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Minneapolis, MN 55401

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March 16, 2017

—Via Electronic Filing—

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

RE: SUPPLEMENT
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 Supplement to our October 24, 2016 Wind Acquisition Petition in the above-referenced docket.

We have now concluded our wind acquisition process and are pleased to present a 1,550 MW portfolio of wind generation – 750 MW of Company developed projects and 800 MW of Request for Proposal (RFP) selected projects - for the Commission's approval. Wind generation is at historically low prices and we believe our proposed portfolio will provide substantial benefits to our customers and the communities we serve.

Some of the enclosed documents are marked either partially or fully "Protected Data" 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 "Protected Data" because the knowledge of such information in conjunction with public information in our Supplement could adversely impact future contract

negotiations, potentially increasing costs for these services for our customers. For these reasons, 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 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

Nancy Lange	Chair
Dan Lipschultz	Commissioner
Matthew Schuerger	Commissioner
Katie Sieben	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 **SUPPLEMENT**

INTRODUCTION

Northern States Power Company, doing business as Xcel Energy, submits to the Minnesota Public Utilities Commission this Supplement to our October 24, 2016 Petition for Approval of the Acquisition of Wind Generation from the Company's 2016-2030 Integrated Resource Plan (IRP).[1]

We are excited to present a 1,550 MW portfolio of wind generation – 750 MW of Company developed projects and 800 MW of Request for Proposal (RFP) selected projects - for the Commission's approval. Specifically, the projects we seek Commission approval of are as follows:

Table 1: 1,550 MW Wind Portfolio

Project Name	Size	Type	Location
Blazing Star I	200 MW	Self-Build	Lincoln County, MN
Blazing Star II	200 MW	Self-Build	Lincoln County, MN
Foxtail	150 MW	Self-Build	Dickey County, ND
Freeborn	200 MW	Self-Build	Freeborn County, MN and Worth and Mitchell Counties, IA

[1] Docket No. E002/RP-15-21.

Crowned Ridge	600 MW	BOT and PPA	Codington County, SD
Lake Benton	100 MW	BOT	Pipestone County, MN
Clean Energy #1	100 MW	PPA	Mercer and Morton Counties, ND
Total	**1,550 MW**		

Our decision to pursue this amount of wind generation is driven by several reasons.

First, the highly competitive pricing of these projects will provide substantial qualitative and quantitative benefits to our customers. Adding this 1,550 MW portfolio to the NSP system would result in net benefits of $2.319 billion (on a Present Value of Societal Costs (PVSC) basis) and in net customer bill savings of $1.599 billion (on a Present Value of Revenue Requirements (PVRR) basis). The wind portfolio will decrease customer bills beginning in 2021 and save them an average of $127 million per year through the life of the projects.

Second, it is consistent with the path and the analysis we laid out in our IRP and our portfolio is the right size to leave open the opportunity to pursue other resource additions in the 2020s, such as solar.

Third, this wind generation is a reasonable and prudent way to ensure our compliance with the state's clean energy objectives. We still need to add wind to meet the 24 percent renewable energy standard (RES) requirement.[2] While this wind portfolio will accelerate our compliance with the RES requirement, we believe this is appropriate given the prices and savings we are seeing.

Lastly, there are transmission limitations that emerged during the course of the wind acquisition process. These limitations, coupled with many others seeking to add significant amounts of wind generation to the transmission system, created risks which impacted our analysis – and ultimately the number – of wind projects we could add.

Our collective willingness to move quickly so far is allowing for our customers to be in a position to realize the maximum benefits from our proposed wind portfolio. The Company and RFP bidders took steps in 2016 to qualify for 100 percent of the production tax credit (PTC) understanding that going forward, the PTC incentive will begin to phase down, moving to 80 percent for projects commenced in 2017 and lower each year thereafter. Additionally, the Commission's authorization of the modified Track 2 Process has been helpful for allowing the acquisition process to move quickly while assuring transparency and fairness for all of those that

[2] Minn. Stat. § 216B.1691

participated. We are happy to report that our RFP analysis and review was overseen and confirmed appropriate by the Auditor.

The need to move quickly still remains in order to accommodate the implementation timelines necessary to achieve full PTC benefits. We therefore respectfully propose the following procedural schedule:

- May 1, 2017 – Comments
- May 15, 2017 – Reply Comments
- July 13, 2017 – Commission Deliberations

This proposed schedule allows parties six weeks to prepare comments, two weeks to prepare reply comments and eight weeks for the Commission to complete their deliberations. We acknowledge this timeline is tight, however, a decision by the Commission in July ensures the developers and the Company have sufficient certainty to proceed with our projects, complete all the necessary work and capture the full benefit of the PTC for our customers. In addition, we commit to filing a project progress report with the Commission in January 2018. This report will allow the Company to raise any viability concerns that arise with any of the projects, and will give the Commission and parties an opportunity for oversight and questions.

In closing, wind generation is at a historically low price and we believe near-term wind additions present a prudent opportunity to achieve lower carbon emissions while driving down overall system costs. We respectfully request the Commission take the following actions:

- Approve 1,550 MW portfolio of wind resource additions to the NSP system;
- Approve an aggregate, symmetrical capital cap for the four self-build project portfolio;
- Confirm the 1,550 MW proposed wind portfolio is a reasonable and prudent way to continue to meet our obligations under Minnesota's Renewable Energy Standard; and
- Establish a procedural schedule similar to the one we have proposed such that the Commission may complete deliberations in July 2017 so we may proceed with these projects and secure 100 percent of the PTC benefits.

BACKGROUND

In our most recent IRP the Commission found it reasonable to acquire at least 1,000 MW of wind—and possibly more—before 2020.[3] Toward that end, in October 2016

[3] Docket No. E002/RP-15-21, January 11, 2017 Order point 3

we filed our initial petition in this docket explaining that our wind acquisition process involved two efforts: (1) a RFP for Purchased Power Agreements (PPAs) and Build-Own-Transfer (BOT) projects; and (2) a Company-built 750 MW Wind Portfolio.

To ensure transparency during our acquisition process, we submitted our self-build proposal in advance of receiving the incoming RFP bids from developers and committed to filing this supplement after evaluating bids received in response to the Company's RFP. As discussed in our October filing, our four self-build projects total 750 MW and were selected after a thorough due diligence process involving the review of many aspects of several project sites across our region including location, wind availability, transmission and interconnection considerations, siting issues and more. We plan to manage these four projects as a portfolio and therefore propose to subject our cost recovery to an aggregate, symmetrical capital cap for the self-build project portfolio.

In addition to our self-build project work, a separate team also reviewed and analyzed the proposals received in response to our RFP.[4] The bids were evaluated in a four-step process: (1) completeness and threshold review to confirm that all information required had been included and that each proposal met the RFP criteria; (2) calculation of levelized cost of energy (LCOE) for each project; (3) non-price review which scored the projects on areas such as permitting, site control, and transmission; and (4) final ranking. Upon completion of these steps, four projects totaling 1,100 MW materialized to the shortlist, with another two projects totaling 200 MW listed as backup. Our analysis and review was overseen and confirmed appropriate by the Auditor.

The RFP process then continued to the contract negotiation phase. As with any negotiation process, there were compromises made by all parties and terms and conditions evolved from those put forth by developers in the initial bidding process. These complex negotiations were done in a compressed timeframe in an effort to keep the projects on track and resulted in three projects totaling 800 MW.

Once the RFP process was concluded and the conflicts "wall" between the RFP and self-build teams was eliminated, we were able to compare terms and inputs used to evaluate the two sets of projects as well as evaluate the total portfolio. Together, our self-build and RFP efforts result in our recommendation to add 1,550 MW of wind resources to the NSP system.

[4] The conflicts "wall" we established to segregate internal personnel working on the self-build proposals and the RFP to avoid potential conflicts of interest is discussed in Attachment A to our October 24, 2016 Petition.

The additional wind proposed in this supplement will also help us meet or exceed our compliance obligations under Minnesota's RES. We think it is helpful to start the discussion about our recovery plans for these investments at this juncture in light of the timing of the in-service dates for these projects. The in-service dates range from 2019-2020, the timeframe during which we are currently anticipating our multi-year rate case settlement to be in effect (if the multi-year rate plan (MYRP) settlement is approved in Docket No. E002/GR-15-826). Accordingly, we intend to return to the Commission to seek recovery of these costs through the annual RES rider process as opposed to our next rate case which will not be filed until 2019, at the earliest, if the settlement is approved.

We will be applying for an Advanced Determination of Prudence (ADP) for our wind portfolio with the NDPSC within 14 days of this Supplement. North Dakota law provides that the NDPSC should act on our ADP Application within seven months. In addition, we will require the NDPSC to issue a Certificate of Site Compatibility for the Foxtail Project and grant the Company a Certificate of Public Convenience and Necessity (CPCN) for it. We plan to apply for these development-related approvals nearer to commencing construction for the Project. We will also be seeking cost recovery for our wind portfolio with the South Dakota Public Utilities Commission.

Our wind portfolio is also implicated in our currently pending Resource Treatment Framework (RTF) proceeding before the Commission and the North Dakota Public Service Commission (NDPSC) (Docket E002/M-16-223). As part of our proposed RTF, we suggested that it may be appropriate to not allocate any portion of the wind portfolio to our North Dakota jurisdiction as part of a larger overall solution in which the Company would recover the costs of other resources not approved by the NDPSC from our Minnesota jurisdiction. Based on the overall benefits provided by our wind portfolio, we believe the Commission can proceed with their consideration of our proposed new wind generation in this docket as it would with any other resource and any jurisdictional allocation issues can be addressed later in the RTF docket.

In the balance of this Supplement, we:

- Describe the RFP process and resulting projects;
- Recap the Company's self-build projects;
- Provide an overview of the risks associated with the projects and how we have attempted to mitigate those risks;
- Outline wind curtailment considerations; and
- Discuss our proposed overall portfolio, including economic analysis and rate impacts.

We provide responses to the Commission's Information Requests (IRs) 1-3 in this supplement as requested. For ease of reference, we have provided the IRs as Attachment A to this filing along with the location of the answer within this supplement. Below are the attachments provided with this filing.

Filing Attachments

Attachment A	Responses to MPUC Information Request Nos. 1-3
Attachment B and B1	Independent Auditor Report and Project List
Attachment C	Crowned Ridge Wind, LLC - Wind Energy Purchase Agreement
Attachment D	Crowned Ridge Wind II (ESI Energy, LLC) – Purchase and Sale Agreement
Attachment E	Lake Benton II (ESI Energy, LLC) – Purchase and Sale Agreement
Attachment F	Clean Energy I (ALLETE Clean Energy, Inc.) – Wind Energy Purchase Agreement
Attachment G	Vestas-American Wind Technology - Master Supply Agreement
Attachment H	Foxtail (ESI Energy, LLC) – Purchase and Sale Agreement
Attachment I	Blazing Star I (Geronimo Energy, LLC) – Purchase and Sale Agreement
Attachment J	Blazing Star II (Geronimo Energy, LLC) – Purchase and Sale Agreement
Attachment K	Freeborn (Invenergy Wind Development North America LLC) – Purchase and Sale Agreement
Attachment L	Modeling Assumptions
Attachment M	Project Revenue Requirements and LCOEs
Attachment N	Jurisdictional Impact of Proposed Projects

SUPPLEMENT

I. RFP Process and Resulting Projects

On September 22, 2016, the Company issued an RFP seeking up to 1,500 MW of wind generation projects and giving potential developers until October 25, 2016 to provide RFP responses. The response to the RFP was robust with 95 proposals associated with 48 projects from 17 bidders totaling nearly 10,000 MW of nameplate wind generation capacity. The bids included 64 PPA proposals, 28 BOT proposals, and 3 proposals that combined both structures. The pricing included in many of the RFP responses was attractive with more than 30 responses below $22/MWh on a LCOE basis.

The RFP process resulted in successful contract negotiations of three projects totaling 800 MW of installed wind capacity, as shown below in Table 2.

Table 2: RFP Wind Portfolio Projects

Project Name	Size	Location	Bid Type	LCOE
				[PROTECTED DATA BEGINS
Crowned Ridge	600 MW	Codington County, SD	Combined	
Lake Benton	100 MW	Pipestone County, MN	BOT	
Clean Energy #1	100 MW	Mercer and Morton Counties, ND	PPA	
				PROTECTED DATA ENDS]

A. Competitive Bidding Process

The three RFP wind projects we propose for Commission approval are the result of an RFP designed in accordance with the Track 1 formal bidding process established in Docket No. E002/RP-04-1752.[5] In this process, the Company issues an RFP, evaluates the bids received, selects proposals from among the bidders, negotiates projects with the selected developers, and presents the results to the Commission for approval. Below we discuss the competitive bidding process in more detail.

1. Independent Auditor

In August of 2016, the Company engaged Leidos Engineering, LLC (Leidos or the Auditor) as an independent auditor in accordance with the requirements set forth in Track 1 of the formal bidding process. This independent audit began on August 2, 2016 with the development of RFP documents, continued through the evaluation of proposals, and ended on December 9, 2016 with the final selection of short-list bidders. The main objectives of the Audit were to (1) ensure that RFP documents provided sufficient information for bidders; (2) identify any potential bias in the evaluation criteria, so that the Company could address it as necessary; and (3) verify that the evaluation criteria were applied in a fair manner. The Auditor's Report is provided as Attachment B to this filing and the project ranking list produced from the RFP review process is provided as Attachment B1.

[5] In its recent IRP Order, the Commission approved the use of this modified acquisition process in conjunction with the Company's self-build projects for the purpose of acquiring wind and solar resources in the 2016-2021 timeframe. Docket No. E002/RP-15-21 (Jan. 11, 2017).

2. RFP Notice

The RFP was officially issued on September 22, 2016. We provided notice of our RFP to potential bidders through news media as well as several government and industry publications and websites. The RFP notice identified eligible resource options, outlined the treatment of transmission and interconnection costs, explained how multiple proposals for the same project would be treated, and provided a model wind PPA, sample BOT Term Sheet and Standard Bidder Forms. The RFP notice also established communication protocols and stipulated that all responses would be due by 5:00 PM Mountain Daylight Time on October 25, 2016. The documents required for bids were also made available through Xcel Energy's website.

3. Evaluation Process

All bids were received by the proposal due date of 5:00 pm MDT on October 25, 2016 and remained sealed until they could be opened together. On October 26, 2016, Xcel Energy's RFP evaluation team opened all bids, catalogued them and implemented the necessary controls to prevent bid information from biasing the process. The controls included the conflicts wall described in our October filing, the securing of all bid documents, and the limiting of access to these documents and the RFP team's analysis to prevent information sharing.

Over the next few weeks, the bids were evaluated in a four-step process:

1) **Completeness and Threshold**: Upon opening the proposals, at least two RFP Resource Planning Team individuals reviewed each proposal to confirm that all information required had been included (completeness review) and that each proposal met the criteria identified in the RFP such as size and location (threshold review). The evaluation team contacted any bidders who did not pass the initial completeness and threshold review and allowed bidders a five-business-day window to address any deficiencies. If the deficiencies were not addressed in a timely manner, the projects were disqualified and no longer considered for short listing. The completeness and threshold review lasted nearly a month as a number of bidders had provided bidder forms that were incomplete or missing information. As a result, this stage of the evaluation process delayed the LCOE and non-price reviews for many of the projects until the end of November. Of the 95 separate proposals received, only six were disqualified from further consideration on this basis.

2) **Levelized Cost of Energy**: Xcel Energy calculated the LCOE for all PPA and BOT proposals that met all completeness and threshold criteria. The LCOE

analysis took place during the end of November and early December due to delays in the completeness and threshold reviews. The objective of the LCOE calculations was to identify projects that would have the lowest total cost and to facilitate a fair comparison between projects. The LCOE for each PPA was calculated using the proposed energy generated and PPA payments. The LCOE for each BOT was calculated using a capital-related revenue requirements model developed by Xcel Energy. The inputs for this model included a mix of information provided by both the bidders and Xcel Energy. Key bidder provided information included the BOT payment terms, PPA pricing, net capacity factors/energy production estimates. The main model assumption provided by Xcel Energy included estimates for ongoing operations and maintenance (O&M) and capital expenditures. Static assumptions related to deferred tax impacts on pricing were used consistent with the assumptions used in calculating pricing for the Company's self-build portfolio. The assumptions used for cost of capital, discount rate, and escalation were developed by Xcel Energy.

Ongoing maintenance and capital expenditures for the BOT proposals were determined using the methodology developed by an Xcel Energy engineer who was designated to assist with the RFP process. This methodology was reviewed and approved by the Auditor prior to the bid submittal deadline on October 25 to ensure an unbiased approach.

3) **Non-Price Review**: The non-price scoring and qualitative risk assessment took place during the end of November and early December. The non-price measures were intended to supplement the LCOE rankings and to determine a preference in the event that LCOE prices were sufficiently close together. For the non-price review, projects were scored in five different areas: (1) generator technology, availability and warranties; (2) permitting and compliance; (3) site control; (4) transmission; and (5) accounting assessment. Bids were allocated "yes" or "no" answers to questions associated with each area, resulting in an overall non-price score for each project based on the assessment of risks related to these categories.

4) **Final Ranking**: The results of the LCOE review and non-price review were used to develop the final ranking of proposed projects and determine the short-list of projects that would proceed to negotiations. Projects were sorted by LCOE score first. In the event that two projects were within 10% of each other based on LCOE, the non-price scores were used to determine the ultimate ranking. In other words, prices within 10% of each other were considered equal, and the non-price scores were used as the tie-breaker. This

stage of the evaluation took place during the first week of December and final rankings were finalized on December 8, 2016 per the RFP schedule.

The overall evaluation was conducted by two separate teams to help maintain an unbiased process. The LCOE/price evaluation team focused on evaluating all RFP projects based on proposed price and a standardized calculation of LCOE. The non-price team focused on conducting the completeness and threshold and non-price reviews.

The evaluation teams were comprised of Xcel Energy employees and third-party consultants. These RFP team members had not been involved in the development of NSP's self-build proposal, with the exception of one engineer who was responsible for developing the O&M and ongoing capital expenditure cost inputs to the LCOE/price review for BOT projects. This work was done in consultation with the Auditor to avoid bias.

On December 9, 2016, the Company presented to the Auditor its short-list of RFP projects with which it intended to enter negotiations. Two back-up projects were also identified to potentially replace any short-list projects that might withdraw during the negotiation process. The Auditor approved the shortlist before we entered negotiations. The following table identifies the short-list and back-up project presented by the Company to the Auditor.

Project Name	Developer	Size	Location	Type	Rank
[PROTECTED DATA BEGINS					
					PROTECTED DATA ENDS]
Crowned Ridge	NextEra Energy	600 MW	Codington County, SD	PPA & BOT	Short List
[PROTECTED DATA BEGINS					
					PROTECTED DATA ENDS]
Lake Benton	NextEra Energy	100 MW	Pipestone County, MN	BOT	Short List
Clean Energy #1 (back-up)	Allete Clean Energy (ACE)	100 MW	Mercer and Morton, ND	PPA	Back-Up
[PROTECTED DATA BEGINS					
					PROTECTED DATA ENDS]

The Auditor's Report (Attachment B) also verified the selection of the four short-listed projects.

4. Negotiations and Due Diligence

On December 15, 2016, the Company held initial conversations with the parties whose bids were selected for the short list. In negotiations, the Company reaffirmed the statements in the RFP process that all projects were required to meet the covenants set forth in the RFP notice and that many of the covenants were non-negotiable. Likewise, a bidder's ability to achieve a Commercial Operation Date (COD) to allow for the full PTC tax benefit and responsibility for transmission cost risk was also non-negotiable. In addition, the Company also highlighted that bidders were required to meet the security requirements detailed in the model purchase power agreement for PPAs and the purchase and sale terms sheet for BOTs. On December 23, one of the short-listed bidders, **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]**, formally withdrew their BOT bid from consideration indicating that they would not be able to support the security requirements.

Concurrent with negotiations, the Company began a more detailed due diligence of the technical aspects of each project. The due diligence process found that one project on the Company's initial short list, the **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]** Project was subject to significant transmission issues that would substantially increase the cost to NSP and its customers. The bidder was unable to remedy these issues and, as a result, decided to withdraw their bid on January 11, 2017.

Shortly after the withdrawal of these two projects, the Company entered negotiations with **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]** and ACE's 100 MW Clean Energy #1 PPA that had been approved as backup projects by the Auditor. Unfortunately, the delayed withdrawal of the **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]** Project resulted in a much more compressed negotiations timeline for the back-up projects. The ACE Clean Energy #1 PPA negotiations were successful, however, the Company was ultimately unable to reach agreement with **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]** on contract terms that we believe were necessary both to protect our customers and to fully capture the benefits of the project. As a result, both the Company and **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]** decided not to move forward with the transaction.

The negotiation process concluded with the Company successfully advancing 800 MW of wind projects comprised of 400 MW of PPA (Crowned Ridge and Clean Energy #1) and 400 MW of BOT (Crowned Ridge and Lake Benton). Altogether, negotiations with NextEra on Crowned Ridge and Lake Benton took almost three months to complete, while the ACE PPA was completed in a more compressed two month timeframe. While the final terms and conditions of the negotiated contracts are very similar to the original bids submitted, both the Company and the bidders made best efforts to compromise to reach agreements in an expeditious manner and meet the timeline laid out in the RFP. The final projects we are recommending for approval are all cost-competitive and consistent with the results reviewed and confirmed to be appropriate by the Auditor.

B. Proposed Projects Resulting from RFP

In this section we provide general project descriptions and transmission considerations for each project. We provide a discussion of the curtailment risk associated with each of these projects (as required by the Commission's January 11, 2017 Order in Docket No. E002/RP-15-21) in the Curtailment section later in this filing.

1. Crowned Ridge

a. Project Description

The Crowned Ridge Wind Project will be a 600 MW (300 MW PPA and 300 MW BOT) wind energy generation facility located in Codington, Deuel and Grant Counties in South Dakota. The anticipated COD is the fourth quarter of 2019. The project will be built by NextEra, which is the largest developer of wind energy in the United States with more than 12,400 MW of installed wind capacity in the U.S. and Canada.

Figure 1: Crowned Ridge Wind Project Location

The project has been offered into the RFP in two parts: a BOT with NSP purchasing the project upon completion for **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]** and a PPA with the purchase price of electric energy starting at **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]**. The combined BOT and PPA bids equate to a LCOE of **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]**. The LCOE for the BOT only portion of the bid amounted to **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]**. The LCOE for the PPA only portion of the bid amounted to **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]**.

It should be noted that the LCOEs shown above differ slightly from the LCOEs that were used in the RFP evaluation and presented to the IA as part of the final shortlist. The updated LCOEs reflect adjustments that were made to the payment schedule as a result of negotiations as well as minor adjustments to the capacity factor and facility nameplate. In negotiations, NextEra indicated that they would be using a different mix of turbines than what was specified in the bidder forms so the capacity factors were adjusted lower based on direction from AWS and project nameplate MWs were updated.

The BOT portion of the Crowned Ridge Wind Farm will have 300.6 MW of nameplate capacity while the PPA will have 300 MW of nameplate capacity. The construction and permitting timeline are consistent with the ability to achieve 100 percent PTC value on the full nameplate proposed by the bidder.

We provide the Crowned Ridge Wind Farm PPA & BOT Agreement as Attachments C and D to this filing.

b. Transmission Considerations

The point of interconnection will be Otter Tail Power's Big Stone South 230 kV substation near Big Stone City, South Dakota. The Crowned Ridge Project has three separate interconnection requests with regard to the Midwest Independent System Operator (MISO) interconnection study cycle, each for 200 MW of the Project's total capacity. The first 200 MW interconnection request (associated with 200 MW of the BOT portion of the project) was submitted as part of the February 2015 MISO study group. The full System Impact Study has been finalized and the Generator Interconnection Agreement (GIA) was filed on January 8, 2016. All costs associated with this portion of the Crowned Ridge Project have been included in NextEra's bid, giving transmission certainty on this portion of the project.

The second interconnection request (associated with 200 MW of the PPA portion of the project) of the Project **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]** All MISO System Impact Studies are complete and Facility Studies are ongoing. GIA negotiations will begin upon completion of the Facility Studies. We believe this will be completed by **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]**. While the final interconnection costs associated with this portion of the Crowned Ridge Project are not final, a review by Excel Engineering as to the reasonableness of the estimated transmission costs provided by NextEra supports the proposal.

The third interconnection request (associated with 100 MW of BOT and 100 MW of PPA) of the Crowned Ridge Project **[PROTECTED DATA BEGINS PROTECTED DATA ENDS].** Like the previous portion, this study will identify all required transmission upgrades required for the Project to interconnect to the transmission grid. We expect that the Interconnection Agreement will be executed upon completion of the generator interconnection studies, which we believe will be completed by **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]**. Excel Engineering did not provide an estimate of anticipated interconnection and upgrade costs for this portion of the Project as this portion was not yet formally in the MISO queue.

