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September 16, 2016

VIA ELECTRONIC FILING

Daniel P. Wolf
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place E., Ste. 350
St. Paul, MN 55101

Re: In the Matter of the Application of Red Pine Wind Project, LLC for a Certificate of Need for a 200 MW Wind Project in Lincoln County, Minnesota, PUC Docket No. IP-6959/CN-16-140

Dear Mr. Wolf:

Enclosed are the **Public** and **Non-Public Trade Secret** versions of the Certificate of Need ("CON") application for Red Pine Wind Project, LLC's planned wind energy project in Lincoln County, Minnesota. With this CON application, Red Pine Wind Project, LLC ("Red Pine") requests authorization to build an up to 200 MW Large Wind Energy Conversion System ("LWECS") and associated facilities. This application is being submitted via the Minnesota Public Utility Commission's e-filing system by Stoel Rives LLP on behalf of Red Pine. On February 12, 2016, Red Pine filed a request for exemptions from certain data requirements in Chapter 7849 of the Minnesota Rules and a variance of the 45-day waiting period between requesting exemptions and filing a CON application. The Commission granted the exemptions and variance in an order dated March 25, 2016. Therefore, this CON application does not include data for which exemptions were granted.

Discrete parts of this CON application include proprietary information that, due to its commercially sensitive nature, has been designated as **Trade Secret** pursuant to Minn. Stat. § 13.37, subd. 1(b). For this reason, Red Pine is filing both Public and Non-Public Trade Secret versions of this CON application. Disclosure of such proprietary information, which includes cost data, would be economically harmful to Red Pine. The Trade Secret information is properly designated because it (1) is supplied by Red Pine, (2) is the subject of reasonable efforts by Red Pine under the circumstances to maintain its secrecy, and (3) derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use.

Red Pine requests that this CON application be reviewed under the informal review process and that the review be combined to the extent practical with the associated LWECS Site Permit Application, which Red Pine anticipates submitting under Docket No. IP-6646/WS-16-618, and separate Route Permit and

CON applications Red Pine anticipates submitting for the project's generation interconnection transmission line.

Sincerely,

Stoel Rives LLP

s/Sarah Johnson Phillips

Sarah Johnson Phillips

Attachments

CERTIFICATE OF SERVICE

I, Sharla Backer, hereby certify that I have this day, served a true and correct copy of the following documents to all persons at the addresses indicated below or on the attached list by electronic filing, electronic mail, courier, interoffice mail or by depositing the same enveloped with postage paid in the United States Mail at Minneapolis, Minnesota.

RED PINE WIND PROJECT, LLC'S CERTIFICATE OF NEED APPLICATION - PUBLIC VERSION

In the Matter of the Application of Red Pine Wind Project, LLC for a Certificate of Need for the 200 MW Red Pine Wind Project in Lincoln County, Minnesota
PUC Docket No. IP-6959/CN-16-140

Dated this 16th day of September, 2016

/s/ Sharla Backer
Sharla Backer

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Daniel P	Wolf	dan.wolf@state.mn.us	Public Utilities Commission	121 7th Place East Suite 350 St. Paul, MN 551012147	Electronic Service	Yes	OFF_SL_16-140_Official

PUBLIC DOCUMENT – TRADE SECRET DATA HAS BEEN EXCISED

STATE OF MINNESOTA
BEFORE THE
PUBLIC UTILITIES COMMISSION

Beverly Jones Heydinger	Chair
Nancy Lange	Commissioner
Dan Lipschultz	Commissioner
Matthew Schuerger	Commissioner
John Tuma	Commissioner

In the Matter of the Application of Red Pine Wind Project, LLC for a Certificate of Need for a 200 MW Wind Project in Lincoln County, Minnesota.

MN PUC Docket No. IP-6959/CN-16-140

SUMMARY OF FILING

Red Pine Wind Project, LLC, a Delaware limited liability company ("Red Pine"), is proposing to construct a wind project in Lincoln County, Minnesota, with an expected nameplate capacity of up to 200.1 MW (the "Project"). The Project will be located in Lincoln County in southwestern Minnesota, immediately east of Ivanhoe and north of Arco, Minnesota. The Project footprint is approximately 42,000 acres. With this filing, Red Pine is requesting that the Minnesota Public Utilities Commission authorize construction of the Project, which is a Large Energy Facility as defined in Minn. Stat. § 216B.2421, subd. 2(1), by granting it a Certificate of Need pursuant to Minn. Stat. § 216B.243, subd. 2. The Project is intended to provide Minnesota and the surrounding region with renewable energy eligible to satisfy renewable energy requirements in Minnesota and surrounding states. Red Pine is engaged in discussions with multiple potential power offtakers and is evaluating options to proceed with construction of the project in either 2017 or 2018 (commercial operation date of December 2017 or December 2018, respectively). Finalizing an offtake arrangement and plans for qualifying for the federal Production Tax Credit ("PTC") ultimately will determine the construction timeline.

PUBLIC DOCUMENT – TRADE SECRET DATA HAS BEEN EXCISED

APPLICATION FOR CERTIFICATE OF NEED

RED PINE POWER PARTNERS, LLC

LINCOLN COUNTY, MINNESOTA

Docket No. IP-6959/CN-16-140

September 16, 2016

Prepared by: Stoel Rives LLP

Sarah Johnson Phillips (#0390166)
Sara Bergan (#0391994)
33 South Sixth Street, Suite 4200
Minneapolis, MN 55402

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Table 1: LEGF Certificate of Need Rule Cross-Reference

Minnesota Rule	Required Information	Applicability/ Location in the Document	Exemption Granted
7849.0120	Criteria – Probable result of denial would be an adverse effect upon the future adequacy, reliability, or efficiency of energy supply to applicant, customers, people of MN, and neighboring states	Section 2.2.1	Yes (partial)
7849.0120	Criteria – A more reasonable and prudent alternative has not been demonstrated	Sections 2.2.2(a) & 3.2.4	--
B1	Appropriate size, type, and timing compared to reasonable alternatives	Sections 2.2.2(b), 2.2.2(c), 2.2.2(d), & 3.2.4	No
B2	Cost of the facility and its energy compared to reasonable alternatives	Sections 2.2.2(f) & 3.2.4	No
B3	Effect of the facility on natural and socioeconomic environments compared to the effects of reasonable alternatives	Sections 2.2.2(g) & 3.2.4	No
B4	Expected reliability compared to reasonable alternatives	Sections 2.2.2(e) & 3.2.4	No
7849.0120	Criteria – Project will provide benefits to society	Section 2.2.3	--
C1	Relationship of the proposed facility or suitable modification to overall state energy needs	Section 2.2.3(a)	No
C2	Effects of the facility on natural and socioeconomic environments compared to the effects of not building	Section 2.2.3(b)	No
C3	Effects of the facility or suitable modification in inducing future development	Section 2.2.3(c)	No
C4	Social beneficial uses of the output of the facility, or suitable modification, including its uses to protect or enhance environmental quality	Section 2.2.3(d)	No
7849.0120 D	Criteria – Proposed facility or suitable modification will not fail to comply with relevant policies, rules, and regulations of other state, federal, and local government agencies	Sections 5 & 2.2.4	No
7849.0210	Filing Fees and Payment Schedule	Section 1.1.2	No
7849.0240	Need Summary and Additional Considerations		
Subpart 1	Need Summary – Summary of major factors justifying need for the facility	Section 2	No
Subpart 2 A	Additional Considerations – Socially beneficial uses of the output of the facility, including to protect or enhance environmental quality	Section 2.3.1	No
Subpart 2 B	Additional Considerations – Promotional activities that may have given rise to the demand for the facility	Section 2.3.2	Yes
Subpart 2 C	Additional Considerations – Effects of the facility in inducing future developments	Section 2.3.3	Yes
7849.0250	Description of Proposed LEGF and Alternatives	Section 3	--
A1	Description – Nominal generating capability and	Section 3.1.1	No

Minnesota Rule	Required Information	Applicability/ Location in the Document	Exemption Granted
	effects of economies of scale on the facility size and timing		
A2	Description – Anticipated operating cycle and annual capacity factor	Section 3.1.2	No
A3	Description – Type of fuel, reason for selection, projection of availability over life of the facility, and alternative fuels	Section 3.1.3	No
A4	Description – Anticipated heat rate of the facility	Section 3.1.4	No
A5	Description – Anticipated areas where the facility will be located	Section 3.1.5	No
B1	Discussion of Alternatives – Purchased power	Section 3.2.2(a)	Yes
B2	Discussion of Alternatives – Increased efficiency of existing facilities including transmission lines	Section 3.2.2(b)	Yes
B3	Discussion of Alternatives – New transmission lines	Section 3.2.2(c)	Yes
B4	Discussion of Alternatives – New generating facilities of a different size and energy source	Sections 3.2.2(d), 3.2.2(e), 3.2.2(f), 3.2.2(g), &3.2.2(h)	Yes (partial)
B5	Discussion of Alternatives – Reasonable combinations of alternatives	Section 3.2.2(i)	Yes (partial)
C	Proposed Facility and Alternatives	Sections 3.3,3.2.3, & 3.2.4	Yes (partial)
C1	Capacity cost in current dollars/kilowatt	Section 3.3.1	Yes (partial)
C2	Service life	Section 3.3.2	Yes (partial)
C3	Estimated average annual availability	Section 3.3.3	Yes (partial)
C4	Fuel costs in current dollars/kilowatt hour	Section 3.3.4	Yes (partial)
C5	Variable operating and maintenance costs in current dollars/kilowatt hour	Section 3.3.5	Yes (partial)
C6	Total cost in current dollars/kilowatt hour	Section 3.3.6	Yes (partial)
C7	Effect on rates systemwide and in MN	Section 3.3.7	Yes (partial)
C8	Efficiency – Expressed for a generating facility as the estimated heat rate	Section 3.3.8	Yes (partial)
C9	Major assumptions for providing information relating to Items 1-8 rates for fuel costs, operating and maintenance costs as well as projected capacity factors	Section 3.3.9	Yes (partial)
D	Map Showing Applicant's System	Section 3.4 Figures 1 & 2	Yes (partial)
E	Other Information – Relevant information about the proposed facility and alternatives necessary to determine need	Sections 2 & 3	--

Minnesota Rule	Required Information	Applicability/ Location in the Document	Exemption Granted
7849.0270	Peak Demand and Electrical Consumption Forecast	Section 6	Yes (partial)
7849.0280	System Capacity	Section 7	Yes (partial)
7849.0290	Conservation Programs	Section 8	Yes
7849.0300	Consequences of Delay – Discuss anticipated consequences if proposed facility is delayed	Section 9	Yes (partial)
7849.0310	Environmental Information – Provide environmental data in response to part 7849.0250, Item C or 7849.0260, Item C and information as requested in parts 7849.0320 to 7849.0340	Section 4	No
7849.0320	Generating Facilities	Section 4.2	No
A	The estimated range of land requirements, including water storage, cooling systems, and solid waste storage	Section 4.2.1	No
B	Estimated vehicular, rail, and barge traffic generated by construction and operation of the LEGF	Section 4.2.2	No
C	Fossil-Fueled Facilities – Fuel	Section 4.2.3(a)	No
D	Fossil-Fueled Facilities – Emissions	Section 4.2.3(b)	No
E	Water Use for Alternate Cooling Systems	Section 4.2.4	No
F	Potential sources and types of discharges to water	Section 4.2.5	No
G	Radioactive Releases	Section 4.2.6	No
H	Potential types and quantities of solid wastes in tons/year	Section 4.2.7	No
I	Potential sources and types of audible noise generated	Section 4.2.8	No
J	Estimated work force required for construction and operation	Section 4.2.9	No
K	Minimum number and size of transmission facilities required to provide a reliable outlet	Section 4.2.10	No
7849.0330	Transmission Facilities	Section 4.3	Yes
7849.0340	Alternative of No Facility	Section 3.2.2(d)	Yes (partial)

PUBLIC DOCUMENT – TRADE SECRET DATA HAS BEEN EXCISED

1. INTRODUCTION AND EXECUTIVE SUMMARY

Red Pine Power Partners, LLC ("Red Pine") submits this application for a Certificate of Need ("CON") from the Minnesota Public Utilities Commission ("MPUC" or the "Commission") for an approximately 200 MW wind energy project (the "Project") pursuant to Minn. Stat. § 216B.243 and Chapter 7849 of the Minnesota Rules. Red Pine respectfully requests that the Commission issue a CON for the Project.

1.1 Introduction

Red Pine intends to construct and operate a Large Wind Energy Conversion System ("LWECS") in southwestern Minnesota with a nameplate capacity of up to 200.1 MW.[1] The Project is a Large Energy Facility as defined in Minn. Stat. § 216B.2421, subd. 2(1) and therefore requires a CON and a LWECS site permit under Minnesota law. Red Pine, a Delaware limited liability company, is a wholly-owned subsidiary of EDF Renewable Energy, Inc. ("EDF-RE"). Red Pine initiated this docket by filing an exemption request for certain data requirements. Red Pine has also applied for an LWECS site permit in Docket No. IP-6959/CN-16-140.

The Project will be located in southwestern Minnesota in Lincoln County in Ash Lake, Lake Stay, Limestone, Marble, and Royal Townships, near the communities of Ivanhoe and Arco, Minnesota. The landscape is rural with limited development or housing, and the Project will be situated on agricultural land. The Project Area contains approximately 42,000 acres, of which approximately 30,597 acres are currently under agreement with Red Pine. While Red Pine is working to secure additional wind rights in the area, the land currently under contract is sufficient to support the Project. Red Pine is currently working to secure the remaining agreements. Red Pine anticipates constructing up to 100 wind turbines with a maximum total nameplate net capacity of 200.1 MW. Red Pine has not made a final wind turbine selection, but is currently considering Vestas V100, V117, and V126 wind turbines.

