

STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION

Montana-Dakota Utilities Co.
Applied Block Chain Office – Dickey County
Public Convenience & Necessity

Case No. PU-22-366

Montana-Dakota Utilities Co.
Applied Block Chain Data Processing Extension
Public Convenience & Necessity

Case No. PU-22-370

FINDINGS OF FACT, CONCLUSIONS OF LAW and ORDER

January 11, 2023

Appearances

Commissioners Randy Christmann, Sheri Haugen-Hoffart and Julie Fedorchak

Paul R. Sanderson, Evenson Sanderson, PC, 1100 College Drive, Suite 5, Bismarck, ND 58501, appearing on behalf of Applicant Montana-Dakota Utilities Co.

Kim J. Radermacher, Radermacher Law Firm, P.C., 506 Main St., Edgeley, ND 58433, appearing on behalf of Protestor Dakota Valley Electric Cooperative, Inc.

John M. Schuh, Legal Counsel, Public Service Commission, State Capitol, 600 E. Boulevard Avenue, Bismarck, ND 58505, appearing on behalf of Public Service Commission.

Hope L. Hogan, Administrative Law Judge, Office of Administrative Hearings, 2911 North 14th Street, Suite 303, Bismarck, North Dakota 58503 as Procedural Hearing Officer.

Preliminary Statement

On September 16, 2022, Montana Dakota Utilities (MDU) filed a Temporary Authority Permit Application to provide power for Applied Blockchain, Inc's. (Applied) proposed office site located near the City of Ellendale in the SE ¼ of the SE ¼ of Section 4, Township 129N, Range 63W, Dickey County, North Dakota (Applied Site), case number PU-22-366.

On September 16, 2022, MDU filed a Temporary Authority Permit Application to provide power for Applied's data processing center with its meter located in NE ¼ of the

NE ¼ of Section 9, Township 129N, Range 63 W, Dickey County, case number PU-22-370.

On October 7, 2022, the commission received a Notice of Protest and Request for Hearing from Dakota Valley Electric Cooperative (Dakota Valley) in the above-captioned cases.

On October 12, 2022, the Commission issued an Order on Protest and Request for Hearing denying Dakota Valley's protest and request for hearing on the Applications for Temporary Authority and ordering MDU to file an application for permanent authority within twenty days.

On October 14, 2022, MDU filed an Application for Permanent Authority to extend three-phase service to Applied's office located at the Applied Site, Case No. PU-22-366, and filed an Application for Permanent Authority to extend three-phase service to Applied's data center at the Applied Site, Case No. PU-22-370.

On October 24, 2022, Dakota Valley filed a protest and request for hearing on both of MDU's Applications for Permanent Authority.

On November 17, 2022, the Commission issued a Notice of Hearing scheduling a public hearing to be held on Monday, December 19, 2022, in the Commission Hearing Room, 12th Floor, State Capitol, Bismarck, North Dakota 58505. The notice identified the following issues to be considered:

1. From whom does the customer prefer electric service?
2. What electric suppliers are operating in the general area?
3. What electric supply lines exist within at least a two-mile radius of the location to be served, and when were they constructed?
4. What customers are served by electric suppliers within at least a two-mile radius of the location to be served?
5. What are the differences, if any, between the electric suppliers available to serve the area with respect to reliability of service?
6. Which of the available electric suppliers will be able to serve the location in question more economically and still earn an adequate return on its investment?
7. Which supplier's extended electric service would best serve orderly and economic development of electric service in the general area?
8. Would approval of the applications result in wasteful duplication of

investment or service?

9. Is it probable that the location in question will be included within the corporate limits of a municipality within the foreseeable future?
10. Will service by either of the electric supplier in the area unreasonably interfere with the service or system of the other?

On December 19, 2022, a public hearing was held as scheduled.

Having heard and considered these matters, the Commission makes its:

Findings of Fact

1. The applicant, MDU, is an investor-owned electric utility providing retail electric service to customers in North Dakota under the regulatory jurisdiction of this Commission.
2. The protestant, Dakota Valley, is an electric distribution cooperative providing retail electric service to its members in North Dakota.
3. The customer, Applied, is a foreign limited liability company.

From whom does the customer prefer electric service?

