COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC 2022 INTEGRATED RESOURCE PLAN OF EAST KENTUCKY POWER COOPERATIVE, INC.	))))	**CASE NO. 2022-0098**

SIERRA CLUB'S COMMENTS REGARDING THE COMMISSION STAFF'S REPORT ON EAST KENTUCKY POWER COOPERATIVE, INC.'S 2022 INTEGRATED RESOURCE PLAN

Sierra Club respectfully submits these comments regarding the Commission Staff's Report on East Kentucky Power Cooperative, Inc.'s ("EKPC") 2022 Integrated Resource Plan, in accordance with the Commission's March 9, 2023, and March 16, 2023, Orders. These comments respond to two aspects of the Commission Staff's Report: (1) the Commission Staff's directive that EKPC address, in its next IRP, "the causes and potential solutions to any reliability issues that arose during Elliott" and (2) the absence of specific commentary from the Commission Staff regarding the impact of the Inflation Reduction Act ("IRA"), in light of the need for EKPC to act quickly to take advantage of the significant financial benefits that the IRA provides.

As Sierra Club explains below, recent information shows that coal and gas generation failed to provide reliable electricity during Winter Storm Elliott, causing rolling blackouts for multiple Kentucky utilities and taking large swaths of generation off the grid throughout the eastern and central United States. New information from Louisville Gas & Electric and Kentucky Utilities ("LG&E/KU"), described below, details roughly 36% of the utilities' coal and gas

generation (measured by capacity) failing at different points during Elliott. For TVA, *all* coal units and 42% of gas plants lost generation during Elliott.

These coal and gas reliability failures in Kentucky were mirrored across the country during Winter Storm Elliott. In ERCOT, 23% of expected coal and gas capacity went off-line. In PJM, almost 38% of gas and 17% of coal were off-line at the height of the storm. MISO had 37 GW of unplanned coal and gas outages; it had strong wind generation and did not need to interrupt customer service. These reliability failures by fossil fuel generation in Kentucky and elsewhere indicate (1) that EKPC should increase renewable generation in its portfolio to enhance reliability for EKPC members' ratepayers, and (2) that it should do so swiftly, without waiting for the next IRP.

Fortunately, there is no better time than the present. The IRA provides large financial benefits and incentives for cooperatives like EKPC to add clean energy. EKPC should act as soon as possible not only for reliability reasons but also for affordability: to take full advantage of the IRA's funding for cooperatives and tax incentives for renewable resources, such as solar and wind power and battery storage, before opportunities to do so lapse.

I. WINTER STORM ELLIOTT DEMONSTRATES THAT COAL AND GAS GENERATION IS UNRELIABLE IN EXTREME WEATHER AND THAT EKPC SHOULD ACCORDINGLY ADD RENEWABLE GENERATION.

New information about Winter Storm Elliott outages in Kentucky and throughout the central and eastern United States highlights the unreliability of both coal- and gas-fired generation in extreme winter weather. Yet, currently virtually all of EKPC's generation capacity—roughly 94%—comes from EKPC's coal and gas plants.[1] Only about 0.2% comes from solar, with no battery storage or wind.[2] While the Commission Staff's Report directs EKPC

[1] EKPC, 2022 Integrated Resource Plan at 1-2.
[2] *Id.* at 1-2, 58.

to address reliability issues during Elliott in its next IRP, EKPC need not and should not wait for the next IRP to act on this evidence that its current generation portfolio is at risk in future extreme winter weather. Rather, the cooperative should urgently revisit its generation portfolio in light of the unreliability of coal and gas generation. Specifically, EKPC should add significant (and appropriately winterized) renewable generation, such as solar and wind power and battery storage, into its portfolio. Increased renewable generation will guard against the coal and gas reliability failures that fellow utilities experienced, in Kentucky and elsewhere, during Elliott.

A. Coal And Gas Generation Were Unreliable In Kentucky During Winter Storm Elliott, To A Greater Extent Than Previously Known.

Coal and gas generation were unreliable during Winter Storm Elliott in Kentucky and caused unprecedented rolling blackouts for two sets of utilities, the Tennessee Valley Authority ("TVA") and LG&E/KU. All of TVA's coal plants were affected, and all TVA generation that went offline was coal or gas. For LG&E/KU, reliability issues that led to rolling blackouts were far greater than a single frozen valve on a natural gas pipeline, the issue that the utilities and their gas supplier highlighted in testimony before the Kentucky legislature. In addition to this issue that affected two gas plants, eight more LG&E/KU units—both gas *and* coal—derated or went offline during Elliott; two fossil fuel units had already lost generation due to mechanical issues; electricity imports from the Ohio Valley Electric Corporation ("OVEC") plummeted due to coal generation failures; and TVA's coal and gas failures meant that part of a contingency reserve on which LG&E/KU relied dried up. Elliott shows that Kentucky utilities cannot rely on coal and gas to perform in extreme weather.

