

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

| | | |
|---|---|-------------------|
| THE ELECTRONIC APPLICATION OF |) | |
| EAST KENTUCKY POWER COOPERATIVE, |) | |
| INC. FOR 1) A CERTIFICATE OF PUBLIC |) | CASE NO. |
| CONVENIENCE AND NECESSITY TO |) | 2024-00310 |
| CONSTRUCT A NEW GENERATION |) | |
| RESOURCE; 2) A SITE COMPATIBILITY |) | |
| CERTIFICATE; AND 3) OTHER GENERAL RELIEF |) | |

**SUPPLEMENTAL RESPONSES TO SIERRA CLUB’S FIRST REQUEST
INFORMATION REQUEST TO EAST KENTUCKY POWER COOPERATIVE, INC.**

DATED OCTOBER 28, 2024

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
FIRST REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED OCTOBER 28, 2024

REQUEST 7

RESPONSIBLE PARTY: Julia J. Tucker

Request 7. Please refer to the Direct Testimony of Witness Tucker at page 8, lines 6 – 16.

a. Please provide the supporting workbooks, with all formulas and links intact, used to develop the energy and peak demand assumptions modeled for each new large customer included in the forecast.

b. For each new customer included in the load forecast, please provide the peak demand, annual energy requirements, load factor, anticipated date the customer expects to receive service, the commercial activity of the customer (i.e. data center, cryptocurrency, or EV manufacturing), and whether the customer has entered into any agreements or contracts with the Cooperative or one its Member-Owner Cooperatives.

c. For each new customer that has executed an agreement indicating an intention to obtain service from the Cooperative or one its Member-Owner Cooperatives, please provide the date of the agreement.

i. If agreements have not been executed, please explain if any of the new customers are considering locating their facility outside of the Cooperative's service territory or in another state.

- d. Please provide the level of peak demand for each potential new customer that has not been included in the load forecast for this CPCN Application.
- e. Please explain if any of the new customers have commenced site construction activities.
- f. Please explain if the Cooperative or one its Member-Owner Cooperatives have had any conversations with new customers about arrangements for curtailable load, standby on-site generation, participation in energy efficiency programs, or any other approaches to offset the capacity need of the new customers.

Response 7.

- a. In the short term, large commercial sales projections rely on input of the owner-members. Owner-members, having knowledge of their key accounts and the presence of industrial parks, project usage for existing large loads, and advise of new consumers or consumers that are leaving. Additional input from EKPC's Economic Development staff may also be included. In the long-term, energy projections use economic variables as model drivers. EKPC projects new large loads based on history and the economy of the service territory using regression analysis. Historical industrial growth is analyzed to distribute consumer projections among the 16 owner-members. Demand of 1.5 MW and 70 percent load factor is assumed for these new loads.
- b. The owner-member cooperatives may still be in confidential negotiations for these consumers. Given the sensitive nature of these discussions, consumer-level details are not provided. Please see a summary in the table below. No agreements are available.
- d. None.
- e. Some new large consumers have commenced construction activities.

f. These details are available upon final negotiation of the contract.

| Year | New Consumer Increased Demand MW (Cumulative) | New Consumer Increased Energy MWh (Cumulative) | Load Factor |
|------|---|--|-------------|
| 2024 | 13 | 78,924 | 69.4% |
| 2025 | 72 | 424,916 | 67.8% |
| 2026 | 126 | 715,359 | 64.9% |
| 2027 | 156 | 869,754 | 63.7% |
| 2028 | 166 | 934,140 | 64.1% |
| 2029 | 182 | 1,052,205 | 65.9% |
| 2030 | 185 | 1,070,601 | 66.0% |
| 2031 | 191 | 1,107,393 | 66.1% |
| 2032 | 199 | 1,153,383 | 66.2% |
| 2033 | 203 | 1,180,977 | 66.3% |
| 2034 | 208 | 1,208,571 | 66.4% |
| 2035 | 214 | 1,245,363 | 66.5% |
| 2036 | 224 | 1,309,749 | 66.7% |
| 2037 | 229 | 1,337,343 | 66.7% |
| 2038 | 236 | 1,383,333 | 66.8% |
| 2039 | 241 | 1,410,927 | 66.9% |

To account for a consumer’s ramp up the demand is the average projected for the year. Once fully operational, the demand represents the consumer’s maximum load.

Energy is the total MWh per year, including the impact of ramp-up. For example, a consumer starting October 2024 will only have energy for Oct - Dec 2024 in 2024.

