

AEP OHIO EXHIBIT NO. \_\_\_\_\_

BEFORE  
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Ohio       )  
Power Company for New Tariffs Related       ) Case No. 24-508-EL-ATA  
to Data Centers and Mobile Data Centers       )

DIRECT TESTIMONY OF  
LISA O. KELSO  
ON BEHALF OF  
OHIO POWER COMPANY

Filed May 13, 2024

INDEX TO DIRECT TESTIMONY OF  
LISA O. KELSO

|      |                                                  |    |
|------|--------------------------------------------------|----|
| I.   | PERSONAL DATA.....                               | 1  |
| II.  | PURPOSE OF TESTIMONY.....                        | 3  |
| III. | OHIO HISTORICAL LOAD.....                        | 3  |
| IV.  | DATA CENTER AND CRYPTO CURRENCY DEVELOPMENT..... | 5  |
| V.   | CONCLUSION.....                                  | 10 |

BEFORE  
THE PUBLIC UTILITIES COMMISSION OF OHIO  
DIRECT TESTIMONY OF  
LISA O. KELSO  
ON BEHALF OF  
OHIO POWER COMPANY

I. PERSONAL DATA

**Q1. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

A1. My name is Lisa O. Kelso and my business address is 700 Morrison Road, Gahanna, Ohio 43230.

**Q2. BY WHOM ARE YOU EMPLOYED AND WHAT IS YOUR POSITION?**

A2. I am employed by Ohio Power Company, (“AEP Ohio” or “the Company”) as Vice President - Customer Experience.

**Q3. WOULD YOU PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND?**

A3. I graduated *magna cum laude* with a Bachelor of Business Administration from Ohio University in 2003. I began work in 2003 with the Ohio Legislative Service Commission Fellowship Program. After completing the Fellowship Program, I worked as an aide in the Ohio Senate from January 2005 to August 2005. I left the Ohio Senate in August 2005 to pursue a Master of Accounting from The Ohio State University. I graduated in June 2006 and joined the PwC (formerly PricewaterhouseCoopers) accounting firm, where I worked until 2008. I joined American Electric Power Service Corporation (“AEPSC”) in 2008 as a Senior Auditor. In 2010, I was promoted to Audit Specialist and in 2012 I joined AEP Transmission as a Business Operations Support Analyst. In 2013, I became a Senior Financial Analyst and progressed through various positions before being

1 promoted to Manager – Transmission Business Planning and Analysis in 2015. In 2016,  
2 I became Manager of Transmission Asset Strategy and Policy. In 2018, I become  
3 Director – Business Operations Support at AEP Ohio. In March 2021, I moved to the  
4 Director of Regulatory Services position, and in August 2021, I was promoted to Vice  
5 President – Regulatory & Finance. In 2024, I accepted my current position of Vice  
6 President – Customer Experience. I am a certified Public Accountant licensed in Ohio.

7 **Q4. WHAT ARE YOUR RESPONSIBILITIES AS VICE PRESIDENT – CUSTOMER**  
8 **EXPERIENCE?**

9 A4. I am responsible for overseeing AEP Ohio’s customer service functions including  
10 account management, community relations, and customer program offerings. My team  
11 assists all classes of customers from residential to large commercial and industrial users  
12 and supports economic development activities to help grow Ohio businesses and  
13 communities.

14 **Q5. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN ANY REGULATORY**  
15 **PROCEEDINGS?**

16 A5. Yes. I have submitted written testimony before this Commission in AEP Ohio’s 2018,  
17 2019, and 2022 Significantly Excessive Earnings Test (“SEET”) filings (Case Nos. 19-  
18 1098-EL-UNC, 20-1006-EL-UNC, 23-535-EL-UNC), the 2020 base rate case (Case No.  
19 20-585-EL-AIR), the gridSMART Phase 3 Project (Case No. 19-1475-EL-RDR). I have  
20 also testified before this Commission in the Company’s ESP V proceeding, Case No. 23-  
21 23-EL-SSO.

## **II. PURPOSE OF TESTIMONY**

**Q6. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

A6. The purpose of my testimony is to provide information and background on the growth of data center and crypto currency data miner classes of customer that have come to and are continuing to express interest in locating in the AEP Ohio service territory. This proposal is being advanced in order to maintain the ability to provide safe and reliable electric service to all customer classes and their natural growth while providing a supportive environment for all economic development. I will briefly describe the load needs and history of these two customer classes locating in central Ohio and the future potential landscape as this novel load continues to grow.

