

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

In The Matter of:

ELECTRONIC JOINT APPLICATION OF KENTUCKY	)	
UTILITIES CO. AND LOUISVILLE GAS & ELECTRIC CO.	)	
FOR CERTIFICATES OF PUBLIC CONVENIENCE AND	)	
NECESSITY AND SITE COMPATIBILITY CERTIFICATES	)	CASE No.
AND APPROVAL OF A DEMAND SIDE MANAGEMENT	)	2022-00402
PLAN AND APPROVAL OF FOSSIL FUEL-FIRED	)	
GENERATING UNIT RETIREMENTS	)	

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**POST-HEARING BRIEF**  
**OF THE KENTUCKY ATTORNEY GENERAL**

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Respectfully submitted,  
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*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 22<sup>nd</sup> day of September, 2023



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Assistant Attorney General

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**ATTORNEY GENERAL’S POST-HEARING BRIEF**

The intervenor, the Attorney General of the Commonwealth of Kentucky, through his Office of Rate Intervention (“OAG”), states as follows for his post-hearing brief in the above-styled matter.

**I. INTRODUCTION**

The fundamental role of the Kentucky Public Service Commission (“Commission”) is to ensure that Kentuckians have access to the safe, reliable and affordable electric utility service required to serve their homes, businesses, industries and institutions. For decades, the reliability aspect has been relatively easy to meet. Vertically integrated utilities located within the Commonwealth’s borders have reliably fueled Kentucky’s way of life through coal-fired generation plants. But the energy transition underway over just the past few years has forced more coal-fired generation to retire in a shorter timeframe than ever before in the Commonwealth’s history.<sup>1</sup> These coal-fired resources are being replaced with less reliable

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<sup>1</sup> U.S. Energy Information Administration (EIA), Kentucky State Profile [last updated Aug. 18, 2022], accessible at: <https://www.eia.gov/state/analysis.php?sid=KY#42> (last accessed Sept. 5, 2023). Historically, coal-fired plants produced more than 90% of Kentucky’s net generation. But since 2011, 5,900 megawatts (“MW”) of Kentucky-based coal-fired generating plants have been shuttered. As of 2021, the proportion of the Commonwealth’s net generation produced by coal-fired plants fell to 71%.

non-coal resources. Clearly, an energy transition is ongoing; how we navigate it, however, will determine Kentucky's future. The issue is not whether renewable resources such as wind and solar can be used, but rather how much truly dispatchable power such as that provided by coal-fired power plants can be subtracted from the electrical grid without harming reliability.

Renewable energy is causing reliability concerns in places where dispatchable generation is being lost and replaced with solar and wind.<sup>2</sup> Since coming into office, General Cameron has consistently raised the alarm about the energy policies that seek to remove fossil fuels as an energy source for Kentucky and the nation. In February of 2022, General Cameron authored an op-ed entitled "*Biden's Energy Policies Harming Kentucky Families*," warning of the failed energy policies of the Biden Administration.<sup>3</sup> Furthermore, in recent cases before the Commission, the OAG has warned repeatedly about the reliability crisis brought on by policies seeking to advance certain political ideologies while ignoring fundamental engineering, physics and economic realities that must be accounted for if we are to maintain a reliable and affordable electric grid.<sup>4</sup>

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<sup>2</sup> See, e.g., [Ensuring electricity reliability must be job number one for FERC](#) (last accessed Sept. 3, 2023); and [Renewable Energy Boom Risks More Blackouts Without Adequate Investment In Grid Reliability](#) April 20, 2021 (last accessed Sept. 3, 2023).

<sup>3</sup> [kentucky.gov/Pages/Activity-stream.aspx?n=AttorneyGeneral&prId=1175](https://kentucky.gov/Pages/Activity-stream.aspx?n=AttorneyGeneral&prId=1175) (last accessed Sept. 5, 2023).

<sup>4</sup> See, *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; *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.

With the exception of the Trump Administration era, the United States Environmental Protection Agency (“EPA”) over the last fifteen years has promulgated a perpetual series of increasingly more stringent regulations affecting primarily coal-fueled electric generation plants throughout the nation. Utilities have been forced to pass the high costs of complying with these burdensome regulations onto their ratepayers. The EPA’s war on coal has resulted in skyrocketing rate increases harming every Kentuckian, which is exacerbated by the marked increase in poverty rate since 2021,<sup>5</sup> and the fact that electricity costs are increasing faster than other forms of energy.<sup>6</sup> Moreover, the burden of high utility rates caused by these EPA mandates has caused some manufacturers and industries vital to national security and the economy to close.<sup>7</sup>

This never-ending cascade of environmental regulations has forced many Kentucky coal-fired generating plants to shutdown long before their scheduled retirement dates, thereby preventing ratepayers from getting what they paid for.<sup>8</sup> Such premature plant retirements force ratepayers to pay for not only the costs of new replacement generation, but *also* the costs of the retired facilities. The closure of coal-fired plants has also harshly affected Kentucky

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<sup>5</sup> See, e.g., “Biden Built The Strongest Safety Net In U.S. History. Now It’s Collapsing Around Him,” by Adam Cancryn, *Politico*, Sept. 12, 2023 (“New data released Tuesday by the Census Bureau found that the poverty rate spiked to 12.4 percent in 2022, from 7.8 percent in the prior year. . . .”), accessible at: <https://www.politico.com/news/2023/09/12/joe-biden-anti-poverty-economics-00115217> (last accessed Sept. 14, 2023); “US Inflation Eroded 2022 Wages, As Child Poverty Jumped, Census Says,” by Howard Schneider, *Reuters*, Sept. 12, 2023, accessible at: <https://www.reuters.com/world/us/us-official-poverty-rate-was-115-2022-census-bureau-says-2023-09-12/> (last accessed Sept. 14, 2023).

<sup>6</sup> U.S. Bureau of Labor Statistics, Sept. 13, 2023, accessible at: <https://www.bls.gov/news.release/cpi.nr0.htm> (last accessed Sept. 13, 2023).

<sup>7</sup> “Kentucky Aluminum Plant Cuts Off Production, Lays Off 600 Workers Due To High Energy Costs,” *Fox News*, June 24, 2022, accessible at: <https://www.foxnews.com/us/kentucky-aluminum-plant-cuts-production-lays-off-600-workers-high-energy-costs> (last accessed Sept. 14, 2023); “Five Vital Commodity Industries Are Buckling Under Energy Crisis,” *Mining.Com*, Aug. 18, 2022, accessible at: <https://www.mining.com/web/five-vital-commodity-industries-are-buckling-under-energy-crisis/> (last accessed Sept. 14, 2023).

<sup>8</sup> The petitioning utilities have, over the years, closed multiple coal-fired plants, e.g., Green River Units 1-4, Tyrone, Pineville, Brown Units 1-2, Can Run Units 1-6, Canal, and Paddy’s Run.

mining communities.<sup>9</sup> This unconscionable, harmful result is not tolerable to Kentucky's hard-working families.<sup>10</sup> Meantime, under the misguided Biden Administration policies, while the United States continues to force the shuttering of coal-fired generation plants, China continues to build dozens of new ones (the equivalent of two new plants per week)<sup>11</sup> to support their country's massive economic development and expansion:

An unspoken truth of the climate-change crusade is this: Anything the U.S. does to reduce emissions won't matter much to global temperatures. U.S. cuts will be swamped by the increases in India, Africa and especially China. Look no further than China's boom in new coal-fired electricity. . . . Since China signed the Paris pact, its coal-fired power capacity has increased by some 185 gigawatts, S&P Global Commodity Insights estimated earlier this summer. The U.S. has decreased its coal capacity by about 80 gigawatts since late 2015.<sup>12</sup>

Shockingly, the Biden Administration's EPA war on coal and Kentuckians is *far* from complete. Indeed, as indicated in the record of this case,<sup>13</sup> one of that agency's most recent

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<sup>9</sup> See, e.g., "Kentucky Coal Mine Closures: Economic, Environmental, and Social Impacts and Opportunities for Growth," accessible at: <https://skillings.net/kentucky-coal-mine-closures-economic-environmental-and-social-impacts-and-opportunities-for-growth/> (last accessed Sept. 2, 2023); "Obama Kept His Promise, 83,000 Coal Jobs Lost And 400 Mines Shuttered," <https://dailycaller.com/2016/09/05/obama-kept-his-promise-83000-coal-jobs-lost-and-400-mines-shuttered/> (last accessed September 5, 2023).

<sup>10</sup> "I fear this new plan will cost rate payers more money on monthly electric bills. Coal has consistently been the cheapest form of electricity and Kentucky was known for years for having some of the lowest utility rates in the nation. Retiring coal plants and replacing with other sources will negatively impact rates. . . . Some of the plant closures that were supposed to save ratepayers money have not since closures occurred from 2013-2022. Over that timeframe, rates have increased as utilities have decreased the use of coal by closing down plants. Also, over that timeframe, 2013 to 2022, Kentucky went from the #3 state for cheapest electricity to #21. This undoubtedly has caused us to lose industry and added to the complexities of recruiting new industry to our county and region. . . . As you are aware, our region of this state has been poverty stricken for many many years. Our people, especially those on a fixed income, CAN NOT afford this burden to be added to utility bills. . . . Does the \$2.09 billion account for decommissioning of these plants?. . ." Public comments of Harlan County Judge/Executive Dan Mosley, Aug. 3, 2023, Case No. 2022-00402 [emphasis in original].

<sup>11</sup> "China approved equivalent of two new coal plants a week in 2022, report finds," by Jesse Yeung, CNN, Feb. 27, 2023, accessible at: <https://www.cnn.com/2023/02/27/energy/china-new-coal-plants-climate-report-intl-hnk/index.html> (last accessed Sept. 8, 2023).

<sup>12</sup> See, e.g., "China's Coal Power Boom," *Wall St. Journal*, Sept. 13, 2022, accessible at: <https://www.wsj.com/articles/chinas-coal-power-boom-beijing-xi-jinping-climate-energy-biden-administration-11650480857> (last accessed Sept. 5, 2023); "China Has Approved More Than 50 Gigawatts of New Coal Power," by Alex Kimani, *Oil Price.Com*, Aug. 6, 2023 accessible at: <https://oilprice.com/Energy/Coal/China-Has-Approved-More-Than-50-Gigawatts-Of-New-Coal-Power.html> (last accessed Sept. 6, 2023); and Center for Research on Energy and Clean Air, *Global Energy Monitor*, Feb. 2023.

<sup>13</sup> See, e.g., LG&E-KU's Aug. 9, 2023 Supplemental Response to Kentucky Coal Association ("KCA") DR-4-5.

salvos—the Good Neighbor Rule (“GNR”), pertaining to nitrogen oxide (“NO<sub>x</sub>”) emissions—has led the petitioning utilities to conclude that they must close three additional coal-fired plants that lack NO<sub>x</sub>-controlling selective catalytic reduction (“SCR”) equipment.<sup>14</sup> Fortunately, this rule is currently not in effect in Kentucky due to the efforts of the Attorney General in obtaining a stay at the U.S. Sixth Circuit Court of Appeals.<sup>15</sup> However, several proposed and soon-to-be-rolled-out regulations appear to be designed to simply destroy the entire coal industry, which was once the Commonwealth’s lifeblood.<sup>16</sup>

The Attorney General notes that Kentucky ratepayers have been paying for these coal plants for decades, which still have years of remaining operating life. Through every season, they provide safe, reliable power for the Commonwealth, and as such represent valuable investments that should be protected to every possible extent. This spring, the General Assembly passed Senate Bill 4<sup>17</sup> requiring utilities to receive prior Commission approval before retiring any fossil-fueled generation. Senate Bill 4’s message is clear: the General Assembly has declared the Commonwealth’s public policy to be that the Commission must

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<sup>14</sup> Mill Creek Unit 1, Mill Creek Unit 2, and Ghent Unit 2. The decision to close Mill Creek Unit 1 was proposed and solidified in Case No. 2020-00061, in which LG&E obtained approval to increase its environmental surcharge rate in order to recover costs of complying with the EPA’s 2015 Effluent Limitations Guidelines Rule (2015 ELG Rule) at the Companies’ Mill Creek Units 2, 3 and 4. Mill Creek Unit 1 thus lacks both ELG and SCR controls, and would require a new cooling tower to comply with Clean Water Act § 316 (b). The Companies also propose to close a fourth coal-fired plant, Brown Unit 3, for other reasons.

<sup>15</sup> *Commonwealth of Kentucky v EPA*, U.S. Court of Appeals for the Sixth Circuit, Case No. 23-3216; Order dated July 25, 2023.

<sup>16</sup> “The energy future outlined by the EPA will result in more blackouts, higher costs, and greater uncertainty for Americans. And it will magnify today’s reliability challenges with grave consequences for an already stressed electric grid. When you find yourself in a hole, the first step is to stop digging. The EPA needs to put down their shovel.” Statement of National Rural Electric Cooperative Association CEO Jim Matheson regarding the EPA’s proposed New Source Performance Standards for Greenhouse Gas Emissions from New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units; Emission Guidelines for Greenhouse Gas Emissions from Existing Fossil Fuel-Fired Electric Generating Units; and Repeal of the Affordable Clean Energy Rule, (Docket ID No. EPA-HQ-OAR-2023-0072); statement accessible at: <https://www.electric.coop/nreca-files-comments-against-epa-power-plant-proposal> (last accessed August 8, 2023).

