

**From:** [PSC Public Comment](#)  
**To:**  
**Subject:** RE: Public Comments for Case: 2022-00098 - East Kentucky Power Cooperative, Inc.  
**Date:** Friday, April 7, 2023 10:11:00 AM

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Case No. 2022-00098

Thank you for your comments on the application of East Kentucky Power Cooperative. Your comments in the above-referenced matter have been received and will be placed into the case file for the Commission's consideration. Please cite the case number in this matter, 2022-0098, in any further correspondence. The documents in this case are available at [View Case Filings for: 2022-00098 \(ky.gov\)](#).

Thank you for your interest in this matter.

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**From:** KY Public Service Commission Public Comments <psc.comment@ky.gov>  
**Sent:** Friday, March 31, 2023 3:13 PM  
**To:** PSC Public Comment <PSC.Comment@ky.gov>  
**Subject:** Public Comments for Case: 2022-00098 - East Kentucky Power Cooperative, Inc.

Public Comments for Case 2022-00098 submitted by \_\_\_\_\_ on Friday, March 31, 2023 at 3:13 PM

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Comments: EASTERN KENTUCKY POWER COOPERATIVE ("EKPC") 2023 INTEGRATED RESOURCE PLAN DOCKET #2022-00098 COMMENTS OF THE SOUTHERN RENEWABLE ENERGY ASSOCIATION March 31, 2023 The Southern Renewable Energy Association (SREA) is an industry-led initiative that promotes the use and development of renewable energy in the south. Since 2013, SREA has engaged in integrated resource plan (IRP) processes in Arkansas, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Tennessee and Virginia. We strive to provide the most up-to-date publicly available market information regarding renewable energy resource availability, pricing, performance and forecasting. SREA appreciates the opportunity to comment on the Eastern Kentucky Power Cooperative 2023 IRP. EKPC's IRP anticipates very little change over the next few years based on its IRP results, stating "EKPC has sufficient capacity resources to meet its forecasted summer load peaks through the IRP study period. It expects to utilize Power Purchase Agreements ("PPAs") to cover the future winter period needs for a hedge against energy price exposure and solar PPAs to meet its sustainability goals on an economic basis." This current IRP "Final Plan" includes adding 710 MW of new solar resources by 2027, followed by an additional 400 MW by 2032. Additionally, the Plan includes a 100 MW seasonal PPA in 2022, and a 225 MW peaking resource

added in 2032. No existing units are slated for retirement through 2036. Review of EKPC's Renewable Energy Assumptions EKPC does not publish its renewable energy cost assumptions publicly and heavily redacts many of its inputs. SREA chose not to formally intervene in this docket and thus we do not have access to the redacted materials listed in the IRP main document. IRP Table 8-2 only includes redacted Projected Capital Cost assumptions in dollar per kilowatt capacity (\$/kW), but does not provide other information regarding inflation rates, tax credit assumptions, or performance metrics such as capacity factors, capacity values or effective load carrying capacity (ELCC) analysis, equivalent forced outage rates (EFOR), heat rates, or other parameters necessary to fully evaluate new generation technology. Without providing full methodology and data input assumptions, stakeholders are unable to verify how reasonable or accurate EKPC's assumptions are. EKPC cites the National Renewable Energy Lab (NREL) Annual Technology Baseline (ATB) from 2021, and the Energy Information Administration (EIA) Annual Energy Outlook (AEO) from 2021; both data sources are publicly available but contain volumes of data that are specialized and unique depending on which data are ultimately selected for modeling purposes. It is entirely possible to select data from the NREL ATB or EIA AEO that are not representative of the true market opportunities available to EKPC. For example, renewable energy technologies are expected to continue to decline over time due to technological learning curves; thus, using a single year's worth of data from the NREL ATB or EIA AEO would be insufficient. The NREL ATB includes these learning curves for all technologies; however, it is unclear if EKPC adequately incorporated all of the NREL ATB's data and assumptions. Selecting inaccurate data as initial inputs to models inherently flows through to the final results, and can drastically impact modeling outputs, and ultimately influence the final plan. We request that EKPC publish data assumptions without redaction that rely on publicly available information so that non-intervening stakeholders may provide feedback. More Resources Should Be Evaluated Currently in the EKPC portion of the PJM generation interconnection queue there are over 3,540 MW worth of solar projects, 2,090 MW of solar plus storage (hybrid) resources, and 222 MW of battery resources. While there are no wind resource currently in the EKPC generation interconnection queue, if EKPC identified a wind energy need in the IRP, it is potential that wind energy development companies would enter into the PJM queue. Development companies often depend on IRPs as a market signal or a willingness to transact. By excluding wind resource assessment, EKPC effectively creates a self-fulfilling prophesy where few new developers wish to enter the queue if no market signal exists. In the 2019 IRP, EKPC included wind resources. In this 2023 IRP, EKPC chose to remove those resources from assessment. EKPC states that, "Wind was excluded from the screening due to the lack of significant wind resources in the EKPC zone, as noted on NREL wind speed maps, and the cost of a PPA with wind resources located in other areas of the PJM region." EKPC also states that, "To date, EKPC has participated in the evaluation of out-of-state wind projects but has not found any that fit its generation expansion needs." The purpose of an IRP is to identify what resources could be incorporated. Sensitivities can be run to determine the price point at which a new resource is added, and when. EKPC has missed an opportunity to more fully evaluate its options in its modeling regarding wind energy, batteries, and hybrid resources. KY PSC staff have previously noted this deficiency and the lack of rationale provided by EKPC in its technology assumptions. In response to the 2019 IRP, KY PSC staff noted that: "EKPC should provide greater support for and discussion of the rationale of its choices of alternative assumptions (such as different weather assumptions in the demand and supply-side forecasts), constraints, and decision parameters programed into the RTSim production cost and optimization models. As one example, Table 8-2 on page 136 presents nine resource options offered into the RTSim production cost model. There should be a more robust

