

BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Joint Application of)
Vadata, Inc. and Ohio Power Company for) Case No. 17-1827-EL-AEC
Approval of a Unique Economic)
Development Arrangement for Ohio Data)
Center Campuses

**FIVE-YEAR STATUS REPORT OF AMAZON DATA SERVICES, INC F/K/A
VADATA, INC. ON THE ECONOMIC DEVELOPMENT ARRANGEMENT**

I. Introduction.

On September 1, 2017, Amazon Data Services Inc., formerly known as Vadata, Inc. (“ADS”), and Ohio Power Company (“AEP Ohio”) filed a joint application seeking approval from the Public Utilities Commission of Ohio (“Commission”) of an economic development arrangement in connection with ADS’s investments in and development of three data center campuses in the Columbus, Ohio region.

On January 10, 2018, the Commission issued a decision in which it approved the proposed arrangement and found that significant economic benefits were expected to result from the proposed arrangement. Specifically, the Commission found that the proposed economic development arrangement would support substantial new, energy efficient electrical load while encouraging investments in new high-paying jobs and state-of-the-art data center facilities in Ohio. The Commission, based on these findings, approved the economic development arrangement between ADS and AEP Ohio, in accordance with Ohio Revised Code 4905.31 and Ohio Administrative Code 4901:1-38-03.

To ensure that the requirements for the economic development arrangement continued to be met during the ten-year term of the arrangement, the Commission ordered ADS to file a comprehensive status report following the first five years of the arrangement. (*See Jan. 10, 2018*

Opinion & Order, ¶ 35.) In accordance with the Commission's directives, this status report includes (i) the status of data center construction; (ii) the economic development impact of the data center construction, including an economic analysis of the multiplier effect, either submitted via IMPLAN or comparable study; (iii) the net savings to ADS over the five-year timeframe versus the costs ADS would have to pay for electric service without the arrangement; and (iv) whether the arrangement is still necessary.¹

As discussed more fully in this report, ADS has delivered on its economic development promises, which has brought tremendous economic and job creation benefits to the State of Ohio. As of December 2022, ADS has completed the construction of data center buildings at all three of the data center campuses that are part of this economic development arrangement, located in AEP Ohio service territory in New Albany, Dublin and Hilliard, Ohio. Moreover, as discussed in more detail below, ADS's significant investments in building and operating those three data center campuses has brought billions of dollars in economic benefits to the State of Ohio, and raised Ohio's profile in global technological markets as a desirable location to establish and expand new energy-intensive businesses due to favorable market conditions, transparent utility rates, and the Commission's willingness to incentivize investments through the approval of economic development arrangements permitted under Ohio law and the Commission's rules. Moreover, the operation of the three data center campuses in AEP Ohio territory has resulted in significant revenue to that Commission-regulated utility which ultimately benefits all ratepayers.

With the three ADS data center campuses now fully built out and operational, ADS will no longer seek to maintain the economic development arrangement approved by the Commission.

¹ In addition, as referenced in paragraph 35 of the Commission's January 10, 2018, Opinion and Order, contemporaneously with this report ADS has filed a motion for protective order to protect from disclosure certain confidential trade secret information of ADS.

The arrangement was very successful in terms of incentivizing ADS to invest in Ohio, and with those investments largely completed at the three existing data center campuses, ADS has provided AEP Ohio notice that it is exiting the Contract for Economic Development Arrangement approved by the Commission. Thus, beginning in June 2023, ADS will pay for wire services from AEP Ohio pursuant to the utility's tariffs approved by the Commission.

II. Status of Data Center Construction.

ADS is an affiliate of Amazon Web Services, Inc. ("AWS"), which is a wholly-owned subsidiary of Amazon.com, Inc. Launched in 2006, AWS provides state-of-the-art cloud computing infrastructure and services. Cloud computing is the on-demand delivery of computing resources and applications via the internet. A key benefit of cloud computing is replacing up-front capital infrastructure expenses with low variable costs that scale with enterprises of all sizes. Customers using the AWS cloud have reliable, scalable, flexible, and low-cost access to secure infrastructure services via pay-as-you-go pricing. The AWS cloud provides secure and affordable computing capacity to more than one million customers across the world, including fast-growing startups, large enterprises, non-profits, and government agencies. The AWS cloud operates from data center locations operated by ADS in thirty regions globally; six of which are in the United States. Businesses, governments, and universities across the world rely on the cloud computing services provided by the ADS data centers in Ohio.