<sup>17</sup> 2023 Regular Session of the Kentucky General Assembly. The bill became law on March 29, 2023 without the Governor’s signature; now codified as KRS 278.264.



ensure that Kentucky has reliable, dispatchable electricity twenty-four hours per day, for every day of the year. Therefore, the Attorney General disagrees with the Petitioners' conclusions to close prematurely their coal facilities, and urges the Commission to deny the Petitioners' request for permission to close those plants.

## II. STATEMENT OF THE CASE

On December 15, 2022, Louisville Gas & Electric Co. ("LG&E") and Kentucky Utilities Co. ("KU")(hereinafter jointly referenced as "LG&E-KU" or "the Companies"), filed their Joint Application for Approval of Certificates of Public Convenience and Necessity, Site Compatibility Certificates, and Demand-Side Management and Energy Efficiency Program Plan ("Joint Application") in the instant docket. Through their Joint Application, which was deemed filed as of January 6, 2023,<sup>18</sup> the Companies seek:

- (a) Certificates of Public Convenience and Necessity ("CPCN") for the construction of two 621 megawatt (MW) net summer rating natural gas combined cycle combustion turbine ("NGCC") facilities, one at LG&E's Mill Creek Station in Jefferson County ("Mill Creek NGCC") and the other at KU's E.W. Brown Station in Mercer County ("Brown NGCC"), including various natural gas and electric transmission construction to be associated with those facilities, and Site Compatibility Certificates for both proposed NGCCs;
- (b) CPCNs for two 120 MWac solar photovoltaic ("PV") electric generating facilities, one to be constructed in Mercer County ("Mercer Solar Facility") and owned by the

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<sup>18</sup> See Order dated January 6, 2023.

Companies, the other in Marion County (“Marion Solar Facility”) to be purchased from a third-party solar developer;

- (c) a CPCN to construct a 125 MW, 4-hour (500 MWh) battery energy storage system (“BESS”) facility at the Brown Station (“Brown BESS”);
- (d) approval of the proposed 2024-2030 Demand Side Management and Energy Efficiency Program Plan (“Proposed DSM-EE Program Plan”);
- (e) a declaratory order that the Companies’ entry into four separate proposed non-firm energy-only power-purchase agreements (“Solar PPAs”) for the output of four solar PV facilities with a combined capacity of 637 MW<sup>19</sup> does not require Commission approval, but rather will be treated in the same manner, including Fuel Adjustment Clause (“FAC”) cost recovery, as the 25 MW portion of the non-firm energy-only PPA the Companies entered into with Rhudes Creek Solar, LLC that will serve native load customers, which the Commission addressed in Case No. 2020-00016 and determined did not require Commission approval and provided for FAC cost recovery;
- (f) approval of regulatory asset treatment for the difference between AFUDC accrued at the Companies’ weighted average cost of capital and AFUDC accrued using the methodology approved by the Federal Energy Regulatory Commission (“FERC”) during the construction period of the two NGCCs, Mercer County Solar Facility, and Brown BESS.

On November 21, 2022, the OAG moved to intervene in the instant docket, which the Commission granted on November 30, 2022. From December 21, 2022 through January 20,

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<sup>19</sup> These Solar PPA projects are described in more detail in Joint Application, p. 3.

2023, seven other parties moved for and were granted intervention.<sup>20</sup> The Commission issued its procedural schedule on January 6, 2023.

On March 16, 2023, the Kentucky General Assembly enacted Senate Bill 4 (entitled “An Act relating to the retirement of fossil fuel-fired electric generating units and declaring an emergency”), which became law thirteen days later. Now codified as KRS 278.264, the statute, among other things, creates a rebuttable presumption prohibiting the retirement of fossil fuel-fired electric generating units absent evidence sufficient for the Commission to find that:

(a) The utility will replace the retired unit with new generating capacity that:

1. is dispatchable;
2. maintains or improves the electric transmission grid’s reliability and resilience; and
3. maintains the minimum reserve capacity requirement established by the utility’s reliability coordinator;

(b) The retirement will not harm the utility’s ratepayers by causing the utility to incur any net incremental costs to be recovered from ratepayers that could be avoided by continuing to operate the electric generating unit proposed for retirement in compliance with applicable law; and

(c) The decision to retire the fossil fuel-fired electric generating unit is not the result of any financial incentives or benefits offered by any federal agency.

In compliance with KRS 278.264, the Companies on May 10, 2023 filed a new docket, Case No. 2023-00122,<sup>21</sup> presenting evidence which they asserted supported the retirement of

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<sup>20</sup> The intervening parties are: Kentucky Industrial Utility Customers, Inc. (KIUC); the Sierra Club; Lexington-Fayette Urban County Government (LFUCG); Louisville/Jefferson County Metro Government (Louisville Metro); Four parties participating jointly, consisting of Metropolitan Housing Coalition, Kentuckians For The Commonwealth, Kentucky Solar Energy Society, and Mountain Association (Joint Intervenors); KCA; and Mercer County Fiscal Court.

<sup>21</sup> *In Re: Electronic Joint Application of Kentucky Utilities Co. and Louisville Gas & Electric Co. for Approval of Fossil Fuel-Fired Generating Unit Retirements.*

seven fossil fuel-fired generating units<sup>22,23</sup> (jointly, “the affected units”) which the Companies argued is sufficient to overcome the rebuttable presumption set forth in KRS 278.264. On May 16, 2023, the Commission entered an order granting LG&E-KU’s motion to consolidate Case No. 2023-00122 into the Case No. 2022-00402 docket, incorporated by reference the record in Case No. 2020-00061,<sup>24</sup> and established a new procedural schedule providing for two additional rounds of discovery for a total of four. After multiple intervenors filed testimony, the Company filed their rebuttal testimony on August 9, 2023. An evidentiary hearing was held from August 22-29, 2023.

### III. ARGUMENT

#### A. The Strength of America’s Electric Grid is Founded on Dispatchable Thermal Resources

Going forward, Kentucky, the country and the rest of the world will need more—not less—energy. Every modern technological advance from horse and carriage to automobiles, fans to air conditioning, and computers to cell phones required increased energy production. New technological advances as well as electrification of transportation and space heating means that this historical trend for the need to generate more electricity year-over-year will

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<sup>22</sup> Consisting of the following four coal-fired plants: Brown Unit 3 (412 MW summer rating), Ghent Unit 2 (485 MW summer rating), Mill Creek Unit 1 (300 MW summer rating) and Mill Creek Unit 2 (297 MW summer rating); and the following gas-fired small-frame combustion turbines (CTs): Haefling Units 1 and 2, and Paddy’s Run Unit 12. The Companies outlined plans to retire Mill Creek Units 1 and 2 in Case No. 2020-00061, prior to the enactment of KRS 278.264.

<sup>23</sup> Haefling Units 1 and 2 and Paddy’s Run Unit 12 are small-frame, gas-fired CTs used for limited peaking operations which have a combined generation capacity of approximately 47 MW summer rating. All three units are at or near the end of their respective lifespans of approximately 50 years. The Companies’ analysis assumed that in the event of a major mechanical issue, these units would be uneconomical to repair. The Companies had previously retired four similar CTs due to similar major mechanical issues. The Companies will not retire these units until they fail, which is expected to occur by 2025.

<sup>24</sup> *In Re: Electronic Application of Louisville Gas & Electric Co. for Approval of an Amended Environmental Compliance Plan and a Revised Environmental Surcharge*. In this case, LG&E obtained approval to increase its environmental surcharge recovery rates in order to comply with the EPA’s 2015 ELG Rule, and stated its intent to close the Mill Creek Unit 1 coal-fired plant by 2024. Final Order dated Sept. 29, 2020 at 7-12.

continue rather than abate. For over a century, coal-fired electric generation plants have been providing safe, reliable largely base-load power during all weather conditions, 24-hours per day, 365 days per year, year-in and year-out. These facilities are capable of sustained output of low-cost energy for prolonged periods, often for months on end. The predictable start-up times and trustworthiness of these dispatchable plants 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 constantly changing weather.<sup>25</sup> Moreover, dispatchable, turbine-driven, synchronous generation resources such as coal-fired plants provide a natural inertia that forces the flow of electrons down the wires. This natural inertia helps to regulate electric frequency and retard its decay, keeping it at or near 60 Hz, and produces short circuit strength that provides ride-through capability for intermittent or sustained oscillations.<sup>26</sup>

Electrons traveling on the grid move in accordance with well-defined principles of physics and engineering—they do not do so in response to politics or wishful thinking.<sup>27</sup> Dispatchable thermal resources such as coal-fired plants can also be utilized on the grid as spinning reserves, to quickly provide voltage support, ramping and additional frequency regulation.<sup>28</sup> Intermittent generation resources such as wind and solar lack the ability to meet

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<sup>25</sup> “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.

<sup>26</sup> See, e.g., LG&E-KU 2021 Joint Integrated Resource Plan [“IRP”], Case No. 2021-00393, Companies’ response to AG-DR-2-8, p. 1 of 2.

<sup>27</sup> “I would further observe that the adage, “Hope is not a strategy,” is certainly true when it comes to providing electric service. Yet hope is the primary underpinning of nearly all the intervenors’ recommendations. . . . Hope for what *might* happen cannot reliably serve customers.” Rebuttal Testimony of David S. Sinclair at 2:3-18 [emphasis in original].

<sup>28</sup> 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 August 15, 2023).

increased demand, without adding ultra-expensive storage.<sup>29, 30</sup> 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 Kentucky’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.<sup>31</sup>

The Companies’ plan to retire four coal plants results in a weaker, less reliable electrical grid prone to prolonged outages. This is the last thing Kentuckians need, especially in an era with pressure on the economy to force increased electrification of both transportation and space heating. We are going to need more energy, not less. Accelerating the retirement of fossil fuel plants before there is a ready replacement to meet increased energy needs is inviting a catastrophe. As East Kentucky Power Cooperative CEO Anthony

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<sup>29</sup> “. . . [G]rid-scale electric availability has been made possible by using electricity-producing machines (turbines) that can be turned on when needed, fueled by large quantities of primary energy sources (such as natural gas, coal, and flowing water) that are easily and inexpensively stored. Such metrics characterize, for now, more than 80% of U.S. electricity production and more than 90% of transportation. The U.S., on average, has about one to two months’ worth of national demand in storage for each kind of hydrocarbon. Such enormous quantities are possible because it costs less than \$1 a barrel per month to store oil or the energy equivalent of natural gas. Storing coal is even cheaper. Thus, over the past century, engineers achieved the feat of building a nation spanning group of electricity grids that powers nearly everything, anytime, while still consuming less than 3% of the GDP. . . . Even though wind/solar machines don’t have fuel costs and have lower maintenance costs than combustion machines, grid-scale battery costs would have to drop at least 20-fold to match the reliability economics of conventional dispatchable power.” *“The Energy Transition Delusion: A Reality Reset,” supra* at 6 [citations omitted].

<sup>30</sup> As the International Energy Agency notes, “[t]he transition to clean energy means a shift from a fuel-intensive to a material-intensive energy system,” IEA World Energy Outlook Special Report, “The Role of Critical Minerals in Clean Energy Transitions,” May 2021 (pp. 28, 104). This transition to a material-intensive energy system will require increasing the supply chain of minerals such as lithium, graphite, nickel, and rare earths by 4,200%, 2,500%, 1,900%, and 700%, respectively, by 2040. *“The ‘Energy Transition’ Delusion: A Reality Reset,” supra* at 23.

<sup>31</sup> The Attorney General acknowledges that at some point in the future, some sort of breakthrough technology may be developed to enable this transformation. But until then, the grid will continue expanding and will require a continuous, sustainable flow of electrons to power the electric grid.

“Tony” Campbell noted in a letter to President Biden concerning grid reliability, “The emerging picture is of an electric grid that is steadily becoming less fuel secure . . .”<sup>32</sup> American Electric Power, in a letter to congressional offices, stated that the Clean Electricity Performance Program would, “adversely impact reliability and resilience of the electric grid.”<sup>33</sup> Kentuckians do not want—or need—a grid like California’s, “that is over-reliant on intermittent energy resources, voluntary service curtailments and imports from other regions.”<sup>34</sup> Those states that are transitioning their grid away from time-proven fossil-fueled generation to more intermittent and less-reliable resources know that their energy bills will become less affordable over time;<sup>35</sup> in fact, some are having second thoughts about their prior decisions to jettison fossil-fueled generation plants.<sup>36</sup> It is imperative that the Commission take every measure to strengthen the reliability and resilience of Kentucky’s electric grid, and keep the affected coal plants open for the remainder of their depreciation lifespan.

### **B. America’s Looming Reliability Crisis**

There is a cost to maintaining reliability. The grid operates on absolute principles of physics and engineering—dispatchable thermal generation acts within those parameters. Historically, policy makers in the Commonwealth and throughout most of the nation demonstrated stalwart commitment to fostering policies necessary for the electric grid to

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<sup>32</sup> EKPC President & CEO Anthony “Tony” Campbell Letter to President Biden, July 13, 2021. Copy attached as OAG Brief Exhibit 1.

<sup>33</sup> “Major utility questions Biden’s signature climate plan,” *E&E News*, September 15, 2021, accessible at: <https://www.eenews.net/articles/major-utility-questions-bidens-signature-climate-plan/> (last accessed Sept. 4, 2023).

<sup>34</sup> EKPC President & CEO Anthony “Tony” Campbell Letter to President Biden, July 13, 2021, *supra*.

