

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)	CASE NO.
FOR APPROVAL OF PROPOSED CHANGES TO)	2023-00153
THEIR QUALIFIED COGENERATION AND)	
SMALL POWER PRODUCTION FACILITIES)	
TARIFFS)	

RESPONSES TO COMISSION’S FIRST INFORMATION REQUEST
TO EAST KENTUCKY POWER COOPERATIVE, INC.

DATED JUNE 8, 2023

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

PSC’S REQUEST DATED JUNE 8, 2023

REQUEST 1

RESPONSIBLE PARTY: David Crews

Request 1. Refer to the Commission Staff’s Report (IRP Staff Report) on the 2022 Integrated Resource Plan (IRP) of EKPC, 2 pages 28 and 31.

Request 1a. Provide an update to the table, EKPC Projected Capacity Needs (MW), on page 28. Include in the response any known large commercial and industrial additions that would increase load, any known large commercial and industrial loss of load, or changes in EKPC’s forecasting methodology that was used in the IRP.

Response 1. Please find the updated table for 1.a. below:

YEAR	Projected Peaks Long Term LF 2022		Planning Reserves		Capacity Required		Existing Capacity		Capacity Needs or Excess Gen	
	WIN	SUM	WIN	SUM	WIN	SUM	WIN	SUM	WIN	SUM
2024	3,349	2,558	0	77	3,349	2,635	3,434	3,132	85	497
2025	3,370	2,590	0	78	3,370	2,668	3,434	3,132	64	464
2026	3,400	2,603	0	78	3,400	2,681	3,434	3,132	34	451
2027	3,419	2,618	0	79	3,419	2,697	3,434	3,132	15	435
2028	3,452	2,640	0	79	3,452	2,719	3,434	3,132	(18)	413
2029	3,467	2,655	0	80	3,467	2,735	3,434	3,132	(33)	397
2030	3,484	2,669	0	80	3,484	2,749	3,434	3,132	(50)	383
2031	3,504	2,686	0	81	3,504	2,767	3,434	3,132	(70)	365
2032	3,535	2,708	0	81	3,535	2,789	3,434	3,132	(101)	343
2033	3,551	2,727	0	82	3,551	2,809	3,434	3,132	(117)	323
2034	3,578	2,748	0	82	3,578	2,830	3,434	3,132	(144)	302
2035	3,607	2,771	0	83	3,607	2,854	3,434	3,132	(173)	278
2036	3,651	2,803	0	84	3,651	2,887	3,434	3,132	(217)	245
2037	3,673	2,827	0	85	3,673	2,912	3,434	3,132	(239)	220
2038	3,704	2,854	0	86	3,704	2,940	3,434	3,132	(270)	192

Request 1b. Provide an update to the table, EKPC Final Plan Additions and Reserves (MW), on page 31. Include in the response whether 100 MW 2022 Seasonal Power Purchase Agreement (PPA) was executed. If the PPA was executed, explain whether EKPC considers this an energy or capacity purchase.

Response 1b. No PPA or contract has been entered into as part of the anticipated 100MW seasonal purchase at this time.

EKPC Final Plan Projected Additions and Reserves

Year	PPA Energy Additions	Peak / Intermed Capital Add		Total Capacity = Existing + Additions		Tot. Cap. minus Requirements or Excess Generation	
		Win	Sum	Win	Sum	Win	Sum
2024	200			3,434	3,132	84	497
2025				3,434	3,132	64	464
2026	200			3,434	3,132	33	451
2027	200			3,434	3,132	14	434
2028				3,434	3,132	(19)	413
2029				3,434	3,132	(33)	396
2030				3,434	3,132	(50)	383
2031	200			3,434	3,132	(70)	364
2032	200	225	170	3,659	3,302	123	513
2033				3,659	3,302	107	493
2034				3,659	3,302	81	472
2035				3,659	3,302	52	448
2036				3,659	3,302	7	414
2037				3,659	3,302	(14)	389
2038				3,659	3,302	(46)	362

***Only generation added for the purpose of covering summer peak load capacity obligations is considered "capacity" additions. All other intermittent or seasonal purchases are made to hedge the energy price exposure to the EKPC system, not to add "capacity."**

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REQUEST 2

RESPONSIBLE PARTY: David Crews

Request 2. Confirm that EKPC considers all capacity from qualifying facilities (QFs) on its system to be non-dispatchable and does not consider that capacity towards satisfying its winter or summer capacity needs in resource planning.

Response 2. All existing QFs are non-dispatchable as requested by the QF owners and as defined within the individual contracts. EKPC does not consider the energy received from the current non-dispatchable QFs as satisfying its winter or summer firm energy requirements in its resource planning.

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REQUEST 3

RESPONSIBLE PARTY: David Crews

Request 3. Provide any contracts or PPAs that EKPC has entered into that were part of EKPC's preferred plan in Case No. 2022-00098.

Response 3. No PPAs or contracts have been entered into as of this date as part of the Integrated Resource Plan in PSC Case No. 2022-00098.