## **III. OHIO HISTORICAL LOAD**

**Q.7 CAN YOU EXPLAIN THE BACKGROUND OF AEP OHIO'S HISTORICAL LOAD?**

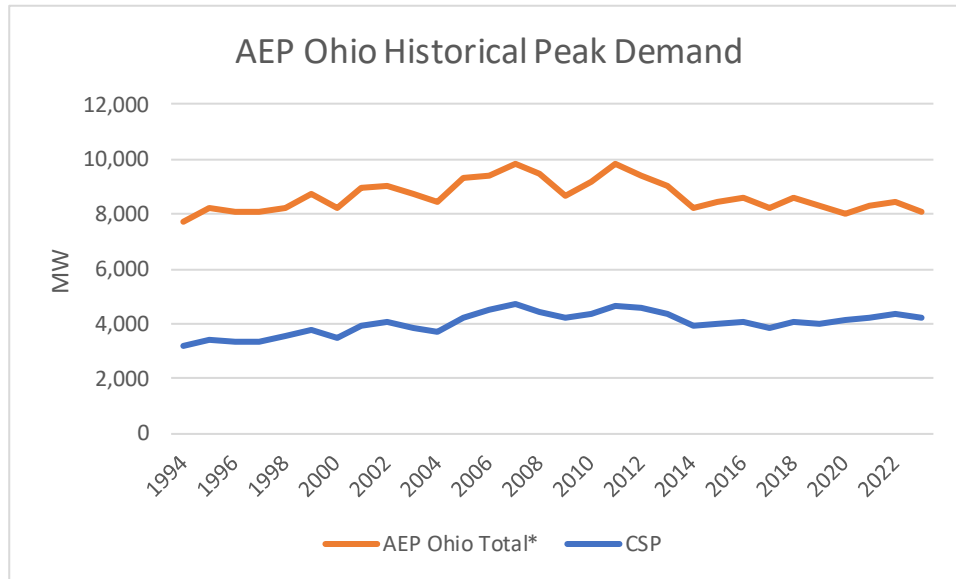
A7. AEP Ohio has been in business since the early 1900's, originating as two subsidiaries – Columbus Southern Power (CSP) and Ohio Power (OP). While the two companies merged over a decade ago and are operated jointly, AEP Ohio still is able to measure the historic load for CSP and OP rate zones. CSP is located in Central Ohio as well as in Southern Ohio. Approximately 80% of CSP's load is located in Central Ohio<sup>1</sup>. For decades, AEP Ohio has seen minimal or negative load growth as depicted in Figure LOK-1. CSP's historic 30-year compound annual growth rate was 0.9% and the combined AEP Ohio's total rate was 0.2%. This low load growth was primarily due to

---

<sup>1</sup> As AEP Ohio witness Ali defines the Central Ohio transmission system which is broader than the Central Ohio area in the CSP rate zone and extends into the OP rate zone; the load center for both the historic data and future signed data center load is primarily located in the CSP rate zone.

1 advances in energy efficiency measures and major industrial customers reducing  
2 production or shutting down entirely.

**Figure LOK-1**



\*AEP Ohio Total includes both CSP and OP load

3 Historically large industrial companies were AEP Ohio's largest users of electricity. For  
4 example, as recently as 2006, an aluminum smelting company requiring 520 MW of load  
5 was, by far and away, the largest single user for many years. This largest user was also  
6 located along the Ohio River where generation and transmission were readily available.  
7 As I discuss in Section IV, AEP Ohio's largest load began to shift from the historical  
8 manufacturing and industrial sectors to the internet and technology sectors, including data  
9 centers and crypto currency data mining, starting in the early 2020s.

#### **IV. DATA CENTER AND CRYPTO CURRENCY DEVELOPMENT**

**Q8. CAN YOU EXPLAIN THE BACKGROUND OF DATA CENTER DEVELOPMENT IN CENTRAL OHIO?**

A8. AEP Ohio's first hyperscale data center load started to come online in 2017. It is my understanding that hyperscale data centers began to locate in Central Ohio because of reliable electric service from AEP Ohio, available fiber connectivity, water resources, and retail choice for generation supply. By 2020, actual data center load exceeded 100 MW and by April 2024, actual data center load was approximately 600 MW in Central Ohio. Data center load is continuing to rapidly accelerate and will reach a total of 5,000 MW in Central Ohio by 2030 based on signed agreements with the Company. Central Ohio's total load will more than double from approximately 4,000 MW to 9,000 MW over the course of a decade, and AEP Ohio's Top 5 customers will all be data center customers by 2030.