<sup>35</sup> See, e.g., “California’s Dilemma: How to Control Skyrocketing Electric Rates While Building the Grid of the Future,” *Utility Dive*, April 26, 2021, accessible at: <https://www.utilitydive.com/news/californias-dilemma-how-to-control-skyrocketing-electric-rates-while-buil/597767/> (last accessed September 5, 2023).

<sup>36</sup> See, e.g., “Newsom Embraces Dirty Energy in Bid to Stave off Blackouts,” by Wes Venteicher, *Politico*, Aug. 31, 2023, accessible at: <https://www.politico.com/news/2023/08/30/Newsom-aliso-canyon-dirty-energy-blackouts-00113534> (last accessed Sept. 8, 2023).

thrive and grow. Unfortunately, that commitment is waning, such that many recent economic policies are driving thermal generation off the grid. The reality is that Kentucky and the nation will need our 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 a 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.<sup>37</sup> Moreover, Kentucky’s climate is not conducive to sustained, high capacity solar or wind generation, thus making these resources less cost-competitive and less reliable.

On June 1, 2023, the President and CEO of the North American Electric Reliability Corp. (“NERC”), James B. Robb testified before the United States Senate Committee on Energy and Natural Resources regarding the reliability and resiliency of the U.S. Bulk Power System. Mr. Robb noted:

[The] Bulk power system reliability is at an inflection point. NERC assessments demonstrate that the electric grid is operating ever closer to the edge where reliability is at risk — an edge characterized by the prospect of more frequent and more serious disruptions that threaten human wellbeing and economic productivity. To be clear, NERC believes that the energy transformation can be navigated in a reliable way. To do so, reliability must be anchored as our north star guiding the journey. . . .<sup>38</sup>

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<sup>37</sup> The projected winter-time capacity factor of the Companies’ proposed new solar facilities will range between 14.1%-16.1%, whereas the historic winter-time capacity factor for their coal plants from 2012-2022 averaged approximately 60.5%. *See* responses to AG-DR-1-33 and AG-DR-1-34.

<sup>38</sup> “The Reliability and Resiliency of Electric Service in the U.S. in Light of Recent Reliability Assessments and Alerts,” Testimony of James B. Robb, before the Committee on Energy and Natural Resources U.S. Senate, June 1, 2023, accessible at: <https://www.energy.senate.gov/services/files/D47C2B83-A0A7-4E0B-ABF2-9574D9990C11> (last accessed Aug. 9, 2023).



Recently, in a May 4, 2023 hearing held by the United States Senate Committee on Energy and Natural Resources, the 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.”<sup>39</sup> 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 flashing . . . .<sup>40</sup>

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 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. . . .<sup>41</sup>

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<sup>39</sup> “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 Aug. 9, 2023).

<sup>40</sup> *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 Aug. 9, 2023); and “2 FERC Members Flag Grid Reliability Concerns During US Senate Committee Hearing,” *S&P Global Market Intelligence*, May 4, 2023.

<sup>41</sup> 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 August 9, 2023).

The nation’s largest regional transmission organization (“RTO”), PJM, whose footprint borders directly on the Companies’ service territories, has also *strongly* cautioned that approximately 40 GW of generation, representing 21% of the 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.<sup>42</sup>

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 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.<sup>43</sup>

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<sup>42</sup> “Energy Transition in PJM: Resource Retirements, Replacements & Risks,” Feb. 24, 2023, pp. 1-2, 5.

<sup>43</sup> 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 the other RTO serving the

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:<sup>44</sup>

- “We are concerned about being in a supply crunch by the end of this decade”;<sup>45</sup>
- “We can’t simply shut down thermal resources and replace them with non-thermal resources.”<sup>46</sup>
- “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”;<sup>47</sup>
- “We are going to need thermal resources in order to preserve reliability until replacement tech exists to deploy at scale”;<sup>48</sup>
- “. . . 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”;<sup>49</sup>
- “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

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Commonwealth, the Midcontinent Independent System Operator (“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](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 Sept. 18, 2023).

<sup>44</sup> 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 August 15, 2023). *See also* Rebuttal Testimony of David Sinclair, pp. 3-4.

<sup>45</sup> *Id.* at 13:25-13:33.

<sup>46</sup> *Id.* at 24:50-25:15.

<sup>47</sup> *Id.* at 1:12:10-1:12:36.

<sup>48</sup> *Id.* at 1:26:53-1:27:00.

<sup>49</sup> *Id.* at 1:19:57-1:22:14.

we sit here today, they're not getting built.”<sup>50</sup>

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.<sup>51</sup>

Just months ago, Kentucky experienced what may have been its first reliability crisis. On December 24-25, 2022, Winter Storm Elliott struck many parts of the eastern U.S., including Kentucky, causing temperatures to plummet. For many residents in the Companies' service territories across the Commonwealth, the looming reliability crisis became a reality, as they experienced rolling blackouts imposed in order to prevent a far more widespread system outage of greater duration. The freezing of a single valve, on a single gas transportation main, forced the rolling blackouts, forcing the Companies to back down several gas-fired units tied to the affected gas transportation main.<sup>52</sup> Coal-fired plants, however, are capable of maintaining a thirty-to-sixty day supply of coal in a stockpile immediately adjacent to the plant's boiler, minimizing chances for a fuel supply interruption. Coal-fired plants thus

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<sup>50</sup> *Id.* at 1:36:35-1:36:51.

<sup>51</sup> 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 Sept. 5, 2023).

<sup>52</sup> See, e.g., Companies' responses to AG-DR-1-3, AG-DR-1-4, and AG-DR-1-13, Attachment 1.

provide an essential part of America’s—and Kentucky’s—grid reliability.<sup>53</sup> Retiring the four affected plants at this time would not be wise.

As the Companies noted in their 2021 Integrated Resource Plan (IRP) docket:

Reliable, low-cost electricity is critically important to the Commonwealth’s economy. As a leading manufacturer of automobiles, steel, and other products, Kentucky was the 7th most electricity-intensive U.S. state in 2019, as measured by the ratio of electricity consumption and state gross domestic product.<sup>54</sup>

The reliability crisis now at our front door did not come as a surprise—indeed, it was foreseen for at least the past several years.<sup>55</sup> Although this crisis likely will get worse before it gets better, the Commission and all stakeholders must agree that it goes no further—it simply *must* stop at the Commonwealth’s border. It is unacceptable, and we must act together to ensure our grid has the best and most cost-effective reliability measures we can provide.

In the instant case, this Commission has an opportunity to mitigate and forestall the reliability crisis by denying the Companies’ petition to close the four coal-fired units. In doing so, the Commission will be following the lead of other states and RTOs that have delayed coal plant retirements due to reliability concerns.<sup>56</sup> Even California, which seemingly cannot

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<sup>53</sup> See, e.g., public comment letter of Senate President Robert Stivers, dated Aug. 18, 2023.

<sup>54</sup> Case No. 2021-00393, IRP Vol. 1, at 5-1.

<sup>55</sup> See, e.g., “Reliability in PJM: Today and Tomorrow,” March 11, 2021; “Energy Transition in PJM: Frameworks and Analysis,” Dec. 15, 2021; “Get Ready for the Blackouts,” *Wall St. Journal*, Sept. 7, 2021 Op-Ed.

<sup>56</sup> See, e.g., “FERC Approves MISO SSR Agreement for Wisconsin Coal Plant,” *RTO Insider*, March 22, 2023, accessible at: <https://www.rtoinsider.com/31879-ferc-approves-ssr-agreement-wisconsin-coal-plant/> (last accessed Sept. 5, 2023); “We Energies and Alliant Energy Coal Plants in Wisconsin to Stay Open Longer Due to Energy Supply Fears,” *Milwaukee Journal Sentinel*, June 23, 2022, accessible at: <https://www.jsonline.com/story/money/business/2022/06/23/wisconsin-coal-plants-in-oak-creek-sheboygan-portage-stay-open-longer-due-energy-supply-fears/7705049001/> (last accessed Sept. 6, 2023); “Northern Indiana Public Service Co. Delays Retirements of Two Coal-Fired Plants,” by Tim Sylvania, *PV Magazine*, May 4, 2022, accessible at: <https://pv-magazine-usa.com/2022/05/04/solar-tariffs-led-directly-to-delay-of-coal-plant-retirements/> (last accessed Sept. 6, 2023); “Ameren Missouri Delays Coal Plant Retirement,” by Ethan Howland, *Utility Dive*, Aug. 22, 2022, accessible at: <https://www.utilitydive.com/news/ameren-missouri-coal-rush-island-miso-ferc/630226/> (last accessed Sept. 6, 2023); “Dozens of U.S. Coal Plant Closures Delayed as Green Energy Shift Slows,” by Billy Wade, *Bloomberg*,

rush to renewables fast enough, is delaying retirements of other dispatchable thermal generation—nuclear and gas.<sup>57</sup> Europe has had to return to coal in order to avoid an overall energy emergency,<sup>58</sup> and this summer the United Kingdom was forced to restart coal plants to meet demand.<sup>59</sup> Europe also recently discovered that the inadequacy of renewables can force industry shutdown and overall energy supply issues.<sup>60</sup> Furthermore, the Commission has the opportunity to ensure that ratepayers get the value expected out of these facilities, while ensuring reliability through the years of their remaining service lives. By definition, the mandate of KRS 278.264 (2)(b), that the proposed retirement of a fossil fuel plant must not: “. . . harm the utility’s ratepayers by causing the utility to incur any net incremental costs to be recovered from ratepayers that could be avoided by continuing to operate the electric generating unit proposed for retirement in compliance with applicable law,” *cannot* be satisfied

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Nov. 1, 2022, accessible at: <https://www.bloomberg.com/news/articles/2022-11-01/forty-us-coal-plant-closures-are-delayed-as-green-energy-transition-slows#xj4y7vzkg> (last accessed Sept. 6, 2023).

<sup>57</sup> See, e.g., “California Lawmakers Extend the Life of the State’s Last Nuclear Power Plant,” By Nathan Rott, *NPR*, Sept. 1, 2022, accessible at: <https://www.npr.org/2022/09/01/1119778975/california-lawmakers-extend-the-life-of-the-states-last-nuclear-power-plant>; “Despite Climate Goals, California will Let Three Gas Plants Keep Running,” By Sammy Roth, *Los Angeles Times*, Aug. 15, 2023, accessible at: <https://www.latimes.com/environment/newsletter/2023-08-15/despote-climate-goals-california-will-let-three-gas-plants-keep-running-boiling-point> (last accessed Sept. 6, 2023).

<sup>58</sup> “Coal Makes a Comeback as Europe Tries to Avoid an Energy Emergency,” by Lily Jamali, *Marketplace*, October 19, 2022, accessible at: <https://www.marketplace.org/2022/10/19/coal-comeback-europe-avoid-energy-emergency/> (last accessed Sept. 5, 2023).

<sup>59</sup> “UK Restarts Coal-Fired Units as Temperatures, Power Demand Rise,” by Darrell Proctor, *POWER Magazine*, June 13, 2023 accessible at: <https://www.powermag.com/uk-restarts-coal-fired-units-as-temperatures-power-demand-rise/> (last accessed Sept. 5, 2023).

<sup>60</sup> See, e.g., “Europe’s Climate Lesson for America,” *Wall St. Journal*, Sept. 14, 2021, accessible at: <https://www.wsj.com/articles/europe-climate-lesson-for-america-energy-prices-fuel-wind-11631655375> (last accessed Sept. 5, 2023); “Energy Prices in Europe Hit Records After Wind Stops Blowing,” *Wall St. Journal*, Sept. 13, 2021, accessible at: <https://www.wsj.com/articles/energy-prices-in-europe-hit-records-after-wind-stops-blowing-11631528258> (last accessed Sept. 5, 2023); “Expensive Energy May Have Killed More Europeans Than Covid-19 Last Winter,” *The Economist*, May 10, 2023, accessible at: <https://www.economist.com/graphic-detail/2023/05/10/expensive-energy-may-have-killed-more-europeans-than-covid-19-last-winter> (last accessed Sept. 5, 2023); “Europe’s Search for Natural Gas Runs Up Against Climate Goals,” June 27, 2022, *Wall St. Journal*, accessible at: <https://www.wsj.com/articles/europes-search-for-natural-gas-runs-up-against-climate-goals-11656144535> (last accessed September 5, 2023).



if ratepayers are saddled with stranded costs arising from the premature retirement of the four subject coal-fired units.

