COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC 2024 INTEGRATED RESOURCE PLAN	)	Case No.
OF DUKE ENERGY KENTUCKY, INC.	)	2024-00197

ATTORNEY GENERAL'S COMMENTS

The intervenor, the Attorney General of the Commonwealth of Kentucky, through his Office of Rate Intervention ("OAG"), tenders the following Comments regarding Duke Energy Kentucky's ("DEK," or "the Company") 2024 Integrated Resource Plan ("IRP"):

I. SUMMARY OF IRP

A. Background and Existing System

DEK is an investor-owned utility that owns, operates and maintains electric generation, transmission, and distribution facilities in its service territory located in all or portions of seven Kentucky counties, through which it serves over 153,000 retail customers.[1]

The Company also purchases, transmits and sells electricity at the wholesale level, primarily through its participation in the PJM Regional Transmission Organization. DEK jointly owns its transmission system with its neighboring immediate parent entity, Duke Energy, Ohio, both of which participate jointly in PJM's Duke Energy Ohio/Kentucky ("DEOK") transmission zone.[2] As a PJM member, DEK is required to offer its available

[1] IRP at p. 66. The Company also provides gas service to over 105,000 customers in seven Kentucky counties. *Id.*

[2] *See, e.g.,* Case No. 2024-00285, *In Re: Electronic Application Of Duke Energy Kentucky, Inc. to Become a Full Participant in the PJM Interconnection LLC, Base Residual And Incremental Auction Construct for the 2027/2028 Delivery Year and for Necessary Accounting and Tariff Changes*, Application at 5-6.

generation to PJM, and purchase the energy needed to serve its customer load from the PJM Day-Ahead or Real-Time Energy Markets.[3]

DEK currently owns and operates 1,197 MW of generation capacity, consisting of its 600 MW East Bend coal-fired unit, and six gas-fired (dual-fuel capable) combustion turbines ("CTs") having a combined output of 564 MW, located at its Woodsdale Station.[4] The Company also owns: (a) 9.3 MW of behind-the-meter solar generation assets, but are not dispatched into the PJM market;[5] and (b) 24 MW of demand response.[6] For the 2025/2026 delivery year, PJM has established a 17.8% initial reserve margin applicable to DEK,[7] and has also initiated the Effective Load Carrying Capability ("ELCC") methodology for accreditation of most new and existing capacity resource classes in its Base Residual Auction.[8]

The Company's service territory is also experiencing a significant influx of customer-owned behind-the-meter distributed generation resources, primarily solar and solar-plus-storage. In response to discovery, DEK stated that as of this year, residential customers have 38.2 MW of solar generation, and non-residential customers have 62.5 MW, for a combined total slightly in excess of 100 MW.[9] Additionally, a total of 32 DEK customers have wind generation facilities that provide a total of 2.2 MW of behind-the-meter resources.[10] Furthermore, the Company projects that by 2044, customers will have a total of 394.7 MW of behind-the-meter solar and solar-plus-storage.[11]

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[3] Case No. 2024-00285, Direct Testimony of John Swez ("Swez Direct") at 4:4-7.
[4] Installed capacity ("ICAP"). IRP at 35.
[5] Case No. 2024-00285, Swez Direct at 8:6-9.
[6] IRP at 35.
[7] *Id.* at 38.
[8] *Id*. at 37. Under PJM's ELCC, the East Bend plant receives an 84% rating, and the Woodsdale dual-fuel capable CTs receive a 79% rating. *Id.*
[9] Response to AG-DR-2-9, Attachment.
[10] *Id.*
[11] *Id*.

