COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF EAST KENTUCKY POWER COOPERATIVE, INC. FOR 1) CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT A NEW GENERATION RESOURCES; 2) FOR A SITE COMPABILITY CERTIFICATE RELATING TO THE SAME; 3) APPROVAL OF DEMAND SIDE MANAGEMENT TARIFFS; AND 4) OTHER GENERAL RELIEF	)	**CASE NO. 2024-00370**

RESPONSES TO COMMISSION STAFF'S FOURTH REQUEST FOR INFORMATION

TO EAST KENTUCKY POWER COOPERATIVE, INC.

DATED MARCH 3, 2025

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF EAST KENTUCKY POWER COOPERATIVE, INC. FOR 1) CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT A NEW GENERATION RESOURCES; 2) FOR A SITE COMPABILITY CERTIFICATE RELATING TO THE SAME; 3) APPROVAL OF DEMAND SIDE MANAGEMENT TARIFFS; AND 4) OTHER GENERAL RELIEF	)	**CASE NO. 2024-00370**

CERTIFICATE

STATE OF KENTUCKY)
)
COUNTY OF CLARK)

Julia J. Tucker**,** being duly sworn, states that she has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to Commission Staff's Fourth Request for Information in the above-referenced case dated March 3, 2025, and that the matters and things set forth therein are true and accurate to the best of her knowledge, information and belief, formed after reasonable inquiry.

Julia J. Tucker

Subscribed and sworn before me on this 13th day of March, 2025.

Notary Public

GWYN M. WILLOUGHBY
Notary Public
Commonwealth of Kentucky
Commission Number KYNP38003
My Commission Expires Nov 30, 2025

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00370
FOURTH REQUEST FOR INFORMATION RESPONSE

COMMISSION STAFF'S REQUEST DATED MARCH 3, 2025
REQUEST 1
RESPONSIBLE PARTY: Julia J. Tucker

Request 1. Refer to the Direct Testimony of Julia Tucker (Tucker Direct Testimony), page 16. Provide the financial impacts associated with EKPC's PJM Interconnection, LCC (PJM) purchases required to meet the excess energy needs during Winter Storms Elliott and Gerri.

Request 1. EKPC purchases all energy for its load from the PJM energy market and then offsets that purchase with the economic dispatch. The net of all energy purchased, and generation sold, is billed to EKPC by PJM as a net total. A net total of 483,582 MWh was billed to EKPC from PJM for the entire month of December 2022 at a total cost of $62.4 million. A net total of 285,889 MWh was billed to EKPC from PJM for the entire month of January 2024 at a total cost of $10.6 million. The winter storms in both December 2022 and January 2024 make up the bulk of the energy and associated costs for their respective monthly totals. The total energy expense reported here is before any highest-cost unit or forced outage disallowances that occur during normal Fuel Adjustment Clause ("FAC") calculations and subsequent filings.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00370
FOURTH REQUEST FOR INFORMATION RESPONSE

COMMISSION STAFF'S REQUEST DATED MARCH 3, 2025
REQUEST 2
RESPONSIBLE PARTY: Julia J. Tucker

Request 2. Provide the Revenue and Cost profile for the Cooper 2, Spurlock 1, Spurlock 2, Spurlock 3, and Spurlock 4 facilities for each year beginning in 2014 through 2025, as of February 2025. Include all fixed and variable costs, energy revenue, capacity revenue, and ancillary revenue by unit.

Response 2. Please see Attachment Staff Response 4-2.xlsx. The cost data is reported by plant on RUS Form 12 and not by unit. Therefore, the revenue data is also shown by plant and not unit to be comparable. The 2024 cost data is preliminary and has not been completely audited as of the date of this filing. December 31, 2024 is the last date that cost data is currently available.

