



414 Nicollet Mall  
Minneapolis, MN 55401

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October 24, 2016

**—Via Electronic Filing—**

Daniel P. Wolf  
Executive Secretary  
Minnesota Public Utilities Commission  
121 7<sup>th</sup> Place East, Suite 350  
St. Paul, MN 55101

RE: PETITION  
WIND GENERATION ACQUISITION  
DOCKET NO. E002/M-16-777

Dear Mr. Wolf:

Northern States Power Company, doing business as Xcel Energy, submits to the Minnesota Public Utilities Commission the enclosed Petition requesting approval for the Company to build, own, and operate a 750 MW Wind Portfolio. We believe near-term wind additions present a great opportunity to achieve lower carbon emissions at an affordable price, and we are pleased to present a portfolio of Company-developed projects. We believe these projects will deliver value to our customers, and we are making this filing consistent with the acquisition process verbally approved by the Commission during our recent 2016-2030 Integrated Resource Plan (IRP) hearing. As discussed in our August 12, 2016 IRP Reply Comments, we will supplement this filing in the first quarter of 2017, after we receive and evaluate bids in response to our pending RFP.

Portions of the enclosed documents are marked “NOT PUBLIC” as they contain information the Company considers to be trade secret data as defined by Minn. Stat. §13.37(1)(b). This data includes confidential pricing and other contract terms, as well as bid evaluation criteria. This information has independent economic value from not being generally known to, and not being readily ascertainable by, other parties who could obtain economic value from its disclosure or use. We have marked additional information as “NOT PUBLIC” trade secret because the knowledge of such information in conjunction with public information in our

Petition also adversely impact future contract negotiations, potentially increasing costs for these services for our customers. Thus, the Company maintains this information as a trade secret.

We have electronically filed this document with the Commission, and copies have been served on the parties on the attached service list. Please contact me at [aakash.chandarana@xcelenergy.com](mailto:aakash.chandarana@xcelenergy.com) or (612) 215-4663 if you have any questions regarding this filing.

Sincerely,

/s/

AAKASH H. CHANDARANA  
REGIONAL VICE PRESIDENT  
RATES AND REGULATORY AFFAIRS

Enclosures  
c: Service Lists

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STATE OF MINNESOTA  
BEFORE THE  
MINNESOTA PUBLIC UTILITIES COMMISSION

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

IN THE MATTER OF THE PETITION OF  
XCEL ENERGY FOR APPROVAL OF THE  
ACQUISITION OF WIND GENERATION  
FROM THE COMPANY'S 2016-2030  
INTEGRATED RESOURCE PLAN

DOCKET No. E002/M-16-777

**PETITION**

**INTRODUCTION**

Northern States Power Company, doing business as Xcel Energy, submits to the Minnesota Public Utilities Commission this Petition for Approval under Minn. Stat. § 216B.2422, subd. 5 for the Company to build, own, and operate a 750 MW Wind Portfolio.

**EXECUTIVE SUMMARY**

As discussed in our 2016-2030 Integrated Resource Plan (IRP), we intend to achieve a 60 percent reduction in carbon emissions from 2005 levels and an energy mix that is more than 60 percent carbon free—both by 2030. This proposal for the Company to build, own, and operate a 750 MW Wind Portfolio is part of accomplishing those goals because it allows us to accomplish substantial reductions in carbon emissions at an affordable cost.

During the course of the IRP docket, the Commission approved a modified acquisition process for at least 1,000 MW of wind additions in our five-year action plan.<sup>1</sup> Our acquisition process involves two related efforts: (1) a Request For Proposals (RFP) for Purchased Power Agreements (PPAs) and Build-Own-Transfer (BOT) projects; and (2) a Company-built 750 MW Wind Portfolio. As part of this

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<sup>1</sup> Docket No. E002/RP-15-21 (January 29, 2016). The Commission confirmed during October 13, 2016 deliberations that it is reasonable for the Company to acquire at least 1,000 MW of wind by 2019.

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process, the RFP serves not only to procure cost-competitive wind projects for our customers, but also to demonstrate the competitiveness of our self-build Wind Portfolio using current market data.

To ensure transparency and fairness during this process, we committed to submitting our self-build proposal in advance of receiving the incoming RFP bids from developers. We issued the RFP on September 22, 2016, and proposals are due back tomorrow, October 25, 2016. Accordingly, we are submitting our proposed self-build Wind Portfolio and firm pricing for consideration in this filing. We have also taken steps internally to segregate personnel working on the self-build proposal and the RFP to avoid potential conflicts of interest.<sup>2</sup>

Our Wind Portfolio is comprised of four projects located in Minnesota and North Dakota that we selected after a thorough due diligence process. As a result, these are well-vetted and cost-competitive projects. Like the steps an independent, third-party developer would undertake, we reviewed many aspects of several project sites across our region including location, wind availability, transmission and interconnection considerations, siting issues and more. The four projects provided in Table 1 rose to the top of our list.

**Table 1: Wind Portfolio Projects (MWh)**

<b>Project Name</b>	<b>Size</b>	<b>Location</b>	<b>Levelized Cost of Energy</b>
			[TRADE SECRET BEGINS
Foxtail	150 MW	Dickey County, ND	
Blazing Star I	200 MW	Lincoln County, MN	
Blazing Star II	200 MW	Lincoln County, MN	
Freeborn	200 MW	Freeborn County, MN	
Total Wind Portfolio			

TRADE SECRET ENDS]

The projected costs for these projects are lower than any of our past renewable additions. In fact, the Company's most recent wind projects have a Levelized Cost of Energy (LCOE) in the range of [TRADE SECRET BEGINS                      TRADE SECRET ENDS] per MWh. The difference is due, in part, to the 2015 extension of the 100 percent PTC and the fact that wind generation is "on sale." Additionally, we expect to realize efficiencies from building these four projects as a single portfolio. Simply stated, we will be able to leverage economies of scale in project planning and

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<sup>2</sup> The conflicts "wall" is discussed further in Attachment A to this Petition.

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execution, and we reduce the schedule-related risks typically associated with individual projects. Additionally, our multi-year project and construction plan will allow us to optimize the use of both internal and external resources. As a result, we believe it is more beneficial for our customers that the four projects move forward as a portfolio.

We therefore propose to limit our cost recovery to an aggregate capital cap (including AFUDC) of **[TRADE SECRET BEGINS TRADE SECRET ENDS]** for the entire Wind Portfolio. If we exceed these costs in our execution of the projects, the Company (not customers) will bear those costs. Symmetrically, if we are able to achieve any cost-savings, we would retain those savings.<sup>3</sup> We believe the cost of our Wind Portfolio compared to recent past projects alone supports Commission approval of this Petition. That said, we are committed to the acquisition process outlined in our IRP Reply Comments, and we believe our portfolio will prove to be competitive and reasonable when compared to the current market data received in response to the RFP.

After the submission of this Petition, our self-build team will continue to develop these four projects toward project construction and commissioning. Meanwhile, the RFP team will begin to evaluate the incoming RFP proposals, and we will make an informational filing in December 2016 that will include a list of all bids received. Once the RFP team has completed its analysis and successfully negotiated contracts in early 2017, we will submit a supplement to the Commission for approval in early 2017, which will include: (1) a ranking and bid data for all bids received in response to the RFP; (2) a competitive analysis of all projects for which we conduct due diligence; (3) all successfully negotiated contracts from the RFP process; (4) a recommendation as to what projects we believe merit Commission approval; and (5) an independent third-party auditor report of our RFP process that will review our evaluation of proposals and due diligence, as well as our selection of proposals for contract negotiation. At the same time, we will also compare the results of the RFP process to our self-build Wind Portfolio in order to demonstrate that it is competitive and merits Commission approval. Finally, we will provide modeling results and an analysis to address the customer impacts of approving the recommended projects. We believe this acquisition process is fair and transparent and will ensure that we are able to acquire additional wind resources in a reasonable and timely manner in order to lock in 100 percent of the PTC benefits for our customers.

In short, we believe our Wind Portfolio will provide substantial benefits to our customers and the communities we serve. These include:

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<sup>3</sup> This is consistent with the Commission's April 16, 2015 Order in Docket No. E002/CN-12-1240.

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*Customer Value:* The Wind Portfolio offers system cost savings over its life to our customers and fits with our strategy of having a geographically diverse balance of Company-owned and PPA wind resources. Production at these facilities will displace more expensive fossil fuel generation in our system or purchases in the MISO wholesale market. Additionally, the modeling from our IRP included 800 MW of wind additions by 2019 and showed approximately an \$800 million in PVSC savings compared to adding no wind in the same period. And the lower costs of our Wind Portfolio in comparison to the IRP modeling will result in hundreds of millions of dollars in additional benefits.