1. All Coal Units Lost Generation In TVA, And All Lost Generation Was Due To Coal And Gas.

For TVA, approximately 8,000 MW of generation—*all* comprised of coal or gas—went offline during Winter Storm Elliott.[3] *All* of the utility's coal plants lost at least some generation during the storm, causing a total of 2,600 MW of coal to go offline.[4] 42% of TVA's gas plants lost generation as well, for roughly 5,400 MW of gas offline.[5] The largest outage occurred at the coal-fired Cumberland Fossil Plant, affecting both units.[6] According to TVA, at Cumberland "critical instrumentation located on the top of the boilers froze, tripping the units."[7] These power failures within TVA led to rolling blackouts for roughly 2 hours on Dec. 23 and about 6 hours on Dec. 24.[8]

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[3] TVA, U.S. Securities & Exchange Commission Form 10-Q at 53, *available at* https://tva.q4ir.com/financial-information/sec-filings/sec-filings-details/default.aspx?FilingId=100117200446 [hereinafter "TVA, SEC Form 10-Q"].

[4] Kentucky Joint House & Senate Natural Resources & Energy Committee, Feb. 2, 2023, 1:00 PM, https://www.ket.org/legislature/archives/?nola=WGAOS+024020&stream=aHR0cHM6Ly81ODc4ZmQxZWQ1NDIyLnN0cmVhbWxvY2submV0L3dvcmRwcmVzcy9fZGVmaW5zdF8vbXA0OndnYW9zL3dnYW9zXzAyNDAyMC5tcDQvcGxheWxpc3QubTN1OA%3D%3D [hereinafter "Kentucky Joint Natural Resources & Energy Committee Hearing"] (Testimony of Aaron Melda, Senior Vice President, Transmission & Supply, TVA, at approx. 55:00).

[5] *Id.* (Testimony of Aaron Melda, Senior Vice President, Transmission & Supply, TVA, at approx. 55:00 and 1:24:00). Mr. Melda testified that roughly 7,000 MW of generation went offline during the storm, 2,600 MW of which was coal and the remainder of which was gas. To arrive at the figure of 5,400 MW of gas offline during Elliott, we take as accurate Mr. Melda's figures for coal (2,600 MW) and gas (the total amount of offline generation minus 2,600 MW) but substitute the total amount that went offline as roughly 8,000 MW—the figure that appears in TVA's SEC filing. *See supra* n. 3 and accompanying text.

[6] TVA, *Winter Storm Elliott Update* at 4 (Feb. 2, 2023), *available at* https://apps.legislature.ky.gov/CommitteeDocuments/258/ (linked file labeled "Feb 2 2023 TVA PowerPoint.ppx"); *see also* TVA, *Cumberland Fossil Plant*, https://www.tva.com/energy/our-power-system/coal/cumberland-fossil-plant (describing Cumberland Fossil Plant's two coal units).

[7] TVA, *Winter Storm Elliott Update*, *supra*, at 4.

[8] TVA, SEC Form 10-Q, *supra* n. 3, at 54.

2. LG&E/KU Coal And Gas Generation Failed, To A Greater Extent Than Previously Known.

LG&E/KU experienced significant coal and gas failure in the December storm, which likewise caused rolling blackouts. Notably, LG&E/KU's testimony before the Kentucky Legislature's Joint House and Senate Natural Resources and Energy Committee only described low pressure on a gas pipeline as a specific reliability failure during Elliott.[9] However, a recent discovery filing by the utilities in a pending case before the Commission describes a host of coal and gas reliability failures during the storm—both related to weather and not.[10]

Specifically, in addition to the 943 MW of lost gas generation that LG&E/KU has attributed to the gas pipeline's low pressure, the utilities' discovery filing identifies the loss, at points during the storm, of at least 1,489 MW of generation at 8 different coal- and gas-fired units.[11] On top of that, 433 MW of coal and gas generation were already off-line at the start of

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[9] Kentucky Joint Natural Resources & Energy Committee Hearing, *supra* n. 4 (Testimony of Lonnie Bellar, Chief Operating Officer, LG&E/KU at approx. 1:48:45 ("We were ready for the storm. . . . We implemented our cold-weather operation plans that we have across our fleet, coal-fired and gas-fired plants. . . . We brought our units online and kept them running before the cold weather got here. . . . We wouldn't be sitting here having that conversation if we had the [gas] pressure. Again, the gas was there, as we've discussed, but we did not have the pressure to run our generating units."); LG&E/KU, *Generation Reliability Planning and Winter Storm Elliott* at 4 (Feb. 2, 2023), https://apps.legislature.ky.gov/CommitteeDocuments/258/24158/Feb%202%202023%20LG&E-KU%20Presentation.pdf ("December 23 load shed was driven by loss of 900 MW of gas generation due to unexpected low pressure on Texas Gas Transmission pipeline").

