COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

2022 INTEGRATED RESOURCE PLAN OF	)	
EAST KENTUCKY POWER	)	CASE NO. 2022-00098
COOPERATIVE, INC.	)	
	)	

JOINT INTERVENORS' SUPPLEMENTAL POST-HEARING COMMENT ON EAST KENTUCKY POWER COOPERATIVE INC.'S 2022 INTEGRATED RESOURCE PLAN

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JOINT INTERVENORS' SUPPLEMENTAL POST-HEARING COMMENT ON EAST KENTUCKY POWER COOPERATIVE INC.'S 2022 INTEGRATED RESOURCE PLAN

Pursuant to the Public Service Commission's ("the Commission") December 16, 2022 Order in this matter, Kentuckians for the Commonwealth, Kentucky Solar Energy Society, and Mountain Association (collectively, "Joint Intervenors") offer these supplemental post-hearing comments on the 2022 Joint Integrated Resource Plan ("IRP") of East Kentucky Power Cooperative, Inc. ("EKPC"). Joint Intervenors appreciate this comment opportunity, and seek to highlight areas where EKPC's resource planning could be materially improved, bringing us closer to realizing the shared goal of least-cost planning and reliable service.

In light of EKPC's November 1, 2022 Response Comments, hearing testimony, and responses to post-hearing information requests, Joint Intervenors emphasize four points below: (1) EKPC needs to be more proactive to realize the full potential in the Inflation Reduction Act; (2) EKPC's resource planning would benefit from greater integration of analyses across transmission, supply- and demand-side resources, including distributed energy resources; (3) transmission planning would further benefit from greater diligence; and (4) EKPC's limited transparency and direct engagement with the facts hindered development of the record, resulting in missed opportunities to develop more robust planning processes.

I. EKPC Must Be More Proactive to Tap the Full Potential of Federal Funding Avenues Presented By the Inflation Reduction Act.

The passage of the Inflation Reduction Act of 2022[1] ("IRA") provides unprecedented funding opportunities for rural cooperatives, renewable energy generation, energy efficiency,

[1] Inflation Reduction Act of 2022, Pub. L. No. 117-169, H.R. 5376, 117th Cong. (2022).

residential electrification, and more.[2] EKPC's witness, however, made plain at the hearing that the Cooperative is not proactively identifying or pursuing these opportunities.[3] EKPC witnesses appeared to still be of the view that no one can know the IRA's various impacts yet, and evaluating the IRA's impacts can wait until the next IRP, in 2025.[4] This is mistaken and imprudent. The transformational power of the IRA within EKPC's service territory will depend on whether EKPC makes choices that seize the opportunity to effectuate real, measurable, and meaningful change to meet stakeholder needs.

Joint Intervenors offer three examples of ways the IRA is immediately actionable and more certain than EKPC represents. First, on the face of the IRA, direct pay provisions newly allow EKPC to benefit from tax credits for renewable energy projects that were previously limited to taxable entities.[5] It is surprising that EKPC would not recognize, immediately, how direct pay changes the appropriate capital cost assumptions for clean energy resources in resource modeling. With near-term acquisitions in its IRP, prudency requires first re-running the

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[2] *See, e.g.*, Joint Intervenors' Initial Comment on East Kentucky Power Cooperative Inc.'s 2022 Integrated Resource Plan at 6–15 (Oct. 11, 2022), https://psc.ky.gov/pscecf/2022-00098/ashley%40kyrc.org/10112022102431/2022-00098_EKPC_2022_IRP_Joint.Intervenors.Initial.Comment_.Final_-REDACTED.pdf (surveying Inflation Reduction Act provisions relevant to EKPC) ("Joint Intervenors' Initial Comment").

[3] *E.g.*, Testimony of Julia Tucker, Dec. 13, 2022 Hearing Video Transcript ("HVT") at 14:55:22–14:55:43; 15:20:23–15:21:58; 15:22:43–15:23:00.

[4] *E.g.*, Response Comment of East Kentucky Power Cooperative, Inc. at 7 (Nov. 1, 2022), https://psc.ky.gov/pscecf/2022-00098/allyson%40hloky.com/11012022033838/EKPC_Final_Response_to_Comments_-_221101.pdf ("EKPC Response Comment").

[5] IRA Section 13801; Jeffrey McManus, *Climate Law a Game-Changer for Clean Energy in Rural America*, NRDC (Sept. 19, 2022), https://www.nrdc.org/experts/jeffrey-mcmanus/climate-law-game-changer-clean-energy-rural-america.

modeling with those costs updated, testing whether additional or different acquisitions may be lower cost.

In response to Joint Intervenors' post-hearing requests, EKPC admits that they have not yet determined how potential increased federal funding for weatherization, efficiency improvements, and home energy retrofits may impact its long-term load forecast.[6] The IRA has been final for several months; EKPC has now had more than sufficient time to analyze the legislation's impact. EKPC should be much further along than the "very preliminary stages"[7] of this analysis.

Other utility companies are far beyond EKPC in evaluating the totality of potential funding. For example, Duke Energy, one of the largest utilities in the nation, is planning to deploy massive amounts of new wind and solar energy to replace their aging coal power plants, with plans to pass on savings to customers. Duke Energy Chief Financial Officer Brian Savoy says Duke will provide a $56 million refund to its customers in Florida next year for solar production tax credits it will earn under the new federal legislation.[8]

As Sam Walsh, Department of Energy general counsel, explains: "[w]e have a once-in-a-lifetime set of incentives that are on the table. The biggest risk for ratepayers would be a failure

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[6] Response of East Kentucky Power Cooperative to Joint Intervenor Post-Hearing Data Requests, Question 8 (Dec. 22, 2022) ("EKPC Response to JI Post-Hearing Q").

[7] *See* EKPC Response to JI Post-Hearing Q7 and Q8.

[8] Mark Chediak, *Big Utilities See Inflation Reduction Act Helping Reduce Customers' Energy Bills*, Bloomberg (Nov. 14, 2022), https://www.bloomberg.com/news/articles/2022-11-14/big-utilities-see-inflation-act-helping-reduce-customers-bills?leadSource=uverify%20wall.

to capitalize on that right now. Even for that 10-year tax credit window, the planning has to start now."[9]

Further, in response to opposition to any recommendation to reevaluate resources based on changes arising from the IRA, Staff in their report on the LG&E/KU 2021 IRP explained that their "intention in suggesting that the RFP responses should be updated in light of the Inflation Reduction Act is to ensure the least-cost, most reasonable resource is selected."[10] In a similar manner, EKPC should update their cost assumptions modeled for this IRP to reflect direct pay tax credits made available by the IRA before pursuing any new acquisitions.

Second, and relatedly, the potential to site new resources in "energy communities" unlocks an additional ten percent tax credit, and can be analyzed on the face of the Act using public data sources. But EKPC witnesses indicated at the hearing that EKPC has not yet determined the portion of its service territory that qualifies as an "energy community,"[11] and EKPC further explained the state of its progress through post-hearing data request:

> EKPC has requested preliminary data from a third party to begin the identification of "energy communities" within its service territory. This development is in very early stages. Much more investigation will be required before a reasonable determination of what "Energy Communities" exist within the EKPC service territory.[12]

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[9] Ethan Howland, *Inflation Reduction Act upends utility resource planning tenets: NARUC panelists*, Utility Dive (Nov. 17, 2022), https://www.utilitydive.com/news/inflation-reduction-act-ira-resource-planning-irp-naruc-nextera/636801/.