In early years new consumers are primarily named loads identified by owner members. In later years, new consumers are unnamed modeled load of 1.5 MW at 70% load factor, generally assumed to start in January of a given year.

Supplemental Response: Please see attached. EKPC's model parameters export to pdf and not Excel.

Project: H:\Power Supply Analytics\Load Forecasting\Long-Term\2024\Large Power Greater than
Model: Years_15_Manuf
Dependent Variable: Data.Total
Date: December 30, 2024
Time: 04:55 PM
Estimation Begin Date: 2009:1
Estimation End Date: 2023:1
Forecast Period End Date: 2044:1

| Variable | Coefficient | StdErr | T-Stat | P-Value |
|-----------------------|-------------|--------|--------|---------|
| CONST | -314.449 | 67.816 | -4.637 | 0% |
| EmpManuf.SouthCentral | 0.011 | 0.002 | 6.795 | 0% |
| Transform.After2023 | 20.007 | 10.169 | 1.967 | 7% |

Model Statistics

| | |
|---------------------------|--------|
| Iterations | 1 |
| Adjusted Observations | 15 |
| Deg. of Freedom for Error | 12 |
| R-Squared | 0.863 |
| Adjusted R-Squared | 0.841 |
| AIC | 4.539 |
| BIC | 4.680 |
| F-Statistic | 37.922 |
| Prob (F-Statistic) | 0.000 |
| Log-Likelihood | -52.32 |
| Model Sum of Squares | 5947 |
| Sum of Squared Errors | 941 |
| Mean Squared Error | 78.41 |
| Std. Error of Regression | 8.85 |
| Mean Abs. Dev. (MAD) | 5.29 |
| Mean Abs. % Err. (MAPE) | 3.61% |
| Durbin-Watson Statistic | 1.021 |
| Durbin-H Statistic | 0.506 |
| Ljung-Box Statistic | 2.33 |
| Prob (Ljung-Box) | 0.803 |
| Skewness | 0.617 |
| Kurtosis | 3.646 |
| Jarque-Bera | 1.212 |
| Prob (Jarque-Bera) | 0.545 |

Forecast Statistics

| | |
|--------------------------------|-------|
| Forecast Observations | 0 |
| Mean Abs. Dev. (MAD) | 0.00 |
| Mean Abs. % Err. (MAPE) | 0.00% |
| Avg. Forecast Error | 0.00 |
| Mean % Error | 0.00% |
| Root Mean-Square Error | 0.00 |
| Theil's Inequality Coefficient | 0.000 |
| -- Bias Proportion | 0.00% |
| -- Variance Proportion | 0.00% |
| -- Covariance Proportion | 0.00% |

| Variable | Coefficient | Mean | Elast |
|-----------------------|-------------|-----------|-------|
| EmpManuf.SouthCentral | 0.011 | 42386.370 | 3.096 |
| Transform.After2023 | 20.007 | 0.067 | 0.009 |

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REQUEST 14

RESPONSIBLE PARTY: Julia J. Tucker

Request 14. Please refer to the Direct Testimony of Witness Tucker, page 11, lines 11-20.

- a. Please explain if EKPC has taken any steps to dampen the swing in demand observed in January 2024.
- b. Please explain if EKPC has undertaken any analyses to understand the cause of the swing in demand.
- c. Please provide all documents that support the responses to subparts a and b.

Response 14. a. EKPC has factored both Winter Storm Gerri and Winter Elliot into its revised LTLF.

b. The peak load observed during January 2024 does not represent a "swing" in demand, but rather the peak demand was caused by saturation of the load within the system due to the cold weather.

c. See EKPC's response to Staff's First Request for Information, Item 1.

Supplemental Response: EKPC has developed a menu of Demand Side / Demand Response programs. The total impact of these programs on winter peak is listed in the table on Page 9 of the Direct Testimony of Julia J Tucker under the heading “Impact on Winter Peak”.

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REQUEST 17

RESPONSIBLE PARTY: Julia J. Tucker

Request 17. Please provide the annual revenue requirements and present value revenue requirement (PVRR) for all portfolios and scenarios modeled.

Response 17. Refer to EKPC's response to Staff's First Request for Information, Item 6.

Supplemental Response: EKPC did not develop the specifically requested documents.

EKPC has provided the economic analysis that was completed.

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REQUEST 18

RESPONSIBLE PARTY: Julia J. Tucker

Request 18. Please refer to the Direct Testimony of Witness Tucker, page 16, lines 5-7. Please provide the term length for the long-term purchased power agreements from hydro resources.