EAST KENTUCKY POWER COOPERATIVE, INC.
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FOURTH REQUEST FOR INFORMATION RESPONSE

COMMISSION STAFF'S REQUEST DATED MARCH 3, 2025
REQUEST 3
RESPONSIBLE PARTY: Julia J. Tucker

Request 3. Refer to Case No. 2022-00098, 2022 Integrated Resource Plan Section 1 at 2. EKPC states, "In total, EKPC owns and/or purchases 3,438 MW (winter rating) or 3,136 MW (summer rating) of generation." In the present proceeding (Application at 2), EKPC states it has 3,265 MW net winter and 2,963 MW net summer capacity rating. Also in the present proceeding, Tucker Direct Testimony Attachment JJT-4, EKPC's Existing Winter Capacity ranges from 3,727 MW to 3,300 MW and Existing Summer Capacity ranges from 2,580 MW to 2,474 MW. Explain the differences between these three sets of capacity ratings. Include in the response the summer (and winter if known) Effective Load Carrying Capability (ELCC) ratings for each of EKPC's owned and purchased generation resources.

Response 3. EKPC updates its ratings with each filing to match current known ratings within its generation fleet. EKPC reported that it owned or purchased 3,438 MW total winter capacity in its 2022 IRP as compared to the 3,265 MW it reported as owned generation in the present proceeding, and 3,136 MW total summer capacity in its 2022 IRP as compared to the 2,963 MW it reported as owned generation in the present proceeding. Of the total difference of 173 MW

between these two numbers, EKPC's long-term purchased power agreement with SEPA accounts for 170 MWs worth, with the balance being the reduction in Landfill Gas Generation due to the deactivation of the Laurel Ridge site. Refer to the current proceeding Application, page 2, paragraph 2 where EKPC states, "Finally, EKPC purchases hydropower from the Southeastern Power Administration at Laurel Dam in Laurel County, Kentucky (70 MW), and the Cumberland River system of dams in Kentucky and Tennessee (100MW)." Once both the SEPA purchase is added, and the Landfill Gas Generation number is accounted for, the total existing generation numbers match between the 2022 IRP and the present application.

EKPC reported that it owned or purchased 3,265 MW total winter capacity in the application in the present proceeding as compared to the 3,727 MW it reported in Attachment JJT-4 in the present proceeding. Of the total difference of 462 MW between these two numbers, EKPC's short-term purchased power agreement for energy-only offtake from the Safe Harbor Hydroelectric Dam in Pennsylvania accounts for 300 MW. The Safe Harbor PPA was not in effect during the 2022 IRP preparation or while the case was open at the Commission and therefore it would not have been included in the 2022 IRP. Historically, EKPC has not reported short-term PPAs within its owned or purchased totals within Applications and has only included long-term PPAs like the SEPA resources within that narrative. As previously mentioned, the 170 MW of SEPA resources were included in the Application narrative, however not included in the owned generation total of 3,265 MW of total winter capacity. These two hydro resources (Safe Harbor and SEPA) make up a total of 470 MWs of the additional amount of generation reported in Attachment JJT-4 as compared to the application narrative. EKPC's existing Cooperative Solar Farm 1 was also included in the application narrative as an owned generation resource, however

this resource is behind the meter, meaning it does not directly contribute to generation supply within the PJM energy or capacity markets, but rather is an offset to EKPC's total demand and energy requirements within PJM. For this reason, EKPC did not account for the 8.5 MW solar resource as existing generation within Attachment JJT-4. Once the reduction of 8.5 MW is factored into the total 470 MW addition from the hydro resources, then this results in the total difference of 461.5 MW (462 MW after rounding). See attached excel spreadsheet, *Staff DR4-3 - Capacity Comparisons.xlsx*, for a detailed comparison between the values listed in each of the three sources noted above with differences highlighted in yellow. Note, the summer capacity values in Attachment JJT-4 were adjusted for ELCC.