In summary, the first 200 MW portion of Crowned Ridge has transmission cost certainty as a result of the executed GIA, and we believe that the MISO queue positions of the second portion is reasonable, which reduces transmission interconnection risks. We also believe that the reasonableness of the transmission

cost estimates, along with the project's positions in the MISO queue, support the project's ability to achieve a COD sufficient to realize the full benefit of PTC credits. While the last 200 MW portion is subject to more risk and uncertainty, **[PROTECTED DATA BEGINS**

PROTECTED DATA ENDS].

2. Lake Benton

a. Project Description

The Lake Benton BOT Wind Project will be a 100 MW wind energy generation facility located in Pipestone County southeast of Lake Benton, Minnesota.

The Project is a repowering of the existing Lake Benton II wind facility that currently contracts its power through a PPA to NSP and has been in operation since May 2000. The anticipated COD is fourth quarter 2019. The Project will be built by NextEra, which is the largest developer of wind energy in the United States with more than 12,400 MW of installed wind capacity in the U.S. and Canada.

Figure 2: Lake Benton Wind Project Location

The Project has been offered into the RFP as a BOT with NSP purchasing the project upon completion for **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]** equating to a levelized cost of energy of **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]**. We note that this generation facility is currently selling power to NSP

through a PPA at a higher cost than the expected LCOE for the proposed Project. The current cost of the contract is **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]** demonstrating a reduction in cost of about **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]** through 2025 when compared to the LCOE of the proposed Project. These savings will benefit NSP's customers.

It should be noted that the LCOE shown above differs slightly from the LCOE that was utilized in the RFP evaluation and presented to the IA as part of the final shortlist. The updated LCOE reflects adjustments that were made to the payment amounts and schedule in negotiations as well as adjustments to the capacity factor and facility nameplate. After the shortlist had been finalized, AWS provided analysis that indicated that the capacity factor provided by NextEra for Lake Benton was unreasonable, so we have updated the capacity factor with the AWS recommended value for this filing. In addition, the model of turbines to be used in construction changed from what was provided in the initial bid which necessitated an update to the facility nameplate. These changes to the LCOE calculations had no impact on the ranking of our short-list and back-up projects and actually reduced the LCOE from what was used in the RFP analysis.

Lake Benton Wind Farm will have 100.2 MW of nameplate capacity. The construction and permitting timeline are consistent with the ability to achieve 100 percent PTC value on the full nameplate proposed by the bidder. The current PPA will go into suspension at a date to be determined prior to the start of construction on the new facility. Formal decommissioning of the existing facility will occur sometime in early 2019.

The existing, higher-priced PPA was set to expire in 2025, so with the proposed repowering BOT project, we expect to gain at least an additional 19 years of cost-effective generation for the benefit of our customers.

b. Transmission Considerations

The point of interconnection will be NSP's Buffalo Ridge and Chanarambie substations. The project will utilize the grandfathered interconnection rights assigned to Lake Benton Power Partners under Mid-Continent Area Power Pool (MAPP). The project will be required to obtain a generator interconnection agreement under MISO's generator interconnection process, which is expected to be completed by

year-end 2017.[6] The bid proposal initially contemplated the point of interconnection being changed to the Brookings County 345 kV substation, however, the project currently intends to instead use the existing interconnection associated with the current Lake Benton II PPA which results in decreased transmission risk for the project.

We provide the Lake Benton Wind Farm BOT Agreement as Attachment E to this filing.

3. Clean Energy #1

a. Project Description

The Clean Energy #1 Wind Project will be a PPA 100 MW wind energy generation facility in west central North Dakota developed by ALLETE Clean Energy (ACE). The project will be named after and located northeast of Glen Ullin, North Dakota in Mercer and Morton Counties about 40 miles west and 8 miles north of Bismarck, North Dakota. The project is adjacent to the Bison Wind Project that was developed by ACE affiliate, Minnesota Power.

Land is currently secured under option agreements, which will be converted to long-term easement agreements prior to construction starting. Construction is expected to be completed in time for a COD in the fourth quarter of 2019. ACE has developed approximately 645 MW of installed wind capacity in five states since 2011, with 537 MW of that currently owned and operated by ACE.

[6] MISO and stakeholders are presently updating the generator interconnection process to define the process for the retention of interconnection rights.

Figure 3: Clean Energy #1 Wind Project Location

The Clean Energy #1 Project has been offered into the RFP as a PPA, with NSP purchasing the power from the Project at a price of **[PROTECTED DATA BEGINS**

PROTECTED DATA ENDS]. The LCOE for this project amounts to **[PROTECTED DATA BEGINS**
PROTECTED DATA ENDS].

It should be noted that the LCOE shown above differs slightly from the LCOE that was used in the RFP evaluation and presented to the IA as part of the final shortlist. The updated LCOE reflects an adjustment that was made to the commercial operation date (COD) of the facility. In the bid, the project had a projected COD of January 1, 2019 but in negotiations the COD shifted to December 1, 2019. These changes to the LCOE calculations had no impact on the ranking of our short-list and back-up projects.

The LCOE for Clean Energy #1 also includes 5 years of additional estimated wind energy values as the economic modeling was conducted to evaluate a 25 year period. This was done to ensure a fair comparison between the 20 year Clean Energy #1 PPA and BOT and PPA projects with 25 year lives.

Clean Energy #1 Wind Farm will have 105.6 MW of nameplate capacity. The construction and permitting timeline are consistent with the ability to achieve 100 percent PTC value

We provide the Clean Energy #1 Wind Farm PPA Agreement as Attachment F to this filing.

b. Transmission Considerations

The point of interconnection will be Minnesota Power's Square Butte substation near Center, North Dakota in Oliver County. ACE will enter into an agreement with Minnkota Power Cooperative (MPC) to utilize MPC's bus bar at the Square Butte Substation to deliver the MISO point of delivery in MISO. The Clean Energy #1 Project was initially submitted for an interconnection study by ACE affiliate, Minnesota Power. The full System Impact Study has been finalized and the GIA was executed and dated May 8, 2014. Minnesota Power plans to transfer the GIA to ACE (subject to regulatory approval) in order to execute the obligations under the PPA. All costs associated with this portion of the Clean Energy #1 project have been included in ACE's bid, giving transmission certainty on this portion of the Project.

This Project has transmission cost certainty as a result of the executed GIA, which reduces transmission interconnection risks. We believe that the reasonableness of the transmission cost estimates, along with the project's existing GIA, will not impact the project's ability to achieve a COD that realized the full benefit of PTC credits. Additionally, the PPA Agreement dictates that ACE will absorb the generation interconnection cost risks, mitigating the risks associated with the project for NSP and its customers.

II. Self-Build Projects

In this section we briefly recap and provide an update on the four self-build projects as proposed and described in detail in our October Petition.

Before turning to each individual project, we note that we have not changed any of our cost estimates for our self-build projects from our October submission and that we remain committed to the firm aggregate cost-per-kw pricing detailed in that filing. We have kept our calculations largely static per the process we identified in October; however, we made three small changes to our LCOE calculations for each project in an effort to most accurately reflect the levelized cost of these projects and to facilitate an "apples-to-apples" comparison between the RFP and self-build projects.

First, consistent with our December 5, 2016 response to the Department's IR No. 1, the Net Capacity Factors (NCFs) and resulting Annual Energy Production (AEP) have changed slightly from our October submission based on updated wind analysis. At the time of the initial submission, the NCFs were developed based on best available wind data for the sites, turbine performance information provided by our supplier, and preliminary turbine layouts from the developers. We now have more

information, including more site wind data and improved turbine design layouts, which is reflected in our updated NCFs. As indicated in our December IR response, the overall impact of the NCF changes are insignificant to the LCOE of the self-build project portfolio. The original and updated NCFs are reflected in Table 3:

Table 3: Updated NCFs

Project	Oct NCF	Revised NCF
	[PROTECTED DATA BEGINS	
Foxtail		
Freeborn		
Blazing Star I		
Blazing Star II		
	PROTECTED DATA ENDS]	

Second, we have updated the discount rate used to calculate the LCOE for each self-build project. This is necessary to ensure an accurate comparison between the RFP and self-build projects because the RFP Team used a slightly higher discount rate in its analysis than the Self-Build Team. The result of using the RFP Team's discount rate is a slight reduction in LCOE for each of our self-build projects.

Finally, consistent with our November 23, 2016 response to the Department's IR No. 4, we have updated our LCOE calculations to include proration of accumulated deferred income tax (ADIT) for each proposed project. As we acknowledged in that response, the proration of ADIT is a currently disputed issue in some of the Company's cost recovery dockets. That said, the Company believes that a proration of ADIT is appropriately included in cost recovery calculations and, therefore, has included it in LCOE calculations for both BOT and self-build projects in this petition.

The net result of these three modifications to our LCOE calculations is reflected in Table 4 below.

Table 4: Updated LCOEs

Project	Oct LCOE	Revised LCOE
	[PROTECTED DATA BEGINS	
Foxtail		
Freeborn		
Blazing Star I		
Blazing Star II		
	PROTECTED DATA ENDS]	

As explained in our October submission, we will realize efficiencies from building these four projects as a single portfolio. These efforts include leveraging economies of scale in project planning and execution, and reducing 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 beneficial for our customers that the four self-build projects move forward as a portfolio.

In light of our proposed self-build portfolio approach, we also reiterate our proposal to subject our cost recovery to an aggregate capital cap (including allowance for funds used during construction (AFUDC)) of **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]** for all of the four self-build projects. If we exceed these costs in our execution of the projects, the Company will bear those costs. Symmetrically, if we are able to achieve any cost-savings, we would retain those savings.[7]

As indicated in our October filing, to meet the safe harbor requirements for these self-build wind projects, Xcel Energy's subsidiary, Capital Services, LLC entered into a fixed price Master Supply Agreement (MSA) on September 15, 2016 with Vestas American Wind Technology, Inc. for the provision of wind turbines to support our proposed Wind Portfolio. Pursuant to the MSA, Xcel Energy secured sufficient turbine equipment to meet the five percent safe harbor requirement. The MSA is provided as Attachment G to this supplement. We made an affiliate interest (AI) filing concurrent with this supplement in a new docket with the Commission for approval of the affiliate interest agreement supporting this arrangement pursuant to Minn. Stat. § 216B.48.[8] As indicated in our AI filing, we respectfully request that the Commission approve the Agreement with Capital Services in parallel with its consideration of our proposed wind portfolio. The wind equipment transactions will not take place until we have received Commission approval.

Below, we provide a brief summary recapping our October filing information for each project and a discussion of our balance of plant (BOP) contracting efforts to support these four projects. We also provide a discussion of the curtailment risk associated with each of these projects (as required by the Commission's January 11, 2017 Order in Docket No. E002/RP-15-21) in the curtailment section later in this filing.

[7] This is consistent with the Commission's April 16, 2015 Order in Docket. No. E002/CN-12-1240.

A. Project Summaries

1. Foxtail

The 150 MW Foxtail Wind Project is being developed by an affiliate of NextEra Energy Inc., and is located on an approximately 20,000 acre site located 20 miles West of Ellendale, North Dakota.

Total capital costs for the Foxtail Project are currently estimated at approximately **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]**, which includes the estimated transmission upgrades and interconnection costs discussed in our October filing as well as anticipated siting and permitting costs. The projected LCOE for the Foxtail Project is **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]**.

We expect our primary construction activities on the Foxtail Project will occur in 2018 and 2019 with engineering and some procurement occurring in 2017. Under the current estimated schedule, we anticipate that commercial operation will be achieved by September 2019.

The purchase and sale agreement (PSA) for the Foxtail Project is provided as Attachment H.

2. Blazing Star I

The 200 MW 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.

Total capital costs for the Blazing Star I Wind Project are currently estimated at approximately **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]**, which includes the estimated transmission upgrades and interconnection costs discussed in our October filing as well as anticipated siting and permitting costs. The projected LCOE for the Blazing Star I Project is **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]**.

We expect our primary construction activities on the Blazing Star I Wind Project will occur in 2019. Under the current estimated schedule, we anticipate that commercial operation will be achieved by December 2019.

The PSA for the Blazing Star I Project is provided as Attachment I.

3. Blazing Star II

The 200 MW 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.

Total capital costs for the Blazing Star II Project are currently estimated at approximately **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]**, which includes the estimated transmission upgrades and interconnection costs discussed in our October filing as well as anticipated siting and permitting costs. The projected LCOE for the Blazing Star II Project is **[PROTECTED DATA BEGINS PROTECTED DATA ENDS].**

We expect our primary construction activities on the Blazing Star II Wind Project will occur in 2019 and early 2020. Under the current estimated schedule, we anticipate that commercial operation will be achieved by September 2020.

The PSA for the Blazing Star II Project is provided as Attachment J.

4. Freeborn

The 200 MW Freeborn Wind Project is being developed by an affiliate of Invenergy Wind Development LLC, and is located on an approximately 40,000 acre site near Glenville, Minnesota. Land acquisition is nearly complete and planned to be completed later this spring. We currently expect that approximately 50-75 MW of this project—including the collection substation and its point of interconnection to be located in Minnesota's Freeborn County and that the remaining 125-150 MW will be located in Iowa's Worth and Mitchell Counties.[9]

Total capital costs for the Freeborn Project are currently estimated at approximately **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]**, which includes the estimated transmission upgrades and interconnection costs discussed in our October filing as well as anticipated siting and permitting costs. The projected LCOE for the Freeborn Project is **[PROTECTED DATA BEGINS PROTECTED DATA ENDS].**

[9] We initially anticipated that a larger portion of the Freeborn Project would be located in Minnesota, but the inability to resign certain expiring land rights changed the geographic focus of the project and has resulted in additional megawatts being located in Iowa.

We expect our primary construction activities on the Freeborn Project will occur in 2020. Under the current estimated schedule, we anticipate that commercial operation will be achieved by early December 2020.

The PSA for the Freeborn Project is provided as Attachment K.

B. Balance of Plant Construction Contract

As part of our development of these four self-build 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.

On February 15, 2017, we issued a firm-price RFP for construction companies to provide bids for BOP services in support of our self-build projects. 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. Submission of the RFP bids are due March 27, 2017 which will support the completion of all proposed projects before the 2020 PTC deadline.

We note that in preparation for our October Petition, we worked 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.

III. Project Risk Assessment

As with any large generating project, there are risks associated with the development and operation of our proposed projects, whether self-build, BOT or PPA. However, we believe that we have identified, assessed and mitigated major risks through prudent contracting practices and that it is reasonable and in our customers' interest for the Commission to authorize us to proceed with these projects. We discuss each of the primary areas of risk and our mitigating actions in this section.

A. Federal PTC

In order to qualify for 100 percent of the PTC amount through the "safe harbor," these wind facilities must have begun construction by the end of 2016 and must be completed within 4 years of commencement date. 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 if the work involves equipment

for the project or (2) incurring at least five percent of the total project cost.[10] 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.

We believe that all of these proposed seven projects will meet the requirements necessary to qualify for the 100 percent of the PTC, and that the risk of failing to achieve 100 percent qualification has been reasonably mitigated.

In both the PPA and BOT agreements, the bidders assume the risk of completing projects in the timeframe required to achieve the full PTC benefit. Risk is further mitigated by the bidders having indicated that they have turbines that qualify for PTC credits through safe-harbor mechanisms, as well as Xcel Energy having a portfolio of safe-harbor-qualifying turbines that could also be used in the projects.

Likewise, the Company mitigated the PTC risk for our self-build portfolio by securing enough turbines to support our projects and meet the five-percent safe-harbor requirement in September 2016. In addition, we have developed a comprehensive project schedule that involves the sequenced construction of the four projects comprising our portfolio and aims to keep the projects on track to ensure qualification for 100 percent of the PTC.

B. Construction Risks

With regard to the BOT proposals, the projects all have agreements that assign construction risk to the bidder. NSP does not purchase the projects until construction is completed. This mitigates risk to the Company and to its customers by eliminating any detrimental financial impact prior to the projects' completion. In addition, the parties have also agreed to **[PROTECTED DATA BEGINS**

PROTECTED DATA ENDS].

With regard to the PPA agreements, NSP is also not obligated to make payments to counterparties prior to the commercial operation date of the projects. These agreements also have provisions similar to the BOT damage provisions. Specifically, damages are recouped in the form of a security requirement paid to NSP in the

[10] The Consolidated Appropriations Act, 2016.

amount of **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]**.

Additionally, for BOT agreements, we have required the bidders to meet our technical criteria for Company-owned facilities. These technical criteria are based on our experience operating similar facilities and compliance with the criteria should mitigate the risk of construction problems or setbacks.

Finally, our self-build proposals have mitigated construction risk for our customers in two ways. First, we propose to subject our cost recovery to an aggregate capital cap (including AFUDC) of **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]** for the entire self-build Wind Portfolio. This allows the Company to spread construction risk among the four projects, so that a construction issue with one project can be offset or balanced by efficiencies achieved across the portfolio. Second, we have proposed the four 750 MW self-build projects as a single portfolio. In managing the projects this way, we will be able to leverage economies of scale in project planning and execution, and reduce the schedule-related risks typically associated with individual projects.

C. Transmission Risks

As discussed in our October Petition, interconnection and other transmission risks can be some of the largest development risks associated with wind generation. All generation 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 DPP cycles, according to the date each project satisfies all of the requirements to enter a particular cycle.[11] MISO is currently studying the February 2016 DPP.

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 (1) the amount of wind generation requesting to be added to the MISO system; (2) the delays associated with processing of the MISO interconnection queue; (3) the way that upgrades and their costs are assigned to projects in the queue; and (4) the number of projects that actually move forward once the studies are complete.

[11] 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.

Project-specific transmission risks are discussed in the project description sections above. However, we note here that the MISO transmission interconnection process is not yet complete for several of the projects from both our self-build portfolio and from the RFP process. With regard to BOT and PPA projects, however, we believe this risk has been reasonably mitigated by our agreements with developers as well as by considering transmission cost uncertainty as a factor in the RFP Team's non-price review.

With regard to the potential for transmission risk for our self-build projects, we have mitigated the risks 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 and included in those estimates in both our capital costs and our LCOE calculations for each project. These costs are built into our proposed aggregate, symmetrical capital cap. Second, for those projects without an executed interconnection agreement, we have negotiated contractual rights in 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.

D. Environmental Risks

Under the terms of the PPA and BOT Agreements for all projects, the bidders are responsible for all applicable environmental permits, licenses and approvals from any governmental authority required under applicable laws for construction, ownership, operations and maintenance of the facility prior to transfer of ownership to NSP. Each project is also expected to have minimal impact on avian and bat species, based on research that has been performed in the region specific to the environmental impacts of wind energy. ACE has completed the studies related to the Avian and Bat Protection Plan (ABPP) and received its permit through the Large Wind Energy Conversion System (LWECS) permitting process. As such, we believe the environmental risk related to this project has been sufficiently mitigated. With regard to the Crowned Ridge and Lake Benton projects, NextEra has begun these studies and will provide the permits once available. Xcel Energy has also conducted its own analysis to assess the risks related to environmental permitting. We believe that these projects are likely to receive the permitting required and will be able to reach commercial operation in the timeline proposed by NextEra.

The process is the same for our self-build projects. Like BOT and PPA projects, developers of our self-build projects are responsible for applicable environmental permits, licenses and approvals from any governmental authority required under applicable laws for construction, ownership, operations and maintenance of the site prior to transfer of ownership to NSP. The only difference for our four self-build

projects is that all other permits will be obtained by the developer prior to construction.

Pre-construction wildlife studies have been initiated or completed at all four self-build projects in general accordance with Tiers 1-3 of the U.S. Fish and Wildlife Service's (USFWS) Land Based Wind Energy Guidelines. At Freeborn and Blazing Star I & II, these studies support an ABPP, which is required by the State of Minnesota. A draft ABPP for Blazing Star I was filed with a draft site permit for the project in late 2016,[12] and ABPPs for Blazing Star II and Freeborn are expected to be developed in coordination with their respective site permit applications, which have not yet been filed. Although the State of North Dakota does not currently require an ABPP for issuance of a Certificate of Site Compatibility (CSC), Tier 1-3 studies have been completed for the Foxtail Project and will be used to characterize risks to wildlife within the framework of a voluntary wildlife conservation strategy created by the developer. Additional consultation with the USFWS on the self-build projects will occur once transfer of ownership of the self-build projects is complete.

E. Operational Risks

Once in-service, these proposed wind projects also face operational risks. These risks involve the amount of annual generation and the real-time delivery of that power to our customers, resulting from power production and curtailment. We discuss curtailment generally as one component of operational risk in this section but discuss our assumptions and expectations for each project more specifically in the curtailment section below.

With regard to the PPA proposals, Crowned Ridge and Clean Energy #1 are designed to compensate the counterparties for the actual electric energy delivered from the wind farms. This incentivizes the counterparties to properly maintain their turbines and maximize production. With respect to curtailment, wind developers are typically paid by the utility in the event that their project is curtailed. However, our customers will not pay for curtailments associated with emergencies or transmission system maintenance outages. Finally, we identified project-specific curtailment risks during our due diligence for each project, and those risks are discussed in in the curtailment section below.

The operational risks associated with owned projects (whether BOT or self-build) remain with the Company through its ownership. Additionally, owned projects have some uncertainty in annual costs for operation and maintenance. These risks are offset, however, by higher estimated benefits from Company ownership. For

[12] Docket No. IP6961/ WS-16-686

example, to the extent that annual generation at the Company-owned projects are lower than expected, the overall cost-effectiveness of the project would decrease. Conversely, however, if annual generation is greater than expected, the overall cost-effectiveness of the project would increase.

Finally, in order to incorporate potential operational risks, we have included what we believe to be conservative assumptions in our analysis and also included sensitivities that explore the impacts of a number of different downside scenarios. This analysis applies to on-going costs and curtailment estimates, which are higher than have been recently experienced. Likewise, we have adjusted capacity factors based on direction from our consultants, and our sensitivity analyses that use even lower capacity factors still demonstrate substantial savings for customers. These risks and assumptions are quantified in the Economic Analysis section later in this Petition.

F. Tax Reform

There are various corporate tax reform proposals currently at the federal level that have gained momentum following the 2016 presidential election. These reforms have the potential to change the corporate tax rate, interest deductibility and expensing of capital, all of which could impact the price of wind acquisitions from both a PPA and ownership perspective. While there is a potential that the project costs may change as a result, we believe the portfolio is likely to remain cost-effective., provided that PTCs continue to be available. Although it is too early to know what tax reform may look like or if it will happen at all, we are aware of the potential reforms and have taken steps to address this potential issue. In particular, the Company and its counterparties have negotiated provisions in the BOT and PPA agreements that will allow for renegotiation (including termination) in the event of tax reform being passed. Should this occur, we would analyze the impacts and determine the best path forward in cooperation with the Department and Commission.

That all said, given the significant uncertainty as to whether there will even be tax reform, we believe we should take advantage of the current low price environment for wind projects and capture the full benefit of this wind portfolio for our customers before the stepdown of the PTC credits.

G. Wind Curtailment

The Commission's January 11, 2017 Order in Docket No. E002/RP-15-21 requires that the Company discuss each project's wind curtailment risk as well as a discussion of how revenues from wind generation, sold into the MISO market, will be returned to Minnesota customers. Here, we discuss curtailment generally, provide an estimate of potential curtailment over the life of the wind projects, the assumptions used to

develop our estimate, and a discussion of the treatment of revenues from wind generation sold into the market.

1. Curtailment Generally

We expect some level of wind curtailment will occur during the life of all wind projects, which based on our experience and analysis, we expect will be less than four percent over the life of the projects which is consistent with historical curtailment levels. Curtailment is expected to be higher at the outset of the project, and then is expected to decline as new transmission and other changes on the MISO system occur to better accommodate increased wind penetration. The driver of curtailment early-on is generally because the projects go into service before all required transmission facilities are completed – both locally and regionally on the MISO system. Regional congestion is expected to be the largest driver of curtailment over the life of the wind projects.

A significant driver of regional transmission congestion has been the significant concentration of wind facility operations in southern Minnesota and all through Iowa, which is continuing to increase. The required transmission upgrades for some of the new wind projects going into service between 2016 and 2020 will not all be in-service by the time the projects begin producing energy. This will have a negative effect on Locational Marginal Pricing (LMP) in MISO that could potentially also impact real-time wind generation on the NSP System.[13]

To analyze the potential level of curtailment, we performed PROMOD and other studies, used historical curtailment data along with knowledge of the transmission system, Wind RFP Bidder transmission studies, and studies performed under the Minnesota Renewable Energy Integration and Transmission Study.[14]

2. Potential Transmission Investments

Overall, we expect that significant planned transmission improvements in the region, such as the CapX2020 transmission projects (CapX2020) and the MISO Multi-Value Projects (MVP), will positively impact curtailment of our proposed wind projects by creating additional transmission outlet and reducing local and regional congestion. Table 5 below shows the transmission projects that are designed to increase

[13] This potential impact will lessen due to mitigation measures such as: (1) the use of Dispatchable Intermittent Resource (DIR) and set-point control technology, (2) placing in service the required transmission facilities and transmission system improvements, and (3) improved scheduling.

