COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

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	))))))))	CASE NO. 2022-00355

O R D E R

On September 30, 2022, East Kentucky Power Cooperative, Inc. (EKPC) filed an application, using the Commission's electronic Tariff Filing System, seeking approval of a special contract entered into by and between EKPC, Jackson Energy Cooperative Corporation (Jackson Energy), and UMine, LLC (UMine) pursuant to the terms of EKPC and Jackson Energy's Interruptible Service Tariff and Economic Development Rider Tariff (EDR Tariff) and to the Commission's September 24, 1990 Order in Administrative Case No. 327[1] (Administrative Case 327 Order). EKPC requested an effective date of November 1, 2022. On October 19, 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. On October 27, 2022, the Kentucky Resources Council submitted comments regarding the proposed special contract and requested that the Commission open a formal proceeding to further investigate the

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[1] Administrative Case No. 327 (Docket 19000327), *An Investigation into the Implementation of Economic Development Rates by Electric and Gas Utilities* (Ky. PSC Sept. 24, 1990).

reasonableness of the proposed special contract. The Attorney General and Kentucky Resources Council comments are included in Appendix B to this Order. The matter stands submitted to the Commission for a decision based upon the evidentiary record.

LEGAL STANDARD

The Commission has exclusive jurisdiction over the regulation of rates and service of utilities in Kentucky.[2] Kentucky law provides that a utility may demand, collect and receive fair, just and reasonable rates[3] and that the service it provides must be adequate, efficient and reasonable.[4] KRS 278.190 permits the Commission to investigate any schedule of new rates to determine its reasonableness.

In the Administrative Case 327 Order, the Commission found that Economic Development Rates (EDR) would provide important incentives to large commercial and industrial customers to either locate or expand their facilities in Kentucky, bringing jobs and capital investment into the Commonwealth.[5] The Administrative Case 327 Order contains 18 findings that refined the criteria on which the Commission would evaluate and approve an EDR.[6] In the Administrative Case 327 Order, the Commission also directed that a jurisdictional utility filing an EDR contract must comply with Findings 3–17.[7] The findings in the Administrative Case 327 Order that are applicable to this proceeding, and

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[2] KRS 278.040(2).

[3] KRS 278.030(1).

[4] KRS 278.030(2).

[5] Administrative Case 327 Order at 25.

[6] Administrative Case 327 Order at 24–28.

[7] Administrative Case 327 Order at 28, ordering paragraph 1.

therefore comprise the legal standard by which this proposed contract should be evaluated, are summarized as follows:[8]

- Finding 3: EDRs should be implemented by special contract negotiated between the utilities and their large commercial and industrial customers.[9]

- Finding 4: An EDR contract should specify all terms and conditions, including the rate discount and related provisions, jobs and capital investment created, customer-specific fixed costs, minimum bill, estimated load and load factor, and length of contract.[10]

- Finding 5: An 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.[11]

- Finding 6: A utility should demonstrate that the EDR exceeds the marginal cost associated with serving the customer.[12]

- Finding 7: A utility should file an annual report with the Commission detailing revenues received and marginal costs from EDRs.[13]

- Finding 8: A utility should demonstrate that nonparticipating ratepayers are not adversely affected by the EDR through a cost-of-service analysis.[14]

- Finding 9: The EDR should include a provision providing for the recovery of EDR customer-specific fixed costs over the life of the contract.[15]

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[8] Finding 13 is not relevant to this proceeding because it applies to contracts designed to retain the load of existing customers, not to attract new customers. While UMine is an existing customer, this specific contract is not designed to retain the load of UMine's existing facilities. Findings 15 and 16 are not relevant to this proceeding because they apply to gas utilities, not electric utilities.

[9] Administrative Case 327 Order at 25, finding paragraph 3.

[10] Administrative Case 327 Order at 25, finding paragraph 4.

[11] Administrative Case 327 Order at 25, finding paragraph 5.

[12] Administrative Case 327 Order at 26, finding paragraph 6.

[13] Administrative Case 327 Order at 26, finding paragraph 7.

[14] Administrative Case 327 Order at 26, finding paragraph 8.

[15] Administrative Case 327 Order at 26, finding paragraph 9.

- Finding 10: The major objectives of EDRs are job creation and capital investment. However, specific job creation and capital investment requirements should not be imposed on EDR customers.[16]

- Finding 11: All utilities with active EDR contracts should file an annual report with the Commission providing information shown in Appendix A, which is attached to the Administrative Case 327 Order.[17]

- Finding 12: For new industrial customers, an EDR should apply only to load which exceeds a minimum base level. For existing industrial customers, the EDR should apply only loads which exceed a minimum base load. At the time an EDR contract is filed, a utility should identify and justify the minimum incremental usage level and normalized base load for an existing customer or the minimum usage level required for a new customer.[18]

- Finding 14: The term of an EDR contract should be for a period twice the length of the discount period, with the discount period not exceeding five years.[19]

- Finding 17: Comments submitted by the Kentucky Cabinet for Economic Development (Cabinet) or other interested parties pertaining to EDR contracts should be filed with the Commission no more than 20 days following the filing of an EDR contract by a utility.[20]

THE SPECIAL CONTRACT

The initial term of the special contract is ten years, with additional one-year terms thereafter. Pursuant to the special contract, Jackson Energy will be billed under EKPC's Section C tariff and Rate D – Interruptible Service while UMine will be billed under Jackson Energy's Rate Schedule 46 – Large Power Rate tariff and Interruptible Service

[16] Administrative Case 327 Order at 26, finding paragraph 10.

[17] Administrative Case 327 Order at 26, finding paragraph 11.

[18] Administrative Case 327 Order at 26–27, finding paragraph 12.

[19] Administrative Case 327 Order at 27, finding paragraph 14.

[20] Administrative Case 327 Order at 28, finding paragraph 17.

Rider. The contract is for a term of ten years, with a five-year EDR discount period. The contract demand will be 1,000 kW, with 150 kW of firm load. The EDR discount will be applied to the demand charges as stated in EKPC's Rate Section C and the resulting reduction will be passed through to UMine without any revision by Jackson Energy, as Jackson Energy's tariff provides that the discount will not be smaller than the amount calculated from the EKPC rate schedules. For the portion of monthly demand that is less than firm load levels, the EDR discount will be applied to the applicable demand charge. For the portion of monthly demand in excess of the firm load levels, the EDR discount will be applied to a net demand charge that reflects the applicable demand charge less the interruptible service credits. The special contract contains an early termination clause that would require UMine to pay back a portion of the discounts received based on when the contract was terminated.

ATTORNEY GENERAL'S COMMENTS

The Attorney General stated that it supports efforts to promote economic development in Kentucky. However, the Attorney General stated that such proposals should be tailored carefully to ensure that the ratepayers of Eastern Kentucky do not unfairly subsidize companies for benefits the economic development provides. Specifically, the Attorney General indicated that the Commission should thoroughly examine the marginal cost analysis and other materials provided by EKPC to ensure that the UMine load will provide a net benefit to other ratepayers. In addition, the Attorney General stated that the Commission should require EDR special contract customers to secure their participation with appropriate collateral. The Attorney General stated that this was especially important in this instance given that UMine is in the crypto mining business.

