



UTILITIES CO.

A Subsidiary of MDU Resources Group, Inc.

400 North Fourth Street
Bismarck, ND 58501
701-222-7900

July 1, 2022

Executive Secretary
North Dakota Public Service Commission
600 East Boulevard Ave., Dept. 408
Bismarck, ND 58505-0480

Re: Ten-Year Plan

Montana-Dakota Utilities Co. (Montana-Dakota), herewith submits ten (10) copies of its North Dakota Ten-Year Plan in accordance with NDCC 49-22-04. Notice of the filing of this plan is given, pursuant to Article 69-06-02-02 of the North Dakota Administrative Code, to the state agencies and officers as designated in Article 69-06-01-05 of the Administrative Code and denoted on the attached Service List. The report can be found at the Public Service Commission's website: <http://www.psc.nd.gov/>.

Sincerely,

A handwritten signature in blue ink that reads 'Travis R. Jacobson'.

Travis R. Jacobson
Director of Regulatory Affairs

Enclosure
cc: Service List (without enclosure)

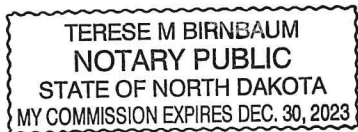
Montana-Dakota Utilities Company)
Ten-Year Plan) CERTIFICATE OF SERVICE
Submitted on July 1, 2022)

I, Caitlin Straabe, being first duly sworn on oath, certifies that the following list contains the names and last address of each designated state agency and/or state official given notice of filing of Montana-Dakota Utilities Co.'s (Montana-Dakota) Ten-Year Plan pursuant to the Rules and Regulations of the North Dakota Public Service Commission. I hereby certify that I have, by depositing this Certificate of Service with the United States Postal Service, caused notice to be given all such required state agencies and state officials that Montana-Dakota has filed its Ten-Year Plan for North Dakota Electric Properties with the North Dakota Public Service Commission.

<u>Name</u>	<u>Last Known Address</u>
See Exhibit A Attached	See Exhibit A Attached

Caitlin Straabe
Caitlin Straabe

Subscribed and sworn to before me this 1st day of July 2022.



Terese M. Birnbaum
Terese M. Birnbaum, Notary Public
Burleigh County, North Dakota
My Commission Expires: 12/30/2023

Montana-Dakota Utilities Co.
2022 North Dakota Ten-Year Plan For North Dakota Electric Properties
Service List – Notice of Filing

North Dakota Aeronautics Commission
P.O. Box 5020
Bismarck, ND 58502-5020

ND Industrial Commission
600 E Boulevard Avenue Dept 405
Bismarck, ND 58505-0840

ND Office of Attorney General
600 East Boulevard Avenue Dept 125
Bismarck, ND 58505-0040

Office of Governor
600 East Boulevard Avenue
Bismarck, ND 58505-0100

ND Department of Agriculture
600 East Boulevard Avenue Dept 602
Bismarck, ND 58505-0020

ND Department of Transportation
608 East Boulevard Avenue
Bismarck, ND 58505-0700

ND Department of Health
600 East Boulevard Avenue
Bismarck, ND 58505-0200

ND State Historical Society
612 East Boulevard Avenue
Bismarck, ND 58505-0830

ND Department of Human Services
600 East Boulevard Avenue Dept 325
Bismarck, ND 58505-0250

Indian Affairs Commission
600 East Boulevard Avenue
Bismarck, ND 58505-0300

ND Dept. of Labor & Human Rights
600 East Boulevard Avenue Dept 406
Bismarck, ND 58505-0340

Job Service of North Dakota
P.O. Box 5507
Bismarck, ND 58506-5507

Department of Career & Technical Education
600 East Boulevard Avenue Dept 270
Bismarck, ND 58505-0610

ND Department of Trust Lands
1707 North 9th Street
PO Box 5523
Bismarck, ND 58501-5523

ND Department of Commerce
1600 East Century Avenue, Suite 6
PO Box 2057
Bismarck, ND 58503