The electricity generated by the Project will be offered for sale to wholesale customers, including Minnesota utilities that forecast a need for additional renewable energy to comply with the Minnesota Renewable Energy Standard ("RES"), the Clean Power Plan, utility resource plan commitments or other renewable requirements. Power will run from each turbine through underground 34.5 kilovolt ("kV")

[1] Note that the Project's capacity is intended to be up to 200 MW at the MISO injection point (the Hawks Nest Substation), but depending on final turbine selection, the rated capacity of the Project may be up to 200.1 MW.

collector lines to the Project substation. Red Pine also proposes to construct an approximately 2-mile, 345 kV gen-tie transmission line (the "Gen-Tie Line") to Xcel Energy's Hawks Nest Lake substation, with point of interconnect at the 345kV Brookings County-Hampton MVP line. The Gen Tie Line is itself a Large Energy Facility as defined in Minn. Stat. §216B.2421(2) and a large high voltage transmission line ("LHVTL") as defined in Minn. R. 7849.0010 and, as a result, will require a separate CON. Red Pine intends to begin the application process for the Gen Tie Line CON soon.

The Midcontinent Independent System Operator ("MISO") has conditionally accepted a Generator Interconnection Agreement with Red Pine Wind Project, LLC. The Brooking County-Hampton transmission line is designated by the Mid-Continent Independent System Operator ("MISO") as a Multi Value Project ("MVP"). Red Pine is currently engaged in offtake discussions with multiple parties. Currently, Red Pine is considering starting construction in either 2017 or 2018 (commercial operation date of December 2017 or December 2018, respectively). The construction timeline will be determined upon finalizing offtake arrangements and as determined the necessary PTC qualification.

Figure 1: Project Vicinity Maps

Map Document: P:\0006243.00\GIS\Permit_Maps\RP_ProjectLocation_PermitMap1a_160706.mxd 7/13/2016 12:08:59 PM

Canby
Saint Leo
Porter
Taunton
Minneota
Hendricks
Ivanhoe
Arco
Ghent
Lynd
Russell
Tyler
Lake Benton
Florence
Balaton
Ruthton

Deuel County
Yellow Medicine County
Lincoln County
Lyon County
Brookings County
South Dakota
Minnesota
Pipestone County
Murray County

N
0 3 Miles

Data Source(s): Westwood (2016); ESRI WMS USA Topo & National Geographic Basemap Imagery (Accessed 2016); ESRI (2012); USGS NHD Dataset (2013).

Westwood
Toll Free (888) 937-5150 westwoodps.com
Westwood Professional Services, Inc.

Legend

- Current Project Boundary
- Highway
- Major Road
- NHD Flowline
- Municipal Boundary
- County Boundary
- State Boundary

Red Pine Wind Project

Lincoln County, Minnesota

Project Location

Map 1a

Map Document: P:\0006243.00\GIS\Permit_Maps\RP_ProjectLocation_PermitMap1b_160706.mxd 7/13/2016 12:09:01 PM

T113N R45W
T113N R44W
T113N R43W
LINCOLN CO
LYON CO
T112N R45W
T112N R44W
T112N R43W
T111N R45W
T111N R44W
T111N R43W
T110N R45W
T110N R44W
T110N R43W
Wilno
Ivanhoe
Arco
Lake Stay
Drietz Lake
Hawks Nest Lake
Yellow
South Branch Yellow Medicine River
Dead Coon Lake
Lincoln County
Lyon County
POPOSKI STATE WILDLIFE MANAGEMENT AREA
AIN-O-SLOUGHS STATE LDLIFE MANAGEMENT AREA
RAILROAD GRADE
LIMESTONE
LAKE STAY

N
0 1 Miles

Data Source(s): Westwood (2016); ESRI WMS USA Topo & National Geographic Basemap Imagery (Accessed 2016); ESRI (2012); USGS NHD Dataset (2013); MNDNR (2010).

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ND MN SD MI WI IA Project

Legend

- Current Project Boundary
- Highway
- Major Road
- NHD Flowline
- Municipal Boundary
- County Boundary
- PLS Township Boundary
- PLS Section Boundary

Red Pine Wind Project

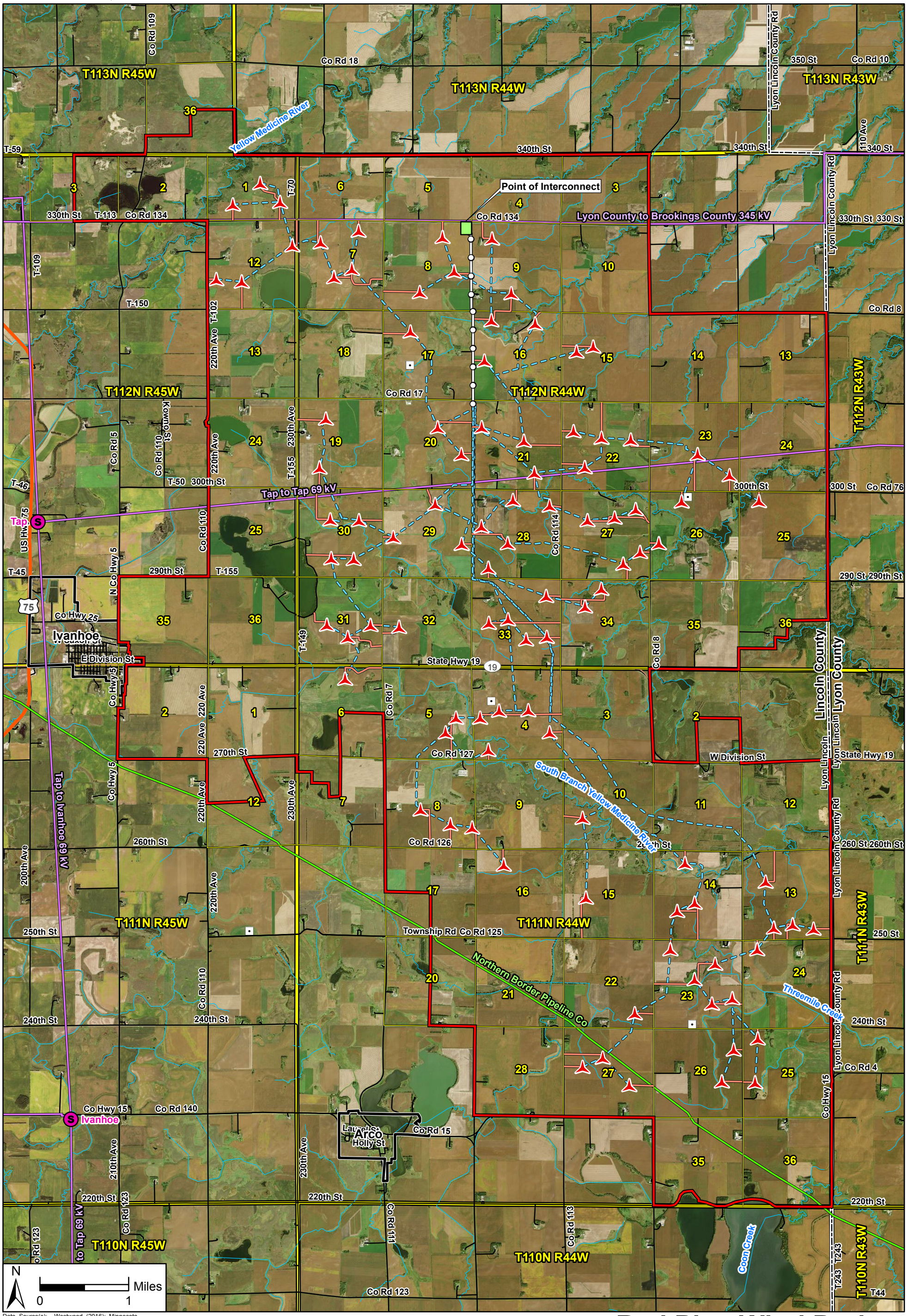
Lincoln County, Minnesota

Project Location

Map 1b

Figure 2: Project Area and Facilities Maps

Map Document: P:\0006243.00\GIS\Permit_Maps\RP_PrelimSiteLayout_PermitMap3a-1_160706.mxd 7/13/2016 12:11:37 PM



Data Source(s): Westwood (2016); Minnesota NAIP Imagery (Accessed 2016); ESRI (2012); USGS NHD Dataset (2013); MNDNR (2010); Ventyx Velocity Suite, Ventyx Energy LLC. (2015); Census Bureau (2015).

Legend

- Proposed Turbine
- Current Project Boundary
- Proposed Substation
- NHD Flowline
- Met Tower
- Proposed Access Road
- Proposed Collection Line
- Proposed Transmission Line
- Municipal Boundary
- County Boundary
- PLS Township Boundary
- PLS Section Boundary
- Highway
- Major Road
- Minor Road
- Railroad
- Existing Substation (Location Approximate)
- Existing Transmission Line (Location Approximate)
- Existing Natural Gas Pipeline (Location Approximate)

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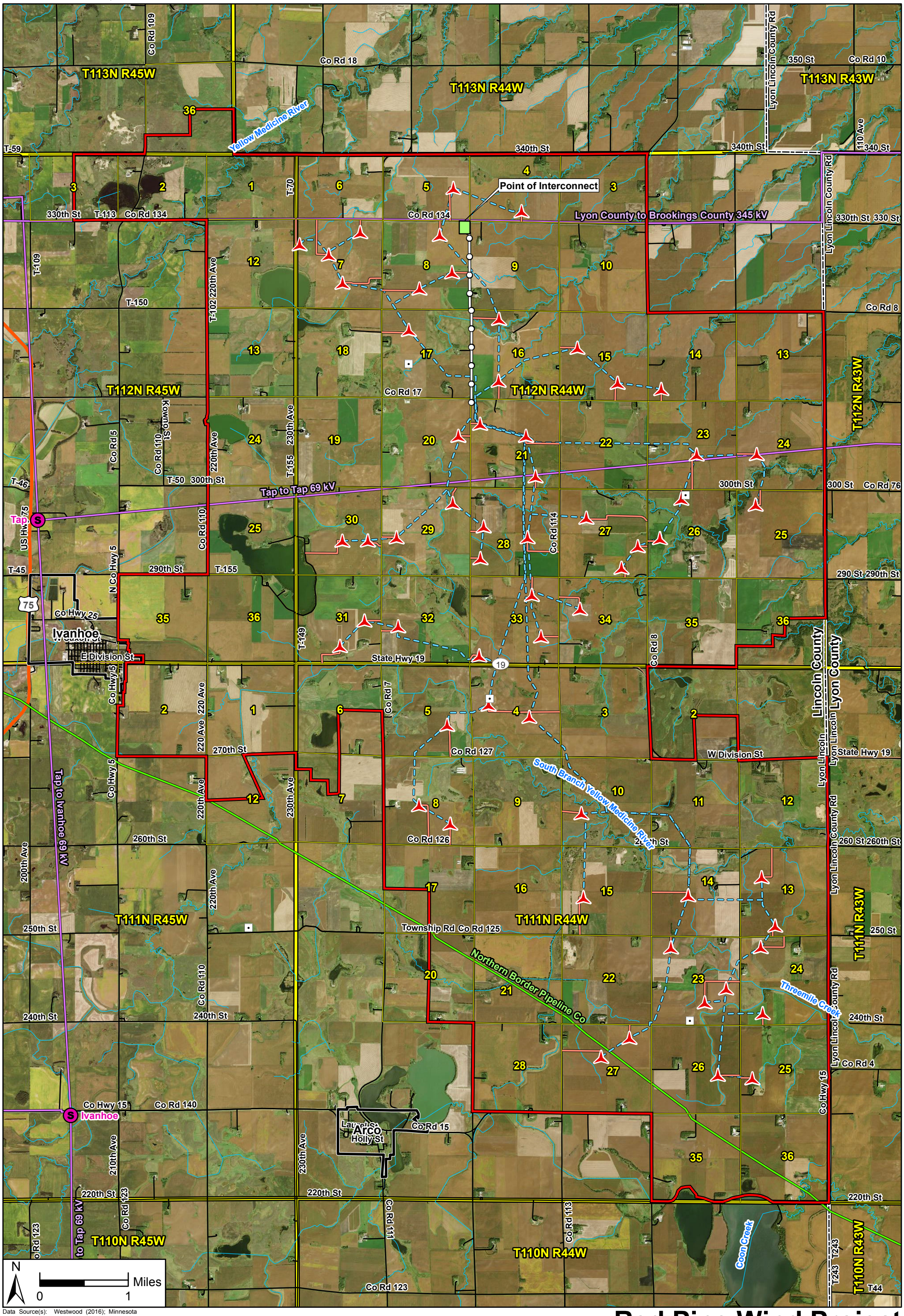
Red Pine Wind Project

Lincoln County, Minnesota

V100 Turbine Layout

Map 3a-1

Map Document: P:\0006243.00\GIS\Permit_Maps\RP_PrelimSiteLayout_PermitMap3a-2_160706.mxd 7/13/2016 12:10:48 PM



Data Source(s): Westwood (2016); Minnesota NAIP Imagery (Accessed 2016); ESRI (2012); USGS NHD Dataset (2013); MNDNR (2010); Ventyx Velocity Suite, Ventyx Energy LLC. (2015); Census Bureau (2015).