[14] Minnesota Renewable Energy Integration and Transmission Study Final Report dated October 31, 2014 included curtailment estimates for 40% and 50% wind penetration in the Minnesota area.

transmission capacity in the wind-rich areas of Minnesota, eastern South Dakota and eastern North Dakota and allow export into the Twin Cities and eastern load centers:

Table 5: Transmission Projects

Transmission Project	Owner	In-Service Date
Fargo North Dakota - Northwest Twin Cities 345 kV Line (CapX)	Xcel Energy, Great River Energy	April 2, 2015
Southeast Twin Cities - LaCrosse, Wisconsin 345 kV Line (CapX)	Xcel Energy, SMMPA and non-MISO	September 16, 2016
Pleasant Prairie - Zion Energy Center 345 kV Line (MVP)	American Transmission Company	December 2013
Big Stone South to Brookings County 345 kV Line (MVP)	Otter Tail Power Company, Xcel Energy	End 2017
Lakefield Jct. - Winnebago - Winco - Kossuth County & Obrien County - Kossuth County - Webster 345 kV Line (MVP)	MidAmerica Energy, ITC Midwest	Mid 2018
North LaCrosse - North Madison (MVP)	American Transmission Company, Xcel Energy	End 2018
Winco to Hazleton 345 kV Line (MVP)	MidAmerica Energy, ITC Midwest	End 2018
Ellendale to Big Stone South 345 kV Line (MVP)	Otter Tail Power Company, Montana Dakota Utilities	End 2019
North Madison - Cardinal - Spring Green - Dubuque area 345 kV Line (MVP)	American Transmission Company, ITC Midwest	2023
Brookings County - Southeast Twin Cities 345 kV Line (CapX)	Xcel Energy, Great River Energy, Otter Tail Power, Minnesota Municipal Power Agency, Central Minnesota Municipal Power Agency	March 2015

The MISO generator interconnection studies and the resulting generator interconnection agreements have also identified a number of transmission upgrades that will be required for the wind projects we propose, which will also create additional transmission outlet and reducing local and potentially regional congestion.

While completion of the CapX2020, the MVP transmission projects, and the generator interconnection upgrades will reduce the amount of future curtailment experienced, the amount of curtailment will depend on the in-service timing of the numerous wind generation projects currently in the development queue.

3. Curtailment Analysis

The Company relied on a number of different analyses to identify expected curtailment for the proposed wind projects. The analyses are discussed in this section.

- **PROMOD Analysis**

The Company performed a PROMOD analysis which is an electric market simulation model that incorporates details in generating unit operating characteristics, transmission grid topology and constraints, and market system operations. MISO uses this model during its MISO Transmission Expansion Planning (MTEP) process to identify transmission constraints and analyze transmission improvements that will address these constraints. Analyses were performed for years 2020 and 2025 using the PROMOD databases provided by MISO in its 2016 MTEP studies, which includes proposed transmission improvements and incremental wind additions required to meet various state renewable requirements. We identified wind generators in the database located close to the location of NSP's proposed projects and calculated the curtailments based on those hours in which the LMP price was less than zero. The PROMOD simulations indicated curtailments will be minimal for NSP's proposed projects.

- **Historical Curtailment Analysis**

We provide projections of wind generation curtailment costs given existing and planned wind-generated energy purchases and transmission system needs in our annual Automatic Annual Adjustment report. This report summarizes our experience with wind curtailment payments, estimates potential curtailment payments over the next five years, and outlines the assumptions used to develop our forecast.

Historically, wind curtailment is small compared to the total wind generation delivered. Between 2003 and 2016, the amount of curtailment varied year by year, depending on the circumstances, but is beginning to stabilize in the 4% percent range as shown in Figure 4 below.

Figure 4

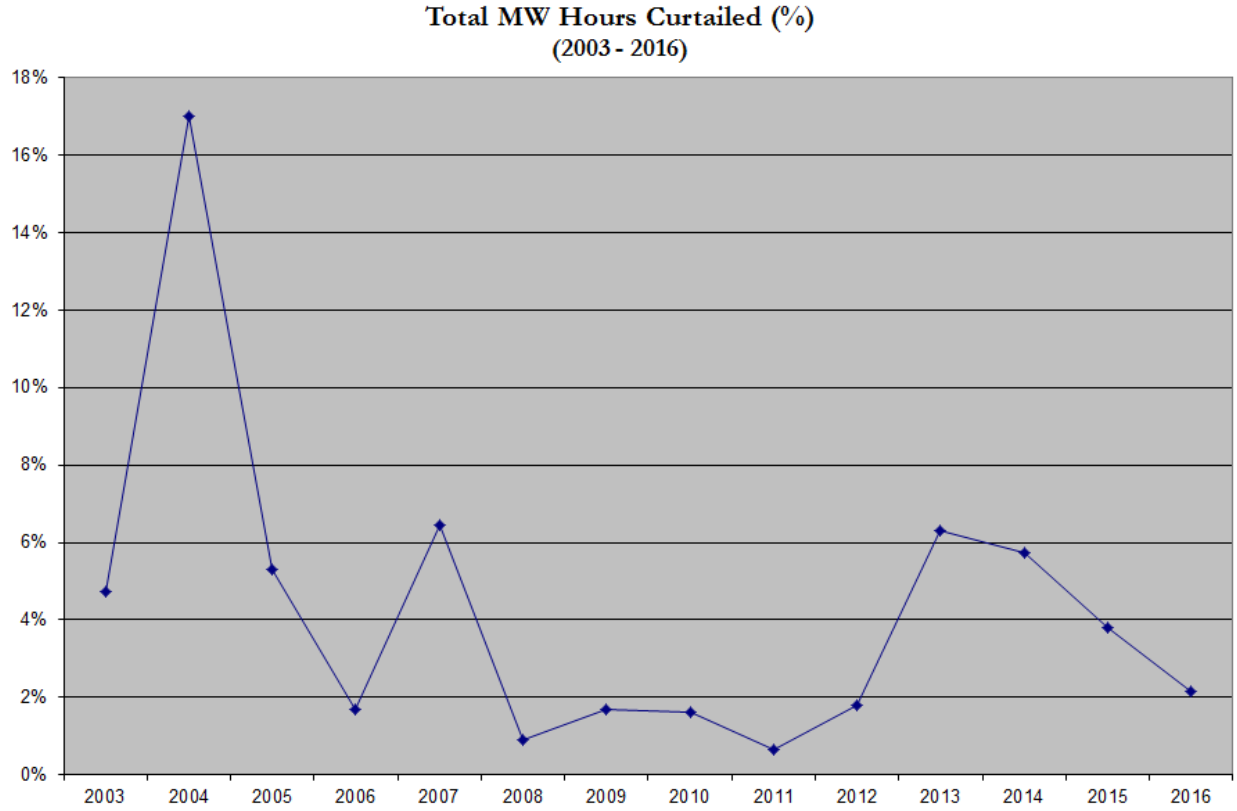


Figure 4 also shows the curtailment variations from year-to-year. The curtailment spikes in 2004 and 2007[15] coincided with the expiration of PTC benefits, where wind generation was added to lock in the PTC, prior to completion of all transmission upgrades. The 2013 and 2014 spikes were primarily the result of planned and unplanned transmission outages related to severe storms in southwest Minnesota. As the transmission upgrades were completed, curtailment again stabilized. We believe we will see a similar pattern over the next few years as the pattern repeated with the step-down in PTC benefits after 2016.

- **MRIT Study[16]**

The Minnesota Renewable Energy Integration and Transmission Study (MRITS) is an engineering study of increasing the Minnesota Renewable Energy Standard to 40 percent by 2030 (and higher proportions thereafter), while maintaining system reliability.

[15] In 2007, curtailment was primarily driven by transmission facility outages that were necessary in order to complete the 825 MW transmission project, along with bringing the Fenton and MinnDakota projects on-line in order to take advantage of the then-expiring PTC

[16] Minnesota Renewable Energy Integration and Transmission Study Final Report (Oct. 31, 2014).

MRITS included production simulation analysis which evaluates hour-by-hour operational performance for an entire year; it also included wind curtailment analysis. A key finding of the MRITS indicated that with upgrades to existing transmission, the grid can be successfully operated for all hours of the year with minimal curtailment of renewable energy. MRITS[17] estimated wind curtailment of between 1.6 percent and 2.14 percent (calculated as a percentage of available annual wind or solar energy). We note however, that the MRITS assumed all current baseload generation remained on the system and that neighboring states comply with—but do not exceed—their respective renewable energy standards.

- **Bidder Analysis**

The Wind RFP requested that the bidders provide an analysis and discussion of the issues surrounding congestion and expected curtailments pertaining to their project(s). The majority of the bidders who responded to this request utilized third-party PROMOD analysis. The analysis provided by the winning bidders, and other bidders not chosen under this RFP all indicated minimal curtailment risk for projects.

Based on historical curtailment data, PROMOD analyses performed by the Company and Bidders and the MRITS Study we expect curtailments to range from as low as two percent to as high as six percent. Curtailment rates may initially be higher and then decline to a lower rate such as the two percent in the MRITS Study. Therefore, we expect that over the lifetime of these wind projects the overall average curtailment rate will be approximately four percent.

4. Self-Build Projects Curtailment Discussion

a. Blazing Star I

The Blazing Star I project will interconnect at a new substation on the Brookings County – Lyon County 345 kV line. We expect that over the lifetime of the project, curtailment will be consistent with the overall average curtailment level of approximately 4 percent. However, during the early years of production (2020 through 2023) Blazing Star I is likely to experience higher curtailment while necessary transmission upgrades are completed.[18]

[17] Section 1.7.5 Curtailment of Wind and Solar Energy.
[18] Blazing Star I will be dependent on completion of the Cardinal - Spring Green - Dubuque area 345 kV line

The Blazing Star I Project will be studied under MISO's February 2016 DPP Study Cycle, which started in February 2017. While these interconnection studies have not been completed, the Company contracted with a consultant to perform studies to determine required transmission network upgrades. Blazing Star I will have a direct and significant 345 kV path east to the Twin Cities load center. This connection will limit congestion between Blazing Star and the load, and should result in reasonable levels of curtailment. The project's expected 2020 in-service dates also allows ample time to construct many of the required network upgrades. However, the consultant's studies showed the potential for congestion between the Twin Cities and load further east until the Cardinal - Spring Green - Dubuque area 345 kV line goes into service in 2023.

b. Blazing Star II

The Blazing Star II Project will interconnect at the new substation installed for Blazing Star I. We expect that, over the lifetime of the Project, curtailment will be consistent with our overall Company curtailment average of approximately four percent. However, during the early years of production (2020 through 2023) Blazing Star II is likely to experience higher curtailment while necessary transmission upgrades are completed.[19]

The Blazing Star II Project will be studied in MISO's August 2016 DPP Study Cycle, which is expected to start around August 2017. While these interconnection studies have not been completed, we contracted with a consultant to perform studies to determine required transmission network upgrades. Blazing Star II will have a direct and significant 345 kV path east to the Twin Cities load center. This connection will limit congestion between Blazing Star II and the load, and should result in reasonable levels of curtailment. The Project's expected 2020 in-service date also allows ample time to construct many of the required network upgrades. However, the consultant's studies showed the potential for congestion between the Twin Cities and load further east until the Cardinal - Spring Green - Dubuque area 345 kV line goes into service in 2023.

c. Foxtail

The Foxtail Project will interconnect at the new substation tapping the Wishek – Ellendale 230 kV line located in eastern North Dakota. We expect that, over the lifetime of the project, curtailment will be consistent with the overall Company curtailment average of approximately four percent.

[19] Blazing Star II will be dependent on completion of the Cardinal - Spring Green - Dubuque area 345 kV line

The Foxtail project was studied under MISO's 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 Foxtail Project interconnects to the Ellendale area 230 kV system, which will be significantly more robust once the Big Stone – Brookings 345 kV MVP line goes into service in 2017 and Ellendale – Big Stone 345 kV Multi-Value Project (MVP) line goes into service in 2019. This connection also provides a significant 345 kV path to the Twin Cities load center. In addition, as part of the development of this project, all Network Resource Interconnection Service (NRIS) related upgrades identified in the interconnection studies will be constructed. These upgrades include the 230 kV line between the Foxtail substation and the Ellendale system, which will strengthen our connection to the Twin Cities and load in North Dakota. These connections will also limit congestion between the Foxtail Project and the load, which should result in lower curtailment. The Project's expected 2020 in-service date also allows ample time to construct many of the required network upgrades.

d. Freeborn

The Freeborn Project will interconnect at ITC Midwest's existing Glenworth 161 kV substation located in southeastern Minnesota. We expect that, over the lifetime of the project, curtailment will be consistent with the overall Company curtailment average of approximately four percent.

The Freeborn project was studied under MISO's February 2015 DPP Study Cycle. All MISO System Impact Studies and Facility Studies are complete, and the GIA is under negotiation. The Freeborn Wind Project will interconnect in an area where major 345 kV MVP line expansion is underway. Freeborn will benefit from completion of the Huntley – Ledyard – Kossuth County and the Ledyard – Colby – Killdeer 345 kV MVP lines scheduled to be in service in 2018. These lines will provide additional transmission outlet for Freeborn and the other wind projects in the area, reducing congestion. Like Foxtail, we chose to fund and construct all NRIS-related upgrades required under the GIA as part of our development of the project, which is expected to minimize local congestion and result in lower curtailment.

5. Wind RFP Projects Curtailment Discussion

a. Clean Energy I

The Clean Energy I Project will interconnect at Minnesota Power's existing 230 kV Square Butte substation located in central North Dakota. We expect that, over the

lifetime of the project, curtailment will be consistent with our overall curtailment average of approximately four percent.

The Clean Energy I project was studied under Square Butte Electric's generator interconnection process and formalized under a MISO GIA dated May 8, 2014. The Clean Energy I project will interconnect in an area where major 230 kV and 345 kV MVP lines exist with connections to Company load in North Dakota and Minnesota. In addition the Big Stone – Brookings 345 kV MVP line goes into service in 2017 and Ellendale – Big Stone 345 kV MVP line goes into service in 2019 will benefit the Clean Energy I project and reduce congestion.

ACE, the developer of Clean Energy I, did not provide a congestion analysis.

b. Crowned Ridge

The Crowned Ridge PPA Project will interconnect at Otter Tail Power's existing Big Stone South 230 kV substation. We expect that over the lifetime of the project, curtailment will be consistent with our overall curtailment average of approximately four percent. However, during the early years of production (2020 through 2023) Crowned Ridge is likely to experience higher curtailment while necessary transmission upgrades are completed.[20]

The Crowned Ridge Project has three separate interconnection requests with regard to the MISO generator interconnection study cycles, each for 200 MW of the Project's total capacity. The first 200 MW interconnection request (associated with 200 MW of the BOT portion of the project) was submitted as part of the February 2015 MISO study group. The full System Impact Study has been finalized and the Generator Interconnection Agreement (GIA) was filed on January 8, 2016.

The second interconnection request (associated with 200 MW of the PPA portion of the project) of the Project **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]**. All MISO System Impact Studies are complete and Facility Studies are ongoing. GIA negotiations will begin upon completion of the Facility Studies. We believe this will be completed by **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]**.

The third interconnection request (associated with 100 MW of BOT and 100 MW of PPA) of the Crowned Ridge Project **[PROTECTED DATA BEGINS**

[20] Crowned Ridge will be dependent on completion of the Cardinal - Spring Green - Dubuque area 345 kV Line

PROTECTED DATA ENDS].
We expect that the Interconnection Agreement will be executed upon completion of the generator interconnection studies, which we believe will be completed by **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]**.

The Crowned Ridge project will interconnect in an area where major 345 kV MVP line expansion is underway. Crowned Ridge will benefit from completion of the Big Stone – Brookings 345 kV MVP line that goes into service in 2017 and the Ellendale – Big Stone 345 kV MVP line that goes into service in 2019. These lines will provide additional transmission outlet for Crowned Ridge and the other wind projects in the area, reducing congestion.

Crowned Ridge will have a significant 345 kV path east to the Twin Cities load center, which will limit congestion between Crowned Ridge and the load. The project's expected 2020 in-service date also allows ample time to construct many of the required network upgrades. However, the System Impact Studies and consulting studies showed the potential for congestion between the Twin Cities and load further east until the Cardinal - Spring Green - Dubuque area 345 kV Line goes into service in 2023.

NextEra, the developer for Crowned Ridge performed a PROMOD congestion analysis for Crowned Ridge, which was provided with their bid. The analysis indicated that curtailment as percentage of Scheduled Energy would be insignificant.

c. Lake Benton Repower

The Lake Benton Repower Project will replace the existing Lake Benton Power Partners I (LBPP) Project and will use the existing interconnection points on the Buffalo Ridge.[21] We expect that over the lifetime of the project, curtailment will be consistent with our overall curtailment average of approximately four percent.

Lake Benton Repower will use existing interconnection rights presently assigned to LBPP, and as such will not be required to build any network upgrades. The 115 kV transmission system on the Buffalo Ridge has sufficient transmission capacity to accommodate all interconnected generation including Lake Benton Repower. The Buffalo Ridge 115 kV system has strong connections to the Twin Cities load center in MISO through a number of major 345 kV facilities.

[21] LBPP interconnection points are presently divided up between Chanarambie, Buffalo Ridge and Yankee substations.

NextEra, the developer for Lake Benton Repower performed a PROMOD congestion analysis that was provided with their bid indicating that curtailment as percentage of scheduled energy would be insignificant.

6. Treatment of Wind Generation Sales

The Commission's January 11, 2017 IRP Order requires a discussion of how revenues from wind generation, sold into the MISO market, will be returned to Minnesota customers and to also provide an estimate of these revenues.

In summary, we would treat new wind farms the same way we treat all other generation. Wind generation is offered into the MISO Day Ahead or Real Time markets. The Company is then paid the market clearing price for this generation, which serves as a credit to our monthly billing statement from MISO. Ultimately, these credits are returned to our customers through the monthly fuel clause adjustment (FCA).

While it is not possible at this time to precisely predict the revenues derived from these sales into the MISO market, our rate impact analysis (see Table 14) below provides an estimate of the additional revenue from sales into the MISO energy market due to the addition of the proposed wind.

III. Proposed Overall Portfolio

A. Portfolio Size

In this petition, we propose to add 1,550 MW of wind generation. In selecting the size of the portfolio, we considered the Commission's IRP order that indicated it was reasonable to acquire at least 1,000 MW of wind—and possibly more—by 2019, as well as our modeling results that showed it was cost-effective. We recognize that 1,550 MW is above the minimum set by the Commission's Order. However, the size of our recommended portfolio is driven by the robust RFP response we received and the attractive pricing achieved in our self-build portfolio, both of which are driven by the current availability of 100 percent qualified PTC projects and the fact that wind is genuinely "on sale." We therefore believe that now is the time to secure these wind resources so we can capture the full PTC benefit for our customers. We further believe that going beyond the 1,000 MW minimum set by the Commission is prudent given the MISO queue and the risk that not all proposed projects will reach COD due to transmission upgrade requirements.

B. Ownership Mix

Last year, we issued an RFP seeking up to 1,500 MW of wind generation projects, and we separately proposed our 750 MW self-build portfolio. As described above, the RFP bids included 64 PPA proposals, 28 BOT proposals, and 3 proposals that combined both structures. As seen in Table 6 below, the average PPA bid pricing was **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]** higher on an LCOE basis when compared to the BOT and Combined bids.

Table 6: LCOEs from All RFP Bids

	Bids	Average	Low	High
	[PROTECTED DATA BEGINS			
BOT				
PPA				
Combined				
		PROTECTED DATA ENDS]		

As further described in the RFP evaluation process section, we assessed all projects on the basis of LCOE in order to group them into similarly priced groups, or tiers. The maximum LCOE to make it into one of the top three tiers was **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]**. As seen in Table 7, these top three tiers included a total of 26 projects.

Table 7: LCOEs from Top Three Tiers of RFP Bids

	Bids	Average	Low	High
	[PROTECTED DATA BEGINS			
BOT				
PPA				
Combined				
		PROTECTED DATA ENDS]		

We then narrowed these 26 projects as they moved through the non-price review, final rankings, and eventually negotiations. Although we initially set out to negotiate contracts for 1100 MW of projects from the RFP process, two bidders withdrew from the process during negotiations, and we were unable to reach agreement on contract terms with a third bidder. This resulted in our recommended portfolio of RFP projects, which includes three BOT projects totaling 400 MW and two PPAs also totaling 400 MW.

This portfolio includes more Company-owned resources than we initially anticipated, and as already discussed, we applied static assumptions in both the RFP and Self-Build processes to forecast the impacts of deferred tax impacts on pricing. If we were to model the potential impact of this, we estimate that it would be in the range of **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]** in LCOE per project. However, this amount could vary as a result of a variety of circumstances, including future capital investment, revenues, and earnings. This additional, potential LCOE impact would not have changed the list of projects that comprise our portfolio and that we are recommending for Commission approval.

Together, our self-build and RFP efforts result in our recommendation to add 1,550 MW of wind resources to the NSP System.

Table 8: 1,550 MW Wind Portfolio

Project Name	Size	Type	Location	LCOE
				[PROTECTED DATA BEGINS
Crowned Ridge	600 MW	BOT and PPA	Codington County, SD	
Lake Benton	100 MW	BOT	Pipestone County, MN	
Foxtail	150 MW	Self-Build	Dickey County, ND	
Blazing Star I	200 MW	Self-Build	Lincoln County, MN	
Blazing Star II	200 MW	Self-Build	Lincoln County, MN	
Freeborn	200 MW	Self-Build	Freeborn County, MN and Worth and Mitchell Counties, IA	
Clean Energy #1	100 MW	PPA	Mercer and Morton Counties, ND	
				PROTECTED DATA ENDS]

We believe each of the projects comprising this portfolio is cost-effective and will result in significant customer benefits, and we further believe the RFP results confirmed the competitiveness of our self-build portfolio.

Our total portfolio contains a mix of PPA and Company-owned resources and is incremental to our existing 2,600 MW wind portfolio. Specifically, we propose 1,150 MW of Company-owned resources and 400 MW of PPAs. By contrast, our existing wind portfolio includes approximately 125 wind PPAs totaling more than 1,700 MW

and only 850 MW of Company-owned resources. In other words, approximately 70 percent of our current wind resources are comprised of PPAs.

As shown below, our proposed 1,550 MW portfolio would result in an NSP System mix of approximately 48 percent (or 2,000 MW) Company-owned resources and 52 percent (or 2,150 MW) PPAs.

Table 9: Overall Wind Portfolio Summary

Portfolio Component	Owned	PPA
Current Wind Resources	850	1,750
Proposed BOT	400	
Proposed Self-Build	750	
Proposed PPA		400
Total	**2,000**	**2,150**

We believe that restoring balance to our wind portfolio in this way will benefit our customers and optimize the value of our proposed resource additions.

C. Economic Analysis

To evaluate the impact on our customers of the proposed wind portfolio, we used the Strategist resource planning model. The Strategist planning model simulates the operation of the NSP System and estimates the total cost of energy over the life of the projects on a present value basis. We use the model to test results under a range of input assumptions. To assess their impact on customer costs, we simulated the operation of the NSP System through 2053, with and without the addition of the 1,550 MW of wind generation proposed in this supplement.

At the outset, we note that wind generation has a no fuel costs so the marginal cost to produce the next unit of energy is zero. In other words, after capital and on-going O&M costs are accounted for, it costs a wind generator nothing to produce the next MWh of energy. As a result, MISO generally provides for wind production ahead of other, higher marginally-priced generation such as gas- and coal-based generation. Consequently, as more wind generation is integrated into the system, coal and gas-fired thermal generation is dispatched less often. When the energy from our proposed 1,550 MW wind portfolio is produced, it displaces energy production from other Company resources or purchased energy from the MISO market. This displacement of other generation or market purchases largely drives the portfolio benefits shown in our modeling results.

We believe we have taken a conservative approach in developing the base assumptions as well as the sensitivities we used to analyze the proposed wind

additions. Below we highlight some of the assumptions we made in testing the cost-effectiveness of the proposed portfolio around curtailment and congestion. As noted previously, the results of the Strategist analysis show that these new wind resources will result in net savings for our customers under all sensitivities conducted.

Key assumptions included in our Strategist analysis:

- *Curtailment*

In the Strategist model, dump energy represents the amount of excess energy that could not be utilized by the dispatch simulation. From 2019 through 2030, this accounts for 3.8% percent of the total energy produced by the proposed projects when MISO market interactions were modeled. This value is consistent with current levels of curtailment on existing wind production. Having an estimate of curtailment built into our model ensures that the net benefits to our customers are not being overstated, and that the realized customer bill reductions may actually be larger than forecasted.