ND Parks & Recreation Department
604 East Boulevard Avenue
Bismarck, ND 58505

Energy Infrastructure & Impact Office
c/o ND Department of Trust Lands
1707 North 9th Street
P.O. Box 5523
Bismarck, ND 58501-5523

ND State Soil Conservation Commission
c/o NDSU Extension Service
2718 Gateway Avenue, Suite 304
Bismarck, ND 58503

ND Game & Fish Department
100 North Bismarck Expressway
Bismarck, ND 58501-5095

ND State Water Resources
900 East Boulevard Avenue Dept 770
Bismarck, ND 58505

United States Department of Defense
1400 Defense Pentagon
Washington, DC 20301-1400

ND Transmission Authority
c/o North Dakota Industrial Commission
600 East Boulevard Avenue Dept. 405
Bismarck, ND 58505-0840

United States Fish and Wildlife Services
North Dakota Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926

North Dakota Pipeline Authority
c/o North Dakota Industrial Commission
600 East Boulevard Avenue Dept. 405
Bismarck, ND 58505-0840

United States Army Corps of Engineers
North Dakota Regulatory Office
3319 University Drive
Bismarck, ND 58504-7565

North Dakota Geological survey
600 East Boulevard Avenue
Bismarck, ND 58505-0840

Federal Aviation Administration
US Department of Transportation
800 Independence Avenue SW
Washington, DC 20591

Natural Resources Conservation Service
916 East Interstate Ave
Bismarck, ND 58503-0548

Department of Environmental Quality
4201 Normandy Street
Bismarck, ND 58503-1324

ND Forest Service
916 East Interstate Ave #4
Bismarck, ND 58503

Federal Bureau of Land Management
99 23rd Avenue West, Suite A
Dickinson, ND 58601

Military Aviation & Installation Assurance
Siting Clearinghouse
3400 Defense Pentagon, Room 5C646
Washington, DC 20301-3400

Minot Air Force Base
196 Missile Avenue
Minot AFB, ND 58705

91st Missile Wing
Minot Air Force Base
201 Summit Drive
Minot AFB, ND 58705

Grand Forks Air Force Base
690 1st Ave
Grand Forks AFB, ND 58205

Burleigh County Auditor
PO Box 5518
Bismarck, ND 58506

Morton County Auditor
210 2nd Ave NW
Mandan, ND 58554

MONTANA-DAKOTA UTILITIES CO.
TEN YEAR PLAN
FOR NORTH DAKOTA ELECTRIC PROPERTIES

For Planning Years July 1, 2022 through June 30, 2032

Submitted to
NORTH DAKOTA PUBLIC SERVICE COMMISSION
July 1, 2022



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MONTANA-DAKOTA UTILITIES CO.

400 North 4th Street
Bismarck, North Dakota 58501

INTRODUCTION

Enclosed are data comprising the Montana-Dakota Utilities Co. (Montana-Dakota) "Ten Year Plan" for North Dakota Electric Properties filed in compliance with NDCC §49-22-04 and NDAC §69-06-02-01 and 02.

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SCHEDULE A

EXISTING ENERGY CONVERSION FACILITIES

The existing energy conversion facilities subject to this filing and located in North Dakota are the 427 MW Coyote Station near Beulah in which Montana-Dakota has a 25 percent ownership interest, the 88 MW Heskett Station in Mandan, which is wholly owned by Montana-Dakota, the 5.3 MW waste heat recovery unit located near Glen Ullin, the 19.5 MW Cedar Hills wind project located near Rhame and the 155.5 MW Thunder Spirit wind project located near Hettinger. Otter Tail Power Company of Fergus Falls, Minnesota operates the Coyote Station and reports all information required by Schedule A.