**C. As EPA’s War on Kentucky is Far From Over, the Commission Must Maximize the Usefulness of the Commonwealth’s Coal Plants**

On May 23, 2023, the Biden Administration’s EPA issued yet another proposal in its on-going series of regulations harming Kentuckians. The proposed greenhouse gas (“GHG”) emission rule is designed to stop fossil fuel power plants from operating. General Cameron joined a coalition of 21 State Attorneys General led by West Virginia in submitting comments opposing EPA’s proposed rule,<sup>61</sup> as well as a second comment letter from a coalition of 18 State Attorneys General led by Ohio opposing the rule.<sup>62</sup> 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.”<sup>63</sup> The Companies themselves have filed similar

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<sup>61</sup> 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>

<sup>62</sup> 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>

<sup>63</sup> “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-2023-0072.ashx#:~:text=Electric%20Reliability%20Council%20of%20Texas%2C%20Inc.%20%28%E2%80%9CER COT%E2%80%9D%29%2C%20Midcontinent.potential%20to%20materially%20and%20adversely%20impact%20electric%20reliability>, (last accessed Sept. 5, 2023); see also “Grid Operators Warn US EPA Proposal Could Lead to ‘Significant Power Shortages,’” Zack Hale, *S&P Global Market Intelligence*, Aug. 9, 2023.

comments, warning that compliance with these proposed regulations would result in what apparently would be the largest rate increases in the Companies' histories.<sup>64</sup>

The Companies' capitulation that EPA has unchecked authority and must be blindly followed is shortsighted. Specifically, as to the GNR, the Companies' belief that they simply have to do something because the Biden Administration's EPA will eventually prevail in its ongoing war is misguided. Thanks to the efforts of the Attorney General, EPA's GNR is stayed in Kentucky and unlikely to survive the legal challenge. Importantly, the stay to the denial of Kentucky's GNR State Implementation Plan ("SIP") is also a stay to the Federal Implementation Plan ("FIP"). Under the Clean Air Act,<sup>65</sup> there cannot be a FIP if a valid SIP is in place.<sup>66</sup> EPA has acknowledged this when they stated that the GNR will not be enforced in Kentucky.<sup>67</sup> EPA's recent track record indicates they will lose on the GNR. Currently there

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<sup>64</sup> See Supplemental Attachment to KCA-DR-4.5, "Comments of PPL Corporation on Proposed New Source Performance Standards For Greenhouse Gas Emissions From New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units: . . . . As drafted, the proposed rule prematurely determines carbon capture and sequestration (CCS) and low GHG hydrogen co-firing as the Best System for Emission Reduction (BSER). Because these technologies have not been adequately demonstrated and are not realistically available within the timeframes specified by EPA, the proposed GHG Rules will have the practical effect of unnecessarily limiting the use of natural gas-fired generation and potentially crowding out alternative technologies and compliance measures. Additionally, by making continued operation of coal-fired EGUs during the interim period contingent on unrealistic capacity factor limitations and natural gas co-firing requirements, the proposed rule further injects significant affordability and reliability risk into the clean energy transition. . . . In drafting the proposed rule, EPA has seriously underestimated the technology and infrastructure challenges associated with effectively mandating the restructuring of an entire industry of critical importance to the economy and electrification effort. . . . [A]chieving an 80% clean energy portfolio by 2030 would require investment of approximately \$22 billion and would result in a 66% increase over today's generation costs. Electricity bills would increase an average of 60% from 2022 to 2030. A \$1.2 billion energy cost increase annually by 2030 for our industrial, large commercial, and small business customers would likely result in a negative impact on load and jobs. Our analysis shows that such an approach would be not only cost prohibitive, but also infeasible in light of the siting, permitting, construction, transmission, and other challenges."

<sup>65</sup> 42 U.S.C. § 7401 et seq.

<sup>66</sup> See generally, 42 U.S.C. § 7410.

<sup>67</sup> EPA Memorandum from Joseph Goffman, Principal Deputy Assistant Administrator Office of Air Radiation entitled "Notice of Forthcoming EPA Action to Address Judicial Stay Orders," dated June 1, 2023, accessible at: [https://www.epa.gov/system/files/documents/2023-06/Goffman%20Memo%20re%20Stay%20Orders\\_060123%20JG%20%281%29.pdf](https://www.epa.gov/system/files/documents/2023-06/Goffman%20Memo%20re%20Stay%20Orders_060123%20JG%20%281%29.pdf) (last accessed Sept. 5, 2023).



are GNR stays in five U.S. Circuit Courts of Appeal covering ten states.<sup>68</sup> EPA also experienced a major curtailment of its authority in *West Virginia v EPA*,<sup>69</sup> the U.S. Supreme Court decision regarding greenhouse gas emissions from power plants.<sup>70</sup> Furthermore, the EPA's attempt to alter the Waters of the United States ("WOTUS") rule was enjoined by the Sixth Circuit Court of Appeals in a challenge the Attorney General filed.<sup>71</sup> Betting on EPA rules that are not final and have not yet survived litigation is a risky proposition for the Companies' ratepayers, and one the Commission should not accept. Frankly, it would be foolish for the Companies or the Commission to make any decision based on the GNR or any other proposed EPA rule given the Biden EPA's poor record in the courts.<sup>72</sup>

Some parties will doubtlessly argue that renewables will become more cost-competitive as they are largely immune from the onerous EPA regulations placed on fossil fuel generation. Yes, there is an environmental compliance cost for any thermal dispatchable generation. But there is also an environmental cost for non-dispatchable resources such as wind, solar and batteries. And other costs as well.<sup>73</sup>

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<sup>68</sup> *Id.* See also EPA Memorandum from Joseph Goffman, Principal Deputy Assistant Administrator Office of Air Radiation entitled "Notice of Forthcoming EPA Action to Address Judicial Stay Orders," dated Aug. 2, 2023, accessible at: <https://www.epa.gov/system/files/documents/2023-08/23-02403-OAR-OAP%20Memo%20from%20J.%20Goffman%20re%20Response%20to%20Further%20Stay%20Orders%20JG%20Signed%20%282%29.pdf> (last accessed Sept. 5, 2023).

<sup>69</sup> *West Virginia v. EPA*, 142 S. Ct. 2587 (2022).

<sup>71</sup> *Commonwealth of Kentucky v. EPA*, U.S. Court of Appeals for the Sixth Circuit, Case No. 23-5343; Order dated May 10 2023.

<sup>72</sup> Even the EPA may be starting to realize the futility of their onerous regulations as they announced on September 6, 2023 to delay plans to tighten air quality standards for ground level ozone; see "Environmental Protection Agency delays new ozone standards until after the 2024 election," accessible at: <https://abcnews.go.com/Health/wireStory/environmental-protection-agency-delays-new-ozone-pollution-standards-102954620> (last accessed Sept. 8, 2023).

<sup>73</sup> See, e.g., "Why We Need to Recycle Clean Energy Technologies — and How to Do It," by Jeff St. John, *Canary Media*, June 13, 2022, accessible at: [https://www.canarymedia.com/articles/clean-energy/why-we-need-to-recycle-clean-energy-technologies-and-how-to-do-it?utm\\_medium=email](https://www.canarymedia.com/articles/clean-energy/why-we-need-to-recycle-clean-energy-technologies-and-how-to-do-it?utm_medium=email) (last accessed Sept. 8, 2023); "LA Times Report Warns About Environmental Danger in Solar Transition," by Joe Silverstein, *Fox News*, July 14, 2022, accessible at: <https://www.foxnews.com/media/la-times-op-ed-warns-about-environmental-danger-solar-transition> (last accessed Sept. 8, 2023).

Within the past few years, renewable resources started becoming more cost-competitive for two reasons: heavy subsidization,<sup>74</sup> and to date, a lack of onerous up-front environmental compliance costs such as the EPA has placed on fossil fuel generation.<sup>75</sup> However, that trend has not only halted, but is actually starting to reverse itself: solar and wind power facilities are now increasing in cost.<sup>76</sup> For example, a New Mexico coal plant slated for retirement was to be replaced by a combination solar and battery facility. But after the contract was signed, costs of solar components and other items had soared, so the contract was amended to sell power 28% higher than the original contract.<sup>77</sup> But the cost increases did not stop there—the utility was also forced to purchase replacement power at higher market rates until the solar project was completed.<sup>78</sup> Operating any type of electric generation resource has a cost. The question is whether the cost is justified by the beneficial attributes the

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<sup>74</sup> “What Does ‘Made in America’ Mean? In Green Energy, Billions Hinge on the Answer,” Phred Dvorak, *Wall St. Journal* March 23, 2023, accessible at: <https://www.wsj.com/articles/what-does-made-in-america-mean-in-green-energy-billions-hinge-on-the-answer-6e2471c5> (last accessed Sept. 5, 2023).

<sup>75</sup> The Attorney General believes that the Commission should nonetheless take careful notice that renewable resources’ supply chains will doubtlessly soon face entirely new classes of environmental compliance costs that government subsidies cannot mitigate, and will force massive price increases up the chain to consumers and all end users. *See, e.g.*, “Reality Check for the EV Battery Push,” J. Peter Pham, Sept. 1, 2022, *Power*, accessible at: [https://www.powermag.com/blog/reality-check-for-the-ev-battery-push/?oly\\_enc\\_id=1450G8988423D3P](https://www.powermag.com/blog/reality-check-for-the-ev-battery-push/?oly_enc_id=1450G8988423D3P) (last accessed Sept. 5, 2023); “The Role of Critical Minerals in Clean Energy Transitions,” Int’l Energy Administration, May 2022 Revised Ed.; [It’s Not Just Mining. Refining Holds U.S. Back on Minerals](#), James Marshal, *E&E News*, July 14, 2021.

<sup>76</sup> *See, e.g.*, “Green Power Gets Pricier After Years of Declines,” Phred Dvorak, *Wall St. Journal*, Aug. 13, 2023.

<sup>77</sup> *Id.* “The cost of large-scale solar and wind power rose as much as 20% last year versus the year before in most of the world, the International Energy Agency said in a June report. In the U.S., financial-services company Lazard’s widely watched report on the cost of power generation logged its first increase for renewables this year since it started tracking it nearly 15 years ago. The whiplash has been particularly bad among renewables developers in the U.S., many of whom have rewritten contracts to stay afloat. The price they are charging long-term buyers for their electricity has doubled since the pandemic and risen nearly 30% in the past year alone, according to clean-energy marketplace LevelTen Energy.” *Id.*

<sup>78</sup> *Id.* *See also*, Case No. 2022-00296, *In Re: Electronic Application of Big Rivers Electric Corporation for Approval of Amendment to Power Purchase Agreement*, Final Order dated June 13, 2023.

resource offers. The higher cost of renewables is evident, because as renewable penetration has increased, rates have also increased.<sup>79</sup>

The Biden administration’s inappropriately named Inflation Reduction Act (IRA),<sup>80</sup> passed on a strictly partisan vote, picks winners and losers instead of allowing the market to send price signals to attract new investments. As FERC Commissioner Danly pointed out in a letter to U.S. House of Representative Chairpersons, subsidies result in a market with distorted price signals and incentives, which interfere with market prices and affect resource adequacy and ultimately, reliability.<sup>81</sup> This all points to an inevitable green energy bailout as the *Wall Street Journal* opined in a recent editorial:<sup>82</sup>

When, even worse, the external subsidies are designed to favor a particular category of resources (such as wind and solar) which do not have the reliability attributes necessary to ensure long-term system stability, the inevitable consequence is that the subsidized renewables will drive the unsubsidized, dispatchable generation into insolvency. Over time, this creates capacity shortfalls and deprives the electric system of the attributes needed to keep the lights on. . . . Although we have yet to see the full effects of these policy decisions, they will inevitably have real-world consequences as the markets experience ever greater scarcity and are unable to attract the investment in the generation assets required to ensure that the electric system remains stable. Reliability failures will ultimately result. . . .

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<sup>79</sup> See, e.g., “States Have Big Hopes for Renewable Energy. Get Ready to Pay For It,” *Politico*, August 22, 2023 accessible at: [https://www.politico.com/news/2023/08/22/new-york-renewable-energy-cost-00112126?utm\\_medium=email](https://www.politico.com/news/2023/08/22/new-york-renewable-energy-cost-00112126?utm_medium=email) (last accessed Sept. 5, 2023). Even the California Public Utilities Commission has expressed concern that the renewable resource pathway it has chosen for ratepayers will make utility costs increasingly less affordable. “California’s Dilemma: How to Control Skyrocketing Electric Rates While Building the Grid of the Future,” by Herman Trabish, *Utility Dive*, April 26, 2021, accessible at: <https://www.utilitydive.com/news/californias-dilemma-how-to-control-skyrocketing-electric-rates-while-buil/597767/> (last accessed Sept. 12, 2023).

<sup>80</sup> “Biden reveals an Inflation Reduction Act Regret: 'I wish I Hadn’t Called it That',” by Naomi Lim, *Washington Examiner*, Aug. 10, 2023, accessible at: <https://www.washingtonexaminer.com/news/white-house/biden-inflation-reduction-act-name> (last accessed Sept. 8, 2023).

<sup>81</sup> Letter from Commissioner Danly to U.S. House of Representatives Chairpersons dated June 1, 2023, pp. 7-8 [emphasis added] accessible at: <https://ferc.gov/news-events/news/commissioner-danlys-response-us-house-representatives-cathy-mcmorris-rodgers-jeff> (last accessed Sept. 5, 2023).

<sup>82</sup> “The Coming Green Energy Bailout,” *Wall St. Journal*, Sept. 4, 2023, accessible at <https://www.wsj.com/articles/green-energy-nyscrda-renewable-subsidies-rate-payer-bailout-b807ccb3> (last accessed Sept. 5, 2023).