Legend

- Proposed Turbine
- Current Project Boundary
- Proposed Substation
- NHD Flowline
- Met Tower
- Proposed Access Road
- Proposed Collection Line
- Proposed Transmission Line
- Municipal Boundary
- County Boundary
- PLS Township Boundary
- PLS Section Boundary
- Highway
- Major Road
- Minor Road
- Railroad
- Existing Substation (Location Approximate)
- Existing Transmission Line (Location Approximate)
- Existing Natural Gas Pipeline (Location Approximate)

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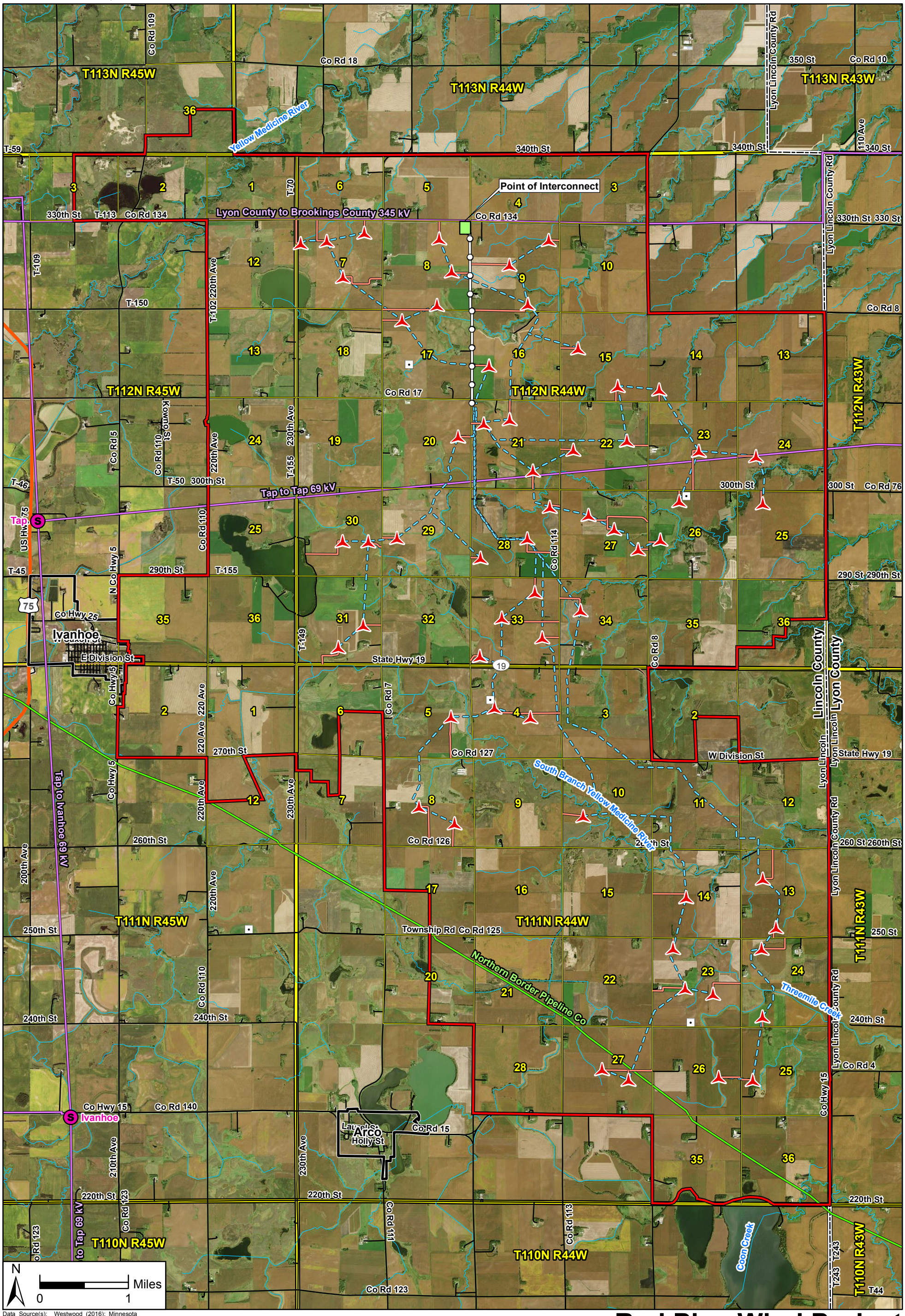
Red Pine Wind Project

Lincoln County, Minnesota

V117 Turbine Layout

Map 3a-2

Map Document: P:\0006243.00\GIS\Permit_Maps\RP_PrelimSiteLayout_PermitMap3a-3_160706.mxd 7/13/2016 12:11:45 PM



Data Source(s): Westwood (2016); Minnesota NAIP Imagery (Accessed 2016); ESRI (2012); USGS NHD Dataset (2013); MNDNR (2010); Ventyx Velocity Suite, Ventyx Energy LLC. (2015); Census Bureau (2015).

Legend

- Proposed Turbine
- Current Project Boundary
- Proposed Substation
- NHD Flowline
- Met Tower
- Proposed Access Road
- Proposed Collection Line
- Proposed Transmission Line
- Municipal Boundary
- County Boundary
- PLS Township Boundary
- PLS Section Boundary
- Highway
- Major Road
- Minor Road
- Railroad
- Existing Substation (Location Approximate)
- Existing Transmission Line (Location Approximate)
- Existing Natural Gas Pipeline (Location Approximate)

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Red Pine Wind Project

Lincoln County, Minnesota

V126 Turbine Layout

Map 3a-3

1.1.1 Project Contacts

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1.1.2 Filing Fees and Payment Schedule (Minn. R. 7849.0210)

The total fee for the CON application is $20,005.00 and will be paid according to the schedule provided in Minn. R. 7849.0210, subp. 2 and shown in Table 2. The total amount is calculated based on a Project capacity of 200.1 MW and the formula provided in Minn. R. 7849.0210, subp. 1. A check in the amount of $5,005.00 is being delivered separately via courier.

Table 2: Fee Calculation

Fee Calculation	Amount
Fee calculation equation	$10,000 + $50/MW
Due with CON Application	$ 5,005.00
Due 45 days after Application submittal date	$ 5,000.00
Due 90 days after Application submittal date	$ 5,000.00
Due 135 days after Application submittal date	$ 5,000.00
Total calculated fees	$ 20,005.00

1.1.3 Exemption and Variance Requests

CON applications must include information as described in Minnesota Rules Chapter 7849. An applicant may request to be exempted from providing certain data by making the exemption request in writing showing that the requirement is either unnecessary to determine the need for the proposed facility or may be satisfied by submitting another document. Minn. R. 7849.0200, subp. 6. On February 12, 2016, Red Pine submitted a request for exemptions from certain requirements for data specific to the operation and regulation of utilities that are not applicable to an independent power producer. Many of these data requirements relate to a utility's "system," which is defined as the "service area where the utility's ultimate consumers are located and that combination of generating, transmission, and distribution facilities that makes up the operating physical plant of the utility, whether owned or non-owned, for the delivery of electrical energy to ultimate consumers." Minn. R. 7849.0010, subp. 29. An independent power producer like Red Pine does not have a service area or a "system," which makes information requests about Red Pine's system inapplicable.

The Project will provide renewable energy intended to be purchased by electric utilities or other businesses to satisfy renewable energy goals (e.g. Minnesota's RES under Minn. Stat. § 216B.1691 and similar policies in other states), assist with Clean Power Plan compliance, achieve utility resource plan renewable targets, or private business renewable energy or sustainability targets. Because the Project is intended to help satisfy renewable requirements or commitments in Minnesota or nearby states created by state statutes, utility resource plans or state implementation of federal rules aimed at carbon reduction, Red Pine requested exemptions from information requirements related to alternatives that would not satisfy such requirements or goals. Information requirements for which exemptions have been granted are not included in this application.

1.2 Wind Power Development in Minnesota and Surrounding Region

As an independent power producer, Red Pine will offer power for sale to wholesale customers (such as investor-owned utilities and electric cooperatives) that have a need for renewable energy.

Minnesota is home to strong wind energy resources and strong policies in support of renewable energy. Of the windy land areas[2] that are potentially available for development, the National Renewable Energy Laboratory estimates that Minnesota has a total wind energy potential of 489,271 MW.[3] As of the fourth quarter 2015, Minnesota had a total of 3,235 MW of installed wind energy capacity.[4] Minnesota has tapped into only a small fraction of its own capacity and remains at seventh place among states in total installed capacity.[5]

The Minnesota Legislature began encouraging renewable energy development in the early 1990s when it directed Xcel Energy (then Northern States Power) to acquire 425 MW[6] of wind power and to put roughly $8.5 million (now closer to $20 million) per year toward renewable energy development.[7] The Minnesota Legislature first adopted a Renewable Energy Objective in 2001, directing electric utilities to

[2] Defined as those with a gross capacity factor (without losses) of 30% or greater at 80 meter hub height.

[3] Wind Powering America, 80-Meter Wind Maps and Wind Resource Potential, *available at* http://www.windpoweringamerica.gov/wind_maps.asp#us (last visited Apr. 25, 2013).

[4] American Wind Energy Association, "U.S. Wind Industry Fourth Quarter 2015 Market Report," *available at* http://awea.files.cms-plus.com/FileDownloads/pdfs/4Q2015%20AWEA%20Market%20Report%20Public%20Version.pdf (last visited Feb. 18, 2016).

[5] *Id.*

[6] Minn. Stat. § 216B.2423. In 1999 another 400 MW was added to the Xcel requirement, creating a total of 825 MW of required wind capacity.

[7] Minn. Stat. § 116C.779.

make a good-faith effort to have 10% of retail electric sales come from renewable resources by 2015.[8] In 2007, the Legislature enacted the current standard, which sets a 25% by 2025 requirement for most Minnesota utilities and a 30% by 2020 requirement for Xcel Energy.[9]

Several other Midwestern states also established renewable electricity targets, including Illinois, Iowa, Michigan, North Dakota, South Dakota, and Wisconsin. In order to facilitate compliance with state renewable standards, the Minnesota Legislature and surrounding states authorized the use of tradable renewable energy certificates ("RECs"),[10] or more specifically the retirement of RECs, to demonstrate annual compliance with state policies.[11] The Midwest Renewable Energy Tracking System tracks REC generation and retirement for compliance purposes for participating states in the region, which include all of the above-mentioned states except Michigan, which has created its own system. The flexibility provided by RECs to utilities for meeting the various standards contributes to creating a robust market for independent wind energy generation and the associated RECs into the foreseeable future.

More recently, the Legislature required a Renewable Energy Integration and Transmission Study[12] be done that would analyze the feasibility of increasing the Renewable Energy Standard to 40% by 2030 and to higher proportions thereafter while maintaining system reliability. That study showed that the addition of wind and solar generation to supply 40% of Minnesota's annual electric retail sales could be reliably accommodated by the electric power system.[13] Bills to increase Minnesota's RES to 40% by 2030 were subsequently introduced in the 2015 legislature but ultimately were not passed. However, there is an emerging trend in other leading renewable energy states to increase renewable energy targets. For example, both California[14] and Oregon[15] recently adopted far more aggressive 50% targets. Red Pine believes that other states may follow these examples.

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[8] Minnesota Department of Commerce, "The Next Generation: Renewable Energy Objective," *available at* https://www.leg.state.mn.us/docs/2008/other/080405.pdf (last visited Aug. 9, 2016).

[9] Minn. Stat. § 216B.1691.

[10] Wisconsin refers to them as Renewable Resource Credits or RRCs.

[11] Minn. Stat. § 216B.1691, subd. 4(b).

[12] MN Laws 2013, Chapter 85 HF 729, Article 12, Section 4

[13] Minnesota Renewable Energy Integration and Transmission Study - Final report, at p.1-6 (October 31, 2014) *available at* http://www.minnelectrans.com/documents/MRITS-report.pdf.

[14] Senate Bill 350 (2015), *available at* https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350

[15] Senate Bill 1547 (2016) *available at* https://olis.leg.state.or.us/liz/2016R1/Downloads/MeasureDocument/SB1547

(continued . . .)

2. NEED SUMMARY (MINN. R. 7849.0120 AND MINN. R. 7849.0240)

2.1 Certificate of Need Criteria (Minn. R. 7849.0120)

The Commission established the criteria used to assess the need for large electric generating facilities in Minnesota Rules 7849.0120. The Commission must grant a certificate of need to an applicant upon determining that:

> A. the probable result of denial would be an adverse effect upon the future adequacy, reliability, or efficiency of energy supply to the applicant, to the applicant's customers, or to the people of Minnesota and neighboring states . . . [;]
>
> . . . .
>
> B. a more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence in the record . . . [;]
>
> . . . .
>
> C. by a preponderance of the evidence on the record, the proposed facility, or a suitable modification of the facility, will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health . . . [; and]
>
> . . . .
>
> D. the record does not demonstrate that the design, construction, or operation of the proposed facility, or a suitable modification of the facility, will fail to comply with relevant policies, rules, and regulations of other state and federal agencies and local governments.[16]

2.2 The Project Satisfies the Four-Part Need Test (Minn. R. 7849.0120)

The Project satisfies all four of the Commission's criteria for granting certification to the Project for the reasons described in this Section 2.2.

(. . . continued)

[16] Minn. R. 7849.0120.

2.2.1 The Probable Result of Denial of Red Pine's Application Would Be an Adverse Effect on the Adequacy, Reliability, and Efficiency of the Regional Energy Supply

The Project will provide up to 200 MW of nameplate capacity of wind-generated electricity to meet the renewable and low-carbon electricity needs of Minnesota and the surrounding region. The Project's output will be available for purchase on the wholesale market by utilities or other private businesses. Denying this application would result in the loss of a significant amount of low-cost renewable electricity needed to satisfy state and regional demand for electricity, as well as to satisfy state requirements and goals for renewable and low-carbon energy now and in the future. Further, it would forego an opportunity to add a zero-carbon generation technology to Minnesota's energy mix in keeping with the state's long-term plans to reduce greenhouse gas emissions[17] as well as federal plans to reduce the same under the Clean Power Plan.[18] If the Commission grants a CON to the Project, Red Pine will be in the wholesale energy market for contracts, providing an incentive to keep the Project's costs low and select the appropriate size, type, and timing for the Project.

(a) Increasing Demand for Electricity.

Although electricity demand has fluctuated in recent years, state and federal agencies continue to predict growth in demand for electricity over the long-term. At the national level, the Energy Information Administration's ("EIA") Annual Energy Outlook 2015 ("AEO 2015") predicts steady but slower growth in electricity demand at an average annual rate of 0.7% for its reference case scenario.[19] The AEO 2015 also notes that the average annual growth in electricity use in the country has slowed from nearly 10% in the 1950s to 0.5% per year over the past decade.[20] The North American Electric Reliability Corporation recently forecasted a 10-year compounded annual growth rate of peak summer and winter electricity demand of just below 1% in each case.[21]

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[17] *See* Minn. Stat. § 216H.02.

[18] Carbon Pollution Emissions Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,662, 64,665 (October 23, 2015) (to be codified at 40 C.F.R. pt. 60).

[19] U.S. Energy Information Administration, Annual Energy Outlook 2015 with projections to 2040, at 8 (April 2015), *available at* http://www.eia.gov/forecasts/aeo/pdf/0383(2015).pdf.

[20] *Id.*

[21] North American Electric Reliability Corporation, 2015 Long-Term Reliability Assessment, at 5 (Dec. 2015), *available at* http://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/2015LTRA%20-%20Final%20Report.pdf (last visited Feb. 18, 2016).