- *Compliance:* The addition of the Wind Portfolio along with our other planned renewable energy resource additions will enable the Company's compliance with state and federal energy policies, including the (currently stayed) federal Clean Power Plan, Minnesota's Renewable Energy Standard (RES), and Minnesota's overarching goal of an 80 percent reduction in carbon emissions by 2050 – all in a cost-effective manner.
- *Societal & Economic Benefits:* The Wind Portfolio will generate significant and lasting economic benefits for our communities and state. These include the provision of low-cost energy to meet our customers' needs, income to landowners in exchange for wind easements on their property, the creation of hundreds of construction jobs, ongoing maintenance jobs, and the contribution of tax revenues and other fees for our communities and state.
- *Environmental Performance:* The addition of this 750 MW Wind Portfolio will enable the Company to continue along a path of improved environmental performance that we began over a decade ago. In particular, the Wind Portfolio will contribute to the Company's carbon reduction goals with an estimated carbon dioxide emissions reduction of approximately 2 million tons annually, on average.

To achieve these benefits, it is necessary to place the proposed wind projects into service by the end of 2020, so that they qualify for 100 percent of the PTC. In light of this timing, we respectfully request that the Commission complete deliberations sometime before July 2017, so we have sufficient certainty to proceed with our contracts and capture the full benefit of the PTC for our customers.

In the balance of this Petition, we:

- Discuss the modified acquisition process in compliance with the Commission's direction at the October 13, 2016 deliberations;

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- Outline the PTC's Safe Harbor Requirements and how we intend to meet them;
- Discuss our due diligence process;
- Provide an overview of the four wind projects that comprise our Wind Portfolio;
- Outline our plans for the BOP contracts; and
- Discuss regulatory approvals needed, as well as a contingency plan.

**I. SUMMARY OF FILING**

A one-paragraph summary is attached to this filing pursuant to Minn. R. 7829.1300, subp. 1.

**II. SERVICE ON OTHER PARTIES**

Pursuant to Minn. R. 7829.1300, subp. 2, the Company has served a copy of this filing on the Office of the Attorney General – Antitrust and Utilities Division. We have also distributed copies of our filing to those on our current Resource Plan service list (Docket No. E002/RP-15-21) and our Miscellaneous Electric service list.

**III. GENERAL FILING INFORMATION**

Pursuant to Minn. R. 7829.1300, subp. 3, the Company provides the following information.

**A. Name, Address, and Telephone Number of Utility**

Northern States Power Company, doing business as:  
Xcel Energy  
414 Nicollet Mall  
Minneapolis, MN 55401  
(612) 330-5500

**B. Name, Address, and Telephone Number of Utility Attorney**

Amanda Rome  
Assistant General Counsel  
Xcel Energy  
414 Nicollet Mall, 401 – 8<sup>th</sup> Floor  
Minneapolis, MN 55401  
(612) 215-5331

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**C. Date of Filing**

The date of this filing is October 24, 2016. The Company requests that approval of this Petition be effective upon the date of the Commission Order. If this Petition is approved, the Company will make a separate cost recovery filing at a later date.

**D. Statute Controlling Schedule for Processing the Filing**

This filing is made pursuant to Minn. Stat. § 216B.2422, subd. 5, which provides an exemption from the Certificate of Need statute (Minn. Stat. § 216B.243) for resources selected through a bidding process approved or established by the Commission.

No specific statute controls the timeframe for processing this filing. The processing is therefore controlled by the Commission's rules on Miscellaneous Filings, Minn. R. 7829.1300 and 7829.1400. We have included the information required under Minn. R. 7829.1300, subp. 3 for miscellaneous filings that, like this one, are subject to specific content requirements. We also note that while Minn. R. 7829.1400, subps. 1 and 4 specify the time periods for initial and reply comments for miscellaneous filings; it has been the past practice of the Commission to set a comment schedule by notice to interested parties pursuant to Minn. R. 7829.1400, subp. 7.

**E. Utility Employee Responsible for Filing**

Aakash Chandarana  
Regional Vice President, Rates and Regulatory Affairs  
Xcel Energy  
414 Nicollet Mall, 401 – 7<sup>th</sup> Floor  
Minneapolis, MN 55401  
(612) 215-4663

**IV. MISCELLANEOUS INFORMATION**

Pursuant to Minn. R. 7829.0700, the Company requests that the following persons be placed on the Commission's official service list for this proceeding:



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Amanda Rome  
Assistant General Counsel  
Xcel Energy  
414 Nicollet Mall, 401 – 8<sup>th</sup> Floor  
Minneapolis, MN 55401  
[amanda.rome@xcelenergy.com](mailto:amanda.rome@xcelenergy.com)

Carl Cronin  
Regulatory Administrator  
Xcel Energy  
414 Nicollet Mall, 401 – 7<sup>th</sup> Floor  
Minneapolis, MN 55401  
[regulatory.records@xcelenergy.com](mailto:regulatory.records@xcelenergy.com)

Any information requests in this proceeding should be submitted to Mr. Cronin at the Regulatory Records email address above.

## **V. DESCRIPTION AND PURPOSE OF FILING**

In this section, we outline the regulatory path we propose for this acquisition and provide additional information regarding the projects making up our Wind Portfolio. We also describe how we selected these particular four projects, and discuss the contracts we have entered, or will enter, to execute our proposal.

### **A. Modified Acquisition Process**

#### *1. Process Overview*

In our most recent Integrated Resource Plan docket, we proposed an acquisition process for wind resources that included four steps:

1. The Company issues an RFP for wind project proposals.
2. The day before receiving responses to that RFP, the Company submits its self-build project Petition (*i.e.*, the current Petition). This Petition provides information for each of the projects comprising our Wind Portfolio and commits to an aggregate capital cap.
3. After receiving bids in response to our RFP, the Company's RFP team will evaluate the bids and select projects for contract negotiation using a number of factors, such as:
  - Levelized cost;
  - Financial capability;
  - Project schedule;
  - Project design;
  - Project risks;
  - MISO queue position status;
  - Interconnection and network upgrades;

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- Energy production profile;
- Site control;
- Project output delivery plan;
- Expected turbine availability;
- Pricing options;
- Project development milestones;
- Exceptions to standard contract terms and conditions; and
- Other relevant factors

Using these criteria, the RFP team will select projects that are in the best interest of our customers and will negotiate contracts with each of the developers.

4. The RFP team will then share the results of the negotiation process with the Company's regulatory team. We will then make a supplemental filing to the Commission that will include (1) a ranking and bid data for all bids received in response to the RFP; (2) an analysis of all projects for which we conduct due diligence in accordance with the factors identified above; (3) all successfully negotiated contracts from the RFP process; (4) a recommendation as to what projects we believe merit Commission approval; and (5) an independent third-party auditor report of our RFP process that will review our evaluation of proposals and due diligence, as well as our selection of proposals for contract negotiation. At the same time, we will also compare the results of the RFP process to our self-build Wind Portfolio.

Consistent with this process, the principal goal of this initial petition is to put forth the Company's self-build projects and provide estimates of total project costs before bids are received in response to our pending RFP. The goal of our supplemental filing will be to provide a complete and detailed analysis of the projects that emerge from the RFP process and a comparison between those projects and our self-build Wind Portfolio.

2. *Commission Approval of our Modified Acquisition Process*

In Reply Comments to our 2016-2030 IRP, the Department recommended that the Commission adopt our proposed acquisition process as a modification to the Commission's existing Track 2 competitive bidding process.<sup>4</sup> The Commission voted

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<sup>4</sup> Department of Commerce Supplemental Comments at 9, Docket No. E002/RP-15-21 (September 12, 2016).

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to adopt this recommendation during deliberations on October 13, 2016, and we expect the Commission’s upcoming written Order in the resource plan to confirm this acquisition process. That said, we will carefully review the Commission’s written Order to ensure that we fully comply with its direction.

**B. PTC’s Safe Harbor Timing Requirements**

In order to qualify for 100 percent of the PTC amount, these wind facilities must begin construction in 2016 to qualify for the PTC “safe harbor.” By law, there are two ways to begin construction for purposes of the safe harbor: (1) commencing “physical work of significant nature” at the project site or at a factory on equipment for the project or (2) incurring at least five percent of the total project cost.<sup>5</sup> With respect to the 5 percent method, it is important to note that costs are not incurred merely by spending money; the developer must actually take delivery of the equipment either by year-end or within 105 days from incurring the cost. Under either safe-harbor method, the projects must be placed in service within four years from the end of the year that construction commenced.

