DATA REQUEST

1-1 Refer to the Direct Testimony of Brian. K. West (West Testimony), page 6, lines 1-3. Explain whether Ebon International, LLC (Ebon) has negotiated or anticipates receiving any incentives from Lawrence County or Kentucky.

RESPONSE

The Company has been informed by Ebon that Ebon has not currently applied for any incentives from either Lawrence County or at the state level.

Witness: Brian K. West

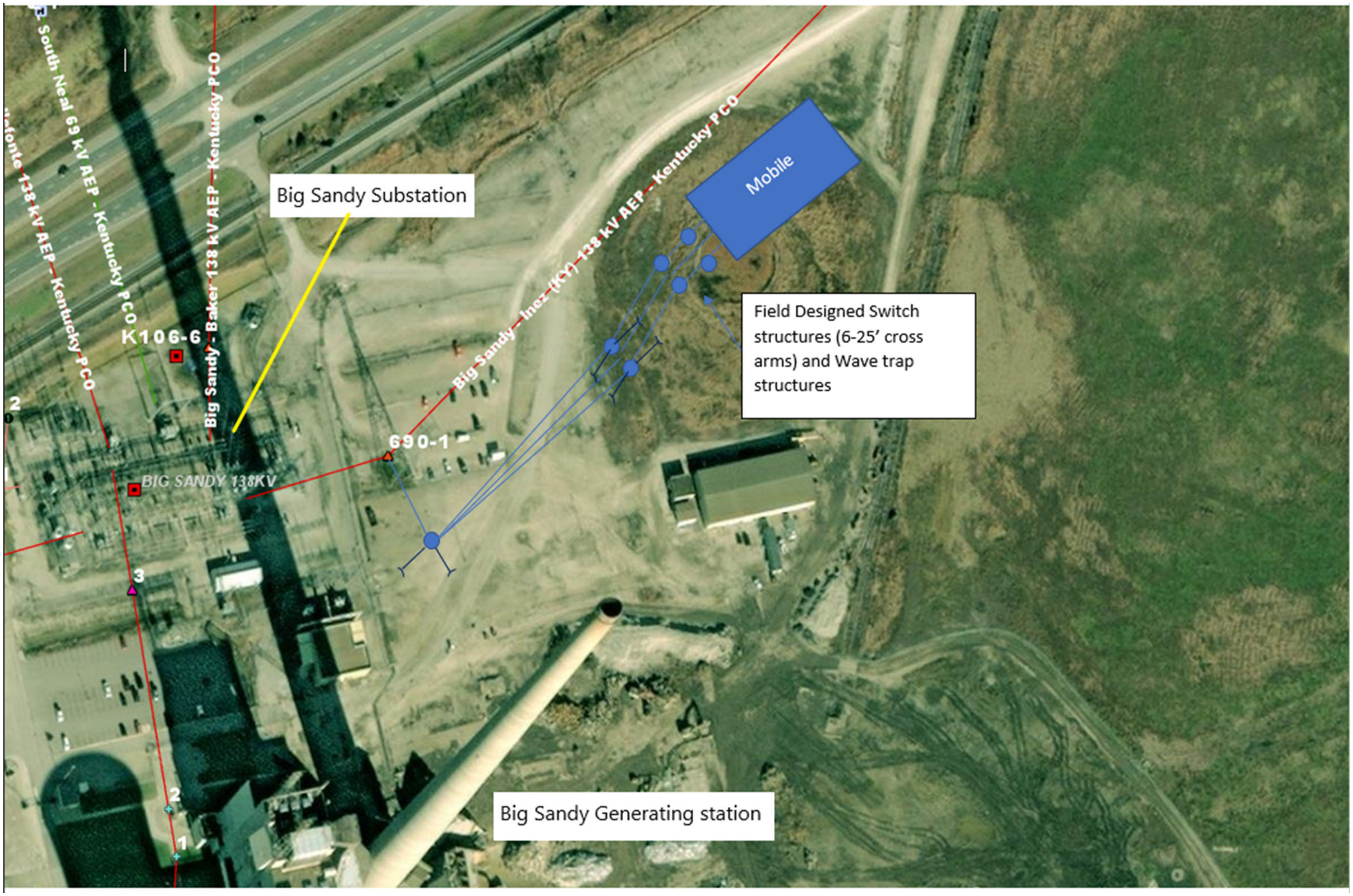
DATA REQUEST

1_2 Refer to the West Testimony, page 6, lines 3-6 and to the Application, Exhibit 1, paragraph 10, page 2. Provide a map of the anticipated locations of Ebon's facility in relation to the Big Sandy Generation station and the substation.