Increasingly, evidence is mounting that utilities with a high percentage of renewable resources either have, or will have higher costs. For example, “[t]he European Union, which gets 17% of its electricity from solar and wind—the highest percentage in the world—also has some of the highest consumer electricity costs.”<sup>83</sup> In fact, popular narratives surrounding the energy transitions conveniently overlook substantive facts:

Claims that wind, solar, and EVs have reached cost parity with traditional energy sources or modes of transportation are not based on evidence. Even before the latest period of rising energy prices, Germany and Britain—both further down the grid transition path than the U.S.— have seen average electricity rates rise 60%–110% over the past two decades.<sup>84</sup> The same pattern is visible in Australia and Canada.<sup>85</sup> It’s also apparent in U.S. states and regions where mandates have resulted in grids with a higher share of wind/solar energy. In general, overall U.S. residential electricity costs rose over the past 20 years.<sup>86</sup> But those rates should have declined because of the collapse in the cost of natural gas and coal—the two energy sources that, together, supplied nearly 70% of electricity in that period.<sup>87</sup> Instead, rates have been pushed higher thanks to elevated spending on the otherwise unneeded infrastructure required to transmit wind/solar-generated electricity, as well as the increased costs to keep lights on during “droughts” of wind and sun that come from also keeping conventional power plants available (like having an extra, fully fueled car parked and ready to go) in effect by spending on two grids. None of the above accounts for the costs hidden as taxpayer-funded subsidies that were intended to make alternative energy cheaper. Added up over the past two decades, the cumulative subsidies across the world for biofuels, wind, and solar

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<sup>83</sup> See, e.g., “Want to Lock Down the Climate?” Bjorn Lomborg, President of the Copenhagen Consensus, *Wall St. Journal*, Sept. 30, 2021, accessible at: <https://www.wsj.com/articles/covid-lockdown-climate-fossil-fuels-electricity-energy-production-africa-carbon-emission-11632943155> (last accessed Sept. 3, 2023).

<sup>84</sup> Frédéric Simon, “Germany Pours Cold Water on EU’s Clean Energy Ambitions,” EURACTIV, June 12, 2018; Strom Report, “Electricity Price in Germany,” 2018.

<sup>85</sup> Joanne Nova, “Electricity Prices Fell for Forty Years in Australia, Then Renewables Came,” JoNova (blog), Feb. 2018.

<sup>86</sup> EIA, “During 2021, U.S. Retail Electricity Prices Rose at Fastest Rate Since 2008,” Mar. 1, 2022.

<sup>87</sup> EIA, *Electric Power Monthly*, “Table 1.1. Net Generation by Energy Source: Total (All Sectors), 2012–April 2022.”

approach about \$5 trillion,<sup>88</sup> all of that to supply roughly 5% of global energy.<sup>89</sup>

Moreover, virtually all stakeholders and experts, including rating agencies<sup>90</sup> and the Companies themselves,<sup>91</sup> agree that extensive penetrations of renewable resources would require even more immense—and far more expensive—reserve margins on a year-round basis.<sup>92</sup> The Companies further acknowledged in their most recent IRP that greater renewable penetration would require yet an even greater need to meet winter-time capacity needs.<sup>93</sup> While these major cost escalations are of little concern for some renewable energy advocates, they should be at the forefront of this Commission’s attention.

The Companies’ witness, Philip Imber testified at the hearing about how difficult it is to operate a coal plant under the relentless and onerous EPA attacks on coal: “There’s belts, suspenders, and other ways that the EPA is unrelentingly addressing emissions from coal fired power plants . . . it’s a tough thing to keep coal-fired plants operating these days.”<sup>94</sup> However,

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<sup>88</sup> BloombergNEF, “Global Investment in Low-Carbon Energy Transition Hit \$755 Billion in 2021,” Jan. 27, 2022.

<sup>89</sup> “The Energy Transition Delusion: A Reality Reset,” *supra*, at 5-6.

<sup>90</sup> “Moody’s Warns of Potential Power Price Volatility from Renewables Oversupply,” by Diana DiGangi, *Utility Dive*, Sept. 14, 2023 (“Because wind and solar power generation depends on weather conditions and is thus not dispatchable, load-serving utilities will likely build in a cushion of supply to enhance reliability and compensate for resource volatility,” the report says.”), accessible at: [https://www.utilitydive.com/news/moodys-utility-renewables-oversupply-price-grid/693714/?utm\\_source=Sailthru&utm\\_medium=email&utm\\_campaign=Issue:%202023-09-14%20Utility%20Dive%20Renewable%20Energy%20%5Bissue:54513%5D&utm\\_term=Utility%20Dive:%20Renewable%20Energy](https://www.utilitydive.com/news/moodys-utility-renewables-oversupply-price-grid/693714/?utm_source=Sailthru&utm_medium=email&utm_campaign=Issue:%202023-09-14%20Utility%20Dive%20Renewable%20Energy%20%5Bissue:54513%5D&utm_term=Utility%20Dive:%20Renewable%20Energy) (last accessed Sept. 14, 2023).

<sup>91</sup> See the Companies latest IRP docket, Case No. 2021-00393, Response to AG-DR-1-35, and Responses to PSC-DR-2-5, and Louisville/Jefferson County Metro Government DR-1-10.

<sup>92</sup> “Because of the **declining reliability value of renewable resources**, the percent nameplate above peak load would increase under each progressive scenario. In the Accelerated scenario, **an additional 78% nameplate capacity on top of the forecasted peak load was required to satisfy the 1-in-10 year LOLE** [Loss of Load Expectation].” *Energy Transition in PJM: Frameworks for Analysis*, PJM Interconnection, Dec. 15, 2021, at 8 [emphasis added]; see also, “IPPs See Danger in Swift Move from Gas and Coal,” *RTO Insider*, December 15, 2021, accessible at: <https://www.rtoinsider.com/29241-ipp-see-danger-swift-move-from-gas-coal/#/> (last accessed Sept. 3, 2023).

<sup>93</sup> Case No. 2021-00393, Response to AG-DR-1-35, and Responses to PSC-DR-2-5, and Louisville/Jefferson County Metro Government DR-1-10.

<sup>94</sup> Video Transcript of Evidence (VTE), Aug. 25, 2023 at 13:12:28 – 13:13:04.

Kentucky does not need to acquiesce to EPA's war on coal. With the enactment of Senate Bill 4, the General Assembly sent a clear message: do not surrender our coal plants. Once a coal plant is retired, options to retain and provide dispatchable and reliable electricity become severely limited. It would be imprudent for the Commission to limit Kentucky's options in the current energy environment.

#### **D. Now Is Not The Time To Abandon Coal**

The General Assembly was wise to pass Senate Bill 4 and the Commission would be wise to follow its meaning and intent to the fullest. Kentucky should not retire fossil fuel generation unless it is replaced with equally reliable dispatchable generation. Reliability is too important to risk. As Senate President Robert Stivers stated in his public comments to the Commission regarding the passage of Senate Bill 4: “. . . the Kentucky General Assembly engaged in considerable debate and discussion regarding the importance of maintaining a reliable and resilient electric energy grid that provides the citizens and businesses throughout the Commonwealth of Kentucky with reliable and affordable energy.”<sup>95</sup> The Companies have a financial incentive to prematurely retire the four affected coal plants brought on by their parent company's bias against coal, but the enactment of KRS 278.264 has interrupted their plans. As monopoly vertically integrated utilities, the Companies must answer first to the General Assembly and the Commission, not to PPL corporate directives, shareholders or the ESG financial political agenda. PPL would be wise to base their decisions upon relevant and sound physics and engineering principles instead of compensating its management for ESG

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<sup>95</sup> Public comment letter from Senate President Robert Stivers, August 18, 2023, accessible at: [https://psc.ky.gov/pscscf/2022%20cases/2022-00402/Public%20Comments//20230818\\_Senate%20President%20Robert%20Stivers%20Public%20Comment.pdf](https://psc.ky.gov/pscscf/2022%20cases/2022-00402/Public%20Comments//20230818_Senate%20President%20Robert%20Stivers%20Public%20Comment.pdf) (last accessed Sept. 5, 2023).



goals, which included providing incentive compensation to top executives for closing the Mill Creek Unit 1 coal-fired unit.<sup>96</sup>

Senate President Stivers' public comments noted PJM's energy transition report from this February saying, "[t]his report confirms my concern expressed in the mandates set forth in Senate Bill 4 regarding the premature retirement of fossil fuel generating units in Kentucky and the threats that these retirements pose to maintaining a reliable and resilient electric energy grid."<sup>97</sup> Keeping the coal plants operating gives flexibility and opportunity for the Companies. Other utilities in the Commonwealth, such as Kentucky Power will face a capacity shortage in a few years. One of the four plants slated for retirement, Ghent Unit 2, if fitted with an SCR, could make a significant dent in the coming capacity shortfall some Kentucky electric utilities will face. Even if the Companies do not end-up selling Ghent Unit 2's power to Kentucky Power via a unit power agreement or otherwise, they would still have the ability to sell on the open market to the benefit of their ratepayers. Retirement of Ghent Unit 2, on the other hand, forecloses the possibility of supplying generation to our neighbors.<sup>98</sup>

The Commission can easily take administrative notice of the number of applications filed before the Kentucky Siting Board seeking permission to build new solar photovoltaic plants. While the number of those applications is in the dozens, it appears that few, if any, of the applications that were approved have yet to start construction. The Commission should also take notice of the number of solar plant developers that have changed their contract terms

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<sup>96</sup> See KCA Hearing Exhibit 2 (2023 PPL "Proxy Summary, Executive Compensation Program," page 4 of PPL Corp.'s 2023 Proxy Statement, the complete document of which is accessible at: <https://www.pplweb.com/wp-content/uploads/2023/04/PPL-Corporation-2023-Proxy.pdf> (last accessed Sept. 5, 2023)). See also VTE Aug. 22, 2023 at 10:42:00 – 10:45:30.

<sup>97</sup> Senate President Robert Stivers public comment letter, *supra*.

<sup>98</sup> See the Kollen recommendation regarding keeping Ghent Unit 2 open, at Direct Testimony of Lane Kollen, pp. 10-15.

to increase their costs, which ultimately will be passed on to Kentucky ratepayers. As explained above, there are no commercially viable renewable alternatives at scale to replace the Companies' coal plants. Changes between the time of the filing of the Companies' 2021 IRP and the instant CPCN docket show just how fluid the market for renewable technology is, and should highlight why there is no need to rush to retire coal plants. The Commission should make its decision not on what is new and popular but on what will work. Now is not the time for speculation or for placing the cost of massive new renewable projects onto the back of ratepayers. The prudent thing is to continue utilizing Kentucky's existing coal plants.

The Companies and perhaps some other intervenors will argue that keeping the coal plants open is cost prohibitive. The Commission must balance reliability and cost. What value should the Commission attribute to the current level of reliability—dependable power for twenty-hour hours of nearly every day of the year? Even “free” power is not affordable if it is not *available*.<sup>99</sup> Pushing the current system off the cliff without having a better system in place would be foolhardy. Keeping the Companies' coal-fired plants operating for as long as possible will provide the needed reliability.

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<sup>99</sup> Some intervenors have attempted to highlight the outages that several of the Companies' coal-fired facilities incurred for several hours during Winter Storm Elliott [“the Storm”]. These intervenors have recommended that the Commission reject all fossil-fueled generating plants, and furthermore failed to point out: (a) virtually no solar generation was available during the Storm, and absolutely none was available during the height of the Storm which occurred in the evening; (b) the affected coal facilities were brought back online quickly enough for the Companies to have made an off-system sale to PJM while the Storm was still impacting the service territories, and for which they received a performance incentive payment from PJM; (c) even if the Companies had wind generation in their fleet (whether owned or via PPA), it would have been curtailed given the 30-40 m.p.h. wind prevalent during the Storm (as indicated on the Attachment to the response to AG-DR-1-13), which exceeds safety tolerances for wind turbines; (d) the historic average winter-time capacity factor of the Companies' coal fleet from 2012-2022 was approximately 60.5%, but the projected average winter-time capacity factor for the solar facilities the Companies are seeking will be only 15.1%. The lack of reliable resources, which these intervenors recommend, would thus have resulted in exponentially worse blackouts. *See* hearing cross examination of Companies' witness Schram, Aug. 24, 2023 VTE at 16:15:20, and responses to AG-DR-1-13 Attachment 1, p. 1, AG-DR-1-33 and AG-DR-1-34.



Contrary to the belief that coal plants are cost-prohibitive, coal plants may become more valuable as their numbers decline because of their ability to deliver dispatchable power. As FERC Commissioner Christie noted in his response dated August 29, 2023 to United States Senator John Barrasso, Ranking member of the Committee on Energy and Natural Resources:

As I testified to your committee on May 4, 2023, the United States is already facing potentially catastrophic consequences from the premature retirements of dispatchable generating resources at an unsustainable pace. When the supply of power is contracting due to premature retirements of dispatchable resources while the demand for power is quadrupling, it does not take a doctorate in statistics to see that the numbers just don't add up.<sup>100</sup>

What will fill this void in Kentucky and the nation that Commissioner Christie is warning us about?

Despite the heavy subsidization offered under the so-called Inflation Reduction Act, prices for renewables are soaring.<sup>101</sup> Solar plants in Kentucky are being approved but not being built. This is not the time for hoping or speculating that renewable resources will somehow become cost-effective. Many say that long-term renewables prices will retreat—and perhaps they will one day—but Kentucky's power generation needs cannot be predicated solely upon hope. The prudent thing is to wait and see if that in fact happens, while in the meantime continuing to utilize Kentucky's exiting coal plants.

**E. The Commission Should Reject Proposals that the Companies Enter Long-Term Fixed Purchase Power Agreements, or Join an RTO, as Opposed to Generating Their Own Power**

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<sup>100</sup> Commissioner Christie letter to Hon. John Barrasso, M.D., Ranking Member, U.S. Senate Committee on Energy and Natural Resources, dated Aug. 29, 2023 attached as OAG Brief Exhibit 2.

<sup>101</sup> "Green Power Gets Pricier After Years of Declines," *Wall St. Journal*, Aug. 18, 2023.

Does Kentucky want its vertically integrated utilities to own their own generation, or to be beholden to the market and generation outside of the Commonwealth? The direction the General Assembly gave when it passed Senate Bill 4 reaffirms the long-held practice that Kentucky utilities own and control their power.