To meet the safe harbor requirements for these wind projects, **[TRADE SECRET BEGINS**

**TRADE SECRET ENDS]**. NSP-MN will execute additional agreements in support of our proposed wind projects, and will file any necessary affiliate interest agreements with the Commission pursuant to Minn. Stat. § 216B.48, subd. 3 in the future.

As already discussed, we have developed a project schedule that optimizes pricing and involves the sequenced construction of the four projects comprising our Wind Portfolio. To meet our projected construction milestones, we will need to provide several months’ advanced notice to our suppliers and contractors. Therefore, to meet our commitments and keep the projects on track to ensure qualification for 100 percent of the PTC, we respectfully request that the Commission complete deliberations in this docket sometime before July 2017.

**C. Interconnection and Transmission**

Similar to other developers, interconnection and other transmission risks can be some of the largest development risks associated with our proposed wind additions. All

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<sup>5</sup> The Consolidated Appropriations Act, 2016.

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generation projects, including each of our four self-build projects are subject to MISO's Attachment X, Generator Interconnection Procedures (GIP), which determine the network upgrades that will be required to interconnect a certain project to the MISO transmission system. Pursuant to the GIP, wind projects are assigned to one of the two annual Definitive Planning Phase (DPP) cycles, according to the date each project satisfies all of the requirements to enter a particular cycle.<sup>6</sup> MISO is currently studying the August 2015 DPP.<sup>7</sup> Once that study has been completed, MISO will study the February 2016 DPP. We discuss the MISO interconnection process in more detail in Attachment B to this Petition. The DPP cycle for each of our projects is identified below in the Project Descriptions section.

Estimating potential network upgrades costs for projects in upcoming DPP cycles has always involved some level of uncertainty, but is more challenging today than in the past. This is largely due to the amount of wind generation requesting to be added to the MISO system, the delays associated with processing of the MISO interconnection queue, the way that upgrades and their costs are assigned to projects in the queue, and the number of projects that actually move forward once the studies are complete. For example, if MISO were to determine that a significant network upgrade (such as a new transmission line) were required for the August 2015 DPP cycle, it would apportion the costs of that upgrade to the projects within that DPP cycle. Each individual project developer would then decide whether to proceed with their project in light of the assigned network upgrade costs. If some of the projects withdraw their interconnection application to MISO, the costs of the network upgrades are reallocated to the remaining projects in that DPP cycle. If all—or enough projects to eliminate the need for the upgrade within a DPP cycle—drop out, then the network upgrade is not completed during that cycle and will likely get passed onto the next DPP cycle.

In this way, network upgrades can “cascade” through the MISO queue depending on whether projects ahead in the queue decide to proceed with their projects and the assigned upgrades, or withdraw their interconnection applications due to the upgrade costs. This cascade effect has also required MISO to restudy projects later in the MISO queue to determine how to reallocate network upgrades and costs when earlier projects withdraw. This process – combined with the increased number of total projects in the MISO queue – has created significant uncertainty for any project that

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<sup>6</sup> DPP cycle requirements are defined in Section 8.2 of MISO's Attachment X and includes providing DPP entry milestone, technical data requirements, and study deposits.

<sup>7</sup> Preliminary results were published on October 6, 2016, with final study results expected in the November-December 2016 timeframe.

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does not already have a signed interconnection agreement.<sup>8</sup> Notably, this uncertainty will apply to both our self-build Wind Portfolio and any project bids received in the RFP process that do not already have a signed interconnection agreement.

We have addressed the risks associated with the MISO queue and network upgrades in two ways. First, we have analyzed each of our projects and their respective positions in the MISO queue, and we have included a good-faith estimate of capital for network upgrades for certain projects. We identify these estimated interconnection costs in the Project Description section below, and have included these estimates in both our capital costs and our LCOE calculations for each project. Second, as we did in connection with the Borders Winds Project,<sup>9</sup> we have negotiated contractual rights in each of our site Purchase and Sale Agreements that give us the ability to terminate the contracts if network upgrade costs exceed a predetermined amount in each contract, making the project unviable. To the extent that occurs for any of our projects, we believe the aggregate capital cap could be expressed in a cost-per-kW basis for the remaining projects.

Again, we believe any project bids received in the RFP process that do not already have a signed interconnection agreement will face similar issues. We also believe the measures described above will allow us to effectively manage the risks of interconnection costs as we move through the approval and construction processes.

#### **D. Due Diligence**

Our proposed 750 MW Wind Portfolio is comprised of four projects that were selected through a comprehensive site selection process. The goal of our selection process was to acquire sites that can offer cost-competitive wind energy to our customers. We evaluated a number of potential sites before selecting the four projects comprising our Wind Portfolio. Our selection process had three primary phases (1) cost analysis; (2) wind performance analysis; and (3) due diligence reviews.

Our cost analysis was based on the MSA and our wind project BOP construction and operating cost model. Our cost model was initially developed for the Grand Meadow Wind Farm in 2008, and we have since used it with the Nobles, Pleasant Valley, Border Winds, and Courtenay wind projects – and most recently, the Public Service of Colorado Rush Creek wind project in Colorado. Our cost model has evolved over the years to reflect our experience with the construction and operation of these wind

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<sup>8</sup> Additionally, MISO is in the process of reforming the GIP and is planning to propose changes to FERC in late October 2016. Those changes are expected to address the issues negatively impacting the GIP.

<sup>9</sup> Docket No. E002/M-13-716 (Aug. 9, 2013).

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farms, as well as cost trends in the wind energy industry.

Our wind performance analysis involved the verification of the potential wind energy production of the proposed sites. To do this, we retained a reputable wind consulting company, AWS True Power (AWS), to perform independent wind analysis based on project layout, wind data, site details, and turbine information. We used this analysis to develop Net Capacity Factors (NCF) for the selected sites in our Wind Portfolio.

The due diligence process ensured that proposed project sites can be properly developed and are ready and feasible to support our planned project construction schedule. The due diligence process involved asking developers an extensive list of questions about their proposed wind sites that fall into eight general categories: (1) land control; (2) wind data; (3) siting and permitting; (4) technical attributes; (5) site specific cost considerations; (6) transmission and interconnection; (7) legal; and (8) environmental. Company personnel with relevant skill sets and expertise in these eight categories reviewed the due diligence risk assessments for each proposed site.

We will continue with iterations of the due diligence review process until the closing date of the Purchase and Sale Agreements (PSA) for each of the four selected sites.<sup>10</sup> The continued due diligence process is necessary to ensure the contractual deliverables for the site development are received timely, and to further support our project development, engineering, construction and commissioning toward the planned in-service dates.

### **E. Project/Site Descriptions**

In this section, we provide information regarding each of the four projects comprising the Wind Portfolio, including affiliation, location, project size, interconnection details and anticipated network upgrades, net capacity factor, projected annual energy output, total project cost, and LCOE. We intend to oversee all aspects of construction for each of our projects and discuss the implementation and construction schedule for each project below.

As noted previously, we believe we can achieve efficiencies by building and managing these four projects as a single portfolio, and the LCOEs reflect these savings. We provide underlying calculations for the LCOEs and portfolio costs in Attachment C, which includes the estimated transmission upgrades and interconnection costs for each of the four projects that we discuss below.

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<sup>10</sup> We will not close on any of the PSAs or begin construction on any of the four projects until the Commission approves this Petition.

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All of the projects described below are subject to a standard set of environmental study requirements. We describe those studies in Attachment D.

1. *Foxtail*

a. Project Description

The Foxtail Wind Project is being developed by an affiliate of NextEra Energy Inc., and is located on an approximately 16,000 acre site located 20 miles West of Ellendale, North Dakota. The site is primarily grazing, farming and rolling open fields; similar to the Courtenay Wind Project, it borders the prairie pothole region, which is a biologically diverse area of the Great Plains.

The Project will consist of a blend of [TRADE SECRET BEGINS  
TRADE SECRET ENDS] wind turbines and [TRADE SECRET  
BEGINS TRADE SECRET ENDS] wind turbines, resulting in 150 MW of nameplate wind power capacity.<sup>11</sup> In addition to wind turbines, the Project will consist of an electrical collection system, access roads, substation and interconnection facilities, an operation and maintenance facility, and other infrastructure typical of a wind farm.

NextEra applied to MISO to interconnect the Foxtail Wind Project to the Montana-Dakota Utilities (MDU) transmission system in November 2013 – connecting to the Montana–Dakota 230 kV Ellendale–Tatanka transmission line at a new substation. The Project was studied under the MISO August 2014 DPP Study Cycle. All MISO System Impact Studies and Facility Studies have been completed and are identified in the executed Foxtail GIA dated August 30, 2016. The GIA shows that the Project will be granted 150 MW of NRIS upon completion of all required network upgrades.