KENTUCKY RESOURCES COUNCIL'S COMMENTS

The Kentucky Resources Council stated that EKPC's filing does not demonstrate that Economic Development would not have occurred in the absence of a discounted rate. Based on EKPC's ongoing Integrated Resource Plan proceeding, Case No. 2022-00098[21], Kentucky Resources Council stated that it is necessary for the Commission to further investigate the reliability implications of UMine's load, the potential for UMine's load to cause transmission and distribution-related capital expenses, and the sufficiency of contract provisions related to reliability interruptions. Kentucky Resources Council also stated that EKPC's marginal cost analysis does not fully evaluate the contracted rate. Specifically, Kentucky Resources Council argued that the marginal cost analysis does not assess the maximum demand allowed under the proposed contract and excludes the effect of the interruptible service credit. Finally, Kentucky Resources Council argued that the proposed special contract only provides minimal economic development opportunities, that cryptocurrency mining operations are especially risky, and that 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.

DISCUSSIONS AND FINDINGS

Requirements of the Administrative Case 327 Order

In the Administrative Case 327 Order, the Commission directed that a jurisdictional utility filing an EDR contract must comply with Findings 3–17.[22] The following paragraphs

[21] Case No. 2022-00098, *Electronic 2022 Integrated Resource Plan of East Kentucky Power Cooperative, Inc.*

[22] Administrative Case 327 Order at 28, ordering paragraph 1.

will address the findings of the Administrative Case 327 Order that are applicable to this proceeding.

Finding 3:

> EDRs should be implemented by special contract negotiated between the utilities and their large commercial and industrial customers.[23]

The Commission finds the proposed special contract complies with Finding 3 of the Administrative Case 327 Order. This is because EKPC has submitted the proposed special contract that was negotiated and executed by EKPC, Jackson Energy and UMine, an industrial customer.

Finding 4:

> An EDR contract should specify all terms and conditions of service including, but not limited to, the applicable rate discount and other discount provisions, the number of jobs and capital investment to be created as a result of the EDR, customer-specific fixed costs associated with serving the customer, minimum bill, estimated load, estimated load factor, and length of contract.[24]

EKPC provided the following: (1) UMine chose the five-year discount option, which provides for a 50 percent discount of the demand charge in the first year and a discount that declines by 10 percent in each subsequent year; (2) UMine estimates it will have a capital investment of approximately $2 million and that it will hire at least three new employees as a result of the proposed special contract; (3) no customer-specific fixed costs have been identified, but the proposed special contract does provide that such costs be recovered over the life of the proposed special contract; (4) the minimum bill will be determined in accordance with Jackson's Rate Schedule 46 – Large Power Rate tariff

[23] Administrative Case 327 Order at 25, finding paragraph 3.

[24] Administrative Case 327 Order at 25, finding paragraph 4.

plus its fuel adjustment clause and environmental surcharge; (5) the contract demand will initially be 1,000 kW with a minimum load factor of 60 percent; and (6) the total term of the proposed special contract is ten years. For the above reasons, the Commission finds that the proposed special contract complies with the Administrative Case 327 Order, Finding 4.

Finding 5:

> EDRs should only be offered during periods of excess capacity. Utilities should demonstrate, upon submission of each EDR contract, that the load expected to be served during each year of the contract period will not cause them to fall below a reserve margin that is considered essential for system reliability. Such a reserve margin should be identified and justified with each EDR contract filing.[25]

EKPC's Rate EDR Tariff contains a provision stating that it and its owner members will only offer an EDR during either periods of excess capacity or the additional capacity needs have been secured, or are capable of being economically secured, through a market purchase agreement. In Case No. 2014-00034,[26] the Commission granted EKPC's request for a waiver from the excess capacity guideline based on the EDR Tariff provision discussed above. As a member of PJM, EKPC is required to maintain or purchase its pro-rata share of PJM's Installed Reserve Margin, which is 14.9 percent. The typical EKPC capacity requirement represents close to a 3 percent reserve margin on the EKPC projected summer peak. As a participant in the PJM capacity markets, EKPC sells all its generating resources into the market and purchases all its load requirements, including the reserve margin. EKPC indicated that based on current

[25] Administrative Case 327 Order at 25, finding paragraph 5.

[26] Case No. 2014-00034, *Application of East Kentucky Power Cooperative, Inc. for Approval of an Economic Development Rider* (Ky. PSC June 20, 2014).

conditions, it does not believe it will be necessary to make a specific market purchase to cover the new UMine demand during the contract term. However, there is a provision in the proposed special contract to address a specific market purchase if necessary. The Commission finds that the proposed special contract complies with the Administrative Case 327 Order, Finding 5, as modified by the waiver granted in Case No. 2014-00034.

Finding 6:

> Upon submission of each EDR contract, a utility should demonstrate that the discounted rate exceeds the marginal cost associated with serving the customer. Marginal cost includes both the marginal cost of capacity as well as the marginal cost of energy. In order to demonstrate marginal cost recovery, a utility should submit, with each EDR contract, a current marginal cost-of-service study. A current study is one conducted no more than one year prior to the date of the contract.[27]

The Commission finds that the proposed special contract complies with the Administrative Case 327 Order, Finding 6, for the following reasons. EKPC provided a marginal cost of service study for the 12-month period ending May 31, 2022. For the demand rate, EKPC prepared a historic analysis and an analysis using the Base Residual Auction (BRA) results for future PJM Delivery years. Under the historical analysis, the marginal cost-of-service study showed that, except for the first-year firm demand rate, the marginal costs would be covered by UMine's load. When adding the first-year firm demand rate and the first-year interruptible demand rate, the marginal costs would be covered. The analysis based on the BRA results for future PJM Delivery years showed that marginal costs would be covered for all periods.

[27] Administrative Case 327 Order at 26, finding paragraph 6.

For the energy rate, EKPC compared the average monthly market purchase rate with the tariffed energy rate for Rate C net of the applicable fuel adjustment clause. That analysis showed that the net energy rate did not exceed the marginal costs. However, when calculating an overall marginal cost impact (demand and energy), the potential annual dollar impact for the discounted demand rate exceeded the marginal costs by an amount greater than the negative annual difference determined for the energy rate. Therefore, combined, EKPC's analysis showed that the marginal costs are covered by the proposed special contract.

Finding 7:

> Utilities with active EDRs should file an annual report with the Commission detailing revenues received from individual EDR customers and the marginal costs associated with serving those individual customers.[28]

EKPC stated that it would commit to filing an annual report with the Commission detailing revenues received from UMine and any other individual EDR customers and the marginal costs associated with service to those individual customers as required.[29] The Commission finds that EKPC and Jackson Energy should file an annual report with the Commission detailing the revenues received from UMine and the marginal costs associated with serving UMine.

Finding 8:

> During rate proceedings, utilities with active EDR contracts should demonstrate through detailed cost-of-service analysis that nonparticipating ratepayers are not adversely affected by these EDR customers.[30]

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[28] Administrative Case 327 Order at 26, finding paragraph 7.

[29] Application, Background Material and Compliance Information at 6, paragraph 15.