[10] Order Appendix: Commission Staff's Report on the 2021 Integrated Resource Plan of Louisville Gas and Electric Company and Kentucky Utilities Company, at 66, *In re: Electronic 2021 Joint Integrated Resource Plan of Louisville Gas and Electric Company and Kentucky Utilities Company*, Case No. 2021-00393 (Sept. 16, 2022), https://psc.ky.gov/pscscf/2021%20Cases/2021-00393//20220916_PSC_ORDER.pdf.

[11] Testimony of Julia Tucker, Dec. 13, 2022 HVT at 15:22:43–15:23:00.

[12] EKPC Response to JI Post-Hearing Q7.

Joint Intervenors find this explanation concerning, given the ready availability of public data sources needed to identify energy communities in EKPC's service.[13] Since the hearing, Joint Intervenors undertook this task, and found substantial portions of EKPC's territory that can reasonably be expected to qualify for that ten percent energy community adder, as explained and reflected in the maps below.

On its face, the IRA provides discrete and identifiable characteristics to define "energy communities,"[14] including (i) brownfield sites, (ii) areas of fossil fuel employment or high unemployment, and (iii) coal retirement areas.[15] In the maps below, areas with recent coal mine closures or coal unit retirements are based on Resources for the Future's ("RFF") analysis of data from the Mine Safety and Health Administration (for coal mine closure locations) and the U.S. Energy Information Administration (for coal generating unit closure locations), which are straightforward to analyze and filter for such information.[16]

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[13] Joint Intervenors also note the lack of concrete information in EKPC's response make it difficult to understand what exactly EKPC is pursuing. The response lacks information defining the data sought or explaining what is "preliminary" about that data, does not identify the third-party collecting that data or explain that third-parties' relationship to EKPC, and does not explain what additional stages or investigation will be necessary beyond this "early stage."

[14] EKPC Post-Hearing Response 7 (providing the definition of an "energy community" as it appears in the legislation).

[15] According to EKPC's post-hearing response 7, "EKPC has requested preliminary data from a third party to begin the identification of 'energy communities' within its service territory. This development is in very early stages." This response is notably unhelpful, lacking any real information about what is "preliminary" about the data, what the data consists of, who the third party is, or why it would be necessary to retain third-party assistance. More concerning, given the various public sources for the necessary data, Joint Intervenors wonder why the task presents such a challenge.

[16] Daniel Raimi & Sophie Pesek, *What Is An "Energy Community"? Alternative Approaches for Geographically Targeted Energy Policy*, Resources for the Future (Nov. 2022), https://media.rff.org/documents/Report_22-12_AxXwJqy.pdf ("RFF Report").

Areas that exceed the statutory employment threshold[17] can also be estimated to determine eligibility. For example, RFF researchers rely upon U.S. Census Bureau's County Business Patterns data to determine areas with more than 0.17% fossil fuel employment, and they rely on Bureau of Labor Statistics data to determine if unemployment was higher than the previous year.[18] The RFF researchers explored three different methodologies for defining these employment areas, the one displayed in the maps below is their "central" approach.[19]

Even using this conservative approach and not including brownfields,[20] Figure 1 below shows that much of Kentucky qualifies either as an energy community, a low-income community,[21] or as both. Figure 2 shows tax incentive eligible areas within EKPC service areas.

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[17] The second prong of the "energy community" definition includes any 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), and (II) has an employment rate at or above the national average unemployment rate for the previous year (as determined by the Secretary)." *Id.* at 5.

[18] *Id.* at 13–16.

[19] *Id.* at 14–16.

[20] Using publicly available data, brownfield sites are readily identifiable. Because brownfields are small areas of land, we do not focus on them in this mapping exercise, but there are many such sites in the state of Kentucky that could be redeveloped for renewable energy to claim this tax benefit.

The Kentucky Energy and Environment Cabinet maintains a Kentucky Brownfield inventory that is updated regularly with site specific information. Energy and Environment Cabinet, *Kentucky Brownfield Sites*, Team Kentucky, https://eec.ky.gov/Environmental-Protection/brownfields/Pages/ky-brownfield-inventory.aspx (last visited Feb. 1, 2023).

[21] Low-Income communities are straightforward to determine based on American Community Survey ("ACS") data. The data displayed in these figures represent areas that fit the Low-Income Community definition based on 2016-2020 ACS five-year estimates. Shapefile downloaded directly from ESRI, *Low Income Community Census Tracts – 2016-2020 ACS*, ArcGIS Online, https://www.arcgis.com/home/item.html?id=573b883f8fd1487991a3136759b00d9c#overview.

Lastly, Figure 3 displays low-income and energy communities within specific service areas of EKPC member-cooperatives.