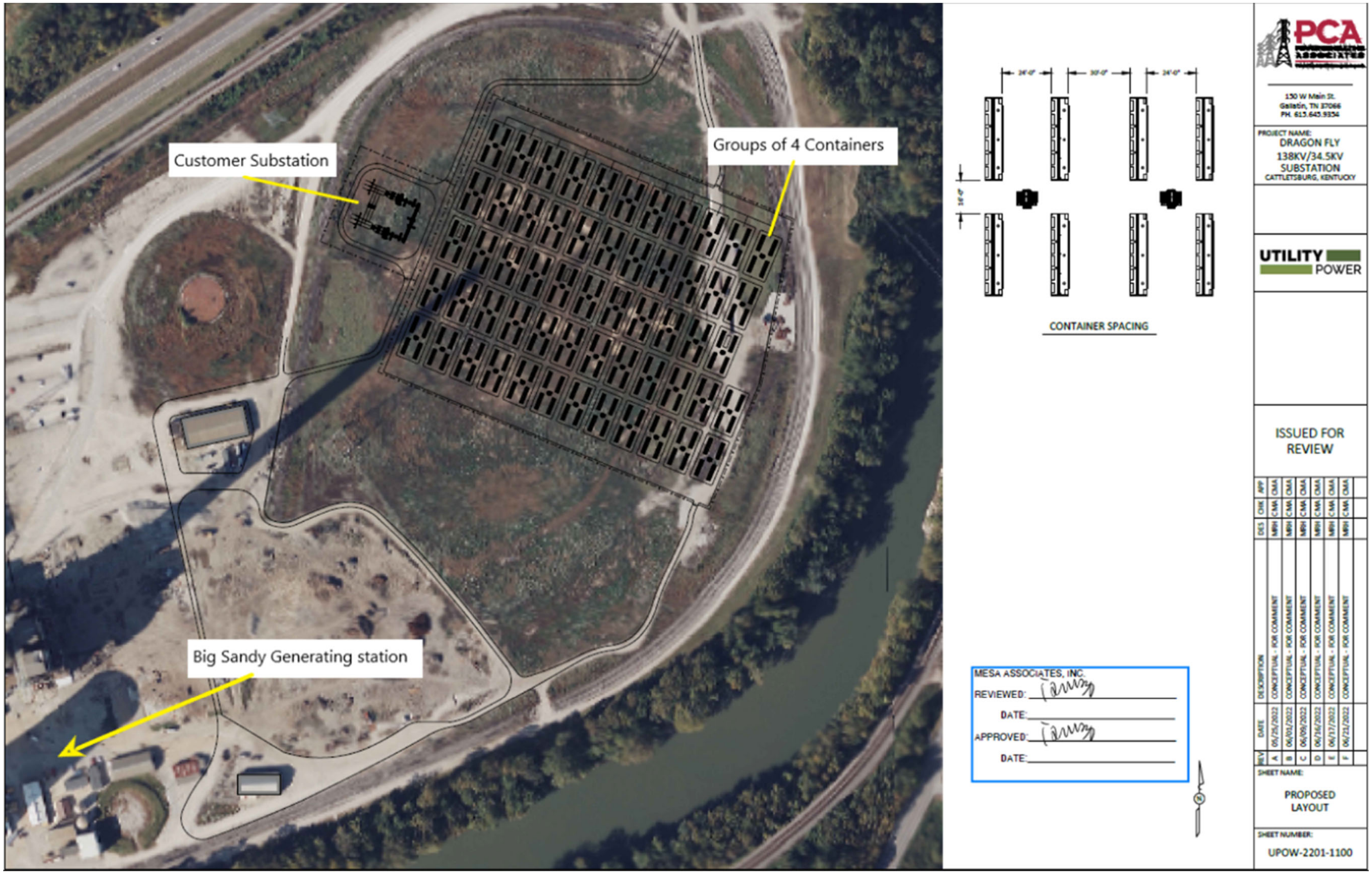
RESPONSE

Please see KPCO_R_KPSC_1_2_Attachment1.

