COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC TARIFF FILING OF EAST KENTUCKY POWER COOPERATIVE, INC. AND ITS MEMBER DISTRIBUTION COOPERATIVES FOR APPROVAL OF PROPOSED CHANGES TO THEIR QUALIFIED COGENERATION AND SMALL POWER PRODUCTION FACILITIES TARIFFS	))))))	**CASE NO. 2023-00153**

RESPONSES TO COMMISSION STAFF'S SECOND INFORMATION REQUEST

TO EAST KENTUCKY POWER COOPERATIVE, INC.

DATED JULY 20, 2023

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC TARIFF FILING OF EAST KENTUCKY POWER COOPERATIVE, INC., AND ITS MEMBER DISTRIBUTION COOPERATIVES FOR APPROVAL OF PROPOSED CHANGES TO THEIR QUALIFIED COGENERATION AND SMALL POWER PRODUCTION FACILITIES TARIFFS	)	**CASE NO. 2023-00153**

CERTIFICATE

STATE OF KENTUCKY)
)
COUNTY OF CLARK)

David M. Crews, being duly sworn, states that he has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Public Service Commission Staff's Second Request for Information dated July 20, 2023 in the above referenced case, and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

David M. Crews

Subscribed and sworn before me on this 31st day of July, 2023.

Terri K. Combs
Notary Public

TERRI K. COMBS
Notary Public
Commonwealth of Kentucky
Commission Number KYNP17358
My Commission Expires Dec 20, 2024

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC TARIFF FILING OF EAST KENTUCKY POWER COOPERATIVE, INC., AND ITS MEMBER DISTRIBUTION COOPERATIVES FOR APPROVAL OF PROPOSED CHANGES TO THEIR QUALIFIED COGENERATION AND SMALL POWER PRODUCTION FACILITIES TARIFFS	)	**CASE NO. 2023-00153**

CERTIFICATE

STATE OF KENTUCKY)
)
COUNTY OF CLARK)

Isaac S. Scott, being duly sworn, states that he has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Public Service Commission Staff's Second Request for Information dated July 20, 2023 in the above referenced case, and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

Isaac S. Scott

Subscribed and sworn before me on this 31st day of July, 2023.

Notary Public

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

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC TARIFF FILING OF EAST KENTUCKY POWER COOPERATIVE, INC., AND ITS MEMBER DISTRIBUTION COOPERATIVES FOR APPROVAL OF PROPOSED CHANGES TO THEIR QUALIFIED COGENERATION AND SMALL POWER PRODUCTION FACILITIES TARIFFS	)	**CASE NO. 2023-00153**

CERTIFICATE

STATE OF KENTUCKY)
)
COUNTY OF CLARK)

Julia Tucker, being duly sworn, states that she has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Public Service Commission Staff's Second Request for Information dated July 20, 2023 in the above referenced case, 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 31st day of July, 2023.

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. 2023-00153
SECOND REQUEST FOR INFORMATION RESPONSE

STAFF'S REQUEST DATED JULY 20, 2023
REQUEST 1
RESPONSIBLE PARTY: David Crews

Request 1. Refer to EKPC's response to Commission Staff's First Request for Information (Staff's First Request), Item 1(a).

Request 1a. Update Table 1(a) shows a capacity deficit beginning in 2028. Provide the reason EKPC does not plan to add generation capacity until 2032.

Response 1a. The RTSim optimization model indicates that it is more economic for EKPC to make a seasonal winter purchase for those years than to invest the capital in a new unit earlier. The timing shown correlates to when the EKPC load forecast shows at least half of the unit capacity being added is needed for native load. The sizing for economic generation resources never precisely aligns with the amount of load to be served.

Request 1b. Explain how EKPC will satisfy its obligations under KRS 278.030(2) when it projects a winter capacity deficit from 2028–2032.

