

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC TARIFF FILING OF KENTUCKY)	
POWER COMPANY FOR APPROVAL OF A)	CASE NO.
SPECIAL CONTRACT WITH EBON)	2022-00387
INTERNATIONAL, LLC.)	

ORDER

On October 28, 2022, Kentucky Power Company (Kentucky Power) filed, through the Commission’s electronic tariff filing system, a special contract with Ebon International, LLC (Ebon) (Special Contract) to provide service to a new cryptocurrency facility in Louisa, Kentucky. The Special Contract states that the effective date will be the first day of the first billing month following the date Ebon provides written notice to Kentucky Power that Ebon’s facility has begun commercial operation and after receipt of Commission approval of the Special Contract. KRS 278.180(1) requires a utility to provide the Commission with 30 days’ notice before making changes to any rate. Therefore, the earliest possible effective date for the Special Contract is November 27, 2022, which is 30 days after the filing date.

On November 9, 2022, the Attorney General of the Commonwealth of Kentucky, by and through the Office of Rate Intervention (Attorney General), submitted comments regarding the proposed special contract and requested that the Commission open an investigation to formally review the proposed Special Contract. Kentucky Industrial Utility Customers, Inc. (KIUC) also filed comments on November 9, 2022, requesting that the Commission open an investigation to determine whether the proposed Special Contract

is just and reasonable. On November 17, 2022, the Kentucky Resources Council submitted comments requesting that the Commission open a formal proceeding to investigate the reasonableness of the proposed special contract. The Attorney General, KIUC, and Kentucky Resources Council's comments are included in Appendix B to this Order.

KRS 278.030 provides that a utility may collect fair, just and reasonable rates and that the service it provides must be adequate, efficient and reasonable. Having reviewed the proposed Special Contract and being otherwise sufficiently advised, the Commission finds that an investigation is necessary to determine the reasonableness of the proposed Contract and that such investigation cannot be completed by November 27, 2022. Therefore, pursuant to KRS 278.190(2), the Commission will suspend the effective date of the proposed Special Contract for five months, up to and including April 26, 2023.

The Commission directs Kentucky Power to the Commission's July 22, 2021 Order in Case No. 2020-00085¹ in which the Commission mandated the use of electronic filing procedures listed in 807 KAR 5:001, Section 8. The Commission finds that electronic filing procedures are to be used, consistent with the filing procedures set forth in Case No. 2020-00085. The Commission further finds that a procedural schedule is established to review the reasonableness of the proposed Special Contract. The procedural schedule is attached as Appendix A to this Order and is incorporated herein.

¹ Case No. 2020-00085, *Electronic Emergency Docket Related to the Novel Coronavirus COVID-19* (Ky. PSC July 22, 2021), Order (in which the Commission ordered that for case filings made on and after March 16, 2020, filers are NOT required to file the original physical copies of the filings required by 807 KAR 5:001, Section 8).

IT IS THEREFORE ORDERED that:

1. This proceeding is established to investigate the reasonableness of the proposed Special Contract.

2. Kentucky Power's proposed Special Contract is suspended for five months from November 27, 2022, up to and including April 26, 2023.

3. Kentucky Power shall, by counsel, enter an appearance in this proceeding within seven days of the date of service of this Order. The entry of appearance shall include the name, address, telephone number, fax number, and electronic mail address of counsel.

4. Unless otherwise ordered by the Commission, the procedures set forth in 807 KAR 5:001, Section 8, related to service and electronic filing of papers shall be followed in this proceeding.

5. Pursuant to 807 KAR 5:001, Section 8(9), within seven days of service of this Order, Kentucky Power shall file by electronic means a written statement that it waives any right to service of Commission Orders by United States mail and that it or its authorized agent possess the facilities to receive electronic submissions.

6. Unless a party granted leave to intervene states its objection to the use of electronic filing procedures in a motion for intervention, the party shall:

a. Be deemed to have consented to the use of electronic filing procedures and the service of all papers, including Orders of the Commission, by electronic means; and

b. Within seven days of the date of service of an order of the Commission, granting intervention, file with the Commission a written statement that:

(1) It or its authorized agent possesses the facilities to receive electronic transmissions; and

(2) Sets forth the electronic mail address to which all electronic notices and messages related to this proceeding shall be served.

7. If a party objects to the use of electronic filing procedures and the Commission determines that good cause exists to excuse that party from the use of electronic filing procedures, service of documents on that party and by that party shall be made in accordance with 807 KAR 5:001, Section 4(8).

8. The procedural schedule set forth in Appendix A to this Order shall be followed.

9. As set forth in 807 KAR 5:001, Section 4(11)(a), a person requesting permissive intervention in a Commission proceeding is required to demonstrate either (1) a special interest in the proceeding, which is not adequately represented in the case, or (2) that the person requesting permissive intervention is likely to present issues or develop facts that will assist the Commission in fully considering the matter without unduly complicating or disrupting the proceedings. Therefore, any person requesting to intervene in a Commission proceeding must state with specificity the person's special interest that is not otherwise adequately represented, or the issues and facts the person will present that will assist the Commission in fully considering the matter. A mere recitation of the quantity of utility service consumed by the movant or a general statement regarding the potential impact of possible modification of rates will not be deemed sufficient to establish a special interest. In addition, any motion to intervene after the date established in the procedural schedule shall also show good cause for being untimely. If

the untimely motion is granted, the movant shall accept and abide by the existing procedural schedule.

10. Kentucky Power shall give notice of the hearing in accordance with the provisions set forth in 807 KAR 5:001, Section 9(2). In addition, the notice of the hearing shall include the following statements: "This hearing will be streamed live and may be viewed on the PSC website, psc.ky.gov"; and "Public comments may be made at the beginning of the hearing. Those wishing to make oral public comments may do so by following the instructions listed on the PSC website, psc.ky.gov." At the time publication is requested, Kentucky Power shall forward a duplicate of the notice and request to the Commission.

11. At any public hearing in this matter, neither opening statements nor summarization of direct testimonies shall be permitted.

12. Pursuant to KRS 278.360 and 807 KAR 5:001, Section 9(9), a digital video recording shall be made of the hearing.

13. The Commission does not look favorably upon motions for continuance. Accordingly, motions for extensions of times with respect to the schedule herein shall be made in writing and will be granted only upon a showing of good cause.

14. The Commission does not look favorably upon motions to excuse witnesses from testifying at Commission hearings. Accordingly, motions to excuse a witness from testifying at a Commission hearing or from testifying in person at a Commission hearing shall be made in writing and will be granted only upon a showing of good cause.

15. The Executive Director shall serve a copy of this Order on the Attorney General, KIUC, and Kentucky Resources Council.