The required upgrades include: (1) construction of a new interconnection substation; (2) reconductoring MDU’s Ellendale–Foxtail 230 kV transmission line; and (3) reconductoring Western Area Power Administration’s (WAPA) Mandan–Ward 230 kV transmission line. The cost of all upgrades, with the exception of the WAPA upgrade, is known. The final WAPA costs will not be known until a facilities study is completed and a Facility Construction Agreement is executed.<sup>12</sup> NextEra is

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<sup>11</sup> [TRADE SECRET BEGINS

TRADE SECRET ENDS].

<sup>12</sup> The WAPA system is in the SPP region rather than MISO region, so facilities upgrades in both MISO and SPP must be studied and potentially constructed.

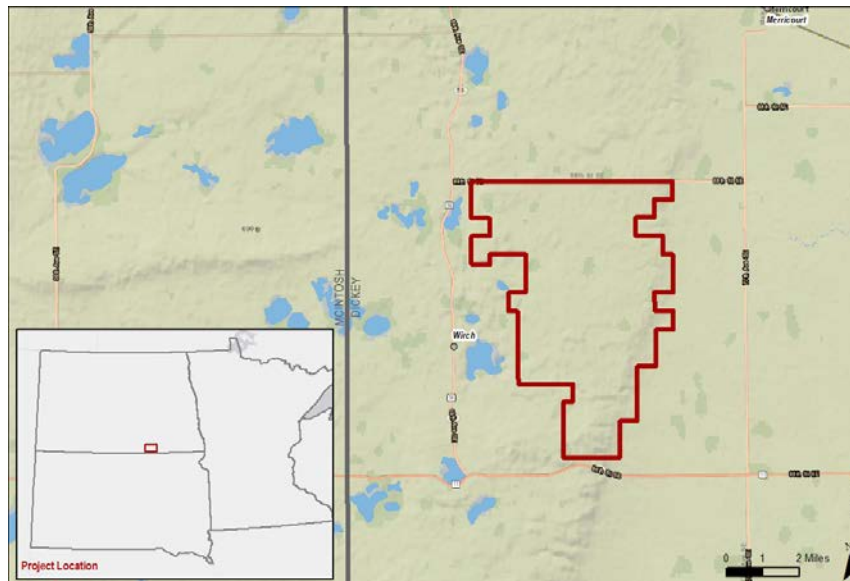
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responsible for obtaining the necessary approvals to interconnect the Foxtail Project with the MISO transmission system.

We have estimated the costs of the WAPA upgrade based on our knowledge and review of the Mandan–Ward facility, and included it with the known costs from the completed MISO studies. We have estimated the network upgrades at approximately [TRADE SECRET BEGINS TRADE SECRET ENDS] and interconnection costs at approximately [TRADE SECRET BEGINS TRADE SECRET ENDS].

Figure 1 below shows the location of the Foxtail Wind Project.

**Figure 1: Foxtail Wind Project Location**



Our wind performance analysis predicted a net capacity factor of [TRADE SECRET BEGINS TRADE SECRET ENDS] percent. We additionally project average Annual Energy Production (AEP) of approximately [TRADE SECRET BEGINS TRADE SECRET ENDS] MWh, depending on final layout and turbine selection.

Total capital costs for the Foxtail Project are currently estimated at approximately [TRADE SECRET BEGINS TRADE SECRET ENDS], which includes the estimated transmission upgrades and interconnection costs discussed above as well as anticipated siting and permitting costs. The projected LCOE for the Foxtail Project is [TRADE SECRET BEGINS TRADE SECRET ENDS].



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b. Implementation Schedule

We expect our primary construction activities on the Foxtail Project will occur in 2018 and 2019. However, engineering and some procurement will occur in 2018. The current schedule indicates that wind turbine generators will be delivered to the project site starting in time to begin turbine erection in 2019. Under the current estimated schedule, we anticipate that commercial operation will be achieved by September 2019.

Key variables that may influence the estimated construction schedule include the approval of this filing and weather-related delays. We are currently working with MISO and NextEra regarding the remaining studies as discussed above.

2. *Blazing Star I*

a. Project Description

The Blazing Star I Wind Project is being developed by Geronimo Energy and is located on approximately 37,200 acres in Hansonville, Hendricks, and Marble Townships, Minnesota. The Project will consist of a blend of **[TRADE SECRET BEGINS** **TRADE SECRET ENDS]** wind turbines and **[TRADE SECRET BEGINS** **TRADE SECRET ENDS]** turbines, resulting in 200 MW of nameplate wind power capacity. In addition to wind turbines, the Project will consist of an electrical collection system, access roads, substation and interconnection facilities, an operation and maintenance facility, and other infrastructure typical of a wind farm. Less than one half of one percent of the Project area acres will be removed from agricultural use over the life of the Project. The site is predominately active crop land and is in the wind-rich Buffalo Ridge area in Lincoln County, Minnesota near the Minnesota-South Dakota border.

Geronimo applied to interconnect the Blazing Star I Wind Project to the Company's transmission system with MISO in March 2015. Blazing Star I will be studied under the MISO February 2016 DPP Study Cycle. As discussed earlier, we do not expect the February 2016 Study Cycle to start until late 2016 or early 2017. While the Project is expected to connect to the grid through a newly-constructed Project substation that will interconnect with the Brookings to Lyon County 345 kV line, the MISO System Impact Study will determine what transmission constraints must be addressed to maintain system reliability. The Facility Studies that will follow will determine the improvements that must be made – and the cost of those improvements. The results

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of the Facility Studies will be used to complete the GIA.<sup>13</sup> Geronimo is responsible for pursuing the necessary approvals to interconnect the Blazing Star I Project with the MISO transmission system.

We have, however, identified and estimated likely transmission network upgrades and interconnection costs for the Blazing Star I Wind Project based on studies performed for the Company by a consultant, and informed by our knowledge and review of the system. The likely upgrades that Blazing Star I will have to partially or fully fund include: **[TRADE SECRET BEGINS**

**TRADE SECRET ENDS]**.

Our current estimate for network upgrades is approximately **[TRADE SECRET BEGINS** **TRADE SECRET ENDS]** and interconnection costs are approximately **[TRADE SECRET BEGINS** **TRADE SECRET ENDS]**.

While we believe our estimates are directionally accurate, final costs will not be known until the Facility Studies are complete and a GIA is executed. We will not know whether the project qualifies for Network Resource Interconnection Service (NRIS) from MISO until the System Impact Studies have been completed. However, we have applied for Network Integration Transmission Service (NITS) for the full 200 MW of the project. NITS, like NRIS will allow the project to qualify as a capacity resource upon completion of all required network upgrades.

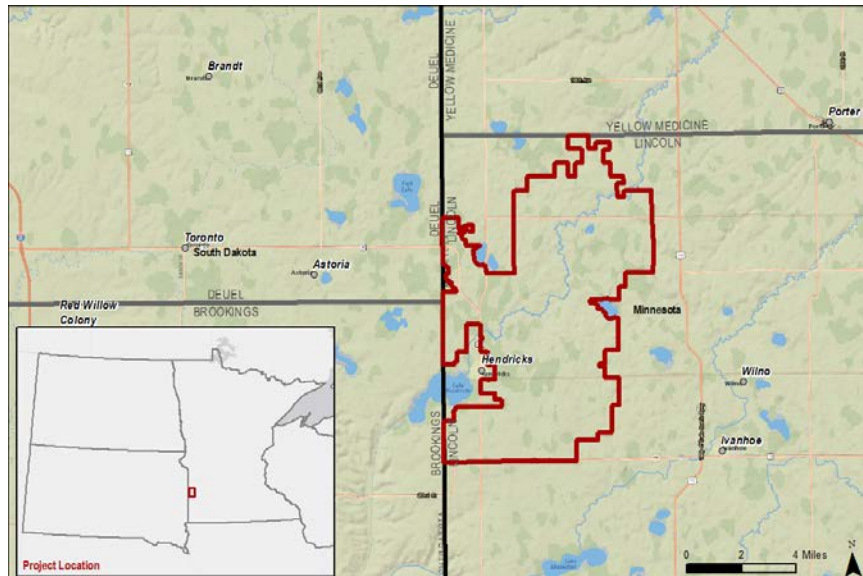
Figure 2 below shows the Blazing Star I Wind Project location.

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<sup>13</sup> We expect the facility studies to be completed within the next 12 months, with a signed GIA to follow thereafter.

