COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC 2025 INTEGRATED RESOURCE PLAN OF EAST KENTUKCY POWER COOPERATIVE, INC.	**)** **)** **)**	**CASE NO. 2025-00087**

COMMENTS OF EAST KENTUCKY POWER COOPERATIVE, INC.

Comes now East Kentucky Power Cooperative, Inc. ("EKPC"), by and through counsel, pursuant to the Commission's April 10, 2025 Order and for its written response to comments filed by the Attorney General ("AG") and the Sierra Club, respectfully states as follows:

EKPC RESPONSE TO AG'S COMMENTS

The AG's comments seem to be very supportive of EKPC's IRP. The AG's main concerns have to do with EKPC's reliance on PJM purchases, the change in language from "affordable" to "competitive" rates in EKPC's mission statement, and a perceived gap between EKPC's generation and what the load forecast shows. Overall, the AG's comments are understandably primarily focused on ensuring grid reliability and affordability for ratepayers and EKPC is committed to fully covering its energy requirements in the most affordable and reliable manner available.

The AG expresses concern about potential overreliance on PJM for future energy needs; however, with leveraging the economic benefits of PJM, the net cost would be higher if not for EKPC's membership in PJM. The highest level of savings recognized in EKPC's PJM annual report are trade benefits. These include the optimization of EKPC's generation assets within the PJM energy market. As a member of PJM, EKPC is no longer required to run out-of-the-money

generation to meet its load needs. This optimization cannot be efficiently replicated outside of an energy market or power pool. No matter how expensive the PJM energy market becomes, if EKPC can hedge its load expense with its own generation resources, it is more efficient to participate in the energy market than dispatch generation as a stand-alone balancing authority. EKPC agrees emphatically with the AG that steel-in-the-ground remains the best hedge against PJM market uncertainty, both in terms of market prices for capacity and energy, and protection against political pressure that may sway market rules.

It is important to note that EKPC expects to enter into seasonal purchase power agreements, in addition to its existing generation fleet and spot market purchases, to meet its winter peak load needs beginning in the 2025/2026 winter season through the 2028/2029 winter season. The Liberty RICE station is anticipated to be operational in the 2028/2029 winter season and the Cooper Combined Cycle unit is expected to be operational in the 2030/2031 winter season. Please refer to EKPC's response to Staff's second request for information, Item 5d. The reserve margin column in Table 8-3 (Revised) represents reserves over the target of 7%. EKPC is projecting a reserve margin of 16% (7% plus the 9% listed in the table) by 2031 once both of these new resources are online, the reserve margin stays above 7% through the 2039 planning horizon. EKPC plans to carry enough capacity to meet its planned peaks plus the 7% reserve margin. The difference noted by the AG in table 8-10 is attributed to economic dispatch of the generation fleet. The difference between 18,447 GWh and 12,686 GWh in 2039 means that the model determined it was more economic to purchase 5,761 GWh of energy from the market instead of generating that energy using the EKPC generation fleet. However, EKPC is not obligated to purchase that energy because it plans to retain a physical hedge using the existing and planned generation fleet.

The AG expresses concern that the intermittent nature of renewable resources, such as wind and solar, carries reliability risks and cautions against prematurely shuttering fossil fuel baseload generation resources and adopting intermittent renewable resources. EKPC is cognizant of those risks, and the AG aptly notes that EKPC has no plans to prematurely close its valuable dispatchable fossil fuel generation resources, which are considered the backbone in maintaining reliable and affordable electric generation customers. The AG encouraged EKPC to reassess the multitude of intermittent, proposed solar farm projects and EKPC has in fact done so. There are solar projects that EKPC previously indicated to the Commission that it was considering but are no longer included in EKPC's long range plan.