Witness: Brian K. West



Map is preliminary. Final engineering not finalized.



Map is preliminary. Final engineering not finalized.

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DATA REQUEST

1_3 Refer to the West Testimony, page 6, lines 9-13. The cryptocurrency markets are highly volatile and risky.
a. Explain the degree to which Ebon's business depends on cryptocurrency mining.
b. In the case of default or bankruptcy, explain whether Kentucky Power is requiring Ebon to post a bond or any other form of assurance that Kentucky Power's other customers will not bear any of the cost incurred to serve Ebon.

RESPONSE

a. The Company has been informed by Ebon that Ebang International Holdings Inc. (Nasdaq: EBON) (Ebon's parent company) is a blockchain technology company with strong application-specific integrated circuit (ASIC) chip design capability. Ebang's ASIC chip technology has many applications, and among them are cryptomining and other digital asset financial services. Because of its competitive advantages, capabilities and continuous R&D in this field, Ebang has become a leading bitcoin mining machine producer in the global market with established relationships to global wafer foundry companies. That said, Ebang's technology and computing facilities can be used for many other blockchain applications in financial technology (fintech) and other big data processing. Ebon (Ebang's wholly-owned US subsidiary) develops and operates physical blockchain data centers using the parent company's technology and equipment that can be used to create cryptocurrency. Like other data centers, Ebon's datacenters can be used for other blockchain applications in fintech and other big data processing. While Ebon's Kentucky facility is being designed to process cryptocurrencies, it is not dependent upon cryptomining for operation or economic success because it has other block-chain applications and market applications.

b. Kentucky Power will require Ebon to provide a security deposit or letter of credit in the amount of 2/12ths of the customer's estimated annual bill.

Witness: Brian K. West (subpart b)

Witness: Amanda C. Clark (subpart a)

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DATA REQUEST

1_4 Refer to the West Testimony, page 7, lines 13-18 and page 8, lines 8-12. Provide a schedule of Kentucky Power's forecasted winter and summer peak load, the supply resources by generation type (including the Bridge Power Coordination Agreement and any other anticipated capacity purchases) that will be utilized to satisfy that load, and the reserve margin for the years 2023-2043. Include in the response known and anticipated supply resource retirements and additions as well as known or anticipated load additions. Include in the response whether Ebon's 250 MW total capacity reservation is modeled as 250 MW or 25 MW of capacity.

RESPONSE

Please see KPCO_R_KPSC_1_4_PublicAttachment1, KPCO_R_KPSC_1_4_Attachment 2 and KPCO_R_KPSC_1_4_Attachment3. Please note that 2033-2043 will be addressed in the Company's next Integrated Resource Plan filing which is due on or before March 20, 2023. The Company anticipates Ebon's load will be at 25 MW coincident with PJM 5 coincident peaks.

Witness: Brian K. West

Kentucky Power Company
Annual Internal Load
2023-2034

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Internal Energy (GWH)												
Residential	1,959	1,929	1,909	1,890	1,873	1,862	1,848	1,832	1,821	1,810	1,800	1,791
Commercial	1,460	1,897	1,894	1,890	1,884	1,881	1,877	1,873	1,869	1,865	1,862	1,859
Total Industrial	2,076	2,072	2,062	2,052	2,042	2,037	2,035	2,034	2,034	2,031	2,028	2,026
Total Other Ultimate	9	9	9	9	9	9	9	9	9	9	9	9
Total Ultimate Sales	5,504	5,908	5,875	5,842	5,809	5,790	5,770	5,749	5,733	5,716	5,699	5,685
Other Sales-for-Resale	78	77	33	0	0	0	0	0	0	0	0	0
Total Sales-for-Resale	78	77	33	0	0	0	0	0	0	0	0	0
Total Internal Sales	5,581	5,985	5,907	5,842	5,809	5,790	5,770	5,749	5,733	5,716	5,699	5,685
Total Losses	412	463	503	457	459	452	453	451	449	448	446	445
Total Internal Energy	5,994	6,448	6,410	6,298	6,268	6,242	6,223	6,200	6,182	6,164	6,145	6,130
Internal Peak Demand (MW)												
Summer	1,011	1,092	1,089	1,069	1,065	1,059	1,056	1,053	1,050	1,046	1,046	1,042
Preceding Winter	1,282	1,342	1,336	1,309	1,301	1,289	1,285	1,277	1,271	1,261	1,260	1,253

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DATA REQUEST

1_5 Refer to the West Testimony, page 7, lines 13-18. Kentucky Power is traditionally a winter peaking utility.
a. Explain how Kentucky Power will satisfy its capacity requirements if it is capacity short during the winter months for the period 2023-2043.
b. Explain whether Kentucky Power views capacity purchases as a viable way to satisfy at least a part of its capacity requirements.