SCHEDULE B

ENERGY CONVERSION FACILITIES UNDER CONSTRUCTION

Montana-Dakota is currently in the process of building a simple cycle combustion turbine generating resource (88 MW), which will help meet future energy and demand requirements from its customers in an economic and reliable fashion. Heskett 4 will be located beside the current Heskett 3 simple cycle combustion turbine which gives Montana-Dakota ability to utilize existing air permit emissions, land, natural gas pipeline, and interconnection facilities. The site is designed to convert Heskett 3 and 4 into a combined cycle facility with the addition of heat recovery boilers and a steam turbine generator in the future if needed. Heskett 4 is expected to be brought online by May 31, 2023.

SCHEDULE C

PROPOSED ENERGY CONVERSION FACILITIES ON WHICH CONSTRUCTION IS INTENDED WITHIN THE ENSUING FIVE YEARS

None

SCHEDULE D

PROPOSED ENERGY CONVERSION FACILITIES DURING THE NEXT TEN-YEAR TIME PERIOD

Montana-Dakota routinely studies additional resource options to meet its customer needs. These options are addressed in Montana-Dakota's Integrated Resource Plan (2021 IRP) filed with the Commission on July 1, 2021, and designated as Case No. PU-21-307.

SCHEDULE E

EXISTING TRANSMISSION FACILITIES (ELECTRIC)

Exhibit A is a system map of North Dakota showing the location of existing transmission facilities.

SCHEDULE G

PROPOSED TRANSMISSION FACILITIES ON WHICH CONSTRUCTION IS INTENDED WITHIN THE ENSUING FIVE YEARS (ELECTRIC)

Montana-Dakota as part of the MISO Interconnection Process, is currently reconductoring and upgrading several of the 230kV lines from Mandan to Ellendale and are expected to be completed by the end of 2023. Additions to the 230 kV portion of the Wishek Substation will be made to support the upcoming Badger Wind Project in 2023.

Montana-Dakota as part of the MISO Long-Range Transmission Planning (LRTP) process, plans to jointly construct, with Otter Tail Power Company, a 345kV double circuit capable line from Montana-Dakota's Ellendale 345 Substation to Otter Tail Power Company's Jamestown Substation with only one circuit being added as part of the LRTP Tranche 1 projects. Additional work will be done at the Ellendale 345 kV substation to terminate the new transmission line into the substation. The MISO Board of Directors (BOD) are currently set to approve the LRTP Tranche 1 projects as part of the MISO Transmission Expansion Planning 2021 (MTEP21) process during the July MISO BOD meeting. If approved, the project is expected to be in-service the end of 2028.

SCHEDULE I

PROPOSED TRANSMISSION FACILITIES DURING THE NEXT TEN YEAR TIME PERIOD (ELECTRIC)

None

SCHEDULE J

REGIONAL COORDINATION

Montana-Dakota has been coordinating the planning, construction, and operation of electric facilities with other utilities and agencies serving North Dakota since 1945. Montana-Dakota has interconnection agreements with Basin Electric Power Cooperative (Basin Electric), Western Area Power Administration (WAPA), Otter Tail Power Company, NorthWestern Energy Corporation, and Minnkota Power Cooperative, Inc. These agreements provide for the interconnection of Montana-Dakota's bulk transmission facilities with the WAPA transmission network and MISO bulk transmission facilities.

Montana-Dakota is a transmission owning member of MISO. MISO is a FERC-authorized Regional Transmission Organization (RTO). MISO commenced tariff administration for the operational control of the transmission systems of its members in February 2002. MISO commenced its energy market on April 1, 2005. The MISO Ancillary Services Market started on January 6, 2009 at which time Montana-Dakota became a Local Balancing Authority within MISO. Montana-Dakota actively participates in the planning processes performed by MISO, which has the obligation to coordinate the planning of transmission facilities. Two of the planning processes mandated by FERC are generator interconnection and delivery service. The third process is related to expansion planning through the MISO Transmission Expansion Plan. As part of the market operation, Montana-Dakota's generating units are dispatched by MISO.