The difference between the application narrative (2,963 MW) and Attachment JJT-4 (2,580 MW) with regards to the summer capacity ratings is due to the ELCC adjustment of the generation resources. Refer to the Direct Testimony of Julia J. Tucker, page 18 line 4 through page 19 line 4 and Figure 3 on page 19, where EKPC states it intention to, "... provide the approximate position of EKPC's generation capacity portfolio in relation to the PJM capacity auction, which is an economic position, rather than the reliability aspect of the portfolio portrayed in Figure 2." Also refer to Attachment JJT-4, for each "SUM" (summer) column there is an asterisk ("*") with a corresponding note which states, "Summer capacity adjusted for class ELCC ratings and summer load adjusted for PJM load obligation (EKPC LTLF Summer Peak minus 6%)." See attached excel spreadsheet, *Staff DR4-3 - ELCC Ratings.xlsx*, for the Summer ELCC ratings adjustment for each of EKPC's owned generation resources. Also included in the spreadsheet is a comparison between the prior PJM capacity accreditation methodology using eFORD and the revised ELCC methodology. Between the 2024/2025 BRA and the 2025/2026 BRA, EKPC resources were

effectively derated by 14%, or 428.6 MW, in the PJM capacity market. This derating is purely an economic position with regards to the PJM capacity market, and does not result in any unit being derated for energy production throughout the year, or during EKPC anticipated winter peak load period. EKPC did not apply ELCC when comparing its winter generation capacity to the winter peak load forecast plus planning reserves for this reason.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00370
FOURTH REQUEST FOR INFORMATION RESPONSE

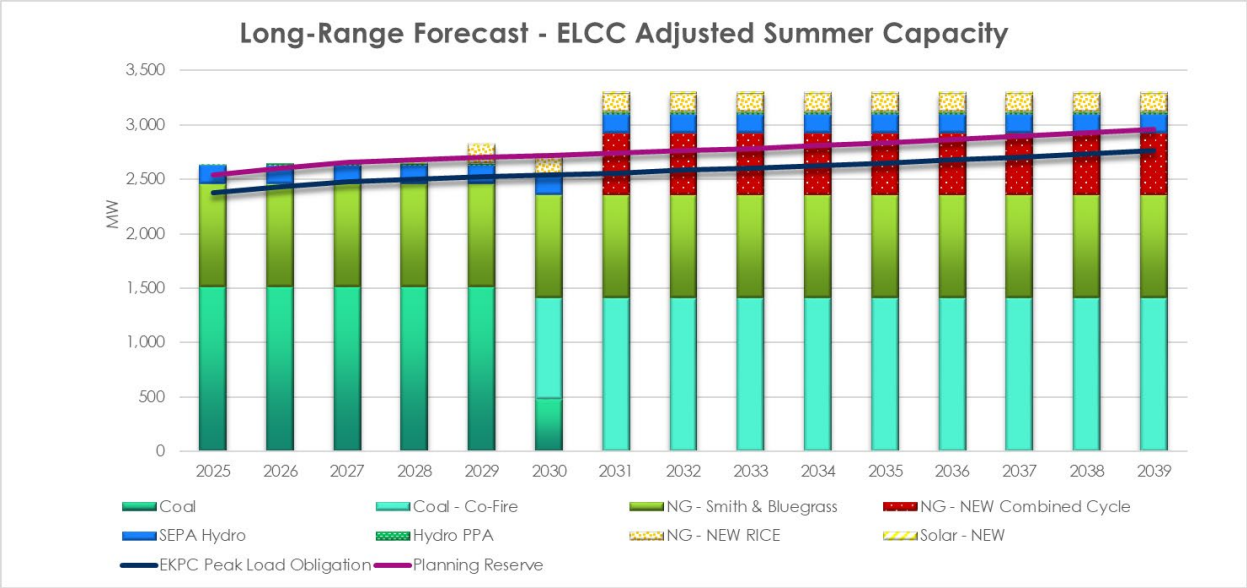
COMMISSION STAFF'S REQUEST DATED MARCH 3, 2025
REQUEST 4
RESPONSIBLE PARTY: Julia J. Tucker

Request 4. Refer to the Direct Testimony of Julia T. Tucker (Tucker Direct Testimony) Attachment JJT-4. Beginning in 2025, explain why the summer Total Effective Addition amounts decrease. If the decrease is an error, provide a corrected Attachment JJT-4.