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**Figure 2: Blazing Star I Wind Project Location**



Our wind performance analysis predicted a net capacity factor of approximately **[TRADE SECRET BEGINS                      TRADE SECRET ENDS]** percent. We additionally project average AEP of approximately **[TRADE SECRET BEGINS                      TRADE SECRET ENDS]** MWh, depending on final layout and turbine selection.

On July 20, 2016, Geronimo Energy submitted a *Certificate of Need Application* with the Commission.<sup>14</sup> On August 2, 2016, the Department of Commerce recommended that the Commission find the Application to be complete, and that the Commission evaluate the Petition using the comment process, rather than a contested case proceeding.<sup>15</sup> The Commission accepted the Application as substantially complete and directed an informal review process at its September 8, 2016 Agenda Meeting. Geronimo submitted a Site Permit application for the Blazing Star I Project with the Commission on September 2, 2016, which the Commission found substantially complete at its October 18, 2016 Agenda meeting.<sup>16</sup>

Total capital costs for the Blazing Star I Wind Project are currently estimated at approximately **[TRADE SECRET BEGINS                      TRADE SECRET ENDS]**, which includes the estimated transmission upgrades and interconnection

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<sup>14</sup> Blazing Star Wind Project, Large Wind Energy Conversion System, Certificate of Need Application, Docket No. IP6961/CN-16-215 (July 20, 2016)

<sup>15</sup> See Comments, Department of Commerce, Docket No. IP6961/CN-16-215 (August 2, 2016).

<sup>16</sup> See In the Matter of Blazing Star Wind Farm Site Permit Application for a Large Wind Energy Conversion System, Docket No. IP6961/WS-16-686.

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costs discussed above as well as anticipated siting and permitting costs. The projected LCOE for the Blazing Star I Project is **[TRADE SECRET BEGINS TRADE SECRET ENDS]**.

b. Implementation Schedule

We expect our primary construction activities on the Blazing Star I Wind Project will occur in 2019. However, engineering and some procurement will occur in 2018, as well as some construction pending approval of the various regulatory filings. The current schedule indicates that wind turbine generators will be delivered to the Project site starting in time to begin turbine erection in 2019. Under the current estimated schedule, we anticipate that commercial operation will be achieved by December 2019.

Key variables that may influence the estimated construction schedule include the approval of this filing, weather-related delays, and the timeliness with which the interconnection process with MISO is fully complete. We are currently working with MISO and Geronimo regarding completion of the studies discussed above.

3. *Blazing Star II*

a. Project Description

The Blazing Star II Wind Project is also being developed by Geronimo Energy. It extends the Blazing Star I Project footprint east and south – and is located on approximately 30,000 acres of predominantly active crop land. The Project will consist of a blend of **[TRADE SECRET BEGINS TRADE SECRET ENDS]** wind turbines and **[TRADE SECRET BEGINS TRADE SECRET ENDS]** turbines, resulting in 200 MW of nameplate wind power capacity. In addition to wind turbines, the Project will consist of an electrical collection system, access roads, substation and interconnection facilities, an operation and maintenance facility, and other infrastructure typical of a wind farm. Like Blazing Star I, less than one half of one percent of the Project area acres will be removed from agricultural use over the life of the Project.

Geronimo applied to interconnect the Blazing Star II Wind Project to the Company's transmission system with MISO in May 2016. Blazing Star II will be studied under the MISO August 2016 DPP Study Cycle. As discussed earlier, the Company does not expect the February 2016 Study Cycle to start until late 2016 or early 2017 – with the August 2016 Study Cycle beginning roughly six months after the February 2016 Study Cycle begins. The MISO System Impact Study will determine what

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transmission constraints must be addressed to maintain system reliability. The Facility Studies that will follow will determine the improvements that must be made – and the cost of those improvements. The results of the Facility Studies will be used to complete the GIA.<sup>17</sup> Geronimo is responsible for pursuing the necessary approvals to interconnect the Blazing Star II Project with the upper Midwest transmission system.

We have however, identified and estimated likely transmission network upgrades and interconnection costs for the Blazing Star II Wind Project based on studies performed for the Company by a consultant, and our knowledge and review of the system. We used these studies to identify expected transmission upgrades that the Project will be required to interconnect. The likely upgrades that Blazing Star II will have to partially or fully fund include: **[TRADE SECRET BEGINS**

**TRADE SECRET ENDS]**.

Our current estimate for network upgrades is approximately **[TRADE SECRET BEGINS** **TRADE SECRET ENDS]** and interconnection costs are approximately **[TRADE SECRET BEGINS** **TRADE SECRET ENDS]**.

While we believe our estimates are directionally accurate, final costs will not be known until the Facility Studies are complete and a GIA is executed. We will not know whether the Project qualifies for NRIS until the System Impact Studies have been completed. However, we have applied with MISO for NITS for the full 200 MW of the Project. NITS, like NRIS will allow the Project to qualify as a capacity resource upon completion of all required network upgrades.

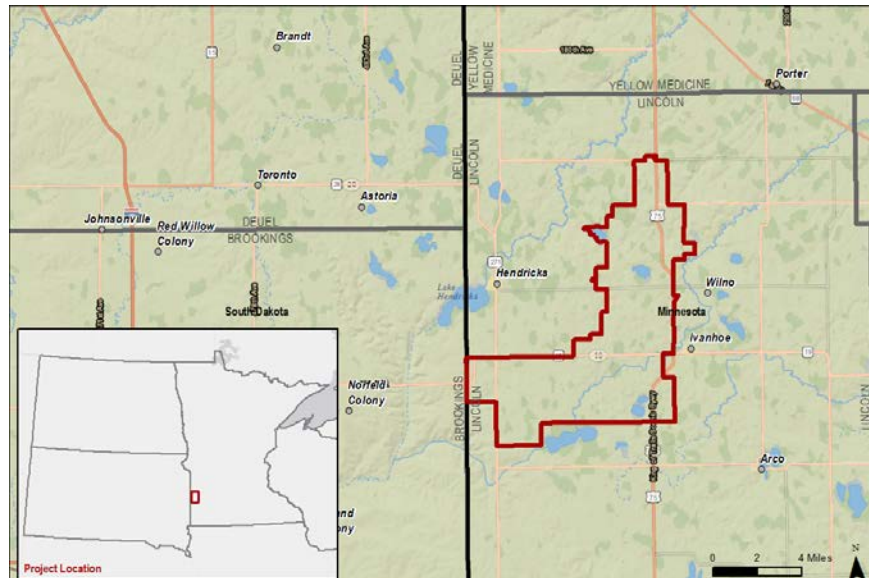
Figure 3 below shows the location of the Blazing Star II Wind Project.

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<sup>17</sup> We expect the facility studies to be completed within the next 18 months, with a signed GIA to follow thereafter.

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**Figure 3: Blazing Star II Wind Project Location**



Our wind performance analysis predicted a net capacity factor of approximately [TRADE SECRET BEGINS                      TRADE SECRET ENDS] percent. We additionally project average AEP of approximately [TRADE SECRET BEGINS                      TRADE SECRET ENDS] MWh, depending on final layout and turbine selection.

Total capital costs for the Blazing Star II Project are currently estimated at approximately [TRADE SECRET BEGINS                      TRADE SECRET ENDS], which includes the estimated transmission upgrades and interconnection costs discussed above as well as anticipated siting and permitting costs. The projected LCOE for the Blazing Star II Project is [TRADE SECRET BEGINS                      TRADE SECRET ENDS].

b.      Implementation Schedule

We expect our primary construction activities on the Blazing Star II Wind Project will occur in 2019 and early 2020. However, engineering and some procurement will occur in 2018 and early 2019. The current schedule indicates that wind turbine generators will be delivered to the project site starting in time to begin turbine erection in 2020. Under the current estimated schedule, we anticipate that commercial operation will be achieved by September 2020.

Key variables that may influence the estimated construction schedule include the approval of this filing, weather-related delays, and the timeliness with which the

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interconnection process with MISO is fully complete. We are currently working with MISO and Geronimo regarding completion of the studies discussed above.

4. *Freeborn*

a. Project Description

The Freeborn Wind Project is being developed by an affiliate of Invenergy Wind Development LLC, and is located on an approximately 40,000 acre site East of Glenville, Minnesota. The Project will consist of a blend of **[TRADE SECRET BEGINS** **TRADE SECRET ENDS]** wind turbines and **[TRADE SECRET BEGINS** **TRADE SECRET ENDS]** wind turbines, resulting in 200 MW of nameplate wind power capacity. In addition to wind turbines, the Project will consist of an electrical collection system, access roads, substation and interconnection facilities, an operation and maintenance facility, and other infrastructure typical of a wind farm.