Montana-Dakota and WAPA historically had an agreement that provided for mutual wheeling and coordinated construction of transmission facilities. This agreement expired on January 1, 2016. WAPA and Basin Electric joined the Southwest Power Pool (SPP) in October 2015 and with the expiration of the WAPA Transmission Service Agreement (TSA) on January 1, 2016, Montana-Dakota began taking Network Integrated Transmission Service (NITS) from SPP to serve approximately one-half of its customer load in western North Dakota and eastern Montana. Montana-Dakota has offset NITS charges by receiving credits for its transmission facilities that are used to facilitate SPP transmission service.

Montana-Dakota, Otter Tail Power Company, and NorthWestern Energy Corporation own the 475 MW Big Stone generating station near Big Stone City, South Dakota, and associated bulk transmission facilities. Montana-Dakota owns 22.7 percent of the Big Stone Plant. In addition, Montana-Dakota is a participant in another joint venture with Minnkota Power Cooperative, Inc. (agent for Northern Municipal Power Agency), Otter Tail Power Company, and NorthWestern Energy Corporation. This is the 427 MW Coyote generating station near Beulah, North Dakota, and associated bulk transmission facilities. Montana-Dakota currently owns 25 percent of the Coyote Station. These cooperative efforts permit Montana-Dakota to realize economic benefits from ownership in a large generating station and to provide the electrical generation required of it and its partners using fewer facilities.

Montana-Dakota is also a member of the Midwest Reliability Organization (MRO). The MRO is one of six regional entities in North America operating under authority from regulators in the United States and Canada through a delegation agreement with the North American Electric Reliability Corporation (NERC). The primary focus of the MRO is developing and ensuring compliance with regional and international standards and performing assessments of the grid's ability to meet the demands for electricity.

SCHEDULE K

ENVIRONMENTAL INFORMATION

Montana-Dakota Utilities Co.'s Environmental Policy states that:

The Company will operate efficiently to meet the needs of the present without compromising the ability of future generations to meet their own needs. Our environmental goals are:

- *To minimize waste and maximize resources;*
- *To be a good steward of the environment while providing high quality and reasonably priced products and services; and*
- *To comply with or surpass all applicable environmental laws, regulations and permit requirements.*

Montana-Dakota maintains good relations with local, state, and federal agencies involved with environmental protection and land use planning in its service area.

Transmission and energy conversion facilities will be designed and located in such a manner as to maximize operational efficiency and economic benefits and to minimize impacts on agriculture, extractable resources, health and safety, plant and animal life, communications, and the visual effect on the surrounding area. Transmission and energy conversion facilities will be sited in compliance with the federal, state, and local laws and with the Public Service Commission's rules and regulations.

Montana-Dakota strives to maintain compliance and operate in an environmentally proactive manner, while taking into consideration the cost to customers. Montana-Dakota actively provides comments to federal and state legislative and regulatory activity related to environmental issues, including air emissions, greenhouse gases (GHG), waste disposal, and water discharges. The Company has also established memberships in relevant trade organizations to assist in monitoring the potential impact of proposed legislation and regulation to the Company's operations.

SCHEDULE L

PROJECTED DEMAND FOR SERVICE

The load data reported in this plan are the result of Montana-Dakota's *2022-2041 Electric Load Forecast* dated December 31, 2021.

1. Projected Peak Load for 2022-2032

The demand forecast was developed using an econometric model whose methodology is documented in detail in *2022-2041 Electric Load Forecast*.

The summer peak is the highest hourly demand value for the summer months in the given year. The winter peak is the highest hourly demand value for the winter season occurring at the end of the given year or the beginning of the following calendar year. The projected demands shown in MW below represent the load at the customer level plus the demand due to system losses. System losses include energy losses on the transmission and distribution systems and energy that is unaccounted for such as power theft or stray currents. The summer peak demand given is net of energy efficiency and prior to any reduction in load due to demand response.

a. Montana-Dakota Integrated System

PROJECTED PEAK DEMAND (MW)

YEAR	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
SUMMER	580.6	586.6	593.4	600.2	607.0	613.8	620.8	627.7	634.8	641.9	649.2
WINTER	579.1	583.8	590.4	596.8	603.3	609.6	616.5	623.2	630.4	637.7	645.2