AWS has become the world's most comprehensive, widely adopted cloud computing service. AWS is still growing and is poised to expand its growth in the United States, including in Ohio. While many data center capital and operating costs are similar across U.S. regions, the key cost differentiator across regions is the cost of electric power and its delivery. That is where the current economic development arrangement has been a key differentiator that has incentivized

ADS to make investments in its data centers in the Columbus region. Ensuring attractive power costs through the approved economic development arrangement has allowed Ohio to remain competitive from an operating cost perspective, and has positioned Ohio for additional capital investment and economic development by ADS. This, in turn, has facilitated Ohio's effectiveness in the new knowledge economy.

ADS currently operates three data center campuses in the Columbus, Ohio region, with one data center campus located in New Albany, Ohio, one data center campus located in Hilliard, Ohio, and one data center campus located in Dublin, Ohio. Each data center campus can accommodate up to [REDACTED] individual data center buildings, with each building housing servers used by AWS to provide cloud computing services for its customers. In 2018 and 2019, ADS operated [REDACTED] data center buildings at each campus, for a total of [REDACTED] energized data center buildings across the three data center campuses. Beginning in August 2020, ADS energized [REDACTED] additional data center building at each campus, for a total of [REDACTED] energized data center buildings across the three data center campuses. Beginning in August 2021, ADS energized [REDACTED] additional data center building at each campus, for a total of [REDACTED] energized data center buildings across the three data center campuses. And beginning in December 2022, ADS energized [REDACTED] additional data center building at each campus, for a total of [REDACTED] energized data center buildings across the three data center campuses.

As of December 31, 2022, ADS had fully developed all three data center campuses, with [REDACTED] data center buildings at each campus for a total of [REDACTED] data center buildings operating in AEP Ohio territory. This significant development and expansion of ADS data centers in Ohio was made possible in large part by the economic development arrangement approved in this case by the Commission.

III. Economic Development Impact of Data Center Construction.

As described in the joint application, ADS committed to investing hundreds of millions of dollars in Ohio to acquire and develop three properties as data center campuses for cloud computing. ADS has fulfilled its commitments.

The construction, maintenance, and operation of the three data center campuses in the Columbus, Ohio region has produced substantial economic benefits for Ohio including direct, indirect, and induced effects. In order to evaluate the economic impact of its investments in Ohio, ADS conducted an Investment and Economic Study (“EIS”) to assess the economic impact of ADS’s investment in the Ohio through 2021.² The study uses the IMPLAN model that quantified ADS’s economic impact by using a value-added approach and input-output multiplier methodology. The study found that ADS’s investment in Ohio had a significant impact on the state’s economy. In total, through 2021, ADS invested \$ [REDACTED] in constructing, operating, and maintaining the three data center campuses in the Columbus, Ohio region. This includes \$ [REDACTED] in capital expenditures (“CAPEX”) and \$ [REDACTED] in operating expenditures (“OPEX”). Further, the study found that \$ [REDACTED] of ADS’s investment in Ohio was purchased from in-state businesses, consisting of \$ [REDACTED] in CAPEX and \$ [REDACTED] in OPEX. The in-state purchases of CAPEX included construction labor, materials, and construction services. The in-state purchases of OPEX included compensation for employees and contractors, and utility and facility costs.

ADS’s investment in Ohio has generated direct and downstream revenue and expenditure in the Ohio data center supply chain. ADS purchases from Ohio vendors directly support output

² Ex. A, AWS Investment and Economic Impact Study in Ohio (December 2022) (“EIS”), filed under seal.

or revenue and create or retain jobs at ADS suppliers. Further, ADS purchases from Ohio vendors indirectly support revenue and jobs at downstream firms in the data center supply chain as ADS suppliers make industry-to-industry purchases to support ADS's investment. AWS in-state purchases from Ohio vendors supported an estimated \$ [REDACTED] in revenue at Ohio businesses. This accounted for \$ [REDACTED] in GDP to the State of Ohio. Further, Ohio businesses that support ADS's investment spent an estimated \$ [REDACTED] in labor compensation to workers at external vendors.

In addition, ADS's construction and expansion of its three data center campuses resulted in the growth of full-time jobs in Ohio's growing information technology sector. ADS's data center investments have directly created over [REDACTED] high-paying full-time equivalent jobs to support ADS's data center operations in the Columbus region. Those employees have collectively received over \$ [REDACTED] in compensation, which in turn has supported [REDACTED] in direct purchases and thousands of jobs at businesses within Ohio. Further, ADS estimates that over [REDACTED] workers have been on-site at the ADS data center campuses performing skilled roles such as electricians, security, and maintenance technicians. The compensation that these workers received has further increased the number of in-state purchases from Ohio vendors.