The Freeborn Wind Project is in Freeborn County in the southeast part of Minnesota – and is similarly-situated ecologically to our Pleasant Valley Wind Project, which is in adjacent Mower and Dodge counties. The site is predominately active crop land. Invenergy applied to interconnect the Freeborn Wind Project to ITC Midwest’s transmission system in November 2014. The Project qualified for MISO’s February 2015 DPP Study Cycle. All System Impact Studies have been completed and Facility Studies are ongoing. While final interconnection and transmission upgrade costs will not be known until the Facility Studies are complete and the GIA is executed, upgrades identified to-date include: (1) upgrading the Glenworth 161 kV substation to allow interconnection of the project; (2) rebuilding the 7.6 mile North Iowa Wind – Colby 161 kV line; (3) replacing the Glenworth 161 – 69 kV transformer; and (4) upgrading the PJM Wilton 3M– 4M 345 kV transmission lines. Invenergy is responsible for pursuing the necessary approvals to interconnect the Freeborn Project with the upper Midwest transmission system.

The MISO System Impact studies show that the project will be granted 150 MW of NRIS upon completion of all required network upgrades. Invenergy is responsible for pursuing the necessary approvals to interconnect the Freeborn Project with the MISO transmission system.

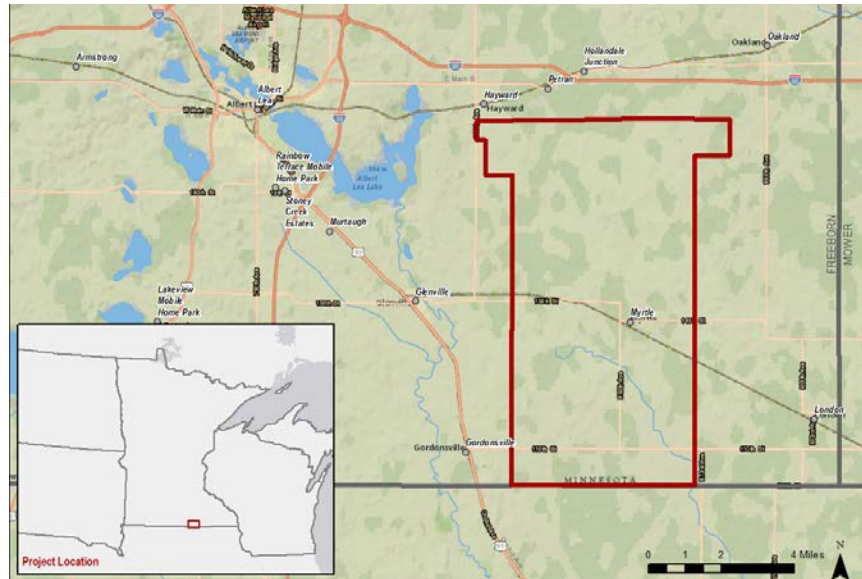
We have estimated the costs of transmission network upgrades and interconnection costs for the Freeborn Wind Project identified through the MISO studies process, and included them in our project costs. We have estimated the network upgrades at approximately **[TRADE SECRET BEGINS** **TRADE SECRET**

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**ENDS]** and interconnection costs at approximately **[TRADE SECRET BEGINS  
TRADE SECRET ENDS]**, based on our knowledge and review of the facilities involved and included this cost in our estimate.

Figure 4 below shows the location of the Freeborn Wind Project.

**Figure 4: Freeborn Project Location**



Our analysis predicted a net capacity factor of approximately **[TRADE SECRET BEGINS  
TRADE SECRET ENDS]** percent. We additionally project average AEP of approximately **[TRADE SECRET BEGINS  
TRADE SECRET ENDS]** MWh, depending on final layout and turbine selection.

Total capital costs for the Freeborn Project are currently estimated at approximately **[TRADE SECRET BEGINS  
TRADE SECRET ENDS]**, which includes the estimated transmission upgrades and interconnection costs discussed above as well as anticipated siting and permitting costs. The projected LCOE for the Freeborn Project is **[TRADE SECRET BEGINS  
TRADE SECRET ENDS]**.

b. Implementation Schedule

We expect our primary construction activities on the Freeborn Project will occur in 2020. However, engineering and some procurement will occur in 2018 and 2019. The current schedule indicates that wind turbine generators will be delivered to the project site starting in time to begin turbine erection in 2020. Under the current



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estimated schedule, we anticipate that commercial operation will be achieved by early December 2020.

Key variables that may influence the estimated project schedule include the approval of this filing, weather-related delays, and the timeliness with which the interconnection process with MISO is fully complete. We are currently working with MISO and Invenenergy regarding the remaining studies as discussed above.

**F. Balance of Plant Construction Contracts**

In addition to the contracts previously discussed, as part of our development of these projects, we will enter into BOP construction contracts with third party construction companies experienced in wind project construction. The BOP contracts will be fixed price contracts, which will minimize schedule and cost risk.

The scope of the BOP contracts will include installation of the wind turbines and construction of the site infrastructure. Site infrastructure includes access roads, turbine foundations, electrical cable collection system, collection substations, and operations and maintenance building. We have initiated discussions with established BOP contractors who have extensive experience building wind projects in the region, to evaluate our Wind Portfolio project plan and develop reasonable cost estimates for the relevant scope of work.

If our Wind Portfolio is approved by the Commission – and after the completion of our preliminary engineering including site/turbine design optimization – we will issue a firm price RFP for BOP construction to qualified contractors in order to support the completion of all proposed projects before the 2020 PTC deadline.

**G. Contingency & Communication Plan**

In its September 12, 2016 Supplemental Comments to our IRP, the Department of Commerce recommended that the Company “file a contingency plan early in the [wind acquisition] process to address the potential for the bidding process to fail.” The Commission adopted this recommendation during deliberations, and we expect the Commission’s upcoming written Order in the IRP to require a contingency plan. We propose the following measures to address the concerns the Department raised in comments.

First, we propose to make an informational filing in December 2016 in this Docket to update the Commission as to the bids received in response to our pending RFP. This filing will include a list of all bids received in response to the RFP. This will allow the

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Commission and Department to confirm the robustness of our RFP process, and ensure that we will have a sufficient number of competitive bids to move forward with the RFP and to demonstrate the competitiveness of our Wind Portfolio.

Second, in January 2018 after the Commission has approved a package of wind projects and the successful projects are underway, we propose to make an informational filing to inform the Commission on project progress. This will allow the Company to raise any viability concerns that arise with any of the projects, and will give the Company and Commission the opportunity to address those concerns in a timely fashion.

We believe touch-points between the Company, Commission, and Department will ensure that our overall acquisition process continues to be transparent and moves forward constructively.

**VI. EFFECT OF CHANGE UPON XCEL ENERGY REVENUE**

This petition results in no change in revenue for the Company. We will separately file for approval for cost recovery of the final package of wind projects the Commission selects from this process.

**CONCLUSION**

The Company's goal is to reduce carbon emissions at a reasonable cost, and this proposal to build, own, and operate a 750 MW Wind Portfolio is an important part of accomplishing this goal. Our four projects are the result of a thorough due diligence process, and they are cost-competitive when compared to recent market data for wind and other renewable projects. On this basis alone, we believe the Commission could approve this petition, but we are also committed to the acquisition process outlined in our IRP Reply comments. To that end, we put forth our projects and pricing before we received the RFP bids for transparency. We will be back to the Commission in early 2017 with a comprehensive proposal that incorporates the results of our RFP process and self-build proposals.

Dated: October 24, 2016

Northern States Power Company

STATE OF MINNESOTA  
BEFORE THE  
MINNESOTA PUBLIC UTILITIES COMMISSION

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

IN THE MATTER OF THE PETITION OF  
XCEL ENERGY FOR APPROVAL OF THE  
ACQUISITION OF WIND GENERATION  
FROM THE COMPANY'S 2016-2030  
INTEGRATED RESOURCE PLAN

DOCKET No. E002/M-16-777

**PETITION**

**SUMMARY OF FILING**

Please take notice that on October 24, 2016, Northern States Power Company, doing business as Xcel Energy, filed with the Minnesota Public Utilities Commission a Petition for Approval for the Company to build, own, and operate a 750 MW Wind Portfolio (the Foxtail, Blazing Star I and II, and Freeborn Projects).