Response 4. The Total Effective Addition represents the sum of capacity additions or subtractions for each given year. For example, the Hydro PPA column shows 300 MW beginning in 2026 and ending in 2034. The 300 MW addition is shown in year 2026 within the Hydro PPA "WIN" (winter) column, which is then added to the Total Effective Addition "WIN" (winter) column. Once the Hydro PPA is complete, the 300 MW is then subtracted from the Total Effective Addition column beginning in 2035, as it is no longer an additional source of peak energy in the winter. Similarly, 9 MW of the Hydro PPA was accounted for as summer capacity. These 9 MW were subtracted after the expected completion of the agreement in 2035. The Hydro PPA is the only addition that is added and then eventually subtracted in its entirety within the planning horizon.

The "SUM" (summer) columns only include capacity resources that could be sold into the PJM capacity market. Capacity is adjusted from summer installed capacity ratings utilizing PJM's posted ELCC class ratings for the 2025/2026 delivery year Base Residual Auction. The PJM-supplied ELCC class ratings forecast shows de-minimis year-over-year changes for fossil-fuel assets like coal or natural gas, however it shows substantial decreases for fixed-tilt solar assets in particular. ELCC for these assets reduces from 13% in the 2025/2026 delivery year to just 4% in the 2038/2039 delivery year. This degradation of ELCC-adjusted capacity is reflected in the Solar "SUM" (summer) column with negative capacity additions to appropriately show the year-over-year reduction in the value of solar as a capacity resource within the PJM capacity market, although it remains a viable energy resource. An error was discovered in the ELCC calculation for the existing combustion turbine facilities and SEPA Hydro resources which resulted in 30 MW of total summer ELCC-adjusted capacity to be missing from the final summation as submitted in the application. The corrected version is attached as *Attachment JJT-4 (revised).pdf*. In addition, a correction to Figure 3, found in the Direct Testimony of Julia J. Tucker, page 19 line 5-6, has been provided below. The correction results in an additional 30 MW (2,580 MW to 2,610 MW) of existing ELCC-adjusted summer capacity being available throughout the planning horizon but does not impact reliability expectations for meeting summer supply needs and does not impact EKPC's winter capacity or expected deficit in the winter period.

Figure 3 (revised)



EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00370
FOURTH REQUEST FOR INFORMATION RESPONSE

COMMISSION STAFF'S REQUEST DATED MARCH 3, 2025
REQUEST 5
RESPONSIBLE PARTY: Julia J. Tucker

Request 5. Refer to Tucker Direct Testimony Attachments JJT-2 at 46 and 48 and Attachment JJT-4. Explain the rationale for subtracting six percent from the summer Long Term Load Forecast (LTLF) in Attachment JJT-4 as opposed to using the actual summer base case LTLF.

Response 5. EKPC is a winter peaking utility with its winter peak roughly 1,000 MW higher than its summer peak load. The summer peak is not impactful to resource planning from a reliability perspective due to EKPC planning for and building capacity to meet its winter peak plus reserve margin. The summer peak is impactful with regards to EKPC's ability to hedge its Owner-Member's load obligation in the PJM capacity market. EKPC, on behalf of its Owner-Members, is obligated to purchase 100% of its PJM-determined load obligation from the PJM capacity market. Load obligation is based on a PJM-adjusted version of the summer peak, which considers the overall resource availability within PJM based on ELCC and the PJM calculated installed reserve margin. EKPC's PJM-calculated load obligation in the most recent auction (2025/2026 BRA) was 6% lower than EKPC's own summer base case peak load forecast. To accurately represent the

financial impact of the load obligation, EKPC reduced its base case peak load forecast for the summer by 6%. EKPC then reduced its total summer capacity values by the PJM ELCC class ratings to compare its expected summer load obligation to its ELCC-adjusted capacity to create an apples-to-apples comparison and accurately reflect EKPC's expected summer capacity market position.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00370
FOURTH REQUEST FOR INFORMATION RESPONSE