detailed discussion as to why these particular options were chosen (such as cost, performance attributes, technology development, current and expected market characteristics) and why specifically other optional resources were rejected. In addition, EKPC should provide more explicit explanations for what environmental cost elements and uncertainties are included in the models. EKPC should include the potential effects of carbon regulation and how that could affect fuel and emission prices on the supply-side and ultimately the price of electricity on the load forecast.” KY PSC staff once again noted the deficiencies in Table 8-2 in this 2023 IRP. Staff state that: “EKPC’s resource assessment model was only permitted to select 100 MW simple cycle units, 225 MW simple cycle units, a 418 MW combined cycle units, 100 MW seasonal PPAs, and 100 MW energy only, solar facilities. However, the resource assessment portion of EKPC’s IRP simply identifies those resources as being included without an explanation for why they were chosen. Further, EKPC’s IRP never discusses nuclear energy or pumped storage, whether operated by EKPC or through a partnership, as resource options, and excludes other resources, such as hydroelectric and out-of-state wind facilities, with very little to no explanation. Thus, it was not clear from EKPC’s IRP how it chose the potential supply-side resources to include in the model and in particular why any specific generation resource was excluded from the model, including whether it was excluded for qualitative or economic reasons.” In effect, EKPC not only did not resolve the KY PSC staff’s requests after the 2019 IRP, but excluded even more resources in the 2023 IRP, without justification. SREA recommends that EKPC evaluate owned and contracted versions of solar, hybrid, batteries, wind resources, and transmission solutions. Further, we recommend including sensitivities that test different prices and impacts of federal policy. Finally, SREA recommends reviewing a new report by RMI entitled, “Reimagining Resource Planning,” and adopting the best practices provided in the report. Inflation Reduction Act Should be Incorporated EKPC could not have adequately forecasted the passage of the Inflation Reduction Act when this IRP was filed in April 2022; however, scenario-based resource planning could have been more instructive with a more robust scenario that included extensions of federal tax credits. Due to the lag time associated with the Kentucky IRP process, broader “bookends” of scenarios are necessary to capture reasonable market changes that may drastically impact the Company’s operation. We encourage EKPC to conduct and provide new analysis regarding the impact of the Inflation Reduction Act sooner rather than later. Capacity Planning is Deficient SREA’s concern with capacity-based planning is that that even if renewable energy cost assumptions were below avoided cost, a utility’s modeling methodology would refuse to select low-cost renewable energy, regardless of price. This has been proven true with other IRPs. Capacity-only planning leads to a Catch-22 for renewable energy resources. In instances where capacity needs are satisfactorily met under the status quo, a model will not select new low-cost energy resources and instead rely on higher cost capacity resources for energy delivery. However, when a capacity-based model is provided a capacity need (either through extensive retirements or significant load growth), renewable energy resources are only evaluated on their capacity value, not their low-cost energy contributions. Capacity-only planning leads to over-building of new natural gas power plants, when a mixture of low-cost renewable energy resources would likely lead to overall reduced ratepayer costs. To be clear, this is not an argument that all existing capacity resources should be retired. In normal dispatch operations, higher cost generation resources would be ramped down to accommodate lower cost renewable energy resources when available. Lower-cost energy-based resources reduce overall total costs; however, capacity-only planning does not take the normal dispatch operations into consideration. This is an unfair standard that always leads to devaluing renewable energy resources, while always building rate-based new natural gas power