- *Congestion*

In order to incorporate congestion costs in the Strategist modeling, we relied on the PROMOD LMP databases published by MISO in the 2016 MISO Transmission Expansion Planning (MTEP) studies. Xcel Transmission Planning prepared PROMOD LMP simulations for years 2020 and 2025 using the MTEP 16 database. Based on those simulations, we included congestion cost of $2.71 per MWh in 2020, escalating at 2% thereafter, for the proposed wind additions.

a. Reference Case

The assumptions underlying our most recent IRP Reference Case are from the December 2014 modeling that was used for our January 2015 initial IRP filing. To better reflect more current expectations, we updated the base assumptions for this petition consistent with the assumptions used in our Jurisdictional Cost Allocation Issues docket (Docket No. E002/M-16-223). This updated reference case (Reference Case) accounts for updated assumptions regarding load growth, renewable energy pricing, and gas pricing, among others. It also incorporates the closure of Sherco Units 1 & 2 in 2026 and 2023, respectively, and the addition of a combined cycle plant in 2027.

The Commission's IR No. 1 asked that we specify which energy and demand forecast was used for our economic analysis for these wind acquisitions. In all of our

Strategist modeling, the Fall 2016 Load Forecast, which was developed by the Xcel Energy Load Forecasting group, was used. Please see Attachment L for a further discussion regarding our modeling assumptions and pertinent changes from the Company's last IRP.

b. Strategist Modeling

We evaluated the proposed wind projects both on an individual basis and as a total portfolio to provide transparency around the projected benefits of each individual project as well as the combined benefits of the entire 1,550 MW package. The results of the Strategist analysis shows that these new wind resources will result in net savings for our customers under all sensitivity tests conducted. Table 10, below, shows the Present Value of Societal Costs (PVSC) and Present Value of Revenue Requirement (PVRR) savings. The base PVSC assumptions include a regulated cost of $21.50 for each ton of CO2 emitted in 2022, escalating at 2% thereafter, as well as externality costs for emissions of criteria pollutants and CO2 before 2022. The PVRR savings do not include CO2 costs or other externality costs and do not include Surplus Capacity Credit.

Table 10: Incremental PVSC and PVRR Savings from Reference Case ($millions)

	PVSC			PVRR			
	Base	Markets On	Preferred Plan Renewables	Base	Markets On	Preferred Plan Renewables	No Dump Energy Credit
Reference Case	0	0	0	0	0	0	0
BOT Crown Ridge	(489)	(521)	(497)	(342)	(372)	(291)	(317)
PPA Crown Ridge	(478)	(509)	(485)	(331)	(361)	(280)	(306)
Lake Benton	(148)	(166)	(155)	(92)	(77)	(96)	(90)
Clean Energy	(114)	(127)	(119)	(42)	(38)	(64)	(36)
Blazing Star 1	(326)	(329)	(337)	(233)	(279)	(191)	(216)
Blazing Star 2	(316)	(337)	(327)	(188)	(197)	(184)	(174)
Foxtail	(252)	(259)	(263)	(149)	(161)	(154)	(138)
Freeborn	(304)	(319)	(317)	(184)	(192)	(181)	(173)
All	(2,319)	(2,591)	(2,249)	(1,541)	(1,599)	(1,411)	(1,319)

Under either a PVSC or PVRR view, the proposed wind portfolio provides significant benefits. In fact, all projects provide significant cost savings to our customers, both individually and as a portfolio, even under the conservative sensitivity cases studied.

As we continue to transition our fleet to include more renewables and less coal generation, there will be periods of time where the generation on our system exceeds our native load serving requirement. During these periods, we are likely to make energy sales into the MISO market. Revenues from those sales will be credited to

customers through the monthly FCA. Thus, assumptions regarding the likely value of these potential sales are an important factor in predicting the likely rate impact of the proposed wind portfolio. Therefore, we have analyzed the PVSC and PVRR under three different scenarios, "markets on", "preferred plan renewables" and "no dump energy credit," to assess how project revenues from the MISO market may be impacted under various conditions. .

Base Assumptions

Under our base assumptions, we do not allow market sales or purchases. This is consistent with past analysis of resource additions and the modeling conducted in past IRPs. In a "markets-off" optimization, the model does not consider the ability to make market purchases and sales. Thus, the cost-effectiveness of resource additions are based on their effectiveness in serving only system (not market) needs.

Markets On Sensitivity

Once resources are added to the MISO system, they are typically dispatched based on the economic signals provided in the energy market. Thus, if it costs less to buy energy from the market as compared to running a system resource, market purchases are made. Relying on the market to reduce costs provides savings to our customers. To evaluate the likely impact on customer rates, we modeled market purchases and sales based on hourly forecasted LMPs at the Minnesota Hub. By matching hourly wind profiles with our forecast of hourly energy prices we are able to analyze the impact of the proposed wind additions. The impact of the market interactions can be seen by comparing the base assumptions to the "markets on" sensitivity. Because the base assumptions do not allow market purchases or sales, any generation in excess of system requirement is categorized as "dump energy." The base assumptions assume a conservative value for dump energy of one-half the price of our market forecast. Compared to the base assumptions, the markets on approach produces $58 million of additional PVRR savings.

No Dump Energy Credit Sensitivity

We have also included an extreme sensitivity that does not allow any market sales or purchases and does not give any value to the "dump energy." Under this sensitivity, all benefits come from savings attributable to our system resources. Even under this extreme case, the benefits of the wind portfolio are significant at $1,319 million on a PVRR basis or approximately 86% of the base assumptions.

Preferred Plan Renewables Sensitivity

Our base assumptions do not include additional renewables beyond 2020.[22] However, our preferred plan in our recent IRP included additions of solar and wind beyond what we proposed here. We note that, all else equal, additions of non-dispatchable resources will result in diminishing system benefits as future increments are added. Thus, we believe it is appropriate to analyze the impacts of the proposed portfolio without diminishing its value by assuming additions of renewable resources beyond what we are proposing here. However, to analyze the impact of the proposed additions in the context of our preferred plan, we ran a sensitivity that included the addition of 1,200 MW of solar resources between 2022 and 2030 and another 150 MW of wind in 2026. While inclusion of these additional renewable resources reduces the benefit of the wind by $70 million PVSC and $130 million PVRR, the proposed portfolio continues to provide significant benefits of $2,249 million PVSC and $1,411 million PVRR to our customers.

Additional Sensitivities

We performed six additional sensitivities to further test the cost effectiveness of the proposed wind projects.

- *Project Life Sensitivities*

We have determined the useful life of our proposed projects to be 25 years based on the site specific suitability assessment performed by our turbine supplier. The 25-year useful life is also consistent with the prevailing industry standards and is supported by our proactive operation & maintenance programs that maintains high long-term reliability of Xcel Energy owned wind farms. We also evaluated sensitivities of 20 and 30 year lives.

- *On-Going Cost Sensitivities*

The on-going O&M and capital cost estimates used in our base assumptions are based on previous wind projects currently operating in the NSP region. The estimates took into account varying turbine models and technology and also scaled the costs based on turbine quantity. The sensitivities we conducted evaluated the impacts of a variation in O&M of 10% and ongoing capital costs of 30%.

[22] All cases include our updated small solar forecast which assumes that 687 MW of small solar will be added by 2020.

- *Capacity Factor Sensitivities*

The capacity factors we included are based on an independent evaluation by AWS True Power (AWS). Specifically, we retained AWS to review information provided by the bidders and provide an opinion as to the reasonableness of each project's projected NCF for the top 25% of projects that were bid into the RFP. Additionally, once we identified a short-list of projects, AWS performed a more detailed evaluation of NCFs, which accounted for on-site wind speed, turbine design, turbine layout, and wake loss, among other factors.

We further tested our assumptions regarding project lives, capacity factors and O&M in the sensitivities shown in Table 11, below. The proposed projects show significant cost savings to our customers under all sensitivities.

Table 11: Incremental PVSC Savings from Reference Case ($millions)

	PVSC						
	Base	30-Year Life	20-Year Life	+5% Cap Factor	-5% Cap Factor	High On-Going Costs	Low On-Going Costs
Reference Case	0	0	0	0	0	0	0
BOT Crown Ridge	(489)	(557)	(399)	(594)	(384)	(472)	(507)
PPA Crown Ridge	(478)	(478)	(478)	(522)	(432)	(478)	(478)
Lake Benton	(148)	(172)	(117)	(183)	(113)	(142)	(155)
Clean Energy	(114)	(114)	(114)	(127)	(102)	(114)	(114)
Blazing Star 1	(326)	(374)	(265)	(397)	(256)	(316)	(337)
Blazing Star 2	(316)	(360)	(256)	(386)	(245)	(305)	(326)
Foxtail	(252)	(289)	(204)	(308)	(200)	(244)	(261)
Freeborn	(304)	(346)	(247)	(374)	(235)	(294)	(314)
All	(2,319)	(2,584)	(1,961)	(2,751)	(1,894)	(2,255)	(2,383)

Table 12: Incremental PVRR Savings from Reference Case ($millions)

	PVRR						
	Base	30-Year Life	20-Year Life	+5% Cap Factor	-5% Cap Factor	High On-Going Costs	Low On-Going Costs
Reference Case	0	0	0	0	0	0	0
BOT Crown Ridge	(342)	(430)	(253)	(429)	(254)	(324)	(360)
PPA Crown Ridge	(331)	(331)	(331)	(358)	(303)	(331)	(331)
Lake Benton	(92)	(109)	(51)	(120)	(62)	(85)	(98)
Clean Energy	(42)	(42)	(42)	(49)	(35)	(42)	(42)
Blazing Star 1	(233)	(230)	(151)	(292)	(175)	(222)	(244)
Blazing Star 2	(188)	(219)	(144)	(247)	(130)	(178)	(199)
Foxtail	(149)	(175)	(113)	(195)	(105)	(140)	(157)
Freeborn	(184)	(214)	(143)	(242)	(127)	(174)	(195)
All	(1,541)	(1,740)	(1,269)	(1,886)	(1,203)	(1,477)	(1,605)

- Gas Price Forecast

Our gas price forecast is based on a blend of the latest market information and long-term fundamentally-based forecasts acquired from third parties. We have included a low gas sensitivity to evaluate project the impacts of lower gas prices. The proposed 1,550 MW portfolio of wind resources is cost-effective under the low gas sensitivity.

- Cost of Carbon

In addition to the base assumption of a $21.50 per ton regulated cost, we modeled contingencies that reflect the high end and low end of the Commission's $9 - $34 range and a zero regulated cost of carbon scenario.

The below table shows the results of sensitivities regarding the gas price forecast and the regulated cost of carbon.

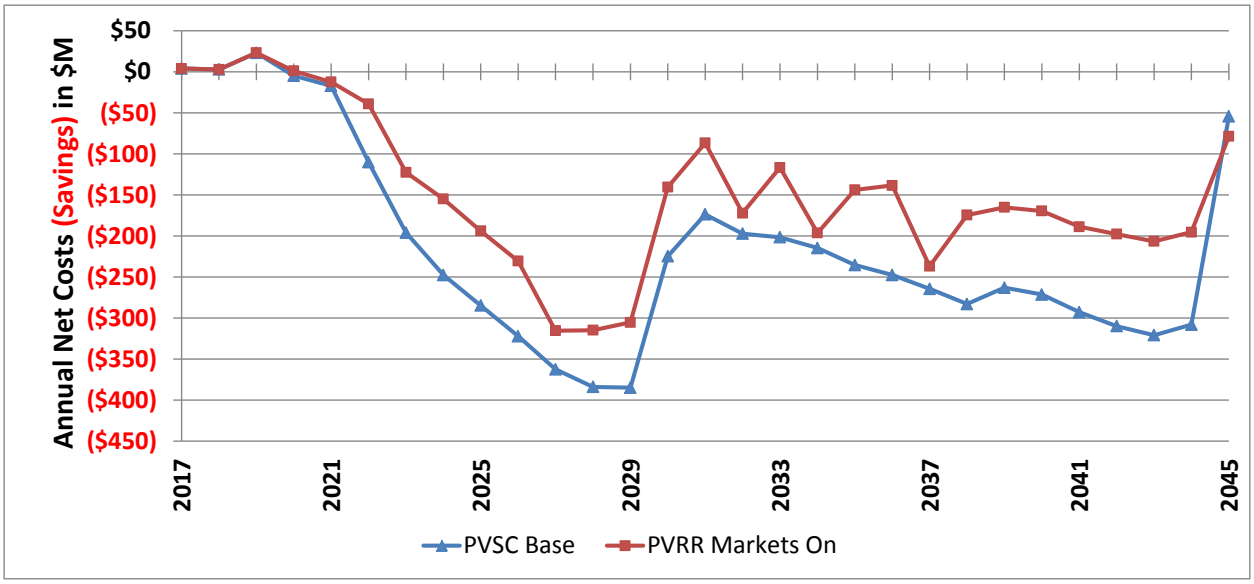
Table 13: Incremental PVSC and PVRR Savings from Reference Case ($millions)

	PVSC						PVRR	
	Base	Low Gas Price	High Gas Price	Zero CO2	Low CO2	High CO2	Base	Low Gas Price
Reference Case	0	0	0	0	0	0	0	0
BOT Crown Ridge	(489)	(390)	(619)	(394)	(419)	(552)	(342)	(253)
PPA Crown Ridge	(478)	(379)	(606)	(383)	(408)	(539)	(331)	(242)
Lake Benton	(148)	(114)	(194)	(111)	(119)	(176)	(92)	(57)
Clean Energy	(114)	(91)	(144)	(85)	(92)	(135)	(42)	(18)
Blazing Star 1	(326)	(260)	(412)	(276)	(290)	(357)	(233)	(177)
Blazing Star 2	(316)	(242)	(413)	(246)	(264)	(363)	(188)	(121)
Foxtail	(252)	(198)	(324)	(205)	(217)	(284)	(149)	(100)
Freeborn	(304)	(234)	(397)	(240)	(256)	(348)	(184)	(121)
All	(2,319)	(1,801)	(2,982)	(1,738)	(1,894)	(2,703)	(1,541)	(1,060)

c. Annual Impacts

To understand how the costs (savings) change over time, Figure 4 below visually portrays the annual costs (savings) impacts of the total portfolio as compared to the Reference Case.

Figure 4: Annual Costs (Savings) Compared to Reference Case



It is important to note that PVSC Base assumptions savings in Figure 4 includes costs for CO2. A CO2 cost of $21.50 results in an increase in savings of approximately $56 million per year. Savings shown in Figure 4 for the PVRR Markets On sensitivity assume we are able to take advantage of the MISO energy market to make energy

purchases and sales. As the Company will take advantage of MISO energy market transactions when in the interest of our customers, we believe the "markets on" scenario is a better indicator of the likely rate impacts to customers of the wind resource additions.[23] As noted above, even in an extreme case where we are unable to take advantage of the MISO market or receive any revenue for "dump energy" the wind resources provide significant benefits to our customers. We also note that we have included wind integration costs and coal cycling costs consistent with the wind integration study included in our most recent IRP. Based on those assumptions, we have included an impact of approximately $9 million per year due to the impact of coal cycling. We note that, due to the decision to retire the Sherco Units 1 and 2, we will likely experience lower cost impacts from cycling of our coal plants, however, we have not reduced these costs in our analysis to ensure a conservative approach.

It is important to note that the addition of the proposed wind resources create a net cost of $23 million in 2019. Initially, upfront capital costs of the proposed owned projects drive costs higher in the early years, but over the long term, customers receive significant rate benefits from avoided fuel costs and the accrual of PTCs. As shown in Figure 4, customers are expected to see a neutral rate impact by 2020 and to realize significant benefits beyond 2020 for each remaining year of the projects' lives.

An alternate way of assessing the value of the proposed wind to the system is by evaluating the levelized price of the projects and the other costs and benefits associated with them. Levelized prices are a fixed $/MWh price that have the same NPV as the actual cost streams generated by Strategist. As mentioned previously, in addition to the direct project costs, the Strategist model also adds cost for wind integration, transmission congestion, and line losses. The primary benefit of the projects is avoided costs from fossil fuel resources, but the model also tracks benefits from avoided emissions and capacity costs. The below table illustrates how the levelized costs of the proposed projects are more than offset by the value of avoided generation costs.

[23] As noted above, our base assumptions do not allow market transactions. As noted in past proceedings, this avoids the potential of resources being added to the system based on the assumption that excess energy could be sold for a profit into the MISO market. However, if it is determined that a resource will be added to the system, its impact on rates is likely better reflected in a scenario that allows market interactions.

Table 14: PVSC Levelized Costs Analysis - $/MWh[24]

	BOT Crown Ridge	PPA Crown Ridge	BOT Lake Benton	PPA Clean Energy	Self Build Blazing Star 1	Self Build Blazing Star 2	Self Build Foxtail	Self Build Freeborn	Portfolio ALL
	[PROTECTED DATA BEGINS								
LCOE									
									PROTECTED DATA ENDS]
Wind Integration	$0.54	$0.54	$0.54	$0.53	$0.54	$0.55	$0.54	$0.56	$0.54
Wind Congestion	$3.25	$3.25	$3.25	$3.15	$3.25	$3.31	$3.25	$3.32	$3.26
Wind Induced Coal Cycling	$1.48	$1.48	$1.48	$1.58	$1.48	$1.47	$1.48	$1.46	$1.46
Avoided Production and Capacity Costs	($47.17)	($47.20)	($42.19)	($43.99)	($48.70)	($48.51)	($48.12)	($49.94)	($45.53)
Avoided Emission Costs	($8.14)	($8.13)	($11.95)	($10.14)	($6.06)	($8.99)	($7.90)	($8.96)	($8.83)
	[PROTECTED DATA BEGINS								
Net Cost/(Benefit)									
									PROTECTED DATA ENDS]

Table 15: PVRR Levelized Costs Analysis - $/MWh

	BOT Crown Ridge	PPA Crown Ridge	BOT Lake Benton	PPA Clean Energy	Self Build Blazing Star 1	Self Build Blazing Star 2	Self Build Foxtail	Self Build Freeborn	Portfolio ALL
	[PROTECTED DATA BEGINS								
LCOE									
									PROTECTED DATA ENDS]
Wind Integration	$0.54	$0.54	$0.54	$0.53	$0.54	$0.55	$0.54	$0.56	$0.54
Wind Congestion	$3.25	$3.25	$3.25	$3.15	$3.25	$3.31	$3.25	$3.32	$3.26
Wind Induced Coal Cycling	$1.48	$1.48	$1.48	$1.58	$1.48	$1.47	$1.48	$1.46	$1.46
Avoided Production and Capacity Costs	($48.85)	($48.88)	($37.54)	($41.55)	($52.50)	($45.24)	($45.02)	($46.44)	($44.54)
Avoided Emission Costs	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	[PROTECTED DATA BEGINS								
Net Cost/(Benefit)									
									PROTECTED DATA ENDS]

In addition to the compelling economic benefits, adding additional wind at favorable pricing provides a hedge against future increases in natural gas prices. This is primarily because the wind displaces thermal generation. To illustrate the benefit of these projects, the below table shows a base volume of natural gas and the delta avoided by the studied projects.

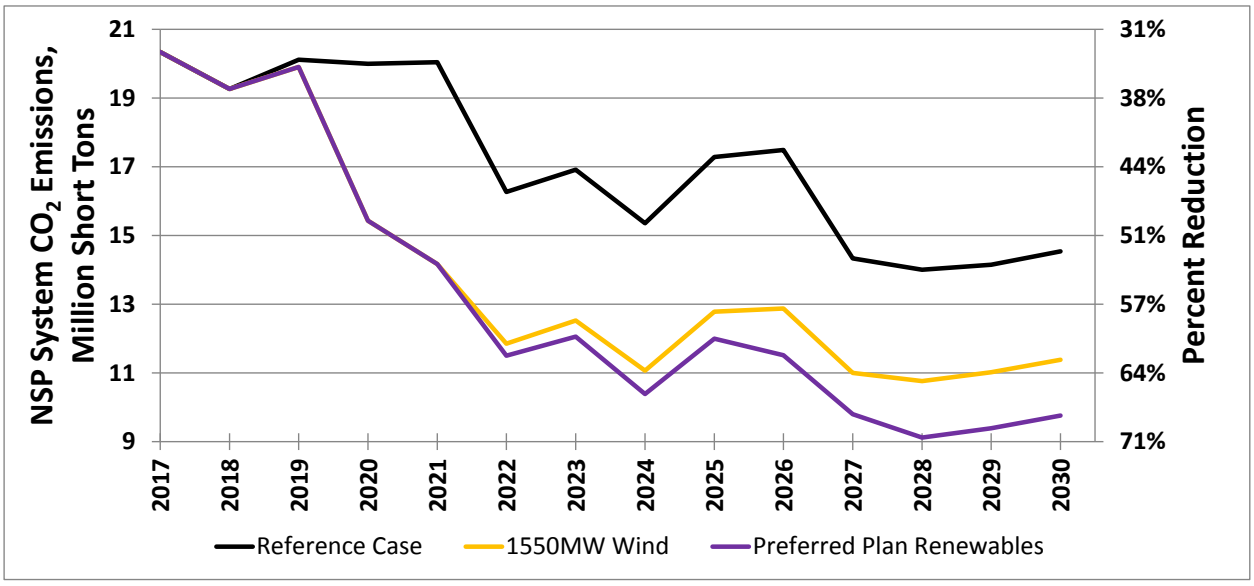
[24] Unlike the LCOE used in the RFP analysis, the LCOE for Clean Energy #1 shown above does not include 5 years of additional estimated wind energy values. As previously discussed, the estimated wind energy values were added to the RFP analysis to ensure a fair comparison between the 20 year Clean Energy #1 PPA and BOT and PPA projects with 25 year lives.

Table 16: Hedge Value

Total System 2017-2053	Natural Gas *bcf*
Reference Case	6,186
BOT Crown Ridge	(187)
PPA Crown Ridge	(186)
Lake Benton	(27)
Clean Energy	(20)
Blazing Star 1	(176)
Blazing Star 2	(111)
Foxtail	(93)
Freeborn	(107)
All	(716)

Figure 5 below shows the impact of the proposed wind portfolio on system CO2 emissions. The Reference Case includes our updated small solar forecast and the shutdown of Sherco Units 1 and 2, but does not include any additional renewables. The Preferred Plan Renewables sensitivity includes 1,800 MW of total wind additions and 1,200 MW of incremental utility-scale solar additions by 2030.

Figure 5: Impact of Proposed Wind Portfolio on CO2 Emissions



As shown in Figure 5, the proposed wind additions will have a significant impact on our system CO2 emission. Thus, the 1,550 MW of wind generation will lower customers' bills while providing significant environmental benefits and enhance the diversity of our generation portfolio.

e. Estimated Customer Rate Impacts

We expect that soon after initial operation, customers' overall bills will be lower than otherwise as a result of the acquisition of the proposed resources. Based on the results of our Strategist modeling, we expect that beginning in 2021, the cost of the proposed wind projects will be more than offset by decreases in the cost of fuel and purchases and increases in revenues from market sales.[25] To develop our rate impacts analysis, we began with the incremental impact of the wind resources as determined by the Strategist modeling that was conducted. Specifically, we used the outputs from the rate-impact, markets-on scenario. We believe this scenario most closely reflects the impacts to customer bills.

Using the annual system-wide costs impact from Strategist, we then applied a jurisdictional allocator based on a current sales forecast to determine the costs allocated to the Minnesota jurisdiction. The jurisdictional costs were then allocated to classes based on Class Cost of Service Study (CCOSS) allocation factors approved in the Company's last Minnesota rate case order.

Table 17 shows the forecasted incremental annual rate impact of the wind additions through 2022. The values in the table reflect incremental costs or savings as compared to the Reference Case where no wind additions are included. We anticipate the peak cost impacts to occur in 2019 and decline rapidly thereafter as the projects depreciate.

Table 17: Incremental Revenue Requirement Impact Proposed Portfolio, $M

	2017	2018	2019	2020	2021	2022
New Ownership Wind, 1150MW	4	3	31	74	93	73
New PPA Wind, 400MW	0	0	2	24	24	25
Production Cost Savings	0	0	(6)	(41)	(57)	(64)
MISO Purchases	0	0	(1)	(25)	(26)	(22)
MISO Sales	0	0	(4)	(55)	(78)	(84)
Wind Congestion Costs*	0	0	1	15	19	20
Wind Integration Costs	0	0	0	2	3	3
Wind Coal Cycling Costs	0	0	0	7	9	10
Net Costs	**4**	**3**	**23**	**1**	**(12)**	**(39)**

* Congestion Costs reflected as cost adder to wind generation rather than lower generator LMP.

[25] We provide annual revenue requirements and LCOEs for each project in the proposed wind portfolio in Attachment M.

Table 18, below, shows the forecasted incremental impact on average monthly bills in Minnesota. It is important to note that if the costs of these wind additions are recovered through a rider, the actual timing of the recovery and the rate design approved in a future rate case will impact the actual class allocation. We have provided an estimated impact below. The below table shows that the monthly cost impact to the average residential customer is expected to peak in 2019 at $0.37 per month. Further detail regarding the estimated allocation of costs to customer classes is provided in Attachment N.

Table 18: Incremental Average Monthly Bill Impacts

Rate Class Impacts	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Residential	$0.06	$0.04	$0.37	$0.04	($0.16)	($0.56)
Commercial Non demand	$0.09	$0.07	$0.54	$0.05	($0.25)	($0.86)
C&I Demand	$3.41	$2.38	$19.57	$0.78	($10.60)	($32.65)
Lighting	$0.04	$0.03	$0.20	($0.05)	($0.19)	($0.43)

f. Jurisdictionally Allocated Rate Impacts

The Commission's Information Request No. 3 asked for a rate impact analysis, including an assessment of the average monthly bill impact by customer class for the first five years, under the assumptions that North Dakota does not pay for the proposed wind additions. The incremental impact on our Minnesota customers if the proposed wind additions are not allocated to our North Dakota customer is shown below in Table 19.