[30] Administrative Case 327 Order at 26, finding paragraph 8.

EKPC stated that it would commit to demonstrating through detailed cost of service analysis that nonparticipating ratepayers are not adversely affected by EDR customers.[31] The Commission finds that in all rate proceedings occurring during the term of the Agreement that EKPC and Jackson Energy should provide a detailed cost of service analysis demonstrating that non-EDR rate payers are not adversely affected by the proposed special contract.

Finding 9:

> All EDR contracts should include a provision providing for the recovery of EDR customer-specific fixed costs over the life of the contract.[32]

The Commission finds that the proposed special contract complies with the Administrative Case 327 Order, Finding 9. This is because, while EKPC and Jackson Energy have not identified any EDR customer-specific fixed costs, the proposed special contract contains a provision providing for the recovery of EDR customer-specific fixed costs over the life of the proposed special contract.

Finding 10:

> The major objectives of EDRs are job creation and capital investment. However, specific job creation and capital investment requirements should not be imposed on EDR customers.[33]

The Commission finds that the proposed special contract complies with the Administrative Case 327 Order, Finding 10. This is because EKPC stated that neither it

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[31] Application, Background Material and Compliance Information at 6, paragraph 16.

[32] Administrative Case 327 Order at 26, finding paragraph 9.

[33] Administrative Case 327 Order at 26, finding paragraph 10.

or Jackson Energy established minimum requirements for new jobs and capital investment in order for UMine to be eligible for the EDR.[34]

Finding 11:

> All utilities with active EDR contract should file an annual report to the Commission providing the information as shown in Appendix A, which is attached hereto and incorporated herein.[35]

The Commission finds that the proposed special contract complies with the Administrative Case 327 Order, Finding 11. This is because EKPC stated that it would commit to filing an annual report with the Commission providing the information shown in Appendix A of the Administrative Case 327 Order.[36] The annual report format is attached as Appendix A to this Order.

Finding 12:

> For new industrial customers, an EDR should apply only to load which exceeds a minimum base level. For existing industrial customers, an EDR shall apply only to new load which exceeds an incremental usage level above a normalized base load. At the time an EDR contract is filed, a utility should identify and justify the minimum incremental usage level and normalized base load required for an existing customer or the minimum usage required for a new customer.[37]

In Case No. 2014-00034, EKPC proposed to apply the EDR discounts to a qualifying new customer's entire load instead of an incremental load over a certain threshold. The Commission granted EKPC's waiver noting that all of the load of a new customer would be incremental usage over and above what was included in EKPC's last

[34] Application, Background Material and Compliance Information at 6, paragraph 17.

[35] Administrative Case 327 Order at 26, finding paragraph 11.

[36] Application, Background Material and Compliance Information at 7, paragraph 19.

[37] Administrative Case 327 Order at 26–27, finding paragraph 12.

rate case and that EKPC's proposed load parameters as they related to applying the EDR discounts would not disadvantage other customers. Based on that waiver, the proposed special contract applies the EDR discount to the entire new load. The Commission finds that the proposed special contract complies with the waiver granted in Case No. 2014-00034.

Finding 14:

> The term of an EDR contract should be for a period twice the length of the discount period, with the discount period not exceeding five years. During the second half of an EDR contract the rates charges to the customer should be identical to those contained in a standard rate schedule that is applicable to the customer's rate class and usage characteristics.[38]

The Commission finds that the proposed special contract complies with the Administrative Case 327 Order, Finding 14. This is because, pursuant to the proposed special contract, the discount period is for five years, and the total term is ten years; during the last five years, UMine will be charged the rates contained in Jackson Energy's Rate Schedule 46 – Large Power Rate tariff.

Finding 17:

> Comments submitted by the Cabinet or other interested parties pertaining to EDR contracts should be filed with the Commission no more than 20 days following the filing of an EDR contract by a utility.[39]

The Attorney General filed comments regarding the proposed special contract on October 19, 2022, which was within the allowed 20-day time period. The Attorney General's comments are discussed below. Kentucky Resources Council's comments

[38] Administrative Case 327 Order at 27, finding paragraph 14.

[39] Administrative Case 327 Order at 28, finding paragraph 17.

were filed on October 27, 2022, outside of the allowed 20-day time period. The purpose for the 20-day time period was to allow the Commission ample time to review on comments on EDR contracts before a contract took effect. As the proposed special contract was filed in the Commission's electronic Tariff Filing System, the filing was available for public review since September 30, 2022. Regardless of the tardiness of Kentucky Resources Council's comments, given the facts and arguments presented, the Commission does not find good cause to necessitate an investigation based on Kentucky Resources Council's comments.

The Commission finds that the terms of the proposed special contract are reasonable and should be approved as they substantially comply with the requirements set forth in EKPC and Jackson Energy's EDR tariff, the Administrative Case 327 Order, and the waivers granted in Case No. 2014-00034.

Attorney General's Comments

As noted above, the Commission's review of the marginal cost-of-service study showed that the marginal costs to serve UMine were covered by the proposed special contract. Regarding the Attorney General's suggestion that the Commission should require EDR special contract customers to secure their participation with appropriate collateral, the Commission would note that the proposed special contract has a provision for a security deposit as well as an early termination clause that would require UMine to pay back a portion of the discounts it received if it were to terminate the contract prematurely. The Commission believes that these types of provisions are important safeguards and believes that such provisions should be included in EDR special contracts. However, 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.

IT IS THEREFORE ORDERED that:

1. The special contract between EKPC, Jackson Energy, and UMine is approved effective November 1, 2022.

2. By March 31 of each year, EKPC and Jackson Energy shall file an annual report with the Commission detailing, for the prior calendar year, revenues received from UMine and the marginal costs associated with serving UMine throughout the term of the special contract.

3. During any rate proceedings filed by EKPC or Jackson Energy subsequent to the effective date of the special contract with UMine, and during a period when EKPC or Jackson Energy still has an active EDR contract, EKPC and Jackson Energy shall demonstrate through detailed cost-of-service analysis that its non-EDR ratepayers are not adversely affected by the EDR to UMine and any other EDR customers that may be on the EKPC or Jackson Energy system at that time.

4. EKPC and Jackson Energy shall file by March 31 of each year a report with the Commission providing, for the prior calendar year, the information shown in Appendix A to this Order.

5. Any documents filed pursuant to ordering paragraphs 2 and 4 of this Order shall reference the number of this case and shall be retained in the post-case correspondence file for this proceeding.

6. The Executive Director is designated authority to grant a reasonable extension of time for the filing of any documents required by this Order upon EKPC or Jackson Energy's showing of good cause for such extension.

7. Within 20 days of the date of this Order, EKPC shall file with the Commission, using the Commission's electronic Tariff Filing System, the special contract as approved herein.