Response 18. See EKPC response to Staff's First Request for Information, Item 5.

Supplemental Response: These reference separate PPAs. The SEPA contract is a long-term PPA that has been in place for over a decade. The Safe Harbor PPA referred to in SC 1-18 (Staff 1-6) is a new energy-only PPA discussed as part of the expansion planning.

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REQUEST 34

RESPONSIBLE PARTY: Julia J. Tucker

Request 34. Please provide a load and resources table from now through 2034, or the furthest year the Company has available, showing the Company's projected peak demand and firm capacity available by year. List firm capacity by resource/fuel type. Include the Company's reserve margin in the table.

Response 34. Refer to Attachment JJT-3, the EKPC Capacity Expansion Plan, as filed in the Application.

Supplemental Response: Please see the Excel spreadsheet being uploaded separately.

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REQUEST 37

RESPONSIBLE PARTY: Julia J. Tucker

Request 37. Please provide a narrative explanation of how the Company ensures that it will have enough capacity to meet demand in the future while maintaining a cost-effective system for customers. Include answers to the following:

- a. How frequently does the Company assess its resource adequacy?
- b. How far into the future does the Company plan for resource adequacy?
- c. What standard does the Company use? For example, is it a 1 day in 10 years standard or a different metric?
- d. Does the Company use a planning reserve margin when making resource decisions? If so, please provide the margin the Company currently uses and a narrative explanation of how that PRM was determined to be appropriate for planning purposes.
- e. Please identify the interconnections with neighboring systems identified in its resource adequacy analysis, the transfer capability (both directions) at each point, and explain any simplifications.
- f. Are any upgrades to interconnections with neighboring systems included in EKPC's plans? If so, please provide supporting documentation.

Response 37. a-d. Refer to the Direct Testimony of Julia J. Tucker, as filed in the Application.

e. EKPC does not identify interconnection requirements with neighboring systems. PJM, through its generation interconnection process, identifies any transfer capability constraints that may be caused by the interconnecting generator.

f. EKPC is currently coordinating with LG&E/KU to establish a new 69 kV free-flowing interconnection, and with AEP to establish a new 138 kV free-flowing interconnection. These interconnections are being established to provide local reliability improvements in their respective areas of the system. Additionally, two upgrades of existing free-flowing interconnections are currently in EKPC’s future work plans. These upgrades have been identified to support local reliability in those respective areas. Table 37-1 lists information regarding the planned new interconnections and the upgrades to existing interconnections:

| Free-Flowing Interconnection Facility | Interconnecting Utility | Project Type (New Construction or Upgrade) | Projected In-Service Date |
|--|--------------------------------|---|----------------------------------|
| Coburg-Campbellsville 69 kV | LG&E/KU | New Construction | June 2027 |
| Jenny Wiley-Dewey Dam 138 kV | AEP | New Construction | December 2030 |
| Duncannon Lane-KU Fawkes 69 kV | LG&E/KU | Upgrade | December 2024 |
| McCreary County-KU Wofford 69 kV | LG&E/KU | Upgrade | May 2028 |

Supplemental Response: EKPC does not believe this response requires any further information and is adequate as originally provided.

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REQUEST 38

RESPONSIBLE PARTY: Julia J. Tucker

Request 38. What model or models does the Company use to assess resource adequacy?

Response 38. See EKPC response to Sierra Club's First Request for Information, Item 16.

Supplemental Response: EKPC uses the RTSim model for production cost type analyses.

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REQUEST 40

RESPONSIBLE PARTY: **Julia J. Tucker**

Request 40. Does the Company have capacity contracts with third parties? If so, please list each contract, its capacity in MW, the fuel type of any associated generator, and the cost of the capacity in \$/MW-year.

Response 40. Yes, EKPC currently contracts with the Southeastern Power Administration (“SEPA”) on 170 MW of energy, capacity, and renewable energy credits (“RECS”) generated by hydroelectric dams. There is a 100 MW slice of system allocation generated by multiple run-of-river dams located on the Cumberland River system and a 70 MW dam on Laurel River Lake which is dispatchable. Rates are updated annually with a current contract rate of \$2.22/kW-Month, or \$26,664/MW-year, for capacity in effect from April 2024 through April 2025. The current energy rate is set at \$14.551/MWh.

Supplemental Response: These reference separate PPAs. The SEPA contract is a long-term PPA that has been in place for over a decade. The Safe Harbor PPA referred to in SC 1-18 (Staff 1-6) is a new energy-only PPA discussed as part of the expansion planning.