At the state level the most recent Quadrennial Report projected that Minnesota's electric consumption would increase at an average rate of 1.1% per year based on the combined projections of all utilities serving Minnesota customers.[22] Notably the report continued to conclude that even in light of the state's Energy Conservation Policy Goal, demand for electricity in Minnesota will outstrip the contribution of conservation toward balancing supply and demand in the state in a cost-effective manner.[23]

Utilities recent resource plans also anticipate the need for new generation. Although demand projections continue to slow year over year, Xcel Energy has proposed a Resource Plan that would reduce carbon emissions by 60% by 2030.[24] As part of that plan, Xcel Energy anticipates acquiring 800 MW of additional wind power before 2020 and 1,800 MW of additional wind power before 2030.[25] Furthermore, the Commission recently ordered Minnesota Power to initiate a competitive bidding process for 100-300 MW of installed wind capacity by the end of 2017 as part of Minnesota Power's Integrated Resource Plan.[26] In response to that Order, Minnesota Power issued a Request for Proposals for up to 300 MW of wind generation in July of 2016.[27] And Otter Tail Power's 2017-2031 Integrated Resource Plan proposes to procure 200 MW of wind generation by 2020 with additional authority for up to 100 MW more if it is cost-effective and consistent with reliability.[28]

(b) Demand for Renewable Electricity in Minnesota.

In 2007, the Minnesota Legislature established a particular need for additional renewable energy resources when it enacted the renewable energy standard for Xcel Energy and another 15[29] of the state's

[22] Minnesota Department of Commerce - Division of Energy Resources, Energy Policy and Conservation Quadrennial Report 2012, at 7 (2012) ("2012 Quad Report"), *available at* http://archive.leg.state.mn.us/docs/2015/mandated/150086.pdf (last visited Aug. 9, 2016).

[23] *Id*.

[24] *In the Matter of Xcel Energy's 2016-2030 Integrated Resource Plan*, Docket No. E002-RP-15-21, SUPPLEMENT – CURRENT PREFERRED PLAN, at 4 (January 29, 2016).

[25] *Id*. at 2.

[26] *In the Matter of Minnesota Power's 2016-2030 Integrated Resource Plan*, Docket No. E-05/RP-15-690, ORDER APPROVING RESOURCE PLAN WITH MODIFICATIONS, at 15 (July 18, 2016).

[27] Press Release, Minnesota Power, Minnesota Power Seeks Proposals for Large-Scale Wind, Solar Energy, and Customer-Driven Resources (July 26, 2016), *available at* http://www.mnpower.com/Content/Documents/Company/PressReleases/2016/20160727_NewsRelease.pdf.

[28] *In the Matter of Otter Tail Power's 2017-2031 Integrated Resource Plan*, Docket No. E017/RP-16-386, APPLICATION FOR RESOURCE PLAN APPROVAL, at 2-3 (June 1, 2016).

largest electric utilities.[30] The standard amended Minnesota's earlier renewable energy objective and established a new requirement that Xcel Energy generate or procure the equivalent of 30% of its total electric retail sales from renewable energy by 2020[31] and that the other subject utilities reach 25% by 2025.[32] The Legislature also set interim milestones for both as detailed in Table 3. In 2013, the Legislature acted once again to create an additive Solar Energy Standard of 1.5% for IOUs by 2020 and a goal of achieving 10% of retail sales from solar by 2030.[33] That same year, the Legislature also adopted a requirement for a Renewable Energy Integration and Transmission Study[34] that analyzed increasing the Renewable Energy Standard to 40% by 2030 and to higher proportions thereafter while maintaining system reliability. The engineering study showed that the addition of wind and solar (variable renewable) generation to supply 40% of Minnesota's annual electric retail sales can be reliably accommodated by the electric power system.[35]

Table 3: Minnesota Renewable Energy Standard Milestone Schedule

Year	Xcel Energy	Other Utilities
2010	15%	7% (goal)
2012	18%	12%
2016	25%	17%
2020	30% (at least 24% wind)	20%
2025	30% (at least 24% wind)	25%

In its January 15, 2015 report to the Minnesota Legislature on RES compliance, the Division of Energy Resources ("DER") reported that utilities complied with their 2013 obligations and appeared able

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[29] Basin Electric Power Cooperative, Central Minnesota Municipal Power Agency, Dairyland Power Cooperative, East River Electric Cooperative, Great River Energy, Heartland Consumer Power District, Interstate Power and Light, L&O Power Cooperative, Minnkota Power Cooperative, Minnesota Municipal Power Agency, Minnesota Power, Missouri River Energy Services, Northwestern Wisconsin Electric Company, Ottertail Power Company, and Southern Minnesota Municipal Power Agency.

[30] Minn. Stat. § 216B.1691, subd. 2a.

[31] Minn. Stat. § 216B.1691, subd. 2a(b).

[32] Minn. Stat. § 216B.1691, subd. 2a(a).

[33] Minn. Stat. § 216B.1691, subd. 2f.

[34] MN Laws 2013, Chapter 85 HF 729, Article 12, Section 4

[35] Minnesota Renewable Energy Integration and Transmission Study - Final report, at p.1-6 (October 31, 2014) *available at* http://www.minnelectrans.com/documents/MRITS-report.pdf.

to comply into the future.[36] The 2015 Biennial Transmission Projects Report further concluded that Minnesota utilities have sufficient capacity acquired to meet Minnesota's renewable energy needs through 2025 as well as those requirements imposed on Minnesota utilities by surrounding states.[37]

Currently, the Minnesota renewable standards and those in surrounding states are not likely to demand significant new capacity additions on their own. That said, this picture could quickly change if Minnesota legislators or legislators in nearby states elect to increase the state standard as was recently done in California[38] and Oregon[39]. In the case of Minnesota and as mentioned above, analytical studies requested by the legislature have already shown that a significant increase is possible in Minnesota and legislators have already been contemplating an increase.

Perhaps more importantly, and independent of the legislative process, utilities are committing to renewable energy additions as part of their integrated resource planning process above and beyond what is required by the RES. As mentioned earlier, Xcel Energy anticipates acquiring 800 MW of additional wind power before 2020 and 1,800 MW of additional wind power before 2030.[40] Likewise, the Commission recently ordered Minnesota Power to seek 100-300 MW of installed wind capacity by the end of 2017 as part of its Integrated Resource Plan.[41] As these utilities are starting to demonstrate, the RES provides a minimum level of demand for renewable energy—the actual demand may be much higher.

(c) C&I Procurement

Support for renewable energy has risen in recent years in the commercial and industrial ("C&I") sectors. The American Wind Energy Association reports that commercial and industrial buyers invested

[36] Minnesota Department of Commerce, Division of Energy Resources, Minnesota Renewable Energy Standard Utility Compliance, at 9-10 (Jan. 15, 2015) ("RES Compliance Report"), *available at* *http://archive.leg.state.mn.us/docs/2015/mandated/150096.pdf*.

[37] 2015 Minnesota Biennial Transmission Projects Report, at 142 (Oct. 30, 2015), *available at* http://www.minnelectrans.com/documents/2015_Biennial_Report/Biennial-Transmission-Projects-Report-2015.pdf.

[38] See Senate Bill 350, also referred to as the Clean Energy and Pollution Reduction Act of 2015, *available at* https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350.

[39] Senate Bill 1547 (2016) *available at* https://olis.leg.state.or.us/liz/2016R1/Downloads/MeasureDocument/SB1547

[40] *Id.*

[41] *In the Matter of Minnesota Power's 2016-2030 Integrated Resource Plan*, Docket No. E-05/RP-15-690, ORDER APPROVING RESOURCE PLAN WITH MODIFICATIONS, at 15 (July 18, 2016).

in more than 3 gigawatts of new renewable capacity in 2015 alone.[42] C&I offtake arrangements are growing in the Midwest, including several examples involving Iowa wind projects. These opportunities can take various forms to suit the particular parties involved and meet applicable state regulatory requirements. Examples include hedge contracts, virtual or synthetic power purchase agreements, and REC transactions. In addition, some utilities in the Midwest have been developing new green tariff type procurement opportunities for large customers as another option for C&I customer procurement of renewable energy.

(d) Clean Power Plan

In 2015, The United States Environmental Protection Agency ("EPA") released the Clean Power Plan under Section 111(d) of the Clean Air Act, which aims to reduce carbon dioxide emissions from power plants by 32% below 2005 levels over the next 25 years.[43] Although the United States Supreme Court has stayed the rule pending resolution of legal challenges to the rule, the Minnesota state agencies are continuing to develop a State Implementation Plan for Minnesota.[44] While, Minnesota's current investments and commitments to renewable energy put it close to being on track to meet Clean Power Plan emissions reductions targets, the Clean Power Plan would provide another layer of certainty for the long-term need for renewable energy in the state. Further, Clean Power Plan compliance requirements would spur a greater regional demand for renewable energy and could further increase the competitive price advantage of wind energy.

(e) Baseload Plant Retirements

Planned baseload retirements have been increasing substantially in recent years and will further drive the addition of new capacity even in years of low growth in demand for electricity. Xcel Energy, for example, recently proposed to cease coal generation at Sherco Unit 2 in 2023 and Sherco Unit 1 in 2026, amounting to 1,500 MW.[45] Minnesota Power has also been pursuing a plan called Energy Forward that it

[42] The Rise of the Non-Traditional Energy Buyer, John Powers, *available at* http://www.aweablog.org/the-rise-of-the-non-traditional-energy-buyer/ (Jan. 7, 2016).

[43] Carbon Pollution Emissions Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,662, 64,665 (October 23, 2015) (to be codified at 40 C.F.R. pt. 60).

[44] Statement from Governor Dayton on Clean Power Plan (February 10, 2016), *available at* http://mn.gov/governor/newsroom/index.jsp?id=1055-154794.

[45] *In the Matter of Xcel Energy's 2016-2030 Integrated Resource Plan*, Docket No. E002/RP-15-21, SUPPLEMENT – CURRENT PREFERRED PLAN, at 8 (January 29, 2016)..

announced in 2013 and includes a shift from a heavily coal-based portfolio to a more balanced mix of coal, natural gas and renewables. So far this includes the refueling of the Laskin Energy Center to a natural gas peaking facility and retirement of Taconite Harbor 3.[46]And the Commission recently ordered Minnesota Power to idle Taconite Harbor 1&2 in 2016 and cease coal operations in 2020.[47]

In the past three years, MISO received 51 requests for unit suspensions or retirements amounting to a total of 9,272 MW. Of those, 31 of the requests were for unit retirements amount to nearly 4,500 MW.[48] In its regional transmission planning process, MISO most recently included five future scenarios with all assuming over 12,000 MW of capacity retiring before 2028 and with one of the five assuming just under 20,000 MW of capacity and another one assuming over 22,000 MW of capacity retiring by 2028.[49] On the generation side, four of the five scenarios show a need for 20,000 MW or more of additional nameplate capacity to be needed between 2013 and 2028, whereas the "limited growth" scenario showed a much smaller 13,000 MW of capacity needed over the same time period.[50]

2.2.2 Granting a CON for Red Pine Will Have a Beneficial Impact on the Future Adequacy, Reliability and Efficiency of the Energy Supply to the People of Minnesota and Neighboring States.

Red Pine understands that there are other wind projects proposed in the region, as demonstrated by other CON applications for wind projects in Minnesota, planned smaller projects that do not require a CON, and other wind projects in the MISO interconnection queue.

(a) No More Reasonable and Prudent Alternative to the Red Pine Wind Project Has Been Demonstrated

The Project is the best alternative for meeting renewable energy targets and market demand. Minn. R. 7849.0120(B) directs applicants for CONs to assess project alternatives so that the Commission may determine whether a more reasonable and prudent alternative exists. Because the Project is intended

[46] *In the Matter of Minnesota Power's 2016-2030 Integrated Resource Plan*, Docket No. E015/RP-15-690, 2015 INTEGRATED RESOURCE PLAN, at 12 (September 1, 2015).

[47] *In the Matter of Minnesota Power's 2016-2030 Integrated Resource Plan*, Docket No. E015/RP-15-690, ORDER APPROVING RESOURCE PLAN WITH MODIFICATIONS, at 14 (July 18, 2016).

[48] Midcontinent ISO, MISO Transmission Expansion Plan, (2014) ("MTEP 14") at p.77, *available at* https://www.misoenergy.org/Library/Repository/Study/MTEP/MTEP14/MTEP14%20Full%20Report.pdf

[49] *Id.* at 103.

[50] *Id.* (MISO also notes that these scenarios were developed before the final Clean Air Act 111d) rule came out and do not look specifically at the rule.

to help satisfy state and regional renewable energy needs and/or carbon reduction goals and the Commission cannot issue a certificate for new nuclear power under state law,[51] non-renewable generation sources are not reasonable alternatives to the Project and are not examined here. Further state law precludes the issuance of a Certificate of Need for a facility using non-renewable power unless it is demonstrably less expensive inclusive of environmental costs.[52]

(b) Timing. As described in Section 2.2.1, the demand for electricity is projected to continue growing at a steady rate, and utilities in the state and region are actively issuing solicitations for low-cost renewable energy projects in the near term to satisfy longer-term state or federal requirements. Red Pine is currently in offtake conversations with multiple parties. Additionally, in May 2016 the Internal Revenue Service released updated guidance on the Production Tax Credit (PTC), extending the safe harbor period for up to four years. To date, Red Pine is currently considering both a 2017 and 2018 construction scenario (commercial operation date of December 2017 or December 2018, respectively). Both the offtake discussions as well as the safe harbor announcement will determine and influence when construction begins for the Project and the Project completion date.

(c) Size. Composed of up to 100 wind turbines, the Project will have a nameplate capacity of up to 200.1 MW. As an LWECS, the Project is sized to take advantage of economies of scale.

(d) Technology and Location. The Project's location is well situated for a wind project of this size. First, the Project is located in the southwestern corner of the state where there is excellent wind resource. Second, the Project will benefit from the completion of the Brookings-Hampton 345 kV Multi-Value Project transmission line, which has been identified as serving multiple economic, reliability, and policy purposes for the MISO region. Third, any other renewable energy generation option would be less appropriate because it would be more costly and less suited to the resources available in southwestern Minnesota. Wind energy is the lowest-cost new renewable energy resource generally and is particularly so in places like Lincoln County, where the wind resources are excellent.