generation. Synapse Energy Economics has noted the deficiency of capacity expansion models, stating: "In addition, some capacity expansion models are unable to endogenously retire EGUs, and require these decisions to be made outside of the model construct. While making decisions outside the model reduces computational requirements, it may introduce user error or bias. For example, a modeler may not review economic retirements, and thus fail to capture a cost-effective compliance mechanism." According to Moody's Investors Service, "Some coal plants still perform economically, but competitiveness could come under pressure as market conditions evolve...Most municipal- or G&T-owned coal plants in the US are old and have high production costs. According to the report, 72.3% of these plants, or about 65.0 gigawatts, have operating costs exceeding \$30 per megawatt hour, which Moody's views as the threshold above which coal plants are vulnerable to be displaced by cheaper generation options. Newer units that came online after 2000 use more efficient technology and run at lower heat rates and operating costs, enabling many of them to be competitive with the market and achieve higher capacity factors. Others are located adjacent to coal mines, allowing them to eliminate transportation costs from their overall fuel expenses. Nonetheless, each plant's competitiveness will ultimately depend on external factors including the price of natural gas and renewable energy in the vicinity, regional transmission organization reserve margins and the extent of political support for various fuels." As Moody's points out, broader energy market forces will render higher cost energy resources (such as existing steam turbine generation) obsolete and likely to be out-competed by lower cost energy resources such as renewable resources. Over-reliance on capacity-focused modeling underestimates renewable energy benefits while retaining older, less efficient generation. Taken to the extreme, a capacity-only planning process could lead to unusual model results that recommend significant power generation development or legacy generation retention that are rarely used, at the expense of low-cost energy options. This outcome appears to have occurred, given that low-cost wind energy and solar energy generation were not selected in the next few years in Plans 1, 2, 3, 4, or 5; yet, the Final Plan includes renewable additions in most years over the next decade. The Final Plan appears different from the Plans 1-5 because those plans rely heavily on capacity-based additions, but the Final Plan rightfully ignores those results to add energy resources. Still, it is unclear that the Final Plan is as robust as necessary to reduce costs and maintain system reliability. Capacity-focused planning does not initially address economic costs; alternatively, an energy-based financial dispatch model would efficiently dispatch necessary resources. EKPC should evaluate energy planning options, not just capacity. EKPC even noted that "All other intermittent or seasonal purchases are made to hedge the energy price exposure to the EKPC system, not to add "capacity." However, the current modeling practices do not adequately capture hedging opportunities, and thus EKPC ratepayers are likely over-paying for energy resources compared to current renewable energy offers. Re-launch Collaborative 2.0 Membership In its 2019 IRP, EKPC provided information regarding its Collaborative 2.0 stakeholder outreach efforts. SREA commended EKPC for its voluntary effort; however, in this IRP, the Collaborative 2.0 effort has gone unmentioned. We encourage the company to expand the membership to include utility-scale renewable energy development interests. Issue a Renewable Energy RFP Significant change has occurred since EKPC first filed its IRP in April 2022. EKPC recognized that "...market and fuel prices levels at the end of March 2022 are significantly higher than they were in the Fall 2021, when EKPC developed the price assumptions for this study." In August 2022, Congress passed into law the Inflation Reduction Act, which has significant implications for both the demand side and generation side of the IRP equations. EKPC's Final Plan includes an addition of over 700 MW of solar resources over the next five years. Given the rapid and significant

changes in the market due to natural gas prices and the Inflation Reduction Act, SREA recommends that EKPC immediately issue a 1,000 MW request for proposals for renewable resources and work with the National Renewable Cooperative Organization (NRCO) to conduct an analysis based on the updated bids. EKPC IRP Recommendations

- EKPC should move away from capacity-only or capacity-focused resource planning.
- EKPC should allow renewable energy to directly compete against existing generation units.
- The National Renewable Energy Lab's Annual Technology Baseline should be used for all renewable energy resource cost and performance assumptions.
- Energy storage resources should be allowed to access multiple revenue streams including but not limited to frequency control, voltage regulation, energy arbitrage, peaking and other value stacks.
- Cost projections for renewable energy and energy storage should continually decline over time, while performance projections should continually increase.
- Federal tax credits, including the PTC and ITC, should be incorporated for renewable energy and energy storage projects in accordance with the Inflation Reduction Act..
- Levelized cost of energy benchmarks (in \$/MWh values) should be provided for all energy resources. LCOE values should be similar to the NREL ATB values.
- Issue a 1,000 MW RFP for renewable energy resources to gather updated market information.
- Incorporate data from NRCO renewable energy RFP's into IRP planning.
- Expand the Collaborative 2.0 membership to include utility-scale renewable energy development.
- Review and adopt recommendations provided in the RMI report, "Reimagining Resource Planning"

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