



AN ALLETE COMPANY

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June 26, 2017

VIA EMAIL and U.S. MAIL

Mr. Darrell Nitschke, Executive Secretary
North Dakota Public Service Commission
State Capitol Building
600 E. Boulevard Ave., Dept. 408
Bismarck, ND 58505

RE: Minnesota Power's Ten Year Plan – July 2017

Dear Mr. Nitschke:

Enclosed is Minnesota Power's North Dakota Ten-Year Plan pursuant to N.D.C.C. § 49-22-04. Notice of the filing of this plan will be given pursuant to N.D. Admin. Code 69-06-02-02 to the state agencies and officers as designated in N.D. Admin. Code 69-06-01-05. A copy of Minnesota Power's Ten Year Plan will also be filed with the Mercer, Morton and Oliver county auditors.

If you have any questions, or need additional information, please contact me at the number listed above.

Yours truly,

A handwritten signature in black ink that reads "David R. Moeller".

David R. Moeller

DRM:sr
Enc.

1 **PU-17-265** Filed: 6/26/2017 Pages: 8
2017 Ten Year Plan

Minnesota Power & Light
David Moeller

TEN-YEAR PLAN

Minnesota Power
An operating division of ALLETE, Inc.
Duluth, Minnesota

Prepared for the North Dakota Public Service Commission
Pursuant to Section 49-22-04 of the
North Dakota Century Code

July 2017

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**Minnesota Power's
TEN-YEAR PLAN**

INTRODUCTION

Minnesota Power, an operating division of ALLETE, Inc., provides retail electric service to northeastern Minnesota and wholesale service to 16 municipal customers in Minnesota and a private utility in Wisconsin. Minnesota Power has historically maintained an energy resource portfolio of coal, hydro, and biomass. In an effort to meet Minnesota's Renewable Energy Standard (Minn. Stat. § 216B.1691) and diversify its energy resource portfolio, Minnesota Power has been implementing a renewable development plan that began with 98.6MW of purchased wind energy from the Oliver I and II Wind Energy Centers in Oliver County, North Dakota and has continued through the Bison 1, 2, 3, and 4 wind projects. Minnesota Power also continues to purchase energy and capacity from Square Butte Electric Cooperative's Milton R. Young Unit 2 plant that is delivered via Minnesota Power's +/- 250kV direct current transmission line ("DC Line") that runs between the Square Butte Substation in Center, North Dakota and Minnesota Power's Arrowhead Substation near Duluth, Minnesota.

**Minnesota Power's
Ten-Year Plan**

SECTION A: Existing Energy Conversion Facilities¹

Bison 1—81.8 MW

Bison 2—105 MW

Bison 3—105 MW

Bison 4—204.8 MW

Hydro Operations—114.6 MW

- St. Louis River System—85.6 MW
 - Knife Falls Hydro Electric Station—1.9 MW
 - Scanlon Hydro Electric Station—1.4 MW
 - Thomson Hydro Electric Station—71.3 MW
 - Fond du Lac Hydro Electric Station—11.0 MW
- Winton Hydro Electric Station—4.0 MW
- Prairie River Hydro Electric Station—0.5 MW
- Mississippi River System—24.5 MW
 - Little Falls Hydro Electric Station—4.4 MW
 - Blanchard Hydro Electric Station—16.5 MW
 - Sylvan Hydro Electric Station—1.9 MW
 - Pillager Hydro Electric Station—1.7 MW

Hibbard Energy Center—54.2 MW (summer), 47.2 MW (winter)

Boswell Energy Center Units 1 and 2—138 MW

Boswell Energy Center Unit 3—350.5 MW

Boswell Energy Center Unit 4—585 MW (468 MW Minnesota Power capacity)

Laskin Energy Center Units 1 and 2—110 MW (natural gas)

Taconite Harbor Energy Center Units 1 and 2—150 MW (currently idled)

Taconite Ridge Wind Energy Center—25 MW

Camp Ripley Solar Facility—10 MW

(Non-regulated) Rapids Energy Center—30.8 MW

Purchases

- Square Butte—Young 2—100 MW in 2017
- Oliver County Wind Energy Centers I and II—98.6 MW

¹ Nameplate capacity.

- Wing River Wind—2.5 MW
- Manitoba Hydro—50 MW
- Ontario Hydro—100 MW (capacity only)

Minnesota Power's 2015 Integrated Resource Plan ("2015 Plan") in Minnesota Public Utilities Commission ("MPUC") Docket No. E015/ RP-15-690 (available on the MPUC's eDockets website: <https://www.edockets.state.mn.us/EFiling/search.jsp> or Minnesota Power's website at: <http://www.mnpower.com/Environment/ResourcePlan>) was filed on September 1, 2015 and approved by the MPUC at its June 9, 2016 agenda hearing and pending a written order. The filing provides further information on these generation facilities and is available upon request. Minnesota Power's next integrated resource plan is currently due to be filed with the MPUC by February 1, 2018.