The Companies' combined systems have been constructed and maintained with the promise that they will provide their own generation, as opposed to engaging in large-scale, long-term purchase power agreements from outside of their territories, or pursuing membership in an RTO. Being vertically integrated, the Companies' transmission system accordingly mirrored that same promise, with the goal of transmitting power generated at company-owned stations to substations throughout the service territories. At the Commission's direction, the Companies perform annual studies regarding the costs and benefits of joining an RTO.<sup>102</sup> These studies consistently show at this time that RTO membership is not beneficial to customers.

The testimony of Andrew Levitt, on behalf of Sierra Club states that the Companies have understated the benefit of energy imports into their territories, and that joining PJM would yield significant energy savings.<sup>103</sup> Mr. Levitt suggests that either bilateral or market purchases of power, or both would obviate the need for at least some of the replacement power for which the Companies are seeking CPCNs in this docket. Such a position, however, is not logical in this case.

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<sup>102</sup> The most recent such study was publicly filed into the post-case documents of the Companies' most recent rate case, Case Nos. 2020-00349 and 2020-00350, in November, 2022. The 2022 version, performed by independent third-party consultant Guidehouse, Inc., examined solely the cost effectiveness of joining PJM, thus intentionally excluding MISO from its scope of review. In the instant case, the Companies submitted an updated version of that study in response to Sierra Club-DR-2-26 (b).

<sup>103</sup> Levitt Direct Testimony, pp. 5-7.

As the Companies explained in their application and in response to discovery, they have a very limited ability to import power from neighboring regions. Available Transmission Capacity (“ATC”) is an objective measure of the capability of the Companies’ transmission system to import power from neighboring regions into the Companies’ service territories.<sup>104</sup> As indicated in the Companies’ exhibit SAW-1, they have zero capability to import power from neighboring regions for 42% of the time.<sup>105</sup> Moreover, the export capability from neighboring regions is often limited when the Companies’ load is high—in other words, when any potential need for imports is most likely to occur.<sup>106</sup> Leaving customers without power for almost half the time is not a reliable system, and places the Companies in jeopardy of violating their obligation to meet the needs of their service territory.

Since the Companies rely upon their own generation, they did not construct their transmission system with the ability to import significant amounts of power for potentially long periods. Increasing the ATC of the Companies’ transmission system now to add those capabilities would require a major expansion of that system, which doubtlessly would prove cost-prohibitive. Keeping the four subject coal plants operating as long as possible helps delay any potential need for significant transmission expansion, and thus represents another cost saving the Commission should consider. Therefore, the Commission should reject Mr. Levitt’s recommendation.

The proposed solar PPAs and the proposal for the Companies to own their own solar facilities do not satisfy KRS 278.264 requirements for dispatchable power and therefore should be rejected. Not only are they not dispatchable but they would receive federal

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<sup>104</sup> Exhibit SAW-1, Appendix D-15, § 4.4; and Companies’ response to AG-DR-1-14 (b).

<sup>105</sup> Exhibit SAW-1, Appendix D-15-16, § 4.4, Table 7.

<sup>106</sup> *Id.*

incentives, which as Senate President Stivers noted in his comment letter is contrary to Senate Bill 4: “This application raises the additional issue pursuant to KRS 278.264(2)(c) of whether the Applicants received financial incentives or benefits offered by any federal agency to provide solar power as a replacement for at a portion of the power provided by the fossil fuel-fired electric generating units.”<sup>107</sup> Solar generation is not an appropriate replacement under KRS 278.264, and should be disapproved unless paid for by shareholders. Any PPAs should come before the Commission for approval on their own merits. However, if the Commission should approve the solar PPAs, the PPA expense should not be recovered through the Fuel Adjustment Charge, as KIUC witness Mr. Kollen recommended.<sup>108</sup>

**F. The Commission Should Reject the  
Proposed Brown BESS**

Shareholders, not ratepayers should bear the risk of any new generation that is, as the Companies stated, an experiment to gain experience and data. If the Companies want to experiment with batteries such as the Brown BESS they propose in this case,<sup>109</sup> they should do so on their own dime, not the ratepayers. In addition, batteries do not satisfy the requirements of Senate Bill 4 because they do not generate dispatchable power, and are heavily incentivized by federal subsidies. Moreover, they are highly inefficient as they incur a 15% round-trip efficiency loss of the power used to charge the BESS.<sup>110</sup> The Commission would rightly reject any other generation, transmission or distribution facility with such an enormously inefficient rating. Such gross inefficiency raises major questions as to whether the full value of such a facility can rightly be deemed used and useful for rate base purposes.<sup>111</sup>

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<sup>107</sup> Public comment letter of Senate President Stivers, *supra*, at 4.

<sup>108</sup> Kollen Direct Testimony, at 20-22.

<sup>109</sup> *See generally*, Sinclair Direct Testimony at 24-26, Response to AG-DR-1-28 (h), and Exhibit SAW-1, p. 38.

<sup>110</sup> Response to AG-DR-1-28 (g).

<sup>111</sup> *See, e.g.*, KRS 278.293.

Perhaps most importantly, the Companies' own analysis shows the Brown BESS is not a least-cost solution, and would pose a net present value harm to ratepayers of between \$95 million - \$130 million, even with the federal Investment Tax Credit incentive.<sup>112</sup>

Batteries are far from perfect. In addition to being limited to durations of approximately 4 hours,<sup>113</sup> their lifespan is not very long.<sup>114</sup> Several states are also wrestling with the issue of utility-scale battery safety. In California, the Moss Landing battery storage system temporarily shut down after two separate incidents in the past few years.<sup>115</sup> Arizona has seen more than one battery storage fire,<sup>116</sup> and New York has launched a work group over safety concerns of lithium-ion battery storage after three mishaps at energy storage facilities.<sup>117</sup>

### **G. The Commission Should Approve the Proposed Demand Side Management and Energy Efficiency Program Plan (“DSM-EE Program Plan”)**

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<sup>112</sup> Revised Exhibit SAW-1, Table 22, May 2023, provided as Attachment 2 in response to Joint Intervenor DR-2-60 (a), at 39.

<sup>113</sup> *Id.*

<sup>114</sup> The Brown BESS' depreciable lifespan is estimated at only 15 years. Response to KIUC-DR-1-7.

<sup>115</sup> “Battery Blazes, Breakdowns Underscore ‘Growing Pains’ for Energy Storage,” by Garrett Hering and Darren Sweeney, *S&P Global Market Intelligence*, May 31, 2022, accessible at:

<https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/battery-blazes-breakdowns-underscore-growing-pains-for-energy-storage-70426578#:~:text=Daily%20outage%20reports%20from%20the%20California%20ISO%2C%20which,lights%20on%20during%20critical%20periods%20of%20peak%20demand> (last accessed September 5, 2023).

<sup>116</sup> “Fire Crews Tend to Massive, Smoldering Battery in Chandler Facility,” by Ryan Randazzo and Perry Vandell, *Arizona Republic*, April 21, 2022, accessible at:

<https://www.azcentral.com/story/money/business/energy/2022/04/21/fire-crews-tend-massive-smoldering-battery-chandler-facility/7405430001/> (last accessed Sept. 5, 2023).

<sup>117</sup> “After Fires, NY Governor Launches Group Focused on Lithium-Ion Battery Safety,” by Jason Fargo, *S&P Global Market Intelligence*, Aug. 1, 2023, accessible at: <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/after-fires-ny-governor-launches-group-focused-on-lithium-ion-battery-safety-76806492> (last accessed Sept. 5, 2023).

The Companies' application includes a suite of proposed new DSM-EE Program Plan.<sup>118, 119</sup> The Companies developed these programs working with their DSM-EE Advisory Group from 2021-2023,<sup>120</sup> which provided input and feedback into the structure of the proposed programs. All but two of the programs pass the Total Resource Cost test<sup>121</sup> upon which the Commission traditionally relies in deciding whether to approve new DSM-EE programs.<sup>122</sup> If approved, the programs could provide peak cumulative demand savings of 377 MW from energy efficiency and demand response savings, and 878 GWh of energy savings by 2030,<sup>123</sup> which could help in reliability to the overall resource plan.<sup>124</sup>

The Attorney General disagrees with the Companies' proposal to modify eligibility for the IQS programs by raising the income level to allow higher earning customers to participate. The Attorney General instead believes the funding for these programs should continue to be targeted to those customers whose income is at 200% of the federal poverty level. If, after all

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<sup>118</sup> The proposed new EE programs consist of: "Income-Qualified Solutions" (IQS) formerly known as "WeCare," (in turn consisting of Low-Income Weatherization and Whole-Building Multifamily subcomponents); Appliance Recycling; Residential Online Audits; and Business Solutions (in turn consisting of Nonresidential Rebates, Small Business Audit and Direct Install, and Nonresidential Midstream Lighting).

<sup>119</sup> The proposed new Demand Response Programs consist of: Connected Solutions (in turn consisting of Residential and Small Nonresidential Demand Conservation Program, Bring-Your-Own Device, Optimized Charging, and Online Transactional Marketplace), Peak Time Rebates, Nonresidential Demand Response and Program Development and Administration.

<sup>120</sup> See Bevington Direct Testimony, Exhibit JB-2. The Attorney General participates in the Companies' DSM-EE Advisory Group.

<sup>121</sup> See, e.g., Isaacson Direct Testimony at 13-15. Two programs, the IQS and the Residential Online Audit program, did not pass the TRC test. Programs such as those in the IQS serve some of the Companies' most economically vulnerable customers, and the Commission has historically granted approval for such programs despite the fact that most will not pass the TRC test. The Residential Online Audit program consists of both educational and prescriptive rebate components, the former of which does not have a measurable benefit which the TRC test is capable of evaluating.

<sup>122</sup> *Id.* at pp. 10-11; see also Case No. 1997-00083, Order dated Apr. 27, 1998 at 20, and Case No. 2017-00441 (Order dated Oct. 5, 2018 at 28 ("The Commission has no jurisdiction over environmental impacts, health, or other non-energy factors that do not affect rates or service. Lacking jurisdiction over these non-energy factors, the Commission has no authority to require a utility to include such factors in benefit-cost analyses of DSM programs.")).

<sup>123</sup> Bevington Direct Testimony at 12.

<sup>124</sup> The addition of dispatchable DSM provides greater reliability at a lower cost than adding the proposed Brown BESS. Kollen Direct Testimony at 16 (*citing* Revised Exhibit SAW-1, May 2023, provided as attachment 2 to Joint Intervenor DR-2-60 (a) at 38).

customers at the 200% income level who have applied for IQS programs have been provided assistance, any funds remain in the IQS budget, the Attorney General believes it would then be appropriate to provide assistance to customers whose incomes fall in the range between 200% - 300% of the federal poverty level.

The Attorney General notes that the Association of Community Ministries (“ACM”) has filed comments generally supportive of the new proposed IQS programs, subject to the implementation of a program designed to track the income levels of participants on an annual basis and report the aggregate numbers to the Commission, to ensure that IQS continues to serve primarily customers at lower income levels.<sup>125</sup> ACM asserts that without such tracking, there is no way for the Companies to know whether or to what extent the addition of higher income participants might start to limit lower-income customers from the opportunity to participate in IQS, but an annual tracking report will allow the Companies to monitor any such trending. The Attorney General agrees with ACM’s tracking recommendation in this regard.

The Attorney General recommends that the Commission approve the proposed suite of new DSM-EE programs, subject to annual reporting on their continuing cost-effectiveness, together with an annual true-up of actual costs vs. amounts collected through the Companies’ DSM cost recovery mechanisms.<sup>126</sup> Traditionally, the Commission has predicated the need for new DSM-EE programs on a demonstrated increase in a utility’s avoided capacity cost. Given that there is no way to predict at this stage of the case if or when any of the affected coal plants will actually be retired, it is likely not possible at this time to accurately project the

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<sup>125</sup> Public comments of Association of Community Ministries, Aug. 18, 2023.

<sup>126</sup> As stated in the Direct Testimony of Lana Isaacson, at 16-17, the Companies propose to perform at least one “impact evaluation” (which appears to be an Evaluation, Measurement and Verification study, or “EM&V”) of the suite of new programs at some point during the proposed 7-year program period.

Companies' avoided capacity costs for the 7-year duration of the proposed new suite of programs. However, if the Commission should approve the proposed DSM-EE portfolio, the Attorney General recommends that the Companies be required to include updates on their avoided capacity costs within their annual DSM-EE update. Depending on the timing and results of the Companies' proposed EM&V study, and the results of tracking the Companies' avoided capacity costs, the Commission may at some point during the 7-year program period want to consider requiring a second EM&V study for at least some of the programs, given their significant overall costs. Given EPA's proposed new onerous GHG regulations, which could lead to even more plant retirements, such annual updates on avoided capacity costs will likely prove an important tool in determining the on-going cost-effectiveness of the Companies' DSM-EE program portfolio going forward.

#### **IV. CONCLUSION**

Kentucky's future stands at a crossroads. Energy touches everything and everyone; it is necessary for everything fabricated, built, grown and moved—it is quite simply the lifeblood of our economy. An energy transition is ongoing as has been the case many times before throughout human history. How do we achieve the best outcome from this transition? One thing is for certain: relying solely on hope and ignoring the laws of physics and engineering will only ensure failure.