4. MDU's application included an appearance form signed by the customer, Applied, requesting that MDU provide service to Applied at the Applied Site.
5. Applied provided two witnesses, Wes Cummins, CEO, and Etienne Snyman, Executive Vice President of Power. Each testified that Applied is developing a large data center for super-computing at the Applied Site. Applied requires three-phase electric service at both the data center and the office locations on the Applied site. The anticipated total electric load at the site will be approximately 180MW with estimated annual consumption of over 1.4 billion kWh.
6. Mr. Snyman testified that Applied desires to receive electric service at the proposed facility from MDU for four reasons: 1) Applied expects to realize significant annual savings on power costs by receiving electric service from MDU and could not proceed with the project at the rates offered by Dakota Valley; 2) MDU has been more responsive throughout the project and had shown a willingness to communicate and work with Applied; 3) Applied prefers to receive its electric service from a provider whose rates and services are subject to regulatory oversight and approval by an independent agency with an opportunity for customer input; and 4) MDU's capital costs for construction were much lower than those of Dakota Valley.
7. The Commission finds that the customer prefers electric service from MDU.

What electric suppliers are operating in the general area?

8. MDU and Dakota Valley are the only electric suppliers operating in the general area of the Applied Site.

What electric supply lines exist within at least a two-mile radius of the location to be served and when were they constructed?

9. MDU owns and operates a 345 kV substation directly south of the Applied Site. MDU obtained a Certificate of Public Convenience and Necessity in September 2013 to own and operate the 345 kV substation and ten miles of 345 kV electric transmission line, Certificate Number 5819. Directly to the east of the Applied Site, MDU owns and operates a 230 kV substation. This substation is fed by MDU's 230 kV transmission line. This substation has two 41.6 kV transmission lines that head south from the substation half a mile to Highway 11 and then to a distribution substation in Ellendale. The three-phase distribution line from Ellendale to Forbes was newly constructed in 2021 as an underbuild on MDU's 115 kV from Ellendale to Leola, except for the first two miles out of Ellendale which was constructed as an underbuild on its 41.6 kV line. The distribution substation at Ellendale serves part of the city of Ellendale, customers along highway 11 including the Applied Digital office site, and the town of Forbes.

10. MDU's 345 kV substation is part of the Midcontinent Independent System Operator (MISO) system. In September 2022, MDU submitted an expedited load study request to MISO to add an additional 180 MW at the 345 kV substation. MDU was granted an additional 180 MWs at the 345 kV substation and currently has 197 MWs of existing capacity.

11. Dakota Valley has a single-phase distribution line that runs parallel to 87th Ave. adjacent to the Applied Site. This single-phase line connects with Central Power Electric Cooperative's (Central Power) Ellendale substation, which is approximately three miles north of the Applied Site. The line comes out of the Ellendale substation and continues south past the Applied site. Had the customer requested single-phase overhead service for the office site, service may have been provided by this single-phase distribution line.

12. Both electric suppliers will need to construct extensions to existing three-phase supply lines to serve the Applied Site. MDU would serve the data center by connecting to the 345 kV substation and running a one-foot extension to a meter located on MDU's substation property. Applied would then run an overhead line 1,300 feet to the location of its data center on the Applied Site. MDU would serve the office by extending a three-phase line two-thousand feet from its existing three-phase distribution line adjacent to its 230 kV substation to the Applied Site.

13. Dakota Valley would serve Applied's office by converting 15,500 feet of its existing single-phase line to a three-phase line from Central Power's existing Ellendale substation approximately three miles north of the Applied Site. Dakota Valley did not present any

evidence of the projected cost of a future interconnection or when such interconnection would occur. Dakota Valley proposes to serve the data center by extending a line from MDU's 345 kV substation, similar to the design of MDU's extension. Dakota Valley does not have an interconnection agreement with MDU for the 345 kV substation. MDU would be required to construct, own, operate, and maintain the same facilities even if it were served by Dakota Valley.

14. To facilitate the interconnection with MDU's 345 kV substation, Dakota Valley requested Basin Electric Power Cooperative (Basin), which is a MISO member, to submit an application to add 180 MW of load at MDU's 345 kV substation. Basin submitted an application to add network load for this project on October 24, 2022. At the time of the hearing, MISO had not approved Basin's request to add 180 MW of load at MDU's 345 kV substation. Basin's engineer, Jason Doerr, testified that even if Basin's load request was granted, a load study would likely have to be performed by MISO or MDU to determine how the additional 180 MW load could be served out of MDU's 345 kV substation. However, a Central Power witness for Dakota Valley acknowledged that there was no law or rules that would require MDU to allow other entities to use the existing capacity or interconnection.