Table 19: Incremental Impact to Minnesota Customers of North Dakota Share

Customer Class	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Residential	$0.00	$0.00	$0.02	($0.04)	($0.07)	($0.10)
Commercial Non demand	$0.01	$0.00	$0.03	($0.07)	($0.10)	($0.15)
C&I Demand	$0.19	$0.14	$1.03	($2.42)	($3.68)	($5.40)
Lighting	$0.00	$0.00	$0.01	($0.03)	($0.04)	($0.06)

Table 19 isolates the impact on our Minnesota Customers of allocating the North Dakota jurisdictional share of the proposed wind resources to the remainder of our Upper Midwest System as compared to allocating the wind on a system basis.

We noted in our Resource Treatment Framework (RTF) Petition that we did not intend to set forth a specific cost allocation request, precise cost determinations, or a cost recovery request as part of the RTF proceeding. The revenue requirement impacts set forth in the RTF petition were intended to provide a general indication of

impacts to facilitate review of our proposed RTF. Further, our proposal to not allocate the wind additions was part of a broader proposal to reasonably resolve past disputes over resource selection.

Therefore, we have provided updated customer impacts as set forth in Tables 9 and 10 and Schedule 7 of the RTF petition in Attachment N. In order to perform this analysis we used the assumptions for the resource allocation as we proposed in our RTF petition. Specifically, we assumed that C-BED, Solar, and Biomass resources would not be allocated to North Dakota, but would instead be allocated to the remainder of the system and the proposed addition of 1,550 MWs of wind would also be allocated to the remainder of the system as shown above.[26] A summary of the updated impacts of our proposed RTF to our customers in Minnesota under a pseudo and legal separation are shown below in Table 20 and 21. As shown in more detail in Attachment N, Tables 17 and 18 include all impacts under our proposal set forth in Tables 9 and 10 of the RTF petition.

Table 20: Updated Average Monthly Rate Impacts under Proposed Pseudo Separation

	2017	2018	2019	2020	2021	2022
Residential	$0.00	$0.00	$0.02	$0.11	$0.09	$0.07
Commercial Non demand	$0.01	$0.00	$0.03	$0.17	$0.13	$0.11
C&I Demand	$0.19	$0.14	$1.03	$5.82	$4.42	$3.46
Lighting	$0.00	$0.00	$0.01	$0.07	$0.05	$0.04

Table 21: Updated Average Month Rate Impacts under Proposed Legal Separation

	2017	2018	2019	2020	2021	2022
Residential	$0.00	$0.00	$0.02	($0.03)	($0.06)	($0.07)
Commercial Non Demand	$0.01	$0.00	$0.03	($0.03)	($0.08)	($0.10)
C&I Demand	$0.19	$0.14	$1.03	($0.52)	($2.02)	($3.08)
Lighting	$0.00	$0.00	$0.01	$0.06	$0.04	$0.03

At this time, the RTF Proceeding is ongoing. For this filing we have assumed that the proposed wind will be a system resource and believe that it is appropriately evaluated as a system resource addition at this time. We believe that a determination that the proposed wind portfolio, or another resource, be allocated to one jurisdiction or a subset of jurisdictions can be made in the RTF Proceeding or another proceeding.

[26] This is similar to the assumptions used in Scenario 3C shown in Schedule 7 of our Application for Consideration of a Resource Treatment Framework to Address Jurisdictional Cost Allocation Issues in Docket No. E002/M-16-223.

CONCLUSION

In closing, wind generation is at a historically low price and we believe near-term wind additions present a prudent opportunity to achieve lower carbon emissions while driving down overall system costs. We commit to filing a project progress report with the Commission in January 2018. This report 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 respectfully request the Commission take the following actions:

- Approve 1,550 MW portfolio of wind resource additions to the NSP system;
- Approve an aggregate, symmetrical capital cap for the four self-build project portfolio;
- Confirm the 1,550 MW proposed wind portfolio is a reasonable and prudent way to continue to meet our obligations under Minnesota's Renewable Energy Standard; and
- Establish a procedural schedule similar to the one we have proposed such that the Commission may complete deliberations in July 2017 so we may proceed with these projects and secure 100 percent of the PTC benefits.

Dated: March 16, 2017

Northern States Power Company

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

Nancy Lange	Chair
Dan Lipschultz	Commissioner
Matthew Schuerger	Commissioner
Katie Sieben	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 **SUPPLEMENT**

SUMMARY OF FILING

Please take notice that on March 16, 2017, Northern States Power Company, doing business as Xcel Energy, filed with the Minnesota Public Utilities Commission, a Supplement to our October 24, 2016 Petition for Approval of the Acquisition of Wind Generation from the Company's 2016-2030 Integrated Resource Plan (IRP).

Response to the Commission's February 14, 2017 Information Requests

MPUC Question 1:
In Xcel Energy's January 4, 2017 Informational Letter, filed in this docket, Xcel stated it will make a regulatory filing with the Minnesota Public Utilities Commission in 1st Quarter 2017 (the Q1 Petition).

What energy and demand forecast will Xcel Energy use for the economic analysis of the wind acquisitions (fall 2016, spring 2017, other)? Please include a discussion of pertinent changes to Xcel's load forecast from the forecast used in the Company's 2016 Resource Plan (Docket No. 15-21).

Response:
Please see Attachment L and page 43 of our Supplement.

MPUC Question 2:
In the Q1 2017 Petition, please include:

2.a.) An assessment of the entire revenue requirement on an annual basis for the Company's proposed wind acquisitions;
2.b.) How the revenue requirements will be allocated to each customer class; and
2.c.) The average monthly bill impact by customer class for the first five years. (As a basis for comparison, see Tables 8 & 9 of Attachment E of Xcel's January 29, 2016 Resource Plan Supplement in Docket 15-21.)

Response:
Please see Attachment M and pages 53-54 of our Supplement.

MPUC Question 3:
On January 3, 2017, in Docket No. E-002/M-16-223, Xcel filed its Application for Consideration of a Resource Treatment Framework to Address Jurisdictional Cost Allocation Issues.

3.a.) Please file Xcel Energy's January 3, 2017 RTF Application in the record for Docket No. 16-777.

3.b.) On page 56 of the RTF Application, "Proposed RTF," Xcel states, "With respect to future new resource additions, the Company will be able to assess and propose resources for North Dakota and the remainder of the NSP System separately… When a resource need arises in, or new resources are otherwise planned for, the remainder of the NSP System, those resources will be sized for, dedicated to serve only, and fully recovered in the remainder of the NSP System. Consequently, our North Dakota jurisdiction will not obtain the benefits or pay the costs associated with new NSP System resource additions."

For the Q1 2017 Petition, in addition to the rate impact analysis staff requests in PUC IR #2, please include the same rate and bill impact analysis for PUC IR #3, but for the possibility that North Dakota will not pay for the costs of the new wind resources proposed in Docket No. 16-777.

Response:

We submitted the RTF in Docket No. E002/M-16-777 on March 14, 2017. Please see page 54-55 of our Supplement for the rate impact analysis.

PUBLIC DOCUMENT
NOT PUBLIC (OR PRIVILEGED) DATA HAS BEEN EXCISED
*Black rectangle indicates protected data.

Independent Auditor's Report: Northern States Power Company 2016 Wind Solicitation

Xcel Energy

January 23, 2017

leidos

Independent Auditor's Report: Northern States Power Company 2016 Wind Solicitation

Xcel Energy

January 23, 2017

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Independent Auditor's Report: Northern States Power Company 2016 Wind Solicitation Xcel Energy

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EXECUTIVE SUMMARY

Xcel Energy (Xcel)[i] retained Leidos Engineering LLC (Leidos or Independent Auditor) to perform an independent audit of Northern States Power Company's 2016 solicitation of wind resources through a Request for Proposals (RFP) process. Xcel is seeking to procure up to 1,500 MW of cost-effective wind resources through either a power purchase agreement (PPA) or build-own-transfer (BOT) arrangement with power suppliers. This report describes the RFP process followed by Xcel during the solicitation, presents the findings and conclusions of the Independent Auditor, and fulfills the requirement established by the Minnesota Public Utilities Commission (PUC) in 2006 for an independent audit of Xcel's resource acquisition process to ensure transparent, fair, and equitable procurement of new power supply resources.[ii] This independent audit (the Audit) began on August 2, 2016 with the development of RFP documents, continued through the evaluation of proposals[iii], and ended on December 8, 2016 with the final selection of short-list Bidders[iv] with whom Xcel would enter into closed-door negotiations (the RFP Process). Leidos work as Independent Auditor does not include the monitoring or review of negotiations or their outcomes. The Audit was conducted to comply with the requirements established by the PUC and provides an independent, systematic, critical review of the RFP Process for certification to the PUC.

The primary objectives of the Audit were to:

- Assess whether the RFP documents and associated attachments provided sufficient and consistent information for Bidders to prepare competitive proposals.
- Identify any potential bias in evaluation criteria, process, proposal modeling, selection process, or treatment of Bidders/proposals.
- Establish that the evaluation criteria were applied in a fair and unbiased manner and that a consistent, transparent methodology was used to rank proposals.

[i] Northern States Power Company (NSP) is a subsidiary of Xcel Energy, Inc., that serves retail customers in Minnesota. Throughout this report to enhance readability the term "Xcel" will be used to refer to Xcel Energy, Inc. and Northern States Power Company.

[ii] *Order Establishing Resource Acquisition Process Under Minn. Stat. § 216B.2422, Subd. 5, and Requiring Compliance Filing*, Docket No. E-002/RP-04-1752, May 31, 2006, p. 8.

[iii] The term "proposal" is used throughout to refer to all the documents, forms, spreadsheets, maps, reports, data, and information submitted by respondents ("Bidders") for one complete project evaluation. There are several wind projects for which Bidders submitted multiple proposals in various configurations. A separate proposal was required for each project configuration to be evaluated.

[iv] The term "Bidder" is used throughout to refer to those entities who responded with a proposal to Xcel's 2016 wind resources solicitation. The term "potential Bidders" refers to wind power developers and other entities that may have interest in submitting a proposal to Xcel to supply wind generation resources, but may or may not have submitted a proposal.

- Assess whether the components of the process conformed to accepted industry standards.
- Identify any irregularities in the RFP Process.

The Audit was led by a senior management consultant experienced in generation resource procurement, renewable resource project evaluation, and integrated resource planning (the Project Manager). The Audit was performed in accordance with industry standards such as those established by the Institute of Internal Auditors. Leidos' economic, financial, engineering, and technical staff reviewed materials provided by Xcel. Where appropriate, Leidos conducted research and independently gathered information to verify assumptions or augment information provided by Xcel. Leidos exchanged emails and held meetings with key staff involved in this solicitation to clarify and discuss aspects of the RFP documents, process, and evaluation. Leidos' professional expertise and knowledge gained through conducting similar procurements and performing similar audits on behalf of other clients supplemented these materials and served as the underlying foundation for Audit results.

Leidos' role in this process was solely that of third-party independent auditor. Leidos reviewed the modeling, due diligence, and evaluation criteria used by Xcel in this procurement process solely for the purpose of identifying irregularities, bias or discrimination. Although such efforts may have included assessing the reasonableness of various modeling assumptions, Leidos did not perform the role of consulting engineer. Leidos evaluated the procurement *process* not the actual procurement. Leidos does not attest to the validity of the associated assumptions or outcomes. The sole purpose of this report is to comply with PUC requirements; no other use is expressed or implied. Nothing in this report is a legal opinion.

Table ES- 2 presents Audit results.

Table ES- 2 Audit Results[v]

	PARAMETER	REQUIREMENT	WAS REQUIREMENT MET?
I	**Bid Documents & Notifications**	RFP documents and associated attachments provided adequate and consistent information that Bidders could use to prepare competitive proposals.	Yes
		Information was disseminated to a broad range of potential Bidders to achieve a robust pool of proposals.	Yes

[v] All findings are based solely on Leidos' review of materials furnished by Xcel as identified, or publicly-available information as cited. Review of additional materials or disclosure of material facts could change the findings stated in this report.

		Xcel's procurement process conformed to representations made in the RFP documents and any post-release announcements.	Yes
		Xcel exercised appropriate control of the Bidder documents post receipt.	Yes
II	**Communications**	Xcel communicated consistently and transparently with potential and actual Bidders throughout the process.	Yes
		Correspondence between Xcel personnel and potential and actual Bidders did not afford undue advantage or preferential treatment to the potential disadvantage of other Bidders.	Yes
		Bidders received equal and equitable treatment.	Yes
III	**Evaluation Criteria**	The evaluation criteria, evaluation process, proposal modeling, selection process, and assumptions used for selecting proposals were free from bias.	Yes
		Xcel's methodology for selecting short-listed Bidders was free from bias.	Yes
		Xcel's modeling, due diligence and evaluation criteria were free from irregularities, bias or potential discrimination.	Yes
IV	**Evaluation Process**	Xcel's stated evaluation criteria were applied in a fair and unbiased manner and a consistent, transparent methodology was used to rank proposals.	Yes
		The components of the process and the procurement process conformed to accepted industry standards.	Yes
		Xcel's stated evaluation criteria were correctly applied and proposals were evaluated in accord with Xcel's expressed assumptions and methodology.	Yes

Section 1
AUDIT SCOPE

Xcel retained Leidos to perform an independent audit of Northern States Power Company's 2016 solicitation of wind resources through an RFP process. Xcel is seeking to procure up to 1,500 MW of cost-effective wind resources through either a power purchase agreement or build-own-transfer arrangement with power suppliers. This report describes the RFP process followed by Xcel during the solicitation (the RFP Process), presents the findings and conclusions of the Independent Auditor, and fulfills the requirement established by the Minnesota PUC in 2006 for an independent audit of Xcel's resource acquisition process to ensure transparent, fair, and equitable procurement of new power supply resources.[1] This independent audit (the Audit) began on August 2, 2016 with the development of RFP documents and ended on December 8, 2016 with the final selection of short-list Bidders with whom Xcel would enter into closed-door negotiations. Leidos work as Independent Auditor does not include the monitoring or review of negotiations or their outcomes. The Audit was conducted to comply with the requirements established by the PUC and provides an independent, systematic, critical review of the RFP Process for certification to the PUC.

This report presents the results of the Audit and is organized as follows. Section 1 sets forth the Audit scope and includes a background of the regulatory history, Audit purpose, and Audit parameters. Section 2 presents the Audit approach. Section 3 provides the Audit results. Audit outcomes including findings appear in Section 4. Redacted and confidential information appears in appendices hereto and is noted as such.

1.01 Background

This Audit is being conducted pursuant to Xcel's resource acquisition process established in 2006. The revised process emerged from Xcel's 2004 Resource Plan[2] and is based on two tracks. The first track applies to this procurement and is a formal competitive bidding process used to acquire resources from external Bidders. The second more intensive track is used when Xcel proposes to build resources and for procurement of all baseload resources.[3] The first track requires, among other things,

[1] *Order Establishing Resource Acquisition Process Under Minn. Stat. § 216B.2422, Subd. 5, and Requiring Compliance Filing*, Docket No. E-002/RP-04-1752, May 31, 2006, p. 8.

[2] *In the Matter of the Petition of Northern States Power Company d/b/a Xcel Energy's Application for Approval of its 2004 Resource Plan*, Docket No. E-002/RP-04-1752, November 1, 2004.

[3] *Compliance Filing In the Matter of the Petition of Northern States Power Company d/b/a Xcel Energy's Application for Approval of its 2005-2019 Resource Plan*, Docket No. E-002/RP-04-1752, August 28, 2006, pp. 2-4.

use of an independent auditor. This section explains how this requirement was established and provides general information on audit requirements.

Following unsuccessful bidding processes in 1995, 1999, and 2001,[4] Xcel proposed changes to its resource acquisition process in its 2004 Resource Plan.[5] Comments received on Xcel's proposal included an alternate process put forth by the Minnesota Department of Commerce (DOC)[6] that was ultimately adopted by the PUC.[7] Under the proposed DOC Process,[8] Xcel would acquire intermediate, peaking and wind resources through a competitive bidding process that included review by an independent auditor.[9] Use of an independent auditor was to:

> …ensure that Xcel's process for obtaining and evaluating responses to the RFP [was] unbiased[10]

The DOC also provided the following details concerning the scope of the independent audit:

> The independent audit should explain the steps employed in Xcel's bidding process, the reasonableness of the steps, and Xcel's adherence to the steps.[11]

The difference between an "independent auditor" and an "independent evaluator" was later clarified by PUC staff: the former evaluates the fairness of the acquisition process while the latter actually selects proposals.[12]

Pursuant to Xcel's 2006 compliance filing, independent auditor certification of the RFP Process occurs within 20 days of Bidder selection—between Step 5: Bidder selection and negotiations, and Step 7: filing for approval with the PUC.[13] Due to the accelerated nature of the current process, the Audit Report is being filed as part of Xcel's approval filing.

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[4] Refer to the discussion in *Order Seeking More Detailed Proposals*, November 17, 2005, PUC Docket No. E002/RP-04-1752, p.3.

[5] See s*upra* note 2, p. 1.

[6] *Comments of the Minnesota Department of Commerce*, PUC Docket Nos. E002/RP-04-1752 and E002/RP-00-787, December 17, 2004.

[7] See s*upra* note 2.

[8] See s*upra* note 4.

[9] *Supplemental Comments of the Minnesota Department of Commerce*, PUC Docket No. E002/RP-04-1752, November 23, 2005, pp. 3-5.

[10] *Ibid.*, p. 3.

[11] *Ibid*, p. 3, footnote No. 4.

[12] *Staff Briefing Papers for E002/RP-04-1752 on April 25, 2006*, p. 16.

[13] See s*upra* note 3, p. 3.

1.02 Purpose

The Audit was conducted to comply with the requirements established by the PUC and discussed in Section 1.01. The Audit provides an independent, systematic, critical review of the RFP Process for certification to the PUC.

The primary objectives of the Audit were to:

- Assess whether the RFP documents and associated attachments provided sufficient and consistent information for Bidders to prepare competitive proposals.
- Identify any potential bias in evaluation criteria, process, proposal modeling, selection process, or treatment of Bidders/proposals.
- Establish that the evaluation criteria were applied in a fair and unbiased manner and that a consistent, transparent methodology was used to rank proposals.
- Assess whether the components of the process conformed to accepted industry standards.
- Identify any irregularities in the RFP process.

The Audit was led by a senior management consultant experienced in generation resource procurement, renewable resource project evaluation, and integrated resource planning. The Audit was performed in accordance with industry standards such as those established by the Institute of Internal Auditors.

1.03 Parameters

The following sets forth the parameters required to be met by the RFP Process.

I. Bid Documents & Notifications

- RFP documents and associated attachments provided adequate and consistent information that Bidders could use to prepare competitive proposals.
- Information was disseminated to a broad range of potential Bidders to achieve a robust pool of proposals.
- Xcel's procurement process conformed to representations made in the RFP documents, and any post-release announcements.
- Xcel exercised appropriate control of the Bidder documents post receipt.

II. Communications

- Xcel communicated consistently and transparently with potential and actual Bidders throughout the process.

- Correspondence between Xcel personnel and potential and actual Bidders did not afford undue advantage or preferential treatment to the potential disadvantage of other Bidders.
- Bidders received equal and equitable treatment.

III. Evaluation Criteria

- The evaluation criteria, evaluation process, proposal modeling, selection process, and assumptions used for selecting proposals were free from bias.
- Xcel's methodology for selecting short-listed Bidders was free from bias.
- Xcel's modeling, due diligence and evaluation criteria were free from irregularities, bias or potential discrimination.

IV. Evaluation Process

- Xcel's stated evaluation criteria were applied in a fair and unbiased manner and a consistent, transparent methodology was used to rank proposals.
- The components of the process and the procurement process conformed to accepted industry standards.
- Xcel's stated evaluation criteria were correctly applied and proposals were evaluated in accord with Xcel's expressed assumptions and methodology.

1.04 Limitations

Leidos' role in this process was solely that of third-party independent auditor. Leidos reviewed the modeling, due diligence, and evaluation criteria used by Xcel in this procurement process solely for the purpose of identifying irregularities, bias or discrimination. Although such efforts may have included assessing the reasonableness of various modeling assumptions toward that end, Leidos did not perform in the role of consulting engineer. Leidos evaluated the procurement *process* not the actual procurement. Leidos does not attest to the validity of the associated assumptions or outcomes.

The results presented in this report are predicated on information provided and representations made by Xcel. Leidos made reasonable efforts given the nature of this Audit to obtain pertinent information concerning conduct of the RFP Process. Leidos has requested attestation statements of key staff involved. However, Leidos has no means to determine the extent to which material facts concerning the RFP Process have been disclosed nor is this a forensic audit. All findings in this report are based solely on Leidos' review of materials furnished by Xcel as identified, or publicly-

available information as cited. Review of additional materials or disclosure of material facts could change the findings stated in this report.

This report documents the Audit for the sole purpose of demonstrating compliance with PUC requirements as defined in Section 1; no other use is expressed or implied. Nothing in this report can be considered a legal opinion.

Section 2
AUDIT APPROACH

2.01 Overview

Under the direction and supervision of the Project Manager, Leidos staff reviewed materials provided by Xcel. Where appropriate, Leidos conducted research and independently gathered information to verify assumptions or augment information provided by Xcel. Leidos exchanged emails and held meetings with key staff involved in this procurement to clarify and discuss aspects of the RFP Process and evaluation. Leidos maintained logs of all efforts conducted in support of this Audit and client correspondences. In addition, written minutes of project meetings were prepared. Leidos' professional expertise and knowledge gained through conducting similar procurements and performing similar audits on behalf of other clients supplemented these materials and served as the underlying foundation for Audit results.

2.02 Process Description

The Audit commenced with a kickoff meeting during which key members of the Leidos and Xcel teams discussed the RFP Process and established a communications protocol, project schedule, and data transmittal plan. Audit parameters and key details of the procurement process were explored. During the course of the Audit, Leidos held weekly meetings with Xcel to discuss progress, coordinate meetings, and obtain clarifications and/or additional materials. Audit team members held internal progress meetings to discuss efforts, identify areas requiring additional investigation, and coordinate review. As the Audit proceeded, additional meetings for specific topics were held with and subsequent data requests made to Xcel.

Upon receipt of proposal materials from Xcel, Leidos established a secure network storage area for all Audit related materials and limited access to Audit team members. Documents received by Leidos were under physical control of Audit team members during the course of the Audit. Leidos maintained a log of materials received from Xcel over the course of the Audit. In compliance with the terms of the Confidential Nondisclosure Agreement executed between Leidos and Xcel, Leidos returned all proposal documents to Xcel upon completion of the Audit.

Leidos assessed the extent to which RFP documents and associated attachments provided adequate and consistent information that Bidders could use to prepare competitive proposals. Leidos reviewed advanced notifications as well as post-release announcements to assess the level to which information was disseminated to a broad range of potential Bidders to achieve a robust pool of proposals. Leidos assessed the level to which Xcel's procurement process conformed to representations made in the RFP documents and any post-release announcements. Leidos assessed the extent to which Xcel exercised appropriate control of the Bid Documents post receipt.

Leidos sought to identify potential biases in the evaluation criteria, evaluation process, proposal modeling, selection process, and assumptions used for selecting proposals. Leidos evaluated Xcel's methodology for selecting short-listed Bidders. Leidos reviewed Xcel's modeling, due diligence and evaluation criteria to identify irregularities, bias or potential discrimination. Leidos evaluated the extent to which Xcel's stated evaluation criteria were applied in a fair and unbiased manner and that a consistent, transparent methodology was used to rank proposals. Leidos assessed whether the components of the process conformed to accepted industry standards and sought to identify irregularities in the procurement process. Leidos evaluated the extent to which Xcel's stated evaluation criteria were correctly applied; and proposals were evaluated in accord with Xcel's expressed assumptions and methodology. Leidos tracked all efforts, cited discrepancies and noted comments via email communication with Xcel.

Leidos requested that Xcel staff provide written attestation statements concerning RFP communications and proposal evaluation. These attestation statements are included in Appendix B.

2.03 Audit Team

Leidos was retained by Xcel to conduct this Audit. Leidos assists utilities, energy developers, end users, and financial institutions across the country with the development, analysis, and negotiation of power purchase and sales agreements. Leidos' experience relative to this engagement includes comprehensive power system planning and analysis and design of generation portfolios. Leidos has a designated group of economists, engineers, analysts, and other professionals who provide a range of energy resource planning and advisory services. Our multidisciplinary staff understands the breadth of technical, financial, regulatory, environmental, and social issues surrounding the electric power industry and can apply this knowledge to guide sound business decisions. Our practitioners have significant forecasting and market modeling experience in many energy-related and resource industries including renewable and fossil-fuel electric generation, fuels, solid waste, and water.