RESPONSE

a. Kentucky Power will satisfy its capacity requirements if it is capacity short through a combination of owned generation as well as market purchases. The ultimate mix of resources will be determined in the Company's Integrated Resource Plan ("IRP") to be filed on or before March 20, 2023.[1] In general, the mix of resources includes solar, wind and natural gas added at various levels and years, as needed.

b. A certain amount of capacity purchases, in addition to owned generation, is a prudent method of satisfying the Company's capacity requirements. Bilateral capacity purchases give the Company the ability to secure a certain portion of needed capacity when the costs are favorable to customers. This strategy is in alignment with the Company's 2019 IRP filed in Case No. 2019-00443. See part (a) of this response with respect to the Company's next IRP.

Witness: Brian K. West

[1] *See* Order, *In The Matter Of: Electronic Application Of Kentucky Power Company To Extend Date To File 2022 Integrated Resource Plan*, Case No. 2022-00353 (Ky. P.S.C. October 27, 2022) (allowing Kentucky Power an extension to file its 2022 IRP until March 20, 2023).

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DATA REQUEST

1_6 Refer to the West Testimony, page 7, lines 18-22 and page 8, lines 1-5. Explain whether Kentucky Power anticipates having to purchase capacity during the 2024-2025 PJM Planning Year. If not, explain how Kentucky Power anticipates fulfilling its winter and summer capacity requirements.

RESPONSE

In order to satisfy the Company's FRR requirement with PJM, Kentucky Power has entered into a bilateral market capacity purchase agreement for 80 MW at $54/MW-Day for the 2024/25 PJM Planning Year.

Witness: Brian K. West

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DATA REQUEST

1_7 Refer to the West Testimony, page 9, lines 8-12.
a. Explain the number of times PJM declared an event that required interrupting customers on the Rider Demand Response Service (D.R.S.).
b. Explain whether Kentucky Power has ever interrupted customers taking service under Rider D.R.S. and if so, the amount of power interrupted, duration, and the circumstances requiring each interruption.

RESPONSE

a. PJM does not call for interruptions under Rider D.R.S., the Company does.

b. Yes, the Company has interrupted customers taking service under Rider D.R.S. Please see KPCO_R_KPSC_1_7_Attachment1 for the information requested.

Witness: Brian K. West

DATA REQUEST

1_8 Refer to the West Testimony, page 8, lines 8-12. Explain whether PJM is always the entity calling for an interruption or whether Kentucky Power can call for an interruption.

RESPONSE

Kentucky Power would always be the entity calling for Rider D.R.S. interruptions.

Witness: Brian K. West

DATA REQUEST

1_9 Refer to the West Testimony, page 9, lines 11-19. A marginal cost study is not the same thing as a fully distributed cost of service study for rate making purposes.
a. Provide the incremental cost of generation in the marginal cost study.
b. Refer also to WKW-Exhibit 2. Provide the supporting workpapers and an explanation of each step in the marginal cost study. Provide all supporting calculations and documentation in Excel spreadsheet format, with all formulas, columns, and rows unprotected and fully accessible.
c. Since Kentucky Power is purchasing capacity through the Bridge Power Coordination Agreement and paying the PJM Base Residual Auction clearing prices for the 2022-2023 and 2023-2024 years, explain why these clearing prices would not be appropriate for the incremental generation cost to be used in the marginal cost study.
d. In Kentucky Power's recent net metering case, the Commission outlined several system elements quantifying system benefits from customer net metering. In the case of new generation, there would be incremental costs to the system. Explain why these system elements would not also apply in a marginal cost study for Ebon.
e. Provide a cost benefit analysis of the proposed Ebon contract over the life of the 10-year contract. Provide all supporting calculations and documentation in Excel spreadsheet format, with all formulas, columns, and rows unprotected and fully accessible.
f. Provide a cost benefit analysis of the proposed Ebon contract over the life of the 10-year contract, which includes capacity costs. Provide all supporting calculations and documentation in Excel spreadsheet format, with all formulas, columns, and rows unprotected and fully accessible.