Figure 1. Energy and Low-Income Communities in Kentucky

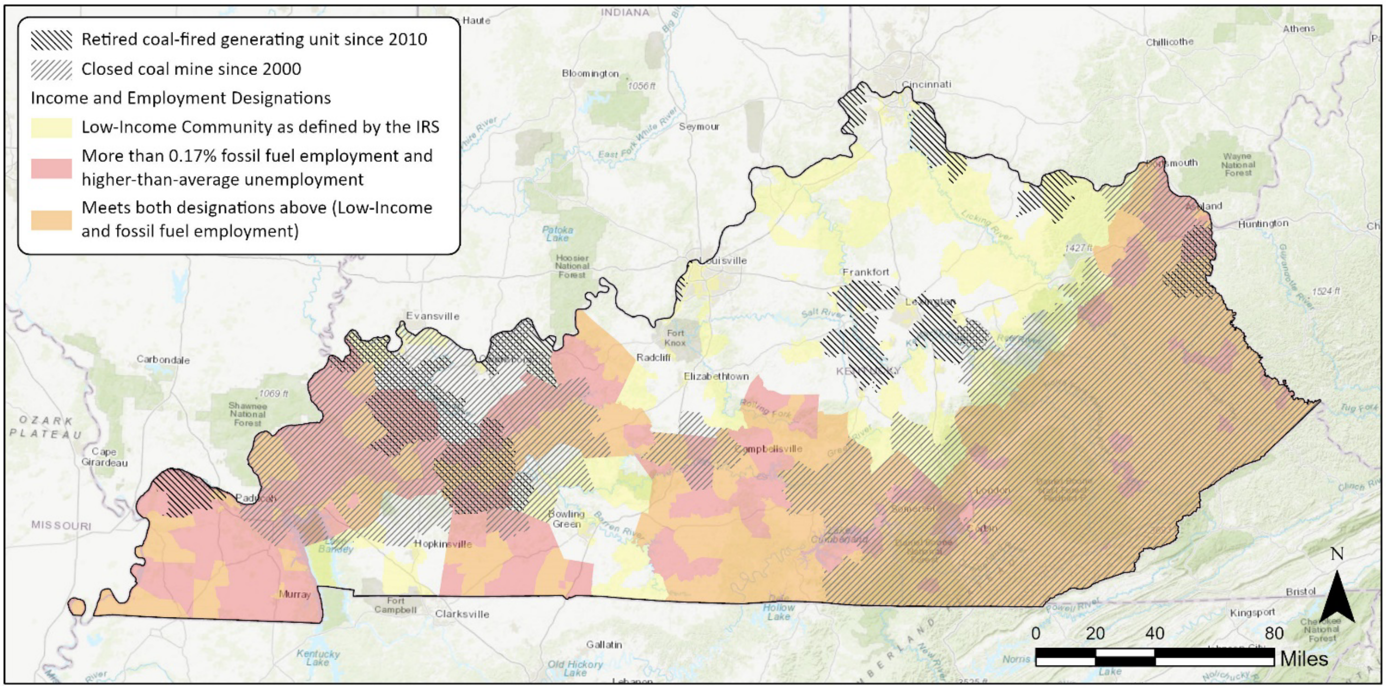


Figure 2. Energy and Low-Income Communities within EKPC Territories

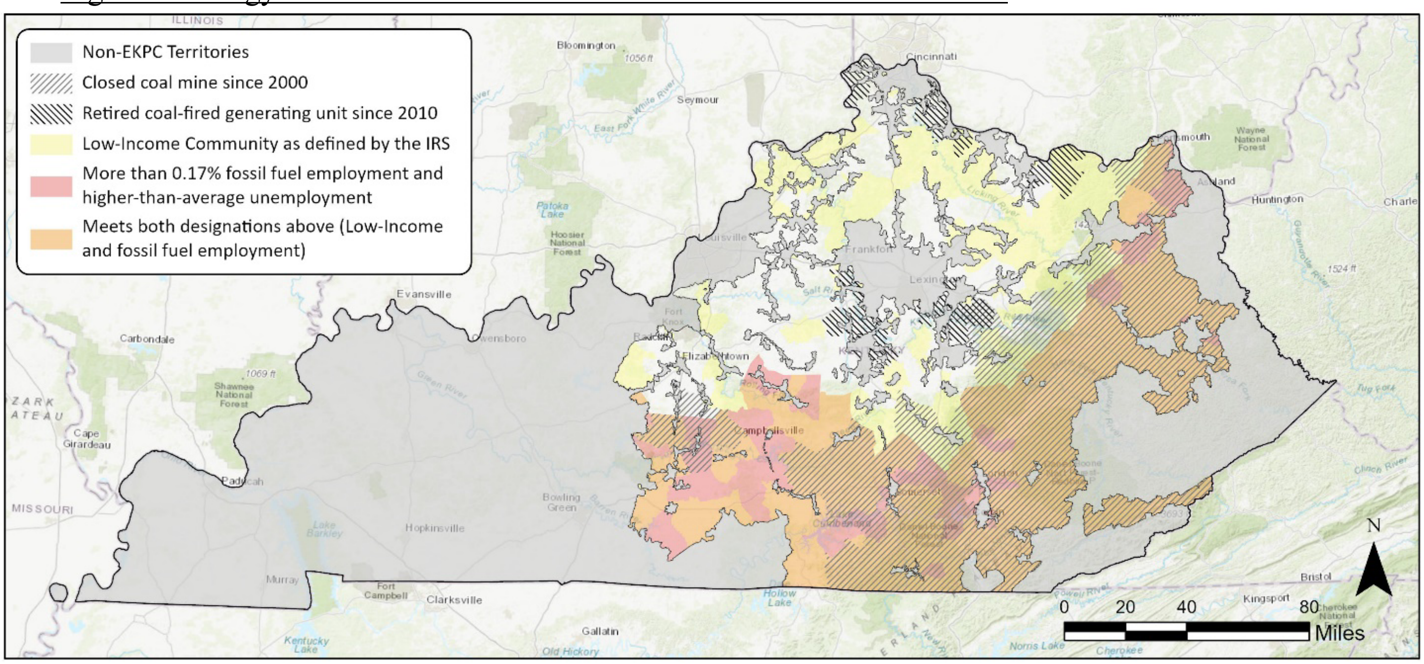
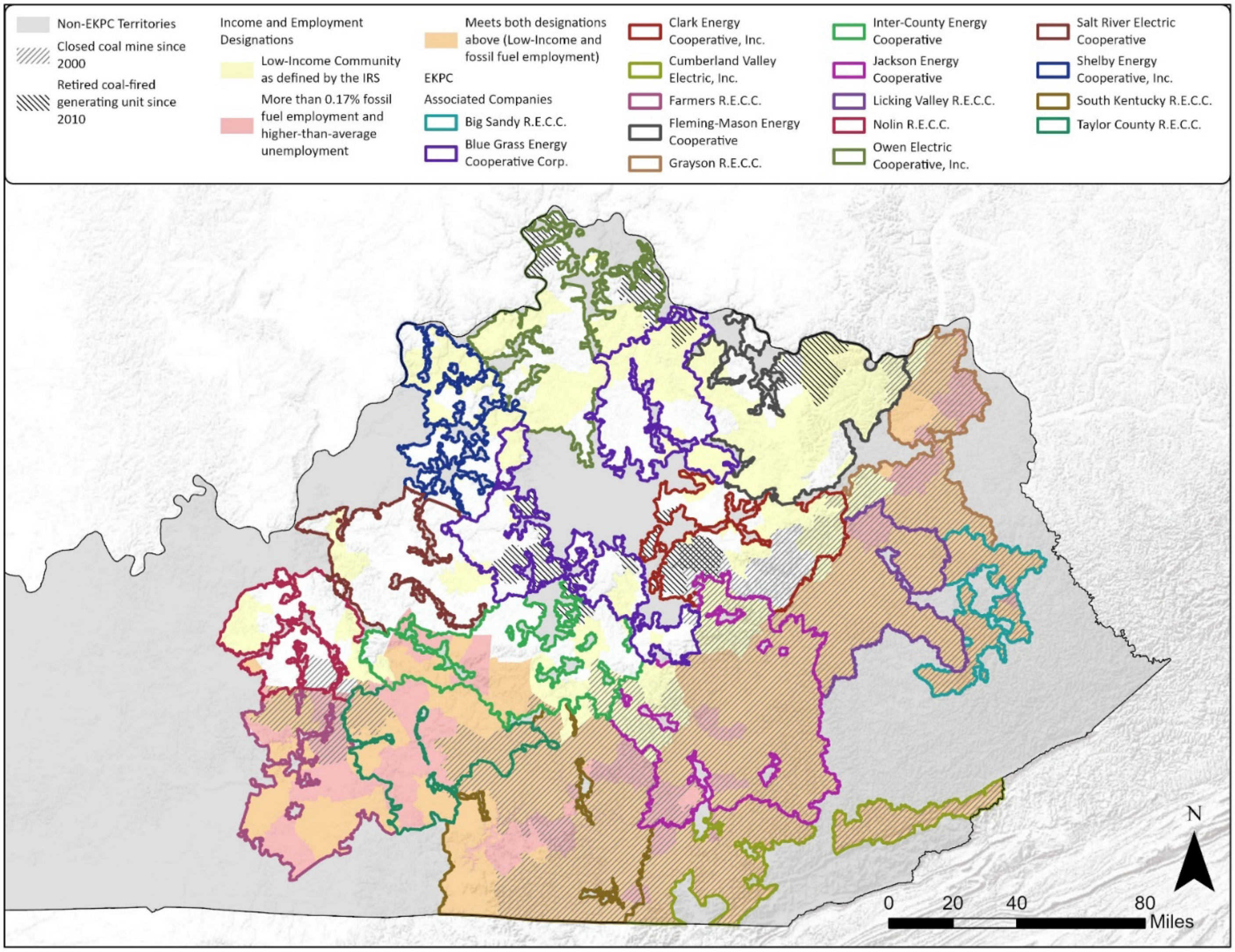