Response 1b. EKPC will satisfy its obligations by making monthly or seasonal purchases based on the economic analysis. If EKPC were to acquire or construct a new capacity resource anytime there was a small forecasted deficit, the cost to consumers would outweigh the marginal risk of making a monthly or seasonal purchase from the market. Nevertheless, EKPC remains committed to having "steel on the ground" to meet its known and anticipated load in a reasonable least-cost manner.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2023-00153
SECOND REQUEST FOR INFORMATION RESPONSE

STAFF'S REQUEST DATED JULY 20, 2023
REQUEST 2
RESPONSIBLE PARTY: David Crews

Request 2. Refer to EKPC's response to Staff's First Request, Item 1(b), Table EKPC Final Plan Projected Additions and Reserves.

a. Provide any information, including the Power Purchase Agreement (PPA), for the 200 MW addition for 2024. If EKPC has not entered into the PPA, explain when and how EKPC will determine if the 200 MW PPA contract for renewable energy will be executed.

b. Explain if the 200 MW PPA is for summer, winter, or both.

c. Explain if EKPC enters into, and exercises the 200 MW PPA strike price hedge, is EKPC obligated to take the full 200 MW of energy hourly or any amount of energy up to 200 MW.

d. As the energy LMP increases from below the 200 MW PPA strike price to above the strike price and EKPC exercises its rights under the 200 MW PPA, explain how that affects the hourly operation of EKPC's generation units, the energy prices received by EKPC for its generation sales into PJM and the ultimate energy prices paid by EKPC as the LMP changes from below to above the strike price. Include a numerical example in the response.

e. If EKPC exercises its rights under the 200 MW PPA, explain if the 200 MWs is considered dispatchable.

Response 2 a-e. The referenced 200 MW PPA was assumed to be for a solar project constructed in and interconnected to the EKPC system. EKPC has run multiple RFPs for solar PPAs. EKPC negotiated a contract and proceeded to have the EKPC Board approve the contract only to have the counterparty in the contract refuse to execute the contract. EKPC ran subsequent RFPs and received responses but the respondents advised EKPC that they would not honor the proposals they had made. Therefore, no contract has been entered into at this point in time. EKPC continues to seek solar PPAs and self-build options. Once finalized, EKPC will seek Commission approval of its chosen alternative. Assuming that the chosen project(s) is a solar installation, EKPC would expect to receive the actual energy generated from the project on a real time basis, dependent on the available irradiation. In a PPA, there would be no strike price hedge with such an agreement and EKPC would be obligated to pay a contracted amount for each MWh of energy produced from the project. Regardless of whether a solar facility is owned by EKPC or contracted for, it would not be dispatchable in the sense that solar projects produce based on irradiation and all energy produced would be sold into the PJM market at the LMP price for that generation node. Solar generators have an incremental cost of $0 per MWh and as such would always be picked up in the PJM market unless they created problematic congestion. The balance of EKPC's generators would be dispatched by PJM based on their bid cost or actual cost depending on the situation. The PJM market has a broader footprint than EKPC's historical balancing footprint. EKPC would expect solar generation to be sold into the market on a real time basis, avoiding the risk of selling in the day-ahead energy market and then generation (irradiation) not materializing as forecasted.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2023-00153
SECOND REQUEST FOR INFORMATION RESPONSE

STAFF'S REQUEST DATED JULY 20, 2023
REQUEST 3
RESPONSIBLE PARTY: David Crews

Request 3. Refer to EKPC's response to Staff's First Request, Item 1(b). Explain why the plan EKPC submitted in its Integrated Resource Plan included an annual 100 MW energy purchase, but EKPC stated the 100 MW energy purchase has not been entered into prior to this proceeding. Include in the response, why the table in Item 1(b) does not include the annual 100 MW energy purchase.

Response 3. EKPC continually evaluates its energy price hedges and alternatives to secure those hedges. The 100 MW energy purchase price was much greater than that expected in the IRP. As EKPC looks at securing its energy price certainty, it considers all alternatives including buying natural gas at a fixed price to ensure the cost to operate its combustion turbines. EKPC has purchased firm natural gas for the months of December 2023, January 2024 and February 2024. EKPC has also purchased 50 MW of energy for the month of December 2023. These hedges are expected to meet the upcoming winter needs for the EKPC system. EKPC will continue to monitor its load expectations along with its generation availability and determine if there is a need to secure additional price hedges on its energy.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2023-00153
SECOND REQUEST FOR INFORMATION RESPONSE

STAFF'S REQUEST DATED JULY 20, 2023
REQUEST 4
RESPONSIBLE PARTY: David Crews

Request 4. Explain why EKPC would need to purchase the 100 MW energy if EKPC states that it does not have a capacity shortfall in the near future.