(e) Reliability. Wind energy is sometimes criticized for being intermittent, which may be confused with reliability. While the wind resource itself may be intermittent or variable, wind turbine technology has become quite advanced and very reliable. The Project will be available to generate electricity approximately 97% of the time, consistent with other utility-scale wind projects. Furthermore,

[51] Minn. Stat. §216B.243, subd. 3b.

[52] Minn. Stat. §216B.243, subd. 3a.

the Project will be designed such that each wind turbine can run independently, meaning that if one turbine encounters a problem the other turbines will still be operational. This is in contrast to other forms of generation where a problem with one unit could significantly impact the facility's entire production.

(f) Cost. The Project is the best renewable energy alternative in terms of price for three primary reasons. First, wind energy is generally the most affordable source of new renewable electricity. Second, the Project is carefully sited to take advantage of an excellent wind resource, making it even more efficient. Third, the Project timing takes advantage of federal incentives and low prices in the power purchase agreement market, together reducing the ultimate cost to the utility and its customers.

(g) Effects on the Natural and Socioeconomic Environment. Although there is no environmentally perfect means to produce and consume electricity, wind-generated electricity avoids many of the environmental problems associated with other forms of generation. The Project will not release any air pollutants that can affect the local (*e.g.,* particulate matter), regional (*e.g.,* mercury), or global (*e.g.,* carbon dioxide) environment. It will not require the use of valuable water resources, nor will it discharge into any water body. Although many acres of land are leased for a project of this size, less than 1% will actually be occupied by turbines or related facilities. Most current uses for the land will be able to continue. Because of its renewable nature, there is no extraction, processing, or combustion of fossil fuels. Red Pine also is working with environmental consultants to design the turbine layout, access roads, substation, interconnection facilities, and laydown areas to minimize the impact on birds, bats, and wildlife habitat.

The Project already includes approximately 30,597 acres of land under contract. Red Pine has executed landowner agreements for wind rights and property easements necessary to support the Project. Landowners in the Project area will receive payments in exchange for leasing their land for the Project. As such, landowners in the area will acquire a valuable new revenue stream without having to take much acreage out of production. More details on the economic and tax benefits to the surrounding community are described in Section 2.2.3.

2.2.3 The Project Will Benefit Society in a Manner Compatible with the Natural and Socioeconomic Environments (Minn. R. 7849.0120(C))

Minn. R. 7849.0120(C) requires CON applicants to address whether a project will benefit society in a manner compatible with the natural and socioeconomic environments, including human health. The electricity produced by the Project will have significant, numerous, and varied societal benefits.

(a) Overall State Energy Needs. As discussed in Section 2.2.1, the Project will provide electricity both to meet general future energy needs in Minnesota.

(b) Impact on Natural and Socioeconomic Environments Compared to No-Build Alternative. As described in Section 2.2.2(g), wind energy has limited impact on the natural environment. The Project will produce little or no emission of greenhouse gases (*e.g.,* carbon dioxide), criteria pollutants (sulfur dioxide, nitrogen oxides, carbon monoxide, mercury, lead, ozone, or particulate matter), hazardous air pollutants, or volatile organic compounds. No water is required in the power generation process, nor will there be any discharge of wastewater containing heat or chemicals. Since the fuel is wind, no extraction, processing, transportation, or combustion of fossil fuels will be required for power generation. Under 300 acres in the Project footprint will be permanently taken out of agricultural production. Both the Project and the individual turbines are being sited so as to minimize impact on local and migratory wildlife and wildlife habitat.

Red Pine anticipates only minor negative impacts and significant positive impacts on the socioeconomic environment of Lincoln County from the Project. As discussed above, less than 300 acres will be taken out of agricultural production. Other land in the Project footprint will remain available for farming or other uses. Project construction will not negatively impact leading industries within the Project area.

The Project will benefit the local economy in southwestern Minnesota by creating between 300 to 400 temporary construction jobs, some of which will be filled by local contractors using locally sourced materials and services whenever possible and economical. Wages and fees paid to local workers, contractors, and service providers will boost local income that will circulate in the local economy. The 10 permanent jobs anticipated to be created for long-term operations and maintenance of the Project will continue these benefits over the life of the Project. Local landowners whose land is utilized for construction or placement of the facility will be compensated with lease payments. The lease payments are long-term commitments to participating landowners. The Project also will expand the local tax base through payments of wind energy production taxes. At a rate of $0.0012 per kilowatt-hour of wind-generated electricity produced,[53] Red Pine will pay approximately **[TRADE SECRET BEGINS - [redacted] - TRADE SECRET ENDS]** per year in production taxes that the state will redistribute local units of government.

[53] Minn. Stat. § 272.029.

Not building the Project would result in no physical impact on local environment in Lincoln County. However, the no-build alternative also would result in Lincoln County forgoing significant economic benefits in the form of new jobs, new income streams for landowners, and production tax payments. Not building the Project also would forgo a source of clean, renewable electricity that would have minimal environmental impacts and contribute to Minnesota's renewable development goals.

(c) Effects of the Proposed Facility on Inducing Future Development. The Project is not expected to directly affect development in Lincoln County, but it will provide significant benefits to participating landowners, the local economy, and the local tax base.

(d) Socially Beneficial Uses of the Output. The Project will efficiently provide renewable energy that will help meet the Minnesota renewable requirements and objectives and general energy demand. The Project's 200 MW capacity is sufficient to serve the energy needs of up to 80,000 average American households.

2.2.4 The Red Pine Project Is Consistent with Federal, State, and Local Rules and Policies

(a) The Project Is Consistent with Minnesota Energy Policy.

The Project will produce a significant amount of renewable energy, which is consistent with Minnesota policy and surrounding state policies to promote increased renewable energy. Minnesota favors renewable energy in a variety of ways, including through the RES discussed above and through the CON statute itself. The Commission may not issue CONs to applicants for nonrenewable energy projection without demonstrating that it is less expensive (including environmental costs) than a renewable energy alternative.[54] In addition, Minnesota law prohibits the Commission from approving nonrenewable energy facilities in utility integrated resources plans or for rate recovery unless a utility demonstrates that a renewable energy facility is not in the public interest.[55] Minnesota also supports wind energy with a variety of incentives, including, for example, exemption from sales tax for materials used to manufacture, construct, install, and maintain wind projects.[56] The Project is consistent with Minnesota's policy preferences and support for renewable energy.

[54] *See* Minn. Stat. § 216B.243, subd. 3a.

[55] *See* Minn. Stat. § 216B.2422, subd. 4.

[56] *See* Minn. Stat. § 272.02, subd. 22.

(b) The Project Is Consistent with Federal Energy Policy.

The Project also is consistent with federal energy policy, which provides significant support for wind energy development. For example, the federal government has supported wind energy for nearly 20 years with the PTC, which is available during the first 10 years of a wind project's operations. Most recently the PTC was extended as part of the Consolidated Appropriations Act, 2016. In addition, the Modified Accelerated Cost Recovery System allows wind energy investments to be recovered through depreciation.

(c) The Project Complies with Federal, State, and Local Environmental Regulations.

The Project will meet or exceed the requirements of all federal, state, and local environmental laws and regulations, including the governmental approvals listed on Table 6.

2.3 Project Relationship to Socioeconomic Considerations (Minn. R. 7849.0240)

2.3.1 Socially Beneficial Uses of Energy Output (Minn. R. 7849.0240, subp. 2(A))

The energy produced by the Project will provide numerous social benefits. The Project will provide a large amount of renewable energy with minimal environmental impact and serve to diversify the region's energy resources. Farmers and rural landowners leasing land to Red Pine for the Project will have a new source of income that will provide a boost to the local economy in southwestern Minnesota. And since only a small portion of the total acres leased for the Project will be used for turbines, roads, and other associated facilities, most of the Project footprint will remain available for farming or other local land uses.

2.3.2 Promotional Activities Giving Rise to Demand (Minn. R. 7849.0240, subp. 2(B))

Red Pine requested an exemption from this data requirement. Red Pine has not engaged in promotional activities that could have given rise to the need for the electricity to be generated by the Project.

2.3.3 Effects of Facility in Inducing Future Development

Red Pine does not anticipate a large direct impact on future development in Lincoln County. The main direct impact of the Project will be in creating approximately 300 to 400 temporary construction jobs and at least 10 full-time operations and maintenance jobs. Indirect impacts on future development include wind energy production taxes that will be paid to local governments and landowner rent

payments. Red Pine intends to use local contractors and materials whenever it is possible and economical to do so.

3. DESCRIPTION OF PROJECT AND ALTERNATIVES (MINN. R. 7849.0250)

3.1 Proposed Project (Minn. R. 7849.0250(A)

The Project will be located in Lincoln County in southwest Minnesota near the communities of Ivanhoe and Arco, Minnesota. The Project footprint encompasses approximately 42,000 acres and is located within Ash Lake, Lake Stay, Limestone, Marble, and Royal Townships. Red Pine intends to site wind turbines and related facilities on agricultural land within the Project's boundaries.

Approximately 30,597 acres of land are currently under agreement, which is sufficient to support the proposed Project. The resigning of leases which will be reaching their expiration date in 2017 is continuing along with the possible addition of land particularly in the western area of the boundary. Additionally, the Project is currently offering Wind Rights Easements to small tract landowners (~5 acres or less) in the Project area. The Wind Rights Easements to small tract landowners are commonly referred to as a "Good Neighbor" lease. Project vicinity maps are included as Figure 1, and maps showing preliminary locations for turbines and Project facilities are included as Figure 2. Red Pine anticipates constructing up to 100 wind turbines (depending on final turbine model selection) with a total nameplate capacity of up to 200.1 MW. Final turbine selection will be made based on optimization of wind resources, availability, and cost efficiency.

The wind turbines will be interconnected by communication and electric power collection cables within the Project footprint. Electrical collector lines, junction boxes, and feeder lines will be required to deliver electricity to the interconnection point. The intended point of interconnection is the Brookings-Hampton 345 kV MVP Line. The Project will require construction of up to approximately 26 miles of gravel roads for access to the wind turbines and other Project facilities. Drainage systems, other access roads, storage areas, and operations and maintenance facilities will be installed as needed to accommodate construction and operations.

The electricity generated by the Project will be offered for sale in the region, including to Minnesota utilities that have issued solicitations for wind energy or otherwise forecast a need for additional renewable energy. Red Pine anticipates construction and commissioning of the Project in 2017.

3.1.1 Nominal Generating Capability and Effect of Economies of Scale

The Project will have a nameplate capacity of up to 200.1 MW. Larger wind installations such as the Project take advantage of economies of scale by spreading fixed transaction, construction, operation, and maintenance costs over the entire Project. The result is a lower cost of production for electricity.

3.1.2 Anticipated Operating Cycle and Annual Capacity Factor

Red Pine anticipates a net capacity factor of approximately **[TRADE SECRET BEGINS - [redacted] - TRADE SECRET ENDS]** for the Project, with projected average annual output of approximately **[TRADE SECRET BEGINS - [redacted] - TRADE SECRET ENDS]**.

3.1.3 Fuel

The Project's wind turbines will be fueled by wind.

3.1.4 Anticipated Heat Rate

Heat rates are not applicable to a wind energy project.

3.1.5 Facility Location

The Project will be located in southwestern Minnesota in Lincoln County. The Project's approximately 42,000-acre footprint that is within Ash Lake, Lake Stay, Limestone, Marble, and Royal Townships. The direct use of land for wind turbine and other Project facilities will be approximately 256-296 acres. The Project will be located on agricultural land in a rural landscape with limited development or housing. The site was selected due to its excellent wind resources.

3.2 Availability of Alternatives (Minn. R. 7849.0250(B))

3.2.1 Objectives Used to Evaluate Alternatives

Red Pine requested and received a partial exemption from the requirement to discuss alternatives to the proposed Project and proposed to limit its discussion of alternatives to other projects that would contribute to satisfying renewable energy requirements. The following discussion of such potential alternatives includes analysis of commercial availability, cost, scale, suitability for the Project site or for Minnesota, environmental considerations, and eligibility to meet RES requirements.

3.2.2 Description and Environmental Information for Alternatives Considered

(a) Purchased Power Alternative. Red Pine received an exemption from discussing purchased power alternatives.

(b) Alternative of Performing Upgrades to Existing Resources. Red Pine received an exemption from discussing efficiency alternatives.

(c) New Transmission Alternative. Red Pine received an exemption from discussing new transmission alternatives.

(d) No Facility Alternative. Red Pine received an exemption from Minn. R. 7849.0340, which requires an applicant to submit data for the alternative of "no facility." Instead, Red Pine proposed to discuss the consequences to the region of not building the facility.

Given that the proposed Project is designed to increase the amount of energy available for purchase and to satisfy renewable energy and low-carbon requirements and goals in Minnesota and surrounding states, not building the facility is not a viable alternative. Not building the facility would result in no new renewable energy, missed opportunity to take advantage of federal tax incentives for renewable energy, and no ability for utilities or businesses in Minnesota or surrounding states to purchase a low-cost, renewable energy. As a result, the no-facility alternative is contrary to Red Pine's objectives for the Project and would not satisfy state and regional demand for energy or statutory requirements for renewable energy.

(e) Solar Power. Although Minnesota has decent solar resources and solar technologies have been commercially available for decades, solar power technologies have only recently begun to be deployed at a wide-scale within the state. More important, the wind resource is generally superior to the solar resource in the location planned for the Project. At an even more general level, the cost and reliability of wind power continue to be more favorable than for solar power despite recent substantial decreases on cost for solar. Wind has long been more cost-effective than solar-powered electricity and remains the lowest-cost new source of renewable energy even with the recent declines in solar prices. The levelized total system cost for wind power in the EIA's Annual Energy Outlook 2016 was $64.5/MWh compared with $84.7/MWh for solar PV or $235.9/MWh for solar thermal.[57]

Further, the direct land use requirement for a solar facility is much different than that for wind. On a capacity basis, a MW of solar requires over 5 acres,[58] whereas a MW of wind requires less than a

[57] U.S. Energy Information Administration, Levelized Cost and Levelized Avoided Cost of New Generation Resources in the Annual Energy Outlook 2016 (August, 2016), *available at* https://www.eia.gov/forecasts/aeo/pdf/electricity_generation.pdf.