RESPONSE

a.-b. The Company's marginal cost study considers four incremental costs:

Energy – additional cost for the Customer's energy consumption. Utilizes the Customer's expected kWh multiplied by the Day-Ahead Locational Marginal Pricing.

Distribution –additional costs not reimbursed by the EDR customer to integrate the Customer into the Company's distribution system, except for metering which the Company bears the costs pursuant to 807 KAR 5:041, Section 10(1).

Transmission – additional cost to Kentucky Power's Network Integration Transmission

Service ("NITS") expense for the Customer's projected MW.

Generation capacity – The Company will replace only a portion of the Rockport Unit Power Agreement capacity upon its expiration.

The Company plans to make bilateral purchases for the PJM 2022-2023 (for the stub period) and 2023-2024 planning years to meet the capacity needs of the Company's customers, including new customers, during times when excess capacity may not exist. Between December 8, 2022 and May 31, 2023 (which is the "stub period" after the Rockport UPA expires where Kentucky Power will continue to purchase needed excess capacity from Kentucky Power's AEP affiliates until the end of the 2022-2023 PJM planning year), capacity purchased will cost less than that provided under the Rockport UPA at the time the contract was negotiated. Thus, the Company would not incur any additional incremental costs to purchase capacity otherwise provided by Rockport through at least May 31, 2024. Please see KPCO_R_KPSC_1_9_PublicAttachment2, tab "5CP and G Cost" which demonstrates this.

Furthermore, the Company must secure capacity to serve all of its customers after the expiration of the Rockport UPA, not just Ebon. Capacity costs are not assigned to individual customers and are recovered through Tariff P.P.A.

On December 28, 2022, the Company filed an ERRATA to BKW-Exhibit 2. Please see KPCO_R_KPSC_1_9_PublicAttachment1 for the supporting calculations to ERRATA BKW-Exhibit 2.

c. Please see KPCO_R_KPSC_1_9_PublicAttachment2 tab "5CP and G Cost" which illustrates the Company's position that there will be no incremental generation costs as replacement costs will be less than costs provided under the Rockport UPA. Nonetheless see subpart f.

d. The Company has not quantified any non-cost of service elements within its marginal cost analysis.

e. Please see KPCO_R_KPSC_1_9_PublicAttachment2 for the requested analysis.

f. Please see KPCO_R_KPSC_1_9_PublicAttachment2 for the requested analysis.

Witness: Lerah M. Kahn

DATA REQUEST

1_10 Refer to the Application, Exhibit 1, paragraph 10 and Article 1.1(U). If the substation is to be constructed after the first two years of operation, explain how Kentucky Power will provide service to Ebon for the first two years.

RESPONSE

Kentucky Power is working with Ebon to provide approximately 80 MW of capacity for their operations until the customer's substation is completed. The 80 MW would be provided through the use of "capital spares" as defined in Article 1.1(A) of the Application, Exhibit 1. When the special contract was originally negotiated, 100 MW was planned for the initial phase of the project (Application, Exhibit 1, Article 1.1(S)), but has since been adjusted to 80 MW.

Witness: Brian K. West

DATA REQUEST

1_11 Refer to the Application, Exhibit 1, Article 5.1(B). Explain how the Floor Prices were determined.

RESPONSE

When the contract negotiations began, the calculated bill for the Ebon load under Tariffs I.G.S., E.D.R. and D.R.S. produced a realized rate lower than the Company's estimate of the marginal cost to serve. The floor price mechanism was put in place to raise the realized rate to more acceptable (still negotiated) levels over the 10-year contract. It also provides a mechanism to keep the special contract customer's rates lower over time by banking credits for periods where energy costs are low and realized rates are lower than the floor price for time periods when the reverse is true. Please see the tab labeled “Floor Price Bank Example” on the application’s Confidential Exhibit 1 for an example of the floor price.

Witness: Brian K. West

DATA REQUEST

1_12 Refer to the Application, Exhibit 1, Articles 5.1(B) and 5.1(C) and Confidential Exhibit 1, Floor Price Bank Example. Provide a narrative description of the Floor Price mechanism and its intended purpose.