Response 4. Capacity and energy are two separate requirements. Capacity requirements are based on a resource being available to supply energy to load. EKPC participates in the PJM Base Residual Auction (BRA) with its load and generation. As a load serving entity, EKPC must purchase the capacity to meet its capacity obligation (forecasted load plus the reserve requirement PJM establishes based on meeting the PJM region's summer peak load) from the BRA load serving entities. Additionally, EKPC sells its generating capacity into the PJM BRA market. EKPC receives revenue for the capacity sales which offsets the cost to purchase the capacity to satisfy EKPC's load serving obligation. All capacity resources that clear in the market and receive a capacity commitment have an obligation to offer those resources into the day-ahead energy market. Load is served in the energy market. EKPC's winter energy requirements are greater than its summer requirements but EKPC's PJM capacity obligation is based on its summer load. EKPC offers its generation into the market. If a generator does not clear in the market, then generally the

market price is cheaper than operating the generator. Any revenue EKPC receives from generation in the market hedges the maximum price that the EKPC's Owner-Member Cooperatives (owner-members) must pay for energy. Since EKPC's energy requirements are higher in the winter, there are times during winter periods that EKPC needs additional resources or instruments to hedge purchases from the energy markets that are not offset by energy sales from EKPC generation. EKPC plans to minimize the risk of that price exposure to its owner-members by ensuring that its energy sales into the market closely match it energy purchases so those transactions offset and EKPC's load is served at a known hedged price. EKPC sets that price hedge by having coal contracted and available for use at its Spurlock and Cooper generating facilities, by buying forward physical natural gas to be delivered to its J.K. Smith and Bluegrass combustion turbine facilities and/or having fuel oil stored at those plants. EKPC has a contract for hydro power from the Southeastern Power Administration at a known price. EKPC has interruptible industrial contracts that allows it to shed load obligations during times of extreme pricing, which help avoid high priced market purchases. If EKPC determines it needs additional hedged energy supply, then market alternatives are evaluated, such as forward energy purchases or Call Options.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2023-00153
SECOND REQUEST FOR INFORMATION RESPONSE

STAFF'S REQUEST DATED JULY 20, 2023
REQUEST 5
RESPONSIBLE PARTY: David Crews

Request 5. Explain if EKPC is certain that its current generation fleet is sufficient enough to provide adequate service to its territory for the next ten years.

Response 5. As with any industry involving highly technical operational complexities existing within a dynamic economic and regulatory ecosystem that increasingly offers less and less predictability, there are no "guarantees" that any utility's current generation fleet is sufficient to provide adequate service within its service territory for the next ten years. Winter Storm Elliott perfectly illustrated that even with adequate capacity resources, external factors beyond a utility's control may stymie its ability to adequately serve load during periods of extreme demand.

Nevertheless, EKPC's current generation fleet provides reliable, cost-effective electricity to its owner-members for the reasonably foreseeable future. The fleet meets all known environmental regulations and operates within all of its permits. EKPC continually evaluates alternatives and contingencies to determine if new or additional resources can help improve its reliable, cost-effective service to owner-members. If EKPC determines that it does have an economic and reliable alternative to add to its system, it brings that alternative to its member-

owned Board of Directors and then to the Commission for prudency review and approval via an application for a certificate of public convenience and necessity and site compatibility certificate or for approval of the issuance of a security or other evidence of indebtedness for a long-term power purchase agreement.