COMMISSION STAFF'S REQUEST DATED MARCH 3, 2025
REQUEST 6
RESPONSIBLE PARTY: Julia J. Tucker

Request 6. Refer to Tucker Direct Testimony page 13, lines 8–16 and page 14 lines 1–22 and page 15 lines 1–19.

a. Explain whether PJM requires EKPC to maintain a capacity reserve margin, and if so, provide and explain how that margin is calculated for EKPC. Include in the response whether the same calculation for the required reserve margin in summer is also applied to EKPC's winter required reserves for the PJM's three forward planning years.

b. Referring to page 14 lines 1–22, if the actual winter peaks are higher than forecast, explain the rationale for using the winter base case forecast and not the extreme weather winter forecast.

Response 6.

a. No, PJM does not require EKPC to maintain a capacity reserve margin with regards to its generation fleet. PJM requires all load serving entities to purchase its respective summer load obligation as discussed in the response to Item 5. The summer load obligation does include the PJM specified installed reserve margin which is adjusted each capacity delivery year. The installed

reserve margin is a PJM planning parameter which helps PJM ensure adequate summer capacity is available to meet its peak summer demand on an RTO-wide basis, however it does not ensure that EKPC carries enough generation capacity to hedge EKPC's summer load obligation which is a financial risk for EKPC and its Owner-Members, nor does it ensure that EKPC carries enough generation to adequately hedge its peak winter load forecast which is a reliability risk for EKPC and its Owner-Members. The PJM installed reserve margin helps PJM plan for and meet its peak summer load for the RTO as a whole, but it does not ensure that EKPC's Owner-Members are insulated from soaring capacity or energy prices due to deficiencies within the market.

PJM, a region which includes both regulated and independent merchant generation, has indicated that it has concerns about reliability as soon as 2026 given PJM's 2025 load forecast. PJM's release of the 2025 load forecast projected a significant increase in future expected loads driven in large part by data centers and electrification that far exceeds any ability of retirement reversals to cover. In fact, PJM's concerns led it to request FERC approval of an expedited process to study new interconnection requests for projects that could be on-line as early as 2028. It is imperative that EKPC plans to meet its winter peak energy needs and adequately hedge its PJM load obligation in order to remain hedged against increased costs in the PJM capacity and energy markets due to the anticipated supply shortages.

b. EKPC's 2020 and 2022 forecasts under-foretasted actual winter demand. The 2024 load forecast incorporates demand performance from the recent winter weather events and therefore is more reasonable than previous forecasts. It is appropriate to use the 2024 normal load forecast as it is already higher than both the 2020 and 2022 forecasts. Using a Reserve Margin allows EKPC to account for the risk of extreme weather and generator outages separately from the

base normal weather load forecast. In addition, using the normal weather forecast then adding the reserve margin as a secondary value allows EKPC to reasonably assess its risk of serving native load at normal weather conditions versus its risk of serving load during extreme weather periods.

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FOURTH REQUEST FOR INFORMATION RESPONSE

COMMISSION STAFF'S REQUEST DATED MARCH 3, 2025
REQUEST 7
RESPONSIBLE PARTY: Julia J. Tucker

Request 7. Refer to Tucker Direct Testimony page 15 lines 1–19 and Attachment JJT4.

a. Confirm that the ELCC generation unit accreditation methodology effectively derated all EKPC's units seasonally.

b. Explain why EKPC did not apply the ELCC methodology to its winter unit capacity ratings. Include in the response why this omission does not present an inflated winter unit capacity over what each unit will provide during a forecast winter peak.

c. Explain whether the Existing Capacity column in Attachment JJT-4 has been adjusted to account for ELCC ratings. If not, explain the rationale for not calculating reserve margins using existing and added unit capacities all on an equivalent apples-to-apples basis.