GROWTH RATE (%)

YEAR	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
SUMMER	--	1.0	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
WINTER	--	.8	1.1	1.1	1.1	1.0	1.1	1.1	1.2	1.2	1.2

Historically, for the period 2016-2021 the summer peak demand increased at an average rate of 0.08 percent per year while the winter peak demand decreased at an average rate of .02 percent per year. The projected average growth rates for the period 2022-2032 are 1.1 percent for the summer peak and 1.1 percent for the winter peak.

b. North Dakota

PROJECTED PEAK DEMAND (MW)

YEAR	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
SUMMER	407.5	409.0	415.0	420.7	426.5	432.4	438.4	444.3	450.4	456.7	463.0
WINTER	406.4	407.1	412.9	418.3	423.9	429.4	435.4	441.1	447.3	453.6	460.1

GROWTH RATE (%)

YEAR	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
SUMMER	--	.4	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
WINTER	--	.2	1.4	1.3	1.3	1.3	1.4	1.3	1.4	1.4	1.4

2. Projected Energy for 2022-2032

The projected annual energy requirements, shown in gigawatt-hours (GWh), for Montana-Dakota's Integrated System are as follows:

Year	Annual Energy (GWh)	Year	Annual Energy (GWh)
2022	3,268.3	2028	3,481.0
2023	3,295.2	2029	3,519.3
2024	3,332.5	2030	3,560.0
2025	3,368.9	2031	3,601.7
2026	3,406.2	2032	3,644.3
2027	3,442.0		

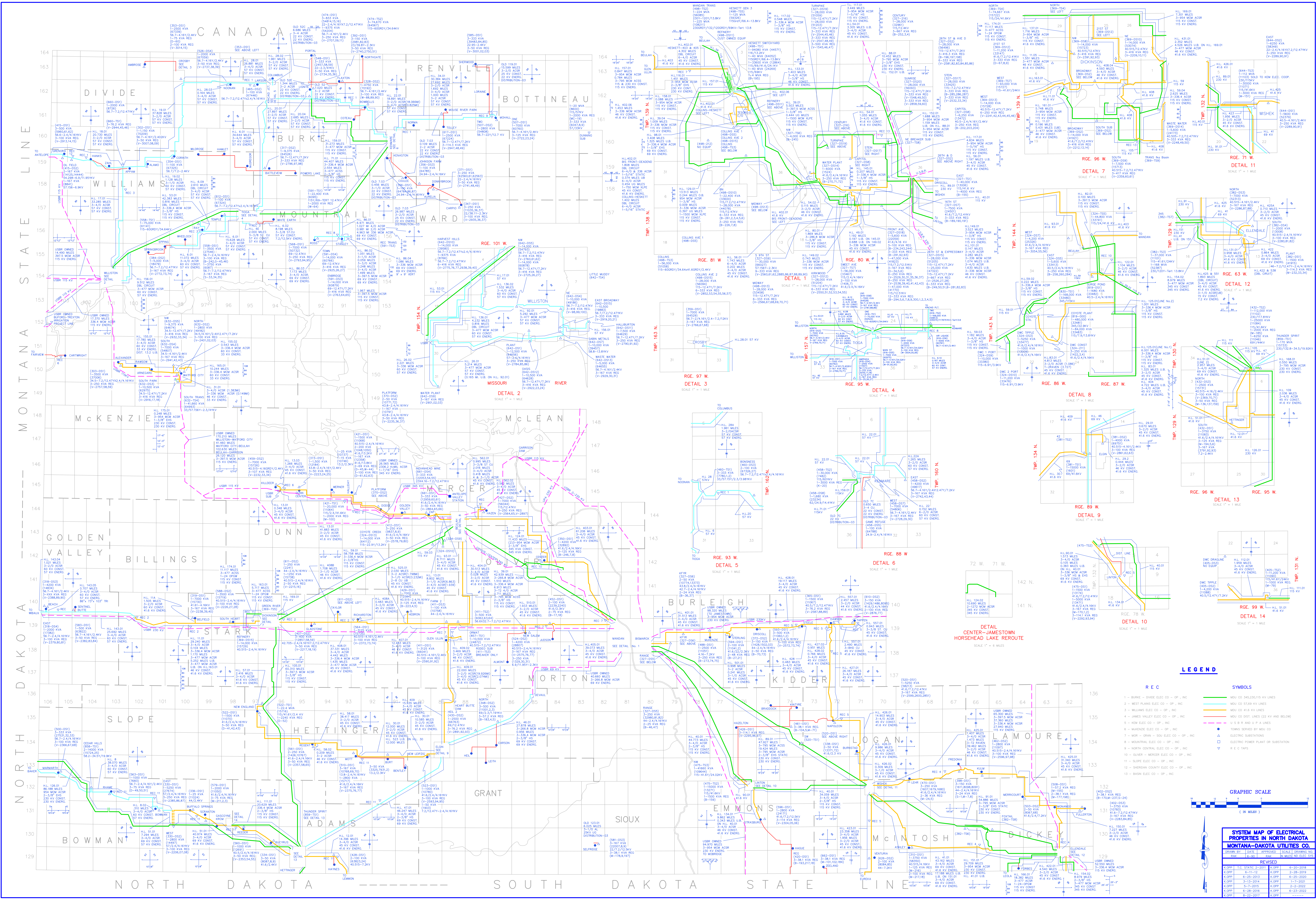
Historically, for the period 2016-2021, Montana-Dakota experienced an average annual decrease of 0.08 percent for energy consumption. The projected average growth rate for the period 2022-2032 is 1.1 percent.