However, there are significant headwinds which make the task of providing adequate, efficient and reasonable service to consumers at rates that are fair, just and reasonable more complicated. We discussed these headwinds directly in EKPC's 2022 Integrated Resource Plan (IRP) where we emphasized the challenges with an "overly aggressive timeframe for renewable integration in terms of both technological challenges and supply chain concerns" among other challenges and opportunities we saw on the horizon. Since submission of that IRP for instance, the Environmental Protection Agency is currently promulgating nearly a dozen new rules that would force utilities to retire baseload generation resources prematurely in favor of non-dispatchable resources that are less reliable and often non-productive during periods of early morning peak-demand periods. Much of utilities' remaining baseload generation will be forced to rely upon, and implement, technology that is currently neither economically viable or demonstrated at utility scale. Capacity markets, which are intended to provide clear pricing signals to encourage the development of new generation resources, are out of step with actual grid reliability needs and are the subject of numerous stakeholder efforts at PJM and proceedings before the Federal Energy Regulatory Commission. Likewise, the ability to actually interconnect a new generation resource is significantly delayed as PJM works through an interconnection queue backlog. At the state level, in a recent legislative hearing, the Attorney General's office suggested that there may be a need for legislation to also require regulated utilities to submit to planning and zoning jurisdiction

of local government agencies for certain types of generation. This duplicative jurisdiction over the siting of capacity resources will not improve the overall reliability of Kentucky's electric power grid and does not account for the legitimate reasoning behind the allowances made for utilities on this issue The Commission's own increased attention to minor filing deficiencies (i.e. not including a fax number within an application, being dissatisfied with the functionality of bookmarks within a pdf document, etc.) that are immaterial to the substance of recent utility filings adds cost and delay to the processing of applications, and often to the underlying projects themselves.

Not all of the factors that impact future uncertainty are negative, however. On the positive side, economic development in Kentucky continues to shatter new records. Within EKPC's owner-members' service territories alone, thirty-two new projects yielded $2.89 billion in new investment and over 2,000 new jobs. The load growth associated with this economic development activity is also taken into account as EKPC considers how best to optimize its future fleet. The transition of the transportation sector from petroleum based fuels to electric energy also promises to dramatically impact future utility loads although the timing and extent of this transition remains very imprecise.

In short, EKPC appreciates the Commission's question and it was one that its management asks itself every day. While EKPC is confident its current fleet is adequate to serve its existing customer load for the foreseeable future, the long-term answer to that question is likely to ebb and flow as circumstances change. EKPC appreciates the Commission's statutory requirement to assure that all regulated utilities provide adequate, efficient and reasonable service and looks forward to working with the Commission in the furtherance of that goal during this period of heightened uncertainty.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2023-00153
SECOND REQUEST FOR INFORMATION RESPONSE

STAFF'S REQUEST DATED JULY 20, 2023
REQUEST 6
RESPONSIBLE PARTY: Julie Tucker

Request 6. Refer to EKPC's response to Staff's First Request, Item 3. Provide a copy of every Purchase Power Agreement EKPC has entered into for the each of the following years: 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, and 2023. For all existing contracts, identify where, in the contract, the qualify facility (QF) owner requested that its generation capacity be considered non-dispatchable.

Response 6. Please see attached Excel Spreadsheet: *Response 6 DR2-6 Table.*

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2023-00153
SECOND REQUEST FOR INFORMATION RESPONSE

STAFF'S REQUEST DATED JULY 20, 2023
REQUEST 7
RESPONSIBLE PARTY: David Crews

Request 7. Explain how EKPC plans to apply its tariff and rates uniformly across all generation types of qualifying facilities (QFs). To the extent that different types of QFs exist in EKPC's service territory, provide supporting calculations and explanations for at least three QF types.

Response 7. As it has done so since its first Cogeneration and Small Power Production tariff was approved in 1988, EKPC will apply its tariff and rates uniformly to all QFs pursuant to the terms, conditions, and provisions incorporated in the tariffs. Neither the currently approved version of the Cogeneration and Small Power Production tariff nor the proposed March 2023 updates incorporate any recognition of different tariff or rate treatments due to differences in the type of QF seeking to sell energy or capacity to EKPC. Indeed, the PURPA regulation itself recognizes that the precise terms and conditions of a contract between a utility and PURPA generator are subject to the unique facts of each particular transaction and that a one-size-fits-all approach, even within a single category of generators, is not required.