16. Nothing contained in this Order shall prevent the Commission from entering further Orders in this matter.

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PUBLIC SERVICE COMMISSION


Chairman

Vice Chairman


Commissioner

ENTERED
NOV 23 2022
rcs
KENTUCKY PUBLIC
SERVICE COMMISSION

ATTEST:


Executive Director

APPENDIX A

APPENDIX TO AN ORDER OF THE KENTUCKY PUBLIC SERVICE
COMMISSION IN CASE NO. 2022-00387 DATED NOV 23 2022

- Requests for intervention shall be filed no later than 12/02/2022
- Initial requests for information to Kentucky Power shall be filed no later than 12/09/2022
- Kentucky Power shall file responses to initial requests for information no later than.....12/28/2022
- All supplemental requests for information to Kentucky Power shall be filed no later than 01/17/2023
- Kentucky Power shall file responses to supplemental requests for information no later than01/27/2023
- Intervenor testimony, if any, in verified prepared form shall be filed no later than..... 02/08/2023
- All requests for information to Intervenors shall be filed no later than..... 02/22/2023
- Intervenors shall file responses to requests for information no later than..... 03/08/2023
- Kentucky Power shall file, in verified form, its rebuttal testimony no later than.....03/15/2023
- Kentucky Power or any Intervenor shall request either a hearing or that the case be submitted for decision based on the record no later than.....03/22/2023

APPENDIX B

APPENDIX TO AN ORDER OF THE KENTUCKY PUBLIC SERVICE
COMMISSION IN CASE NO. 2022-00387 DATED NOV 23 2022

TWENTY-SEVEN PAGES TO FOLLOW

**COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION**

Re: Special Contract For Electric Service And Rider D.R.S. Addendum With Ebon International, LLC, Case No. TFS 2022-00529

ATTORNEY GENERAL'S COMMENTS

The Attorney General provides these Comments related to Kentucky Power Company's ("Kentucky Power" or "Company") pending proposal to approve a special contract with Ebon International, LLC ("Ebon").

The Attorney General requests that the Commission open an investigation to formally review this special contract. Through this tariff filing, the Company attempts to set rates for a substantial portion of its load, perhaps in excess of 35% of its annual retail sales, with extremely limited review and notice. Summary approval of such an important matter is inappropriate.¹

Kentucky Power's proposed special contract with Ebon is not proposed under its economic development rider tariff because the capacity needed by Ebon exceeds the available cap under Kentucky Power's economic development tariff and Ebon, "required a more complex billing calculation than is possible under any of the Company's tariffs."² However, it is clear that the proposal is meant to serve economic development needs as

¹ As a prefatory matter, given the substantial load involved and unique legal posture, this matter should have been filed as formal application as opposed to a tariff filing. While the Commission has allowed Kentucky Power to file economic development special contracts as tariff filings, the special contract at issue here has not technically been entered under Kentucky Power's economic development tariff. While the Commission should apply the substantive requirements applicable to economic development special contracts in this case, this matter is deserving of the scrutiny that it will only receive under a formal docket.

² Testimony of Brian West at 11.

the Company argues that the special contract will, “help address economic hardships in the Company’s service territory,”³ and the Company touts the job creation to be driven by the project.⁴ Thus, because the Company proposes to provide discounted rates in order to drive economic development, it is important that the Commission analyze whether the special contract fulfills the requirements the Commission has placed on economic development special contracts in its September 24, 1990 Order in Administrative Case No. 327 (“Administrative Case 327 Order”).

The Attorney General is in full support of efforts to promote economic development throughout the Commonwealth and specifically in Eastern Kentucky. However, proposals to facilitate economic development should be tailored carefully to ensure that the ratepayers of Eastern Kentucky do not unfairly subsidize companies. On its face, this special contract does not appear to protect existing ratepayers. The special contract proposed here violates Administrative Order 327 in at least two ways.

First, the proposed special contract violates Administrative Order 327’s requirement that the special rate must generate revenues that exceed the project’s marginal costs. Administrative Order 327 requires, “[a] utility should demonstrate that the EDR exceeds the marginal cost associated with serving the customer.” Principally, this requires a thorough vetting of the marginal cost analysis performed by the Company and submitted with the tariff filing. Kentucky Power fails to demonstrate that the rate charged to Ebon will generate revenues exceeding the marginal costs to serve the load.

³ Testimony of Brian West at 6-7.

⁴ Testimony of Brian West at 10.

As an example of one marginal cost caused by the special contract that the Company does not plan to recoup in the special rate, Kentucky Power admits that, “[it] will be required to acquire... 25 MW to meet the Company’s PJM capacity requirements.”⁵ However, in its “Summary of Incremental Costs and Revenues,” costs related to “Generation Capacity” is “\$0.” While it is likely that Kentucky Power is underestimating the amount of capacity it will be required to obtain to fulfill the obligations driven by this special contract, the failure to include the costs related to the capacity the Company must obtain demonstrates that the marginal cost analysis is flawed.

Further, the Company represents the “Summary of Incremental Costs and Revenues” at Exhibit B to the Testimony of Brian West as a “Marginal Cost Study.”⁶ However, the single page summary merely notes conclusory values. It fails to provide any context for how those values were selected or calculated. Further, as the special contract is heavily redacted, it is impossible to duplicate the Company’s calculations. The purported study also fails to demonstrate if and how the net revenue will change over the term of the special contract. Critical review of these aspects of the Company’s proposal is essential to protect ratepayers.

The intent behind Administrative Order 327’s marginal cost requirement is plain. Special rates discounted to drive economic development must not drive rate increases for existing ratepayers. On its face and based on the information currently available for

⁵ Testimony of Brian West at 8.

⁶ See Transmittal Letter of October 28, 2022.

review, it appears this special contract could cause higher rates for existing ratepayers.

Second, the proposed special contract violates Administrative Order 327's limitation on discounted rates to periods of excess capacity. Administrative Order 327 requires, "[a]n EDR contract should only be offered during periods of excess capacity for the utility, and the utility must demonstrate that the EDR contract will not cause it to fall below a reserve margin essential for system reliability." The Commission very recently reiterated the necessity of an adequate demonstration of excess capacity when seeking approval of economic development special contracts.⁷ Kentucky Power failed to demonstrate that the special contract is being offered during a period of excess capacity, and in fact, admits that it is not.

As mentioned above, Kentucky Power admits that it will need to purchase additional capacity to serve this special contract customer.⁸ In fact, Kentucky Power admits soon it will not have sufficient capacity to serve existing customers.⁹ Clearly, this is not a period of excess capacity. Thus, the Company failed to meet the requirement of Administrative Order 327 that economic development special contracts be limited to periods of excess capacity.

The intent behind Administrative Order 327's limitation on providing discounted economic development rates to periods of excess capacity relates to the Commission's

⁷ See Order of October 31, 2022 at 11 in Case No. 2022-00292, *Electronic Application of Atmos Energy Corporation for Approval of Special Contract Pursuant to its Economic Development Rider*. "For future EDR contracts, Atmos shall file specific detailed support for the Administrative Case 327 Order, Finding 5 showing that Atmos has adequate system capacity to serve the proposed customer and that the load served will not cause it to fall below a reserve margin considered essential for system reliability."

⁸ Testimony of Brian West at 8.

⁹ Testimony of Brian West at 7.

marginal cost concerns. If a utility does not have excess capacity, service of new load will necessarily drive market purchases. At a minimum, existing ratepayers should be held harmless for those purchases, but the limitation of these offerings to periods of excess capacity is likely an attempt by the Commission to avoid the complicated analysis required to apportion those costs. Such a limitation is reasonable.

Importantly, a portion of the testimony put forward by the Company in support of the special contract has the unintended consequence of highlighting both of the aforementioned violations of Administrative Order 327. The Company incorrectly argues that it would be “unreasonably discriminat[ory]” to require Ebon to pay for increased capacity costs driven by its load. This argument provides support for the conclusion that Kentucky Power failed to include all marginal costs in its marginal cost analysis. It also highlights that the Commission is right to avoid this controversy by limiting these discounted rates to periods of excess capacity.