DEK states that in order to determine the demand it must meet, it combines the initial reserve margin with its peak demand forecast. ELCC values are then applied to new and existing resources in order to determine the amount of new capacity, if any, that the Company must add in order to meet its peak demand plus reserve requirements.[12]

B. DEK Load Growth

DEK states that the 2024 IRP utilizes the same forecast methodology as used in its past IRP filings. Further, its long-range energy forecast is closely linked to economic activity within its service territory.[13] DEK obtained economic forecasts from Moody's Analytics for the national level, and the Cincinnati Primary Metropolitan Statistical Area, which includes its service territory.[14] The Company utilized several modeling methodologies for various customer classes, including tailored econometric models for some customer classes.[15] DEK states that its peak demand models are made with sufficient granularity as to allow for precise consideration of individual factors such as EVs, rooftop solar, energy efficiency and demand response programs.[16]

The Company states that certain national trends (rising average age of population, stagnant birth rates, and lengthening life expectancies) will also affect the DEK territory.[17] Further, the population growth of the Cincinnati area will lag behind the national growth rate. Thus, the Company expects the population of its territory to grow at 0.2% annually from

[12] *Id.* at 5, 38. In a discovery response, DEK stated that PJM's implementation of ELCC has decreased the Company's total accredited generation, as well as its load obligation. At least for now, the net effect of ELCC's implementation benefits the Company's portfolio by decreasing the Company's load obligations to a greater degree than the application of ELCC decreases its generation accreditation. Response to AG-DR-2-5.
[13] IRP at 66.
[14] *Id*. at 66-67. Moody's Analytics and DEK financial reports are the sources for all economic data. *Id*. at 72.
[15] *Id*. at 67.
[16] *Id.*
[17] *Id*. at 70.

2024-2040, below the projected 0.3% national annual growth rate.[18] DEK's energy forecasts for the twenty-year forecast period shows the residential class increasing by 1% per year, and both the commercial and industrial classes increasing by 0.8% per year.[19] When netted with losses, the summation of the energy forecast across all sectors results in growth of 0.8%.[20] The Company projects its load will grow from the current 4.288 TWh annually to 4.676 TWh by 2040, a growth of 9.04% over that period.[21] Finally, driven by economic development such as new data centers which could locate in the DEK service territory, the Company is monitoring the potential for load forecast increases beyond this IRP's base assumptions.[22] The Company concludes that it ". . . anticipates mostly stable load with modest growth, particularly in the residential class."[23]

C. Demand Side Resources

DEK maintains a suite of Demand Side Management ("DSM") programs,[24] consisting of traditional energy efficiency ("EE") conservation programs, and demand response programs.[25] All DSM programs are screened for cost-effectiveness with DSMore, a financial analysis tool that evaluates costs, benefits and risk.[26] DSMore evaluates cost-effectiveness primarily by focusing on the four California Standard tests: Utility Cost Test (UCT), Rate Impact Measure (RIM) Test, Total Resource Cost (TRC) Test, and Participant Cost Test

[18] *Id.*
[19] *Id*. at 75.
[20] *Id*.
[21] *Id*. at Table B.10 ("Duke Energy Kentucky System Service Area Energy Forecast After EE"), p. 86.
[22] *Id*. at 63.
[23] *Id.* at 26.
[24] *See, e.g.,* KRS 278.010 (17), and KRS 278.285.
[25] IRP at 40.
[26] *Id*. at 99.

(PCT).[27] The Commission has traditionally focused primarily on the TRC test.[28] A TRC score of less than one indicates that the cost of the program outweighs the measured benefits. With the exception of two low-income programs and the Peak Time Rebate Program, the TRC scores of all of the remaining residential DSM programs exceed the 1.0 threshold.[29] Additionally, all non-residential DSM programs have TRC scores of greater than 1.0.[30]

As of the current year, DEK projects that the EE impacts of its programs will total 11,667 MWh, with a total DSM impact of nearly 26 MW.[31] By 2038, DEK's energy efficiency programs are projected to reduce energy consumption by 242,830 MWh and 38 MW,[32] with total peak reduction across all programs expected to be 62 MW.[33]