Response 7.

a. The ELCC generation unit accreditation methodology effectively derated the summer capacity rating of all of EKPC's units, reducing its total capacity available to sell into the PJM capacity market by 14%. See EKPC's response to Item 3, above.

b and c. EKPC joined PJM on June 1, 2013. Prior to that date, EKPC planned its system on a stand-alone basis. EKPC was its own balancing authority and as such, had to balance its load and generation on a real time basis to meet its obligations within the Bulk Electric System. Long term plans were developed with that goal in mind, and so the development of new generation was driven by what would best serve the EKPC system. A computer model with generation optimization capabilities was used to compare many options and develop a group of best alternatives, then more detailed analysis would be completed to develop the final plan. The optimization model would evaluate the full life cost of a unit and how it impacted the cost to serve load and compare that to the other alternatives provided. Then the best set of alternatives would be evaluated based on more specific costs and operations based on the EKPC system instead of generalized locations.

After June 1, 2013, EKPC no longer had the obligation to balance its load and generation in real time. PJM now has the obligation to provide the balancing authority operations. EKPC now has to ensure that its owner-members' load is served at the least reasonable cost within that system. EKPC ensures this by hedging the owner members' load with resources at a known energy volume and price to cap the maximum price that is paid for market purchases. This hedge is accomplished by the following actions.

EKPC sells all of its generation and purchased power agreements with capacity rights into the PJM markets. These include the longer-term capacity market and the daily, real time energy market operations.

The long-term capacity market is designed to be run three years ahead of the delivery time period so that plans can be made to adequately serve the PJM load. Due to rule changes, recent

auctions have not been completed on that schedule. EKPC participates in the capacity market in two ways. It offers all of its capacity resources (generators, PPAs with capacity rights, and demand response) in the auction. Other market participants do the same. PJM determines what it considers to be the reliability concerns with generators and sets parameters around those generators that are offered into the market. This is where the ELCC component comes into play for the EKPC generators. The net amount of generation that PJM will consider from each of the EKPC generators or PPAs is determined by the ELCC methodology. PJM develops a load forecast for its system and adds a reserve requirement to that value. The most recent Installed Reserve Margin is 17.7%. PJM must purchase a minimum of its peak load plus 17.7% from the capacity auction. Based on the results of that auction, EKPC's generation resources will clear at a certain price level. EKPC's resources that cleared the auction will be guaranteed that revenue on a monthly basis for the applicable delivery year of the auction.

On the load side of the auction, PJM will assign EKPC its proportionate share of the auction expense based on its load ratio share. PJM is not specifically forecasting EKPC's expected summer peak load. It is estimating EKPC's summer peak load based on the PJM total load forecast and EKPC's historic proportionate load share of the entire PJM summer load.

EKPC's plan has always been to ensure that it sells as much or more generation into the auction than what it has to buy for its proportionate share of the load. By making sure that at least as much is sold as is bought nets the auction expense. The actual market clearing price is not as critical to EKPC as it sells more than it buys. The higher the auction price goes, the more critical it is to ensure that EKPC's net capacity position is positive. A net purchase is a substantial risk, especially at recently cleared auction prices. The way EKPC ensures it is a net seller is by

estimating its load ratio share of the PJM forecast and comparing that to its ELCC-adjusted capacity resources.