The Company argues:

The Company will not incur any additional incremental costs to purchase capacity otherwise provided by Rockport through at least May 31, 2024. Kentucky Power has an obligation to supply generation capacity to cover all of its load, regardless of the load’s composition. The Company cannot unreasonably discriminate against one customer over another based on what type of business they are in, its business model, or its number of employees. The Company cannot unreasonably discriminate, period.¹⁰

Implicit in the statement that the Company will not incur any additional incremental (i.e. marginal) costs to purchase capacity “through at least” May 31, 2024 is

¹⁰ Testimony of Brian West at 8-9.

an admission that it could, and in fact will, incur increased capacity costs driven by this load during the ten-year term of the special contract. As mentioned above, the Company admits that service of the Ebon load will require additional capacity purchases. The Company's protestations thereafter that it, "cannot unreasonably discriminate, period," are simply argument that it should not be required to pass marginal capacity costs driven by this load on to Ebon. Respectfully, this is contrary to the Commission policies reflected in Administrative 327 requiring an economic development project's rate revenues to exceed its marginal costs.

First, the Commission's requirement the Company demonstrate that, "the EDR exceeds the marginal cost associated with serving the customer," does not distinguish between capacity and energy charges.

Second, increased capacity charges driven by additional load are exactly the type of customer impacts the Commission sought to avoid by limiting the operation of economic development rates to "periods of excess capacity."

Third, requiring a customer to pay capacity charges driven by its load is not "discriminatory," and arguments to the contrary fail as a matter of logic. Special contract rates are, by definition, discriminatory. They discriminate between the special contract rate and rates charged of all other customers. Under the test selected by the Company, the question would then turn to whether those discriminatory rates were reasonable. As the Commission determined in Administrative Order 327, requiring a customer to cover the marginal costs driven by their usage is reasonable. To allow otherwise would be unreasonable. Requiring a customer to cover costs driven by their usage is foundational

to cost based rate-making and is therefore, entirely reasonable. The Company argues that, “[t]he cost of capacity needed to serve new load has never been directly assigned only to new customers.”¹¹ This argument fails to appreciate the novelty of the circumstances present here. The Company fails to identify another instance when it sought to provide a discounted, economic development rate during a period where it did not have the capacity to meet that load. If the rate resulting from the addition of incremental capacity charges creates a bad bargain for the customer, that result has not been caused because it is unreasonable to allocate costs in that way. Instead, that result is caused by the Company not having excess generation, which would make it reasonable to serve that load at a discounted rate without prejudice to existing customers.

Thus, the Company’s argument that it would be unreasonably discriminatory to require Ebon to pay its marginal capacity costs is evidence that the proposed special contract violates the two key principles of Administrative Order 327 discussed above. The special contract does not generate revenue sufficient to cover marginal costs and it is not limited to a period of excess capacity.

If, despite the foregoing, the Commission is inclined to approve the special contract, the Commission should take additional steps to protect ratepayers. The Commission should require economic development special contract customers to secure their participation with appropriate collateral. In the event of default on the special contract, the Commission should require companies to provide security for the benefits

¹¹ Testimony of Brian West at 8-9.

they receive through discounted rates. This is especially true for an industry such as crypto mining where the operations can be moved easily. A default presents risks to the other ratepayers should they be forced to pay for energy, capacity, or other purchases made for the benefit of the special contract customer. In Case No. 2022-00355, the Commission recently determined, “even if the Commission were to examine the Attorney General’s recommendation to require EDR special contract customers to secure their participation with appropriate collateral, a proceeding on a single EDR special contract would not be the appropriate venue to do so, as such a requirement would affect all utilities that provide EDRs.”¹² Nonetheless, such a requirement is important for the protection of ratepayers and the Commission should require it when the Commission determines it is procedurally appropriate to do so.

In conclusion, the Attorney General is in full support of all reasonable economic development initiatives that have the potential to benefit the people of a service territory as long as risks to existing customers are properly mitigated. Here, the Commission should approve the special contract if and only if the Company and Ebon are willing to ensure and clearly demonstrate that the special rate provided to Ebon covers the marginal costs driven by its load and ratepayers are fully protected in the event of default. To ensure that is the case, the Commission should open a formal investigation into this special contract.

¹² See Order of October 31, 2022 in Case No. 2022-00355, *Electronic Tariff Filing of East Kentucky Power Cooperative, Inc. for Approval of a Special Contract Pursuant to its Interruptible Service Tariff and Economic Development Rider Between It, Jackson Energy Cooperative Corporation, and UMine, LLC.*

Respectfully submitted,

DANIEL J. CAMERON
ATTORNEY GENERAL

A handwritten signature in blue ink that reads "J. Michael West". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

J. MICHAEL WEST
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Certificate of Service and Filing

Pursuant to the Commission's Orders and in accord with all other applicable law, Counsel certifies that, on November 9, 2022, a copy of the forgoing was served by electronic mail to the following.

linda.bridwell@ky.gov
Nancy.Vinsel@ky.gov
psc.tariffs@ky.gov
jkylercohn@bkllawfirm.com
mkurtz@bkllawfirm.com
kglass@stites.com
Jeb.Pinney@ky.gov

this 9th day of November, 2022

A handwritten signature in blue ink, appearing to read "J. Michael West". The signature is fluid and cursive, with a horizontal line extending from the end.

Assistant Attorney General

BOEHM, KURTZ & LOWRY
36 EAST SEVENTH STREET, SUITE 1510
CINCINNATI, OHIO 45202

TELEPHONE (513) 421-2255

November 9, 2022

Linda C. Bridwell, P.E., Executive Director
Daniel Hinton, Tariff Branch Manager
Kentucky Public Service Commission
211 Sower Boulevard
P.O. Box 615
Frankfort, Kentucky 406042
Submitted via email to dehinton@ky.gov

Re: *Special Contract For Electric Service And Rider D.R.S. Addendum
With Ebon International, LLC, Case No. TFS 2022-00529*

Dear Executive Director Bridwell and Mr. Hinton:

Kentucky Industrial Utility Customers, Inc. (“KIUC”) provides these Comments related to Kentucky Power Company’s (“Kentucky Power” or “Company”) pending proposal to approve a special contract with Ebon International, LLC (“Ebon”).

Background

On October 28, 2022, Kentucky Power filed for approval pursuant to the Commission’s electronic tariff filing system of a ten-year special contract with Ebon. Ebon proposes to construct and operate a blockchain data computing complex in Lawrence, Kentucky (“Ebon Facility”) on a portion of the site of the Company’s Big Sandy Generating Station. The Ebon Facility will be located on 55-acres to be leased from Kentucky Power. The total cost of construction is estimated at over \$250 million, and the Ebon Facility is expected to employ 50-100 new permanent full-time jobs with annual compensation between \$44,000 to \$76,000 by June 2024.

The electrical infrastructure for Kentucky Power to provide service to the customer’s Facility does not currently exist. During Phase One, Kentucky Power would provide up to approximately 90 MW of service, depending on the Company’s ability to deliver capacity to the Facility. After construction of a new substation, Phase Two would be for up to 250 MW of service beginning in approximately June 2024. Ebon is solely responsible for the cost of the new substation.

Ebon is the wholly-owned subsidiary of Ebang International Holdings (“Ebang”) a publicly listed company (“NASDAQ:EBON”). Ebang engages in the research, design, and development of application-specific integrated circuit chips and manufacture of Bitcoin mining machines in China, the United States, Hong Kong and internationally. Ebang has a market capitalization of approximately \$44 million and its shares are currently priced at about \$0.31 per share on the NASDAQ.

Linda C. Bridwell, P.E., Executive Director
Daniel Hinton, Tariff Branch Manager
Kentucky Public Service Commission
November 9, 2022
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The Ebon Facility is expected to operate at a 90% load factor. Energy consumption in Phase Two is estimated to be 1,971,000 MWh. Kentucky Power's 2021 total retail sales were 5,093,309 MWh. Therefore, the proposed Ebon Facility represents a retail energy sales increase of approximately 38.7%.