D. Federal Regulatory Challenges

DEK states that it has considered both the costs of complying with existing environmental rules and regulations, as well as forecasting future regulatory actions that should be considered when making long-term decisions regarding its generation mix.[34] In particular, DEK's IRP makes it clear that the Company will be adversely impacted by the EPA's Clean Air Act ("CAA") §111(d) April 2024 Updates ("CAA §111(d) Update") regulating existing coal and new natural gas generation facilities. As the IRP indicates, the CAA §111(d) Update provides coal plants with four different compliance pathways: (1) Retire

[27] *Id.*
[28] *See, e.g., Electronic Joint Application Of Kentucky Utilities Company And Louisville Gas And Electric Company For Certificates Of Public Convenience And Necessity And Site Compatibility Certificates And Approval Of A Demand Side Management Plan And Approval Of Fossil Fuel-Fired Generating Unit Retirements*, Case No. 2022-00402, Final Order dated Nov. 6, 2023 at 156, 168.
[29] IRP at 101.
[30] *Id.*
[31] *Id.* at 42.
[32] *Id.* at 40-41.
[33] *Id.*
[34] *Id.* at 124. The OAG will address DEK's environmental regulatory burden more closely in the Comments section of this document.

by 1/1/2032 without restriction on operation until retirement; (2) Convert to full natural gas operation by 1/1/2030; (3) Convert to at least 40% gas-cofiring by 1/1/2030; or (4) Add Carbon Capture and Sequestration (CCS) by 1/1/2032.[35] As DEK notes, multiple parties are currently contesting the legality of the CAA §111(d) Update.[36] DEK therefore prepared its IRP with two alternatives, one in the event the Company is required to comply with the regulation, the other alternative reflecting the possibility of the regulation being stayed or eventually repealed.[37] DEK states that its 2024 IRP Preferred Portfolio provides the Company with the needed optionality regardless of whether the CAA §111(d) Update is eventually repealed or remains in effect.[38] The DEK IRP's preferred portfolio relies on the third option outlined above, utilizing a combination of natural gas and coal co-firing.[39]

E. Preferred Plan

DEK notes that its 2024 IRP shares some of the characteristics of its previous IRPs, but reflects ". . . updated fuel and load forecasts, as well as updated new generation capital costs reflecting a dynamic macroeconomic and inflationary environment impacting supply chain and resource costs."[40] However, the most salient dynamic in the current IRP, not present in prior IRPs, is the planned election to achieve compliance with the CAA §111(d) Update by converting the East Bend plant from 100% coal generation to coal generation with natural gas co-firing capabilities, or dual fuel operation ("DFO").[41] The Company states that the planned DFO conversion of the East Bend plant:

[35] IRP at 4.
[36] *Id*. at 5, 62. The OAG has joined a coalition of 25 states in a lawsuit challenging the rule in *State of West Virginia et al v. EPA* (D.C. Cir.), Case No. 24-1120.
[37] *Id*.
[38] *Id.* at 62.
[39] *Id.* at 4.
[40] *Id*. at 3.
[41] *Id*. at 4, 8.

> ". . . adds needed fuel diversity and security to the Duke Energy Kentucky system, reduces customers' exposure to PJM Interconnection LLC (PJM) market prices, provides for a measured energy transition while allowing time for technological advancements related to permanent replacement generation, and is in line with Kentucky's energy policies and priorities."[42]

The issue of compliance with the CAA §111(d) Update is in fact so essential to the entire IRP that the Company's Preferred Portfolio was developed with two alternative scenarios.[43] The first, and primary scenario assumes the CAA §111 (d) Update stays in place, and calls for: (a) East Bend's DFO conversion in 2030; (b) the continued operation of the six Woodsdale CTs throughout the planning period; (c) the addition of 50 MW of solar generation in 2029, then adding approximately 50 MW of additional solar generation every two years through 2040, for a total of 309 MW;[44] and (d) the construction of a 1x1 combined cycle gas generation plant in 2039, when the East Bend DFO plant reaches the end of its lifespan.[45]

