Interim Joint Committee on Natural Resources and Energy Hearing August 3, 2023, YouTube video accessible at <https://www.youtube.com/watch?v=Bja3IDPFPMs> (last accessed March 8, 2024).

⁵¹ *Id.* at 13:25-13:33.

- “We can’t simply shut down thermal resources and replace them with non-thermal resources.”⁵²
- “We will need thermal resources until those resources can be replaced at scale. And we don't see that technology being integrated into the system, certainly not tomorrow. And so we will continue to need our thermal resources”;⁵³
- “We are going to need thermal resources in order to preserve reliability until replacement tech exists to deploy at scale”;⁵⁴
- “. . . currently we have 48 gigs [GW] that . . . are waiting to construct, but we are not seeing steel in the ground.... [A] variable that we just don't know enough about yet is how much of this generation that is in the queue and finds their way through the queue, how much of this generation is actually going to get built? And we don't have that answer right now. Last year, it's a pretty pitiful two gigs. And 1,300 of it was a natural gas plant in Ohio. 700 of it was renewable”;⁵⁵
- “There are a lot of watts in the queue that are some combination of solar, wind, battery resource, and we hope they get built because we need the watts. But as we sit here today, they're not getting built.”⁵⁶

PJM is abundantly clear that as an RTO, they require more dispatchable thermal generation resources to replace those that are retiring, and non-dispatchable intermittent resources will not fill the void. PJM’s Independent Market Monitor agrees. Speaking before FERC’s Forum on PJM Capacity Performance on June 15, 2023, PJM’s Independent Market Monitor said there is no commercial replacement right now and no clear path forward in response to Commissioner Christie’s question about what we are going to do to replace 55% of coal and gas PJM relied on during Winter Storm Elliott.⁵⁷

⁵² *Id.* at 24:50-25:15.

⁵³ *Id.* at 1:12:10-1:12:36.

⁵⁴ *Id.* at 1:26:53-1:27:00.

⁵⁵ *Id.* at 1:19:57-1:22:14.

⁵⁶ *Id.* at 1:36:35-1:36:51.

⁵⁷ See FERC video hearing transcript from PJM Capacity Market Forum, Docket No. AD23-7-000, June 15, 2023; Commissioner Christie’s question starting at 2:46:25, Joe Bowring’s answer starting at 2:51:54, available at: <https://www.ferc.gov/news-events/events/pjm-capacity-market-forum-06152023> (last accessed March 8, 2024).

The OAG has repeatedly cautioned utilities against abandoning dispatchable thermal resources and making a head-long rush to renewable resources, as the former constitute the backbone of America’s electric grid. Given the growing electrification movement, it is abundantly clear that BREC’s service territory, the Commonwealth and the entire nation will require *more* electricity, not less.⁵⁸

Since the date BREC’s service territory was first created, dispatchable thermal generation plants (which historically have been primarily coal-fired) provided safe, reliable largely base-load power during all weather conditions, 24-hours per day, 365 days per year, year-in and year-out. Dispatchable thermal resources are capable of either sustained output of low-cost energy for prolonged periods, or in the case of modern combined-cycle gas units can follow load, a characteristic which is becoming increasingly valuable to utilities, their customers and even to RTOs. Dispatchable thermal resources such as the Wilson plant and a potential new combined-cycle plant, if it is constructed, can also be utilized on the grid as spinning reserves, to quickly provide voltage support, ramping and additional frequency regulation.⁵⁹ The predictable start-up times and trustworthiness of these dispatchable thermal resources allow utilities and grid operators to meet the needs of the grid and energy markets. Renewable generation, on the other hand, lacks this reliability, and is subject to the vagaries of constantly changing weather.⁶⁰ Moreover, dispatchable, thermal, turbine-driven,

⁵⁸ See, e.g., “Amid record high energy demand, America is running out of electricity,” by Evan Halper, *Washington Post*, March 7, 2024, accessible at: <https://www.washingtonpost.com/business/2024/03/07/ai-data-centers-power/> (last accessed March 8, 2024).

⁵⁹ See, Interim Joint Committee on Natural Resources and Energy Hearing August 3, 2023, testimony of PJM Vice-President for State and Member Services Asim Haque, YouTube video accessible at <https://www.youtube.com/watch?v=Bja3IDPFPMs> at 22:07–25:30 (last accessed March 8, 2024).

⁶⁰ “The lessons of the recent decade make it clear that [renewable] technologies cannot be surged in times of need, are neither inherently “clean” nor even independent of hydrocarbons, and are not cheap.” Mark P. Mills, “*The Energy Transition Delusion: A Reality Reset*,” by Mark P. Mills, Northwestern University Engineering School Faculty Fellow, Manhattan Institute, Aug. 2022, at 1.

synchronous generation resources such as coal and gas-fired plants provide a natural inertia that forces the flow of electrons down the wires.