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

9. This case is closed and removed from the Commission's docket.

PUBLIC SERVICE COMMISSION

Chairman

Vice Chairman

Commissioner

ENTERED

OCT 31 2022 bsb

KENTUCKY PUBLIC SERVICE COMMISSION

ATTEST:

Executive Director

APPENDIX A

APPENDIX TO AN ORDER OF THE KENTUCKY PUBLIC SERVICE COMMISSION IN CASE NO. 2022-00355 DATED OCT 31 2022

ECONOMIC DEVELOPMENT RATE CONTRACT REPORT

UTILITY:______________________________ YEAR:__________

	Current Reporting Period		Cumulative	
1) Number of EDR Contracts -				
Total:	______		______	
Existing Customers:	______		______	
New Customers:	______		______	
2) Number of Jobs Created -				
Total:	______		______	
Existing Customers:	______		______	
New Customers:	______		______	
3) Amount of Capital Investment -				
Total:	______		______	
Existing Customers:	______		______	
New Customers:	______		______	
4) Consumption -				
(A) DEMAND				
Total:	______	kW	______	kW
Existing Customers:	______	kW	______	kW
New Customers:	______	kW	______	kW
(B) ENERGY/CONSUMPTION				
Total:	______	kWh	______	kWh
Existing Customers:	______	kWh	______	kWh
New Customers:	______	kWh	______	kWh

APPENDIX B

APPENDIX TO AN ORDER OF THE KENTUCKY PUBLIC SERVICE COMMISSION IN CASE NO. 2022-00355 DATED OCT 31 2022

EIGHTEEN PAGES TO FOLLOW

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

Re: ***Industrial Power Agreement with Interruptible Service and Economic Development Rider between East Kentucky Power Cooperative, Inc., Jackson Energy Cooperative Corporation, and UMine, LLC*, Case No. TFS2022-00480**

ATTORNEY GENERAL'S COMMENTS

The Attorney General provides these Comments related to East Kentucky Power Cooperative, Inc.'s ("EKPC" or "Company") pending proposal to approve an economic development rider ("EDR") special contract with UMine, LLC ("UMine").

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 for benefits the economic development provides.

Principally, this requires a thorough vetting of the marginal cost analysis performed by the Company and submitted with the tariff filing. On its face, the Company's filing demonstrates that its service of the UMine load will provide a net benefit to other ratepayers. The Commission should thoroughly examine that analysis, and the other materials provided, to verify that conclusion.

Further, the Commission should require EDR 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 they receive through discounted rates. This is especially true for an industry such as crypto mining where the operations can be moved easily. A potential 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 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.

Respectfully submitted,

DANIEL J. CAMERON
ATTORNEY GENERAL

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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 October 19, 2022, a copy of the forgoing was served by electronic mail to the following.

isaac.scott@ekpc.coop

this 19th day of October, 2022

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Assistant Attorney General

KENTUCKY RESOURCES COUNCIL

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October 27, 2022

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

RE: ***Industrial Power Agreement with Interruptible Service and Economic Development Rider between East Kentucky Power Cooperative, Inc., Jackson Energy Cooperative Corporation, and UMine, LLC*, Case No. TFS2022-00480**

Dear Executive Director Bridwell and Mr. Hinton:

The Kentucky Resources Council, Kentuckians for the Commonwealth, Kentucky Solar Energy Society, Kentucky Conservation Committee, and Mountain Association (collectively, "Joint Commenters") respectfully submit these comments regarding East Kentucky Power Cooperative's ("EKPC") proposed Economic Development Rider ("EDR") special contract with Jackson Energy Cooperative and UMine LLC ("UMine") that was filed via the Commission's electronic tariff filing system on September 30, 2022. For the reasons stated below, Joint Commenters respectfully request that the Commission open a formal proceeding to investigate whether the proposed special contract is reasonable and satisfies the requirements of EKPC's EDR tariff and the Commission's prior orders.

The Commission should open a formal proceeding here for further investigation because EKPC's filing failsto demonstrate the reasonableness of the proposed special contract. There is no evidence that UMine would not be locating or expanding facilities in EKPC's territory without EDR discounts. The Commission should investigate whether UMine's load would exacerbate reliability issues and whether it would result in transmission grid and infrastructure upgrades that would adversely impact existing customers. The Commission should also require EKPC to provide a more complete and accurate marginal cost analysis and investigate the reasonableness of the proposed special contract's stacking of EDR discounts and interruptible service credits. Finally, the Commission should investigate the differences between cryptocurrency mining operations like UMine and traditional large commercial and industrial customers and consider both whether additional protections for ratepayers are needed as part of any contract with UMine.

Joint Commenters further respectfully request that the Commission consider their comments even though they are submitted more than 20 days after EKPC filed the proposed special contract via the electronic tariff filing system.[1] Joint Commenters did not learn of EKPC's special contract filing until after the 20 days had passed, and upon learning of the filing acted promptly in less than a week's time to prepare and submit these comments in advance of the expiration of the 30-day notice period provided by law.[2] Moreover, as the Commission noted in its final order in Case No. 2016-00316 concerning EKPC's EDR tariff, it is in the Commission's discretion to find that further investigation is needed to determine the reasonableness of a proposed special contract, regardless of whether other parties submit comments.[3]

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

The proposed EKPC-Jackson-UMine special contract filing 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. As the Commission noted in its 2016 final order concerning EKPC's EDR tariff, the Commission made EDR tariffs available to utilities to

> 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. The Commission also found that utilities should have the flexibility to design EDRs according to the needs of their

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[1] In the final order for Administrative Case No. 327, the Commission found that "[c]omments submitted by the Cabinet or other interested parties pertaining to EDR contracts should be filed with the Commission no more than 20 days following the filing of an EDR contract by a utility." Order, *In re: An Investigation into the Implementation of Economic Development Rates by Electric and Gas Utilities*, at 17 (Ky. P.S.C. Sept. 24, 1990).

[2] KRS 278.180 (generally requiring 30-days' notice for any change in any rate); KRS 278.010(12) (broadly defining "rate" to include "any individual or joint far, toll, charge, rental, or other compensation for service rendered or to be rendered by any utility, and any rule, regulation, practice, act, requirement, or privilege in any way relating to such fare, toll, charge, rental, or other compensation, and any schedule or tariff or part of a schedule or tariff thereof"); 807 KAR 5:011(13) (defining "special contracts" as "establish[ing] rates, charges, or conditions of service not contained in [a utility's] tariff").

[3] *See* Order, *In re: Application of East Ky. Power Coop., Inc. for Approval of an Industrial Power Agreement with an Econ. Dev. Rider*, Case No. 2016-00316 (Ky. P.S.C. Nov. 21, 2016), at 3 (noting that a formal proceeding will be required "if the Commission finds that further investigation is needed to determine the reasonableness of the proposed special contract").

customers and service areas and to offer them to new and existing customers who *require an incentive* to locate or expand facilities.[4]

The EKPC-Jackson-UMine special contract filing does not meet these standards. Nowhere in EKPC's filing does it demonstrate that UMine would not be locating or expanding facilities in EKPC's territory without EDR discounts. Although EKPC submitted a statement from UMine in which it cites certain jobs and capital investment projections, nowhere in that statement or anywhere else in EKPC's filing does UMine represent that the availability of discounted rates is critical to those decisions. Moreover, as discussed in more detail below, UMine's ability to take advantage of the interruptible service credit calls into question whether the EDR discounted rate is necessary to incentivize UMine's investment.