RESPONSE

When the contract negotiations began, the calculated bill for the Ebon load under Tariffs I.G.S., E.D.R. and D.R.S. produced a realized rate lower than the Company's estimate of the marginal cost to serve. The floor price mechanism was put in place to raise the realized rate to more acceptable (still negotiated) levels over the 10-year contract. It also provides a mechanism to keep the special contract customer's rates lower over time by banking credits for periods where energy costs are low and realized rates are lower than the floor price for time periods when the reverse is true. Please see the tab labeled "Floor Price Bank Example" on the application's Confidential Exhibit 1 for an example of the floor price.

Witness: Brian K. West

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DATA REQUEST

1_13 Refer to the Application, Exhibit 1, Article 5.1(D). Explain whether the terms of this section will set rates sufficient to cover the variable cost of service and make a contribution to fixed costs.

RESPONSE

The Special Contract provisions ensure that the minimum billing will be total FAC and base fuel costs plus any applicable taxes and fees, which typically covers the average variable cost of service. It is likely but not certain that a contribution to fixed costs will be made as the Company does not know the future. Please refer to KPCO_R_KPSC_1_9_PublicAttachment2, tab "KPSC 1-9(e)(f)" at line No. 13, which estimates that a contribution to fixed costs will occur in addition to covering the variable cost of service over the 10-year contract.

Witness: Brian K. West

DATA REQUEST

1_14 Explain how the energy usage and payments of Ebon will be factored into Kentucky Power's Fuel Adjustment Clause.

RESPONSE

The Fuel Adjustment Clause ("FAC") uses the kWh sales and the cost of generated and purchased energy to determine the FAC rate. The energy usage and payments will be factored into the Company's FAC like any other customer in our service territory. The energy usage will be accounted for on page 3 of 5 of the monthly FAC filing, which shows the monthly energy sales for the company. The payments from Ebon (nor from any other customer) do not factor into the FAC calculation as they are not fuel related.

Witness: Brian K. West

VERIFICATION

The undersigned, Brian K. West, being duly sworn, deposes and says he is the Vice President, Regulatory & Finance for Kentucky Power Company, that he has personal knowledge of the matters set forth in the foregoing responses and the information contained therein is true and correct to the best of his information, knowledge, and belief.

Brian K. West

Commonwealth of Kentucky)
) Case No. 2022-00387
County of Boyd)

Subscribed and sworn before me, a Notary Public, by Brian K. West this 22nd day of December, 2022.

Scott E. Bishop
Notary Public

SCOTT E. BISHOP
Notary Public
Commonwealth of Kentucky
Commission Number KYNP32110
My Commission Expires Jun 24, 2025

My Commission Expires June 24, 2025

Notary ID Number: KYNP32110

VERIFICATION

The undersigned, Lerah M. Kahn, being duly sworn, deposes and says she is a Regulatory Consultant for Kentucky Power Company, that she has personal knowledge of the matters set forth in the foregoing responses and the information contained therein is true and correct to the best of her information, knowledge, and belief.

Lerah M. Kahn

Lerah M. Kahn

Commonwealth of Kentucky)
) Case No. 2022-00387
County of Boyd)

Subscribed and sworn before me, a Notary Public, by Lerah M. Kahn this 21st day of December, 2022.

Scott E. Bishop

Notary Public

SCOTT E. BISHOP
Notary Public
Commonwealth of Kentucky
Commission Number KYNP32110
My Commission Expires Jun 24, 2025

My Commission Expires June 24, 2025

Notary ID Number: KYNP 32110

VERIFICATION

The undersigned, Amanda C. Clark, being duly sworn, deposes and says she is the External Affairs Manager for Kentucky Power Company, that she has personal knowledge of the matters set forth in the foregoing responses and the information contained therein is true and correct to the best of her information, knowledge, and belief.

Amanda C. Clark

Amanda C. Clark

Commonwealth of Kentucky)
) Case No. 2022-00387
County of Boyd)

Subscribed and sworn before me, a Notary Public, by Amanda C. Clark this 21st day of December, 2022.

Scott E. Bishop

Notary Public

SCOTT E. BISHOP
Notary Public
Commonwealth of Kentucky
Commission Number KYNP32110
My Commission Expires Jun 24, 2025

My Commission Expires June 24, 2025

Notary ID Number: KYNP 32110