The alternative scenario of the Preferred Portfolio assumes the CAA §111(d) Update is not in effect. The primary difference in this scenario is that the East Bend plant remains fired exclusively by coal, continues operating through 2035, and is replaced the following year by the combined cycle gas facility.[46]

II. OAG COMMENTS

DEK's IRP provides a thorough analysis of the Company's existing system, and its

[42] *Id.* at 4.
[43] *Id.* at 9.
[44] The Company states that under PJM's ELCC methodology, solar contributes less than 15% of its nameplate capacity towards meeting PLM's planning reserve requirements, but helps to diversify DEK's energy mix. *Id*. at 5.
[45] *Id.,* Fig. 1.2.
[46] The plans for new solar generation and the continued operation of the Woodsdale CTs remain identical in both options of the Preferred Plan. *Id.*, Fig. 1.3.

short and long term supply and demand side requirements given the current and future regulatory environment. In particular, the Company's past several IRPs have identified the future need to eventually replace the East Bend plant, at the end of its projected lifespan, with a firm dispatchable supply side resource that would provide both capacity and energy for the Company's service territory.[47] Although the current IRP also identifies future additions of intermittent solar generation,[48] it is clear these additions are merely to supplement the fossil-fueled dispatchable resources its customers require.[49]

In its last IRP docket, the Commission Staff Report asked the Company to discuss the following reliability concerns in its next IRP:

> "As renewable resources are added to Duke Kentucky's and within PJM's service territories, operational and reliability challenges from intermittent resources could arise. For the next IRP, Duke Kentucky should discuss any issues that it or PJM is facing currently or in the near future, and if there were any issues, how they would be addressed."[50]

The Company provided the following response in the current IRP:

> "As more intermittent resources come online in PJM, and as dispatchable resources retire, PJM will face operational challenges as uncertainty around performance of intermittent resources at all times of day could create potential issues. In PJM's recent capacity filings in which all resources are moving toward an ELCC framework, **dispatchable generation will be more valuable relative to intermittent resources as far as capacity accreditation. This may encourage dispatchable generation to remain online, and possibly to enter the market with likely higher capacity payments."**[51] [Emphasis added]

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[47] *See. e.g.*, Case No. 2021-00245, *In Re*: *Electronic 2021 Integrated Resource Plan of Duke Energy Kentucky, Inc.*, IRP at 4.

[48] Case No. 2024-00197, *In Re: Electronic 2024 Integrated Resource Plan of Duke Energy Kentucky, Inc.*, IRP at 3. Significantly, the Company's current IRP also concluded that: ". . . onshore wind is not likely to materialize as an available resource in the Duke Energy Ohio/Kentucky (DEOK) PJM load zone in the near future, and there are significant risks to acquiring or contracting wind resources outside of the load zone." IRP at 5.

[49] In addition to being merely an intermittent resource, the application of PJM's ELCC Class Ratings from the 2025/2026 Base Residual Auction means that tracking solar's capacity is reduced from its typical capacity factor of 25% (IRP at 33, Table 4.1) to a capacity factor of only 14% (IRP at 7, Table 4.2), which is clearly insufficient to meet the capacity needs of DEK's service territory by itself.

[50] Case No. 2021-00245, Staff Report dated May 10, 2022 at 33.

[51] Case No. 2024-00197, IRP at 145.