[58] National Renewable Energy Laboratory, Land-Use Requirements for Solar Power Plants in the United States (June 2013), *available at* http://www.nrel.gov/docs/fy13osti/56290.pdf.

quarter acre.[59] The fact that landowners can continue to allow agricultural use of much of the land in a project area is important for a variety of reasons. Red Pine's land rights arrangements contemplate continued agricultural activity that would not be feasible in the same way were the project to instead be a solar project.

(f) Hydropower. Generation from small hydroelectric facilities, with a capacity of 100 MW and under, can be used to comply with the Minnesota RES.[60] The total system cost for hydropower facilities is also generally more expensive than that for new wind facilities.[61]

More importantly, hydroelectric generation requires a dependable supply of moving water in a location suitable for building a generation facility, something that is not available in the near vicinity of the Project site. More generally, there are few, if any, sites in Minnesota suitable for a new hydropower project at an equivalent scale. Minnesota currently has less hydropower capacity in the aggregate than the Project size and the undeveloped capacity is likely similarly under 200 MW.[62] The U.S. Department of Energy previously estimated a potential in Minnesota for 136 MW of hydroelectric development (split among 40 different sites) with most of the sites being 15 MW or less.[63] While there may be the potential for small affordable hydroelectric applications, they are small in number and generally limited in size. In order to provide as much renewable energy electricity as the Project with hydroelectric generation, several or many hydropower projects would likely have to be developed at multiple sites.

The environmental impact of a hydroelectric facility is highly dependent on the location, the topography, impacted aquatic and terrestrial species, the scale, and the generation method. While the current industry trends are toward smaller-scale and often run-of-the-river technologies, historically large hydroelectric facilities have had massive scale impacts on the surrounding ecology. The relatively flat topography in southwestern Minnesota would suggest that even for a project with relatively low hydraulic

[59] National Renewable Energy Laboratory, Land-Use Requirements for Modern Wind Power Plants in the United States (August 2009), *available at* http://www.nrel.gov/docs/fy09osti/45834.pdf.

[60] Minn. Stat. § 216B.1691, subd. 1(a)(3).

[61] Levelized Cost of New Generation Resources, *supra* note 57 (listing average prices for hydro at $67.8/MWh and those for wind at approximately $64.5/MWh).

[62] U.S. Hydropower Resource Assessment for Minnesota (July 1996), *available at* http://hydropower.inel.gov/resourceassessment/pdfs/states/mn.pdf.

[63] U.S. Hydropower Resource Assessment for Minnesota (July 1996), *available at* http://hydropower.inel.gov/resourceassessment/pdfs/states/mn.pdf

head, there could be large tracts of land impacted. That said, the environmental impacts of a hydroelectric facility are site and technology specific and therefore difficult to compare.

According to data released by the EIA, hydropower generation decreased by approximately 20 percent in Minnesota between 2000 and 2010.[64] The 2012 Quad Report cited the "costs of maintaining and operating dams compared to other sources of energy for power generation" as a primary cause for the reduction, as well as "increased concern about the potential negative effect dams can have on Minnesota's river ecosystems."[65]

(g) Biomass. Renewable energy can be produced by using many different biomass feedstocks in many different technological applications, many of which are eligible under the Minnesota RES but only for a small fraction of the overall requirement.[66] While new biomass technologies continue to become commercially available, the most basic technology is perhaps the oldest form of energy generation (combusting wood). In general, Minnesota has rich biomass feedstock resources and the state legislature has long made the development of biomass energy technologies a priority.[67] Once again, biomass systems are considerably more expensive than wind systems on a total system cost basis ($96.10/MWh for biomass; $64.50/MWh for wind).[68] Biomass pricing is also highly dependent on technology and a suitable, reliable, and affordable source of feedstock supply. Experience in Minnesota also suggests that biomass power facilities are generally smaller in scale than many wind facilities and considerably smaller than the 200 MW wind facility proposed by Red Pine.[69]

The gases created by the anaerobic digestion of animal manures or mixed waste, or when landfill solid waste decays, can also be captured and used to turn a turbine to produce power. Such electric power is also eligible under Minnesota's RES. While this can be a useful way to create energy and reduce waste at relatively low cost, the facilities are typically much smaller in scale. At the time the 2012 Quad Report was assembled, there was a total of 9 landfills permitted to produce biogas based energy with a total of

[64] 2012 Quad Report, supra note 22 at 21

[65] *Id.*

[66] Minn. Stat. § 216B.1691, subd. 2a(b) (requiring that of the 30 percent, 25 percent must be wind or solar).

[67] *See, e.g.*, Minn. Stat. § 216B.1691, subd. 1(a)(5) (includes biomass in the RES); Minn. Stat. § 216B.2424 (biomass power mandate).

[68] Levelized Cost of New Generation Resources, *supra* note 57.

[69] *See* 2012 Quad Report, *supra* note 22.

approximately 30 MW in nameplate capacity.[70] Additionally there are 12 biomass-fueled combined heat and power facilities with an aggregate capacity of 135 MW.[71] The Red Pine Project is considerably larger than all of the biomass energy production in the state combined.

Biomass power facilities, in general, are not a suitable alternative to a wind power facility due to the great differences in environmental impacts. Biomass electric generation facilities, unlike wind facilities, have water use and disposal issues and pollutant air emissions to take into consideration. Depending on the feedstock, there may be ongoing associated environmental considerations at the landscape level, benefits or detriments to farmers and landowners involved in feedstock production or collection, and potential environmental or safety concerns associated with transport of the feedstock to the plant. The Project will be able to provide renewable energy more cost-effectively at scale, with fewer environmental impacts to the Project site and the region.

Lastly and perhaps most importantly, major Minnesota utilities do not appear to be planning for large investments in biomass energy into the near future. Xcel Energy has plans to let a significant portion of its biomass facilities retire before 2030[72] and has not included any significant biomass procurement in its most recent resource plan.[73]

(h) Emerging Technologies Alternatives. Because the Project aims to help meet Minnesota's statutory preferences, requirements and goals for renewable and low carbon energy, and those in surrounding states, the analysis under this section is largely focused on other technologies that would be eligible to do the same. Although there is ongoing research and development on technologies in many of the categories discussed previously, the better analogues to the current proposed Project are those technologies that are in more wide-scale use and have better cost parity with wind. As such, this section will not address emerging technologies in resource areas previously discussed (*i.e.*, solar, hydro, and biomass).

Advanced battery technology is still a small sliver of the market, but it is growing. Front-of-the-meter installed capacity of advanced battery technology, almost entirely lithium ion systems, reached 221

[70] *See id.* at 20.

[71] *Id.*

[72] Including the Bayfront, French Island, Wilmarth and Red Wing facilities.

[73] *In the Matter of Xcel Energy's 2016-2030 Integrated Resource Plan*, Docket No. E002-RP-15-21, SUPPLEMENT – CURRENT PREFERRED PLAN, at 10 (January 29, 2016)..

MW in 2015, a 223% increase from the previous year.[74] But while fly-wheels, pumped storage, compressed air, and advanced battery technologies might all be promising technologies to store or make more dispatchable any of the renewable energy resources listed in the previous sections, they would be more properly assessed as complements than alternatives to an electrical generation facility. For example, one study recently examined whether remotely sited wind projects can pair with energy storage to cut down on transmission costs.[75] The study noted that "[i]nvestors an operators could further reduce the costs of accessing remote wind power if the wind farm had the ability to store electricity during times that transmission is constrained, and sell it later when transmission is not constrained. This would allow the operator to avoid wind curtailment as well as perhaps reduce required transmission capacity even further."[76] However, the study ultimately found that "[s]torage might have a role in replacing transmission when integrating remote wind resources, but capital costs need to be less than $100/kWh and transmission costs need to be greater than or equal to $600/Mw-km. Current storage costs are highly uncertain, but roughly 3-15 times higher than $100/kWh for lithium-ion batteries and 5 times higher for sodium sulfur batteries."[77] Likewise many state and federal policies focus on renewable energy generation or production and have yet to adequately account for energy storage. But MISO is currently studying its storage-related market rules and gathering input from stakeholders on several topics, including how MISO should consider classifying energy storage and how MISO should prioritize certain issues if tariff changes are required to accommodate energy storage.[78]

Renewably-sourced hydrogen energy is essentially another form of storage for intermittent renewable energy resources. Hydrogen is an energy carrier or a way of storing, for later or different use,[79] the electricity generated by solar, wind, biomass, or hydropower resources.[80] Fuel cells then use the

[74] "U.S. Energy Storage Monitor: 2015 Year in Review Executive Summary," at 2, Energy Storage Assoc. & GTM Research (Mar. 2016).

[75] Julian Lamy et al., "The Role of Energy Storage in Accessing Remote Wind Resources in the Midwest," 68 Energy Policy 123 (2014).

[76] *Id.* at 124.

[77] *Id.* at 130.

[78] *See* "Energy Storage Workshop," MISO Market Subcommittee (Jan. 5, 2015), *available at* https://www.misoenergy.org/Library/Repository/Meeting%20Material/Stakeholder/MSC/2016/20160105/20160105%20MSC%20Item%2006%20Energy%20Storage%20Workshop.pdf.

[79] Often by using the renewable energy production to split water molecules into oxygen and hydrogen.

[80] In these instances the electrical current from the renewable generation would be used to split water molecules into their hydrogen and oxygen component parts.

hydrogen to produce electricity by taking advantage of the energy released when hydrogen and oxygen molecules bond. Electricity produced from fuel cells that use renewably produced hydrogen could eventually provide high-quality, dispatchable power with almost zero associated pollution. While at times considerable research dollars have been directed to hydrogen and fuel cell technology specifically because of this promise, fuel cells are still not widely available or cost-competitive, and more recently even hydrogen research has slowed.

In either case and if energy storage or hydrogen and related technologies become cost-effective, Red Pine would see the developments not as competition to its Project but as a way to complement and add value to it.

(i) Combinations (Minn. R. 7849.0250(B)(5)). No combinations of the alternatives discussed above would be appropriate because they would not facilitate Minnesota goals and requirements more cost-effectively, or at all, and would have greater impacts on the region and the environment.

3.2.3 Economic Comparison

The EIA estimates that wind is the lowest or nearly the lowest cost alternative among the renewable energy options described in Section 3.2.2. The following EIA table (Figure 3) provides cost information for the construction, operations and maintenance, and other factors for new renewable and other new electricity generation resources.

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Figure 3: Levelized Cost of New Generation Resources

Table 1b. Estimated LCOE (simple average of regional values) for new generation resources, for plants entering service in 2022

	U.S. Average LCOE (2015 $/MWh) for Plants Entering Service in 2022							
Plant Type	Capacity Factor (%)	Levelized Capital Cost	Fixed O&M	Variable O&M (including fuel)	Transmission Investment	Total System LCOE	Levelized Tax Credit	Total LCOE including Tax Credit[1]
Dispatchable Technologies								
Advanced Coal with CCS[2]	85	97.2	9.2	31.9	1.2	139.5	N/A	139.5
Natural Gas-fired								
Conventional Combined Cycle	87	13.9	1.4	41.5	1.2	58.1	N/A	58.1
Advanced Combined Cycle	87	15.8	1.3	38.9	1.2	57.2	N/A	57.2
Advanced CC with CCS	87	29.2	4.3	50.1	1.2	84.8	N/A	84.8
Conventional Combustion Turbine	30	40.9	6.5	59.9	3.4	110.8	N/A	110.8
Advanced Combustion Turbine	30	25.8	2.5	63.0	3.4	94.7	N/A	94.7
Advanced Nuclear	90	78.0	12.4	11.3	1.1	102.8	N/A	102.8
Geothermal	91	30.9	12.6	0.0	1.4	45.0	-3.1	41.9
Biomass	83	44.9	14.9	35.0	1.2	96.1	N/A	96.1
Non-Dispatchable Technologies								
Wind	40	48.5	13.2	0.0	2.8	64.5	-7.6	56.9
Wind – Offshore	45	134.0	19.3	0.0	4.8	158.1	-11.4	146.7
Solar PV[3]	25	70.7	9.9	0.0	4.1	84.7	-18.4	66.3
Solar Thermal	20	186.6	43.3	0.0	6.0	235.9	-56.0	179.9
Hydroelectric[4]	58	57.5	3.6	4.9	1.9	67.8	N/A	67.8

[1]The tax credit component is based on targeted federal tax credits such as the production or investment tax credit available for some technologies. It only reflects tax credits available for plants entering service in 2022. EIA models renewable tax credits as follows: new solar thermal and PV plants are eligible to receive a 30% investment tax credit on capital expenditures if under construction before the end of 2019, and then tax credits taper off to 26% in 2020, 22% in 2021, and 10% thereafter. New wind, geothermal, and biomass plants receive a $23.0/MWh ($12.0/MWh for technologies other than wind, geothermal and closed-loop biomass) inflation-adjusted production tax credit over the plant's first ten years of service if they are under construction before the end of 2016, with the tax credit for wind declining by 20% in 2017, 40% in 2018, 60% in 2019, and expiring completely in 2020. Up to 6 GW of new nuclear plants are eligible to receive an $18/MWh production tax credit if in service by 2020. Not all technologies have tax credits, and are indicated as "N/A." The results are based on a regional model and state or local incentives are not included in LCOE calculations.

[2]Due to new regulations (CAA 111b), conventional coal plants cannot be built without CCS because they are required to meet specific CO_2 emission standards. The coal with CCS technology modeled is assumed to remove 30% of the plant's CO2 emissions. Coal plants have a 3 percentage-point adder to their cost-of-capital.

[3]Costs are expressed in terms of net AC power available to the grid for the installed capacity.

[4]As modeled, hydroelectric is assumed to have seasonal storage so that it can be dispatched within a season, but overall operation is limited by resources available by site and season.

Source: U.S. Energy Information Administration, Annual Energy Outlook 2016, April 2016, DOE/EIA-0383(2016).

3.2.4 Alternative Summary

In summary, none of the alternatives discussed above is a viable alternative to the Project on its own or in combination because it does not meet the objectives of the Project, does not meet the Project's site criteria, is less cost-effective than the Project, or would have a greater environmental impact than the Project, or because of some combination of the preceding factors. With the exception of environmental impacts that were discussed in detail in each section above, Table 4 below summarizes these comparisons.