Ninety percent of the new 250 MW load will take interruptible service under Rider D.R.S. ("Demand Response Service"). Ten percent, or 25 MW, will be firm service. Pursuant to Rider D.R.S., Ebon will be paid an Interruptible Demand Credit of \$5.50/Kw-month, or \$14.85 million annually (225,000 KW x \$5.50 x 12). This \$14.85 million annual payment will be automatically recovered from other customers pursuant to Tariff P.P.A. ("Purchase Power Adjustment"). Additional pricing provisions are contained at pages 10-15 of the proposed special contract, all of which are redacted.

Through May 31, 2024, Kentucky Power can acquire generating capacity to serve the new load under the AEP Power Coordination Bridge Agreement ("Bridge PCA"). After the Bridge PCA expires on May 31, 2024, Kentucky Power will not have sufficient generating capacity to serve the 25 MW of firm demand (plus a reserve margin). If Kentucky Power is unsuccessful in its PJM coincident peak shaving efforts under Rider D.R.S., or if Ebon elects to not interrupt when called upon, then the Company's capacity shortfall may be increased.

There are no explicit security deposit or credit support provisions in the proposed special contract regarding a potential Ebon default prior to the end of the ten-year contract term. But Kentucky Power avers that in case of a default it has remedies under Kentucky law.

Exhibit 2 to the proposed special contract (attached) is Kentucky Power's incremental cost analysis. This analysis purports to show that the annual incremental cost to serve the 250 MW load will be \$105.8 million versus annual incremental revenue of \$124.6 million, thus resulting in an annual contribution to fixed costs (net revenue) of \$18.8 million.

Comments

KIUC recognizes that Kentucky Power's service territory is economically distressed. Coal mining is greatly reduced from its peak and the closure of AK Steel's Ashland facility hurt the local economy. Ratepayers are currently struggling with significant increases to the Company's fuel adjustment clause ("FAC") due to high purchase power costs. On the positive side, expiration of the high demand cost 390 MW Rockport Unit Power Agreement in less than a month should bring needed rate relief.

KIUC supports all economic development efforts made by Kentucky Power. We recognize that this ongoing effort over the past several years has been difficult. True economic development can be transformative. Toyota's Georgetown manufacturing facility is the prime example. However, there are serious concerns that providing electric service to this Bitcoin mining facility may do more harm than good by raising rates on existing customers and by exposing those customers to greater risk. Therefore, the Commission should open a formal proceeding to investigate the justness and reasonableness of this transaction.

Linda C. Bridwell, P.E., Executive Director
Daniel Hinton, Tariff Branch Manager
Kentucky Public Service Commission
November 9, 2022
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In its formal proceeding to investigate the reasonableness of the proposed special contract, the Commission should, among other things, examine the following issues regarding the Company's incremental cost analysis.

The incremental cost analysis contained in Exhibit 2 does not appear to include the \$14.85 million annual payment to Ebon under Rider D.R.S. This payment will be automatically charged to ratepayers through Tariff P.P.A. This \$14.85 million annual payment to Ebon almost completely wipes out the purported incremental benefit of \$18.8 million. A \$14.85 million P.P.A. rate increase will cost the average residential customer more than \$36 per year.

The incremental cost analysis assumes zero costs for the generating capacity needed to serve the new load. Once the Bridge PCA expires on May 31, 2024, Kentucky Power will need to obtain at least 25 MW plus a reserve margin to serve the firm portion of the 250 MW new load. Additional generating capacity may be required if the PJM peak shaving provisions of Rider D.R.S are unsuccessful, or if Ebon elects to not interrupt when called on. At a minimum, the new capacity needed to serve the 25 MW firm load plus a reserve margin should be included in the incremental cost analysis.

The incremental cost analysis assumes that the 1,971,000 MWh to serve the Ebon Facility (250 MW x 8,760 x 90%) will be purchased on the PJM market at \$38.9/MWh. If this estimate is too low, then the entire analysis fails. During Kentucky Power's two pending six-month FAC review cases (May 2021 through October 2021 and November 2021 through April 2022) the Company's PJM market purchases averaged \$49.39/MWh. Using the actual PJM energy cost of \$49.39 in the incremental cost analysis increases the incremental cost by \$20.7 million which more than fully off-sets the purported net benefit. Forward and futures pricing for the period beginning June 2024 supports the concern that the PJM energy pricing assumption may be too low.

As long the cost of market purchases to serve the Ebon Facility is greater than the fuel cost of Kentucky Power's self-generation, then the FAC will increase for all ratepayers. The FAC would increase because the Ebon Facility will consume a large portion of the relatively low-cost self-generation that would otherwise go to current customers. It is not clear if this very likely FAC increase was factored into the incremental cost analysis.

Finally, the incremental cost analysis assumes incremental revenue from Ebon of \$124.6 million (\$63.2/MWh). In 2021, Kentucky Power had 35 customers served under Tariff I.G.S. ("Industrial General Service") at an average price of \$67.8/MWh, or only slightly above the assumed special contract rate. There is no way to verify the assumption of how much Ebon will be charged. The pricing provisions of the proposed special contract are completely redacted. But we do know that the proposed contract has these terms: "Floor Price", "Floor Price Bank", "Capacity Discount" and "Incremental Discount". These terms imply discounts in addition to those addressed in the testimony in support of the filing.

Linda C. Bridwell, P.E., Executive Director
Daniel Hinton, Tariff Branch Manager
Kentucky Public Service Commission
November 9, 2022
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In conclusion, the proposed special contract will have a profound impact on Kentucky Power's costs and the base, FAC and PPA rates to other customers. Therefore, a full investigation is warranted.

Respectfully submitted,

/s/ Michael L. Kurtz

Michael L. Kurtz, Esq.

Jody Kyler Cohn, Esq.

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**COUNSEL FOR KENTUCKY INDUSTRIAL
UTILITY CUSTOMERS, INC.**

MKLkew
Attachment

Cc: Katie Glass, Esq., Sites and Harbison, PLLC
Nancy Vinsel, General Counsel, KPSC
J.E.B. Pinney, Esq., Executive Advisor, KPSC
John G. Horne II, Esq., Executive Director Office of Rate Intervention
Michael West, Esq., Deputy Executive Director Office of Rate Intervention

ATTACHMENT

Summary of Incremental Costs and Revenues

Ln No.	Marginal Costs - Energy	
(1)	Annual kWh	1,971,000,000
(2)	DA LMP \$/kWh	0.03890
(3)	Marginal Costs - Energy	\$76,674,933
=(1)*(2)		
Marginal Costs - Distribution		
(4)	Distribution WO Total	\$4,801,185
(5)	Levelized Carrying Cost	10.15%
(6)	Annual Dist Incremental Cost	\$487,230
=(4)*(5)		
Summary of Incremental Costs and Revenues		
(7)	Energy	\$76,674,933
(8)	Distribution	\$487,230
(9)	PJM LSE Transmission	\$28,626,639
(10)	Generation Capacity	\$0
(11)	Total Incremental Costs	\$105,788,801
=(7)+(8)+(9)+(10)		
(12)	<u>Incremental Revenue</u>	<u>\$124,643,645</u>
(13)	Net Revenue (Cost)	\$18,854,844
=(12)-(11)		