These are the essential facts the Commission should keep in mind when reaching its decisions:

1. Dispatchable thermal generation is necessary to operate the electrical grid;
2. Currently the only commercially available forms of dispatchable thermal power resources are nuclear, gas and coal;



3. Nuclear is currently not feasible, leaving gas and coal. If building a new plant, gas wins by default (unless you're China) because of the EPA's hostility to building coal plants;
4. In cases such as this where the issue of replacing existing coal plants with other resources is at issue, newly enacted KRS 278.264 provides certain restrictions which the Commission must follow;
5. Coal is important to Kentucky's economy providing reliable and affordable energy, jobs, and generating tax revenues for communities;
6. Kentucky will need our thermal dispatchable resources until they can be replaced at scale;
7. Coal plants have never caused rolling blackouts in Kentucky;
8. Renewables such as solar and wind are not dispatchable and are increasing in cost;
9. Ratepayers in states heavily dependent on renewables have higher electric bills and continually have reliability issues, which will only worsen in the future;
10. RTO membership does not guarantee ratepayers lower rates or improved reliability; and,
11. EPA's proposed rules are not final but speculative, and its current track record in federal courts is a losing one.

Common sense dictates that Kentucky needs 24/7 reliable power, and that wind, solar and battery storage cannot meet that basic requirement. Dispatchable, thermal resources are the backbone of a reliable electric grid, and plants fired by both coal and natural gas are necessary. Common sense also dictates fuel diversification is key to stability and economic benefits. It would be unwise for the Companies to increasingly place all their eggs in the natural gas basket. No single energy source is perfect or without issues; thus, utilizing all cost-

effective resources allows the strengths of each to be used to overcome the weakness of others, yielding a reliable and affordable grid. For these reasons, the Commission should keep the affected coal plants operating for as long as possible.

Respectfully submitted,  
**DANIEL CAMERON**  
**ATTORNEY GENERAL**



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**OAG BRIEF EXHIBIT-1**



July 13, 2021

President Joseph R. Biden  
The White House  
1600 Pennsylvania Avenue, N.W.  
Washington, DC 20500

President Biden,

The events of 2021 continue to heighten my concern that the reliability of the U.S. power grid may be compromised if policy-makers do not navigate the evolution in the generation portfolio carefully, especially as policies carry us farther from conventional generation technologies.

The May cyberattack leading to the temporary shutdown of the Colonial pipeline points to the critical importance of fuel security for electric utilities. Although the Colonial pipeline crisis primarily affected vehicle fuel, the implications are clear for other fuels dependent on pipeline delivery. On May 13, North American Electric Reliability Corp.'s President and CEO Jim Robb noted his concerns related to the electricity industry:

"The Colonial pipeline attack underscores the interconnectedness of electricity with other infrastructures and is the reason we must redouble our focus on the reliability of the pipeline system that delivers essential fuel. If this had happened to a major natural gas line serving electricity generators under extreme cold weather conditions, the results could have been catastrophic."<sup>1</sup>

This follows the February winter storms, which exposed weather-related deficiencies in the fuel-delivery system for natural gas-fueled power plants in Texas and surrounding states, leaving millions without electric service for extended periods during the bitterly cold weather.

As I have emphasized in my previous letters, my primary concern is maintaining reliable, affordable electric service for the people and businesses of Kentucky, especially during extreme weather events such as this year's winter storms. Like Mr. Robb, I am very concerned when I consider the potential consequences if a fortune-seeking hacker or, worse, an adversarial nation-state finds a way to disrupt fuel deliveries to power plants in the midst of an ongoing extreme weather event.

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<sup>1</sup> NERC, "Electric-Gas Interdependencies, Potential Summer Energy Shortfalls are Focus of Board Discussions," May 13, 2021. <https://www.nerc.com/news/Headlines%20DL/Board%2013MAY21.pdf>.

It is worth taking a moment to consider how various electric-generating technologies are fueled, and how and when those fuels are delivered to generators.

Nuclear and coal are two technologies that, for decades, have produced dependable supplies of electricity for the U.S. Fuel can be delivered months or years ahead of time and stored securely on site for nuclear- and coal-fueled generators. The refueling process for a nuclear unit is complex; but, once complete, the plant can operate for long periods before refueling is required. Coal plants typically store 30 to 60 days of fuel on site. Coal can be delivered by truck, train or barge. Such transportation flexibility provides valuable options for emergencies, such as when a railroad track is damaged or river travel is disrupted.

Wind and solar generators rely on real-time wind and solar irradiance conditions to produce electricity. If the wind does not turn a turbine or the sun does not shine on a solar panel, no energy is generated. When these technologies generate more electricity than needed in the moment, the energy can be stored for later. But I strongly urge you and your policy advisors to have a realistic understanding of the limitations of current utility-scale battery technology. For the most part, batteries may be able to provide a few hours of energy for limited geographic areas. The future of utility-scale battery technology is promising, but it is a grave mistake to assume it, paired with renewables, can provide anywhere near the 24/7/365 reliability Americans are accustomed to. Furthermore, deployment of batteries has not begun to reach a level that could make an appreciable difference over a widespread area. EKPC operates within PJM, which estimates a summer peak of 149,000 MW for 2021<sup>2</sup>; the installed capacity of utility-scale batteries within the RTO as of May 2020 was 280 MW<sup>3</sup>.

For natural gas, the fuel delivery mode is almost universally by pipe. Most natural gas power plants are served by a single pipeline; any interruption to the pipe or somewhere upstream can mean almost instantaneous power plant outages. Some natural gas plants, including EKPC's, have on-site storage of alternative fuel, such as oil, which can usually keep the plant running for another day or so. Beyond that timeframe, continuing to run the plant at full capacity without pipeline access can mean a tremendous undertaking of quickly sourcing and delivering dozens or even hundreds of truckloads of oil daily.

For many, the Colonial pipeline crisis revealed a vital fact—a large swath of the U.S. is heavily dependent on a single pipeline for its vehicle fuel. Likewise, Americans should understand they are increasingly dependent on natural gas pipelines for reliable electric service, but pipeline capacity is not growing nearly as fast as the capacity of the power plants they support. In the past decade, major interstate pipeline capacity for natural gas has expanded just 24 percent<sup>4</sup> while natural gas's share of U.S. electric

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<sup>2</sup> PJM Interconnection, "PJM Summer Outlook Forecasts Adequate Supplies To Serve Electric Demand," 5/20/21 press release, <https://www.pjm.com/-/media/about-pjm/newsroom/2021-releases/20210520-pjm-summer-outlook-forecasts-adequate-supplies-to-serve-electric-demand-this-summer.ashx>.

<sup>3</sup> PJM Interconnection, "Energy Storage Offers Efficiency, Flexibility to Power the Grid," May 18, 2020, <https://www.pjm.com/-/media/about-pjm/newsroom/fact-sheets/energy-storage-fact-sheet.ashx>.

<sup>4</sup> U.S. Energy Information Administration (U.S. EIA), Major Pipeline Crossing Multiple State Borders (Capacity in MMcf/d), 2007-2020, <https://www.eia.gov/naturalgas/pipelines/EIA-StatetoStateCapacity.xlsx> downloaded 5/28/21.



generation ballooned from 15 percent to 35 percent.<sup>5</sup> In fact, since 2005, natural gas deliveries to power plants have doubled.<sup>6</sup>

And it is important to note that for many regions, natural gas is the primary—sometimes only—fuel to fill in gaps when renewables are not available. Plants fueled by other reliable technologies that could help fill the gap are steadily declining. While natural gas power plant capacity expanded during the past decade, 95 gigawatts (GW) of coal capacity was closed or switched to another fuel, and another 25 GW is slated to shut down by 2025.<sup>7</sup> U.S. electric utilities also retired nearly 9,000 MW of nuclear capacity in the past 10 years. In the next five years, the federal government forecasts no new coal plants will be built.<sup>8</sup> Two new nuclear units totaling 2,200 MW have been under construction for more than a decade at the Vogtle plant in Georgia, our nation's first new nuclear units in nearly 30 years. The project's numerous delays and over \$13 billion in cost overruns are likely to deter proposals for new nuclear for the foreseeable future.

The emerging picture is of an electric grid that is steadily becoming less fuel secure, and that is troubling to me. I am concerned the U.S. is moving toward a grid featuring reliability similar to California's, one that is over-reliant on intermittent energy resources, voluntary service curtailments and imports from other regions. And, when those tools fail to close the gap, it is a grid that is subject to rolling blackouts, as California learned last summer.

NERC's 2021 Summer Reliability Assessment noted that most of the U.S. west of the Rockies, along with Texas, the upper Midwest and New England, are at "elevated risk to energy emergencies." And California was singled out as being at risk during normal peak summer hours and at "high risk" if demand is above normal.<sup>9</sup> As California ISO (CAISO) released its own projections for how it hopes to meet demand for electricity this summer, CAISO CEO Elliott Mainzer commented:

"New resources are coming online by summer, and we have taken the lessons learned from last year to make modifications to our market and operations. This makes us cautiously optimistic that there will be enough electricity to meet demand this summer."<sup>10</sup>

Given California's experience last summer, I am doubtful "cautious optimism" provides much reassurance to those who depend on reliable electric service, including residential customers cooling their homes and industrial customers keeping their operations running and employees working.

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<sup>5</sup> U.S. EIA, Electric Power Annual 2019, Table 3.2.A Net Generation by Energy Source, 2009-2019. Downloaded from <https://www.eia.gov/electricity/annual/>, 5/21/21

<sup>6</sup> U.S. EIA, U.S. Natural Gas Consumption by End Use, [http://www.eia.gov/dnav/ng/ng\\_cons\\_sum\\_dcu\\_nus\\_a.htm](http://www.eia.gov/dnav/ng/ng_cons_sum_dcu_nus_a.htm), downloaded 5/22/21.

<sup>7</sup> U.S. EIA, "As U.S. coal-fired capacity and utilization decline, operators consider seasonal operation," Sept. 1, 2020. <https://www.eia.gov/todayinenergy/detail.php?id=44976>

<sup>8</sup> U.S. EIA, Preliminary Monthly Electric Generator Inventory (based on Form EIA-860M as a supplement to Form EIA-860), downloaded from <https://www.eia.gov/electricity/data/eia860m/> on 5/22/21

<sup>9</sup> North American Electric Reliability Corp., "2021 Summer Reliability Assessment," May 2021.

<sup>10</sup> California ISO, "California ISO Summer Assessment reaffirms that grid is better positioned for this summer, but reliability risks remain;" downloaded from <http://www.aiso.com/about/Pages/News/default.aspx>, 5/22/21.

As the Biden administration considers and implements policies that bring permanent change to America's energy landscape, fuel security should be given the priority it deserves in protecting the grid's reliability.

Sincerely,

A handwritten signature in black ink that reads "Anthony Campbell". The signature is written in a cursive style with a horizontal line striking through the middle of the name.

Anthony "Tony" Campbell  
President & CEO

CC: U.S. Energy Cabinet Secretary Jennifer Granholm  
FERC Chairman Richard Glick  
Senate Minority Leader Mitch McConnell  
Senator Rand Paul  
Senator Joseph Manchin  
Congressman Andy Barr  
Congressman Hal Rogers  
Congressman Brett Guthrie  
Congressman Thomas Massie  
Congressman James Comer  
Congressman John Yarmuth  
Governor Andy Beshear  
Kentucky Senate President Robert Stivers  
Kentucky Energy and Environment Secretary Rebecca Goodman  
Kentucky PSC Chairman Michael Schmitt  
Kentucky PSC Vice-chairman Kent Chandler  
Kentucky PSC Commissioner Talina Mathews

**OAG BRIEF EXHIBIT-2**





**FEDERAL ENERGY REGULATORY COMMISSION**  
Commissioner Mark C. Christie

August 29, 2023

The Honorable John Barrasso, M.D.  
Ranking Member  
Committee on Energy and Natural Resources  
United States Senate  
Washington, DC

Re: Questions Dated April 26, 2023

Dear Senator Barrasso:

Enclosed please find my responses to the questions from you dated April 26, 2023.<sup>1</sup> I have placed the questions themselves in italics, with my answers following in normal typeface.

I thank you for your questions.

***Question 1:** The Biden administration has set a clear target of reaching “net-zero” greenhouse gas emissions economy-wide by 2050. This target has not been adopted by Congress and is not reflected in statute. To achieve it, the administration is urging mass electrification of all sectors of the economy. Princeton’s “Net-Zero America: Potential Pathways, Infrastructure and Impacts” study predicts that U.S. electricity production will need to “double to quadruple by 2050 in the net-zero scenarios” to meet the increased demand from electrification of the transportation and industrial sectors. States such as New York have begun banning natural gas in new buildings to forward this electrification goal.*

- a. What do you believe the impact of electrification will be on the reliability and affordability of electric service as demand for electricity increases?*

The “electrify everything” movement to meet “net zero” goals will increase overall demand for electricity several times over, such as, for example, converting the entire transportation and home heating sectors of the economy to electrical power. As the Princeton study acknowledges, demand for power will likely double to quadruple to meet the “net-zero” scenarios outlined therein. Such a huge increase in power demand will no doubt have negative implications for reliability, as explained further below. To the extent that quadrupling power demand will require massive expenditures for both new generation and transmission, the costs to consumers will be huge. The Princeton study estimates that the costs to consumers will be in the neighborhood of \$2.5 trillion.

- b. What do you see as the central challenges associated with doubling or quadrupling electric generation in the next 30 years?*

As I testified to your committee on May 4, 2023, the United States is already facing potentially catastrophic consequences from the premature retirements of dispatchable generating resources at an unsustainable pace. When the supply of power is contracting due to premature

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<sup>1</sup> Apparently, my responses were never delivered. I apologize and hereby submit my responses.



retirements of dispatchable resources while the demand for power is quadrupling, it does not take a doctorate in statistics to see that the numbers just don't add up.