ADS's purchases from Ohio vendors has further created demand for labor in Ohio. ADS estimates that between 2015 and 2021, ADS's in-state purchases from Ohio businesses has supported an average of [REDACTED] full-time equivalent jobs annually at external businesses supporting the ADS's data center campuses. Those jobs supported by ADS's investment in Ohio include the following:

- [REDACTED] jobs annually supported by the direct effects of the ADS investment including jobs in sectors such as construction, maintenance, facilities, security, and electrical utilities.

- [REDACTED] jobs annually supported by the indirect effects of the ADS investment including jobs in sectors that supply the skilled labor and services needed to fulfill work for ADS.
- [REDACTED] jobs annually supported by the induced effects of the ADS investment including jobs in sectors that supply consumer goods and services to Ohio households.

In sum, the approval by the Commission of the economic development arrangement in this case served as an important incentive for ADS to make significant investments in Ohio. Those investments have conferred substantial benefits to Ohio's economy, including through the creation of substantial numbers of jobs and through direct and indirect investments that have greatly improved Ohio's economy. As significant, the Commission's forward-thinking willingness to support the arrangement has made Ohio a leading location for the development and expansion of cloud computing services, which serves to attract further investments from Amazon and other technology and service providers from around the globe.

IV. Net Savings to ADS Over Five-Year Timeframe.

The Commission-approved economic development arrangement provides the terms and conditions under which ADS receives transmission services, distribution services, and ancillary services (together, "Wire Services") from AEP Ohio for ADS's facilities, buildings and equipment at ADS's data center campuses in Dublin, Hilliard, and New Albany, Ohio (together, the "Ohio Data Center Campuses") for the 120-month term from approval of the arrangement. The Commission-approved arrangement applies to up to [REDACTED] ADS data centers at each of the Ohio Data Center Campuses, for a potential total of [REDACTED] data centers at the three campuses.

In 2018 through 2022, following the Commission's approval of the economic development arrangement, ADS received and paid for Wire Services from AEP Ohio for each of ADS's Ohio Data Center Campuses in accordance with the terms of the arrangement. Those terms provide for

the application of a percentage discount to ADS's kWh billing determinant for the Wire Services depending on the number of energized data centers at each campus, with increasing levels of discount with additional data center investment that provides an incentive for ADS to continue creating jobs and investments at its Ohio Data Center Campuses. The kWh billing determinant discount follows the following formula.

<u># of Energized Data Centers</u>	<u>kWh Billing Determinant Discount</u>
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

The approved economic development arrangement provides that ADS will pay AEP Ohio certain non-by-passable riders relating to energy supply for each campus. Those include payments to AEP Ohio of kWh-based riders for the Wire Services, with the exception of the Retail Stability Rider (which does not apply and has since been eliminated by AEP Ohio), capped at 833,000 kWh per month for each data center campus. In addition, the approved arrangement provides that ADS will pay AEP Ohio all existing and new non-kWh-based riders at AEP Ohio's tariffed rates, with no discount or cap. Moreover, the approved arrangement provides that ADS may self-assess the kWh tax (which ADS has done for all three data center campuses) and may opt out of the Energy Efficiency and Peak Demand Reduction Cost Recovery Rider (which ADS has opted out of while that rider was effective).

ADS has paid AEP Ohio for all rider charges in accordance with the terms of the approved reasonable arrangement. For Wire Services in 2018, ADS paid AEP Ohio a total of \$ [REDACTED]; for Wire Services in 2019, ADS paid AEP Ohio a total of \$ [REDACTED] for Wire Services in 2020, ADS paid AEP Ohio a total of \$ [REDACTED]; for Wire Services in 2021, ADS paid AEP Ohio a total of \$ [REDACTED] and for Wire Services in 2022, ADS paid AEP Ohio a total of \$ [REDACTED]. In total, in the first five years of the approved reasonable arrangement, ADS has paid AEP Ohio \$ [REDACTED] for Wire Services, representing a significant contribution to AEP Ohio's operating revenue as result of ADS's operation of its data center campuses in AEP Ohio territory.³

The cumulative savings for each of the first five years of the approved reasonable arrangement is summarized below:

- For calendar year 2018, ADS received a total discount on utility charges for all three data center campuses of \$ [REDACTED] based on a [REDACTED] kWh billing determinant discount under the approved economic development arrangement.
- For calendar year 2019, ADS received a total discount on utility charges for all three data center campuses of \$ [REDACTED] based on a [REDACTED] kWh billing determinant discount under the approved economic development arrangement.
- For calendar year 2020, ADS received a total discount on utility charges for all three data center campuses of \$ [REDACTED] based on a [REDACTED] kWh billing determinant discount applied January through July 2020 and an [REDACTED] kWh billing determinant

³ [REDACTED]

discount applied August through December 2020 under the approved economic development arrangement.