KENTUCKY RESOURCES COUNCIL

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Lauren Heberle

Adam Johnson

Jane Richards

Hannah Weinstein

Board Emeritus
Roger Shott

Of Counsel
Tom FitzGerald

November 17, 2022

Linda C. Bridwell, P.E., Executive Director
Daniel Hinton, Tariff Branch Manager
Kentucky Public Service Commission
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Submitted via email to dehinton@ky.gov

RE: *Kentucky Power Company's Special Contract for Electric Service and Rider D.R.S. Addendums with Ebon International, LLC, Case No. TFS 2022-00529*

Dear Executive Director Bridwell:

Kentucky Conservation Committee, Mountain Association, Apogee-Climate & Energy Transitions/Earth Tools, Appalachian Citizens' Law Center, Sierra Club, and Kentucky Resources Council (collectively, "Joint Commenters") respectfully submit the below comments on Kentucky Power Company's ("KPCO") proposed Special Contract for Electric Service and Rider Demand Response Service ("DRS") Addendum with Ebon International, LLC. ("Ebon"), filed via the Commission's electronic tariff filing system on October 28, 2022. Joint Commenters respectfully request that the Commission open a formal proceeding to investigate whether the proposed special contract ("KPCO-Ebon Contract") is reasonable and satisfies the requirements of the Commission's prior orders, including the September 24, 1990 Order in Administrative Case No. 327 requirements for Economic Development Rates ("EDRs").

The Commission should open a formal proceeding here for further investigation because KPCO's filing fails to demonstrate the reasonableness and full impacts of the proposed special contract and attempts to circumvent proper public scrutiny and participation.

I. KPCO's Filing Should Be Considered as an EDR Contract, Despite Not Being Filed as Such

KPCO submits this proposed special contract outside of its approved EDR tariff – and, as discussed below, several features of the proposed contract deviate from the requirements of KPCO's EDR tariff and the Commission's prior orders. Nevertheless, since the proposed contract seeks approval to incorporate an EDR, the Commission should evaluate its reasonableness under the requirements for EDRs set by Administrative Case No. 327 and subsequent Commission orders concerning EDRs.

This special contract is submitted following a previous KPCO attempt at seeking Commission approval to offer EDRs to this facility for cryptocurrency mining, which it withdrew earlier this year following scrutiny from Commission staff and intervenors in Case No. 2022-00181. On June 9, 2022, KPCO submitted an application to the Commission to amend their EDR tariff and authorize multiple special contracts for EDRs, including special contracts to 11 entities for 12 sites, totaled to be around 482.5 MW, but sited “up to 550 MW.”¹ The three largest contracts were for 250 MW, 75 MW, and 45 MW, mostly for “Cryptocurrency Mining/Data Centers.”² The application also sought deviation from Administrative Case No. 327’s requirement that “EDRs should only be offered during periods of excess capacity” and that a utility demonstrate with “the submission of each EDR contract[] that the expected load to be served during each year of the contract period will not cause the utility to fall below a reserve margin that is considered for system reliability.”³

On June 22, 2022, the Commission on its own order, set up a procedural schedule for the processing of this case, including providing an opportunity for parties to intervene and seek discovery.⁴ After both the Attorney General (“AG”) and Kentucky Industrial Utility Customers (“KIUC”) intervened and requested a hearing – which the Commission granted along with suspending the proposed tariff for five months⁵ – KPCO filed a Motion to Withdraw Application Without Prejudice, stating that “it has determined it is not in the best interest of the Company to proceed with the prosecution of its application at this time.”⁶

This present KPBO-Ebon contract appears to be for the same facility that was subject to the largest contract that was at issue in Case No. 2022-00181. KPCO is no longer seeking changes to its existing tariff, but instead seeking Commission approval of this contract outside of its approved EDR tariff while including DRS tariff provisions. While KPCO submits this proposed contract through the Commission’s tariff system instead of initiating a docketed

¹ Electronic Application of Kentucky Power Company for an Order Approving the Company’s Amended Tariff E.D.R. to Increase the Capacity Available to be Served Under the Tariff and for Required Deviations from the Commission’s September 24, 1990 Order In Administrative Case No. 327, Case No. 2022-00181 (Ky. P.S.C. Jun. 9, 2022).

² *Id.* ¶ 11, Exhibit 2.

³ *Id.* ¶¶ 2-3.

⁴ Order, *In re: Electronic Application of Kentucky Power Company for an Order Approving the Company’s Amended Tariff E.D.R. to Increase the Capacity Available to be Served Under the Tariff and for Required Deviations from the Commission’s September 24, 1990 Order In Administrative Case No. 327*, Case No. 2022-00181 (Ky. P.S.C. Jun. 22, 2022).

⁵ Order, *In re: Electronic Application of Kentucky Power Company for an Order Approving the Company’s Amended Tariff E.D.R. to Increase the Capacity Available to be Served Under the Tariff and for Required Deviations from the Commission’s September 24, 1990 Order In Administrative Case No. 327*, Case No. 2022-00181 (Ky. P.S.C. Jul. 8, 2022).

⁶ Motion To Withdraw Application Without Prejudice, *In re: Electronic Application of Kentucky Power Company for an Order Approving the Company’s Amended Tariff E.D.R. to Increase the Capacity Available to be Served Under the Tariff and for Required Deviations from the Commission’s September 24, 1990 Order In Administrative Case No. 327*, Case No. 2022-00181, at 1 (Ky. P.S.C. Jul. 15, 2022).

proceeding, it also has deemed its proposal so unique that it has also submitted testimony explaining the contract’s provisions. Moreover, this testimony is limited in its publicly available information, as it includes cost information that KPCO claims is confidential, and a Motion for Confidential Treatment of that information. The public is left with vague statements with little to no evidence to support KPCO’s claims or pricing structure.

This KPCO-Ebon Contract is a 10-year contract that proposes to construct and operate a blockchain data computing complex in Lawrence County, Kentucky (“Ebon Facility”) on the site of the KPCO’s Big Sandy Generating Station. The cost of construction of the Ebon Facility is estimated at over \$250 million, and the facility will be located on 55 acres to be leased from Kentucky Power.⁷ Phase One of the contract would allow KPCO to provide up to approximately 80-100 MW of service, and Phase Two would be for up to 250 MW of service after additional construction.⁸

In its testimony, KPCO highlights that Ebon cannot take service under the tariff EDR, stating:

There are two primary reasons: First, Ebon’s Total Capacity Reservation exceeds the current MW cap for Tariff E.D.R. Approximately 211 MW remains unsubscribed under Tariff E.D.R., while the contract capacity for the Ebon Facility is planned for 250 MW. Second, Ebon required a more complex billing calculation than is possible under any of the Company’s tariffs.⁹

However, the referenced calculation is kept confidential from the document and is not available for review, and KPCO’s Motion for Confidential Treatment will keep these calculations away from public view and scrutiny. Similarly, KPCO’s testimony makes the claim that the KPCO-Ebon Contract’s pricing structure is reasonable, but fails to provide any public information to substantiate their claim.¹⁰

Additionally, KPCO does not expand on what it means by a “more complex billing calculation.”¹¹ It is unclear whether the complex billing will require upgrades to the Company’s billing system. If upgrades to the billing system are required, costs associated with the system upgrades related to Ebon should not be borne by the Company’s other customers.

As the AG’s comments point out, while KPCO does not file this contract as an EDR, it acts effectively as one and should be analyzed by the Commission as such.¹² As described above, KPCO’s testimony highlights the number of jobs that it claims the KPCO-Ebon Contract will

⁷ Testimony of Brian K. West on Behalf of Kentucky Power Company (“West Testimony”), at 6.

⁸ *Id.*

⁹ *Id.* ¶ 11.