In Administrative Case No. 327, the Commission concluded that EDR tariffs should be implemented to minimize "the 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."[5] In light of the failure to provide this evidence in support of its filing, the Commission should open a formal proceeding to determine whether the location or expansion of the UMine facility would not occur without the proposed EDR special contract.

II. Full Consideration of Potential Reliability Impacts is Needed Here in Light of Recent EKPC Representations of Transmission Inadequacies.

Based on the developing record in EKPC's ongoing Integrated Resource Plan proceeding, Case No. 2022-00098, it is necessary for the Commission to further investigate the reliability implications of the proposed EDR load, the potential for UMine's load to cause transmission- and distribution-related capital expenses, and the sufficiency of contract provisions related to reliability interruptions. These recommendations are grounded in EKPC's representations to the Attorney General that its uneconomic Cooper Station Units cannot be retired because "the current transmission system is not configured to support the peak load periods" without those units.[6]

According to EKPC, this transmission vulnerability could result in cascading outages impacting "[a] nine-county area stretching from Adair County to Clay County[.]"[7] At the time of that testimony, EKPC did not specifically identify each impacted county, but Jackson County certainly sits east of Adair County and just to the northwest of Clay County. If Jackson County is indeed among the potentially impacted counties, the addition of UMine's load should be formally investigated. The strains that an energy-intensive cryptocurrency mining operation

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[4] *Id.* at 2 n.2 (emphasis added).

[5] 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).

[6] Case No. 2022-00098, EKPC Response to Attorney General's Initial Request Q1c (July 29, 2022).

[7] Case No. 2022-00098, EKPC Response to Joint Intervenors' Supplemental Request Q21b (providing testimony of James C. Lamb in Case No. 2007-00168) (Sept. 20, 2022).

places on the grid are well-documented,[8] and the need for a formal investigation of this issue by the Commission is especially acute here in light of EKPC's recent representations regarding the vulnerability of its transmission system in this region.

To allow for evaluation of potential reliability implications, EKPC should provide its most current power flow analysis, including analyses that consider the implications of Cooper Station units being on simultaneous outage or retired. Transmission and distribution equipment investments necessary to maintain voltage support and the adequacy of the bulk power system can be specifically identified, with cost estimates reviewed by the Commission, and if the contract is to be approved, explicitly allocated to UMine in the special contract.

Lastly, in a formal proceeding, the Commission should consider the sufficiency of special contract provisions addressing reliability implications from the addition of UMine's load. UMine's special contract appears to include provisions addressing reliability that were not present in Kroger's 2016 EDR contract.[9] The sufficiency of these provisions should be fully considered before the Commission acts on the proposed special contract.

The Commission should also ensure that ratepayers and community members are not obligated to bear the costs of transmission grid and infrastructure upgrades required to service UMine unless those upgrades benefit existing customers as well. Any such costs would adversely impact EKPC ratepayers and have not been accounted for in the company's marginal cost analysis. In addition, these investments should not be made in lieu of long-overdue transmission upgrades that would benefit existing ratepayers. As the executive director for Appalachians for Appalachia recently said, "[l]ocal energy infrastructure is being pushed to the limit. Meanwhile these [cryptocurrency] miners are receiving benefits that local business owners, and everyday people, are not being extended as well."[10] The Commission should prioritize allocating costs in a manner that protects existing consumers from higher wholesale costs, cost shifting, and stranded assets.

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[8] *See* Fitch Ratings, *Crypto Mining Poses Challenges to Public Power Utilities* (Jan. 24, 2022), https://www.fitchratings.com/research/us-public-finance/crypto-mining-poses-challenges-to-public-power-utilities-24-01-2022 ("[d]igital asset or crypto currency mining in the US could pose power supply risks to public power utilities unless they are sufficiently mitigated" due to cryptocurrency mining's energy intensity and ability to quickly scale operations up and down). EKPC and Jackson themselves recognized this risk in the terms that they included in the proposed special contract. EKPC/Jackson/UMine contract at 14 ("Customer acknowledges that the energy-intensive nature of its operations are dissimilar to that of most other members of Cooperative and that any load in excess of the maximum demand could result in damage to Cooperative's distribution system, EKPC's transmission system, and/or the distribution substation.").

[9] *Compare* EKPC/Jackson/UMine contract at Sec. 4.b. (addressing reliability interruptions) *and* Industrial Power Agreement with Economic Development Rider between EKPC, South Kentucky, and Kroger, Case No. 2016-00316 (Aug. 1, 2016) (containing no provisions related to specific reliability threats posed by Kroger's load addition or addressing need for reliability interruptions), https://psc.ky.gov/pscscf/2016%20cases/2016-00316/20160830_east%20kentucky%20power%20cooperative,%20inc.%20application.pdf.

[10] Avi Asher-Schapiro, *Coal to Crypto: The Gold Rush Bringing Bitcoin Miners to Kentucky*, Thomson Reuters Found. (Mar. 14, 2022), https://longreads.trust.org/item/ bitcoin-mining-US-coal-country-climate.

III. EKPC's Marginal Cost Analysis Does Not Fully Evaluate the Contracted Rate and Warrants Closer Scrutiny.

The Commission should not approve an EDR special contract unless EKPC can demonstrate that the proposed agreement will not adversely impact other ratepayers, including by raising rates or otherwise increasing costs. As the Attorney General states in their comments, "proposals to facilitate economic development should be tailored carefully to ensure that the ratepayers of Eastern Kentucky do not unfairly subsidize companies for benefits the economic development provides."[11] This is compelled by the Commission's order in Administrative Case No. 327, which found that, "[u]pon submission of each EDR contract, a utility should demonstrate that the discounted rate exceeds the marginal cost associated with serving the customer."[12]

The Marginal Cost Analysis provided in support of EKPC's request does not adequately demonstrate that the discounted rate exceeds the marginal cost associated with serving UMine.[13] In particular, the marginal cost analysis does not assess the maximum demand allowed under the proposed contract and excludes the effect of the interruptible service credit, and as result, the analysis does not directly evaluate whether the special contract rate exceeds EKPC's marginal costs.[14] Before acting on the proposed special contract, the Commission should require submission of an accurate and complete marginal cost analysis that fully addresses the proposed special contract rates, and that demonstrates that the stacking of EDR discounts and interruptible credits is reasonable and does not result in adverse impacts on existing customers.

EKPC's marginal cost analysis assesses potential impacts "based on a contract demand of 1,000 kW, with a firm demand of 150 kW and an interruptible demand of 850 kW,"[15] but the maximum demand allowed under the contract appears to be five times higher.[16] Ordinarily, Jackson's Rate Schedule 46 defines "Billing Demand" as the greater of (a) contract demand or (b) the customer's actual peak demand during the current month or preceding eleven months.[17] The proposed contract, however, prescribes that UMine's "Billing Demand shall be the Contract

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[11] *See* Attorney General Comments, page 1.

[12] Order, *In re: An Investigation into the Implementation of Economic Development Rates by Electric and Gas Utilities*, at 15 (Ky. P.S.C. Sept. 24, 1990).