3. Load Centers

Montana-Dakota's load centers for the Integrated System, defined as areas with 10 MW or more of load in a limited geographical area, are, in North Dakota, Bismarck-Mandan, Dickinson, Stanley, Tioga, Watford City, and Williston and in Montana, Baker, Glendive, Sidney, and Miles City.

Exhibit A

North Dakota Electric System Map



LEGEND

SYMBOLS

- 1 - BURKE - BVIDE ELEC CO - OP, INC
- 2 - WEST PLAINS ELEC CO - OP, INC
- 3 - WILLIAMS ELEC CO - OP, INC
- 4 - JAMES VALLEY ELEC CO - OP, INC
- 5 - JAMES VALLEY ELEC CO - OP, INC
- 6 - MINNEAPOLIS ELEC CO - OP, INC
- 7 - MORRIS - GRAN - SOU ELEC CO - OP, INC
- 8 - MOUNTAIN ELEC CO - OP, INC
- 9 - NORTH CENTRAL ELEC CO - OP, INC
- 10 - BURKE - MERCER ELEC CO - OP, INC
- 11 - SPOON ELEC CO - OP, INC
- 12 - SHERIDAN COUNTY ELEC CO - OP, INC
- 13 - BARNES ELEC CO - OP, INC

SYMBOLS

- 1 - MW CO 345,250.15 KV LINES
- 2 - MW CO 57.5W KV LINES
- 3 - MW CO 41.6 KV LINES
- 4 - MW CO 30 KV LINES (25 KV AND BELOW)
- 5 - MW CO 15 KV LINES
- 6 - TOWER
- 7 - ELECTRIC SUBSTATION
- 8 - ELECTRIC PLANT OR SUBSTATION
- 9 - E & T TAPS

GRAPHIC SCALE

(1 INCH = 1 MILE)

SYSTEM MAP OF ELECTRICAL PROPERTIES IN NORTH DAKOTA
MONTANA-DAKOTA UTILITIES CO.

REVISION

KOPR	8-28-2011	KOPR	6-28-2014
KOPR	8-11-2012	KOPR	2-28-2015
KOPR	6-25-2013	KOPR	6-25-2020
KOPR	3-13-2014	KOPR	4-29-2021
KOPR	5-7-2015	KOPR	2-2-2022
KOPR	8-28-2016	KOPR	6-23-2022