**Q9. CAN YOU DESCRIBE CRYPTO MINING DEVELOPMENT IN AEP OHIO'S SERVICE TERRITORY?**

A9. Similarly, it is my understanding that cryptocurrency mining has located in AEP Ohio's service territory over the last several years for a few reasons. Because cryptocurrency mining is an energy intensive process that consumes significant electricity and creates a large amount of heat, Ohio's cooler climate for much of the year is attractive to miners who need to cost effectively keep their computers operating at moderate temperatures. Further, much of Ohio's legacy industrial electricity capacity has attracted new incoming cryptocurrency loads looking to fill these voids in the more rural parts of our territory. And multiple cryptocurrency miners have located on or near former utility

1 generation station sites that have been abandoned after deregulation in Ohio, because  
2 access to transmission capacity is readily available and cryptocurrency mining sites do  
3 not need to be near other load or population centers.

4 **Q10. WHAT IMPLICATIONS HAVE RESULTED FROM THIS TREMENDOUS**  
5 **INFLUX IN DATA CENTER AND CRYPTOCURRENCY DATA MINING**  
6 **LOAD?**

7 A10. In addition to the approximately 5,000 MW of load either being served or with signed  
8 agreements, additional interest from data centers desiring to locate in Central Ohio  
9 continues to rapidly expand at a rate that dwarfs historical load growth. AEP Ohio has  
10 received inquiries and preliminary requests for service from over 50 customers at over 90  
11 sites totaling more than 30,000 MW. As discussed by Company Witness Ali, as data  
12 center interest quickly accelerated AEP Ohio had to temporarily stop accepting new  
13 agreements to serve new data center customers so that AEP's transmission planning  
14 group could study the data center impacts on the electrical delivery system in Central  
15 Ohio. AEP Ohio met with and communicated the need for the pause with all current  
16 transmission customers that have executed an agreement as well as those prospective  
17 customers that submitted requests for service but have not yet executed an agreement.

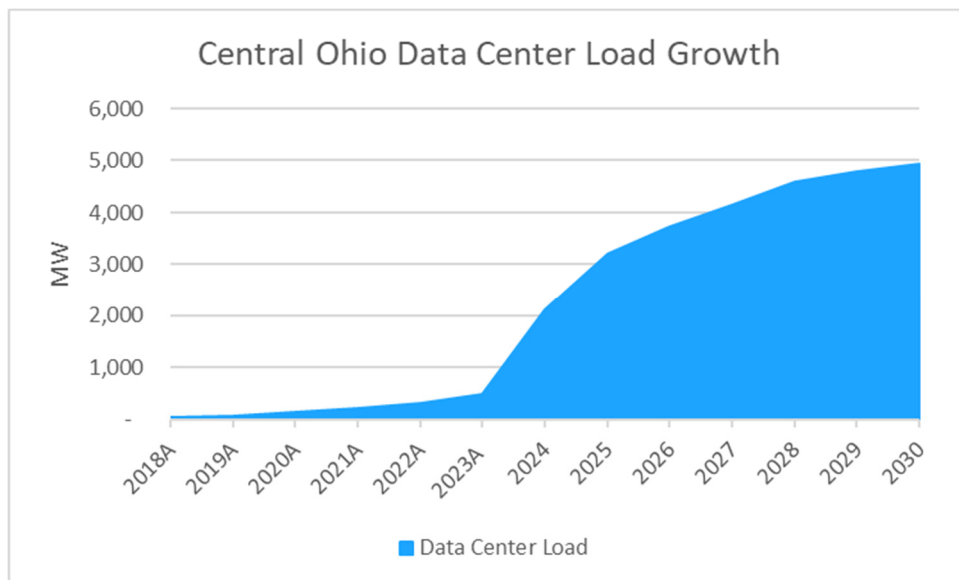
18 As part of the pause, AEP Ohio developed a customer queue (based on the order  
19 in which the request was received) whereby prospective customers looking to locate in  
20 the AEP Ohio service territory or existing customers looking to expand their services  
21 could submit their requests for incremental service (without signing an agreement). The  
22 current queue currently includes requests from more than 50 data center customers  
23 seeking to locate or expand their electric services at over 90 sites totaling more than



1 30,000 MW of data center customers in the AEP Ohio service territory. If even half of  
2 this speculative load would materialize, AEP Ohio's peak load would more than triple  
3 from its historic peak load in 2023.<sup>2</sup>

4 As I explained earlier, there are executed agreements for data center projects  
5 totaling approximately 5,000 MW of new load by 2030 (including data center load  
6 already being served today). This is not part of the additional 30,000 MW of requests in  
7 the queue. As outlined in Figure LOK-2 below, the chart illustrates the data centers' load  
8 ramps totaling 5,000 MW through 2030. This would more than double the load in Central  
9 Ohio – the most densely populated part of AEP Ohio's service territory – and as  
10 Company Witness Ali explains led AEP Ohio to pause signing additional load to ensure  
11 adequate transmission capacity remains available for normal distribution planned load  
12 growth.

**Figure LOK-2**



<sup>2</sup> Data obtained from [Case 24-501-EL-FOR, Form FE-D4](#).