[13] *Id.*

[14] Joint Commenters note that the exclusion of the maximum contract demand and interruptible service credits in the marginal cost analysis of the contract rate may not be the only flaws and respectfully request that the Commission investigate the entirety of EKPC's marginal cost analysis. With the benefit of more time and expert review, additional flaws may be brought to light and addressed.

[15] Marginal Cost Analysis at 3.

[16] EKPC-Jackson-UMine Proposed Contract, ¶¶ 2-3.

[17] Jackson Energy Cooperative Corporation Tariff, Schedule 46, 9th Revised Sheet No. 6.

Demand"[18]; asserts that "the 'Contract Demand' for service . . . shall be 1,000 kW"[19]; and then allows that UMine's maximum demand "shall be 5,000 kW."[20] Taken together, these contractual provisions suggest that UMine may not be billed for demand above 1,000 kW, yet enjoys license to reach peak demand as high as 5,000 kW scot-free. EKPC's marginal cost analysis must be revised to account for the contract's actual maximum demand.

Additionally, EKPC's marginal cost analysis inexplicably excludes the effect of stacking interruptible service credits and contract discounts. Though the column headers in the table at page 3 in EKPC's marginal cost analysis suggest otherwise, EKPC explains via footnote that "[t]he interruptible service demand credit **is not evaluated on a marginal cost basis** in this analysis."[21] Because EKPC did not evaluate on a marginal cost basis the interruptible service demand credit portion of its contract rate, EKPC's filing cannot show that the contracted rate exceeds EKPC's marginal costs.[22]

In a full proceeding, EKPC should present for Commission review a marginal cost analysis of the contracted rate, including the effect of the interruptible service demand credit for the bulk of UMine's demand. Based on preliminary review and accepting at face value the rates and market price for capacity used in EKPC's historical analysis, it appears that the contracted rate may exceed EKPC's marginal capacity costs in every discount year. This is shown in the following table, which recreates EKPC's page 3 table with two changes:

(1) for demand > 150 kW, application of the discount to the demand rate net of the interruptible credit (*i.e.*, $1.89); and

(2) addition of a final column that sums the contract demand charge, accounting for firm and interruptible demand.

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[18] EKPC-Jackson-UMine Proposed Contract, ¶ 2.

[19] *Id.* ¶ 3.

[20] *Id.*

[21] Marginal Cost Analysis at 3, n.2 (emphasis added).

[22] *Contra* Marginal Cost Analysis at 4 (inaccurately claiming that "Based on this analysis the discounted demand rates for the contract and net of interruptible service exceed the historic marginal costs for the five-year discount period.").

Table 1. Recreated Historic Marginal Demand Rate Comparison[23]

Discount Period	Contract Demand Rate Up to Firm - First 150 kW			Demand Rate Net of Interruptible Credit - >150 kW			Total Difference: Discount and Interruptible Credits
	Discounted	BRA Results	Difference	Net Rate of	BRA Result	Difference	
	$ 7.49	$ 4.26		$1.89	$ 4.26		
1st Year - 50%	$ 3.75	$ 4.26	$ (0.51)	$ 0.95	$ 4.26	$ (3.32)	$ (3.83)
2nd Year - 40%	$ 4.49	$ 4.26	$ 0.23	$ 1.13	$ 4.26	$ (3.13)	$ (2.89)
3rd Year - 30%	$ 5.24	$ 4.26	$ 0.98	$ 1.32	$ 4.26	$ (2.94)	$ (1.95)
4th Year - 20%	$ 5.99	$ 4.26	$ 1.73	$ 1.51	$ 4.26	$ (2.75)	$ (1.02)
5th Year - 10%	$ 6.74	$ 4.26	$ 2.48	$ 1.70	$ 4.26	$ (2.56)	$ (0.08)

These charges better reflect the actual contracted demand charges,[24] and appear to show that EKPC's marginal cost of capacity could exceed demand revenues from UMine in every year of the discount period. When the effect of the interruptible service credit is accounted for in EKPC's page 4 table, as shown below, it appears that EKPC's marginal cost of capacity could exceed demand revenues from UMine by tens of thousands of dollars in each of the discount years.[25]

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[23] Based on unlabeled table presented on page 3 of EKPC's Marginal Cost Analysis, with changes described above.

[24] Marginal Cost Analysis at 2 ("For all demand over the firm demand, the EDR discount would be applied to the net rate of $1.89 / kW ($7.49/kW - $5.60/kW)."); Proposed EKPC-Jackson-UMine Special Contract ¶ 5.a ("Any credits provided under any other demand-related rider shall be applied before the discounts as described above are applied. Thus the Interruptible Rider demand credit, if applicable, shall be applied to the Customer's billing before the EDR discount."); Background & Compliance Document ¶ 7 ("Pursuant to the provisions of Jackson's EDR tariff, the EDR discount is applied to the total demand charge, which is the sum of all demand charges including any credits provided under any other demand-related rider. Thus, for that portion of the monthly demand that exceeds the Firm Load levels, the EDR discount will be applied to a net demand charge that reflects the applicable demand charge less the interruptible service credit. For that portion of the monthly demand that is less than the Firm Load levels, the EDR discount will be applied to the applicable demand charge.").

[25] Table 2 repeats EKPC's claim that the Interruptible Demand could not be greater than 850 kW (1,000 kW Billing Demand less 150 kW firm load), but as discussed above, UMine appears to have license under the proposed contract to reach demand levels as high as 5,000 kW—creating the potential for significantly higher interruptible demand than analyzed in Table 2 below or in EKPC's marginal cost analysis. This potential is further affirmed by contractual provisions providing that UMine's "Interruptible Demand shall . . . not exceed 20,000." EKPC-Jackson-UMine Proposed Contract, ¶ 4. EKPC must clarify what the actually operative contractual limit on Interruptible Demand is, revise the contract accordingly, and submit a marginal cost analysis that accounts for demand up to the contractually allowed maximums.

Table 2. Recreated Historic Marginal Demand Revenue/Cost Comparison[26]