¹⁰ *Id.* ¶ 12.

¹¹ *Id.* ¶ 11.

¹² Attorney General’s Comments, *In re: Special Contract For Electric Service And Rider D.R.S. Addendum With Ebon International, LLC*, Case No. TFS 2022-00529, p. 2 (Ky. P.S.C. Nov. 9, 2022).

create,¹³ and the economic development it will bring to the area.¹⁴ KPCO does not go in depth to substantiate these claims, but instead appears to repeat Ebon’s estimates of job creation and economic development. This appears similar to Case No. 2022-00181, in which KPCO conceded in response to discovery that its estimates on job creation relied on EDR customer’s claims without doing a separate analysis.¹⁵

In its original filing in June, KPCO attempted to seek exception from Administrative Case No. 327’s requirement that EDRs are only offered when a utility has excess capacity, as stated above. Specifically, Administrative Case No. 327’s Order requires a utility “to provide an affirmative declaration and evidence to demonstrate that it has adequate capacity to meet anticipated load growth each year in which an incentive tariff is in effect” stating that “additional load resulting from discounted rates should not create a need for new plant capacity” and “during periods of excess capacity the load resulting from EDRs increases a utility’s operating efficiency and allows sales of capacity that may not have occurred without the EDRs.”¹⁶

In this filing, KPCO does not shy away from the fact that it is capacity short, but instead uses it as a reason for not seeking approval of this special contract under its existing Tariff EDR.¹⁷ In its June 2022 filing, KPCO claims it will use its 2022 Integrated Resource Plan process to potentially purchase new capacity highlighting once again that it is capacity short.¹⁸ The Commission’s requirements for EDRs under Administrative Case No. 327 should be applied here in order to protect ratepayers from potential costs and risks, especially given that increasing the size of capacity, as KPCO intends to do by adding Ebon as a major new customer, could lead to significant cost impacts to existing customers. The need for proper scrutiny of this proposed special contract is imperative to make sure it includes adequate protections for existing ratepayers. As the Commission has previously noted in Case No. 2020-00174, a reasonable EDR tariff would hold existing KPCO ratepayers “harmless” while assisting in economic development.¹⁹

¹³ West Testimony, at 10.

¹⁴ *Id.*

¹⁵ Discovery Response to AG 2_4, *In re: Electronic Application of Kentucky Power Company for an Order Approving the Company’s Amended Tariff E.D.R. to Increase the Capacity Available to be Served Under the Tariff and for Required Deviations from the Commission’s September 24, 1990 Order In Administrative Case No. 327*, Case No. 2022-00181 (Ky. P.S.C. Jul. 25, 2022).

¹⁶ Order, *In re: An Investigation into the Implementation of Economic Development Rates by Electric and Gas Utilities*, at 2 (Ky. P.S.C. Sept. 24, 1990).

¹⁷ West Testimony, at 11.

¹⁸ Electronic Application of Kentucky Power Company for an Order Approving the Company’s Amended Tariff E.D.R. to Increase the Capacity Available to be Served Under the Tariff and for Required Deviations from the Commission’s September 24, 1990 Order In Administrative Case No. 327, Case No. 2022-00181, at 5 (Ky. P.S.C. Jun. 9, 2022).

¹⁹ Order, *Electronic Application of Kentucky Power Company for (1) A General Adjustment of its Rates for Electric Service; (2) Approval of Tariffs and Riders; (3) Approval of Accounting Practices to Establish Regulatory Assets and Liabilities; (4) Approval of a Certificate of Public Convenience and Necessity; and (5) All Other Required Approvals and Relief*, Case No. 2020-00174, at 92 (Ky. P.S.C. Jan. 13, 2021).

The Commission should initiate a proceeding to fully investigate the KPCO-Ebon Contract given its lack of supporting evidence and publicly available information, and to ensure it is held up to the requirements of an EDR special contract.

II. KPCO's Filing Does Not Demonstrate that Economic Development Would Not Occur in the Absence of a Discounted Rate.

The proposed KPCO-Ebon Contract is inadequately supported because it fails to establish one of the most basic requirements for EDR special contracts: that any economic development resulting from the contract would not occur in the absence of the utility providing a discounted rate. The Commission should require KPCO to prove that providing a discounted rate to Ebon would drive economic development in the Lawrence County area, and that Ebon would not build the proposed facility if not for this rate. Although KPCO makes this claim generally with respect to the proposed special contract, it does not provide any specific evidence to substantiate the claim. In addition, KPCO's redaction of pricing information from the publicly available contract (under a claim of confidentiality) makes the reasonableness of the contract impossible for the public to evaluate.

Further, KPCO states that Ebon will lease 55 acres from the Company for the proposed facility,²⁰ but KPCO provides no details concerning this arrangement, making it impossible to evaluate whether the land-lease would be sufficient to incentivize Ebon absent the discounted rates. This also raises the question of what additional benefits KPCO might be receiving from the arrangement, and whether any of those benefits should be passed on to ratepayers. And it is unclear whether any potential tax benefits from the local and state governments may be recognized because of the Ebon Facility. Given that Ebon will be leasing KPCO owned property, the property tax increase will be limited to property improvements, which are unclear based upon the KPCO's filing. KPCO should provide a good faith estimate in the potential tax revenues to be recognized by the local government.

KPCO's testimony states that "Ebon's operations in Lawrence County will help stabilize the economy in that part of the Company's service territory."²¹ However, that claim is once again not substantiated with evidence demonstrating how the arrangement would explicitly assist this area nor is it quantified. As noted above, none of the calculations used to justify its pricing is available to the public. Under an EDR tariff, the onus is on the KPCO and Ebon to provide evidence that Ebon operations "will promote sustained economic development based on plant and facilities investment and job creation."²² KPCO has provided no such evidence, and this filing attempts to circumvent this requirement by proposing the KPCO-Ebon Contract outside of its already-approved EDR tariff.

²⁰ West Testimony, at 6.

²¹ *Id.* ¶ 10.

²² Order, *In re: An Investigation into the Implementation of Economic Development Rates by Electric and Gas Utilities*, at 10 (Ky. P.S.C. Sept. 24, 1990).

This is especially troubling given, as the Commission previously highlighted in Administrative Case No. 327, the potential for “revenue loss resulting from free riders taking advantage of rate discounts offered” because such free riding “is detrimental to the utility and all nonparticipating ratepayers.”²³ In light of the contracting parties’ failure to provide this evidence in support of its filing, the Commission should open a formal proceeding to determine whether the construction of the Ebon Facility would not occur without the proposed special contract.

III. The Commission Should Open a Formal Proceeding to Ensure the Proposed Special Contract Adequately Protects Ratepayers.

In Administrative Case No. 327, the Commission found that EDR agreements can provide important incentives to large commercial and industrial customers to either locate or expand their facilities in Kentucky, bringing jobs and capital investment to the Commonwealth. However, the proposed KPCO-Ebon Contract to support a new cryptocurrency mining facility differs in important ways from past EDR proposals that this Commission has approved. Not only are the proposed economic benefits and prospective jobs claimed without any substantive evidence, cryptocurrency mining operations, such as the proposed Ebon Facility, carry heightened risks that require further investigation into the reasonableness of the contract to ensure that ratepayers are adequately protected. As discussed below, KPCO has failed to meet its burden to show the reasonableness and full impact of the proposed special contract.

