

Staff Briefing Papers

Meeting Date	February 27, 2020	Agenda Item *6
Company	Minnkota Power Cooperative Northern Municipal Power Agency	
Docket No.	In the Matter of Minnkota Power Cooperative, Inc. and Northern Municipal Power Agency's 2019 Resource Plan ET6, ET-6132/RP-19-416	
Issues	What action should the Commission take on Minnkota's and Northern Municipal Power Agency's 2019 Resource Plan?	
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Relevant Documents	Date
Initial Filing – Minnkota Power Cooperative	June 28, 2019
Comments – Department of Commerce	November 7, 2019
Reply Comments – Minnkota Power Cooperative	January 8, 2019
Response to Reply Comments – Department of Commerce	January 28, 2019

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The attached materials are work papers of the Commission Staff. They are intended for use by the Public Utilities Commission and are based upon information already in the record unless noted otherwise.

Background

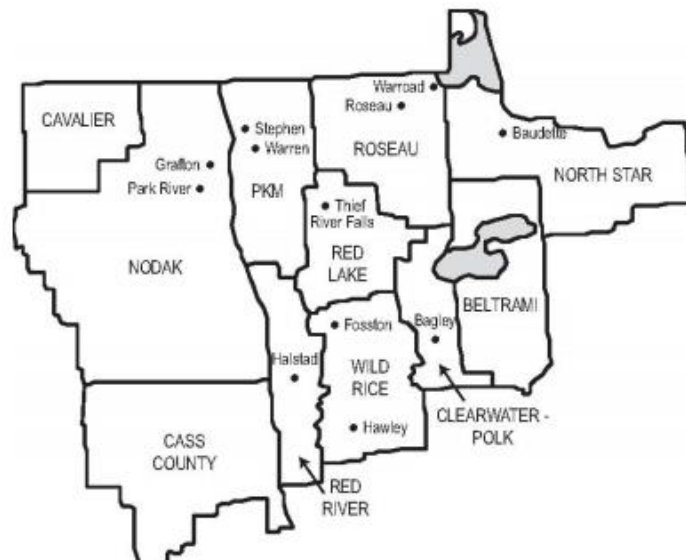
Minn. Stat. §216B.2422, subd. 1 requires any entity serving at least 10,000 retail customers in Minnesota and capable of generating 100,000 kilowatts of electricity to file an Integrated Resource Plan (IRP). Pursuant to Minn. Stat. § 216B.2422, subd. 2, municipal utilities, cooperatives, or wholesalers, however, Commission resource plan orders are merely advisory. 216B.2422, subd. 2 is as follows:

Subd. 2. Resource plan filing and approval. A utility shall file a resource plan with the commission periodically in accordance with rules adopted by the commission. The commission shall approve, reject, or modify the plan of a public utility, as defined in section [216B.02, subdivision 4](#), consistent with the public interest. In the resource plan proceedings of all other utilities, the commission's order shall be advisory and the order's findings and conclusions shall constitute prima facie evidence which may be rebutted by substantial evidence in all other proceedings. With respect to utilities other than those defined in section [216B.02, subdivision 4](#), the commission shall consider the filing requirements and decisions in any comparable proceedings in another jurisdiction. As a part of its resource plan filing, a utility shall include the least cost plan for meeting 50 and 75 percent of all new and refurbished capacity needs through a combination of conservation and renewable energy resources.

Minnkota Power Cooperative, Inc. and Northern Municipal Power Agency (Joint System) filed its resource plan with the Commission on June 28, 2019.