Figure 3. Energy and Low-Income Communities within EKPC Service Areas



As this effort shows, the IRA is more certain and actionable than EKPC represents. While the foregoing focused on direct pay tax credit eligibility, there are at least two more facets of the IRA that EKPC can and should be proactively pursuing. First, IRA Section 22004's $9.7 billion appropriation for grants and loans for renewable energy and zero-emission resources to rural electric cooperatives through the U.S. Department of Agriculture.[22] EKPC could seek up to $970 million in grants and loans for qualifying projects, and must be proactively engaged in pursuing that opportunity. For example, the Department of Agriculture has been holding listening sessions and encouraging written comments on how to implement this expanded IRA funding opportunity, including how to develop and prioritize project submissions.[23] Based on EKPC witnesses' testimony, it is not clear that any EKPC Staff has been participating in that agency process, and it does not appear that EKPC has submitted written comment in the alternative.[24]

Second, IRA Section 22001's one-billion-dollar appropriation, again to the Department of Agriculture, to fund loans financing construction of electric distribution, transmission, and generation facilities, including improvements and replacements needed to improve electric service to rural communities.[25] Also known as USDA 317 Loans, the IRA newly directs the

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[22] IRA Section 22004 (amending Section 9003 of the Farm Security and Rural Investment Act of 2002, 7 U.S.C. § 8103, to appropriate funds for USDA assistance to rural electric cooperatives); *see also* Press Release, *Electric Co-ops Cheer Inclusion of Key Co-op Priorities in Senate-Passed Inflation Reduction Act*, NRECA (Aug. 7, 2022), https://www.electric.coop/electric-co-ops-cheer-inclusion-of-key-co-op-priorities-in-senate-passed-inflation-reduction-act.

[23] *See* Inflation Reduction Act Listening Session, 87 Fed. Reg. 65,188, 65,189-90 (Oct. 28, 2022) (announcing listening sessions for input on implementation of IRA sections 22001 to 22004 on Nov. 3 & 4, 2022).

In response to requests for additional opportunities for public input, the Rural Utility Service and USDA hosted listening sessions throughout January 2023 to allow for stakeholder feedback and discussion regarding available IRA funding for renewable energy projects in rural communities. *See* Erik Hatlestad, *IRA REC Public Sessions Start this Week*, Rural Power Coalition (Jan. 17, 2023), https://www.ruralpower.us/blog/ira-rec-public-sessions-start-this-week.

[24] USDA Rural Business-Cooperative Serv., *IRA Listening* Session, Docket ID No. RBS-22-NONE-0025, https://www.regulations.gov/document/RBS-22-NONE-0025-0001/comment (no written comment from EKPC on implementation of IRA sections 22001 to 22004) (last visited Feb. 1, 2023).

[25] IRA Section 22001 (amending Section 9003 of the Farm Security and Rural Investment Act of 2002, 7 U.S.C. § 8103, to provide additional funding for renewable energy loans).

Department of Agriculture to develop loan forgiveness guidelines, making it possible that these already low-cost loans for investments in solar, wind, hydro, biomass, geothermal, and energy storage may sometimes function more like grants.

At minimum, EKPC must act now to: (1) analyze available tax credits and incentives to understand what is required to capture those benefits, including engagement with implementing state and federal agencies; (2) identify eligible areas within its service territory that qualify as "energy communities" or "low-income communities," as defined in the legislation; and (3) working in close partnership with stakeholders, implement these provisions in a manner that allows customers to share in the gains from the transition to a green economy.

These recommendations are consistent with Joint Intervenors' position throughout this proceeding, and with the views of a number of public commenters. As the following excerpts reflect, through public comments, customers are telling EKPC what they need and depending on EKPC's leadership to capitalize on federal funding opportunities to meet those needs:

> Weekly, we read innovations that promise to improve renewables and energy storage, while the IRP is still depending on a fifty-year-old coal plant in a world approaching climate disaster. EKPC needs to be in the front of the line for the Inflation Reduction funds so they can retire debts, lower costs, and innovate.[26]
>
> It is clear that we need to focus on renewable energy and move away from fossil fuels. In addition, energy EFFICIENCY should be a priority. Please take advantage of every available tax incentive and credit in order to provide people with the lowest cost energy possible. We need to be focused on a resilient KY for EVERYONE, not just the coal and natural gas companies. We need a plan to transition to renewable energy NOW (or 20 years ago).[27]
>
> This IRP is lacking in so many ways for EKPC customers. Co-ops can and should be leaders in planning and implementing energy projects that help the people they're serving and protect the environment. Like most folks, my electric bill is

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[26] E. Gail (Elizabeth) Chandler, Public Comment in Case 2022-00098 (Dec. 6, 2022).

[27] Lauren Kallmeyer, Public Comment in Case 2022-00098 (Dec. 7, 2022).

> high and getting higher. I'm so frustrated to not see any energy efficiency programs or community solar programs that could help me and other non-homeowners. We have so many federal funds and tax incentives coming in the next few years that EKPC should be tapping into. The people of KY desperately need these programs both to lower our energy bills and make sure we continue to have reliable energy, which means renewables.[28]
>
> The member-owners that are served by EKPC deserve a new and completely redesigned Integrated Resource Plan, fully informed by the wants and needs of EKPC's stakeholders, that maximizes the new opportunities at hand and directly invests in our communities. We have the tools to lower our bills, become more resilient, and create good local jobs that can never be outsourced, and need our utilities to lead on these investments. Both the need and the moment are unprecedented. If EKPC waits three more years to do this, many of those opportunities will be lost.[29]

EKPC's reluctance to evaluate the implications of the IRA may result in a failure to obtain funding that is much needed within its service area. As reflected in the public comments submitted in response to EKPC's IRP, members of the public are eager to see EKPC take immediate action in evaluating opportunities presented by the IRA.

> Now is the time to invest in the newer more environmentally friendly sources of power. I'm disappointed there is not more solar and hydro plant investment planned. Especially with the recent Inflation Reduction Act incentives, I would think the Co-op would be eager to re-think this Plan and re-write it in view of the huge opportunities this new legislation offers in investments along these lines, both for the co-op and for individual families and businesses which make up its membership. Aggressive action here would be appropriate. (Ruth Meyers)

II. To Achieve and Maintain Least-Cost Portfolios, EKPC Needs Resource Planning That Genuinely Integrates Analysis of Transmission, Supply- and Demand-Side Resources.