In addition to particular expertise in auditing, Leidos' Audit team for this engagement includes technical specialists in renewable energy, resource procurement, energy market and financial modeling, and resource planning. The Audit was conducted under the direction and supervision of Jennifer White, a senior management consultant with 18 years of experience in the utility industry specializing in long-term organizational, financial, and resource planning; economic and financial analysis of markets, projects, and portfolios; and in conducting process, operational, and performance audits. She has managed RFP Processes for renewable and thermal generation resources, conducted contract negotiations, and led integrated resource planning projects. Ms. White was supported by Phil Stiles, a senior consultant in power generation at Leidos, specializing in wind turbine technology, operations and maintenance, turbine testing, and wind resource contracting.

2.04 Auditor Role

Leidos conducted this Audit as a third-party independent reviewer of Xcel's RFP Process. Leidos relied upon the process and criteria defined and established by Xcel. Leidos evaluated the procurement *process* not the actual procurement results. Leidos reviewed the modeling, due diligence, and evaluation criteria used by Xcel in this RFP Process solely for the purposes of identifying irregularities, bias or discrimination and confirming that Xcel consistently and appropriately applied its defined criteria to evaluation of the proposals.

2.05 Limitations

Leidos' role was to independently evaluate Xcel's process. Leidos' role in this process was solely that of third-party independent auditor. Although such efforts may have included assessing the reasonableness of various modeling assumptions toward that end, Leidos did not perform the role of consulting engineer. Leidos did not perform this Audit in the role of independent evaluator nor was Leidos involved in the selection or ranking of proposals. Leidos does not attest to the validity of the assumptions or outcomes of Xcel's procurement process. Review of additional materials or disclosure of material facts not currently known could change the findings stated in this report.

Additional limitations appear in Section 1.04.

2.06 Disclosure

Leidos discloses that it has served many utilities and project developers within the energy industry, including Xcel and its wholly-owned subsidiaries, and some Bidders and potential Bidders to the 2016 Wind RFP. None of these pre-existing business dealings or relationships impacted the Audit Team's ability to conduct an independent, unbiased, and critical assessment and evaluation of the RFP Process. Furthermore, the Project Manager did not have communications or a relationship with Xcel or potential Bidders prior to the onset of the Audit; and no Leidos staff enlisted for the Audit were responsible for evaluation of proposals or development of model input or assumptions other than in a review and verification capacity.

Section 3
AUDIT RESULTS

This section discusses the RFP Process and presents the results of Leidos' Audit activities.

3.01 Overview

The 2016 Wind RFP solicitation, among other items, addressed:

- Eligible Resources
- Interconnection and Transmission Requirements
- Transmission and Interconnection Costs
- Schedule
- Instruction for Communication with Xcel
- Proposal Submittal Deliverable Requirements

The 2016 Wind RFP allowed for proposals of any capacity structured as (i) BOT arrangements, (ii) PPAs, or (iii) any combination of (i) and (ii).

3.02 Bidder Documents and Notifications

On September 22, 2016 Xcel notified the PUC of its same day issuance of the Northern States Power Company 2016 Wind Solicitation: Wind Resources Request for Proposals (the 2016 Wind RFP) for up to 1,500 mega-watts (MW) of wind turbine generation (WTG). A notice to the press of the 2016 Wind RFP was delivered through the Xcel Media Relations group. Additionally, the solicitation was made public through the Xcel company website[19] as well as the United States Department of Energy's The Green Power Network website[20] and industry publications and websites including Wind on the Wires[21] and North American Windpower.[22]

The 2016 Wind RFP clearly identified proposal requirements and submittal deadline. It set forth a timeline of events and submittal requirements. Communication protocols and points of contact were included. The 2016 Wind RFP identified eligible resource options, outlined the treatment of transmission and interconnection costs, explained

[19] http://www.xcelenergy.com/NSP2016WindRFP

[20] http://apps3.eere.energy.gov/greenpower/financial/

[21] http://windonthewires.org/press/33/xcel-energy-seeks-over-1500-mw-of-cost-effective-wind-energy-by-2020

[22] http://nawindpower.com/xcel-energy-issues-rfp-for-60-increase-in-wind-energy

how multiple proposals for the same project would be treated, and provided a model wind PPA, sample BOT Term Sheet and Standard Bidder Forms.

The seven 2016 Wind RFP documents made available to Bidders on the Xcel company website included the following:

1. The main 2016 Wind RFP document in Microsoft Word format titled "Northern States Power Company 2016 Wind Solicitation: Wind Resources Request for Proposals." This document's filename was "Updated Final NSP Wind RFP 9.21.16." It provides background information, proposal requirements, and instructions to Bidders on how to submit their proposals.
2. The wind farm project technical requirements and specifications document in Microsoft Word format with the filename "Wind Farm Technical Requirements 10.3.16"
3. A draft term sheet for the purchase and sale of an operational wind project in Microsoft Word format with the filename "Wind Purchase and Sale Term Sheet"
4. A sample power purchase agreement titled "Wind Energy Purchase Agreement" in Microsoft Word format with the filename "Model Wind PPA."
5. A document titled "NSP 2016 Wind RFP Questions" in pdf format, filename "Frequently Asked Questions - Updated October 21 (PDF)" This document provided Xcel's answers to Bidders' questions posed and was updated and reposted several times between the RFP issuance and the proposal submittal due date.
6. A document titled "Addendum 1 – Additional Transmission Cost Information Requested" in Microsoft Word format with the filename "Addendum 1 - 10042016 - Additional Transmission Cost Information Requested." This document requested additional incremental and decremental price information from Bidders concerning transmission interconnection costs.
7. Standard Bidder forms as part of Appendix A to the 2016 Wind RFP and contained in an Excel workbook with the filename titled "Appendix A - 10.20.16 Bidder Forms (XLS) _v4." Requested information was required to be completed by the Bidders on fourteen standard forms (refer to Table 3-1), one on each workbook tab.

Table 3-1: Standard Bidder Forms—Workbook Tabs

Standard Bid Tab Description	
Tab 1	Confidentiality
Tab 2	Bid Certification
Tab 3	Cover Sheet
Tab 4	Pricing PPA
Tab 5	Pricing Ownership or BOT
Tab 6	O&M and Ongoing Capex BOT
Tab 7	Construction Milestones
Tab 8	Technical Description
Tab 9	Production Profile
Tab 10	Representation Authorization
Tab 11	Interconnection Details_v3
Tab 12	Creditworthiness
Tab 13	Siting Environmental PPA
Tab 14	Siting Environmental BOT

3.03 Transmission and Interconnection

Xcel limited the geographic location to those projects with an interconnection location within the Midcontinent Independent System Operator (MISO) territory and in a state where NSP customers or generation resources are located. This "Project Region" included those portions of Minnesota, Wisconsin, Michigan, North Dakota and South Dakota within MISO. Xcel required that Bidders be responsible for all costs associated with interconnecting their proposed projects to the MISO system. Bidders were instructed that they shall arrange and be solely responsible for all costs associated with delivery of energy from their project(s), located within the Project Region, to the point of interconnection in their proposals. Bidders were specifically told that they are responsible for all losses and congestion costs incurred in transmitting energy from the proposed generating facility to the point of interconnection.

Bidders were also asked to provide a list of costs itemized by major components and supporting documentation, such as MISO generator interconnection study reports, MISO optional study reports or Bidder-sponsored interconnection study reports detailing interconnection and transmission costs associated with their RFP Project(s). The Study reports were to include detailed descriptions and cost assumptions for all interconnection facilities, transmission system upgrades, distribution system upgrades, and transmission system protection facilities needed for the proposed project(s).

Xcel reaffirmed the responsibilities for interconnection costs in a separate email to Bidders which is provided in Appendix C. Bidders were asked to confirm their understanding of the requirements. All Bidders responded affirmatively confirming they understood that they were responsible for all future transmission costs and therefore the proposed price(s) could not be subject to any future adjustments to a higher price.

3.04 Internal Control of Documents and Information

The 2016 Wind RFP required that all proposal packages be delivered to the Xcel RFP Project Manager, who is a member of Xcel's Resource Planning team, by 5:00 PM Mountain Daylight Time (MDT) on October 25, 2016. Xcel's Resource Planning personnel were responsible for logging all proposal packages received and preserving them unopened until October 26, 2016 (or the submittal of Xcel's self-build option(s) filing, whichever occurred last). The proposals were stored in a secure environment and were "checked-out" to designated RFP evaluation team members, identified in Section 3.08, and logged under a controlled procedure governed by Resource Planning.

No members of Xcel's engineering or technical staff responsible for the development of the technical or performance parameters of Xcel's self-build option(s) had access to the proposals submitted, with the exception of one engineer responsible for developing the operations and maintenance (O&M) and ongoing capital cost assumptions for BOT projects. Because this engineer had worked on Xcel's self-build option, he was tasked with developing the specific methodology and all guidelines for the input assumptions for O&M and ongoing capital costs prior to the receipt of proposals. The self-build team engineer was not allowed to change the methodology or guidelines for assumptions input after receipt of the proposals.[23]

The Independent Auditor reviewed the methodology and guidelines for the input assumptions and agreed that they were reasonable and sufficiently rigid so as to not enable bias to be introduced into the evaluation of BOT project costs, or provide unfair advantage or disadvantage to any of the evaluated BOT projects in relation to other BOTs or to the PPAs or to the self-build option.

[23] The Independent Auditor did not review or analyze Xcel's self-build option(s) in any way, including the methodology or assumptions used for ongoing O&M and capital expenditures; and as such provides no opinion thereto.

The RFP evaluation team was instructed during meetings and in written documentation not to communicate directly or indirectly with anyone working on the self-build projects. These communication protocols remained in effect throughout the RFP Process until the final PPA/BOT short list was established.

3.05 Communications with Bidders

The 2016 Wind RFP specifically discussed communications between Bidders and Xcel, providing specific contact information and stating that all communication was to occur exclusively in written format and only via email. Bidders were instructed to submit inquires to the RFP Project Manager via email at: NSP2016WINDRFP@xcelenergy.com and were told they should not attempt to acquire information through any other means including telephone calls to the Company. Bidders were notified in the 2016 Wind RFP document that they were responsible for monitoring the RFP website for updated addendums. The evaluation teams were also instructed not to communicate with bidders during the evaluation process, outside of the official email medium and only to ask clarifying questions and/or give the bidders opportunity to cure deficiencies that are identified during the completeness and threshold review.

Xcel established these information policies to ensure that all respondents had the same timely access and knowledge about the RFP and evaluation process. According to the 2016 Wind RFP document, the deadline for submitting questions was 5:00 pm MDT on October 10, 2016; and questions were no longer to be accepted after that time. Also according to the 2016 Wind RFP document, all filed addendums were to be posted by 5:00 pm MDT/6:00 CDT on October 17, 2016.

Xcel did not entertain questions posed in any format other than email. Members of Xcel's RFP evaluation teams, as identified in Section 3.08, did not have in-person or telephone conversations with Bidders or potential Bidders. However, there were two separate attempts by Bidders to contact Xcel personnel via telephone, which are described in the following paragraphs.

One Bidder contacted by telephone Xcel personnel that were not part of the RFP evaluation teams and, through a series of conversations, made inquiries regarding using a third-party wind data vendor. The Independent Auditor launched an investigation of the communication that had occurred, calling and interviewing all Xcel personnel involved, as well as the Bidder, to determine the nature of the conversations that took place. There was no indication that the communication between the Bidder and Xcel staff was known by Xcel staff to be related to the RFP or the Bidder's potential proposal, including no RFP clarification type questions/answers, discussion of evaluation criteria, scoring, sites, or even the mention potential projects. As such, the Independent Auditor determined that Xcel staff did not violate the protocol for communication as described in the RFP document or Xcel's internal RFP process documents. Because of the nature of the communication that occurred and because the Bidder stated that it did not believe its request of Xcel was related to the RFP, it is reasonable to assume that the Bidder had no intention of violating the communication protocol as outlined in the RFP. As a result of its investigation, the

Independent Auditor does not believe that these communications caused an unfair advantage or disadvantage to the Bidder or other potential Bidders and does not believe there was the introduction of bias into the evaluation of RFP responses.

Another Bidder left a voicemail message after the question cutoff date inquiring about modifying a proposed price and was told via email that all inquiries were to be submitted via email prior to the cutoff date. The nature of the question posed in the voicemail message did not cause undue bias or result in an advantage or disadvantage to the Bidder or other Bidders.

Xcel maintained a log of all inquiries and coordinated the preparation of written responses. Xcel periodically posted responses to questions received from Bidders on the company website. The RFP document stated that Xcel would file responses as an addendum(s) to the RFP, however responses were provided in a document titled "NSP 2016 Wind RFP Questions" that was not titled as an addendum. This document provided Xcel's answers to Bidders' questions and was updated and reposted several times between the RFP issuance and the proposal submittal due date. The first posting occurred on September 30th and the last on October 21, 2016, four days beyond Xcel's stated date for all information to be posted.

Although Xcel did not follow the stated protocol by failing to provide answers to questions in an addendum format and by posting after the October 17, 2016 date provided in the RFP, the Independent Auditor finds this did not impact the responsiveness of Bidders or the evaluation or results of the RFP process, as the document provided was easily viewed and accessible, Xcel sent the aforementioned email to Bidders on October 31st notifying them of the transmission cost response outlined in the final update to the document on October 21, and the document did not provide any new information other than simple restatement or clarification of what was already provided in the main 2016 Wind RFP document.

In addition to describing the protocol for questions submittal and responses to be provided, the protocol for Xcel asking clarifying questions, conducting due diligence, submitting information requests, clarifications, and confidentiality were all discussed adequately and appropriately in the RFP.

In support of this Audit, Leidos reviewed all email communications between Xcel and Bidders for the Audit period and found no irregularities or introduction of information that could cause undue bias against, preferential treatment toward, or unfair disadvantage to any particular Bidder or subset of Bidders. Xcel and the Auditor have maintained electronic logs of all email correspondence.

3.06 Schedule

The 2016 Wind RFP provided the process schedule appearing in Table 3-2 below and this schedule, through the step called "NSP bid evaluation and selection completed," was adhered to, except for the response to the aforementioned question regarding transmission interconnection costs provided on October 21.

Table 3-2: 2016 Wind RFP Schedule

Activity	Date
RFP Issued	September 22, 2016
Deadline for submitting questions from Bidders	October 10, 2016
NSP will post responses to Bidder questions	October 17, 2016
Bid submittal deadline, 5:00 pm MDT	October 25, 2016
NSP bid evaluation and selection completed	December 8, 2016
Contract negotiations completed	1st Quarter 2017
Regulatory filing with the Minnesota PUC	1st Quarter 2017

3.07 Evaluation Process Overview

Xcel and the Independent Auditor worked together to establish a detailed approach for the RFP process including proposal evaluation.

Xcel used a four phased approach to evaluate proposals responding to the RFP:

1) Completeness and Threshold Review
2) Levelized Cost Of Energy (LCOE)/Price Review
3) Non-Price/Qualitative Review
4) Final Ranking

These phases are described in more detail in Section 3.09.

The LCOE/Price Review established an LCOE for each proposed project, which was combined with the results of the Non-Price/Qualitative Factor Review to determine the RFP short list. The LCOE/Price Review served as the primary consideration in populating the final short list of projects to proceed to negotiations. The Non-Price/Qualitative Review served to provide a Non-Price score as well as qualitative risk assessments/comments from subject matter experts, however, only the Non-Price scores were used to help determine the recommended list of proposals that progress to

negotiations. The Non-Price scoring and qualitative risk assessment measures were intended to supplement the LCOE rankings, to determine a preference in the event that LCOE prices are sufficiently close together, and to provide additional information that can be used in the regulatory approval process.

The evaluation was conducted by two separate teams to help maintain an unbiased evaluation. The LCOE/Price evaluation team focused on evaluating all RFP projects based on proposed price and a standardized calculation of LCOE. The Non-Price/Qualitative team focused on conducting the Completeness and Threshold and Non-Price/Qualitative reviews.

The evaluation teams were comprised of Xcel employees and third party consultants that had not been involved in the development of NSP's self-build proposal, except the one aforementioned engineer responsible for developing the O&M and ongoing capital expenditure cost inputs to the LCOE/Price Review. The core RFP evaluation team was comprised of those individuals from Xcel's Resource Planning and was responsible for RFP document development and issuance, document control, and managing the four evaluation phases.

It should be noted that various Bidders submitted multiple business arrangements for the same wind project. Xcel reviewed these arrangements as separate proposals. For projects that included both PPA and BOT components (hybrid), Xcel's review conformed to the provisions set forth in the proposal. Xcel evaluated these hybrid proposals by averaging the estimated LCOE from each project component, PPA and BOT, to arrive at an overall LCOE.

3.08 Xcel RFP Evaluation Team

The following tables list all of the individuals included in the RFP evaluation as well as their specific roles in conducting or contributing to the four evaluation phases. The RFP Evaluation Team, comprised of those individuals in Table 3-3 was responsible for RFP Issuance, Completeness and Threshold Review, the LCOE/Price Review, Document Control and managing the Non-Price/Qualitative Factor Review.

Table 3-3: RFP Resource Planning Team Members, Key Personnel and Role in RFP Process

Name Title	Company	Role
Jonathan Adelman **AVP Strategic Resource and Business Planning**	Xcel Energy	Executive Management oversight
Kurt Haeger **Executive Consultant**	Xcel Energy	LCOE Modeling and RFP compliance with Corporate Strategy and Business objectives
PJ Martin **Director Strategic Resource Planning**	Xcel Energy	Direct RFP preparations and execution, manage internal management communications and completeness and threshold evaluator
Thomas Mol **Senior Resource Planning Analyst**	Xcel Energy	Day-to-day management of RFP execution including logging, proposal screening, due diligence oversight, development of proposal short list and supporting recommendation, Bidder communication and internal RFP progress communication and completeness and threshold evaluator
Mary Morrison **Resource Planning Analyst II**	Xcel Energy	RFP logging, proposal screening, Bidder communication and completeness and threshold evaluator
Jon Landrum **Manager Resource Planning Analytics**	Xcel Energy	LCOE modeling
Patrick Bourke **Senior Consultant, Strategic Asset Planning**	Xcel Energy	Assistance with bid opening, proposal screening and cataloguing and available as an additional completeness and threshold evaluator

In addition to the core RFP Evaluation Team, certain in-house and third-party subject matter experts were used to conduct additional due diligence in an effort to evaluate key components of proposals, as described in more detail in Section 3.09. These other team members and their roles are shown in Table 3-4.

It was disclosed to the Independent Auditor after the conclusion of Xcel's evaluation process and the preparation of the Independent Auditor's draft report that Lesley Dubois of AWS is the spouse of personnel employed by one of the Bidders who responded to the RFP. The Independent Auditor did not investigate claims made by Ms. Dubois that she did not discuss the evaluation with her spouse; as there is no way to independently and credibly verify this claim. The Independent Auditor asserts this is an easily recognizable conflict of interest and this information should have been made known to Xcel and the Independent Auditor prior to the evaluation

commencing; however, the Independent Auditor does not feel this conflict of interest impacted the evaluation or rankings.

Table 3-4: Other Non-Price and Completeness and Threshold Assessment Evaluators/Contributors

Topic	Name Title	Company	Role
BOT Generation Performance Verification	Lesley Dubois Jerry Dittman	AWS Xcel Energy	Verify BOT and PPA capacity factors to be used in LCOE
BOT O&M/Cap Ex	Nathan Svoboda Senior Manager Operations	Xcel Energy	Develop procedure to determine O&M and capital expenditures for BOT to be used in LCOE Apply procedure to determine BOT O&M and capital expenditures used in LCOE evaluation
Transmission and Interconnection	Michael Cronier	Excel Engineering	Assistance with Non-Price Evaluation
Land and Site Control	Sarah Schwartz Manager Siting and Land Rights	Xcel Energy	Site Control and Land Rights Due Diligence
Environmental Permits	Jim Bodensteiner Principle Environmental Analyst	Xcel Energy	Environmental Permit Due Diligence
Finance and Credit	Tim Carter Sr. Director of Risk and Controls and Credit	Xcel Energy	Responsible for the security requirement and funding questions in the threshold review
Accounting Impacts	Brenden Pleskow Principal Financial Consultant	Xcel Energy	Responsible for the accounting treatment assessment in Non-Price review
Model BOT Project Term Sheet	Jerry Dittmann Manager Business Development	Xcel Energy	Model BOT project term sheet exceptions
BOT Project Technical Specifications	Jerry Dittmann Manager Business Development	Xcel Energy	BOT project technical specifications exceptions

3.09 Evaluation Phases

3.9.1 Completeness and Threshold Review

Upon opening the proposals, at least two RFP Resource Planning Team individuals reviewed each proposal to confirm that all information required had been included and that each proposal met the threshold criteria identified in the RFP. The evaluation team contacted any Bidders who did not pass the initial completeness and threshold review and allowed Bidders a 5 business day window to address any deficiencies. If the deficiencies were not addressed in a timely manner, the projects were disqualified and no longer considered for short listing. Information deficiencies were logged electronically and Xcel notified the Bidders of the deficiencies via e-mail. The e-mail provided a list of the deficiencies and the specific date by which the Bidder must correct the deficiency.

The Completeness Review was documented for each project proposal on an Excel spreadsheet. Xcel and the Independent Auditor have maintained electronic logs of all Completeness and Threshold Reviews conducted. Xcel maintained a log of all deficiency emails sent and Bidder responses received, which the Independent Auditor has reviewed. Of the 95 separate proposals received, only six were deemed disqualified from further consideration; all of these met the completeness requirements but failed the threshold requirements.

3.9.2 LCOE/Price Review

Xcel calculated the LCOE for all PPA and BOT proposals that met all Completeness and Threshold Criteria requirements.

The objective of the LCOE calculations was to identify projects that will have the lowest total cost. The LCOE for the PPAs was calculated using the proposed energy generated and PPA payments. The LCOE for the BOTs was calculated using an Excel-based capital related revenue requirements model developed by Xcel with the inputs being the BOT payments provided by the Bidder and Xcel's assumptions for ongoing O&M and capital expenditures. The energy generation values used were also provided by the Bidder. The assumptions used for cost of capital, discount rate, and escalation were developed by Xcel and contained in Xcel's most recent Corporate Assumptions Memo.

Ongoing maintenance and capital expenditures for the BOT proposals were determined using the methodology and procedure developed by Xcel's designated engineering staff person, which was completed prior to proposal opening and reviewed and approved by the Independent Auditor.

Leidos reviewed the project-specific O&M and capital cost assumptions using our knowledge and experience with other wind projects. We note that certain typical wind project costs were missing from Xcel's model during our initial review. Leidos discussed these costs with Xcel and it was determined that a majority of the costs not present are accounted for by Xcel not at the project level, but at a corporate/group level. Because they are not accounted for at the project budget level, they were not

included in the O&M model. Xcel informed the Auditor that developing project-specific costs would be difficult. Xcel reviewed its typical accounting for such cost items and attempted to quantify additional costs that may be incurred due to the ownership of new projects. It then developed two specific adders (on a % of total project cost basis) to apply to the O&M and ongoing capital costs resulting from their model. One adder was an Administrative and General (A&G) average overhead cost and the other an Engineering and Supervision (E&S) Electric Production average overhead cost. Leidos agreed that this was an acceptable methodology to account for these costs, however, Leidos did not independently review the financial or accounting analysis conducted by Xcel to develop these adders. The Independent Auditor believes these adders were consistently and equitably applied.

The Independent Auditor reviewed the LCOE model and confirms that it provided a fair and reasonable evaluation of the LCOE from the proposed projects. The assumptions, inputs, and calculations are the sole responsibility of Xcel; as the Auditor merely reviewed assumptions, inputs, and calculations to determine that the model was working as intended and being applied fairly and uniformly.

The LCOE modeling was completed using a 25 year evaluation period. The evaluation period for the LCOE calculations began with the earliest proposed commercial operation date (COD) of all Bids submitted. To the extent an RFP Project was bid for a term less than 25 years, the Company assigned annual estimated wind energy values (multiplied times the expected average energy production of the RFP Project) to the proposal for the years beyond the proposed bid term to year 25. This methodology was used to reflect the long-term benefits of a 25 year wind project.

These wind energy values are presented in the following Table 3-5 and derive from the wind energy costs assumed in Xcel's January 2016 Integrated Resource Plan analyses for 100% PTC in service at the end of 2019. These values are listed below by year through 2053.

Table 3-5: Assumed Wind Energy Values ($ per MWh)

2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
21.98	22.48	22.98	23.49	24.02	24.56	25.11	25.67	26.25	26.83	27.44	28.05
2031	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**
28.68	29.32	29.98	30.65	31.34	32.04	32.76	33.49	34.24	35.01	35.79	36.59
2043	**2044**	**2045**	**2046**	**2047**	**2048**	**2049**	**2050**	**2051**	**2052**	**2053**	
37.41	38.25	39.11	39.98	40.88	41.79	42.73	43.69	44.67	45.67	46.69	

The LCOE calculations were be based on costs at the point of interconnection. No proposals were assigned a cost or credit for MISO inter-zonal transmission costs, congestion costs, or costs incurred due to curtailment.