A. KPCO and Ebon’s proposal does not provide adequate evidence backing its claimed economic development opportunities.

The KPCO-Ebon Contract claims to make a capital investment of over \$250 million to develop and construct the Ebon Facility.²⁴ However, this amount is contradicted in Exhibit 1 of the KPCO-Ebon Contract which indicates that Ebon plans to invest a minimum of \$50 million.²⁵ These two numbers vary drastically. KPCO’s filing also lacks descriptions related to how much of the projected spending will be directly invested in the local area or subject to local and state taxation.

In terms of job creation, the KPCO-Ebon Contract proposes creating 50-100 jobs with salaries ranging from \$44,000 to \$76,000. However, it is very unclear what the likelihood is that this number of jobs would come to fruition, as it is only an estimation, and no detailed description (let alone supporting evidence) is provided. Another concern is whether the employment will be local. KPCO’s testimony indicates that Ebon’s operations are “highly technical” and would necessitate hiring and maintaining approximately 100 positions of which, a “majority of these position are for the most very technical professional positions.”²⁶ Highly technical positions typically require higher education. Per the U.S. Census, approximately 9% of

²³ *Id.*

²⁴ West Testimony, at 6.

²⁵ *Id.*

²⁶ *Id.* ¶10.

Lawrence County, Kentucky residents 25 years or older have a bachelor's degree or higher.²⁷ Given the low propensity for higher education, the jobs available for local residents at the Ebon facility may be limited. Nor is there any evidence provided concerning how many of these projected jobs would require in-person work at the facility as opposed to work that could be done remotely by employees located outside of Kentucky.

The KPCO-Ebon Contract fails to provide any clarity on (1) how many of these positions will be filled locally, (2) how many of these positions will be filled remotely, (3) what the educational and experience requirements for these positions are, (4) how many of these positions are full time versus part time, (5) whether the local economy have personnel that can fulfill these roles and if so, how many, and (6) how many jobs will be permanent versus temporary during the initial establishment of the Ebon Facility. Without answers to these questions, there is no guarantee that the Ebon facility will stimulate the local economy, particularly after construction of the facility is completed; on the contrary, it could very well have a minimal impact.

Although job creation is not a formal eligibility requirement, the notably uncertain job benefits of Ebon's operation must be a factor in evaluating the reasonableness of the contracted rate, especially considering cryptocurrency mining operations tend to create minimal jobs, or outsource jobs from other locations. As a Berkeley Haas professor observed: "These are warehouses full of computers and they only require one or two IT people to run the whole operation, so it's unlikely that it brings jobs or stimulates the economy."²⁸

There is also no guarantee that the estimated number of jobs that Ebon proposes to create will come to fruition, as seen with other cryptocurrency mining facilities. For example, in Rockdale, Texas, during the BTC boom of 2017, a cryptocurrency mining company promised to build the largest cryptocurrency mining facility in the world—one that could eventually be used for other data-driven applications and create more than 300 jobs. In reality, the facility only generated 14 of 350 promised jobs and was quickly scaled back.²⁹

The Commission should ensure that Ebon will in fact provide some worthwhile benefit to the economic development of the Commonwealth and the Lawrence County Area before approving any discounted rates or this special contract.

²⁷ United States Census Bureau, Quick Facts for Lawrence County, Kentucky (last visited Nov. 16, 2022) <https://www.census.gov/quickfacts/lawrencecountykentucky>.

²⁸ Laura Counts, *Power-hungry cryptocurrency miners push up electricity costs for locals*, Berkeley Haas (Aug. 3, 2021), <https://newsroom.haas.berkeley.edu/research/power-hungry-cryptominers-push-up-electricity-costs-for-locals/> (quoting Assistant Professor Giovanni Compiani, one of the co-authors of Matteo Benetton *et al.*, *When Cryptocurrency Comes to Town: High Electricity-Use Spillovers to the Local Economy*, SSRN, at 3 (Aug. 2022), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3779720).

²⁹ U.S. House of Representatives, Committee on Energy & Commerce Staff, *Memorandum, Hearing on "Cleaning Up Cryptocurrency: The Energy Impacts of Blockchains"* (Jan. 17, 2021), https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/Briefing%20Memo%20OI%20Hearing_2022.01.20.pdf.

B. Cryptocurrency mining operations are especially risky.

Additionally, the filing fails to provide a description of the facility itself or its permanency, which is concerning given cryptocurrency mining operations represent a high risk to other customers because operations can be moved easily and the potential for default places other ratepayers at risk of being forced to pay for energy, capacity, infrastructure, or other purchases made for the benefit of the special contract customer.

Cryptocurrency mining operations are not tethered to any particular geography, but rather seek cheap energy, speed to market, and flexibility. For example, multiple companies offer mining equipment in shipping containers to chase the best prices,³⁰ and when prices fluctuate, mining facilities can migrate quickly. Cryptocurrency operations prioritize seeking out utilities where industrial electricity rates are low or discounted as in the present proposal.

The nature of cryptocurrency mining is also extremely volatile. The value of cryptocurrency, in its short history, has fluctuated significantly regardless of the type of cryptocurrency being mined. The value of cryptocurrency influences the level of mining activity, as miners need the value of the currency to outweigh the mining costs to create profit. The variance in price, particularly over the past 5 years, for both cryptocurrencies (Bitcoin and Ethereum) mined by Ebon is likely tied to the level of mining, and subsequently the electric load of the Ebon facility.³¹

The impacts on other ratepayers from discounted electricity rates provided to cryptocurrency operations can be severe. Cryptocurrency mining operations both increase the total quantity of electricity needed on the grid and introduce specific risks that are attributable to the intensity, portability, and extreme time-sensitivity of cryptocurrency mining operations. Cryptocurrency operations frequently demand the construction of transmission and distribution lines, substation upgrades, or other infrastructure to facilitate the delivery of electricity to energy intensive mining rigs.³² Ratepayers may be left on the hook for these investments if and when a cryptocurrency operation abruptly leaves (as they are generally capable of doing) or collapses.³³

³⁰ See, e.g., EZ blockchain, *EZ Smartbox Mobile Mining Container*, <https://ezblockchain.net/smartbox/> (last visited Oct. 24, 2022).

³¹ Google Finance, Bitcoin and Ethereum Value, Most Recent 5 Years (last visited Nov. 16, 2022).

³² For example, in Idaho, investor-owned utility Idaho Power requested that cryptocurrency miners prepay for required infrastructure upgrades to prevent stranded assets on remaining ratepayers when the economics of cryptocurrency mining change. Idaho Pub. Utils. Comm'n, *Application of Idaho Power Co. for Authority to Establish a New Schedule to Serve Speculative High-Density Load Customers*, at 13-14, Case No. IPC-E-21-27 (Nov. 4, 2021), <https://puc.idaho.gov/Fileroom/PublicFiles/ELEC/IPC/IPCE2137/CaseFiles/20211104Application.pdf>; see also Justine Calma, *Texas' Fragile Grid Isn't Ready for Crypto Mining's Explosive Growth*, The Verge (July 14, 2022), <https://www.theverge.com/2022/7/14/23206795/bitcoin-crypto-mining-electricity-texas-grid-energy-bills-emissions> (“Unfortunately, the costs for building out all this infrastructure are often passed on to consumers — particularly if it’s done at a huge scale under a rushed timeline as crypto mining might demand.”).

³³ Naureen S. Malik & Michael Smith, *Crypto Mania in Texas Risks New Costs and Strains on Shaky Grid*, Bloomberg (Mar. 15, 2022), <https://www.bloomberg.com/news/articles/2022-03-15/crypto-mania-in-texas-risks-new-costs-and-strains-on-shaky-grid>.