- For calendar year 2021, ADS received a total discount on utility charges for all three data center campuses of \$ [REDACTED] based on an [REDACTED] kWh billing determinant discount applied January through July 2021 and a [REDACTED] kWh billing determinant discount applied August through December 2021 under the approved economic development arrangement.
- For calendar year 2022, ADS received a total discount on utility charges for all three data center campuses of \$ [REDACTED] based on a [REDACTED] kWh billing determinant discount applied January through November 2022 and a [REDACTED] kWh billing determinant discount applied for December 2022 under the approved economic development arrangement.

In total, between 2018 and 2022, ADS paid AEP Ohio \$ [REDACTED] for Wire Services in accordance with the approved arrangement, and received a total cumulative discount during that time period of \$ [REDACTED], representing an overall savings of [REDACTED] % off of tariffed utility rates for Wire Services.

V. ADS Has Notified AEP Ohio of the Termination of the Contract for Economic Development Arrangement.

As described above, ADS has made significant investments in Ohio which has resulted in substantial economic benefits to Ohio's economy. These investments were made possible in significant part by the Commission's willingness to approve the economic development arrangement in this case, and in the process make Ohio a competitive market to establish and operative energy-intensive businesses such as data centers.

ADS, in turn, delivered on its economic development promises by making significant investments in the construction and operation of the three data center campuses at issue in the economic development arrangement, and in the process ADS helped put Ohio on the global map as a preeminent location for technology investments. In addition, ADS's investments has brought substantial economic benefits and jobs to Ohio, as discussed in detail in this report.

With the three data center campuses fully built-out and operational, ADS no longer requires the economic development arrangement to incentivize continued investments in the now-constructed data center campuses. Accordingly, ADS has notified the utility that ADS is terminating the Contract for Economic Development Arrangement filed on this docket on January 26, 2018, effective May 31, 2023. Starting on June 1, 2023, ADS will continue to operate its data center campuses, paying for wire services from AEP Ohio pursuant to the tariffs approved by the Commission.

ADS remains deeply committed to its investments in Ohio, and appreciates the Commission's willingness to incentivize business investments that ultimately provide benefits to many residents and communities across this state, including those detailed in this report.

Dated: April 28, 2023

Respectfully submitted,

/s/ David F. Proaño

David F. Proaño (0078838), Counsel of Record

dproano@bakerlaw.com

Kendall C. Kash (0093717)

kkash@bakerlaw.com

BAKER & HOSTETLER LLP

Key Tower

127 Public Square, Suite 2000

Cleveland, Ohio 44114

Telephone: 216-621-0200

Facsimile: 216-696-0740

Rand L. McClellan (0079266)

rmcclellan@bakerlaw.com

Kayla M. Prieto (0092090)

kprieto@bakerlaw.com

BAKER & HOSTETLER LLP

200 Civic Center Drive, Suite 1200

Columbus, Ohio 43215

Telephone: 614-228-1541

Facsimile: 614-462-2616

Willing to Accept Service by Email

Counsel for Amazon Data Services, Inc.

CERTIFICATE OF SERVICE

I certify on this 28th day of April, 2023, that the foregoing document was filed using the Commission's Docketing Information System and was served by electronic mail on the following:

stnourse@aep.com
cblend@aep.com
bojko@carpenterlipps.com
perko@carpenterlipps.com
Maureen.willis@occ.ohio.gov
william.wright@ohioattorneygeneral.gov
thomas.lindgren@ohioago.gov
werner.margard@ohioago.gov

/s/ David F. Proaño
David F. Proaño (0078838)
*Counsel of Record for Amazon Data
Services, Inc.*

Case No. 17-1827-EL-AEC

EXHIBIT A TO

***FIVE-YEAR STATUS REPORT OF AMAZON DATA
SERVICES, INC F/K/A VADATA, INC. ON THE
ECONOMIC DEVELOPMENT ARRANGMENT***

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behalf of Amazon Data Services, Inc..