Table 4: Comparison of Alternatives to the Red Pine Wind Project

Alternatives Considered	Eligible for the MN RES?	Compatible with Project site?	Available at similar scale?	EIA Average Levelized Cost[81]	Analysis waived?
Wind	**Yes**	**Yes**	**Yes**	**$64.5/MWh[82]**	**No**
Purchased Power	*NA*	*NA*	*NA*	*NA*	*Yes*
Upgrades to Existing Resources	*NA*	*NA*	*NA*	*NA*	*Yes*
New Transmission	*NA*	*NA*	*NA*	*NA*	*Yes*
No Facility	*NA*	*NA*	*NA*	*NA*	*Yes*
Solar Power (photovoltaic)	Yes	No	Yes	$84.7/MWh	No
Hydropower	Yes	No	Not in MN	$67.8/MWh	No
Biomass	Yes	No	Possibly for some technologies	$96.1/MWh	No
Emerging Technologies					
Hydrogen and Fuel Cells	Yes (Renewable H_2)	Possibly	No	NA	No
Energy Storage Options	No	Possibly	No	NA	No
Combinations	No	Possibly	Possibly	NA	No

3.3 Discussion of Proposed Facility and Alternatives (Minn. R. 7849.0250(C))

As discussed in Section 3.2 above, none of the alternatives considered meets the objectives of the Project. Other renewable energy technologies that could satisfy RES requirements (including solar, small hydroelectric, biomass, and certain emerging technologies) have higher costs, greater environmental impacts, and/or are less suited to the Project's site in southwestern Minnesota.

3.3.1 Capacity Cost Is Dollars per Kilowatt

Wind energy projects do not have costs attributable to capacity, and therefore costs for wind energy facilities are typically not expressed in terms of capacity costs. The Project will deliver energy to utilities on an as-generated basis and will receive payment for energy generated. Red Pine estimates that the capital cost for the Project is estimated to be between **[TRADE SECRET BEGINS - [redacted] - TRADE SECRET ENDS]**. On an installed basis, the anticipated total capital cost per kilowatt (in current dollars) is **[TRADE SECRET BEGINS - [redacted] - TRADE SECRET ENDS]**. The largest component of that cost will be the wind turbines.

[81] Figures are in 2015 dollars per megawatt-hour for plants entering service in 2022. See the full EIA table in Figure 3.

[82] EIA's levelized cost estimates for wind exceed the anticipated costs of the Project.

The Project's price per kilowatt hour will be determined by Red Pine's negotiations with potential purchasing utilities or the MISO market. Red Pine expects pricing to be competitive with other large wind energy projects in the region. Taking into account the capital costs described above, estimated production figures, the Project's anticipated lifespan, and other assumptions, Red Pine estimates the total capital cost of the Project to be $ **[TRADE SECRET BEGINS -** [redacted] **- TRADE SECRET ENDS]** per kWh.

3.3.2 Service Life

Red Pine estimates that the Project's service life will be 30 years with proper maintenance and service. This estimate is based on Red Pine's and its parent EDF-RE's extensive experience in the ownership and operation of this type of facility. Red Pine is confident that its planned maintenance program will sustain the Project for at least its estimated service life.

3.3.3 Estimated Average Annual Availability

Red Pine estimates that the Project will be available at least approximately **[TRADE SECRET BEGINS -** [redacted] **- TRADE SECRET ENDS]** of the year, which is consistent with industry standards for wind projects.

3.3.4 Fuel Costs

The Project will have no fuel costs because wind is free. Red Pine will pay landowners for the wind rights easements on the land on which the Project will be located. Nominal purchases of electricity also will be required to operate the Project, with Red Pine ultimately selling the Project's net output.

3.3.5 Variable Operating and Maintenance Costs

Red Pine estimates that variable maintenance costs over the life of the Project will average approximately **[TRADE SECRET BEGINS -** [redacted] **- TRADE SECRET ENDS]** annually. Operating costs include site and facility maintenance, and taxes and fees. Based on estimates for the Project's output, Red Pine estimates that the variable operating and maintenance costs for the Project will be **[TRADE SECRET BEGINS -** [redacted] **- TRADE SECRET ENDS]** per kilowatt-hour.

Wind facilities typically do not have to go entirely offline for maintenance. Rather, individual turbines can be shut down as necessary for service, while the rest of the facility continues to generate power.

3.3.6 Total Cost

Red Pine estimates the Project's total capital cost to be **[TRADE SECRET BEGINS - [redacted] - TRADE SECRET ENDS]** (or **[TRADE SECRET BEGINS -[redacted]- TRADE SECRET ENDS]** per kilowatt) depending on final turbine selection and other factors. The actual price for which the Project will sell energy has not been determined and is subject to negotiations with potential purchasing utilities or the MISO market price. Red Pine has not entered into any definitive energy sales agreements, but expects pricing to be competitive with other large wind energy projects in the region.

3.3.7 Estimate of Facility's or Alternative's Effect on Rates

Minn. R. 7849.0250(C)(7) requires CON applicants to estimate a proposed project's "effect on rates system-wide and in Minnesota, assuming a test year beginning with the proposed in-service date." Red Pine requested an exemption from this data requirement and, in the alternative, proposed to address the Project's impact on state or regional wholesale electricity prices. The Project's energy production will be modest relative to the energy consumption of Minnesota and the region. Therefore, the price of the Project's output will have minimal impact on electricity rates. However, since the Project has no fuel costs, it could serve to help stabilize or lower electricity prices in the state and the region, as compared to energy resources with more volatile pricing.

3.3.8 Efficiency

Because no fuel is burned in the production of energy at the Project, this data requirement is not applicable to a wind energy project.

3.3.9 Assumptions (Minn. R. 7849.0250(C)(9))

The cost information provided in this CON application assumes a net capacity factor of approximately **[TRADE SECRET BEGINS -[redacted]- TRADE SECRET ENDS]** and assumes that operations and maintenance costs will escalate at rates consistent with the rest of the economy. More specifically Red Pine used a **[TRADE SECRET BEGINS -[redacted]- TRADE SECRET ENDS]** escalation rate to estimate the operating and maintenance costs. Red Pine anticipates that construction will take approximately six to eight months including: approximately four months for the construction of roads, turbine foundations and the electrical collection system; and two months for the erection of the turbines. Red Pine is currently considering both a 2017 and 2018 construction scenario (commercial operation date of December 2017 or December 2018, respectively). Both the offtake discussions as well as the safe harbor announcement will determine and influence when construction begins for the Project and the Project completion date.

3.4 Map of System (Minn. R. 7849.0250(D))

The Commission has granted Red Pine an exemption from the requirement to provide a map showing the applicant's system. As an alternative, Red Pine proposed to provide a map of the Project and its location relative to power grid infrastructure. Such maps are included as Figures 1 and 2. More detailed preliminary turbine layout maps will be provided with Red Pine's LWECS Site Permit application.

4. ENVIRONMENTAL INFORMATION (MINN. R. 7849.0310 AND MINN R. 7849.0320)

4.1 Environmental Information for the Proposed Project and Alternatives (Minn. R. 7849.0310)

The following is a summary of available environmental impact information for the proposed Project. Environmental information for potential alternatives to the Project is discussed in Section 3.2, but none of those alternatives was determined to be a viable alternative to the Project. More detailed environmental information for the Project also will be provided in the Project's LWECS site permit application.

4.1.1 Impacts to Visual Resources

The Project area is visually dominated by agricultural production: farm fields, farmsteads, and large open vistas. The area can be classified as rural open space with a gently rolling topography. Local vegetation in the area is predominantly agricultural including pasture, grains, and forage crops creating a low uniform cover. Currently, the only prominent vertical components of the visual landscape in the Project area are trees and manmade structures, including existing wind turbines. Structures within the Project area primarily include residences and farm outbuildings with some dating back to the late nineteenth or early twentieth century. There are already several wind projects in the area, including well over 200 existing commercial scale wind turbines within a 10 mile radius of the Project Area.

Red Pine will work to avoid or minimize visual impacts into the final design and siting of the Project and will work with landowners to identify and address concerns related to Project aesthetics. Red Pine proposes the following mitigative measures:

- Turbines will be uniform in color;
- Turbines will not be located in biologically sensitive areas such as public parks, WMAs, Scientific and Natural Area (SNAs), WPAs, or wetlands;
- Turbines will be illuminated to meet the minimum FAA requirements for obstruction lighting of wind turbine projects (e.g. reduce number of lights on turbines and synchronized red strobe lights);

- Collector lines will be buried to minimize aboveground structures within the turbine array;
- Existing roads will be used for construction and maintenance where possible to minimize the amount of new roads constructed;
- Access roads created for the wind facility will be located on gentle grades to minimize erosion, visible cuts and fills; and
- Temporarily disturbed areas will be converted back to cropland or otherwise reseeded with native seed mixes appropriate for the region.

Red Pine also used WindPRO software to model the preliminary project layout for potential shadow flicker at receptors in and around the Project Area. The potential for shadow flicker varies with time of year and time of day.

Red Pine has made efforts to minimize shadow flicker by careful siting and utilizing setbacks from residences. Based on the 1,000-foot setback from homes, receptors will generally experience shadow flicker within 2 hours of sunrise and sunset, when the sun is low in the sky and only when climatic and other conditions are favorable to generate flicker as previously described. Total shadow flicker is only expected to occur at any given receptor for a few days per year, and for generally only a fraction of annual daylight hours.

The potential for shadow flicker will continue to be considered during development, construction, and operation of the project. Although unlikely to occur, specific cases of documented excessive shadow flicker will be addressed. Other mitigative measures Red Pine may employ where appropriate include planting trees or installing screens, blinds, or curtains.

4.1.2 Impacts to Land Use

Specific impacts to agricultural lands will be determined once turbine and road placement and substation/O&M facility locations have been finalized. The loss of agricultural land to the construction of the wind farm will reduce the amount of land that can be cultivated. However, only a very small portion of the Project area will be converted to nonagricultural land use, and this will not significantly alter crop production in the Project area or in Lincoln County. To the extent practicable, temporary staging areas will be placed in previously disturbed locations to minimize the impact to agricultural production. Turbine and facility siting will include discussions with property owners to identify features on their property, including drain tile, that should be avoided. Red Pine does not anticipate any impact on woodlots or mining.

Only land for the turbines, certain electrical equipment, and access roads will be taken out of crop production. Once the wind turbines are constructed, all land surrounding the turbines and access roads may still be farmed. In the event that there is damage to the drain tile as a result of construction activities or operation of the LWECS, the applicant will work with affected property owners to repair the damaged drain tile in accordance with the agreement between the Project owner and the owner of any damaged tile. If Conservation Reserve Program ("CRP") land is impacted, Red Pine will work with the landowner to remove the impacted portion of the parcel from the CRP program. However, it is unlikely that the Project will impact CRP lands.

4.1.3 Impacts to Wildlife

The overall impact of the proposed Project on wildlife is expected to be minimal because turbines and access roads will be placed on agricultural lands. Grasslands, forested areas, shrublands, streams/drainages, and wetlands will be avoided whenever possible. Operation of the wind farm will not change adjacent land uses, and a relatively small portion of the Project area will be affected by construction activities. Red Pine will implement the following measures, to the extent practicable, to help avoid potential impacts to wildlife in the Project area during selection of the turbine locations and subsequent Project development and operation:

- siting turbines, roads and other facilities on cultivated/agricultural land (with the possible exception of a few minor unavoidable areas for utility and access road crossings);
- designing to avoid impacts to wetlands, streams, forested areas and shrublands, and native plant communities to the extent practicable;
- placing electrical collection/feeder lines underground;
- implementing a Wildlife Response Reporting System (WRRS) once turbine construction is completed (the WRRS will include protocols for field technicians during routine maintenance operations to report and document avian and other wildlife mortalities);
- minimally lighting turbines and meteorological towers while meeting FAA requirements;
- using tubular monopole towers to minimize perching; and
- minimizing other Project infrastructure.

Red Pine has also already developed an Avian and Bat Protection Plan (ABPP) for the Project to identify and avoid risks to avian and bat species that may result from construction and operation of the Project. That ABPP was submitted as an appendix to the LWECS application. In addition the USFWS Minneapolis Ecological Services Field Office is making recommendations for the Project pursuant to the 2013 USFWS Eagle Conservation Plan Guidance and has also recommended that the Project pursue a programmatic eagle take permit. This is a voluntary action for EDF but EDF is committed to advancing the Project collaboratively with the USFWS and already has the development of an Eagle Conservation Plan in consultation with USFWS underway.

4.2 Facility Information for Proposed Project and Alternatives Involving Construction of a LEGF (Minn. R. 7849.0320)

The following is a discussion of land requirements, traffic, water, waste, noise, and other facility information for the proposed Project. Certain facility information is discussed for potential alternatives in Section 3.2, but none of these alternatives was determined to be a viable alternative to the Project.

4.2.1 Land Requirements

The Project footprint is approximately 42,000 acres. Of this land, less than 300 acres will be used for wind turbines and associated facilities. The land is zoned for agricultural use and has little existing development or housing. No relocation of people or businesses will be required for the Project. Anticipated impacts to local lands from the Project are described in Section 4.1.2.

(a) Land Requirements for Water Storage. The Project will not require any land for water storage.

(b) Land Requirements for Cooling System. The Project will not require any land for a cooling system.

(c) Land Requirements for Solid Waste Storage. The Project will require minimal space in the operations and maintenance facility for the storage of used oils, spare parts, and tools. More information about solid waste is provided in Section 4.2.7.

4.2.2 Traffic

Existing roadway infrastructure in and around the Project Area consists of county and township roads that generally follow section lines, with private unpaved farmstead driveways and farming access roads. Minnesota State Highway 19 provides the main access to nearby communities and runs east-west through the center of the Project. Various county and township roads (two-lane paved and gravel roads)

provide access to the proposed site. In the agricultural areas, many landowners use private, single-lane farm roads and driveways on their property.

During project construction, temporary impacts are anticipated on some public roads within the Project Area. Roads will be affected by the normal wear and tear by vehicles required to deliver materials and equipment to and from the Project. Some specific routes will also be impacted by the temporary expansion of road widths and/or intersections to facilitate the safe and efficient delivery of equipment.