EKPC estimates its load ratio share of the PJM forecast by comparing previous load obligations to the EKPC summer peak load forecast. Historically, EKPC's summer peak load forecast plus three percent was relatively reflective of what EKPC had to buy from the PJM auction as its load obligation. The most recent auction for the 2025/2026 delivery year resulted in EKPC's load obligation being 6% lower than EKPC's forecasted summer peak load. EKPC reduced its summer peak load forecast by the 6% for the entire planning horizon. However, while the load obligation decreased in the recent clearing, EKPC must maintain adequate reserves in the event that PJM's load obligation calculation results in a higher than expected obligation. EKPC increased the percent added to its summer peak to seven percent to reflect the reserve margin for its summer capacity in order to mitigate that risk. The only time this metric comes into play is when EKPC is looking forward to see if it expects to sell more generation than it has to buy in load obligation. This is not a PJM requirement, this is a self-imposed EKPC requirement for cost hedging purposes. EKPC implemented this procedure when it entered PJM and has reported annually to the Kentucky Public Service Commission regarding its hedging policies and procedures.

EKPC's participation in the capacity market is its only obligation to PJM for long term planning. However, EKPC has an obligation to its Owner Members and the Kentucky Public Service Commission to provide lengthier planning for its system. EKPC initially thought upon its integration into PJM that its winter peak loads would be well covered within the PJM system given it is a summer peaking market and has extra power supply in the winter compared to its load. However, the winter of 2014, the Polar Vortex, quickly revealed that PJM had more winter load

than it anticipated and that generators participating in PJM were not necessarily well prepared for extreme winter weather conditions. Based on the energy pricing experienced during this time period, EKPC quickly realized that it would not be prudent to rely on the market during the winter peak season. Additionally, the Commission made it clear through Fuel Adjustment Clause ("FAC") cases that it would not allow the expense of market purchases to automatically flow through the FAC. EKPC would need to continue to plan for and provide generation coverage of its winter peak loads to ensure the costs were hedged adequately. So EKPC participates within the PJM markets but it also must plan to ensure that it is providing adequate cost hedges for its owner–member's load costs, including the winter peak load season. EKPC provides these hedges by both owning and operating generation, buying firm resources from a third party or supplying demand response programs such as the interruptible tariff.

Step one of EKPC's planning process can be considered as "have we met the PJM obligations?" That is, does EKPC have more generation and demand response resources to sell into the capacity auction than what its load obligation will be as assessed by PJM? The generation values are netted based on ELCC values and the load obligation is estimated based on EKPC's summer peak load forecast minus 6%, plus a reserve margin.

YEAR	Load Obligation SUM*	Planning Reserves 7% SUM*	Capacity Required SUM*	Existing Capacity SUM*	Deficit before Cap Additions SUM*
2025	2,379	166	2,545	2,610	-66
2026	2,433	170	2,603	2,610	-7
2027	2,482	174	2,656	2,610	46
2028	2,504	175	2,679	2,610	69
2029	2,527	177	2,704	2,610	93
2030	2,541	178	2,719	2,504	215
2031	2,560	179	2,739	2,504	235
2032	2,584	181	2,765	2,504	260
2033	2,600	182	2,782	2,504	277
2034	2,625	184	2,809	2,504	304
2035	2,649	185	2,834	2,504	329
2036	2,682	188	2,870	2,504	366
2037	2,705	189	2,894	2,504	390
2038	2,736	191	2,927	2,504	422
2039	2,765	194	2,959	2,504	454

The table above, directly from Attachment JJT-4 (revised), indicates that EKPC is adequately hedged in its PJM capacity market position until summer 2027 (a positive deficit in the last column indicates needed capacity).

Step two is "does EKPC have enough resources secured to cover its expected loads so that prices are hedged?". EKPC looks at its winter peak load plus a reserve margin (to account for extreme weather conditions and potential generator issues, which EKPC has encountered the past two winter seasons) and compares that to the total amount of generation resources. ELCC does not play a role in whether or not EKPC is adequately hedged for its cost exposure. ELCC only comes into play in the PJM analysis discussed in Step one.