At the hearing, across multiple witnesses, EKPC showed a need for more integrated and proactive planning processes. Transmission analyses were not informed by generating portfolio

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[28] Corey Dutton, Public Comment in Case 2022-00098 (Dec. 12, 2022).

[29] Phillip Woolery, Public Comment in Case 2022-00098 (Dec. 12, 2022).

needs, generating unit economics, or non-wires potential; unit retirement decisions are made on the basis of depreciation schedules, irrespective of cost, risk, and reliability implications; and a robust study of Demand-Side Management/Energy Efficiency ("DSM/EE") potential turned out to have nothing to do with the IRP. Each discussed below, EKPC's future long-range planning exercises would benefit from addressing these shortcomings, which individually and combined, frustrate least-cost planning.

A. The IRP regulation, EKPC's statutory obligations, public policy, and good business sense call for proactive, *integrated* resource planning.

The segmented, casual character of EKPC's planning process falls short of the rigor the IRP rules require. Kentucky law requires fair, just, and reasonable utility rates,[30] and the Commission has long-recognized that "'least cost' is one of the fundamental principles utilized when setting rates that are fair, just, and reasonable."[31] Integrated Resource Planning, in turn, uses regular reporting and Commission review to ensure electric utilities develop plans "to meet future demand . . . at the lowest possible cost for all customers . . . ."[32]

To achieve lowest-cost planning, Kentucky regulations require *integrated* analysis of possibly cost-effective generation, demand-side, and transmission resources.[33] That requirement explicitly includes analysis of "[i]mprovements to and more efficient utilization of existing utility generation, transmission, and distribution facilities."[34]

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[30] KRS §§ 278.030(1), 278.040.

[31] *In the Matter of: Application of Kentucky Power Co.*, Case No. 2009-00545, 2010 WL 2640998 (Ky. P.S.C. 2010).

[32] 807 KAR 5:058 (Necessity, Function and Conformity).

[33] 807 KAR 5:058, Section 8(1)–(2).

[34] *Id.* at Section 8(2)(a).

These requirements are sensible. Identifying lowest-cost options through integrated resource planning requires cohesive analyses that put *all* resource options on equal footing. The Regulatory Assistance Project observed this long ago in a 2013 report, *Best Practices in Electric Utility Integrated Resource Planning*:

> Integrated resource planning has many benefits to consumers, and other positive impacts on the environment. This is a planning process that, if correctly implemented, locates the lowest practical costs at which a utility can deliver reliable energy services to its customers. IRP differs from traditional planning in that it requires utilities to use analytical tools that are capable of fairly evaluating and comparing the costs and benefits of both demand- and supply-side resources. The result is an opportunity to achieve lower overall costs than might result from considering only supply-side options. In particular, the inclusion of demand-side options presents more possibilities for saving fuel and reducing negative environmental impacts than might be possible if only supply-side options were considered.[35]

B. EKPC's approach to transmission, supply- and demand-side resource planning lacks integration and frustrates least-cost planning.

In at least three respects, EKPC's hearing testimony and post-hearing responses showed that the Cooperative's resource planning silos each major component of their system, without truly integrated analysis.

First, EKPC has not sufficiently integrated transmission planning with other resource planning, particularly generation resources. EKPC Witness Adams could not recall an instance where EKPC undertook a holistic look at both generation and transmission.[36] Instead, it appears transmission planning is focused on transmission solutions; and generation planning is focused

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[35] Rachel Wilson and Bruce Biewald, *Best Practices in Electric Utility Integrated Resource Planning: Examples of State Regulations and Recent Utility Plans* at 4, Regulatory Assistance Project (June 2013), https://www.raponline.org/wp-content/uploads/2016/05/rapsynapse-wilsonbiewald-bestpracticesinirp-2013-jun-21.pdf.

[36] Dec. 13, 2022 HVT at 9:48:27–9:49:01.

on generation solutions.[37] That leaves EKPC's transmission planning too trained on traditional "wires" solutions, with non-wires solutions only evaluated when specifically requested.[38]

Illustrating the problem, EKPC is twenty months into a transmission study to consider resources necessary for Cooper Station's eventual retirement, but only recently elected to explore converting Cooper Station to synchronous condensers[39] – which EKPC considers a "generation solution."[40] While it is encouraging that EKPC is now evaluating this potentially cost-effective option, more is needed. EKPC should be evaluating all potentially cost-effective solutions, whether labeled as transmission solutions or not.

Second, on the supply-side, EKPC only looks at half of the equation: potential resource additions. EKPC missed the opportunity to evaluate the operating economics of its existing resources, assuming uncritically that a unit's depreciation schedule should alone determine optimal retirement timelines. At the hearing, EKPC's witness confirmed that their current modeling software is capable of evaluating unit retirements,[41] and EKPC should be running that analysis as a matter of course with every triennial IRP.

Third, instead of integrated modeling of supply- and demand-side resources on equal footing, EKPC treated demand response, energy efficiency, and distributed energy resources like

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[37] Dec. 13, 2022 HVT at 09:48:30 – 9:49:00 (witness unaware of instance where EKPC evaluated transmission and generation options holistically); 10:19:24–10:20:23 (distinguishing between transmission and generation solutions); 10:06:18–10:07:32 (not evaluating combinations of resources to address given issue).

[38] Dec. 13, 2022 HVT at 10:21:29–10:22:06.

[39] Joint Intervenors' Initial Comment at 28 (discussing FirstEnergy's conversion of a retiring coal unit to synchronous condensers)

[40] Dec. 13, 2022 HVT at 10:22:18–10:24.

[41] Dec. 13, 2022 HVT at 13:27:43–13:27:58.

fixed inputs, determined outside the modeling. That was the case despite the fact that EKPC, to its credit, worked with third-party GDS to develop and report a service-territory specific analysis of economically achievable demand-side potential. However, at the hearing, EKPC witnesses disappointingly clarified that the GDS Potential Study did not really inform that IRP at all.[42] That Study should be more than a paperweight; it should be a resource that enables EKPC to develop DSM resource options for evaluation in the RTSim modeling.[43] That cost-effective demand-side potential should then be analyzed on equal footing with supply-side resources in the resource optimization modeling.

EKPC's next IRP must also be certain to comprehensively consider the IRA's implications for the cost effectiveness of demand-side resources. The IRA will impact the affordability and accessibility of energy saving investments through programs including Energy Efficiency Home Improvement Credits for up to 30% of qualified improvements.[44] Residential Clean Energy Credits providing up to a 30% tax credit for the installed costs of behind-the-meter generation and battery storage,[45] and over nine billion dollars to fund direct point-of-sale rebates for energy efficiency home heating/cooling equipment and appliances.[46] The ability and eagerness of individual households to take advantage of these opportunities is to be determined.

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[42] Dec. 13, 2022 HVT at 11:25:45–11:27:00.