Information on Minnkota Power Coop and Northern Municipal Power Agency

Minnkota Power Cooperative serves 11 member coops, while NMPA serves 12 municipal utilities, both throughout northwestern Minnesota and eastern North Dakota. Minnkota and NMPA function as a joint system, through ownership agreements and joint ownership of the transmission system. Together they serve 137,000 customers.¹ Minnkota's member cooperatives have wholesale power contracts through 2055, and may supply up to 5% of their energy and capacity requirements from other sources.²



¹ For comparison, Minnesota Power serves 146,741 retail customers; Otter Tail Power serves 131,170 across its 3 state region, and Southern Minnesota Municipal Power Agency (SMMPA) serves around 118,000 retail customers

² Initial filing, p. 8-9

The Joint System's IRP addressed the following topics:

- Demand Response Programs
 - The Joint Systems have around 55,000 customers enrolled in demand response programs, with a winter interruptible load of 395 MW, and summer interruptible load of 98 MW. Both are forecasted to increase during the planning period.³
- Existing Resources, Purchases, and Sales
 - See Table 2 below for existing resources and purchases
 - Sales – 100 MW sales agreement to Basin Electric from March to November, 2019-2021, and March – May 2022.
 - Sales – 50 MW sales agreement to Minnesota Power in 2019 and 2020.⁴
- Load Forecast – see below
- Resource Adequacy – see below
- Energy Requirement Considerations – see below
- Minnesota Renewable Energy Standard
 - The Joint System estimates annual energy production from its wind facilities to be 1,751,500 MWh per year through the planning period, over triple what it forecasts needing to meet the 25% RES standard.⁵
- Energy Efficiency and Conservation Program
 - In 2018, the Joint System's PowerSavers program resulted in 21,538 MWh of energy savings, meeting the 1.5% percent statutory energy conservation goal.⁶
- Regional Transmission Operator Participation
 - The Joint System participate in the MISO market, but are not a formal RTO participant, and have no plans to join at this time.⁷
- Transmission Planning
- Environmental Compliance – Minnkota discusses the following areas:
 - Coal Combustion Residuals (CCR) – p. 34
 - Waters of the United States (WOTUS) – pp. 34-35
 - Steam Electric Effluent Limitation Guidelines (ELG) – pp. 35-36
 - Regional Haze – pp. 36-37
 - Mercury & Air Toxics (MATS) – p. 37
 - Carbon Dioxide Regulations – pp. 38-39
 - Project Tundra (Carbon Capture) – pp. 39-40
- Two and Five year actions plans
 - During the next two years the Joint System will complete a Load Forecast Study
 - Two more Load forecast studies will occur in 2021 and 2023
 - No other actions are anticipate during the five year action time period.⁸
- Contingencies – the Joint Systems laid out plans for the following contingency events:

³ Minnkota, Initial Filing, pp. 13-14

⁴ *Id.*, p. 17

⁵ *Id.*, p. 27

⁶ *Id.*, p. 28

⁷ *Id.*, p. 31

⁸ *Id.*, p. 42

- Sudden addition of a large load – p. 43
- Sudden loss of a large load – p. 43
- Resource options available in the event of facilities shutdown – p. 43
- Environmental Externality Costs – p. 45
- Renewable Resource Scenarios – 50% and 75% – p. 46
- Public Participation – Minnkota held meetings with the boards of their member coops.⁹

Department Comments

The Department of Commerce was the only party to file comments on the Joint System’s IRP. At a high level, the Department’s Analysis found:

1. The forecast has remained stable over time and thus the Department did not conduct an in-depth review. The Department recommends that the Commission accept the Agency’s forecast for planning purposes.
2. The Joint System appears to have no resource needs during the planning period.
3. The Joint System IRP did not include an evaluation of its progress towards meeting Minnesota’s greenhouse gas emissions reduction goal. The Joint System should discuss this evaluation, discussed below, in reply comments, which are due January 8, 2020, or before.

Energy and Demand Forecast

The Joint Systems created low, median, and high growth forecast scenarios for energy and demand:

Table 1: Forecasted Energy and Demand Growth¹⁰

	Energy	Winter Peak	Summer Peak
Low	0.85%	0.45%	0.45%
Median	1.00%	1.00%	0.80%
High	1.80%	1.30%	1.20%