Discount Period		Discounted Contract Demand Rate Revenues		BRA Results - Marginal Costs		Difference	
		Monthly Revenue	Annual Revenue	Monthly Cost	Annual Cost	Monthly	Annual
1st Year -							
Firm	150	$ 561.75	$ 6,741.00	$ 639.00	$ 7,668.00	$ (77.25)	$ (927.00)
Interruptible	850	$ 803.25	$ 9,639.00	$ 3,621.00	$ 43,452.00	$ (2,817.75)	$ (33,813.00)
Total 1st Yr		**$ 1,365.00**	**$ 16,380.00**	**$ 4,260.00**	**$ 51,120.00**	**$ (2,895.00)**	**$ (34,740.00)**
2nd Year -							
Firm	150	$ 674.10	$ 8,089.20	$ 639.00	$ 7,668.00	$ 35.10	$ 421.20
Interruptible	850	$ 963.90	$ 11,566.80	$ 3,621.00	$ 43,452.00	$ (2,657.10)	$ (31,885.20)
Total 2nd Yr		**$ 1,638.00**	**$ 19,656.00**	**$ 4,260.00**	**$ 51,120.00**	**$ (2,622.00)**	**$ (31,464.00)**
3rd Year -							
Firm	150	$ 786.45	$ 9,437.40	$ 639.00	$ 7,668.00	$ 147.45	$ 1,769.40
Interruptible	850	$ 1,124.55	$ 13,494.60	$ 3,621.00	$ 43,452.00	$ (2,496.45)	$ (29,957.40)
Total 3rd Yr		**$ 1,911.00**	**$ 22,932.00**	**$ 4,260.00**	**$ 51,120.00**	**$ (2,349.00)**	**$ (28,188.00)**
4th Year -							
Firm	150	$ 898.80	$ 10,785.60	$ 639.00	$ 7,668.00	$ 259.80	$ 3,117.60
Interruptible	850	$ 1,285.20	$ 15,422.40	$ 3,621.00	$ 43,452.00	$ (2,335.80)	$ (28,029.60)
Total 4th Yr		**$ 2,184.00**	**$ 26,208.00**	**$ 4,260.00**	**$ 51,120.00**	**$ (2,076.00)**	**$ (24,912.00)**
5th Year -							
Firm	150	$ 1,011.15	$ 12,133.80	$ 639.00	$ 7,668.00	$ 372.15	$ 4,465.80
Interruptible	850	$ 1,445.85	$ 17,350.20	$ 3,621.00	$ 43,452.00	$ (2,175.15)	$ (26,101.80)
Total 5th		**$ 2,457.00**	**$ 29,484.00**	**$ 4,260.00**	**$ 51,120.00**	**$ (1,803.00)**	**$ (21,636.00)**
Total 5-year Discount Period		**$ 9,555.00**	**$ 114,660.00**	**$ 21,300.00**	**$ 255,600.00**	**$ (11,745.00)**	**$ (140,940.00)**

[26] Based on unlabeled table presented on page 4 of EKPC's Marginal Cost Analysis. Revised to account for contract provisions requiring that "[f]or all demand over the firm demand, the EDR discount would be applied to the net rate of $1.89/kW." *E.g.* Marginal Cost Analysis at 2; Proposed EKPC-Jackson-UMine Special Contract ¶ 5.a ("Any credits provided under any other demand-related rider shall be applied before the discounts as described above are applied. Thus the Interruptible Rider demand credit, if applicable, shall be applied to the Customer's billing before the EDR discount.").

EKPC should be required to present an analysis of marginal costs that fully accounts for the contract rate, which includes application of the Interruptible Service Credit for the majority of UMine's load. EKPC should also be required to make a sufficient showing that stacking economic development rates and interruptible service credits in this way will not result in adverse impacts on existing customers. This additional showing is needed in light of the novelty of the EDR contract here. UMine's ability to avail itself of interruptible service credits materially distinguishes UMine's EDR request from EKPC's previous EDR contracts.[27] The Commission should consider fully the appropriateness of stacking EDR discounts *and* interruptible service credits, evaluating whether the availability of interruptible service credits that dramatically reduce demand charges from $7.49/kW to $1.89/kW renders further discounts unreasonable.

IV. 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 EDR special contract in this matter 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 *de minimis*, cryptocurrency operations such as UMine carry heightened risks that require further investigation into the reasonableness of the contract to ensure that ratepayers are adequately protected.

A. EKPC and UMine's proposal provides minimal economic development opportunities.

EKPC claims that the proposed EDR special contract in this matter is essentially the same as the EDR special contract the Commission approved in Case No. 2016-00316.[28] That is simply not the case.

The present proposal provides the potential for only 3 jobs and $2 million in capital investment.[29] In comparison, the EDR approved in Case No. 2016-00316 provided for a total of 250 jobs and $24.3 million in capital investment. Although job creation is not a formal eligibility requirement, the notably small and uncertain job benefits of UMine's proposal should be a factor in evaluating the reasonableness of the contracted rate.

Despite the purported economic development justification for cryptocurrency mining incentive programs, these operations actually create very few jobs. After Plattsburgh, New York

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[27] *E.g.*, Kroger EDR does not contemplate interruptible service.

[28] EKPC Cover Letter at 2 (Sept. 30, 2021), https://psc.ky.gov/trf4/uploadedFiles/1400_East_Kentucky_Power_Cooperative__Inc_/09302022094809/Cover_Letter_-_EKPC-Jackson-UMine_IPA_w_Interpt_EDR_093022.pdf.

[29] It is unclear on the face of EKPC's filing what documentation from UMine, if any, EKPC or Jackson has reviewed to substantiate UMine's claimed job potential and capital investment.

experienced an early boom in cryptocurrency operations in the mid-2010s, the former mayor observed that due to the automated nature of cryptocurrency operations, few jobs materialize: "I'm pro-economic development, but the biggest mine operation has fewer jobs than a new McDonald's."[30]

As a Berkeley Haas professor similarly 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."[31] And Fitch Ratings found "[c]ryptocurrency mining operations typically bring in very little additional economic benefits in the form of jobs or ancillary business to a local economy."[32]

The Commission should ensure that UMine will in fact provide some meaningful and measurable benefit to the economic development of the Commonwealth before granting the approval of any discount. In Case No. 2014-00034, the Commission explained that the tariff requires qualifying EDR customers to enter a special contract addressing "the new load to be served; the number of new jobs, if any, anticipated to be created by the customer as a result of the new load; and the capital investment involved." The Commission should investigate whether UMine can indeed create significant economic development in the area.

B. Cryptocurrency mining operations are especially risky.

As the Attorney General warns in their comments, cryptocurrency 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, or other investments made for the benefit of the special contract customer.

The impacts on other ratepayers from discounted electricity rates provided to cryptocurrency operations and from the payments for demand response can be significant. Cryptocurrency 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

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30 Lois Parshley, How Bitcoin mining devastated this New York town: Between rising electricity rates and soaring climate costs, cryptocurrency mining is taking its toll on communities, MIT Tech. Review (Apr. 18, 2022), https://www.technologyreview.com/2022/04/18/1049331/ bitcoin-cryptocurrency-cryptomining-new-york/.

31 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).

32 Fitch Ratings, *Crypto Mining Poses Challenges to Public Power Utilities* (Jan. 24, 2022), https://www.fitchratings.com/ research/us-public-finance/crypto-mining-poses-challenges-to-public-power-utilities-24-01-2022.

the construction of transmission and distribution lines, substation upgrades, or other infrastructure to facilitate the delivery of electricity to energy intensive mining rigs.[33]

Ratepayers may be left on the hook financially for these investments if and when a cryptocurrency operation abruptly leaves or collapses.[34] For example, one cryptocurrency mining operation in Washington that declared bankruptcy in 2018 left more than $700,000 in unpaid utility and electricity bills.[35] Mining operations may leave solely because they can get a better deal on electricity somewhere else.[36] 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.[37]

Some states, recognizing the risks of cryptocurrency mining's unique position as a new, unregulated industrial user, have begun requiring miners to pay for upgrades as opposed to passing those onto the community at large. Likewise, some utilities, recognizing the risks cryptocurrency mining operations pose to their existing customers, have begun to develop tariff provisions to mitigate these risks. In November 2021, Idaho Power became the first investor-owned utility to submit an application with its state regulator, the Idaho Public Utilities

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[33] For example, in Idaho, investor-owned utility Idaho Power requested that cryptominers prepay for required infrastructure upgrades to prevent stranded assets on remaining ratepayers when the economics of cryptocurrency 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.").