## CONFLICTS WALL

As discussed in our 2016-2030 Integrated Resource Plan Reply Comments, the Company has taken steps to segregate the teams working on the self-build proposal (the Self-Build Team) and the RFP process (the RFP Team) to avoid any potential conflicts of interest.<sup>1</sup> Members of each team have been instructed not to share non-public information related to either the RFP process or the self-build proposal with members of the opposite team. Information related to each team's work is also being kept on separate SharePoint collaboration sites that are accessible only to members of the appropriate team.

The Independent Auditor for the RFP process has reviewed and approved the team assignments and segregation strategy. The employees assigned to each team are as follows:

### Self-Build Team

John Valerius – Corporate Development  
JB Jouve – Corporate Development  
Brad Morrison – Engineering & Construction  
Steve Hjermstad – Engineering & Construction  
Frank Qie – Engineering & Construction  
David M Adams - Legal  
Lauren Buehler – Legal (Environmental)  
Pat Flowers – Environmental Services  
Randy Oye – Transmission Access

### RFP Team

Kurt Haeger – Resource Planning  
Jon Landrum – Resource Planning  
PJ Martin – Resource Planning  
Tom Mol – Resource Planning  
Mary Morrison – Resource Planning  
Patrick Bourke – Resource Planning  
Jim Hill – Resource Planning  
Kent Scholl – Resource Planning  
Jerry Dittman – Corporate Development  
Nathan Svoboda – Engineering & Construction  
Sarah Schwartz – Siting & Land Rights  
Jim Bodensteiner – Environmental Services  
Tara Fowler – Purchased Power  
Robert Schleissinger – Risk Strategy & Control  
Michael Cronier – Excel Engineering Consultant  
David DeLuca – AWS Truepower Consultant

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<sup>1</sup> Docket No. E002/RP-15-21 (August 12, 2016)

## MISO INTERCONNECTION PROCESS

We have included estimated costs of interconnection and transmission network upgrades in our overall cost estimates for our proposed Projects. Some of the Projects have completed all MISO study processes, have detailed engineering estimates, and have executed Generator Interconnection Agreements (GIA) – increasing the certainty of our estimates. However, other Projects are not as far along, and so there is more uncertainty in those estimates. We provide an overview of the MISO generator interconnection process below.

### A. MISO Generator Interconnection Procedures

Generation projects that wish to interconnect and inject energy into the MISO system are required to obtain a GIA by following the MISO tariff requirements under Attachment X, Generator Interconnection Procedures (GIP). The GIA grants Interconnection Service, which includes Energy Resource Interconnection Service (ERIS) and Network Resource Interconnection Service (NRIS). ERIS allows a generating project to inject energy to the transmission system on an as-available basis; NRIS allows a generating project to qualify as a network resource. A project can also qualify as a network resource by obtaining firm transmission service in the form of Network Integration Transmission Service (NITS) in combination with ERIS.<sup>1</sup>

Attachment X requires projects to submit an application to MISO detailing the generating project – size, type, location (state and county), the point where the projects interconnect to the grid, and supporting technical data to perform the studies. Along with the Application, the projects are required to pay a number of deposits and milestone payments, which are required for the project to qualify for a MISO Definitive Planning Phase (DPP) Cycle.

MISO combines all projects that qualify for a DPP cycle from a particular region (West, South and Central) before a certain date into “groups,” which are then studied together. Generally, generation projects that are studied together share in the costs of the network upgrades based on their impact on the identified transmission facilities. MISO currently starts two DPP cycles per year, per region – one in February and the other in August. The DPP cycles include System Impact Studies and Facility Studies for the MISO region, along with Affected System Studies, which are performed by

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<sup>1</sup> Network Integration Transmission Service is granted pursuant to Module B of the MISO FERC Electric Tariff.

non-MISO entities such as Southwest Power Pool (SPP), PJM, Minnkota Power Company, and others. The Affected System Studies evaluate the impact of the MISO projects on their systems. These studies lead to execution of GIAs and Facility Construction Agreements (FCA).

System Impact Studies identify the network upgrades required for a given project to interconnect. Facility Studies estimate the cost of the interconnection and network upgrade facilities. The GIA is the contract between the project, the Transmission Owner (TO) at the point of interconnection, and MISO. The GIA identifies all transmission upgrades required for the project to interconnect, and details the costs of the transmission upgrades owned by the TO participating in the GIA. Transmission upgrades of facilities owned by other TOs are identified and contracted under FCAs.

MISO submitted revisions to its Tariff amending the GIP with FERC on October 21, 2016<sup>2</sup> which are expected to address the significant delays in its processing of the interconnection studies that has been occurring. These delays are principally due to the need for MISO to conduct multiple unscheduled restudies of lower-queued projects each time a higher-queued project is withdrawn from the queue.<sup>3</sup> The resulting restudies, which often have a cascading effect on other projects, impair MISO's ability to administer the queue in a timely fashion, significantly delay the execution of GIAs, and exacerbate the uncertainty in project costs. In addition, projects that are not ready to proceed have no incentive to voluntarily exit the queue under the current process; rather, they often linger in the queue until the very last moment, often when the impact of their withdrawal on other projects is at its greatest.

The DPP studies are nearly a year behind schedule, with the August 2015 DPP Study Cycle (Aug-15 Cycle) presently being processed. An issue impacting the queue is the size of the DPP cycles. MISO's generator Interconnection Queue has grown significantly over the past couple of years, likely in response to the extension of the PTC and the Environmental Protection Agency's Clean Power Plan rules. For perspective, we provide a summary of the projects in the various DPP West area study cycles.

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<sup>2</sup> FERC Docket No. ER17-156-000.

<sup>3</sup> Because generator and transmission assumptions are interrelated, whenever an earlier-queued project withdraws from the queue, that withdrawal changes the underlying assumptions in the interconnection studies conducted by MISO for later-queued projects.

**Table 1: MISO West Region Study Cycle Project Megawatts**

DPP Study Cycle	Total	MN	SD	ND	Iowa
August 2012	2,990	1,146	0	279	1,565
February 2013	546	78	0	200	50
August 2013	740	240	0	150	100
February 2014	157	0	0	0	0
August 2014	1,045	0	0	150	589
February 2015	2,225	300	200	0	650
August 2015	2,543	19	700	0	1,304
February 2016	6,475	350	702	60	4,060
August 2016	7,634	1,503	1,106	1,101	1,126
<i>Totals</i>	<i>25,141</i>	<i>3,636</i>	<i>2,707</i>	<i>1,940</i>	<i>9,444</i>

Preliminary results from the Aug-15 Cycle were published on October 6, 2016, with final study results expected in the November/December 2016 timeframe. The Feb-16 study cycle is not expected to start until late 2016/early 2017, with results available in mid-2017; the Aug-16 cycle will begin roughly six months after the Feb-16 Study Cycle begins.

The size of the DPP study cycles poses a number of problems and makes it difficult to accurately predict the transmission upgrades that will be required for a project to interconnect. This is because the transmission system as designed today is not capable of accommodating the large number of megawatts that have requested to interconnect – and greatly exceeds the demand from companies such as Xcel Energy, Ottertail Power Company, Minnesota Power, Great River Energy, MidAmerican and others who have announced plans to purchase or develop more wind generation.

Also, history indicates that a high percentage of these projects will withdraw from the Interconnection Queue. We expect that when all of these projects are studied together, the results will include a significant amount of identified network upgrades that will ultimately not be required once the projects that do not win purchase agreements with utilities withdraw. Predicting which projects and the number of projects that will move forward is very difficult, and can greatly impact the required transmission upgrades. Further complicating the ability to accurately predict final impacts and costs is the Affected System Studies from entities such as SPP and PJM, which also include projects wishing to interconnect to their systems.





## ENVIRONMENTAL STUDIES OVERVIEW

All wind projects are subject to a standard set of environmental study requirements – many of which must be completed prior to final design, or micro-siting of the project. These studies generally fall into the following categories:

*The United States Fish and Wildlife Service (USFWS) – Wind Energy Guidelines (WEG).* These guidelines lay out a progressive step approach to evaluating potential large wind energy conversion sites. Referred to as “tiers” within the guidelines, each tier involves more detailed refinements to each site’s assessment to assist the project proposer in identifying a potential project site with the least possibility for impacts to wildlife and critical habitat. The first two tiers are completed as part of site selection. Tier III involves site-specific pre-construction wildlife and habitat studies. Tiers IV – V are completed post-construction, as needed. Tier I and II are done remotely using existing computer/database information. This information is then used to determine the Tier III studies that may be needed. From the beginning of Tier I to the completion of Tier III may take up to three years. In Minnesota, it is common to conduct special studies for Grouse Lek, Bald Eagles, Native Prairie, and threatened and endangered species, such as the Dakota Skipper and Posheik Skipperling (butterflies) and Northern Long-Eared Bat.