⁹ *Id.*, p. 47

¹⁰ Minnkota, Initial Filing, pp. 20 - 22

Figure 1: Energy Forecast (GWh)¹¹

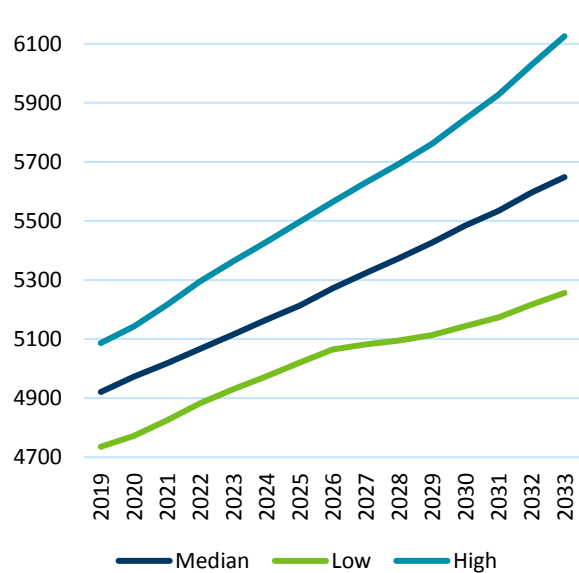
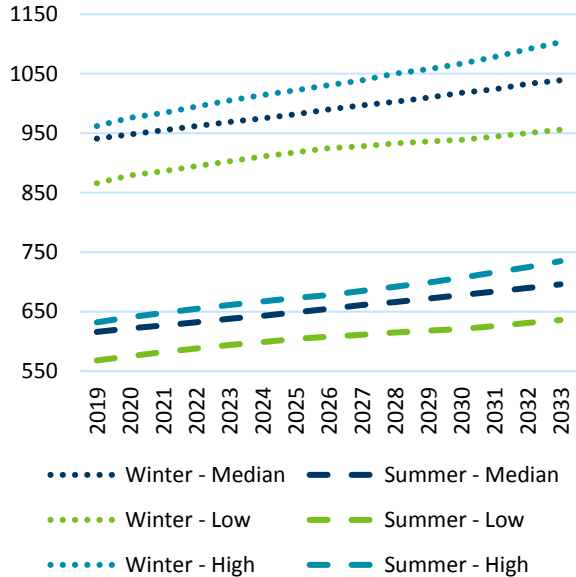


Figure 2: Demand Forecast (MW)¹²



The Department noted that Minnkota’s energy and demand forecasts have routinely exceeded the actual values, but;

Given that the Joint System does not project any need for additional resources during the planning period, the Department’s current constraint on forecasting resources, and the fact that the Joint System has historically over-forecasted demand and energy requirements, the Department opted not to conduct a detailed analysis of the Joint System forecast. The Department concludes that the Joint System’s forecast is reasonable for planning purposes.¹³ **(Decision Option 1a)**

Resource Adequacy

The Department noted the Joint Systems use an actual capacity factor of 42% for its wind facilities, rather than MISO capacity accreditation to determine its resource needs during the planning period.¹⁴ Usually utilities use the MISO wind capacity credit when they determine whether they have sufficient resources to meet their load and not the actual capacity factor. For 2019-2020, the MISO wind capacity credit is 15.7%. Therefore, Department requested additional information from the Joint System to create the following table of supply side-resources available that would count towards MISO resource adequacy requirements:

¹¹ *Id.*

¹² *Id.*

¹³ Department, Initial, p. 7

¹⁴ *Id.* Usually utilities use the MISO wind capacity credit when they determine whether they have sufficient resources to meet their load. For 2019-2020, the MISO wind capacity credit is 15.7%

Table 2: Supply Side Resources¹⁵

Generation Plant	Energy Source	Nameplate MW	Unforced Capacity (UCAP) MW
Young 1	Coal	250	240.4
Young 2	Coal	355	315.9
Coyote	Coal	128	108.6
Various Wind	Wind	459	99
Minnkota WAPA	Hydro	49	42.7
NMPA WAPA	Hydro	36	35.2
Municipal Diesels	Diesel	14	15.7
Cooperative Diesels	Diesel	20	20.7
Total		1311	878.2

The Department found net resources would exceed summer load through the planning period, meaning it would have sufficient resources to meet demand. In the winter, the Joint System indicated it had sufficient resources to meet firm contracts, with interruptible services meeting the rest of its capacity needs.¹⁶