DEK's IRP continues to appropriately identify its service territory's need for dispatchable resources in two ways by: (a) extending the useful life of the East Bend facility for as long as possible in the current EPA regulatory environment;[52] and (b) identifying both the precise type of new replacement dispatchable resource, and its approximate start-up date.[53]

The OAG believes the nation is facing a profound reliability crisis, especially within the PJM footprint, and therefore agrees with DEK's concerns. As the nation's largest RTO, PJM has *strongly* cautioned that over the next 6 years, approximately 40 GW of generation,[54,55] representing 21% of that RTO's current installed capacity, is at heightened risk of retirement, 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." [56]

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[52] *See, e.g.*, Op-Ed, "Federal Policy Puts Our Reliable Electric Grid at Risk," by Chris Perry, President and CEO of Kentucky Electric Cooperatives, *Louisville Courier-Journal*, June 8, 2024, accessible at: https://www.courier-journal.com/story/opinion/2024/06/08/federal-policy-kentucky-electric-grid-at-risk/74013082007/ (last accessed Oct. 30, 2024).

[53] Case No. 2024-00197, IRP at 3.

[54] PJM's Independent Market Monitor estimates the total could reach up to 58 GW of thermal resources. "Up to 58 GW faces retirement in PJM by 2030 without replacement capacity in sight: Market Monitor," by Ethan Howland, *Utility Dive*, March 18, 2024.

[55] A separate resource adequacy analysis reveals that these retirements could lead to a loss of load of as much as 13.9 GW during extreme winter peak demand, and 6.8 GW during merely average winter peak demand. *See,* "Ensuring Reliability: A Case Study of the PJM Power Grid," prepared by Quanta Technology for America's Power, February 2024, at 1-2.

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

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." [57]

Mr. Asthana elaborated further upon his concerns of the too-fast renewable transition in his remarks at NARUC's Annual Meeting in November of last year in La Quinta California:

> "This is going to be a messy transition. That's because the new technologies aren't quite ready yet. We need to be more cautious about pushing the existing generation off because I don't know how these two will intersect. Regulation and legislation that are pushing existing generation off our grid at a date certain, are burning our boats. It's doing it in a way that is creating unacceptable risk. I hope I'm wrong." [58]

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[57] U.S. Senate Committee on Energy & Natural Resources, Testimony of Manu Asthana, President and CEO, PJM Interconnection, June 1, 2023. The Commission should also take notice that MISO is facing an even larger capacity shortfall. *See, e.g.,* "MISO: 49 GW Has Received Interconnection Approval, but Projects Face Major Delays," by Ethan Howland, *Utility Dive*, Sept. 14, 2023, accessible at: https://www.utilitydive.com/news/midcontinent-miso-interconnection-queue-supply-chain-transmission-expansion-mtep/693652/?utm_source=Sailthru&utm_medium=email&utm_campaign=Issue:%202023-09-14%20Utility%20Dive%20Newsletter%20%5Bissue:54508%5D&utm_term=Utility%20Dive (last accessed Oct. 30, 2024).

[58] "Operational Challenges in Our Bulk Power System," by Julie Fedorchak, *et al*. *Public Utilities Fortnightly,* January 2024, accessible at: https://www.fortnightly.com/fortnightly/2024/01/operational-challenges-our-bulk-power-system (last accessed Oct. 29, 2024).

Just two weeks ago, Mr. Asthana, speaking at the annual meeting of the Organization of PJM States ("OPSI"), reiterated his concerns over the growing reliability crisis deepening:

> "I feel more concerned today than I did two years ago about resource adequacy. . . .[l]oad is growing much faster than we had projected then, which even back then was an eye-popping set of numbers. . . . I haven't seen any forecast of load that allows me to rest and say we're good. . . . "We need capacity – a lot of capacity."[59]

FERC Commissioner Christie has also shared his concerns on numerous occasions, including in Congressional testimony:

> "The core threat is two-edged: On the power *supply* side, dispatchable generating resources, even with many years of useful life remaining, are retiring far too quickly and in quantities that threaten our ability to keep the lights on. Intermittent resources simply do not provide a one-for one capacity value replacement. On the *demand* side, we are simultaneously facing steep increases in demand for power largely driven by "hyperscale" users such as data centers, especially using Artificial Intelligence (AI), and cryptocurrency miners."[60] [Emphasis in original]

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:[61]

- "We are concerned about being in a supply crunch by the end of this decade";[62]