The realities of physics, engineering and economics—which are not dependent upon any facts or beliefs about climate change—mean that there is not currently, nor will there be in the foreseeable future, any commercially viable renewable generation at scale to fully power BREC’s or the nation’s electric grid. And despite the inaccurately named Inflation Reduction Act, there is currently no clear path forward to a viable electric grid run solely on renewable resources. Thermal generation—coal, natural gas and nuclear—are necessary today, tomorrow and will continue to be well into the future.⁶¹

Although dispatchable thermal resources have proven the mainstay of the electric grid (and will continue to do so), it is also true that fuel prices for both coal and gas have, in recent years, experienced occasional peaks that can trigger affordability issues. However, the OAG urges BREC and the Commission to not lose sight of the fact that to date, there simply are *no* replacements to coal and gas-fired dispatchable thermal units if we are to maintain a reliable grid. And the cost of an unreliable grid would be an economic catastrophe.

B. Electric Integration Analysis and Modelling

The OAG agrees with BREC’s decisions in this IRP to keep the Wilson plant operating as a coal-fired unit for the foreseeable future, and that when it becomes necessary to retire the two Green Station gas-fired units, the best choice to replace that lost capacity is another dispatchable thermal resource, namely the 635 MW combined-cycle unit referenced in BREC’s Base Portfolio. BREC’s load forecast has also clearly demonstrated that its total load

⁶¹ The OAG acknowledges that at some point in the future, some sort of breakthrough technology may be developed. But until then, the grid will continue expanding and will require a continuous, sustainable flow of electrons to power the electric grid.

will continue to grow, so as to justify the slightly greater capacity the Company will have once the Green units retire and the combined-cycle comes on-line.

C. Demand-Side Resources

The OAG agrees with BREC that as forward capacity prices in MISO have increased significantly over the past decade, the cost/benefit of DR programs has also increased. The OAG further agrees with BREC's conclusion to continue working with its member-owners to evaluate the potential for a suite of residential and non-residential DSM and DR programs.

D. Federal Regulatory Challenges

The OAG agrees with BREC that the Biden Administration's Proposed GHG Rule poses a major obstacle, indeed one which threatens the financial integrity not only of BREC, but every electric generating utility in the Commonwealth. Last year, the Commonwealth's then-Attorney General Daniel Cameron joined a coalition of 21 State Attorneys General led by West Virginia in submitting comments opposing EPA's proposed rule,⁶² as well as a second comment letter from another coalition of 18 State Attorneys General led by Ohio opposing the rule.⁶³ Moreover, most of the nation's RTOs have submitted joint comments warning that proceeding with the rule "could place the reliability of the electric grid in jeopardy."⁶⁴ The

⁶² Comments on the Proposed Rulemaking Titled: "New Source Performance Standards for GHG Emissions from New and Reconstructed EGUs; Emission Guidelines for GHG Emissions from Existing EGUs; and Repeal of the Affordable Clean Energy Rule" by the Attorneys General of the States of West Virginia, Alabama, Arkansas, Georgia, Idaho, Indiana, Iowa, Kentucky, Louisiana, Mississippi, Missouri, Montana, Nebraska, New Hampshire, Ohio, Oklahoma, South Carolina, South Dakota, Texas, Utah, and Virginia," Aug. 8, 2023 (Docket No. EPA-HQ-OAR-2023-0072) accessible at: <https://www.ag.ky.gov/Press%20Release%20Attachments/GHG%20EGU%20States%20Comment%20Letter.pdf> (last accessed March 8, 2024).

⁶³ Comments on the Proposed Rulemaking Titled: "Ohio and 17 States' comments regarding proposed rulemaking RIN 2060-AV09, as set forth in 40 CFR Part 60, 88 Federal Register 33240," Aug. 8, 2023, accessible at: <https://www.ag.ky.gov/Press%20Release%20Attachments/Greenhouse%20Gas%20Comment%20Letter.pdf> (last accessed March 8, 2024).

⁶⁴ "Joint Comments of Electric Reliability Council of Texas, Inc.; Midwest Independent System Operator, Inc.; PJM Interconnection, LLC; and Southwest Power Pool, Inc.," at 2, (Docket EPA-HQ-OAR-2023-0072) accessible at: <https://www.pjm.com/-/media/documents/other-fed-state/20230808-comments-of-joint-isortos-docket-epa-hq-oar-2023->

Attorney General believes end-user rates would increase exponentially under the rule, and that it would be impossible to maintain grid reliability unless the rule is stricken.

E. Conclusion

The Attorney General wishes to conclude his comments on this IRP by noting that over the past decade, BREC has been transformed from a utility contemplating bankruptcy to one that today has achieved investment-grade ratings.

Respectfully submitted,

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COT%E2%80%9D%29%2C%20Midcontinent.potential%20to%20materially%20and%20adversely%20impact
%20electric%20reliability](#), (last accessed March 8, 2024); *see also* “Grid Operators Warn US EPA Proposal
Could Lead to ‘Significant Power Shortages’,” Zack Hale, *S&P Global Market Intelligence*, Aug. 9, 2023.

Certificate of Service

Pursuant to the Commission's Orders in Case No. 2020-00085, and in accord with all other applicable law, Counsel certifies that an electronic copy of the forgoing was served and filed by e-mail to the parties of record.

This 8th day of March, 2024



Assistant Attorney General