EKPC is constantly assessing and reassessing its projects to make the most prudent decisions. The Big Beautiful Bill cast doubt on the ability of EKPC to receive investment tax credits for the Barren County, Windsor, Plumville, and Marion County #2 solar projects, therefore, EKPC decided not to file CPCNs for those solar projects at this time. Those projects may one day become economically viable again; however, when it became evident that the proposed solar projects were not prudent at this time, EKPC adjusted appropriately to take those projects out of EKPC's queue and pursue the remaining projects that are going to bring the most benefit to EKPC, its Owner-Members, and the Owner-Members' end-use customers.

Finally, the AG expressed concern over EKPC's Board of Director's decision to change EKPC's mission statement replacing the word "affordable" with the word "competitive". The mission statement now reads:

> EKPC is a not-for-profit generation and transmission electric utility with headquarters in Winchester, Ky. The cooperative is owned and governed by 16 member-owned electricity distribution co-ops. EKPC's vital mission is to safely generate and transmit *competitive*, reliable power to these cooperatives serving more than 1 million Kentuckians. Together with our owner-members, we're known as Kentucky's Touchtone Energy Cooperatives.

(Emphasis added). The rationale for this change was simple. Today, across Kentucky, and not just in EKPC's Owner-Member's territories, too many people struggle to afford the cost of electricity. The cost of electricity is not going to go down and will in fact continue to rise across the nation. The Board believes that remaining competitive with other electricity suppliers means EKPC is doing the best it can to mitigate these cost increases to the benefit of its Owner-Members, making their costs as affordable as possible. The use of "competitive" is a better measure of holding costs down than the difficult to define "affordable." "Affordable" to a family at or near the poverty line is far from what the average consumer considers it to be. The ambiguity surrounding affordability makes it difficult to quantify, track, and measure. Moving to the "competitive" terminology allows EKPC to quantify and benchmark to neighboring utilities. It is also important to note that the words "affordable" and "competitive" are not mutually exclusive if EKPC remains competitive with, and strives to be cheaper than, neighboring utilities. Remaining competitive is being as affordable, or more affordable, than neighboring utilities.

EKPC'S RESPONSE TO SIERRA CLUB'S COMMENTS

Sierra Club expressed various concerns with EKPC's 2025 IRP including a desire for EKPC to consider alternatives to coal burning units including full gas conversion, a desire for more optimized modeling, a desire for EKPC to retire both Cooper 2 and Spurlock units, and a desire for clarity on EKPC's data center hypotheticals for large load growth.

A. MODELING – alternatives and conversions

Sierra Club expresses concern with EKPC's modeling saying EKPC did not model any other options for its six coal units, nor did it consider alternatives to the new NGCC plant and EKPC should have considered full gas conversion rather than co-firing with natural gas. EKPC chose to model the co-fire conversion of the existing coal fleet (with exception of Cooper 1),

Liberty RICE, and Cooper NGCC projects in its bas-case IRP assumption because these assets are critical to EKPC's portfolio within the IRP's 2025-2039 planning horizon. EKPC modeled up to 40% co-firing on natural gas for Spurlock 1 through 4 and up to 100% co-firing for Cooper 2. EKPC did not model full conversion to natural gas because, if a full gas conversion was considered, this would put EKPC in full reliance on natural gas suppliers). That approach would eliminate any means to economically hedge EKPC's exposure to natural gas price spikes for spot-market purchases, or long-term periods of natural gas price increases, specifically during events like Winter Storm Elliott which emphasized to EKPC the value of fuel security in maintaining a reliable electric grid as evidenced by EKPC's experience with its Bluegrass Generating Station during that storm.

EKPC increased its backup fuel capacity as a result of that event at Bluegrass Generating Station. Unfortunately, fuel oil capacities are limited to a few days of full unit capacity run time, while coal reserves can approach 30-60 days, or more, as space allows. The natural gas pipeline needed to supply the Cooper CCGT is capable of providing enough natural gas to supply the co-fire conversion of Cooper 2. As shown in 2024-000370, the expected dispatch cost for Cooper 2 is nearly cut in half, making the asset more valuable to EKPC's Owner-Members. EKPC notes that while Cooper 2 is expected to operate on either coal or natural gas, a mix between the two, the model economically dispatched the unit on 100% natural gas throughout the planning period. Retaining the ability for Cooper 2 to dispatch coal increases the reliability of the unit should natural gas be curtailed for any reason. Similarly, the co-fire conversions of the Spurlock plant provide competitively priced fuel optionality, the ability for EKPC to reduce its carbon emissions at the largest source in EKPC's generation fleet and provides the needed natural gas pipeline to ensure Spurlock station remains a valuable site for future generation expansion for EKPC in the future.