The maximum construction traffic is expected to be approximately 250 to 275 additional trips per day during peak construction and maximum workforce, and the functional capacity of a two-lane paved rural highway is in excess of 5,000 vehicles per day. Because traffic on area roadways is generally currently well below capacity, the additional 250 to 275 vehicle trips on a temporary basis would be perceptible, but similar to seasonal traffic increases such as observed during autumn crop harvest.

Truck access to the Project Area is mainly served by State Highway 19 which runs east and west through the center of the Project and County Roads throughout the Project area. Specific additional truck routes will be determined by the location required for delivery. Additional operating permits will be obtained for over-sized truck movements. Transportation of equipment and materials associated with the construction of wind projects involves oversized and/or overweight loads and road use that is not consistent with normal traffic in the Project Area.

Once project construction is completed, maintenance crews will periodically drive through the Project Area to monitor and maintain the wind turbines. Wind project operation, maintenance and repair activities are not expected to adversely impact normal traffic in the Project Area. Traffic control measures and coordination with local authorities will be implemented to ensure public health and safety is protected with respect to the project.

The Project will require approximately 17-26 miles of all-weather gravel access roads, depending on the size of turbine selected and final design. The initial roads will be wide enough for construction traffic (up to 40-56 feet) but the permanent condition will be 16-foot-wide all-weather road. During operation of the Project, the access roads will be used by operation and maintenance crews while inspecting and servicing the wind turbines. The access roads will be between towers and keep a low profile to allow cross travel by farm equipment when necessary. Red Pine will work closely with the landowners to locate these access roads to minimize land-use disruptions.

4.2.3 Information Pertaining to Fossil-Fueled Facilities

(a) Fuel. The Project is not a fossil-fueled facility.

(b) Emissions. The Project will not release any emissions from the power generation process.

4.2.4 Water Usage for Alternate Cooling Systems

The turbines will utilize self-contained, internal cooling systems that will not require water storage. The Project's water requirements during operation will be limited to potable water for the operations and maintenance facility, which may be obtained from a well or municipal source. All applicable regulations will be followed.

4.2.5 Water Discharges

The Project will not discharge water during operation beyond sanitary systems for the operations and maintenance structure. Some limited water discharge may be necessary during construction. Red Pine will apply for and comply with the terms of any National Pollution Discharge Elimination System ("NPDES") or other permits required by law. A full list of federal, state, and local permits anticipated to be required for the Project is included in Table 6.

4.2.6 Radioactive Releases

The Project will not produce any radioactive releases.

4.2.7 Solid Waste

The Project is not expected to generate significant quantities of solid waste during its operations. The Project will require use of certain petroleum products such as gear box oil, hydraulic fluid, and gear grease (likely less than three tons per year). When disposal is necessary, these materials will be recycled or otherwise stored and disposed of according to state and federal regulations. In addition, a small amount of office and maintenance materials waste will be produced at the operations and maintenance facility (likely less than two tons per year). These materials will also be stored, recycled, and/or disposed of according to applicable local, state, and federal regulations.

Ordinary solid waste produced at the operations and maintenance facility or at individual turbines during maintenance operations will be disposed of according to local, state, and federal regulations.

4.2.8 Noise

The MPCA has a statewide noise standard (Minn. R. 7030.0040) that specifies daytime and nighttime noise levels that cannot be exceeded by any source. These standards are consistent with speech, sleep, annoyance, and hearing conservation requirements for receivers within areas grouped according to land activities by the noise area classification ("NAC"). The NAC for household units (including farm houses) is identified as NAC 1. The daytime standards state that a sound level of 60 dB(A) may not be exceeded for more than 50% of the time for a one-hour survey, and a sound level of 65 dB(A) may not be exceeded for more than 10% of the time for a one-hour survey. The nighttime standards state that 50 dB(A) many not be exceeded for more than 50% of a one-hour survey, and 55 dB(A) may not be exceeded for more than 10% of a one-hour survey. Table 5 presents the regulated noise levels from the MPCA rules. The L50 is the noise level exceeded for 50% of the time during any measurement duration and represents the median sound level. The L10 is the sound level exceeded for 10% of the time during any measurement duration.

Table 5: State of Minnesota Noise Standards [dB(A)]*

Noise Area Classification (as Identified in Minn. R. 7030.0040)	**Daytime** L_{50}	**Daytime** L_{10}	**Nighttime** L_{50}	**Nighttime** L_{10}
1	60	65	50	55
2	65	70	65	70
3	75	80	75	80

* *A-weighted decibels*
Source: Minn. R. 7030.0040

Operation of wind turbines will contribute to sound levels in the area. The sound associated with the wind project will vary based on wind speed, distance from turbines, the number of turbines in operation, weather and surface conditions, and the nature of obstacles and/or the topography between the wind turbines and the location where the sound is heard. Generally, turbines produce more sound on windier days, but the wind also produces more ambient noise. Therefore, perceived increases in sound levels within the Project Area as modeled for this project are expected to be minimal.

Noise modeling was completed for each of the three wind turbine models - Vestas V100, V117, and V126 - using the sound-modeling software , WindPro. The scenarios assumed that the wind turbines were operating at a wind speed that resulted in the loudest sound being emitted from the turbines. According sound documentation provided by the manufacturer, the loudest

normal operating noise level emitted from the V100-2.0 is 105.0 dB(A) at 10 m/s and higher at 80 m above ground level (AGL), for the V117-3.3 and V126-3.3 it is 108.5 dB(A) at 10 m/s and higher at their respective hub heights. For the worst case scenario, the manufacturer-provided turbine emission values were increased by 2 dB(A) to account for the uncertainty associated with wind turbine noise emission levels in the receptor-based calculations.

The highest-predicted sound level at any residential receiver was predicted to be 45.8-47.3 dB(A). The analysis indicates that operation of the Red Pine project does not have noise levels of 60 dB(A) or greater during the daytime conditions or 50 dB(A) or greater during the nighttime conditions on any modeled receptor, nor will the cumulative impact on any residence exceed 50 dB(A) or 60 dB(A) when assuming a 35 to 40 dB(A) background sound level. When assuming a nighttime background sound level of 35 dB(A), the cumulative sound levels range from 35.3 dB(A) to 47 dB(A), indicating that the change in sound levels caused by the wind project would range from 0.3 dB(A) to 7 dB(A). When assuming a daytime background sound level of 40 dB(A), the cumulative sound levels range from 40.1 dB(A) to 47.5 dB(A), indicating that the change in sound levels caused by the wind project would range from 0.1 dB(A) to 7.5 dB(A). This additional sound from the wind turbines would not be noticeable. In summary, all modeled sound levels at the provided occupied residences are anticipated to be below 50.0 dB(A) for all scenarios (i.e., all layouts, all turbine models, all ambient noise scenarios), therefore Red Pine would be in compliance with Minnesota's allowable sound levels as described in Minnesota Rules Chapter 7030.

4.2.9 Work Force for Construction and Operation

Red Pine will hire balance of plant contractors to construct the Project. Throughout the construction period, Red Pine estimates that the Project will create up to approximately 300 to 400 temporary construction jobs. The Project will employ local contractors and use locally sourced materials and services when possible and economical.

After construction is complete, Red Pine estimates that operation and maintenance of the facility will require approximately 10 full time site technicians, a Wind Power Plant Supervisor and additional support staff as appropriate.

4.2.10 Number and Size of Transmission Facilities

The electricity generated by each turbine will be stepped up by a transformer (either at the base of each turbine or housed in the nacelle) to the power collection line voltage of 34.5 kV. The electric energy collected at the turbines will be transmitted to the Project substation via underground lines trenched to a depth of approximately 36 inches or greater. The Project substation will be located at the northern corner of the Project Area in proximity to the 345kV Brookings County-Hampton MVP Line that crosses that corner of the Project Area. The power will be stepped up from 34.5 kV to 345 kV at the Project substation for delivery to the transmission grid. A 2-mile, 345 kV Gen-Tie Line will be constructed by Red Pine to connect the Project to the 345kV Brookings County-Hampton MVP Line via the Xcel Hawks Nest Lake Substation.

4.3 Transmission Facilities (Minn. R. 7849.0330)

Red Pine received an exemption from this requirement to provide information regarding large high-voltage transmission line alternatives. However, Red Pine anticipates providing more detailed information about the Gen Tie Line in Gen Tie Line CON application and route permit application.

5. OTHER FILINGS AND PERMITS

5.1 Exemption Request

On February 12, 2016, Red Pine requested an exemption from several of the informational requirements included in Chapter 7849 of the Minnesota Rules. These exemptions are referenced where appropriate in this CON application. At the same time, Red Pine requested a variance from Minn. R. 7849.0200, subp. 6, which normally requires CON applicants to wait 45 days between filing an exemption request and filing a CON application. On March 25, 2016, the Commission granted each of Red Pine's exemption and variance requests.

5.2 Environmental Report

The Commission rules require the Minnesota Department of Commerce to provide an Environmental Report for any large energy facility for which a CON must be obtained. Minn. R. 7849.1200.

5.3 Site Permit

The Project will require an LWECS site permit, pursuant to Minn. Stat. § 216F.04. Red Pine anticipates submitting an LWECS Site Permit application soon under Docket No. IP-6646/WS-16-618.

Red Pine requests that the CON application and site permit application processes be combined and coordinated to the extent possible.

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5.4 Other Project Permits

Table 6 below provides a list of regulatory approvals, licenses, and permits likely to be required to construct and operate the Project.

Table 6: Project Permits and Approvals

Potential Permits and Approvals Required for Construction and Operation of the Proposed Project		
Agency		**Name and Type of Permit/Approval**
Federal	Federal Aviation Administration	Form 7460-1 Notice of Proposed Construction or Alteration (Determination of No Hazard)
		Notice of Actual Construction or Alteration (Form 7460-2)
	U.S. Army Corps of Engineers	Federal Clean Water Act Section 404 and Section 10 Permits; Wetland Delineation Approvals; Jurisdictional Determination.
	U.S. Fish and Wildlife Service	Review for Threatened and Endangered Species
	Environmental Protection Agency ("EPA")/("MPCA")	Spill Prevention Control and Countermeasure ("SPCC") Plan
	Lead Federal Agency	Federal Section 106 Review
	National Historic Preservation Act	Cultural Field Survey
	U.S. Department of Agriculture	Form AD-1006
		Conservation / Grassland / Wetland Easement and Reserve Program releases and consents
		FSA Mortgage Subordination & Associated Environmental Review
State of Minnesota	Minnesota Public Utilities Commission	Large Wind Energy Conversion System (LWECS) Site Permit
		Certificate of Need for LWECS
		Route Permit for 2 mile 345 kV gen-tie line.
		Certificate of Need for 2 mile 345 kV gen-tie line.
	Minnesota State Historic Preservation Office	Cultural and Historical resources review; State and National Register of Historic Sites review
	Minnesota Department of Natural Resources	General Permit for Water Appropriations, dewatering
		Native Prairie Protection Plan Review
		Public Waters Work Permit
		License to Cross Public Lands and Waters
	Minnesota Pollution Control Agency	Aboveground Storage Tank ("AST") Notification Form
		NPDES Permit for Construction Activities and Storm Water Pollution Prevention Plan (SWPPP)
		License for Very Small-Quantity Generator of Hazardous Waste
		Section 401 Water Quality Certification
	Minnesota Department of Health	Environmental Bore Hole ("EBH")
		Plumbing Plan Review
		Water Well Permit
	Minnesota Department of Transportation	Utility Access Permit
		Highway Access Permit
		Aviation clearance from Office of Aeronautics
		Oversize and Overweight Permit
	Lincoln County	Land Use Permit
		Conditional Use Permit, if needed
		Roadway Access Permit
		Drainage Permit
		Working in the Right-of Way Permit
		Overweight/Over-Dimension Permit
		Utility Permit

Potential Permits and Approvals Required for Construction and Operation of the Proposed Project		
Agency		**Name and Type of Permit/Approval**
	Lincoln County Soil and Water Conservation District	Wetland Conservation Act Approval
	Townships	Right-of-way permits, crossing permits, road access permits, and driveway permits for access roads and electrical collect system, as needed.

6. PEAK DEMAND AND ANNUAL CONSUMPTION FORECAST (MINN. R. 7849.0270)

Red Pine requested exemption from this data requirement, which requires an applicant to provide information regarding its system peak demand and annual energy consumption. As an alternative, Red Pine proposed to submit regional demand, consumption, and capacity data to demonstrate the need for the Project. Such information is provided in Section 2.2.1.

7. SYSTEM CAPACITY (MINN. R. 7849.0280)

Red Pine requested a partial exemption from this data requirement, which requires applicants to "describe the ability of its existing system to meet the demand for electrical energy forecast" in response to Minn. R. 7849.0270, and "the extent to which the proposed facility will increase this capability." Minn. R. 7849.0280. As an alternative, Red Pine proposed to submit regional demand, consumption, and capacity data to demonstrate the need for the Project. Such information is provided in Section 2.2.1.

8. CONSERVATION PROGRAMS (MINN. R. 7849.0290)

Red Pine requested an exemption from this data requirement, which requires an applicant to describe its energy and conservation plans.

9. CONSEQUENCES OF DELAY (MINN. R. 7849.0300)

Red Pine requested a partial exemption from this data requirement, which requires the CON applicant to discuss the "anticipated consequences to its system, neighboring systems, and the power pool should the proposed facility be delayed one, two, and three years, or postponed indefinitely." Minn. R. 7849.0300. Instead, Red Pine proposed to submit data on the consequences of delay to its potential customers and to the region.

The Project's timeline is being designed to allow it to qualify for the current level of the PTC. Delay would mean the Project would not be eligible for these important federal tax incentives, which would raise the cost of power production to Red Pine and its customers. Since Red Pine's intended customers are utilities meeting renewable energy requirements, the cost impact of delay would ultimately

be passed to utility customers. This, in turn, would have a significant impact on the ability of utilities to meet their RES requirements or other commitments in a cost-efficient and timely manner. For all of these reasons, Red Pine is taking the steps necessary, including submitting this Application, to prepare the Project to begin construction in the third quarter of 2017.

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