The data request as posed assumes that the payment for the purchase of energy or capacity from a QF will vary due to the different types of QFs that operate in the service territories of EKPC's sixteen owner-members. EKPC respectfully disagrees with this assumption. For those QFs that have entered into a contract to sell energy or capacity to EKPC under the Cogeneration and Small Power Production tariff, separate metering has been installed to record the capacity or energy provided during the month. At the end of month, the metering information is retrieved, and the capacity and energy provided from the QF is priced out pursuant to the rates established in the applicable Cogeneration and Small Power Production tariffs. Currently, as all the active QF contracts are classified as non-dispatchable, there are no capacity payments. The metered energy provided is priced at the value of the real-time locational marginal price for energy set by PJM at the EKPC zonal node during each hour of the day at the time of delivery, less a market administration fee which is also defined in the applicable tariffs. The fact the QF generates the energy from biomass, wastes, solar, wind, or hydro resources does not result in a difference in the payment. The energy market is indifferent to the type of generation, it simply sets a price based upon the aggregate load and the aggregate demand within the market. EKPC's philosophical approach to PURPA contracts has been that its regulated customers should not bear any price risk associated with purchasing power from a PURPA generator. This protects EKPC's owner-member residential, commercial and industrial End-Use Retail Members (retail members) from having to subsidize the operations of a proprietary power provider selling power under PURPA. Previous versions of EKPC's Cogeneration and Small Power Production tariff, the currently approved version, and the proposed March 2023 updates did not and do not recognize different payment provisions due to differences in the QF generation resources. Consequently, EKPC is unable to

provide the requested supporting calculations and explanations for at least three QF types, as there is no distinction made in the payments due to QFs based on differing generation resources.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2023-00153
SECOND REQUEST FOR INFORMATION RESPONSE

STAFF'S REQUEST DATED JULY 20, 2023
REQUEST 8
RESPONSIBLE PARTY: Julie Tucker

Request 8. Explain and provide the modeling and analysis EKPC has completed in regard to its Locational Deliverability Area (LDA) to meet the import criteria of the Capacity Emergency Transfer Objective in PJM. Provide all data in which EKPC's LDA specific ELCC is based, including both summer and winter season data. If no analysis has been conducted, explain how EKPC is assured that during a situation of high demand and a capacity shortage within its LDA, that it will be able to import sufficient power with an adequate Capacity Emergency Transfer Limit.

Response 8. PJM has completed the referenced analysis. The most recent analysis completed as support for the planning parameters for the 2024/2025 Base Residual Auction is attached to this response. The Capacity Emergency Transfer Objective (CETO) analysis determines a target MW import value for an LDA that ensures sufficient transmission capability exists to access available PJM capacity reserves located outside the LDA. The import value determined is a measure of the PJM Manual 14B: PJM Region Transmission Planning Process Attachment C: PJM Deliverability Testing Methods transmission capability required by the LDA

so that the study area does not experience a planned, transmission-induced loss of load event more frequently, on average, than 1 time in 25 years.

The CETO for each LDA in PJM is determined using PJM's reliability software to perform a single area reliability study for each LDA. The system models are based on the latest RTEP load and capacity data available at the time of the study. Only the load and capacity within the study area are modeled while the capacity supply from outside the study area is assumed to be unlimited. The transmission system is not modeled. The CETO is the import capability value that is necessary for the study area to achieve the CETO reliability standard. The CETO reliability standard requires no more than one loss of load event per LDA in 25 years.

More detail about the CETO is available in PJM Manual 20 – Resource Adequacy Analysis at http://www.pjm.com/library/manuals.aspx.

The goal of a PJM Load Deliverability study is to establish the amount of emergency power or Capacity Emergency Transfer Limit (CETL), that can be reliably transferred to the study area from the remainder of PJM in the event of a generation deficiency within the study area. This transfer limit, in combination with its corresponding CETO, is then used to determine if the import capability, required in order to meet the reliability objective of a 1/25 LOLE, is sufficient. An indicator of the amount of reserve transfer capacity available is provided by the difference between the CETL and CETO. The results shown in the attached spreadsheet, *Response 8 DR2 Table 2024-2025*, show that EKPC's CETO is 1240 MW and the CETL is 1426 MW+, which indicates that there is more than sufficient Capacity Emergency Transfer Limit available when compared to the Capacity Emergency Transfer Objective. That is 1426MW is greater than 1240 MW. The results of this study are why EKPC is assured that during a situation of high

demand and a capacity shortage within its LDA, it will be able to import sufficient power with an adequate CETL.