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REQUEST 4

RESPONSIBLE PARTY: David Crews

Request 4. Refer to the IRP Staff Report, pages 29–31. Explain why the Seasonal PPA for 2022 should not be considered wasteful duplication given that EKPC has 125 MW of excess capacity.

Response 4. The amount of purchase that could be considered as reasonable would be based on the amount of reserves that are considered to be reasonable for the winter season. The referenced table shows that EKPC had adequate capacity to meet the expected forecast peak without counting additional requirements for reserves and with 100% availability of all of its capacity resources. It is prudent utility practice to carry additional resources as back up reserves to cover extreme or unknown operating conditions. The forecasted peak load is based on the historical average minimum load temperature. If the temperatures are extreme, additional load can be expected especially for heavily residential load like EKPC's. A large amount of EKPC's residential load heats with electric, and temperature variations create significant impacts on the load. The extreme weather conditions that occurred during winter storm Elliott demonstrated the large impact of heating load

on EKPC's system. EKPC experienced its all-time highest system load during this storm. Additionally, extreme cold conditions can impact the operation of mechanical systems within power plants and can cause derates or unavailability of generation units. EKPC either needs to depend on the PJM market to provide the winter reserve requirements for these risks during cold weather conditions or it needs to provide adequate reserves to cover extreme and unknown operating conditions. A PPA in addition to the 125 MW referenced as excess capacity is not wasteful duplication but rather prudent reserve planning.

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REQUEST 5

RESPONSIBLE PARTY: David Crews

Request 5. Refer to the March 31, 2023 letter submitted with the revised tariff sheets in this matter, page 3, paragraph 2, stating that “EKPC neither projects a need or has a plan to add capacity or retire capacity in the next five (5) years.” Confirm that EKPC’s plan described therein, which does not include adding capacity in the next five years, was determined based on the assumption that EKPC would only need sufficient capacity to meet the summer capacity requirement imposed on EKPC by PJM Interconnection LLC (PJM). If the plan was determined based on some other capacity evaluation, need, or requirement, explain the capacity needs or requirements that formed the basis for the plan and how they were determined.

Response 5. EKPC defines its capacity requirements as defined within the PJM system. EKPC has a self-imposed requirement to ensure that it has adequate energy resources secured to reliably serve its native load throughout the entire year. Capacity is a separate market in the PJM system. EKPC considers a firm energy resource as an adequate power supply to serve native load, regardless of whether the resource meets the definition of the PJM capacity market.

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REQUEST 6

RESPONSIBLE PARTY: David Crews

Request 6. Refer to the March 31, 2023 letter submitted with the revised tariff sheets in this matter, pages 2-4.

Request 6a. Explain how EKPC defined the terms “dispatchable” and “nondispatchable”. Include in the response a basis for the distinction.

Response 6a. “Dispatchable” generation resources are controllable by an EKPC System Operator based on the needs of the electric system at any time. This resource has the ability to be turned on, turned off, ramped up, and ramped down as needed when requested by the Operator. “Nondispatchable” generation resources, by contrast, are not able to be called upon or scheduled to provide energy, reduce energy production generation, come offline, ramp up or down and operate at assigned levels as necessary to meet the needs of the system.

Request 6b. Explain whether ownership of the asset determines asset dispatchability.

Response 6b. Ownership of an asset does not imply its ability to be controlled, or dispatchability. The technology of the resource defines its physical ability to generate electricity, and its ability to deliver energy as needed at any given time of any given day. It is the asset owner's responsibility (whether QF or otherwise) to determine if they desire to invest in adequate equipment to ensure that the project is dispatchable. At the time of developing the contract, the asset owner will advise if it desires to have the project be dispatchable or not, and whether the asset's physical characteristics permit the asset to be dispatchable.

Request 6c. Explain whether, ownership of the asset determines asset dispatchability for a renewable resource.

Response 6c. Again, it is the asset owner's responsibility to determine if they desire to invest in adequate equipment to ensure that the project is dispatchable. At the time of developing the contract, the asset owner will advise if it desires to have the project be dispatchable or not, and whether the asset's physical characteristics permit the asset to be dispatchable.

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REQUEST 7

RESPONSIBLE PARTY: David Crews

Request 7. Refer to the March 31, 2023 letter submitted with the revised tariff sheets in this matter, page 3, paragraph 3. Explain whether EKPC is referencing the PJM annual base residual auction market clearing price. If not, explain which market clearing price is referenced.

Response 7. Yes, EKPC is referencing the PJM annual base residual auction market clearing price.

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REQUEST 8

RESPONSIBLE PARTY: David Crews

Request 8a. Refer to the March 31, 2023 letter submitted with the revised tariff sheets in this matter, page 3, in which EKPC stated it has no control over non-dispatchable generators, and therefore, bears the risk of non-performance penalties during PJM system emergencies.

Request a. Provide the days, and number of hours per event, over the past three years when PJM called a system emergency during which EKPC's generators were obligated to perform.

Response 8a. Over the past three years, the only time when PJM called a system emergency during which EKPC's generators were obligated to perform was during Winter Storm Elliot. Specifically, PAI events took place on:

- December 23, 17:30-23:00 (5.5 hours)
- December 24, 04:25-22:00 (17.6 hours)

Request 8b. Explain whether the QFs on EKPC's system were performing during the time periods identified in 8(a).