However, the Department pointed out there is uncertainty around the future of the Coyote plant surrounding compliance with the Regional Haze Rule that could result in an early closure for economic reasons. Therefore, the Department recommend the Joint System include a discussion of Coyote’s future and its impact on system reliability in its next filing, using updated information on Regional Haze compliance.¹⁷ **(Decision Option 7)**

Greenhouse Gas Reduction Goal

The Department pointed out that while the Joint System discussed carbon dioxide (CO₂) regulations, it did not include a discussion of how its IRP helps achieve Minnesota’s greenhouse gas reduction goals, as required by the Commission’s August 5, 2013 *Notice of Information in Future Resource Plan Filings* (Commission’s Letter).¹⁸ Therefore, the Department requested an additional discussion in reply comments.¹⁹

In reply, the Joint System outlined the carbon emissions reductions it expects to see from the implementation of Project Tundra, which it estimates will capture 90% of the carbon from Young 2. The captured carbon would likely be used for enhanced oil recovery. Successful completion of Project Tundra would result in approximately 35% total reductions in CO₂ from 2005 levels, if the carbon is sequestered.²⁰

¹⁵ Department Initial, p. 8

¹⁶ Minnkota/NMPA Initial Filing, p. 11

¹⁷ Department Initial, p. 10

¹⁸ In 2013, the Minnesota Legislature passed amendments to Minnesota Statutes §216B.2422, subd. 4, one of which stated that the Commission’s public interest determination must consider whether the IRP helps the utility achieve the greenhouse gas reduction goals under section 216H.02.

¹⁹ Department, Initial, p. 12

²⁰ Minnkota/NMPA reply comments, p. 5

The Department concluded “although Minnkota should have included additional scenario analyses that did not assume approval and success of carbon sequestration, the Cooperative’s analysis is adequate until the Cooperative submits its next resource plan.”²¹ (**Decision Option 8**)

Filing Date for Next IRP

IRP filing frequency is set by the Commission’s rules, Minn. Rules [7843.0300 Subp. 2](#). These rules specify filings every two years, but it has become common for the Commission to vary these rules in prior proceedings, including in the Joint System’s prior IRP, where the Commission extended the filing deadline by two years. The Commission may wish to consider doing the same for the Joint System here. The record in this proceeding does not contain a proposed date for Joint System’s next resource plan filing, which would be due on July 1, 2021.²² As such, the Commission may wish to hear from parties on this issue at the agenda meeting.

Decision Options

What action should the Commission take on Minnkota/NMPA’s filing?

1. Accept the Minnkota and NMPA’s 2019-2033 IRP
 - a. Accept the Joint System’s forecast for planning purposes. (*Department*)

OR

2. Do not accept Minnkota and NMPA’s 2019-2033 IRP

OR

3. Take no action on Minnkota’s and NMPA’s 2019-2033 IRP

When should Minnkota/NMPA file its next IRP, and should the Commission require any additional information?

4. Vary Minn. Rules 7843.0300 and direct Minnkota/NMPA to file its next resource plan no later than July 1, 2023.

OR

5. Direct Minnkota and NMPA to file its next resource plan no later than July 1, 2021.

OR

6. Direct Minnkota and NMPA to file its next resource plan at some other date.

AND

7. In its next IRP, require the Joint System update the Commission on the impact of the Regional Haze Rule on Coyote’s operations and thus, on the Joint System’s resource needs. (*Department*)

AND

8. In its next IRP, require the Joint System comply with the Commission’s August 5, 2013 letter regarding IRP requirements, and submit an evaluation of the Joint System’s progress towards meeting Minnesota’s greenhouse gas emissions reduction goal, including comparing its actual 2015 CO₂ emissions and projected 2025 emissions to the Joint System’s actual 2005 CO₂ emissions. The Cooperative should include scenarios that do not assume approval and success of carbon sequestration. (*Department*)

²¹ Department, Response to Reply Comments, p. 1

²² The Commission’s July 22, 2015 Order set at July 1, 2019 deadline for Minnkota and NMPA next resource plan.