[10] *In re: Electronic Joint Application of Ky. Utils. Co. & Louisville Gas & Elec. Co. for Certificates of Public Convenience & Necessity & Site Compatibility Certificates & Approval of a Demand Side Management Plan*, Case No. 2022-402, LG&E/KU's Resps. To Att'y Gen. Data Reqs. 13(l), Attachment 1 (provided on Mar. 10, 2023), *Winter Storm Elliott: Events in the LG&E and KU Balancing Authority Area (BAA), December 23-24, 2022*, https://psc.ky.gov/pscecf/2022-00402/rick.lovekamp%40lge-ku.com/03102023103319/03-AG_DR1_LGE_KU_Attach_to_Q13%28l%29_-_Att_1_Winter_Storm_Elliott_LKE_Event_Summary.pdf [hereinafter "LG&E/KU, *Winter Storm Elliott*"].

[11] Specifically, LG&E/KU described the loss of 524 MW at Brown Units 5, 8, 9, and 11; 175 MW at Paddy's Run Unit 13; a maximum of 269 MW at Trimble County Unit 2; 121 MW at Mill Creek Unit 4; and 400 MW at Brown Unit 3. *See infra* notes 17-18 and 24-26 and accompanying text.

the storm due to mechanical issues.[12] LG&E/KU's most recent IRP describes 7,917 MW of winter capacity from the utilities' own coal and gas units.[13] This means that **2,865 MW, or roughly 36% of LG&E/KU's coal and gas generation measured by capacity, was unavailable at some point during Elliott** (though that generation was not all off-line at the same time).[14] Additionally, OVEC's and TVA's generation—likewise dependent on fossil fuels—decreased, thus limiting LG&E/KU imports and reliance on contingency reserves.

This new information about coal and gas reliability failures for LG&E/KU, a fellow Kentucky utility, during Winter Storm Elliott highlights the danger of EKPC's continued reliance on coal and gas for reliability in extreme weather.

a. LG&E/KU Lost Gas Generation At Cane Run, Trimble County, And 5 Additional Units During Elliott, In Addition To 1 Unit Already Offline.

Regarding gas, LG&E/KU lost significant generation during Winter Storm Elliott, including at least 943 MW of gas generation on December 23.[15] One 138-MW gas unit, Brown

[12] LG&E described Trimble County Unit 1 as derated by 295 MW and the 138-MW Brown Unit 10 as off-line, both due to mechanical issues, at the start of Elliott. *See infra* notes 16 and 22 and accompanying text.

[13] LG&E/KU states that the utilities have 4,910 MW of coal and 3,007 MW of gas in winter net capacity. *In re: Electronic 2021 Joint Integrated Resource Plan of Louisville Gas & Elec. Co. & Ky. Utils. Co.*, Case No. 2021-00393, 2021 Joint Integrated Resource Plan of LG&E/KU, Vol. I at 5-6 (Oct. 19, 2021), https://psc.ky.gov/pscecf/2021-00393/rick.lovekamp%40lge-ku.com/10192021013101/3-LGE_KU_2021_IRP-Volume_I.pdf.

[14] We arrived at this figure by adding together the 943 MW of lost gas generation due to low pressure, 1,489 MW of additional lost coal and gas generation during the storm, and 433 MW of coal and gas already offline due to mechanical failures, for a total of 2,865 MW unavailable at some point during Winter Storm Elliott. We then divided 2,865 MW by 7,917 MW total winter coal and gas capacity and multiplied by 100 to arrive at approximately 36%.

[15] LG&E/KU, *Generation Reliability Planning and Winter Storm Elliott*, *supra* n. 9, at 4; LG&E/KU, *Winter Storm Elliott*, *supra* n. 10, at 2. While LG&E/KU's presentation at the Kentucky legislature described "900 MW" offline due to the gas pipeline issue, LG&E/KU's more detailed internal analysis states that derates due to that problem reached 943 MW.