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[59] "Asthana at OPSI: 'We need capacity' – PJM CEO Says Resource Adequacy Concerns Are Growing," *PJM Inside Lines*, Oct. 22, 2024, accessible at: https://insidelines.pjm.com/asthana-to-opsi-we-need-capacity/ (last accessed Oct. 30, 2024).
[60] House Committee on Energy and Commerce, Subcommittee on Energy, Climate & Grid Security, July 24, 2024, accessible at: https://d1dth6e84htgma.cloudfront.net/07_24_24_ENG_Testimony_Christie_1_a4b88839d5.pdf (last accessed Oct. 30, 2024).
[61] 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 Oct. 29, 2024).
[62] *Id.* at 13:25-13:33.

- "We can't simply shut down thermal resources and replace them with non-thermal resources."[63]

- "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";[64]

- "We are going to need thermal resources in order to preserve reliability until replacement tech exists to deploy at scale";[65]

- ". . . 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";[66]

- "There are a lot of watts in the queue that are some combination of solar, wind, battery resource, and we hope they get built because we need the watts. But as we sit here today, they're not getting built."[67]

PJM has been abundantly clear that it requires more dispatchable thermal generation resources to replace those that are retiring, and non-dispatchable intermittent resources will not fill that 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.[68]

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[63] *Id.* at 24:50-25:15.
[64] *Id.* at 1:12:10-1:12:36.
[65] *Id.* at 1:26:53-1:27:00.
[66] *Id.* at 1:19:57-1:22:14.
[67] *Id*. at 1:36:35-1:36:51.
[68] *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 Oct. 29, 2024).

The OAG has repeatedly cautioned utilities against abandoning dispatchable thermal resources and making a head-long rush to renewable resources, as the former constitute the backbone of America's electric grid.[69] Given the growing electrification movement, it is abundantly clear that DEK's service territory, the Commonwealth and the entire nation will require *more* electricity, not less.[70] Dispatchable thermal resources are capable of both sustained output of low-cost energy for prolonged periods, or in the case of modern combined-cycle gas units can follow load, a characteristic which is becoming increasingly valuable to utilities, their customers and even to RTOs. Dispatchable thermal resources such as the East Bend plant, and potentially a new combined-cycle plant upon the retirement of East Bend, can also be utilized as spinning reserves to quickly provide voltage support, ramping and additional frequency regulation.[71] The predictable start-up times and trustworthiness of these dispatchable thermal resources allow utilities and grid operators to meet the needs of the grid and energy markets. Renewable generation without dispatchable resources, on the other

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

[70] *See, e.g.,* "Amid record high energy demand, America is running out of electricity," by Evan Halper, *Washington Post*, March 7, 2024, accessible at: https://www.washingtonpost.com/business/2024/03/07/ai-data-centers-power/ (last accessed Oct. 29, 2024).

[71] *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 Oct. 29, 2024).

hand, lacks this reliability, and is subject to the vagaries of constantly changing weather.[72] Moreover, dispatchable, thermal, turbine-driven, synchronous generation resources such as coal and gas-fired plants provide a natural inertia that forces the flow of electrons down the wires, thus sustaining grid reliability.

As the number of dispatchable resources in the PJM footprint dwindles, the risk of rolling blackouts increases.[73] DEK's identification and selections of the DFO conversion of the East Bend plant, and a combined-cycle gas-fired plant upon East Bend's retirement are designed to satisfy the Company's reliability requirements with dependable around-the-clock availability. The OAG supports these choices.

Respectfully submitted,

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[72] "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.

[73] *See generally*, NERC's "2023 Long-Term Reliability Assessment," Dec. 2023; "Grid Monitor Warns of Blackout Risks as Coal Plants Retire," by Peter Behr, E&E News, Dec. 14, 2023; "House Oversight Examines Grid Reliability and Resource Adequacy," by James Downing, *RTO Insider*, March 12, 2024