- c. *Will electrification programs, such as the ones described above, make coming demand challenges more or less severe?*

Much more severe for the reasons described herein and in my testimony to your committee on May 4, 2023.

***Question 2:*** *The Commission established a Joint Federal-State Task Force on Electric Transmission ("Task Force") in 2021. The Task Force has met six times. States must have a voice in a process that will almost certainly have a direct impact on how they regulate, build, and pay for electric transmission lines. During the second meeting of the Task Force, the issue of requiring a "minimum transfer capacity" between regions was discussed.*

- a. *Does the Commission have the authority under current law to require a minimum level of electric transmission connecting each region?*

Under the Federal Power Act (FPA), the Commission's authority over transmission must be based either on ensuring that regulated transmission providers are meeting specific reliability standards established by the North American Electric Reliability Corporation (NERC) or that transmission rates to consumers are "just and reasonable." The Commission cannot simply mandate a minimum amount of "interregional transfer capacity" (a term that often remains undefined by those advocating mandatory minimums) unless such a legal mandate is proven, based on an evidentiary record, to be justified as necessary to meet reliability standards or to ensure just and reasonable rates for consumers. The FPA does not give the Commission blank-check authority to act as a national transmission planner for whatever purposes and policies the Commission may wish to promote at any given time.

- b. *What evidence, if any, is there that compelling the construction of more electric transmission between regions will improve reliability and affordability?*

Certainly, transfers of power between regions (defined herein as between RTOs, between non-RTO planning regions, or between individual load-serving utilities) at specific times of extraordinarily high demand, such as during weather extremes, can help the recipient region meet peak demand. That happened during Winter Storm Uri and on other occasions. So there is a reliability value under certain conditions to power transfers between regions. But that is nothing new. Facilitating interregional transfers at critical times was one of primary purposes of the power pools created nearly a century ago. That fact, however, does not argue in support of a simplistic mandatory minimum transfer capacity between regions that does not account for local reliability conditions. On the contrary, such a costly mandate is much more likely to benefit generation and transmission developers than it will benefit consumers.

The goal should be to build interregional lines when the facts support specific projects. RTOs and non-RTO regional planning entities already have the authority to plan interregional transmission lines. In fact, we have interregional lines right now, as demonstrated during Winter Storm Uri when power from PJM was transported into MISO and then wheeled into SPP. Those power transfers during



Uri were essential to keeping the lights on in SPP in particular. So I believe that RTOs should be required to engage with each other and systematically consider transmission lines across RTO seams when and where such specific lines could demonstrably solve identified *reliability* needs at the least cost burden to consumers.

Legally mandating *ex ante* a minimum percentage of “interregional” lines across RTO seams, however, does not accord with the realities of transmission planning in RTOs, and certainly not in non-RTO regions, and could end up costing consumers a lot of money for relatively sub-optimal projects, or even create congestion problems. For example, to cite one practical problem, a mandate simply to build a line across an RTO-to-RTO seam may not account for whether there is sufficient network capacity at the incoming location *within* the RTO to handle the inflow of power. It may be that the barrier to interregional power flows is *not* the lack of interregional transmission, but the lack of capacity *within* the RTO itself, which sets up a wholly different planning challenge (and costly network upgrades). Moreover, just because a transmission line is labeled “interregional” does not make it necessarily the optimal solution to solve a specific reliability problem from the standpoint of consumer costs.

So while we should require RTO planners to engage with their neighboring RTOs systematically to consider projects that could cross seams, we should let transmission planners figure out the optimal solutions when “interregional” projects are involved, as they are do for other projects.

I should note that on December 5-6, 2022, Commission staff convened a workshop in Commission Docket No. AD23-3-000 to discuss whether and how the Commission could establish a minimum requirement for interregional transfer capability for public utility transmission providers in transmission planning and cost allocation processes. A Commission notice was issued requesting post-workshop comments, and public comments and reply comments have been submitted.

***Question 3:*** *PJM President Manu Asthana was interviewed by Platts S&P Global for the March 24, 2023 edition of Inside FERC. The article entitled, “PJM CEO acknowledges market changes needed to bolster grid reliability,” states the following:*

*Of the 40 GW of generation at risk of retirement in PJM by 2030, a majority of that is at risk due to federal or state policies rather than market pressure, Asthana said. “Policy reasons are harder to reverse,” but some states with clean energy goals have “reliability offramps.”*

*Recent reliability events in PJM, specifically near Christmas 2022, make the potential loss of 40 GW of firm generation especially concerning. Any public policy determinations that degrade reliability to this degree should be carefully reconsidered.*

- a. Should public policy determinations be implicated in the cost allocation formula for electric transmission projects if they significantly degrade reliability? If so, to what extent should public policy factors be considered?*

The primary factors driving the premature retirements of dispatchable resources in PJM and other RTOs with capacity markets resulting in the reliability events you note are not transmission cost allocation formulae, but market design, especially in the capacity markets, and the impact of federal and state public policies on power market outcomes.



- b. *If the Commission were to require parties to consider public policy determinations when allocating transmission cost, would doing so intensify the resource-adequacy challenges that are already evident in many regions?*

Please see my answer to Q.3.a above.

- c. *What so-called "reliability off ramps," if any, should be considered when costs are allocated?*

Please see my answer to Q.3.a above.

- d. *What role, if any, can the Commission play if public policies degrade the reliability of the bulk power system?*

The Commission regulates the RTO power markets, so if those markets are producing outcomes that threaten reliability, the Commission has the authority to order changes to market designs.

- e. *If electric grids suffer frequent reliability events or increasing reliability risks, doesn't the underlying structure of the markets responsible for the grid become unjust and unreasonable under the FPA?*

If the RTO markets are proven on the record to be degrading reliability, clearly there may be a rate design problem, and it will likely be within the Commission's authority to order remedial measures, based on the record in any case.

**Question 4:** *In my last letter, I asked several questions concerning Transmission NOPRs that are currently on the Commission's docket. One issue I raised, which remains a central concern, is what happens when states do not agree to a cost allocation method because of a variety of factors including state public policy goals. In her answer, Commissioner Clements offered three different solutions if states fail to agree on a specific cost allocation method. These include: "(1) offering more time to the relevant state entities in order to reach agreement; (2) require the relevant public utility transmission provider to establish a cost allocation method (while demonstrating that it has made good faith efforts to seek agreement from the relevant states); or (3) the Commission itself may establish a cost allocation method." Commissioner Christie explained that "voluntary agreements among one or more states to pay for specific policy driven projects" have already been approved by the Commission.*

- a. *Is the current practice, as described by Commissioner Christie, an effective way to build out regional transmission projects largely based on state policy goals?*

Yes, voluntary state agreements are already being used successfully, as evidenced in PJM where the State of New Jersey is building its policy-driven offshore wind projects utilizing PJM's State Agreement Approach.

- b. *Do you agree with his assessment that voluntary state agreements are the proper default option when states reach an impasse?*

Yes.

- c. *Does the Commission have the legal authority to adopt each of the three options described by Commissioner Clements? If so, what are the likely benefits or burdens that would result from each alternative?*





I do not believe that the Commission has the authority under the FPA to force consumers in *non-consenting* states to pay for the public policy choices made by politicians in other states, either by approving an RTO's non-consensual cost allocation formula imposed in lieu of state agreement, or imposing a non-consensual formula developed by the Commission itself. So if states in a multi-state transmission planning region do not agree on an *ex ante* cost allocation formula for policy-driven projects, then the only legal and *fair* option is essentially the PJM State Agreement Approach model, which is based on states' consent (*e.g.*, New Jersey's offshore wind projects).

d. *What specific pitfalls do you associate with allowing states to engage in voluntary state agreements in the future?*

I see no specific pitfalls from allowing the states themselves to determine how they want to pay for transmission projects that primarily serve their own public policies. For example, if Maryland and New York freely consent to share the costs of New Jersey's offshore wind projects (or vice versa), I see no reason whatsoever why the Commission would obstruct such consensual cost-sharing. On the contrary, the Commission should encourage consensual cost-sharing agreements.

**Question 5:** *Section 401 of the Federal Water Pollution Control Act ("Section 401") requires applicants for federal permits to obtain state approval for facilities that may result in a discharge into navigable waters. Previously, this has given certain states a veto power over projects requiring water permits that cross their jurisdiction. By denying a water quality certification, such states can effectively nullify the Commission's certificate orders resulting, in part, if not in whole, with the cancellation of projects found to be in the public convenience and necessity.*

a. *If you are able to compile this data on or before May 3, 2023, please provide a list of projects authorized under NGA sections 3 and 7 that have been canceled or have had to request an extension of time for completing project construction, because of challenges related to obtaining a state water quality certification. Please also identify the state that has not issued the water quality certification.*

I do not have this data. I will defer to the Chairman's office which can instruct staff to compile it. Please see also Commissioner Danly's response to your question dated May 3, 2023.

b. *If you are unable to provide the response to Question 5 by May 3, 2023, please indicate when you may be able to provide an answer and express your views on the impact of Section 401 on the development of natural gas pipelines and electric transmission lines.*

Please see my answer to Q.5.a.

**Question 6:** *On January 9, 2023, CEQ published its Interim GHG Guidance. Although CEQ invited public comment on its Guidance, CEQ also stated that "[t]his interim guidance is effective immediately." In addition, CEQ stated "[a]gencies should use this guidance to inform the NEPA review process for all new proposed actions" and "should consider applying this guidance to actions in the EIS or EA preparation stage."*

a. *Given FERC's status as an independent agency, what weight does and should the Commission give the Guidance? Is it binding?*



As an independent agency, the Commission cannot follow instructions or directives from executive branch agencies such as CEQ or EPA when those directives violate the applicable statutes that govern the Commission's actions, such as the Natural Gas Act (NGA) or National Environmental Policy Act (NEPA).

- b. *The purpose of the NGA is to "encourage the orderly development of plentiful supplies of . . . natural gas at reasonable prices." To the extent to which the implementation of CEQ's guidance is in tension with this statutory purpose, how does the Commission intend to reconcile the two?*

As I noted in my answer to Q.6.a, the Commission must always follow the applicable statutes, in this case the NGA, and cannot follow "guidance" from CEQ or EPA that is contrary to the NGA or other applicable statutes.

- c. *Is FERC currently implementing, or considering implementing, this Guidance? If so, by what means?*

I have no knowledge at this point what directions or guidance are being given to the Commission's staff who draft orders that are presented to us. Should draft orders in certificate cases be brought to us that clearly violate the NGA or go beyond our duties under NEPA, please see my answers to Q.6.a and b above.

**Question 7:** *CEQ's Interim GHG Guidance states that "agencies should evaluate reasonable alternatives that may have lower GHG emissions, which could include technically and economically feasible clean energy alternatives to proposed fossil fuel-related projects." Has FERC found in the past that energy efficiency, conservation, and clean energy alternatives are practical alternatives to constructing and operating proposed interstate natural gas pipelines or LNG import/export facilities?*

Not to my knowledge.

**Question 8:** *The CEQ Interim Guidance provides an example of "indirect effects" that includes the entire life cycle of fossil fuels: "Indirect effects generally include reasonably foreseeable emissions related to a proposed action that are upstream or downstream of the activity resulting from the proposed action. For example, where the proposed action involves fossil fuel extraction . . . [t]he reasonably foreseeable indirect effects of such an action likely would include effects associated with the processing, refining, transporting, and end-use of the fossil fuel being extracted, including combustion of the resource to produce energy." CEQ's Interim GHG Guidance appears to suggest agencies should unilaterally determine appropriate GHG mitigation, stating "[a]gencies should consider available mitigation measures."*

- a. *The CEQ's example appears to imply that where the proposed action would involve the construction and operation of an interstate natural gas pipeline, the reasonably foreseeable indirect effects would include the entire lifecycle of natural gas emissions – that is, the production, processing, and end use of natural gas. Do you agree?*

No. I have been very clear and expansive in my previous testimony to your committee, and in previous correspondence to your committee, about my views on the Commission's authority regarding GHG emissions. See, e.g., my testimony to your committee on March 3, 2022. Please also see my dissent to the majority's proposed certificate and GHG policy statements at [Items C-1 and](#)



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C-2: Commissioner Christie's dissent from the Certificate Policy and Interim Greenhouse Gas Policy Statements | Federal Energy Regulatory Commission (ferc.gov).

- b. *What GHG emissions does FERC consider subject to mitigation? Will FERC only require mitigation of GHG emissions directly released by a facility's construction and operation? Will FERC require mitigation of GHG emissions released by the upstream production or processing, or downstream consumption of natural gas?*

Please see my answer to Q.8.a.

***Question 9:*** *How would FERC implement the Guidance in the context of implementing its backstop siting authority for transmission projects? Would the Commission consider the upstream emissions of generation projects? Would land use impacts or other environmental impacts of different generating sources, such as mining for minerals necessary for solar panels and wind turbines, be considered indirect effects? Would the entire lifecycle of different generation assets be considered indirect effects in the Commission's analysis? Please support your answer with specific statutory text and case law.*

I do not know. At this point, public comments to the "backstop siting NOPR" have been submitted in Commission Docket No. RM22-7-000. I am currently reviewing the comments and considering further action.

Sincerely,

/s/ Mark C. Christie

Commissioner Mark C. Christie