YEAR	LTLF-2024 WIN	Planning Reserves 7% WIN	Capacity Required WIN	Existing Capacity WIN	Deficit before Cap Additions WIN
2025	3,517	246	3,763	3,727	36
2026	3,627	254	3,881	3,427	454
2027	3,677	257	3,934	3,427	507
2028	3,712	260	3,972	3,427	545
2029	3,727	261	3,988	3,427	561
2030	3,743	262	4,005	3,300	705
2031	3,760	263	4,023	3,300	723
2032	3,788	265	4,053	3,300	753
2033	3,793	266	4,059	3,300	760
2034	3,811	267	4,078	3,300	778
2035	3,832	268	4,100	3,300	800
2036	3,870	271	4,141	3,300	841
2037	3,882	272	4,154	3,300	855
2038	3,908	274	4,182	3,300	882
2039	3,933	275	4,208	3,300	908

The table above, directly from Attachment JJT-4, which was not changed by the updated Attachment JJT-4 (revised), indicates that EKPC is short on winter energy hedges beginning in the 2025/2026 winter period. EKPC currently has a contract in place for a hydro purchase for up to 350 MW. It is not a guaranteed amount of energy but based on run of river water conditions. The contract ends December 31, 2025. EKPC has been attempting to extend this contract or one similar but does not currently have an agreement in place.

Prior to joining PJM, EKPC would have undertaken an optimized expansion analysis to determine its best alternatives to specifically follow its load. As a member of PJM, EKPC needs to determine what provides the most net benefit to the members based on expected PJM pricing and not just following EKPC load. EKPC needs to determine what provides the best hedges against market price exposure. EKPC is able to purchase coal ahead of time and maintain inventory, so the cost to operate coal units is a known amount. EKPC knows what it has purchased on PPAs and that is a known price. These are both known hedge quantities. The combustion turbines have a known heat rate, so the efficiency that they convert fuel to energy is known. But the fuel is not known for those units because securing firm transportation and/or hedged fuel for units that seldom run is not economically viable. The combustion turbines provide an upper bound hedge for delivered energy prices based on real time natural gas prices and/or back up fuel oil prices. As stated in Staff Response 2-10, a review of EKPC's last two years of Fuel Adjustment Clause data shows that EKPC purchases roughly 35% of its annual energy from the market. This data indicates that approximately 40% of EKPC's energy is unhedged against market prices or hedged at fairly high prices based on running fuel oil in the combustion turbines. Running an optimization program will not account for the risk this poses. It will only look at the assumed prices. It's not assumed or expected prices that create issues during peak conditions but rather extreme pricing that occurs as demonstrated during Winter Storms Elliott and Gerri. Response to Staff 4-1 shows the amount of costs that EKPC paid during these winter storms. To ensure

adequate cost recovery, EKPC needs to ensure that it has its energy cost exposure capped at its highest cost unit. There are additional cost benefits to the owner members by lowering that energy cost further during non-extreme periods and reducing the amount of net energy that is purchased from the market at a higher price than what it could be generated for with new technologies. For each $1/MWh energy price reduction, EKPC could save its owner members over $4.5 million in fuel costs per year. EKPC compared its proposed expansion plan to projected market prices to show the value in energy price hedges for the new generation facilities as compared to buying the energy from the market. This comparison demonstrates the value of the new generation facilities for owner-member energy prices as compared to having to rely on market pricing.

EKPC's need for new generation is driven by its need to protect its owner-member's energy pricing during winter peak conditions. EKPC provides this protection by providing sufficient generation resources that can be hedged with known fuel costs. Having these resources located near the load zone provides additional protection to serve the owner-members' load needs in the event of extreme circumstances where market resources are not available to serve EKPC's native load. The Commission has repeatedly stated that it does not expect utilities in Kentucky to lean on organized markets to ensure capacity and energy supply to meet a utility's demand and energy needs. EKPC's need is not driven solely by the PJM requirements for summer resources modified by ELCC ratios. EKPC's need for new generation is driven by its obligation to hedge its winter peak loads and provide secure generation resources to its owner-members.