What customers are served by electric suppliers within at least a two-mile radius of the location to be served?

15. MDU serves 6 customers within a one-mile radius and 77 customers within a two-mile radius of the Applied Site, including three customers receiving three-phase service. Of those 77, approximately 64 of those customers are within the city limits of Ellendale, ND.

16. Dakota Valley serves 2 customers within a one-mile radius and 15 customers within a two-mile radius of the Applied Site. None of Dakota Valley's customers within a two-mile radius receive three-phase service.

What are the differences, if any, between the electric suppliers available to serve the area with respect to the reliability of service?

17. Both electric suppliers submitted evidence of outage history on their facilities and evidence of their inspection and repair procedures, including identifying company personnel in the area who would perform repair work.

18. Both electric suppliers propose serving Applied's data center from MDU's 345 kV substation using the same extension design. Therefore, there is no difference in reliability on the proposed extensions to serve the data center.

19. MDU would serve the Applied office by extending a three-phase line two-thousand feet from its existing three-phase distribution line adjacent to its 230 kV substation to the Applied Site. MDU's extension would be underground.

20. Dakota Valley would serve Applied's office by converting 15,500 feet of single-phase line to a three-phase line from Central Power's existing Ellendale substation approximately three miles north of the Applied Site. Dakota Valley's Manager of Engineering, Brandon Giesler, conceded that MDU's extension would be slightly more reliable due to the shorter length and less chance of damage to the line.

21. Both electric suppliers submitted the results of their System Average Interruption Duration Index (SAIDI), which is the average minutes of interruption per customer during the year. The SAIDI results for the corresponding years in which each supplier provided data were:

	<u>MDU</u>	<u>Dakota Valley</u>
2017	116.4	201.8
2018	128.2	280.9
2019	68.5	531.0
2020	81.0	409.8
2021	210.5	104.5

22. The Commission finds that either supplier would be able to serve the Applied Site with sufficient reliability. However, MDU's substation is closer to the Applied office location, which would provide a minor increase in reliability because there would be less line length upon which a fault could occur. The service to the data center also requires the use of MDU's substation.

Which of the available electric suppliers will be able to serve the location in question more economically and still earn an adequate return on investment?

23. MDU would serve Applied's data center by extending a new line 1,300 feet from its existing 345kV substation. Applied's meter for the data center would be located on the substation property. MDU submitted an exhibit detailing the costs of the extension, which totals \$3,444,131. Pursuant to the terms of the electric service agreement between MDU and Applied, Applied is responsible for all the costs of the extension to the data center.

24. MDU would serve Applied's office by extending a three-phase line two-thousand feet from an existing three-phase distribution line adjacent to its 230 kV substation to the Applied Site. MDU submitted an exhibit detailing the costs of the extension, which total \$46,131. During the hearing, MDU's engineer testified the labor costs for the extension had increased by \$20,000 because the extension had to be bored under 87th Avenue due to the work Applied had performed upgrading the road. The updated cost of the extension was approximately \$66,131. Pursuant to the terms of the electric extension agreement between MDU and Applied, Applied is responsible for all costs of the extension to the office greater than \$22,228

25. Dakota Valley testified it proposes to serve Applied's data center by extending a line from MDU's 345 kV substation, similar to the design of MDU's extension. Dakota Valley offered no exhibit to the cost of its proposed extension but Thomas Meland from

Central Power testified that since it would be constructed by MDU and that Central Power would mimic MDU's proposal that it should be of similar cost. Dakota Valley does not have an electric service agreement with Applied that would specify either party's responsibilities for the cost of the extension to the data center.

26. Dakota Valley would serve Applied's office by converting 15,500 feet of its existing single-phase line to a three-phase line from Central Power's existing Ellendale substation approximately three miles north of the Applied Site. Dakota Valley submitted an exhibit detailing the costs of the extension totaling \$141,968.84. Pursuant to the terms of Dakota Valley's line extension policy, the cost of the first 1,250 feet of the extension will be paid by Dakota Valley, with the remaining balance of the line extension cost being allocated one-third to Dakota Valley and two-thirds to Applied. Dakota Valley's total cost for the extension to the office would be \$53,698.64, with Applied's cost of the extension totaling \$88,270.20.