[43] Dec. 13, 2022 HVT at 14:07:10–14:07:52 (explaining RTSim could evaluate DSM, but EKPC has not used model for that analysis)

[44] IRA Section 13301 (amending 26 U.S.C. 25C to extend, increase, and modify tax credits for residential home energy efficiency improvements).

[45] IRA Section 13302 (amending 26 U.S.C. 25D to extend and expand tax credits for residential clean energy investments, including distributed solar and battery storage.

[46] IRA Sections 50122 (appropriating funds for state residential high efficiency rebate programs), and 50121 (appropriating funds for state whole-house rebate program, HOMES).

But that does not mean there is nothing for EKPC to do but wait. To the contrary, EKPC is best-positioned to be a resource to its member-owners, educating them on and helping them access these opportunities. Maximizing individual IRA rebates and credits will contribute to reducing EKPC's system peak, reducing overall energy demand, and increasing bill affordability. By stepping into that role, EKPC might also protect against member-owners being scammed by bad actors or getting poorly installed or only mildly better equipment. It is essential for EKPC to consider how, through energy advisors, energy audits, and inclusive utility investments, it can help maximize these demand-side opportunities.

Each of these examples reflects a missed opportunity for truly integrated planning, that simultaneously evaluates opportunities across multiple systems, identifying efficiencies and lowest-cost potential. Going forward, Joint Intervenors encourage Staff to recommend and EKPC to adopt holistic analyses of generation and transmission, seeking out opportunities for more efficient utilization of existing assets,[47] and ensuring all potentially low-cost options are evaluated.[48] Joint Intervenors also encourage and recommend that resource optimization modeling include integrated evaluations of economically optimal retirement timelines for existing resources and evaluations of demand-side resources. That sort of integrated methodology is critical to ensuring the analysis accurately reflects all the contributions different resources have to offer, and fairly evaluates all resources in concert.

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[47] 807 KAR 5:058 Section 8(2)(a).

[48] 807 KAR 5:058.

III. EKPC Owes Its Customer-Owners Greater Diligence, Coordination, and Transparency in Transmission Planning.

Based on EKPC's Response Comment, hearing testimony, and post-hearing responses, Joint Intervenors would encourage greater diligence, coordination, and transparency in EKPC's transmission planning. In this IRP proceeding, EKPC's information responses hinted at a transmission problem forcing the perpetual operation of Cooper Station, with only two studies of the problem disclosed for discussion: (1) the 2007-vintage power flow analysis purportedly identifying voltage support risks in the event of a simultaneous outage of Cooper Station and all Wolf Creek Dam units; and (2) a study commenced in April 2021, that has continued throughout this IRP proceeding.

EKPC has not produced any intervening power flow analyses completed since 2007; it remains unclear whether this is because it cannot produce them (because it does not have them) or because it has them but is unwilling to produce them. Without them, and in light of the fact that the study that EKPC commenced in April 2021 has not been completed, the problem EKPC hinted at months ago still cannot be evaluated by the Commission, Staff, or stakeholders. EKPC appears to insist such intervening studies exist,[49] and if that is accurate, EKPC should be more forthcoming in future proceedings.

Joint Intervenors similarly cannot explain why EKPC has not approached this alleged transmission constraint with more diligence. According to EKPC's post-hearing responses, a specific study of this issue began in April 2021,[50] but could not be produced as part of this proceeding because it remained unfinished into the fall of 2022. By the time of the hearing, the

[49] EKPC Response Comment at 9.

[50] EKPC Response to JI Post-Hearing Q1.

study had been ongoing for approximately twenty months (April 2021 through December 2022), yet EKPC Witness Adams could not commit to a timeline for completion.[51] In response to post-hearing information requests, EKPC states that the study will be completed in the second quarter of this year.[52]

According to EKPC, additional time is needed for the study because "EKPC staff has learned post-hearing of new plans for generation unit retirements and additions by [LG&E/KU]," and EKPC intends to update its studies accordingly.[53] Joint Intervenors understand this post-hearing response to refer to more than the LG&E/KU generation change that EKPC's Director of Transmission Planning learned about during the hearing: LG&E/KU's plan to retire E.W. Brown Unit 3 in 2028. But EKPC does not identify which additional generation changes require study updates.

Setting aside whichever additional generation changes may be at issue, it is troubling that EKPC would learn in this IRP hearing about LG&E/KU's retirement timeline for Brown Unit 3, which was announced publicly as early as November 25, 2020.[54] It suggests a lack of diligence and results in wasted effort for EKPC to have spent twenty months toiling on a study that, all along, had stale information on a critical unit. At a minimum, a reasonably diligent study should

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[51] Dec. 13, 2022 HVT at 9:28:46–9:29:10.

[52] EKPC Response to JI Post-Hearing Q1b.

[53] *Id.*

[54] *In re: Electronic Application of Kentucky Utilities Company [and Louisville Gas & Electric Company] for an Adjustment of Its Electric Rates, a Certificate of Public Convenience and Necessity to Deploy Advanced Metering Infrastructure, Approval of Certain Regulatory and Accounting Treatments, And Establishment of a One-Year Surcredit*, Case Nos. 2020-00349 and 2020-00350, Direct Testimony of Lonnie E. Bellar at 9 (PDF 80) (providing updated retirement years for Brown 3, Ghent 4, Mill Creek 1-4, and Trimble County 1), available at https://psc.ky.gov/pscecf/2020-00350/rick.lovekamp%40lge-ku.com/11252020085918/10-LGE_Testimony_1of4%28Thompson_Blake_Bellar_Sinclair_Wolfe_Saunders%29.pdf.

incorporate publicly available information, particularly with respect to the resource plans of adjoining utilities and those with shared obligations to the Commonwealth.

Lastly, Joint Intervenors cannot explain how, in light of the original study's timeline, EKPC could possibly redo the study by Q2 2023, as stated in EKPC's post-hearing responses.[55] It would be helpful for EKPC to explain the significant difference in timeframe (twenty months of April 2021 to December 2022 versus six months of January 2023 through the end of Q2 2023).

With these concerns, Joint Intervenors encourage the Commission and Commission Staff to closely follow EKPC's ongoing transmission study efforts. The results of that study will surely be "supportive and informative"[56] in future cases concerning resource planning, resource acquisitions, fuel cost recovery, and more.

IV. EKPC Failed to Take Seriously the Importance of Transparency and Substantive Stakeholder Engagement in the IRP Process, to the Detriment of the Record in this Proceeding.

A. Prior to the hearing, EKPC failed to provide RTSim modeling files and clear explanations of how the modeling was used.

As Energy Futures Group emphasized in their report submitted with Joint Intervenors' comments (the "EFG Report"),[57] it is important for intervening parties to be able to review the modeling methodologies – including directly reviewing the modeling input and output files

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[55] EKPC Response to JI Post-Hearing Q1.

[56] EKPC Response to JI Post-Hearing Q1c.