Response 8b. Three (3) of the five (5) contracted cogen facilities were generating during portions of the period of time in Response 8.a. A total of 0.53 MWh was received during this period.

Request 8c. Explain whether the performance of the QFs on EKPC's system is dependent on EKPC's provision of energy to the customer. For example, if EKPC were to interrupt the customer, explain whether the customer would have to cease operations even though its qualifying facility was able to generate energy.

Response 8c. None of the existing QFs are on the interruptible tariff, so none of these facilities would be interrupted. If the question is in regard to rolling black outs, as opposed to interruptions, then the customers would have to cease operations or disconnect themselves from the grid. Rolling black outs are achieved by operating switches on the transmission / distribution system. System protection would not allow generation at the QFs to be available to flow on to the transmission / distribution grid. If the QF facility chose to isolate itself from the distribution system, then it might be able to self-supply its energy needs from its own generation.

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REQUEST 9

RESPONSIBLE PARTY: David Crews

Request 9. Refer to the March 31, 2023 letter submitted with the revised tariff sheets in this matter, page 3, paragraph 5. Explain all the reasons for considering QFs as non-dispatchable. Include in the response if the ownership and control of the generation resource is a primary factor.

Response 9. Ownership has no bearing on the definition of a resource as dispatchable or non-dispatchable. For a resource to be dispatchable, it must have the technical ability for the EKPC System Operator to be able to control the output of the generator. The Operator must be able to call for the unit to come on line as needed, to be taken off line as needed and to ramp its output levels in between as needed. If the output of a unit cannot be altered based on the request of the Operator, then the unit is considered to be non-dispatchable. It is the QF's choice at the time of developing the contract to determine if their project will meet the definition of dispatchable or non-dispatchable.

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REQUEST 10

RESPONSIBLE PARTY: David Crews

Request 10. Explain whether EKPC has considered committing the QFs into the PJM capacity market and the implications of that action. Also explain whether EKPC has communicated this option with the QF customers.

Response 10. EKPC has not considered committing QFs into the PJM capacity market to date. If EKPC bids into the PJM capacity market a QF resource that it has under contract, and that resource clears, the burden of and responsibility for potential non-performance penalties must be clearly defined as between EKPC and the QF owner. It would be neither equitable nor prudent for EKPC to incur additional operational risk penalties for EKPC's non-QF owner members. The financial obligation for additional equipment required for the QF to be able to comply with PJM dispatch instructions (and thereby avoid allocation of potential non-performance penalties) is the obligation of the developer / seller. EKPC has not had anyone to date that has determined that it is in their financial interest to make that investment and assume the financial risk associated with non-performance penalties in the PJM capacity market.

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REQUEST 11

RESPONSIBLE PARTY: David Crews

Request 11. For all future periods available, provide the PJM calculation for the Effective Load Carrying Capability and any other calculations used to determine the capacity contribution of non-dispatchable resources, as defined by EKPC.

Response 11. The table below is from the “December 2022 Effective Load Carrying Capability (ELCC) Report”:

Table 2: ELCC Class Ratings for 2023/2024 3IA, 2025/2026 BRA and 2026/2027 BRA

ELCC Class	2023/2024 3IA	2025/2026 BRA	2026/2027 BRA
Onshore Wind	15%	15%	13%
Offshore Wind	42%	40%	31%
Solar Fixed Panel	50%	37%	33%
Solar Tracking Panel	61%	51%	45%
4-hr Storage	94%	77%	77%
6-hr Storage	100%	96%	94%
8-hr Storage	100%	100%	100%
10-hr Storage	100%	100%	100%
Solar Hybrid Open Loop - Storage Component	93%	74%	83%
Solar Hybrid Closed Loop - Storage Component	93%	74%	83%
Hydro Intermittent	37%	37%	37%
Landfill Gas Intermittent	63%	63%	64%
Hydro with Non-Pumped Storage*	98%	94%	93%

* PJM performs an ELCC analysis for each individual unit in this class. The value shown in the table is a representative value provided for informational purposes

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REQUEST 12

RESPONSIBLE PARTY: David Crews

Request 12. Provide the 2021 and 2022 National Renewable Energy Laboratories' Annual Technology Baseline costs or like-kind calculation for a physical proxy unit to calculate avoided capacity costs.

Response 12. EKPC has provided the requested data. However, EKPC does not consider this data appropriate for calculating its avoided capacity costs, i.e., the "incremental costs" to EKPC of capacity that "but for the purchase from the [QF]" EKPC would "generate itself or purchase from another source" (18 C.F.R. § 292.101(b)(6)). EKPC has future utility scale solar facilities in its Integrated Resource Plan, but they are considered energy hedges and not capacity. Therefore, this data is not representative of capacity that EKPC could actually avoid by purchasing capacity from the potential QF facilities.

Here are the links to the NREL ATB as specified:

<https://atb.nrel.gov/electricity/2021/index>

<https://atb.nrel.gov/electricity/2022/index>