[34] 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.

[35] 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%20 Hearing_2022.01.20.pdf.

[36] 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. Multiple companies offer mining equipment in shipping containers to chase the best prices, and when prices fluctuate, mining facilities can migrate quickly. *See, e.g.*, EZ blockchain, *EZ Smartbox Mobile Mining Container* (last visited Oct. 24, 2022). https://ezblockchain.net/ smartbox/.

[37] 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.

Commission, to create a separate class of "Speculative High-Density Load Customers," since the utility received at least 17 separate inquiries totaling 1,950 MW — roughly 52% of its until-then-record peak demand.[38] According to the utility, these inquiries reflected customers with: (1) high energy use and load factor; (2) the ability to relocate and disaggregate equipment to obtain favorable rates; (3) volatile load growth and load reduction; (4) high responsiveness to short-term economic signals or volatility; and (5) lack of demonstrated long-run financial viability.[39]

And lastly, cryptocurrency 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 with an eye toward noise pollution,[40] whether they truly create stable, good-paying jobs, what grid and infrastructure upgrades are needed, fire and safety risks,[41] 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.*

Many Kentucky residents and local businesses struggle with an ever-increasing burden from their energy bills.[42] Americans are already struggling to keep up with their electricity bills, particularly those living in disadvantaged communities.[43] As EKPC recently explained, many of

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[38] *See* Application of Idaho Power Co. for Authority to Establish a New Schedule to Serve Speculative High-Density Load Customers, at 5, Idaho Pub. Util. Comm'n Case No. IPC-E-21-37 (Nov. 4, 2021), https://puc.idaho.gov/Fileroom/PublicFiles/ ELEC/IPC/IPCE2137/CaseFiles/20211104Application.pdf.

[39] *Id*. at 3.

[40] Kevin Williams, *An Appalachian town was told a bitcoin mine would bring an economic boom. It got noise pollution and an eyesore*, Wash. Post (Mar. 18, 2022), https:// www.washingtonpost.com/business/2022/03/18/bitcoin-mining-noise-pollution-appalachia/ (A commissioner who voted to approve a cryptocurrency facility in Limestone, Tennessee, later told a reported that he has "never regretted a vote like this one, I sure wish I could take it back," with residents describing the noise as "like a jet engine idling on a nearby tarmac.").

[41] *See e.g.*, N2Global, *Fire Safety in Cryptocurrency Mining: Case Study* (Oct. 22, 2021), https://www.n2global.net/en/media-room/news-highlights/fire-safety-at-cryptocurrency-mining-case-study-by; Levitt Safety, *Protect Your Cryptocurrency Mine With These Fire Mitigation Tactics* (Mar. 28, 2022), https://www.levitt-safety. com/blog/cryptocurrency-mining/; Amir Rubin, *Is Bitcoin Mining Insurable, Examples and Loss Characteristics*, AREPA, at 14-16 (2021), https://www. arepa.com/media/xtsbufex/arepa-whitepaper-bitcoin.pdf; Rebecca Heilweil, *Now Might Be a Good Time to Think About Crypto Insurance*, Vox (June 17, 2022), https://www.vox.com/ recode/23171782/crypto-terra-ust-celsius-meltdown-crash-insurance.

[42] Ky. Energy & Env;t Cabinet, *Energy Affordability*, https:// eec.ky.gov/Energy/Programs/EnergyAffordability/Pages/ default.aspx ("While Kentucky has relatively low energy prices, it does have areas with high energy burdens that can threaten a household's ability to pay for energy, and force tough choices between paying energy bills and buying food, medicine, or other essentials."); Emily Bennett, *WSAZ Investigates | Kentucky Power bill spike*, WSAZ (Jan. 28, 2022), https://www.wsaz.com/2022/01/28/wsaz-investigates-kentucky-power-bill-spike/ (explaining that Kentucky Power ratepayers saw a major increase in their electric bills in January 2022).

[43] 25% of U.S. households (30.6 million) face a high energy burden (i.e., paying more than 6% of income on energy bills) and 13% of U.S. households (15.9 million) have a severe energy burden (i.e., paying more than 10% of income

the retail customers served by its assets "literally, are faced with a regular choice between food, electricity and medicine."[44] By EKPC's estimates, it serves 40 counties experiencing persistent poverty; and roughly 42% of its customers are elderly, many dependent on government assistance, on fixed incomes, and living in "energy-leaking mobile homes."[45]

We agree with the Attorney General that the Commission should require EDR 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.

EKPC should include provisions to ensure UMine will complete the full contract term. Cryptocurrency mining is an inherently volatile endeavor, and UMine has made no assurances of capital or debt positions. In this circumstance, a 10-year contract term that provides for a 5-year discounted term is intrinsically risky and ill-advised. In Case No. 2016-00316, where there were no indications that the company would not fulfill the contract term, EKPC still included terms to encourage the completion of the full contract term. Here, EKPC must do more to safeguard its member-owners and retail customers. The proposed contract includes an early termination clause that allows EKPC to require "a letter of credit or equivalent security satisfactory to EKPC equal to seventy five (75) percent of the total EDR credits during the discount period of the EDR special contract, and equal to fifty (50) percent of the EDR credits during the non-discount period of the EDR special contract." The Commission should require EKPC to exercise these assurance provisions to ensure that, if approved, the 10-year contract term would be completed.

The proposed contract also provides for a security deposit that may be "equal to, but shall not exceed two times the amount of Customer's average monthly bill." The Commission should seek more detail on how the average monthly bill will be determined and analyze whether a two-month security deposit sufficiently insulates ratepayers from the risk of default. especially when no information is provided as to how this "average monthly bill" will be calculated. EKPC should require a security deposit upfront, to be held in escrow, to protect against the possibility of future insolvency, especially given the volatility of the cryptocurrency industry.

Further, given the heightened migration risks associated with cryptocurrency 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 a disappearing miner, Entergy Arkansas has proposed the following safeguards: new cryptocurrency customers should

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on energy). Ariel Drehobl *et al.*, *How High are Household Energy Burdens?* Am. Council for an Energy-Efficient Economy, at ii (Sept. 2020), https://www.aceee.org/sites/default/files/pdfs/u2006.pdf.

[44] *E.g.*, EKPC Comments on Federal Implementation Plan Addressing Regional Ozone Transport for the 2015 Ozone NAAQS Proposed Rule, at 3 (June 22, 2022) Docket EPA-HQ-OAR-2021-0668-0372, https://www.regulations.gov/comment/EPA-HQ-OAR-2021-0668-0372.

[45] *Id*.

be required to pay a security deposit; contribute to any construction upfront; and post a surety bond or letter of credit.[46] The Commission here should require similar safeguards with upfront deposits, guarantees or cost coverage for infrastructure investments, and long-term financial assurances to avoid increased costs for transmission or capacity upgrades from being passed on to existing customers.

Respectfully submitted,

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[46] 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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