[57] Energy Futures Group, *Report on East Kentucky Power Cooperative's 2022 Integrated Resources Plan* (Oct. 2022), attached as Ex. 1 to Joint Intervenors' Initial Comment (Oct. 11, 2022) (hereinafter "EFG Report").

themselves – that are used by utilities to develop their IRPs.[58] Not providing a clear description of modeling methodologies and limiting stakeholders' ability to review this information reduces transparency and replicability, limiting the ability of stakeholders to peer review the company's modeling and assist the Commission in unpacking the key assumptions and policy decisions that may be embedded therein.[59]

Under questioning at the hearing, EKPC Witness Fernie Williams admitted that EKPC did not provide a number of key modeling files in response to discovery. Specifically, Joint Intervenors' Request 40 asked EKPC to "[p]lease provide, in spreadsheet format with all formulas and links intact, the RTSim input and output files used in the production of this IRP."[60] At the hearing, however, Witness Fernie Williams acknowledged that EKPC did not provide input files showing capital costs,[61] startup characteristics, unit ramp rates, or estimated variable costs.[62] Mr. Williams further explained that he read Joint Intervenors' request for "RTSim input and output files" to only refer to files relating to the RTSim production cost model, but *not* the RTSim resource optimizer model.[63] EKPC's failure to provide this information in discovery prevented Joint Intervenors from fully understanding EKPC's modeling methodology prior to the hearing, including how EKPC used the RTSim model, which steps EKPC took, and which inputs it developed external to the model.[64]

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[58] EFG Report at 29–30.

[59] *Id.*

[60] Initial Data Requests of Joint Intervenors, Question 40 (June 30, 2022).

[61] Dec. 13, 2022 HVT at 13:30:36–13:30:56.

[62] Dec. 13, 2022 HVT at 13:34:52–13:35.

[63] Dec. 13, 2022 HVT at 13:32:14–13:32:35:50.

[64] EFG Report at 26–33.

Joint Intervenors had made multiple efforts to seek more information and clarification from EKPC as to how it used the RTSim model and a more complete set of input and output files to review, including through supplemental discovery requests[65] and correspondence with counsel requesting that EKPC meet and confer about its discovery responses.[66] However, EKPC declined to provide additional information – let alone additional modeling files – in response to these efforts.[67] It was not until after the hearing, in response to Joint Intervenors' cross-examination and post-hearing data requests, that EKPC finally provided a more complete set of modeling files that might allow greater understanding their IRP modeling.[68] At this late (post-hearing) stage of the process, however, Joint Intervenors lack sufficient time and resources to attempt an entirely new analysis of the modeling files. EKPC's failure to produce a complete set of modeling input and output files in response to Joint Intervenors' initial discovery requests had a detrimental effect on the transparency of, and stakeholders' ability to engage substantively with, this IRP process.

Joint Intervenors' experience in this proceeding contrasts starkly with their recent experience working with LG&E-KU in its 2021 IRP proceeding (Case No. 2021-00393). As noted by EFG in its report for this case, LG&E-KU not only provided their modeling files to Joint Intervenors in response to initial discovery (amounting to several hundred or more discrete files), they also informally conferred in direct conversations with the EFG team to help answer

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[65] *See* Supplemental Data Requests of Joint Intervenors, Question 44d (Aug. 30, 2022).

[66] Attach. 1, Sept. 27, 2022 Email from Joint Intervenors' Counsel to EKPC; *see also* EFG Report at 34.

[67] Attach. 2, Oct. 3, 2022 Response Email from EKP Counsel; Attach. 3, Oct. 20, 2022 Email from Joint Intervenors' Counsel.

[68] *See* EKPC's Response to JI Post-Hearing Q4.

questions and facilitate understanding of their modeling methodology.[69] As a result, all parties to that proceeding (as well as Commission Staff) were able to engage substantively in more issues and at greater depth. Because the parties already had all of the modeling files in hand and an understanding of LG&E-KU's modeling methodology, they could focus their questions in the hearing on substantive issues.

Joint Intervenors respectfully request that Commission Staff urge EKPC to provide greater transparency and substantive engagement to stakeholders with the modeling methodologies and files going forward, including by providing complete and accessible explanations of modeling methodologies, producing complete sets of all modeling input and output files, and responding collaboratively to all reasonable requests from other parties for help answering clarification questions concerning the modeling.

B. EKPC failed to respond substantively to RTSim modeling critiques.

Although EKPC's failure to provide complete information concerning its modeling methodology, and complete sets of all modeling input and output files, inhibited Joint Intervenors' ability to fully review their analysis in this proceeding, the EFG Report nevertheless offered a series of substantive critiques based on the information that was available. In particular, EFG found that the narrative of the IRP contained limited information and discussion of how the RTSim model was used, that it did not appear that the capital costs were factored into total system cost/profits, and that there were several sections in the IRP that were not clear about which steps were taken using the RTSim model and which were external to the model.[70]

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[69] EFG Report at 30.

[70] *Id.* at 26–33.

In responding to these comments, however, EKPC chose not to engage with their substance, such as by providing a detailed explanation of their modeling methodology or explaining or justifying any of the apparent flaws or ambiguities identified by EFG.[71] Instead, EKPC raised *ad hominem* challenges to the qualifications of the EFG authors, seeking to brush away EFG's substantive comments entirely by arguing that because their experience is more as "the critics rather than the preparers," the serious questions they raised concerning EKPC's modeling are somehow less worthy of attention or a response.[72] EKPC also offered a series of unfounded "transparency" arguments about the EFG Report itself, in an apparent effort to further deflect away from the substance of EFG's comments.[73] These arguments ignored the explanations that EFG provided in their report about the data sources they relied on, all of which were readily available to EKPC (and in fact, largely included EKPC's own reported data).[74] Nor did EKPC identify any substantive errors in the EFG Report.

This response to EFG's modeling critiques displayed a startling lack of respect both for EFG's expertise and experience, and for the role of stakeholder engagement in the IRP process more broadly. The EFG review team for this IRP has over thirty-five years of combined

[71] EKPC Response Comment at 2.

[72] *Id.*

[73] *Id.* at 2–3.

[74] *See* EFG Report at 9 (noting that Table 1 is calculated based on EKPC's own data); *id.* at 12-13 (noting that Table 2 was based on EKPC's own reported load data and PJM's zonal forecast); *id.* at 19 (explaining that because PJM capacity market prices are the result of an administrative process and are difficult to project, S&P Global's PJM capacity price forecast provides a useful data point for comparison against the capacity price forecast EKPC used in its IRP modeling); *id.* at 22-23 (noting that Figure 10 was "taken from operational and cost data provided by EKPC through 2031").

experience in reviewing over 100 utility IRPs.[75] EFG's lead author, Anna Sommer, has over twenty years of experience in energy planning and modeling, including formal training and experience working with multiple models used by numerous utilities, as well as offering testimony to public utility commissions in eight states and Puerto Rico.[76] The other members of the EFG review team add significant additional experience, including experience with additional utility modeling and software platforms and with work in additional states.[77] EFG authors Earnest White and Stacy Sherwood also each bring years of experience working on the staff of state utility commissions (in Virginia and Maryland, respectively).[78]

As EFG noted at the outset of their report,

> [a]n IRP is an opportunity for a utility, regulators, stakeholders, and communities to take an active part in the future of their electric service and their energy outcomes. . . . Effective and meaningful IRPs . . . reflect thorough and thoughtful stakeholder engagement, set forth the utility's perspective and analytical processes, clearly communicate the analyses that combine to make the IRP, are well documented and give a clear decision making path for the utility.[79]

The role of stakeholders in the IRP process is *not* to bring the same expertise and perspective as the utility itself. Rather, stakeholders' role in this process is to raise questions, offer constructive suggestions, and bring the different perspectives of the utility's customers and the different communities it serves. Joint Intervenors retained EFG to assist in playing this role not only for their technical expertise but also because they bring a broad perspective from having worked

[75] *Id.* at 4.