Wetlands are also identified and delineated in order to ensure their protection and to identify appropriate federal, state and local compliance requirements for the project. In all cases, when issues are identified, we work closely with state and local resources regarding our plan to avoid areas having, for example, significant biodiversity or other significance.

*Cultural Resources.* These studies fall into Class I, Class Ia and Class II categories – with Classes I and Ia done remotely using existing computer/database information. These studies are to identify both tribal and non-tribal historical items of significance. Like the USFWS WEG computer-based studies, depending on the results of the desktop studies, additional field surveys (referred to as Class II studies) may be necessary to ensure proper identification and protection of these unique resources. For example, with the Foxtail project, we became aware of a historic battlefield near the project boundary – and with the Freeborn project, the Bohemian Brick Hall. We take these findings into consideration as we complete the detailed site plans for these projects and ensure that our equipment and facilities avoid impacts to these sites of cultural significance. Like with the other studies involved in developing a wind

project, we work closely with the appropriate agencies regarding our plans to avoid areas having substantial historical significance.

All Minnesota projects also require other studies such as for flicker, noise, and other potential impacts – or perhaps additional permits, such as for construction stormwater and crossing permits. If there are wetlands impacts, an Army Corp of Engineers 404 Permit and wetland mitigation are necessary.

We note additionally that the Minnesota projects will require Large Wind Energy Conversion System Site Permits from the Minnesota Public Utilities Commission, per Minn. Stat. § 216F. The North Dakota project will require a Certificate of Site Compatibility from the North Dakota Public Service Commission, per Chapter 49-22 of the North Dakota Century Code. These permitting processes identify and address human and environmental impacts of each project, and provide federal, state, and local agencies, as well as individual landowners, the opportunity to participate in the review and siting of the wind facility.

## CERTIFICATE OF SERVICE

I, Jim Erickson, hereby certify that I have this day served copies of the foregoing document on the attached list of persons.

xx by depositing a true and correct copy thereof, properly enveloped with postage paid in the United States mail at Minneapolis, Minnesota

xx electronic filing

**Docket Nos.        Miscellaneous Electric Service List  
                          E002/RP-15-21  
                          Xcel Energy RP Interested Parties**

Dated this 24th day of October 2016

/s/

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Jim Erickson  
Regulatory Administrator

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Julia	Anderson	Julia.Anderson@ag.state.mn.us	Office of the Attorney General-DOC	1800 BRM Tower 445 Minnesota St St. Paul, MN 551012134	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
Christopher	Anderson	canderson@allete.com	Minnesota Power	30 W Superior St  Duluth, MN 558022191	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
James J.	Bertrand	james.bertrand@stinson.com	Stinson Leonard Street LLP	150 South Fifth Street, Suite 2300  Minneapolis, MN 55402	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
Carl	Cronin	Regulatory.records@xcelenergy.com	Xcel Energy	414 Nicollet Mall FL 7  Minneapolis, MN 554011993	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
Jeffrey A.	Daugherty	jeffrey.daugherty@centerpointenergy.com	CenterPoint Energy	800 LaSalle Ave  Minneapolis, MN 55402	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
Ian	Dobson	ian.dobson@ag.state.mn.us	Office of the Attorney General-RUD	Antitrust and Utilities Division 445 Minnesota Street, BRM Tower St. Paul, MN 55101	Electronic Service 1400	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
Emma	Fazio	emma.fazio@stoel.com	Stoel Rives LLP	33 South Sixth Street Suite 4200 Minneapolis, MN 55402	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
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Brian	Draxten	bhdraxten@otpc.com	Otter Tail Power Company	P.O. Box 496 215 South Cascade Street Fergus Falls, MN 565380498	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
Chris	Duffrin	chrisd@thenec.org	Neighborhood Energy Connection	624 Selby Avenue  St. Paul, MN 55104	Paper Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
Tristan	Duncan	tlduncan@shb.com	Shook Hardy & Bacon, L.L.P.	2555 Grand Blvd.  Kansas City, MO 64108	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
Ed	Ehlinger	Ed.Ehlinger@state.mn.us	Minnesota Department of Health	P.O. Box 64975  St. Paul, MN 55164-0975	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
Kristen	Eide Tollefson	N/A	R-CURE	28477 N Lake Ave  Frontenac, MN 55026-1044	Paper Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
Bret	Eknes	bret.eknes@state.mn.us	Public Utilities Commission	Suite 350 121 7th Place East St. Paul, MN 551012147	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
Betsy	Engelking	betsy@geronimoenergy.com	Geronimo Energy	7650 Edinborough Way Suite 725 Edina, MN 55435	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
Kate	Fairman	kate.frantz@state.mn.us	Department of Natural Resources	Box 32 500 Lafayette Rd St. Paul, MN 551554032	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
Sharon	Ferguson	sharon.ferguson@state.mn.us	Department of Commerce	85 7th Place E Ste 500  Saint Paul, MN 551012198	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties

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Dave	Frederickson	Dave.Frederickson@state.mn.us	MN Department of Agriculture	625 North Robert Street St. Paul, MN 551552538	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
Bruce	Gerhardson	bgerhardson@otpc.com	Otter Tail Power Company	PO Box 496 215 S Cascade St Fergus Falls, MN 565380496	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
Travis	Germundson	travis.germundson@state.mn.us		Board of Water & Soil Resources 520 Lafayette Rd Saint Paul, MN 55155	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
Allen	Gleckner	gleckner@fresh-energy.org	Fresh Energy	408 St. Peter Street Ste 220 Saint Paul, Minnesota 55102	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
Julie	Goehring	N/A		708 70 Ave. NW Moorhead, MN 56560	Paper Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
Janet	Gonzalez	Janet.gonzalez@state.mn.us	Public Utilities Commission	Suite 350 121 7th Place East St. Paul, MN 55101	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
Bill	Grant	Bill.Grant@state.mn.us	Minnesota Department of Commerce	85 7th Place East, Suite 500 St. Paul, MN 55101	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
Thomas J.	Grever	tgrever@shb.com	Shook, Hardy & Bacon L.L.P.	2555 Grand Blvd. Kansas City, MO 64108	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
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Patrick	Hentges		City Of Mankato	P.O. Box 3368  Mankato, MN 560023368	Paper Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
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Margaret	Hodnik	mhodnik@mnpower.com	Minnesota Power	30 West Superior Street  Duluth, MN 55802	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
John	Hole	jhole@misoenergy.org	MISO	1125 Energy Park Dr  St. Paul, MN 55108	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
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Anne	Jackson	anne.jackson@state.mn.us	MN Pollution Control Agency	520 Lafayette Road  St Paul, MN 55115	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
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Peder	Larson	plarson@larkinhoffman.com	Larkin Hoffman Daly & Lindgren, Ltd.	8300 Norman Center Drive Suite 1000 Bloomington, MN 55437	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties

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David	Moeller	dmoeller@allete.com	Minnesota Power	30 W Superior St  Duluth, MN 558022093	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
Andrew	Moratzka	andrew.moratzka@stoel.com	Stoel Rives LLP	33 South Sixth St Ste 4200  Minneapolis, MN 55402	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
Dorothy	Morrissey	dorothy.morrissey@state.mn.us	Public Utilities Commission	121 7th Place East Suite 350 St. Paul, MN 55101	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Debra	Moynihan	debra.moynihan@state.mn.us	MN Department of Transportation	395 John Ireland Blvd MS 620  St. Paul, MN 55155-1899	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
Brian	Napstad	bnapstad@yahoo.com	Board of Water and Soil Resources	51227 Long Point Place  McGregor, MN 55780	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
Carl	Nelson	cnelson@mncee.org	Center for Energy and Environment	212 3rd Ave N Ste 560  Minneapolis, MN 55401	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
David	Niles	david.niles@avantenergy.com	Minnesota Municipal Power Agency	220 South Sixth Street Suite 1300 Minneapolis, Minnesota 55402	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
Rolf	Nordstrom	rnordstrom@gpisd.net	Great Plains Institute	2801 21ST AVE S STE 220  Minneapolis, MN 55407-1229	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
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Adam	Oliver	N/A		12060 Sherburne Ave Becker City Hall Becker, MN 55308	Paper Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
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Bob	Patton	bob.patton@state.mn.us	MN Department of Agriculture	625 Robert St N  Saint Paul, MN 55155-2538	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties

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Kevin	Reuther	kreuther@mncenter.org	MN Center for Environmental Advocacy	26 E Exchange St, Ste 206  St. Paul, MN 551011667	Electronic Service	No	GEN_SL_Xcel Energy_Xcel Energy RP Interested Parties
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