For example, one cryptocurrency mining operation in Washington that declared bankruptcy in 2018 left more than \$700,000 in unpaid utility and electricity bills.³⁴ Mining operations may leave solely because they can get a better deal on electricity somewhere else.³⁵ Entergy Arkansas describes an incident in 2019 where a new cryptocurrency mining customer requiring significant facility upgrades opted to pay a monthly minimum for those upgrades—only to move its shipping containers “virtually overnight” “shortly after taking service . . . effectively disappearing” and leaving the utility unable to even reach the customer to recoup their upfront costs, forcing existing customers to pick up the bill.³⁶

The Commission should ensure that ratepayers and community members are not forced to bear the costs of grid and infrastructure upgrades required to service the Ebon Facility unless they benefit existing customers as well. For example, the Commission recently approved \$12.7 million in transmission upgrades for Big Rivers Electric Corporation to service new cryptocurrency operations in Paducah, the costs of which will be allocated across a broader pool of Big Rivers’ customers.³⁷ The Commission here should formally investigate whether the proposed special contract would result in increased costs for grid and infrastructure upgrades being passed on to existing customers. The Commission should also ensure these investments in cryptocurrency mining operations are not made in lieu of long-overdue infrastructure upgrades that would benefit ordinary ratepayers.

One potential safeguard would be requiring KPCO to include language in the special contract to provide reassurance that the cost of the substation, interconnection, and capital spares will be borne by Ebon and not the Company’s other customers.

Additionally, the special contract allows for Ebon to increase or decrease the Total Capacity Reservation by providing written notice to the Company one year in advance. However, given the significant increase in load above current capacity and that the Special Contract will exceed the current Tariff EDR 250 MW cap, there should be a limitation on the increase or decrease in load. An increase or decrease should be limited to a percentage in either

³⁴ U.S. House Committee on Energy & Commerce Staff, *Memorandum re: Hearing on Cleaning Up Cryptocurrency: The Energy Impacts of Blockchains*, at 9 (Jan. 17, 2022), https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/Briefing%20Memo_OI%20Hearing_2022.01.20.pdf.

³⁵ For example, after the New York Municipal Power Authority increased rates for supplemental electricity used by high-density load customers in Plattsburgh because the rates for local residents there skyrocketed, many cryptocurrency miners moved west to Massena, increasing electricity costs in Massena. McKenzie Delisle, *Mining operation moves out of city for winter*, Press-Republican (Nov. 11, 2019), https://www.pressrepublican.com/news/local_news/mining-operation-moves-out-of-city-for-winter/article_4c86c044-4e1e-5ad6-8e6d-0ad19b875e35.html.

³⁶ In the Matter of the Application of Entergy Arkansas, LLC for a Proposed Tariff Regarding Large Power High-Load Density,” Direct Testimony of D. Andrew Owens, at 13 (Jul. 28, 2022), Ark. Pub. Serv. Comm’n, Docket No. 22-032-TF, http://www.apscservices.info/pdf/22/22-032-TF_16_1.pdf.

³⁷ Order, *In re: Elec. App’n of Big Rivers Elec. Corp. for a Certificate of Pub. Convenience & Necessity to Construct a 161 kV Transmission Line in McCracken Cty., Ky.*, Case No. 2021-00275, at 7 (Ky. P.S.C. Jan. 14, 2022) (noting that the construction costs for transmissions upgrades “will be included in the rates for transmission service under BREC’s Open Access Transmission Tariff”).

direction which would remove any potential negative impact on the Company's other customers. If the load is decreased, it cannot result in significant excess capacity and if increased, it should not require additional capacity to be constructed. Furthermore, the KPCO-Ebon Contract should require that if Ebon indicates that it will decrease the Total Capacity Reservation below 100 MW after 12 months or 250 MW after 24 months, then the Special Contract rate would not be applicable.

Even though it is already stated in the Rider DRS, the proposed contract should also clearly prohibit Ebon from participating in any PJM demand response programs for capacity. This should be reiterated just as the requirements for interruption are restated. The Contract should also clearly indicate that there is an exception for interruptions if they are required for PJM emergency response events.

And lastly, cryptocurrency mining operations pose other significant climate, public health, and damaging impacts on local communities that the Commission should not ignore. The Commission should approach proposals for new cryptocurrency mining facilities, such as this one, with an eye toward whether they truly create stable, good-paying jobs, what grid and infrastructure upgrades are needed, fire and safety risks, as well as increases in local air, water, and solid waste pollution.

C. The Commission should require additional collateral and protections to ensure ratepayers are not forced to bear the costs associated with providing service to a cryptocurrency operation.

The Commission should require EDR or DRS special contract customers to secure their participation with appropriate collateral and, in the event of default, should require companies to provide security for benefits they receive through discounted rates.

KPCO must include provisions to ensure Ebon will complete the full 10-year contract term. Cryptocurrency mining is an inherently volatile endeavor, and Ebon has made no assurances of capital or debt positions. As noted above, the proposed special contract does not include other financial assurances or any explanation for these differences between the \$250 million claimed capital investment and the \$50 million planned investment noted in its exhibits. KPCO indicates that there are remedies under Kentucky law if the Ebon was to default prior to the conclusion of the 10-year contract.³⁸ It is unclear which laws KPCO is referring to – particularly in the event that Ebon declares bankruptcy and/or removes itself from Kentucky jurisdiction altogether – and the Commission should consider such laws to determine if additional protections are needed in the special contract for ratepayers.

In addition to lack of clarity regarding protections under a default, the proposed special contract fails to include any early termination clause, which means that given a default, KPCO will not be able to recover any credits through reimbursements, giving Ebon an easy out if it needed to move its cryptocurrency-mining facility elsewhere, as highlighted in examples cited above. Along with a reimbursement clause that requires sufficient notice and/or compensation

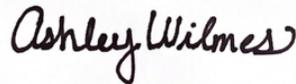
³⁸ West Testimony, at. 13.

for any system upgrades needed to accommodate Ebon’s additional load, the Commission should also ensure that KPCO also requires collateral upfront, potentially through a security deposit to be held in escrow, to protect against the possibility of future insolvency, especially given the volatility of the cryptocurrency industry and the lack of financial data provided for Ebon.

Further, given the heightened risks associated with cryptocurrency mining operations, the Commission should initiate a process to thoroughly vet whether the provisions in the proposed agreement adequately provide for sufficient collateral to mitigate the risk of default. The Commission can take actions to ensure that cryptocurrency mining does not adversely impact ratepayers. For example, to protect customers from the possibility that a cryptocurrency customer might abruptly default, Entergy Arkansas proposes the following safeguards: new cryptocurrency mining customers should be required to pay a security deposit; contribute to any construction upfront; and post a surety bond or letter of credit.³⁹ The Commission here should require similar safeguards with upfront deposits, guarantees or cost coverage for infrastructure investments.

Before acting on the proposed special contract, the Commission should open a formal proceeding to investigate the reasonableness of the contract, including by requiring submissions of more accurate and complete cost estimates fully addressing the contract rates, job creations, and impact on the local community. Without that foundation, KPCO cannot offer a credible claim towards economic development, and should not be allowed to avoid requirements that it do so.

Respectfully submitted,



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³⁹ In the Matter of the Application of Entergy Arkansas, LLC for a Proposed Tariff Regarding Large Power High-Load Density (“Crypto Mining”), Direct Testimony of D. Andrew Owens, at 13 (Jul. 28, 2022), Ark. Pub. Serv. Comm’n, Docket No. 22-032-TF, http://www.apscservices.info/pdf/22/22-032-TF_16_1.pdf.

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