1 **Q11. HOW DOES THIS PROPOSED TARIFF PRESERVE CUSTOMER GROWTH?**

2 A11. As Company Witness Ali explains adding additional load beyond the approximately  
3 5,000 MW committed, significant additional investments in the transmission system are  
4 needed to serve the queue. Increasing the large data center customers (over 25 MW)  
5 minimum contract capacity from 60% to 90% will also encourage data center customers  
6 to request a more accurate capacity (MW) number. Ensuring that data center customers  
7 are submitting accurate capacity requests will enable PJM Interconnection, LLC (PJM) to  
8 plan accordingly to make sure that there is adequate capacity to preserve the ability to  
9 serve normal expected growth and helps protect other future economic development.

10 **Q12. WHAT IS AEP OHIO'S EXPERIENCE WITH THE ECONOMIC**  
11 **DEVELOPMENT SUPPORTED BY TRADITIONAL COMMERCIAL AND**  
12 **INDUSTRIAL CUSTOMERS AS COMPARED TO DATA CENTERS AND**  
13 **CRYPTO MINING FACILITIES?**

14 A12. AEP Ohio acknowledges that data centers support local design, engineering and  
15 construction jobs, pay property tax revenues that support local schools and communities,  
16 and support local communities through corporate donations. But data suggests there is a  
17 difference in the amount of direct jobs that data centers and crypto currency data mining  
18 support versus other commercial and industrial customers. For example, there have been  
19 approximately 95 new or expanded non-data center customers in Ohio from Jan 2019 to  
20 the present that the AEP Economic Development team was involved in helping to locate  
21 in our service territory. While these 95 customers do not include all load growth and

1 customers that have come to our service territory, these projects represent a reasonable  
2 sample to compare traditional commercial and industrial customers' and data center and  
3 crypto mining customers' impact on the economy. These 95 customers brought over  
4 15,000 jobs, \$25.8 Billion capital investment to Ohio, and resulted in 623 MW of added  
5 load to the electrical system. On average, these non-data center C&I customers supported  
6 approximately 25 direct FTE (full-time equivalent) jobs per 1MW, whereas we estimate  
7 data center customers to support less than one direct FTE job per 1MW.

8 **Q13. DO CRYPTOCURRENCY DATA MINERS HAVE ADDITIONAL**  
9 **DISTINGUISHING FACTORS COMPARED TO DATA CENTERS?**

10 A13. Despite their intense energy usage, the majority of cryptocurrency mining customers are  
11 more transient in nature, often even lacking structures physically affixed to the ground.  
12 Even those that have structures affixed to the ground have minimal capital investment  
13 compared to other commercial and industrial customers, including data centers, which are  
14 incredibly capital intense projects. As a result, these customers can easily locate without  
15 much stranded investment; in fact, despite the nascency of this technology/industry, some  
16 crypto currency mining customers have already located and left the AEP Ohio service  
17 territory within a couple short years.

18 **Q14. DOES AEP OHIO SUPPORT FUTURE ECONOMIC DEVELOPMENT IN ITS**  
19 **SERVICE TERRITORY?**

20 A14. Absolutely. AEP Ohio has a long history of working with Jobs Ohio and other state and  
21 local economic development organizations to help bring all types of businesses to Ohio  
22 and we will continue to support economic development throughout our service territory.  
23 As Company Witness Ali explains, the proposed Data Center Power (DCP) Tariff will

1 allow AEP Ohio to support the transmission infrastructure planning process at PJM and  
2 regulatory bodies such as the Public Utilities Commission of Ohio, the Ohio Power Siting  
3 Board and Federal Energy Regulatory Commission. These future transmission  
4 investments are expected to be extra high voltage lines that will provide a new, efficient,  
5 reliable and resilient electric source to power our communities and will allow AEP Ohio  
6 to serve the many data center customers who would like to locate in Ohio. In addition, as  
7 Company witness McKenzie explains, the DCP tariff proposal will help protect existing  
8 ratepayers by ensuring data center customers make long term commitments and have *skin*  
9 *in the game*. The DC tariff proposal will support continued economic development by  
10 both data center and non-data center customers alike in the AEP Ohio service territory.

11 **V. CONCLUSION**

12 **Q15. DOES THIS CONCLUDE YOUR PREFILED DIRECT TESTIMONY?**

13 A15. Yes.

**This foregoing document was electronically filed with the Public Utilities  
Commission of Ohio Docketing Information System on**

**5/13/2024 2:35:00 PM**

**in**

**Case No(s). 24-0508-EL-ATA**

Summary: Testimony Direct Testimony of Kelso electronically filed by Mr. Steven T. Nourse on behalf of Ohio Power Company.