27. The estimated electric consumption for the Applied Site is over 1.4 billion kWh per year. Consideration of the cost to serve the location includes the other costs of electric distribution, transmission, and generation as reflected in the service provider's rates for service. MDU proposed serving Applied's data center under Commission-approved Rate 45, which would have an estimated rate of \$0.047/kWh using the average 2021 MISO energy charge for the MDU load node. MDU also submitted a proposed Rate 45 average rate of \$0.024/kWh using the average MISO day-ahead energy price at the Ellendale substation for the last 4 calendar quarters. MDU submitted a detailed exhibit estimating the annual cost to Applied for electric service to the data center from MDU for the estimated consumption under its proposed rates would be between \$34,746,074 and \$69,288,622. The electric service agreement between MDU and Applied that this estimate is based upon has not been approved by this Commission and is therefore subject to change.

28. MDU proposed serving Applied's office under Commission-approved Rate 30. Applied's office has an estimated annual energy consumption of 84,275 kWh. MDU's annual margin on service to Applied's office would be \$5,557, with an internal rate of return estimated at 17.19% over the life of the project.

29. Dakota Valley proposed serving Applied's data center under its Large Data Center MISO Substation Delivery Service rate which would have a rate of \$0.063 average kWh. Dakota Valley also proposed service to the data center under Basin's RTO Demand Response Rate which would have a rate of \$0.058 average kWh. The annual cost to Applied for electric service to the data center by Dakota Valley for the estimated consumption under its current rates would be between \$86,412,647 and \$95,052,647. Dakota Valley's margin on service to Applied's data center would be \$937,127, which is significantly lower than that proposed by MDU's electric service agreement with Applied.

30. Dakota Valley proposed serving Applied's office under its Small Three-Phase Service rate. Dakota Valley did not have actual information regarding energy

consumption for Applied's office but provided estimates of monthly energy consumption. Dakota Valley's estimated annual revenue for Applied's office would be \$7,971, with an estimated annual profit of \$3,146.84.

31. Both MDU and Dakota Valley could serve the Applied site and earn an adequate return on investment, the Commission finds that MDU will be able to serve the Applied Site more economically and still earn an adequate return on its investment.

Which supplier's extended electric service would best serve the orderly and economic development of electric service in the general area?

32. MDU has a Certificate of Public Convenience and Necessity for the 345 kV substation on the property adjacent to the Applied Site from which service will be provided to the data center. MDU also owns and operates the 230 kV substation on the property to the east of the Applied Site. Service to Applied's office site will be provided by an existing three-phase distribution line adjacent to the 230 kV substation. The Applied Site is located approximately 1.5 miles from the City of Ellendale, which MDU possesses a franchise to serve. MDU serves significantly more customers within a two-mile radius than Dakota Valley.

33. If Dakota Valley is selected to serve the Applied's office building, it would be Dakota Valley's intention to replace the existing single-phase overhead line running south of Dakota Valley's substation with a three-phase underground line. Dakota Valley testified that there is a possibility that it may extend three-phase service to a farmstead five and a half miles south of the Applied Site that has two different feeds for two phases and that serving the Applied Site would make it more economically feasible for that extension. Dakota Valley had not approached the farmstead about possible three-phase service at the time of the hearing.

34. MDU's proposed costs of providing electric service to the Applied data center are between \$25,764,025 and \$51,666,573 less than Dakota Valley's, which assists in the financial viability and success of Applied's data center and the associated employment and economic development for the general area.

35. MDU testified that if Applied would cancel their agreement, they would be able to have another customer use the capacity and interconnection at that location within a month or two.

36. Dakota Valley testified that Basin is conducting a study for a possible market-based rate to provide customers with more options, but currently, they are months away from it being finished and they could not identify what the market-based rate would be. Dakota Valley acknowledged that the customer would be subject to significantly higher costs if served by Dakota Valley.

37. Applied's CEO testified the project would not be economically viable at the rates proposed by Dakota Valley and it would cease development of the project near Ellendale if MDU's Application were denied. With no development of the Applied Site, no additional development or upgrades would occur.

38. Although Dakota Valley provided some evidence that there may be future benefits to customers and development from an upgraded buildout to the Applied Site, it did not establish that the existing customers have a need or demonstrable benefits from the upgraded infrastructure or that it was necessary to receive adequate service. It did not provide evidence of a customer desire and the affordability to the multi-phase customer that may be a continuation of infrastructure development. MDU has more customers within a one-mile and two-mile radius of the Applied Site and has facilities adjacent to the existing commission-approved infrastructure. Accordingly, the Commission finds that service by MDU to the Applied Site best serves the orderly and economic development of electric service in the general area.