[76] *Id.* at Attachment A.

[77] *Id.* at Attachments B-D.

[78] *Id.* at Attachment B, D.

[79] *Id.* at 4 (citing Karhl, Fredrich, et. al. "The Future of Electricity Resource Planning". Lawrence Berkeley National Laboratory, at 3 (Sept. 2016), https://eta-publications.lbl.gov/sites/default/files/lbnl-1006269.pdf).

with numerous utilities across multiple jurisdictions. This allows EFG to closely review a utility's modeling methodology – to the extent it is clearly explained and input and output files are made available, as discussed above – and provide substantive feedback to assist the Commission, the utility, and other stakeholders in understanding how methodological approaches help determine modeling outcomes and what alternative approaches and best practices are being followed by other utilities.

Rather than engaging collaboratively in a substantive discussion aimed at determining the best possible resource plan to serve its Member-Owners, EKPC chose a different path during this IRP proceeding. EKPC's refusal to respond substantively to EFG's comments on their modeling has deprived the Commission and stakeholders of an important opportunity to consider potentially transformational alternative approaches. Commission Staff should urge EKPC to respond fully, substantively, and in good faith to all stakeholder feedback in the future.

C. EKPC's hearing testimony mischaracterized EFG's analysis of EKPC's modeling and attempted to brush aside the need for EKPC to analyze the near-term retirement of Cooper Station.

EKPC's failure to take seriously and engage substantively with EFG's critiques and analysis of the RTSim modeling culminated in erroneous statements concerning EFG's review of Cooper Station's economic outlook made by EKPC Witness Julia Tucker at the hearing. In response to questions from Commissioner Chandler, Witness Tucker stated that she did not understand why EFG's report showed a "negative" revenue outlook for Cooper Station, and therefore she assumed that EFG must have included sunk costs in its analysis.[80] This is incorrect, as was explained in the EFG Report itself. EFG states that its analysis of Cooper Station's

[80] Dec. 13, 2022 HVT at 16:49:19-16:50:37 (referencing EFG Report at 23 & n.33).

economic outlook was "taken from operational and cost data provided by EKPC through 2031," which by definition does not include sunk costs.[81] As was discussed during EKPC Witness Fernie Williams' testimony, EKPC produced in discovery only a single output file from its production cost modeling[82] – and therefore, if EKPC had wanted to substantively respond to EFG's analysis, all it had to do was look at that one file to determine whether the data presented in Figure 10 of the EFG Report was accurate. But EKPC apparently did not even review EFG's analysis carefully enough to realize that it was simply presenting EKPC's data, let alone identify any errors in EFG's presentation. Much like in its Response to Comments discussed above, EKPC apparently rejected EFG's feedback out of hand without engaging seriously with any of its substance.

Moreover, notwithstanding Witness Tucker's statements at the hearing about the importance of not considering sunk costs in a generation retirement analysis, this is precisely the error that EKPC itself made in not analyzing Cooper Station retirement at all in its 2022 IRP. Specifically, EKPC stated that it was not analyzing the retirement of Cooper Station because it believed that it "is beneficial to EKPC's owner-members and end-use retail members if a unit is able to serve until it is fully depreciated."[83] As EFG pointed out in its report, this reasoning "is a classic example of the sunk cost fallacy" because "[t]he fact that a portion of the plant balance still needs to be depreciated does not establish that retaining each of the Cooper Station [units] is the lowest-cost resource option for EKPC's member-owners."[84] In fact, the EFG analysis of

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[81] EFG Report at 22.

[82] Dec. 13, 2022 HVT at 13:37:04–13:37:35 (referencing EKPC's response to Commission Staff data request 27).

[83] Response to JI Initial Request Q38b.

[84] EFG Report at 21–22.

Cooper Station's economic outlook that was referenced in the hearing immediately followed this discussion of sunk cost fallacy, and was presented by EFG to underscore why EKPC should be seriously analyzing a near-term retirement of one or both Cooper Station units, given their capacity factors and operational costs vs. revenue.[85] In the face of this analysis, however, EKPC only doubled down on its consideration of sunk costs in its Response to Comments, repeating the claim from the IRP (in the paragraph referenced by Commissioner Chandler during the hearing) that it is not appropriate for EKPC to consider retiring Cooper Station until its book value is fully depreciated.[86] Witness Tucker's assertion that EFG must have considered sunk costs in its analysis is thus particularly misplaced, since that is precisely the error in EKPC's own rationale for not analyzing a Cooper Station retirement in this IRP that EFG called attention to with its analysis.

Witness Tucker's erroneous testimony concerning EFG's analysis underscores the importance of taking stakeholder feedback seriously and demonstrates that it has real-world consequences. Here, because EKPC apparently failed to make any serious attempt to understand EFG's review of EKPC's own data, EKPC was unable to provide an accurate response to important questions raised at the hearing about EKPC's failure to analyze the retirement of Cooper Station. As EFG recommended, Commission Staff should urge EKPC to provide a robust economic retirement analysis of Cooper Station units in future IRPs.[87] Such an analysis must fairly evaluate the cost of continued operation of Cooper Station against the cost of replacing its

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[85] *Id.* at 22–25.

[86] EKPC Response Comment at 12.

[87] EFG Report at 26.

capacity and any cost-effective mitigations that may be required to address any specific, *bona fide* voltage or reliability concerns that are identified through a power flow analysis.[88]

CONCLUSION

In conclusion, Joint Intervenors express appreciation for this opportunity to continue dialogue on opportunities to strengthen EKPC's integrated resource planning processes. Along with the recommendations and observations offered in Initial Comments and the EFG Report, here, Joint Intervenors' emphasize the need for proactive, integrated, and transparent planning processes. There is incredible potential and need across EKPC's service territory. With real leadership, effective low-cost planning, informed collaboration with stakeholders and meaningful review by technical experts, that potential can be realized.

Respectfully submitted,

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[88] *Id.*

CERTIFICATE OF SERVICE

In accordance with the Commission's July 22, 2021 Order in Case No. 2020-00085, Electronic Emergency Docket Related to the Novel Coronavirus COVID-19, this is to certify that the electronic filing was submitted to the Commission on February 3, 2023; that the documents in this electronic filing are a true representations of the materials prepared for the filing; that no hard copy of this filing will be made; and that the Commission has not excused any party from electronic filing procedures for this case at this time.

Ashley Wilmes

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Ashley Wilmes