Unit 10, was already out of commission and had been for 20 days before Elliott due to issues with its turbine seals.[16] More units derated or went offline during the storm:

- Brown Units 5, 8, 9, and 11—a total of 524 MW—became unavailable on Dec. 23 at 1:28 AM "due to an interruption in fuel gas"; the problem was not fully resolved until 4:58 PM that day. As LG&E/KU explained it, "A pilot light that preheats fuel gas to act as control gas for fuel gas supply regulators blew out, making the regulators" for the units "inoperable and stopping fuel gas supply to the units." Three of the units were placed back online firing fuel oil, but two then experienced major problems again—one went offline "due to a flame scanner issue" and the other because "[i]t hit a controls alarm for emissions limitations" and so was derated to 100 MW.[17]
- Paddy's Run Unit 13 (175 MW) went offline on Dec. 23 from 6:36 AM until 7:13 AM due to "a manual valve in the cooling water circuit" that needed "adjustment" due to "the extreme cold."[18]
- Part—but not all—of the loss of LG&E/KU gas generation during Elliott was due to low pressure on the pipeline for the Cane Run and Trimble County plants, where a control unit on a valve failed because of icing.[19] LG&E/KU reported that the low pressure on the pipeline caused derates at Cane Run between 1:08 PM on Dec. 23 and 4:06 AM on Dec. 25, while low pressure "requir[ed] several derates" at Trimble County between 1:47 PM on Dec. 23 and 4 PM on Dec. 25. Trimble County Unit 5 (179 MW) tripped at 1:08 PM.

[16] LG&E/KU, *Winter Storm Elliott*, *supra* n. 10, at 3.
[17] *Id.* at 3-4.
[18] *Id.* at 4.
[19] Boardwalk Pipelines, *Texas Gas Transmission, LLC: Presentation for the Commonwealth of Kentucky Legislature* at 7 (Feb. 2, 2023), *available at* https://apps.legislature.ky.gov/CommitteeDocuments/258/ (linked file labeled "Feb 2 2023 Boardwalk Pipeline Partners PowerPoint.ppx"); LG&E/KU, *Generation Reliability Planning and Winter Storm Elliott*, *supra* n. 9, at 4.

Cane Run Unit 7 experienced a 253-MW derate. At 1:48 PM Trimble County derated by 439 MW. In all, 943 MW of gas derated due to pipeline low pressure.[20]

b. LG&E/KU Lost Coal Generation At 3 Units During Elliott, In Addition To 1 Unit Already Significantly Derated.

Coal generation for LG&E/KU also suffered during Elliott: as LG&E/KU's own analysis put it, "it is important to note that one of the Companies' coal units was on a forced outage on December 23 and several coal units experienced derates during the course of the storm event."[21] Trimble County 1, a 370-MW unit, was already derated by 295 MW at the time of the storm due to "pre-existing mechanical issues": it had gone out the day before "due to failure of submerged drag chain conveyor hydraulic gearbox."[22] In addition to the derates, one coal-fired unit was taken completely offline during the storm. Specifically:

- From Dec. 23 at 3:10 AM until Dec. 27 at 4:30 PM, Trimble County Unit 2 was derated by 37 MW "due to low inlet air temperature into the air heater." As LG&E/KU explained it, "With the very low ambient air temperatures the water coil air heater could not provide sufficient heat input to maintain full load."[23]
- On Dec. 23 at 3:48 PM, Trimble County Unit 2 derated by 269 MW "due to a frozen boiler feed pump transmitter." This event "caused a unit runback that tripped a coal mill," which then "needed to be manually purged." At 10:26 PM, this issue was resolved, but

[20] *Id.* at 2, 4-5. LG&E/KU's timeline for this event appears internally inconsistent: at one point, the utilities say "Cane Run experienced derates" beginning at 1:08 PM on Dec. 23, and at another point, the utilities describe Trimble County Unit 5 tripping at 1:08 PM on Dec. 23, "followed by a derate at [Cane Run] 7" at 1:47 PM. *Compare id.* at 2 *with id.* at 4.
[21] Case No. 2022-402, LG&E/KU's Resps. To Att'y Gen. Data Reqs. 13 (provided on Mar. 10, 2023), https://psc.ky.gov/pscecf/2022-00402/rick.lovekamp%40lge-ku.com/03102023103319/02-AG_DR1_LGE_KU_Responses.pdf.
[22] LG&E/KU, *Winter Storm Elliott*, *supra* n. 10, at 1, 3.
[23] *Id.* at 4.

the unit remained derated by 37 MW due to the inlet air temperature issue described above.[24]

- On Dec. 23 at 4:13 PM, Mill Creek Unit 4 "lost a coal feeder due to cold weather-related bunker issues (coal tripper froze up)." This caused a 121-MW derate until 6:44 PM.[25]
- Brown Unit 3 (400 MW) experienced significant issues and was eventually taken offline. On Dec. 23 at 7:17 AM, Brown Unit 3 was "derated by 62 MW due to problems with combustion process instrumentation" that LG&E/KU believes was a non-weather-related reliability failure. "This led to additional combustion related issues and derates," for an eventual maximum of a 76-MW derate, before the unit "was taken offline due to excessive slagging" on Dec. 25 at 9:15 PM.[26]