B. MODELING – Cooper CCGT and Liberty RICE

Sierra Club expresses concerns with EKPC's modeling because the Cooper CCGT and Liberty RICE were included in the base model. Liberty RICE and Cooper CCGT were included in the base case assumptions as planned, not existing, resources because EKPC already determined that the Liberty RICE and Cooper CCGT would be needed and filed CPCNs to meet the burden of proof for those resources prior to filing the 2025 IRP. The Liberty RICE unit was ultimately approved in 2024-00310 and provides necessary winter capacity, competitively priced energy, supports the expansion of renewable assets which are prevalent in the PJM generation queue, and provides ancillary service benefit to the EKPC portfolio. Similarly, the Cooper CCGT provides much-needed winter capacity and is expected to be the least-cost thermal asset in EKPC's fleet and was ultimately approved in 2024-00370. When the base model was generated, Liberty RICE and Cooper CCGT were included based on the assumption that the PSC would approve the necessary CPCNs due to these assets being necessary to meet the needs highlighted by the 2024 Long-Term Load Forecast ("2024 LTLF"). The 2024 LTLF was detailed in PSC Case Nos. 2024-00310 and 2024-00370 and in this IRP 2025-00087. The Commission subsequently approved both of the referenced CPCN requests. EKPC plans to construct Liberty RICE, Cooper CCGT, and convert five of its current coal-fired assets to co-fire natural gas which would seem to align with the Sierra Club's ultimate goals and will allow EKPC to provide safe and reliable energy in a cost-effective manner to its Owner-Members and those Owner-Members' end-use customers.

C. RETIREMENT

Sierra Club suggests that EKPC should have considered retiring Cooper Unit 1 prior to 2032 and also calls for the retirement of Cooper Unit 2 and Spurlock Units. However, the resource optimization was run for the 2025 through 2030 time period. During that period, EKPC has no

plans to retire any generation units given its need for additional capacity. As the AG aptly notes, the intermittent nature of renewable resources inherently carries reliability risks and prematurely shuttering fossil fuel baseload generation resources should be cautioned against.

Currently, EKPC has no plans to retire Cooper Unit 1; however, EKPC considered Cooper Unit 1 to be in "mothball" status and EKPC stated in Case No. 2024-00310 and Case No. 2024-00370 that Cooper CCGT is considered an eventual replacement for Cooper Unit 1. Market conditions and environmental restrictions will dictate the ultimate time to discontinue the operation of Cooper Unit 1.

Similarly, the Presidential Exemption for MATs does not require EKPC to co-fire coal and natural gas for Cooper Unit 2. The EPA CHG rulemaking from 2024 requires EKPC to make business decisions whether or not to retire, co-fire, or install carbon capture and sequestration by January 1, 2030 for its coal-fired capacity. EKPC elected to co-fire Cooper Unit 2 to reduce GHG emissions and to increase economic ability to dispatch in the PJM markets. This strategy will minimize future risk of compliance and should the rule be reinstated and will reduce the unit's dispatch cost by roughly half as compared to today's costs. This dispatch cost reduction allows EKPC to hedge market prices at a lower price point for its Owner-Members and ultimately its Owner-Members' end-use retail members.