A ranking based on the LCOE results was prepared for individual projects. The RFP Evaluation Team determined a threshold price at which a sufficient number of proposals to meet the RFP procurement target of 1,500 MW could then progress to the non-price due diligence factor evaluation process. Of the 95 separate proposals received, 26 moved from the LCOE/Price Review onto the Non-Price/Qualitative Factor Review. These 26 proposals comprised projects totaling 6,370.6 MW (nameplate).

Xcel and the Independent Auditor have maintained electronic logs of all LCOE/Price Review spreadsheet models for each proposal that passed the Completeness and Threshold Review.

3.9.3 Non-Price/Qualitative Review

The Non-Price/Qualitative Review was structured to mitigate against the introduction of bias or the perception of bias in the evaluation of RFP responses. Two key measures to ensure RFP integrity of the process included:

1) As outlined in Section 3.04, all proposal information was maintained in a locked room with only the RFP evaluation team members having access.

2) Resource Planning staff will not have seen or have access to information included in Xcel's Self-Build Proposal filing with the MPUC.

In the Non-Price review, all projects were scored using the NSP 2016 Wind RFP Evaluation Form (the Non-Price Evaluation Form). Projects were scored in five (5) different areas including the following:

1) Generator Technology, Availability and Warranties
2) Permitting and Compliance
3) Site Control
4) Transmission
5) Accounting Assessment

In the form, evaluators selected "yes" or "no" answers to all of the questions associated with each area. Based on the "yes" or "no" answers, the form then auto-calculated an overall non-price score for each project.

Evaluators were asked to give justification for their answers within the written comments box in each form section. Evaluators were also expected to provide written comments for each section in which they provided specific detail on any major risks associated with a project as well as a recommendation as to how to proceed given their assessment of the project characteristics. This qualitative assessment is meant to supplement the Non-Price rankings but was not used in any way as part of the determination of scores or rankings as part of the RFP evaluation process.

Xcel and the Independent Auditor have maintained electronic logs of all Non-Price/Qualitative evaluation forms for the 26 proposals included in this phase of the evaluation.

3.9.4 Third Party Analyses

Xcel retained a third party consulting firm for an independent wind energy resource assessment of BOT projects, in order to determine capacity factor and losses values. The findings of these evaluations were included within the Non-Price Qualitative Review scoring, however, the LCOE calculations used energy production and ongoing costs provided by the Bidders. The consultant evaluated projects by examining factors which affect project specific wind energy resources. These factors included but are not limited to tower heights, proximity to local meteorological towers with sufficient historical wind data, daily and monthly wind speeds, maximum wind speeds, turbulence data, and climate data.

Leidos did not conduct a technical review of the third-party's evaluation of projects or independently review the wind energy resource assessment reports, as this is beyond the scope of this assignment. While Leidos did not make a determination regarding the accuracy of the conclusions of the reports, Leidos does not believe that these reports negatively impacted the fairness, reasonableness, or unbiased evaluation of projects considered. We trust that these assessments afforded each proposal equitable care and consideration.

Also, transmission and interconnection costs were evaluated for individual projects and for groups of projects by an independent consultant. The findings of these evaluations were included within the Non-Price Qualitative Review scoring; however, the LCOE calculations use transmission upgrade costs provided by the Bidders.

3.9.5 Final Ranking

The results of the LCOE/Price Review and Non-Price/Qualitative Review were used to develop the final ranking of proposed projects and determine the short list of projects to proceed to negotiations. Projects were sorted by LCOE score first. In the event that two projects were within 10% of each other based on LCOE, the non-price scores were used to determine the ultimate ranking. Prices within 10% of each other were considered equal and the non-price scores acted as the tie-breaker. For example, if there were two projects, one at $19/MWh and one $20/MWh LCOE (within 10% of each other) and the first project had a Non-Price score of 13 while the second has a score of 14, the second project would have a higher ranking and be selected first as it has a higher non-price score.

Because there was significant clustering of LCOE scores, proposals with LCOE prices within 10% of each other were re-ranked in the following manner. The evaluation team first selected the lowest priced LCOE proposal, and then determined if there were any proposals that were within 10% of this least-cost project. There were not any proposals within 10%, so the least-cost project and only this project comprises "Bucket 1." The team then determined the next lowest LCOE project and then determined if there were any proposals that were within 10% of it, treating that list of

proposals as "Bucket 2." The team then re-ranked the proposals within Bucket 2 based on Non-Price scores. Bucket 1 and Bucket 2 represent the top ranked proposals. Next, the team selected the lowest LCOE proposal not included in Bucket 1 or Bucket 2 and combined that proposal with any remaining proposals with LCOEs that are within 10% of its LCOE to create "Bucket 3." Bucket 3 was then re-ranked based on Non-Price scores and represents the next tranche of proposal rankings. The Final Ranking included one top ranked project of 200 MW (nameplate) in Bucket 1; six different top-ranked projects in Bucket 2, totaling 1,900 MW; and 19 different projects in Bucket 3, totaling 4,270 MW. Totaling 1,100 MW, the short list of proposals to move to negotiations included the project in Bucket 1 and three of the six projects identified in Bucket 2. As previously mentioned, various Bidders submitted multiple business arrangements for the same wind project. Three proposed projects identified in Bucket 2 were merely different configurations of projects included on the short list.

The four short list projects, denoted A through D by ranking, are:

REDACTED

B. Crowned Ridge 600 MW Hybrid PPA and BOT, proposed by NextEra Energy (Bucket 2)

REDACTED

D. Lake Benton 100 MW BOT, proposed by NextEra Energy (Bucket 2)

Xcel and the Independent Auditor have maintained electronic logs of all ranked LCOE/Price and Non-Price/Qualitative evaluation scores. The Independent Auditor verifies the selection of the four short-listed proposals.

3.10 Summary of Audit Activities

Leidos reviewed the RFP process and supporting documentation provided by Xcel for accuracy, consistency, fairness and any evidence of potential bias in the evaluation and overall selection process. Table 3-6 provides a summary checklist of Leidos audit activities from the creation of RFP documents to the review of the methodology, assumptions, criteria, and models used by Xcel to shortlist proposals.

Table 3-6: Activities Conducted in Performance of Audit

Audit Activities	
Review of all RFP documents, forms, addendums, new release, notices, and RFP Bidder questions asked and answered. Provision of comments and suggested edits, as necessary.	Review and verification of Xcel's RFP process document, presentations, and diagrams. Provision of comments and suggested edits, as necessary.
Review of 1) LCOE spreadsheet model, 2) O&M and ongoing capital expenditures model, 3) Completeness & Threshold Review evaluation spreadsheet, 4) Non-Price/Qualitative Scoring evaluation spreadsheet and 5) Final short list project rankings spreadsheet for completeness, functionality, and accuracy of formulas and calculations.	Review of proposal documents to confirm appropriate and accurate characterization of Projects within the LCOE spreadsheet model, the O&M and ongoing capital expenditures model, and the Non-Price/Qualitative Review Form.
Review of O&M and ongoing capital expenditure methodology and assumptions.	Verify project O&M costs and ongoing capital expenditures from the O&M model are reflected accurately in LCOE model.
Review of proposal material to confirm results of Completeness and Threshold Review are accurate and causes and outcomes documented.	Review of results of LCOE spreadsheet model for each proposed project.
Review of proposal material to confirm results of the Non-Price/Qualitative Review are accurate and causes and outcomes documented.	Review and verification of Final Ranking of proposals and confirm short-list selected Bidders.
Review of all correspondence between Xcel and Bidders.	Investigation of communication between Bidders and Xcel outside of stated RFP process protocol.

Section 4
AUDIT OUTCOMES

This section presents the outcomes of the Audit based on Leidos' review as discussed in this report.

4.01 Observations

Based on efforts in support of the Audit as discussed in the preceding sections, Leidos makes the following observations concerning the RFP Process.

I. RFP Documents & Notifications

Xcel's RFP documents clearly communicated enough information for Bidders to adequately prepare competitive proposals. Xcel used multiple channels to distribute the RFP notice and provided adequate time for Bidders to prepare submissions. Xcel's RFP defined a reasonable schedule and identified key project milestones. Xcel provided detailed information on submittal requirements as well as materials for Bidders to use through its website. Xcel also provided contact information. In all these respects Leidos observes that Xcel's RFP conforms to industry standards.

Relative to industry practice, Xcel adhered well to the process outlined in its 2016 Wind RFP. With the exception of posting responses past the designated date and not providing answers to questions in addendum format, Xcel followed the schedule and protocol presented to Bidders.

In response to its solicitation, Xcel received proposals for 95 different project configurations from 17 separate Bidders in six states. Bidders were able to submit competitive and responsive proposals that conformed to the requirements of the RFP. In this respect, Leidos observes that Xcel's RFP Documents and notifications achieved intended goals.

II. Communications

Xcel's code of conduct with respect to handling proposals was consistent with industry practice and provided an appropriate standard of care. Xcel kept communications with Bidders limited to only what was necessary to conduct the evaluation and in a documented email format. Xcel notified the Independent Auditor immediately of the two attempts by Bidders to contact Xcel personnel outside the email protocol. Leidos reviewed all communications and found none to be preferential or cause undue bias for or against any proposal in relation to the other proposals or the self-build option. The Independent Auditor requested attestations concerning Bidder communications and relationships from Xcel evaluation personnel, which are found in Appendix B. Based on these efforts Leidos is of the opinion that Xcel's communications

were appropriate and were consistent with intended goals for conduct of this RFP Process.

III. Evaluation Criteria

Xcel's evaluation criteria were reasonable and correctly applied. Xcel applied the evaluation criteria across each proposal submitted in an equitable and consistent manner.

IV. Evaluation Process

Xcel's evaluation process was rigorous, robust, and consistent. Xcel administered the process professionally and was thorough in its efforts. Leidos observes that Xcel's process afforded each proposal equitable care and consideration. Leidos reviewed Xcel's evaluation efforts and found that Xcel consistently applied its stated criteria and evaluation methodology to shortlisted and non-shortlisted projects.

4.02 Accolades

Based on efforts in support of the Audit, Leidos extends the following accolades to Xcel concerning both the RFP Process and the Audit process. The Independent Auditor was satisfied by the level of review and analysis every proposal received. Xcel's work efforts were well documented, detailed, and candid. The comments and conclusions of reviewers were well reasoned and documented. The models developed by Xcel were robust, well organized, and represent quality work products. The overall RFP Process was well executed, well documented, and consistent. Xcel devoted significant resources to administration of the RFP Process and the Independent Auditor is of the opinion that these efforts deserve proper regard in this report.

With respect to the Audit process—an effort that is by definition extra burden and work for all who participated—the Audit team received cooperative and cordial treatment from Xcel. The data and information requested from Xcel were delivered promptly and in order. Bidder communications provided to Leidos were organized and appear to be complete. Throughout the course of the Audit, Leidos often asked questions of and requested additional information from Xcel. The Independent Auditor also worked with Xcel and where necessary requested specific changes to the RFP Process be made to ensure fairness, equitable treatment, and an unbiased outcome. In all cases, Xcel listened, was cooperative, and spent considerable time and effort promptly and effectively responding. Xcel expedited answers to Leidos despite considerable pressure to complete analyses in support of a tight timeframe to move onto active Bidder negotiations. Leidos commends Xcel staff for their professionalism, support, and cooperation.

4.03 Findings

The following table summarizes the finding of the Audit of the RFP Process.

Table 4-1: Audit Findings[24]

	PARAMETER	REQUIREMENT	WAS REQUIREMENT MET?
I	**Bid Documents & Notifications**	RFP documents and associated attachments provided adequate and consistent information that Bidders could use to prepare competitive proposals.	Yes
		Information was disseminated to a broad range of potential Bidders to achieve a robust pool of proposals.	Yes
		Xcel's procurement process conformed to representations made in the RFP documents and any post-release announcements.	Yes
		Xcel exercised appropriate control of the Bidder documents post receipt.	Yes
II	**Communications**	Xcel communicated consistently and transparently with potential and actual Bidders throughout the process.	Yes
		Correspondence between Xcel personnel and potential and actual Bidders did not afford undue advantage or preferential treatment to the potential disadvantage of other Bidders.	Yes
		Bidders received equal and equitable treatment.	Yes
III	**Evaluation Criteria**	The evaluation criteria, evaluation process, proposal modeling, selection process, and assumptions used for selecting proposals were free from bias.	Yes
		Xcel's methodology for selecting short-listed Bidders was free from bias.	Yes

[24] All findings are based solely on Leidos' review of materials furnished by Xcel as identified, or publicly-available information as cited. Review of additional materials or disclosure of material facts could change the findings stated in this report.

		Xcel's modeling, due diligence and evaluation criteria were free from irregularities, bias or potential discrimination.	Yes
IV	**Evaluation Process**	Xcel's stated evaluation criteria were applied in a fair and unbiased manner and a consistent, transparent methodology was used to rank proposals.	Yes
		The components of the process and the procurement process conformed to accepted industry standards.	Yes
		Xcel's stated evaluation criteria were correctly applied and proposals were evaluated in accord with Xcel's expressed assumptions and methodology.	Yes

Appendix A
2016 Wind RFP

For reference, following is the 2016 Wind RFP main document released on September 22, 2016.

PUBLIC DOCUMENT
NOT PUBLIC (OR PRIVILEGED) DATA HAS BEEN EXCISED
*Black rectangle indicates protected data.

Northern States Power Company

2016 Wind Solicitation

Wind Resources
Request for Proposals

RFP Issue Date: September 22, 2016

Proposals Due: October 25, 2016

RFP Website: www.xcelenergy.com/NSP2016WindRFP

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Northern States Power Company
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Notice of Disclaimer

The information contained in this Request for Proposals ("RFP") for wind energy resources has been prepared solely to assist bidders in deciding whether or not to submit competitive, responsive bids. Northern States Power Company (“NSP” or the "Company") does not represent this information to be comprehensive or to contain all of the information that a respondent may need to consider in order to submit a proposal. None of the Company, its affiliates, or their respective employees, directors, officers, customers, agents and consultants makes, or will be deemed to have made, any current or future representation, promise or warranty, express or implied, as to the accuracy, reliability or completeness of the information contained herein, or in any document or information made available to a respondent, whether or not the aforementioned parties knew or should have known of any errors or omissions, or were responsible for their inclusion in, or omission from, this RFP.

The Company reserves the right to modify, supplement or withdraw this RFP at any time, whether due to changes in law or otherwise, and including by issuing one or more addenda to this RFP during this solicitation, which addenda shall become a part of this RFP. No part of this RFP and no part of any subsequent correspondence by the Company, its affiliates, or their respective employees, directors, officers, customers, agents or consultants shall be taken as providing legal, financial or other advice or as establishing a contract or contractual obligation. Contractual obligations on the part of the Company will arise only if and when definitive agreements have been approved and executed by the appropriate parties having the authority to approve and enter into such agreements. The Company reserves the right to request from a respondent (a.k.a., bidder) information that is not explicitly detailed in this document, obtain clarification from bidders concerning proposals, conduct contract development discussions with selected respondents, conduct discussions with members of the evaluation team and other support resources as described in this RFP and in compliance with all FERC Code of Conduct rules and provide data to and conduct discussions with the Independent Auditor ("IA") as necessary for the IA to satisfy the IA’s role.

The Company will, in its sole discretion and without limitation, evaluate proposals and proceed in the manner the Company deems appropriate, which may include deviation from the Company's expected evaluation process, the waiver of any requirements and the request for additional information. The Company reserves the right to reject any, all or portions of any proposal received for failure to meet any criteria set forth in this RFP or otherwise and to accept proposals other than the lowest cost proposal. The Company also may decline to enter into any agreement with any bidder, terminate negotiations with any bidder or abandon the RFP process in its entirety at any time, for any reason and without notice thereof. Respondents that submit proposals agree to do so without legal recourse against the Company, its affiliates, or their respective employees, directors, officers, customers, agents or consultants for rejection of their proposals or for failure to execute an agreement for any reason. The Company and its affiliates shall not be liable to any respondent or other party in law or equity for any reason whatsoever for any acts or omissions arising out of or in connection with this RFP. Each respondent waives any right to challenge any valuation by the Company of its proposal in any court of law or equity. By submitting its proposal, each respondent waives any right to challenge any determination of the Company to select or reject its proposal. Each respondent, in submitting its proposal, irrevocably agrees and acknowledges that it is making its proposal subject to and in agreement with the terms of this RFP.

Each respondent shall be liable for all of its costs incurred to prepare, submit, respond or negotiate its proposal and any resulting agreement and for any other activity related thereto, and the Company shall not be responsible for any of the respondent's costs.

Section 1. Introduction

Northern States Power Company ("NSP" or the "Company"), an operating company subsidiary of Xcel Energy Inc., is issuing this Request for Proposals ("RFP") as a component of its 2016-2030 Upper Midwest Resource Plan (“Resource Plan”). This RFP is seeking proposals for wind generation projects that will provide low cost energy for our customers.

NSP identified, in its most current Resource Plan, the significant customer value and potential carbon reduction that could be created by adding up to 1,500 MW of wind in the 2018 to 2020 timeframe based on the price of new wind resources. The 2016 Wind RFP, in parallel with the Company’s self-build projects, is intended to identify a portfolio of new wind projects that will provide customers with these economic and environmental benefits over the next 25 years.

Through this RFP process, NSP is targeting to procure wind generation (“RFP Project(s)”) via Power Purchase Agreements (“PPA”) or Build-Own-Transfer (“BOT”) Agreements. The Company encourages bidders to provide proposals for both types of agreements to allow the Company to determine whether owned or contracted proposals provide the greatest value to NSP customers. All projects must have or will have an interconnection location within MISO in a state where NSP customers or generation resources are located including Minnesota, Wisconsin, Michigan, North Dakota or South Dakota (“Project Region”).

The Company is asking that proposals be submitted by close of business on October 25, 2016 (“Proposal Due Date”).

1.1 Purpose and Scope

The Company is requesting proposals for wind resources that would achieve commercial operation prior to December 31, 2020 in order to qualify for 100% of the current federal production tax credit (“PTC”). The amount of generation that the Company may acquire from this RFP depends on, among other things, the quality of bids received in response to this solicitation, economic value to NSP customers, and the quality of the Company’s self-build projects.

1.2 Regulatory Context

Docket E002/RP-04-1752 from the Minnesota Public Utilities Commission (“MPUC”) requires that an Independent Auditor (“IA”) conduct an independent review of the Company’s evaluation and selection process in response to this solicitation. The Company will work cooperatively with the IA and shall provide the IA immediate and continuing access to all documents and data reviewed, used, or produced by the utility in this solicitation and evaluation. The IA will provide a written report regarding their assessment of the Company’s evaluation and selection process, which will be filed with the MPUC.

All projects selected in this RFP process as well as the Company's self-build projects will be subject to review and approval by the various regulatory commissions in the states in which we operate.

1.3 Contacts

All correspondence and questions regarding this RFP should be directed, via email only, to the RFP Manager at:

NSP2016WINDRFP@xcelenergy.com

See Section 4.4 for more information.

The NSP 2016 Wind Solicitation webpage can be found at:

http://www.xcelenergy.com/NSP2016WindRFP

Section 2. Eligible Project Information

2.1 Eligible Project Structures

The Company will consider the following two types of project structures.

1. Power Purchase Agreements

PPAs will include rights to all energy, capacity, and environmental attributes for a specified $/MWh price.

All PPA proposals shall include a bid price that is fully compliant with NSP's Model Wind Power Purchase Agreement (Attachment A). PPAs must also include any desired written exceptions to the Model Wind Power Purchase Agreement (Attachment A) if applicable and the corresponding price reduction for each written exception the bidder would like the Company to consider.

2. Build-Own-Transfer

BOTs will allow NSP to take 100% ownership of the RFP Project(s) on the Commercial Operation Date ("COD").

All BOT proposals shall include a bid price that is fully compliant with the conditions and requirements stated in NSP's Wind Farm Technical Requirements (Attachment B) and NSP's Model Term Sheet for the Purchase and Sale of an Operational Wind Project (Attachment C). Proposals may also include any written exceptions from those stated in

NSP's Wind Farm Technical Requirements (Attachment B) and to NSP's Model Term Sheet for the Purchase and Sale of an Operational Wind Project (Attachment C) along with the accompanying price reduction for each written exception the bidder would like the Company to consider.

All BOT proposals are required to provide wind resource studies that verify anticipated capacity factors and production estimates for each individual project.

2.2 Product Description

RFP Project Type: A PPA proposal may be for a new, a to-be-built resource, or for an existing resource.

Product: The Company is seeking PPA and/or BOT wind agreements that convey all energy, capacity and environmental benefits generated from a proposed project.

Contract Length: Contract term lengths for PPA proposals may extend from one (1) to twenty-five (25) years.

Minimum Project Size: Each RFP Project must have a nameplate electric rating greater than or equal to 75 MW. A project will be defined as a complete, commercially operable, wind powered electric generating plant, including all facilities necessary to generate and deliver energy into MISO at a single point of interconnection by the expected online date.

Interconnection: The RFP Project must have a Point of Interconnection ("POI") location within MISO in a state where NSP customers or generation resources are located including Minnesota, Wisconsin, Michigan, North Dakota or South Dakota ("Project Region"). The interconnection point with the MISO facility will be the Point of Delivery ("POD").

Expected Online Date: New RFP Projects must achieve commercial operation by December 31, 2020.

2.3 PPA Pricing

Form 4 provides the pricing template for PPA proposals. All pricing must be in terms of current year dollars, also referred to as escalated or nominal dollars. For example, a $50 per megawatt-hour ("MWh") energy price proposal for 2018 means that in 2018 energy from the facility will be purchased at a rate of $50/MWh.

Form 4 requests pricing with assumptions that: 1) the RFP Project will qualify for federal tax incentives applicable to the proposed technology and to the proposed in-service date and, 2) that existing federal tax incentives will be applicable to the RFP Project even if those incentives are due to expire or decline by the time of the proposed in-service date. Respondents should

describe the federal tax incentive assumptions made in their Energy Payment Rates in the notes section on Form 4.

All PPA proposals shall include a bid price that is fully compliant with the NSP's Model Wind Power Purchase Agreement (Attachment A).

Proposal pricing must include the full cost for all transmission interconnection and system upgrade costs previously identified or anticipated to be identified by MISO.

The Company's preference is for fixed price proposals that contain a fixed base price and the option of a fixed annual escalator. Respondents may not submit proposals with variable base year pricing.

2.4 BOT Pricing

Form 5 provides the pricing template for BOT or Ownership proposals. All pricing must be in terms of current year dollars, also referred to as escalated or nominal dollars.

The BOT bid price shall include the cost to fully comply with conditions and requirements stated in NSP's Wind Farm Technical Requirements (Attachment B) and NSP's Model Term Sheet for the Purchase and Sale of an Operational Wind Project (Attachment C) and include the cost to fully construct the proposed RFP Project.

Proposal pricing must include the full cost for all transmission interconnection and system upgrade costs previously identified or anticipated to be identified by MISO.

Form 5 requests bidders to list the schedule and amounts of all payments from NSP to the bidder. Payments can be made in a periodic or single lump sum manner, and all payments made prior to the assumption of ownership of the RFP Project by the Company require security in the form of a letter of credit in favor of the Company. The Company will add its projected costs associated with the Allowance of Funds Used during Construction ("AFUDC") to all payments made prior to the in service date. The Company will also add its projected Construction Oversight Costs (Company costs to manage and verify the construction is completed in accordance with the Technical Requirements) to the BOT bid price for evaluation. Therefore, BOT bidders should not include these Company costs in their pricing.

2.5 Relevant Bidder Experience

All proposals must describe the respondent's qualifications and experience in developing, constructing, commissioning and operating generation facilities similar to the proposed project(s), including the experience, qualifications and safety record of key personnel who will manage development and an overview of utility scale project(s) the respondent has developed during the last 5 years. If a project team is in place, the proposal should identify the members of the team who will be responsible for design, siting, permitting, financing, construction, and

operation of the facility; if such a group is not in place, the proposal must set forth the respondent's plan for assembling such team (including process and timing).

2.6 Regulatory Approvals

At the completion of the bid evaluation and contract negotiation process, the Company will file the signed transactional agreements with the necessary regulatory commissions in the states in which we operate for all necessary review and approvals.

2.7 ROFO / Purchase Option

The Model PPA includes a Right of First Offer ("ROFO") that, subject to specific conditions, may be exercised by the Company. In addition, while not required under the Model PPA, respondents, at their option, may offer the Company an end-of-term or other purchase option that specifies that the Company can purchase the facility (or the stock of the facility owner) for its appraised fair market value at a specified time or times during, or at the end of, the PPA term.

2.8 Contract Accounting

All contracts proposed to be entered into as a result of this RFP will be assessed by the Company for appropriate accounting and/or tax treatment. Respondents shall be required to supply promptly to the Company any and all information that the Company requires in order to make such assessments.