Further, LG&E's dependence on energy deliveries from fossil fuel-based generation caused even greater shortfalls. Deliveries to LG&E/KU from OVEC, which has entirely coal-based generation,[27] plummeted. LG&E/KU explained that OVEC "was projected to supply 156 MW on 12/23 but in fact ranged from 91 MW to as little as 6 MW over the course of the event."[28] Additionally, TVA "several times during the event . . . withdr[e]w[] its contribution to the Contingency Reserve Sharing Group," which required LG&E/KU "to cover a significantly increased amount of contingency reserve."[29] 54,637 LG&E/KU ratepayers were subject to rolling blackouts between 5:59 PM and 10:11 PM on December 23.[30]

[24] *Id.* at 5.
[25] *Id.*
[26] *Id.* at 4.
[27] *OVEC/IKEC: Ohio Valley Electric Corporation/Indiana-Kentucky Electric Corporation*, https://www.ovec.com/index.php.
[28] *Id.* at 2.
[29] *Id.*
[30] Case No. 2022-402, LG&E/KU's Resps. To Att'y Gen. Data Reqs. 13, *supra* n. 21.

B. Coal And Gas Generation Were Unreliable Throughout The Central And Eastern United States During Winter Storm Elliott.

From December 23 to December 24, 2022, "more than 100,000 MW of coal- and gas-fired generation were offline due to the cold associated with Winter Storm Elliott, highlighting serious performance problems for fossil fuel generators."[31] A March 2023 report from the Institute for Energy Economics and Financial Analysis ("IEEFA"), *Fossil Fuels Fail Reliability Test: Forced Outages During a December Freeze Underscore Serious Performance Problems Facing Coal- and Gas-Fired Electric Generators*, concludes: "The outages stressed the entire Eastern Interconnection of the U.S. electricity system and prompted first-of-a-kind rolling blackouts" for multiple utilities.[32]

Beyond Kentucky, major failures of coal and gas generation throughout the central and eastern United States during Winter Storm Elliott included, as described in the IEEFA's report:

- **PJM:** Especially relevant to EKPC, more than 45 GW of coal and gas outages in PJM, comprising 87% of all system outages. On Dec. 24, 32,473 MW of gas, or almost 38% of all gas in PJM, was offline. On the same day, 7,562 MW of coal, or 17% of coal capacity, was offline. The category of all other resources (i.e., neither coal nor gas) fared substantially better: less than 11% of that capacity, or only 5,917 MW, was offline on Dec. 24. These failures of gas and coal occurred despite the very hefty penalties that PJM exacts for these kinds of forced outages.[33]

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[31] Dennis Wamsted, Institute for Energy Economics and Financial Analysis, *Fossil Fuels Fail Reliability Test: Forced Outages During a December Freeze Underscore Serious Performance Problems Facing Coal- and Gas-Fired Electric Generators* at 4 (Mar. 9, 2023), *available at* https://ieefa.org/resources/fossil-fuels-fail-reliability-test.
[32] *Id.*
[33] *Id.* at 13-14.

- For Duke Energy Carolina and Duke Energy Progress, two Duke Energy subsidiaries operating within PJM, at least 3,730 MW of coal and gas were offline during Elliott, with roughly 1,300 MW of that capacity being lost during the storm (and the bulk of other offline capacity attributable to prior unplanned outages).[34] These outages included:
  - 359 MW, 50% of capacity, at a combined cycle gas plant.[35]
  - 350 MW, 49% of capacity, at a coal plant due to a boiler issue.[36]
  - 325 MW at a coal plant.[37]
  - 300 MW, 58% of capacity, at a combined cycle gas plant that sells into the Duke system.[38]
  - 178 MW, 25% of capacity, at a combined cycle gas plant due to low pressure in the pipeline serving most of the plant.[39]
- Notably, the largest percentage of decline in gas production in the country during Elliott occurred in Appalachia, in the Marcellus and Utica Shale.[40]

- **ERCOT:** 14,204 MW of unplanned coal and gas outages in ERCOT, totaling 23.3% of expected coal and gas capacity in ERCOT offline. These outages occurred despite new Texas regulations requiring winterization and despite the fact that all coal and gas

[34] *Id.* at 18.
[35] *Id.*
[36] *Id.*
[37] *Id.*
[38] *Id.*
[39] *Id.* at 22.
[40] *Id.* at 23.

capacity had been certified as winter-ready before the storm.[41] Meanwhile, both wind and solar outperformed expectations.[42] Specific outages in ERCOT included:

- All 3 available units went offline at a major coal plant near Houston, Texas. A 477 MW unit went offline at 4:15 AM Dec. 23, was offline during the system's peak load, and returned online that evening. A 664 MW unit had its production curtailed by two-thirds on Dec. 21 due to exhaust problems; this issue lasted until Dec. 28. A 663 MW unit's production declined, and it went offline in the afternoon of Dec. 23. One 610 MW unit at the plant was already offline due to a fire that occurred in May.[43]
- An 815 MW unit at a 2,455 MW coal plant was offline during the system's peak.[44]
- All 10 peaker units at a new 480 MW gas plant in Galveston County, Texas, went offline for at least 4 hours—during the time the system experienced peak load.[45]
- A 530 MW unit (1 of 2 units) at a combined cycle gas plant in Jack County, Texas, went offline—including during the system's Dec. 23 morning peak.[46]

- **MISO:** 37 GW of unplanned coal and gas generation outages in MISO, comprising 75% of the system's unplanned outages.[47] MISO's after-action analysis determined that "gas supply availability contributed to increased unplanned outages . . . that pushed MISO into

[41] *Id.* at 10.
[42] *Id.* at 11.
[43] *Id.*
[44] *Id.*
[45] *Id.* at 10-11.
[46] *Id.* at 11.
[47] *Id.* at 7.

emergency procedures" and that "wind production remained high during Winter Storm Elliott."[48] MISO experienced no customer service interruptions.[49]

The significant *un*reliability of coal and gas generation during Winter Storm Elliott, both in Kentucky and more broadly, demonstrates the inaccuracy of an underlying assumption in EKPC's IRP and in the Attorney General's comments—that fossil fuel-based generation is necessarily more reliable than renewable energy. In fact, as compared to coal and gas, renewable energy appears to have fared better during Winter Storm Elliott. In addressing Elliott's import in its next IRP, EKPC should take into account this information about coal and gas failures in PJM and elsewhere. But EKPC should not wait for the next IRP to shore up reliability in its system by moving away from its very heavy reliance on coal and gas and adding renewable energy.

II. EKPC SHOULD ACT SWIFTLY TO TAKE ADVANTAGE OF THE INFLATION REDUCTION ACT'S SIGNIFICANT FINANCIAL BENEFITS FOR RENEWABLE ENERGY.

Sierra Club urges EKPC, going forward, to act quickly to take full advantage of the financial benefits that the IRA affords to EKPC—and, ultimately, EKPC's members' ratepayers. EKPC has said that it is waiting on regulations and/or implementing guidance before moving forward. However, EKPC should be working now to secure the benefits of the IRA for its members and their ratepayers. The cooperative should act as expeditiously as possible to secure the tax credits that are immediately available and the funding anticipated to become available in the near future. As the Joint Intervenors' experts explained, the IRA "is an important and sweeping modification to the energy landscape and leveraging its tax incentive, direct pay, and

[48] MISO, Reliability Subcommittee, *Overview of Winter Storm Elliott December 23, Maximum Generation Event* at 10-11 (Jan. 17, 2023), https://cdn.misoenergy.org/20230117%20RSC%20Item%2005%20Winter%20Storm%20Elliott%20Preliminary%20Report627535.pdf.
[49] *Id.* at 2.

rebate provisions could bring significant benefits to the customers of EKPC's member cooperatives."[50] Like the Joint Intervenors, Sierra Club urges EKPC to be proactive in seeking out federal funding and availing itself of the IRA's incentives—particularly in capitalizing on these resources to build and operate new renewable generation and storage.

As the Joint Intervenors have highlighted throughout these proceedings, the IRA provides numerous incentives for developing renewable generation that change the supply-side economic calculus. For example, as Joint Intervenors point out, the IRA creates significant "direct pay provisions [that] newly allow EKPC to benefit from tax credits for renewable energy projects that were previously limited to taxable entities."[51] These direct pay provisions mean that EKPC can receive the benefit of the Performance Tax Credit ("PTC"), for electricity generated by clean energy, and the Investment Tax Credit ("ITC"), for the installation of renewable generation and storage.[52] The PTC is available for solar and wind energy, and it is currently set at $27.50 per MWh.[53] The ITC is available for solar and wind energy and, as well, for storage.[54]

Sierra Club urges EKPC to act expeditiously to secure the benefit of these provisions, which are immediately available.[55] In determining the cost-effectiveness of the PTC and ITC,