Sierra Club Figure 1 only accounts for energy revenues provided by Cooper Station. Cooper Station also receives capacity revenue which helps to offset the negative position noted in Figure 1. Cooper Station has received [redacted] dollars in capacity revenue in the 2020 through 2024 period and is expected to receive an additional [redacted] in 2025 alone. While Cooper Station operates at a lower capacity factor than the Spurlock units, Cooper plays a pivotal role in reliability in the Southern part of EKPC's transmission system, providing much needed voltage

support to the area during peak load periods. Sierra Club states it would cost roughly [redacted] per year to keep Cooper 1 operational but did not provide the backup calculation for this value. [redacted].

D. BATTERY STORAGE

EKPC's IRP does not add new battery storage and did not consider PV plus battery storage as a supply-side resource option because EKPC requires resources with firm capacity attributes that have the ability to generate and deliver energy during peak winter periods with sustained high-demand periods of 48 hours or more, as witnessed during Winter Storms Elliott, Gerri, and Enzo. Specifically, EKPC did not evaluate stand-alone 4-hour Battery Energy Storage Systems ("BESS") resources as part of its resource optimization modeling because EKPC found them to be uneconomic as compared to purchasing short-term winter PPAs.

BESS was not chosen by the resource optimizer because the total capital cost was modeled at $2,190/kW for a 4-hour, 400 MW capacity, BESS at a total capital cost of $824 million. The dollar per kilowatt estimates sourced from the National Renewable Energy Lab's ("NREL") Annual Technical Bulletin ("ATB"). EKPC assumed that a 4-hour BESS would need to provide at least 200 MW per hour for 8 hours in total to adequately provide a reliable source of energy during extreme conditions which would prevent an energy storage device from being re-charged. This equates to a 400 MW BESS system, which is enough capacity to discharge the battery for 200 MW per hour over two four-hour periods, the morning and evening peaks, during the winter period without needing to re-charge the battery in between those peaks. For these reasons, BESS was not chosen as a resource in any of the top five plans by the Resource Optimizer due to overall cost.

Regarding the Sierra Club's comments, the MWh output of a 400 MW capacity 4-hour battery is the same as a 200 MW capacity 8-hour battery at 1,600 MWh of total energy. NREL capital cost estimates for BESS were derived from a 4-hour BESS as the default resource. EKPC chose to use the default resource as it is the most reasonable estimate available.[1]

E. DATA CENTER HYPOTHETICAL

The Commission held an informal conference in Case No. 2025-00087 on May 28, 2025. As part of the discussion of the general status of data center inquiries regarding potentially locating in the service territories of EKPC's Owner-Members, EKPC's General Counsel, David Samford, advised the conferees that EKPC had an option for a third combustion turbine and, at that time, EKPC's Board had not decided whether to exercise that option. A large data center load of 1.0 GW would require a dedicated resource portfolio consistent with EKPC's pending Data Center Power tariff. The additional resources identified in the Large Load Test Case would be dedicated to the hypothetical data center, covering both its capacity and energy obligations. The preferred portfolio as filed would continue to support EKPC's non-data center load obligations. The scenario modeled in response to Staff's first request for information is merely hypothetical and does not account for the possibility of multiple sources of energy or other factors that would impact power supply to a potential data center load. EKPC is committed to bringing forward a resource portfolio plan for any data center over 250 MW as evidenced by its pending Data Center Power tariff[2].

EKPC appreciates the Commission's time and attention to this matter and has no further comments at this time.

This 19th day of September 2025.

[1] See NREL source for BESS capital costs, "Cost Projections for Utility-Scale Battery Storage: 2023 Update." https://docsnrel.gov/docs/fy23osti/85332.pdf.

[2] See Case No. 2025-00140, *Electronic Tariff Filing of East Kentucky Power Cooperative, Inc. To Establish a New Tariff for Data Center Power.*

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CERTIFICATE OF SERVICE

This is to certify that the foregoing electronic filing was transmitted to the Commission on September 19, 2025; that there are currently no parties that the Commission has excused from participation by electronic means in this proceeding; and that pursuant to prior Commission Orders, no paper copies of this filing will be made.

Counsel for East Kentucky Power Cooperative, Inc.