Would approval of the applications result in wasteful duplication of investment or service?

39. Both electric suppliers will need to construct extensions or upgrades to existing facilities to serve the Applied Site.

40. Both suppliers currently cross each other's lines in the area. MDU's proposed three-phase line extension for Applied's office would cross Dakota Valley's single-phase line located west of 87th Avenue. However, Dakota Valley's single-phase line is not capable of serving and is not proposed for use to serve the Applied Site without an upgrade.

41. MDU's proposed extensions for Applied's office building would provide a shorter extension of three-phase service from existing infrastructure without unnecessary build-out.

42. The Commission finds that approval of the application would not result in wasteful duplication of investment or service.

Is it probable that the location in question will be included within the corporate limits of a municipality within the foreseeable future?

43. The Applied Site is located approximately 1.5 miles from the city of Ellendale. There is no evidence of any plans that the Applied Site would be included within the corporate limits of Ellendale in the foreseeable future.

Will service by either of the electric suppliers in the area unreasonably interfere with the service or system of the other?

44. Dakota Valley's General Manager testified that MDU's extension would not interfere with Dakota Valley's existing electric system in the area. There are no codes or regulations that would prohibit MDU's extension to the Applied Site.

45. Dakota Valley's extension would not interfere with MDU's existing electric system in the area.

46. The Commission finds that an extension of service by either supplier would not interfere physically or operationally with the service or system of the other supplier.

Balance and Weight of Factors

47. The Commission finds that public convenience and necessity reasonably requires approval of MDU's application because:

- a. The location of the lines of MDU's three-phase system to serve Applied's office is shorter than the proposed extension of Dakota Valley's three-phased extension. Service to Applied's data center from both entities would require construction by MDU and from MDU's substation. The location of MDU's lines and infrastructure result in Applied's Site being served by MDU.
- b. MDU will serve the Applied Site more economically when considering both the cost to extend service and the annual costs to the customer as reflected in rates for service. At the rates provided by Dakota Valley, Applied Digital would not be able to economically operate at the location.
- c. Both suppliers are able and qualified to furnish safe and reliable electric service to Applied's office and data center. However, there is a shorter three-phase extension to the office from MDU's adjacent 230 kV substation and uncertainty as to whether service from Dakota Valley using MDU's substation would be available for Dakota Valley. As a result, MDU is better suited to serve the designated site.
- d. MDU can best develop electric service in the area in which the site is located, would not result in wasteful duplication of investment or service, or unreasonably interfere with the service or system of Dakota Valley.
- e. While the customer prefers electric service from MDU, customer preference is not controlling in the issue of public convenience and necessity.

From the foregoing Findings of Fact, the Commission makes its:

CONCLUSIONS OF LAW

1. The Commission has jurisdiction over the parties and the subject matter of this

proceeding.

2. Public convenience and necessity require the granting of a Certificate of Public Convenience and Necessity to the applicant in this proceeding.

From the foregoing Findings of Fact and Conclusions of Law, the Commission issues its:

ORDER

The Commission Orders:

1. Montana-Dakota's application for a certificate of public convenience and necessity to extend electric service to the Applied Site is granted.
2. Montana-Dakota Utilities Co. is issued Certificate of Public Convenience and Necessity No. 5972, authorizing the provision of electric distribution service to the Applied Site at a location in the SE¼ of the SE¼ of Section 4, Township 129N, Range 63W, Dickey County, North Dakota.

PUBLIC SERVICE COMMISSION


Sheri Haugen-Hoffart
Commissioner


Randy Christmann
Chair


Julie Fedorchak
Commissioner

PUBLIC SERVICE COMMISSION

STATE OF NORTH DAKOTA

Certificate of Public Convenience and Necessity

Certificate Number 5972

This is to certify that public convenience and necessity require, and permission is granted for Montana-Dakota Utilities Co., to serve Applied Blockchain in the SE 1/4 of the SE 1/4 of Section 4, Township 129N, Range 63W, Dickey County, North Dakota.

This certificate is issued in accordance with the Order of this Commission dated February 8, 2023, in Case Nos. PU-22-366 and PU-22-370, and is subject to the conditions and limitations noted in the Order.

This certificate is conditioned upon Montana-Dakota Utilities Co. securing the franchise or other authority of the proper municipal or other public authority for the exercise of these rights and privileges.

Bismarck, North Dakota, February 8, 2023.

ATTEST:

PUBLIC SERVICE COMMISSION


Executive Secretary


Commissioner