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[50] Joint Intervenors' Initial Comment on East Kentucky Power Cooperative Inc.'s 2022 Integrated Resource Plan, Exhibit 1, Corrected Version, Energy Futures Group, *Report on East Kentucky Power Cooperative's 2022 Integrated Resource Plan* at 48 (Nov. 1, 2022).
[51] Joint Intervenors' Supplemental Post-Hearing Comment on East Kentucky Power Cooperative Inc.'s 2022 Integrated Resource Plan at 2 (Feb. 3, 2023) (citing IRA Section 13801).
[52] IRA Section 13801; *see* The White House, *Building a Clean Energy Economy: A Guidebook to the Inflation Reduction Act's Investments in Clean Energy and Climate Action* at 10-11 (Jan. 2023), https://www.whitehouse.gov/wp-content/uploads/2022/12/Inflation-Reduction-Act-Guidebook.pdf.
[53] IRS, *Renewable Electricity Production Credit Amounts for Calendar Year 2022: Announcement 2022-23*, at 3, https://www.irs.gov/pub/irs-drop/a-22-23.pdf.
[54] DSIRE, *Business Energy Investment Tax Credit (ITC)* (Dec. 9, 2022), https://programs.dsireusa.org/system/program/detail/658/business-energy-investment-tax-credit-itc; U.S. Dep't of Energy, Office of Energy Efficiency & Renewable Energy, *Advancing the Growth of the U.S. Wind Industry: Federal Incentives, Funding, and Partnership Opportunities* at 2 (Feb. 2023), https://www.energy.gov/sites/default/files/2023-02/weto-funding-fact-sheet-feb-23.pdf.
[55] *See, e.g.*, U.S. Dep't of Energy, Solar Energy Technologies Office, *Federal Solar Tax Credits for Businesses* (Mar. 2023), https://www.energy.gov/eere/solar/federal-solar-tax-credits-businesses; U.S.

Sierra Club echoes Joint Intervenors' experts' recommendation that EKPC "[u]pdate the costs of solar resources to include the impacts from the" IRA and that EKPC "[i]nclude battery storage resources as part of the new supply side resource options," incorporating into that analysis "the impacts of the IRA, which allow[s] standalone battery storage projects to receive the Investment Tax Credit."[56]

Further—and, again, as the Joint Intervenors have highlighted[57]—the IRA has provisions that particularly benefit rural cooperatives like EKPC. Section 22004 of the IRA appropriates $9.7 billion in funds for the U.S. Department of Agriculture's ("USDA") Rural Utilities Service to provide financial assistance for renewable energy systems and energy efficiency improvements for generation and transmission systems.[58] Electric cooperatives are eligible for—and, indeed, the target of—Section 22004 funds.[59] Section 22001 of the IRA provides $1 billion for USDA loans for renewable energy infrastructure, requires loan forgiveness up to 50% upon compliance with the loan's terms and conditions, and permits forgiveness above 50%.[60] Solar and wind projects are eligible for such loans, as are projects for storage of renewable energy.[61]

Dep't of Energy, Office of Energy Efficiency & Renewable Energy, *Advancing the Growth of the U.S. Wind Industry*, *supra*, at 2.

[56] Joint Intervenors' Initial Comment, Exhibit 1, Corrected Version, *supra* n. 50, at 5-6.

[57] *E.g.*, Joint Intervenors' Initial Comment on East Kentucky Power Cooperative Inc.'s 2022 Integrated Resource Plan at 13.

[58] IRA Section 22004.

[59] *Id.*; *see also* U.S. Dep't of Agriculture, Rural Bus.-Cooperative Serv. & Rural Utils. Serv., *Notice: Inflation Reduction Act Listening Session*, 87 Fed. Reg. 65,188, 65,188-65,189 (Oct. 28, 2022), https://www.federalregister.gov/documents/2022/10/28/2022-23519/inflation-reduction-act-listening-session.

[60] IRA Section 22001.

[61] *Id.*; *see also* U.S. Dep't of Agriculture, Rural Bus.-Cooperative Serv. & Rural Utils. Serv., *Notice: Inflation Reduction Act Listening Session*, 87 Fed. Reg. at 65,189.

For these loans, USDA has stated it will prioritize "new construction of renewable infrastructure."[62] Electric cooperatives are likewise eligible for Section 22001 funds.[63]

Finally—and as discussed by Joint Intervenors—the IRA provides, among its additional incentives, incentives specifically for "energy communit[ies]."[64] These communities may include:

> (i) a brownfield site [cross-referenced in its definition with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980]
> (ii) a metropolitan statistical area or non-metropolitan statistical area which—
> (I) has (or, at any time during the period beginning after December 31, 2009, had) 0.17 percent or greater direct employment or 25 percent or greater local tax revenues related to the extraction, processing, transport, or storage of coal, oil, or natural gas (as determined by the Secretary [of the U.S. Department of the Treasury])
> (II) has an unemployment rate at or above the national average unemployment rate for the previous year (as determined by the Secretary), or
> (iii) a census tract—
> (I) in which—
> (aa) after December 31, 1999, a coal mine has closed, or
> (bb) after December 31, 2009, a coal-fired electric generating unit has been retired, or
> (II) which is directly adjoining to any census tract described in subclause (I).[65]

Provision (iii) deserves EKPC's attention. On the face of the legislation, EKPC's placement of a solar, wind, or battery project in the same census tract or an adjoining census tract as a retired coal plant or a shuttered coal mine will trigger increased IRA incentives. Of course, a renewable energy or storage project may be located in an energy community for another, independent reason.[66] Provision (iii) and the other definitions of "energy community" likely contribute to the