SECTION B: Energy Conversion Facilities under Construction

None.

SECTION C: Proposed Energy Conversion Facilities on Which Construction is Intended Within the Ensuing Five Years

With the completion of Bison 1, 2, 3 and 4, Minnesota Power has 496.6 MW of installed wind capacity. Minnesota Power may make individual applications to the NDPSA for approval of additional North Dakota wind facilities when the timing is determined.

SECTION D: Proposed Energy Conversion Facilities during the Next Ten-Year Time Period

See response to Section C.

SECTION E: Existing Transmission Facilities (Electric)

On December 31, 2009, Minnesota Power acquired Square Butte Electric Cooperative's +/- 250kV direct current transmission line ("DC Line") that runs 465 miles between the Square Butte Substation in Center, North Dakota and Minnesota Power's Arrowhead Substation near Duluth, Minnesota. Minnesota Power also recently upgraded the capacity of the DC Line to assure deliverability of the Bison Wind Projects. To accomplish this upgrade that was completed in 2013, Minnesota Power entered into a transmission service agreement with Square Butte (subject to installation of a \$5.6 million transmission system improvement project at the Square Butte Substation) to increase the DC Line capacity from 500 MW to 550 MW.

In 2009, Minnesota Power placed in-service a 230kV AC transmission line (PU-09-587), approximately 22 miles in length that is required to transmit wind generation from the Bison 1 Wind Project substation to the proposed point of interconnection within the existing Square Butte Substation near Center, North Dakota. This transmission line will also be utilized as a generator outlet for future Minnesota Power wind projects.

To facilitate development of additional wind projects in North Dakota, Minnesota Power constructed additional transmission facilities that interconnect with the 230kV AC transmission line and the

Square Butte Substation. Minnesota Power obtained NDPSC approval for an additional 10-mile western extension of the 230kV AC transmission line (PU-11-620) and that line will be used for Minnesota Power's Bison 4 Wind Project.

Minnesota Power is a project participant in the CapX2020 transmission initiative, which includes the Twin Cities – Fargo 345kV Project that begins near Fargo, North Dakota and terminates at Monticello, Minnesota.

SECTION F: Existing Transmission Facilities (Pipeline)

None

SECTION G: Proposed Transmission Facilities on Which Construction is Intended Within the Ensuing Five Years

Minnesota Power may need to construct additional transmission facilities to deliver wind from project sites to the Square Butte Substation.

SECTION H: Proposed Transmission Facilities on Which Construction is Intended Within the Ensuing Five Years (Pipeline)

None

SECTION I: Proposed Transmission Facilities during the Next Ten-Year Time Period (Electric and Pipeline)

Minnesota Power may need to construct additional transmission facilities to deliver wind from project sites to the Square Butte Substation.

SECTION J: Regional Coordination

Minnesota Power's 2015 Plan in MPUC Docket No. E015/RP-15-690 (available on the MPUC's eDockets website: <https://www.edockets.state.mn.us/EFiling/search.jsp>) contained extensive transmission and regional coordination information in Appendix F and is available upon request.

SECTION K: Environmental Information

Minnesota Power's 2015 Plan in MPUC Docket No. E015/RP-15-690 (available on the MPUC's eDockets website: <https://www.edockets.state.mn.us/EFiling/search.jsp>) contained extensive environmental information in Appendix E and is available upon request.

SECTION L: Projected Demand for Service

Minnesota Power's 2015 Plan in MPUC Docket No. E015/RP-15-690 (available on the MPUC's eDockets website: <https://www.edockets.state.mn.us/EFiling/search.jsp>) contained extensive demand and energy forecasting information and is available upon request. Minnesota Power also files annually with the MPUC an Annual Forecast Report in accordance with MPUC rules and that can be made available upon request.



AN ALLETE COMPANY

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June 26, 2017

NOTICE OF FILING

Please take notice that on June 26, 2017, Minnesota Power, 30 West Superior Street, Duluth, Minnesota, filed a Ten Year Plan with the North Dakota Public Service Commission pursuant to N.D.C.C. § 49-22-04. Notice of the filing of this plan is pursuant to N.D. Admin. Code 69-06-02-02 to the following state agencies and officers as designated in N.D. Admin. Code 69-06-01-05:

1. Aeronautics Commission
2. Attorney General
3. Department of Agriculture
4. Department of Career and Technical Education
5. Department of Commerce, Division of Community Service
6. Department of Health
7. Department of Human Services
8. Department of Labor
9. Department of Transportation
10. Economic Development & Finance Commission
11. Energy Development Impact Office
12. Game and Fish Department
13. Geological Survey
14. Governor
15. Indian Affairs Commission
16. Job Service North Dakota
17. Parks and Recreation Department
18. Soil Conservation Committee
19. State Historical Society of North Dakota
20. State Land Department
21. State Water Commission

Yours truly,

A handwritten signature in black ink that reads "David R. Moeller".

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