[62] U.S. Dep't of Agriculture, Rural Bus.-Cooperative Serv. & Rural Utils. Serv., *Notice: Inflation Reduction Act Listening Session*, 87 Fed. Reg. at 65,189.
[63] *Id.*; IRA Section 22001.
[64] Joint Intervenors' Supplemental Post-Hearing Comment on East Kentucky Power Cooperative Inc.'s 2022 Integrated Resource Plan at 4-8.
[65] IRA Section 13101(g)(2).
[66] *See* Joint Intervenors' Supplemental Post-Hearing Comment on East Kentucky Power Cooperative Inc.'s 2022 Integrated Resource Plan at 4-9.

economic benefits of renewable energy and storage under the IRA. EKPC should thus reevaluate its supply-side resource portfolio in light of the substantial financial assistance available due to the IRA.

III. EKPC SHOULD IMMEDIATELY ACT ON THE IRA'S FINANCIAL INCENTIVES FOR RENEWABLE ENERGY AND STORAGE, AND SHOULD BE READY TO ACT IMMEDIATELY TO SECURE IRA COOPERATIVE FUNDING.

EKPC stated in discovery responses that it has no plans to retire any unit at Cooper, Spurlock, J.K. Smith, or Bluegrass.[67] EKPC should reassess whether continued indefinite reliance on its fossil fuel-burning units is in the best interests of its customers and, ultimately, its customers' ratepayers based on new information: the significant evidence of the unreliability of coal and gas in extreme winter weather from Winter Storm Elliott, provided above, as well as any new information about cooperative funding for renewable energy. EKPC's Cooper and Spurlock coal-fired units that lack selective catalytic reduction technology (a form of pollution control equipment) merit especial scrutiny, in light of the recently released Good Neighbor Plan limiting ozone-forming nitrogen oxide emissions.[68]

And EKPC should undertake this reevaluation and set in motion plans for renewable energy generation and battery storage construction swiftly, without waiting for the next IRP. That's because some benefits of the IRA are time-limited—including funding available to cooperatives. For example, IRA section 22001 and 22004 funds must be disbursed by September 30, 2031.[69] The USDA Rural Business-Cooperative Service and Rural Utilities Service recently

[67] EKPC's Resps. to Atty Gen. First Data Reqs. 21, 22a-b (provided on July 29, 2022).
[68] U.S. Env'tal Protection Agency, *Federal "Good Neighbor Plan" for the 2015 Ozone National Ambient Air Quality Standards*, Mar. 15, 2023, https://www.epa.gov/system/files/documents/2023-03/FRL%208670-02-OAR_Good%20Neighbor_Final_20230314_Signature_ADMIN%20%281%29.pdf.
[69] IRA Sections 22001, 22004.

stated that this "mean[s] construction and processing of all reimbursements must occur before then."[70]

Because EKPC will need to be positioned to act quickly to secure cooperative funding and because of the urgency of a reliable electric grid, EKPC should not wait for the next IRP proceeding to plan for and initiate renewable generation and battery storage. Instead, EKPC should reevaluate its current portfolio plans, which rely on operating each of its coal and gas generating units indefinitely, and should act immediately to secure for its members and their ratepayers the benefits of the IRA in constructing renewable generation.

EKPC has stated, in these proceedings, its commitment to "consider the impacts of the IRA in future requests for proposals for resources and future IRP filings, as applicable."[71] For the reasons expressed above, Sierra Club asks that EKPC act to secure funding and financing as soon as relevant implementing regulations and guidance for which EKPC is eligible are released, and set in motion new construction of renewable energy and battery storage rapidly. Further, Sierra Club asks that EKPC not enter into long-term coal contracts, as it has indicated that it is seeking,[72] prior to reassessing current plans to keep all units at Cooper and Spurlock open indefinitely.

Dated: Mar. 31, 2023

[70] U.S. Dep't of Agriculture, Rural Bus.-Cooperative Serv. & Rural Utils. Serv., *Notice: Inflation Reduction Act Listening Session*, 87 Fed. Reg. at 65,189.
[71] Response of East Kentucky Power Cooperative, Inc. to Joint Intervenors' Post-Hearing Comments at 9.
[72] EKPC's Resps. to Atty Gen. Second Data Reqs. 48 (provided on Sept. 20, 2022).

Respectfully submitted,

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CERTIFICATE OF SERVICE

This to certify that the foregoing copy of Sierra Club's Comments Regarding the Commission Staff's Report in this case is being electronically transmitted to the Commission on March 31, 2023, and that there are currently no parties that the Commission has excused from participation by electronic means in this proceeding.

/s/ Joe F. Childers
JOE F. CHILDERS