The Company has specific concerns regarding PPA proposals received in response to this RFP that could result in either (i) a contract that must be accounted for by the Company as a capital lease or an operating lease pursuant to Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") 840 or as a finance lease or an operating lease under FASB ASC 842, or (ii) consolidation of the seller or assets owned by the seller onto the Company's balance sheet pursuant to the variable interest entity requirements of FASB ASC 810. The following shall therefore apply to any proposal submitted pursuant to this RFP:

- The Company is unwilling to be subject to any accounting or tax treatment that results from a PPA's capital lease, finance lease or consolidated variable interest entity classification. As a result, respondents shall state in their proposal(s) (i) that the respondent has considered applicable accounting standards in regard to capital leases, finance leases and variable interest entities, (ii) summarize any changes that the respondent proposes to the Model PPA in order to attempt to address these issues, and (iii) to the respondent's knowledge and belief, the respondent's proposal should not result in such treatment as of the date of the proposal.

- As applicable, the Company will not execute a PPA without confirmation from the Company's external auditors that the PPA will not be classified as a capital lease, finance lease or a consolidated variable interest entity.

By submitting a proposal, each respondent agrees to make available to the Company at any point in the bid evaluation process any financial data associated with the respondent and its proposed RFP Project so the Company may independently verify the respondent's information in the above matters. Financial data may include, but shall not be limited to, data supporting the economic life (both initial and remaining) of the facility, the fair market value of the facility, and any and all other costs (including debt specific to the asset being proposed) associated with the respondent's proposal. The Company may also use financial data contained in the respondent's financial statements (e.g. income statements, balance sheets, etc.) as may be necessary.

Section 3. Transmission and Interconnection Requirements

3.1 General Information

The Company will only consider RFP Projects with a point of interconnection ("POI") located within the Project Region as defined previously.

The Company will consider all RFP Projects that have filed for an interconnect agreement with MISO, regardless of status within the Definitive Planning Phase ("DPP") of the MISO generator interconnection process. However, the company reserves the right to reject any projects that are not included in the August 2016 DPP or earlier cycles.

The Company reserves the right to reject any RFP Project proposal that does not include the full cost responsibility to the bidder of any known or potential interconnection costs or network upgrades that may be required by MISO and/or that does not include interconnection studies supporting interconnection and transmission requirements including technical description and estimated costs of network upgrades from studies completed or underway.

3.2 MISO Transmission and Interconnection Process

Bidders shall include the applicable MISO queue number(s) in their proposal as well as other interconnection information.

Bidder shall be responsible for all costs associated with interconnecting the RFP Project to the MISO system. Bidders must provide a list of costs itemized by major components and supporting documentation, such as MISO generator interconnection study reports, MISO optional study reports or bidder-sponsored interconnection study reports detailing interconnection and transmission costs associated with their RFP Project(s).

Study reports shall include detailed descriptions and cost assumptions for all interconnection facilities, transmission system upgrades, distribution system upgrades, and transmission system protection facilities needed for the RFP Project to comply with all MISO requirements and NSP's Model Wind Power Purchase Agreement (Attachment A) or NSP's Model Term Sheet for the Purchase and Sale of an Operational Wind Project (Attachment C).

Bidders should also identify any contingent facilities required for interconnection and to support meeting commercial operation requirements.

Bidder shall arrange and be solely responsible for all costs associated with delivery of energy from the RFP Project, located within the Project Region, to the POI in proposal.

More specifically, the bidder shall be responsible for all losses and congestion costs incurred in transmitting energy from the proposed generating facility to the POI.

Section 4. Content Requirements and Submission Procedure

4.1 Schedule Estimate

NSP's objective is to complete proposal evaluations, selections and contract negotiations as set forth below:

NSP's 2016 WIND RFP SCHEDULE

RFP Issued	**September 22, 2016**
Deadline for submitting questions from bidders	**October 10, 2016**
NSP will post responses to bidder questions	**October 17, 2016**
Bid submittal deadline, 5:00 pm MDT	**October 25, 2016**
NSP bid evaluation and selection completed	**December 8, 2016**
Contract negotiations completed	**1st Quarter 2017**
Regulatory filing with the Minnesota PUC	**1st Quarter 2017**

4.2 Minimum Requirements for Proposals

This section describes the minimum requirements that all proposals must satisfy to be eligible for consideration in this solicitation. Unless the Company in its sole discretion elects otherwise,

proposals that do not comply with these requirements will be deemed ineligible and will not be considered further. The Company reserves the right to reject any bid and all bids.

- Proposals must include all applicable content requirements described in Section 4.6, including clear and complete written descriptions of all information requested and completed forms.
- Proposals must clearly specify all pricing terms in accordance with Section 4.6.
- Proposals must demonstrate an acceptable level of development and technology risk, as determined by the Company's evaluation team.
- Bid respondents must demonstrate to the satisfaction of the Company that they can meet the security requirements contained in the Model PPA and the Model PSA Term Sheet.
- Proposals must clearly demonstrate any financing requirements and an indicative financing structure (construction and permanent) for any proposed resources that will be delivered under the proposals. Respondents should include a description of how current financial markets are likely to impact the respondent's ability to access the debt and tax equity markets.
- Each respondent must present clear and sufficient proof that it has or can secure an adequate and confirmed supply of generation equipment sufficient (at a minimum) to meet the required proposal.
- Respondents must provide the required bid fee (described in Section 4.5) for each proposal submitted.
- All respondents are expected to provide truthful and accurate statements as part of their bids. Any false statements will result in project disqualification.
- No respondent may act through partnership, joint venture, consortium, or other association or otherwise act in concert with any other person unless it provides written notification of such to the Company as part of its proposal.

4.3 Proposal Submission Deadline

All proposals, including Company self-build proposals will be accepted until 5:00 P.M. Mountain Daylight Time/6:00 P.M. Central Daylight Time on the dates indicated in Section 4.1. All proposals must be transmitted by express, certified or registered mail, or hand delivered to the following address:

NSP 2016 Wind Solicitation
Attn: RFP Project Manager
Xcel Energy Services Inc.
1800 Larimer St, Ste 1600
Denver, Colorado 80202

Proposals received later than the due date and time indicated will be rejected and returned unopened unless the Company determines, at its sole discretion, to consider such proposals.

For each proposal submitted, bidders must provide a complete, signed original proposal, one (1) additional paper copy and two (2) separate USB flash drives that include all proposal documents in electronic format.

Proposals must be submitted in a sealed package with the following information shown on the package:

Response to NSP 2016 Wind Solicitation RFP
Confidential Sealed Bid Proposal

The respondent's company name and address must be clearly indicated on the package containing the proposal and if a bidder submits multiple project proposals they must all be clearly marked and differentiated.

4.4 Information Policy

To obtain additional information about this RFP, potential respondents as well as all other parties may only submit inquires to the RFP Project Manager via email at:

NSP2016WINDRFP@xcelenergy.com

Potential respondents as well as all other parties should not attempt to acquire information through any other means including telephone calls to the Company. The Company will maintain a log of all inquiries and coordinate the preparation of written responses. The Company will periodically post responses to questions on the RFP website and these responses will be filed as addendums to the RFP. The deadline for submitting questions is 5:00 pm MDT/6:00 pm CDT on October 10, 2016; questions will no longer be accepted after this time. All filed addendums will be posted by 5:00 pm MDT/6:00 CDT on October 17, 2016. Bidders are responsible for monitoring the RFP website for updated addendums. The Company has established this information policy to ensure that all respondents have the same timely access and knowledge about the bidding and evaluation process.

4.5 Bid Evaluation Fees

Each bidder shall pay a fee of $5,000 for each proposal submitted. A separate bid evaluation fee is required for projects on the same site with different COD, turbine, pricing, contract term or MW size. Projects on *different* sites, regardless of similarities in size, COD, or contract term, also require a separate $5,000 bid fee for proposal evaluation and due diligence through RFP completion. Bid fees shall be paid by wire transfer to NSP. In response to a Bidder sending an email to the 2016 Wind RFP email address, NSP2016WINDRFP@xcelenergy.com, no earlier

than 5 business days prior to the Proposal Due Date, the Company will email a response with wire transfer instructions. No cashier's checks will be accepted.

If a proposal is deemed "Not Complete" and the bidder elects not to cure any identified deficiencies in the allowed period of time, the bid and all bid fees will be returned to the bidder and the Company will no longer consider that bid(s). Once the bid is deemed "Complete", the Company will not refund any bid fees associated with any bid, regardless of the success or failure of that bid.

4.6 Proposal Content Requirements

This section outlines the content and format requirements for all proposals submitted in response to this RFP. Unless the Company in its sole discretion elects otherwise, proposals that do not include the information requested in this section will be deemed ineligible for further consideration, unless the information requested is not applicable or relevant to a given proposal. The Company reserves the right to conduct any further due diligence it considers necessary to fully understand and evaluate proposals.

Bidders are encouraged to provide as much information as possible to assist in the evaluation of their proposals. A complete proposal will include a complete, signed original proposal, one (1) additional paper copy and two (2) separate USB flash drives assembled in the following format:

Section 1 – Executive Summary

Bidders shall provide an RFP Project summary and overview including narrative that addresses why their proposal provides value to NSP and its customers. Bidder shall also provide detail on background and experience in developing large scale wind energy projects as well as any applicable references (including contact name, contact number and project name) from projects where the Bidder has completed development and construction of a large scale wind facility.

Section 2 –Standard Bidder Forms (Appendix A)

Bidders shall complete all forms in Appendix A (Forms 1-14) and provide all information that is applicable to bidders' respective RFP Project(s) (PPA or BOT). Standard Bidder Forms will be made available on the Company's website at the following link:

http://www.xcelenergy.com/NSP2016WindRFP

Below is a list and brief description of each form:

1. **Confidentiality Agreement:** All bidders will submit a Confidentiality Agreement and agree not to disclose or disseminate any highly confidential information and return all Highly Confidential Information to the Company at the conclusion of the solicitation process.

2. **Bid Certification:** Bidders must certify that all statements and representations made in bidder's proposal are true and that the bidder accepts as applicable NSP's Model Wind Power Purchase Agreement (Attachment A), NSP's Wind Farm Technical Requirements (Attachment B) and NSP's Model Term Sheet for the Purchase and Sale Of an Operational Wind Project (Attachment C), except as specifically noted in writing.

3. **Cover Sheet:** Bidders will provide basic RFP Project description and company information including contact information, RFP Project name, location, nameplate capacity, etc.

4. **Pricing – PPA:** For all PPA proposals, bidders must complete form 4 and provide Committed Energy levels (MWh) for each year of the proposed PPA Term, net of expected degradation impacts, if any, and Energy Payment Rates ($/MWh) for each year of the proposed PPA Term. All dollar amounts should be entered in nominal dollars. Prices may be fixed for the proposed term, or include an escalation factor at a known rate. Regardless, the first year's pricing must be fixed. Any and all price escalations must be fully explained. If bidder proposes more than one pricing option, a separate bid and attendant bid fee must be submitted. All pricing is expected to be fully compliant with NSP's Model Wind Power Purchase Agreement (Attachment A) unless otherwise noted. Committed Energy levels should be estimated at the Point of Delivery.

   Bidders must offer firm pricing valid through December 8, 2016, the projected RFP completion date, or, if proposal is selected for negotiations, either the completion of negotiations or the issuance of an Order from the appropriate state regulatory commission approving the contract resulting from their proposal. Indicative pricing in a proposal will not be acceptable.

5. **Pricing – Ownership/BOT:** For all BOT proposals, bidders must complete form 5 and provide expected generation levels for each year of the RFP Project's expected life, net of expected degradation impacts, if any. Expected generation should be estimated at the point of interconnection. Bidders shall also provide a schedule of payments from NSP to the bidder that separately identifies payments for, 1) engineering, procurement & construction costs, 2) transmission interconnection and network upgrade cost (including potential contingency costs that are anticipated to be NSP's responsibility, 3) optional items available for selection at NSP's discretion, and 4) all other RFP Project related payments to be made by NSP. If bidder proposes more than one pricing option, a separate bid and attendant bid fee must be submitted. All pricing is expected to be fully compliant with NSP's Wind Farm Technical Requirements (Attachment B) unless otherwise noted.

   Bidders must offer firm pricing valid through December 8, 2016, the projected RFP completion date, or, if proposal is selected for negotiations, either the completion of negotiations or the issuance of an Order from the appropriate state regulatory

commission approving the contract resulting from their proposal. Indicative pricing in a proposal will not be acceptable.

6. **O&M and Ongoing Capital Expenditures BOT**: BOT bidders are to provide expected O&M and ongoing capital investment requirements for the proposed RFP Project(s) in as much detail as possible for 25 years following the anticipated transfer of ownership date of the RFP Project to the Company.

7. **Construction Milestones:** Bidders are to provide proposed dates for each significant milestone, as would be found on the detailed development schedule provided with the proposal. Milestones should be based on the requirements to achieve the proposed commercial operation date. See NSP's Model Wind Power Purchase Agreement (Attachment A) for defined terms.

8. **Technical Descriptions:** The proposal must include all pertinent technical information for the RFP Project including detailed turbine information and facility information. Bidders are requested to attach or provide detail from any third party pre-construction energy production reports for proposed wind sites.

9. **Energy Production Profile:** Assuming the proposed facility had been in commercial operation during 2013, 2014, and/or 2015, the proposal must provide an estimate of the annual energy production for each of these years utilizing whatever historical meteorological data is available for the site, or a nearby site with similar meteorological characteristics. If the facility was in commercial operation during these years, provide actual generation. Proposals must also include the average expected hourly generation from the RFP Project for each month. Estimated energy production should be net of any expected plant degradation over time. Time is hour ending, Central Standard Time; do not adjust for daylight savings. Explain fully the meteorological data, and source, used for the annual estimates.

10. **Representation Authorization:** Proposals must include a signed Representation Authorization and Consent form. Signature of this form by the undersigned customer serves as notice of voluntary written consent allowing Xcel Energy Services, Inc. to engage in non-public transmission/interconnection related discussions associated with the possible future power purchase or BOT agreement between MISO and the undersigned customer. Xcel Energy Services, Inc. will maintain and protect the confidentiality of all information received from MISO pertaining to the undersigned customer's transmission/interconnection facilities.

11. **Interconnection Details:** Proposals must include all pertinent MISO or bidder prepared studies including generator interconnection request information, generation interconnection study information, generation interconnection agreement information, MISO document links and information, general project transmission information,

congestion and curtailment analyses, and a point of contact for all transmission related information.

Bidders must also provide a summary of all anticipated interconnection and/or system upgrade costs included in their proposal pricing including financial analyses related to any costs expected to be incurred with regard to interconnection, including the cost of installing the interconnection facilities, the network upgrades, distribution upgrades, affected system upgrades, and system protection facilities that have been identified, and a discussion of any unknown or contingent network upgrades for which the RFP Project may be responsible. Bidders are requested to attach third party studies on projected interconnection/system upgrade costs related to the RFP Project(s).

To the extent that bidders actual transmission interconnection and/or system upgrade costs are lower than projections included in the pricing in their proposal(s), bidders must also provide a proposed bid price reduction mechanism. For BOTs, bidders are expected to provide a bid reduction value in terms of dollars per $1,000,000 in avoided transmission costs. For PPAs, bidders are expected to provide a bid reduction value in terms of $/MWh per $1,000,000 in avoided transmission costs. For example, PPA bidders could specify that the PPA purchase price will be reduced by $2/MWh for every $1,000,000 in avoided transmission costs.

12. **Creditworthiness:** Proposals must include detail and address all questions regarding financial aspects of all projects including financing information, credit history, and legal claims.

13. **Siting Environmental – PPA:** PPA bids must provide all requested details regarding site control, permitting, environmental studies, and legal claims.

14. **Siting Environmental – BOT:** BOT bids must provide all requested details regarding site control, permitting, environmental studies, and legal claims.

Section 3 – Contract Exceptions (Appendix B)

In this section, respondents are required to clearly document any exceptions to the Model contract documents for PPA and BOT projects as applicable. Bidders must further document any exceptions by providing a redline version of the applicable attachment with their Proposal and reason for taking each exception(s). Bidders must also provide a cost reduction estimate for each noted exception.

1. **Exceptions to NSP's Model Wind Power Purchase Agreement (Attachment A):** All PPA proposals must document any exceptions to Attachment A.

2. **Exceptions to NSP's Wind Farm Technical Requirements (Attachment B):** All BOT proposals must document any exceptions to Attachment B.

3. **Exceptions to Model Term Sheet for the Purchase and Sale of an Operational Wind Project (Attachment C):** All BOT proposals must document any exceptions to Attachment C.

4.7 Clarification of Proposals

While evaluating proposals, the Company may request clarification or additional information about any item in the proposal. Such requests will be sent via email to respondents identified on Form 3 by the RFP Project Manager, typically, and respondents are required to provide a written or electronic response back to the RFP Project Manager within five (5) business days, or the Company may deem the respondent to be non-responsive and either suspend or terminate evaluation of the associated proposal. Respondents are encouraged to provide an alternate point of contact to ensure a timely response to clarification questions.

Any amendment, modification, addenda, or clarification to a bid are binding and will be treated the same as any original RFP document. The Company will only accept amendments, modifications, or addenda to a bid in response to a request for clarification from the Company.

Bidders are responsible for carefully examining and understanding all RFP documents and requirements, nature of the work to be performed, and any other requirements listed in this RFP document. A lack of understanding or ignorance of these requirements will in no way relieve the bidder of obligations of their bid or of any resulting contract.

4.8 Confidentiality

Respondents are allowed to identify any information in their proposals that respondents claim should be considered to be confidential or proprietary. Nonetheless, the Company reserves the right to release all proposals to its affiliates and such affiliates' agents, advisors, consultants for purposes of proposal evaluation. The Company will, to the extent required by law, advise each agent, advisor or consultant that receives such claimed confidential information of its obligations to protect such information. In addition, all information, regardless of its confidential or proprietary nature, will be subject to review by the Commission and other governmental authorities and courts with jurisdiction, and may be subject to legal discovery. It is not the Company’s intent to enter into any separate confidentiality, non-disclosure, or similar agreements as a condition to receiving a respondent’s proposal.

Bidders should clearly identify each page and piece of information claimed by Bidder to be confidential, trade secret or non-public information. Bidders must provide written justification for any such claim(s). Bidders acknowledge and agree that notwithstanding its designation of certain materials as confidential, trade secret or non-public, NSP will have the right in its sole discretion to disclose such materials provided to it by a Bidder in any regulatory proceeding or as required by law.

4.9 Addenda to RFP

Any additional responses required from respondents as a result of an Addendum to this RFP shall become part of each proposal. Respondents must list all submitted Addenda at the bottom of the Bid Certification Form (Form 2).

Section 5. Evaluation Objectives and Approach

The objective of the Company's evaluation is to identify portfolios of proposals that meet the resource objectives identified in the solicitation in a reliable and cost-effective manner, while achieving the resource goals of the 2016-2030 Upper Midwest Resource Plan.

An evaluation team, made up of various groups within Xcel Energy Services and the Company will evaluate proposals; however, the Company reserves the right to retain the services of outside experts to assist in the evaluation of proposals. The RFP Project Manager may contact respondents directly, via email, at any point during the evaluation process for the purposes of clarifying proposals.

The Company will use a four phased approach to evaluating bid proposals offered in the RFP. The four phases include 1) a completeness review, 2) a threshold review 3) an economic evaluation, and 4) a qualitative review.

5.1 Completeness Review

The completeness review ensures compliance with all bid submittal requirements (fees, sufficient information provided in bid responses, etc.)

5.2 Threshold Review

The threshold review ensures the bidder and RFP Project complies with all specific bid requirements including:

a. RFP Project size
b. RFP Project location
c. Interconnection to MISO in the Project Area
d. Bidder creditworthiness
e. Bidder experience
f. Compliance with NSP's Wind Farm Technical Requirements (Attachment B)
g. Compliance with NSP's Model Wind Power Purchase Agreement (Attachment A) or NSP's Model Term Sheet for the Purchase and Sale of an Operational Wind Project (Attachment C)
h. Wind production resource studies (for BOTs)

5.3 Economic Evaluation and LCOE Review

The Company will rank proposals using a Levelized Cost of Electricity (LCOE) methodology verified through the use of the Strategist model. For PPA and BOT proposals, RFP project pricing (revenue requirements for BOT projects) and energy production projections will be used. The Company has engaged a third party consultant to independently verify energy production values associated with all RFP Projects. In addition, to enable BOT and PPA proposal comparisons, representative O&M and ongoing capital cost assumptions will be required. Since NSP will be the ultimate owner of an executed BOT project proposal, O&M and ongoing capital estimates provided by the NSP Engineering group will be used in the economic evaluations and rankings for these RFP Projects. Nevertheless, all BOT bidders are also responsible for submitting their own estimates for O&M and ongoing capital projections for RFP project proposals as specified in the BOT Term Sheet.

The economic modeling (LCOE) will be completed using a 25 year evaluation period. To the extent an RFP Project is bid for a term less than 25 years, the Company will assign annual estimated wind energy values (multiplied times the expected average energy production of the RFP Project) to the proposal for the years beyond the proposed bid term to year 25. This methodology is being used to reflect the long-term benefits that a 25 year wind project can bring to our customers.

The Company will verify the final proposal rankings and the economic viability of the selected winning portfolio of bids using its Strategist model.

5.4 Non-Price/Qualitative Factor Review

In developing its final RFP Project rankings and the recommended portfolio of wind projects, the Company will assess a number of non-price qualitative factors. These non-price qualitative factors may be used to support the final recommendation of RFP Projects that have the best opportunity of being completed on time and in a way that brings that maximum benefit to our customers.

a. Generator technology, availability, and warranties
b. Contract exceptions and modifications
c. Environmental permitting and compliance
d. Land use permitting and zoning
e. Other permitting
f. Real property acquisition/site control progress and plan
g. RFP Project operational characteristics
h. State, regional and community support for and benefit from the RFP Project
i. Transmission access plan feasibility and arrangements
j. Transmission upgrade schedule assessment
k. RFP Project execution planning
l. Accounting assessment
m. Vendor concentration and credit exposure

In the non-price, qualitative review, vendor concentration will be a particular area of focus as the Company intends to select a portfolio of bids consisting of at least two or more vendors to provide diversity and mitigate single supplier risk. From a credit perspective, bidders with an S&P and Moody's rating or internal Company rating of BBB- or better will be given preference in this stage of the review.

Upon completion of the qualitative assessment, the Company will develop a short-list of RFP Projects based on the results of the overall evaluation process. The Company will then proceed to negotiate contracts in good faith with selected bidders and develop applicable state regulatory filings for review and approval to proceed with contract execution.

Appendix A

Proposal Forms and Instructions

As discussed in Section 4, the completed forms, attachments and narrative topic discussions, will comprise a complete proposal. The contents of each form and any special instructions for completing the forms are described in section 4.6. These forms can be downloaded from the RFP web site and are expected to be completed and submitted in Microsoft Excel format.

If additional space is needed to elaborate on information requested on any form, please attach additional sheets with the heading "Form [__] – Additional Information."

If certain information is requested that does not apply to the proposal, the respondent must indicate that the information is not applicable. If appropriate, the respondent should explain why the information is not applicable.

In addition to submitting a complete, signed original proposal and one (1) additional paper copy, respondents must also include two (2) separate USB flash drives with electronic copies of all completed Forms in executable format, i.e. not PDF.

Appendix B

NSP's Model Wind Power Purchase Agreement
(Attachment A)
See file titled *Model Wind PPA.doc*

NSP's Wind Farm Technical Requirements
(Attachment B)
See file titled *Wind Farm Technical Requirements.docx*

NSP's Model Term Sheet for the Purchase and Sale of an Operational Wind Project
(Attachment C)
See file titled *Wind Purchase & Sale Term Sheet.doc*

Appendix B
Attestations

The following RFP Process attestations were provided by all members of the Xcel evaluation teams; and are provided alphabetically by last name. Those evaluation team members directly responsible for the rankings of the projects and the creation of the final short list were required to attest they agree and endorse the evaluation determinations; other team members did not have to attest to this as they were not directly involved in the rankings or creation of the final short list.

NSP 2016 WIND RFP PROCESS
EVALUATION PERSONNEL
ATTESTATION STATEMENT

I, [name] Jonathan Adelman, hereby state that I am employed in the capacity of Area Vice President, [job title] Strategic Resource and Business Planning by Xcel Energy, located at 1800 [address] Larimer Street, Denver, CO 80202. As such, I attest to the following concerning Xcel Energy's 2016 Wind RFP process during the period from issuance of the RFP on September 22, 2016 and up until selection on December 8, 2016 of the four short list projects that will move forward with negotiations ("RFP Process"):

1. My role in the aforementioned RFP Process consists of [description of role] Executive Management oversight.
2. I am making the attestations herein on behalf of myself.
   a. Except as disclosed in writing as part of this audit, any relationship(s) I may have with Bidders responding to this RFP has not biased the RFP process for or against any proposal or the self-build option nor afforded them information pertinent to the RFP process that was not otherwise available to all Bidders.
   b. The evaluation process adhered to what was outlined in the RFP document and Xcel's internal RFP process documents without any material or significant changes or deviations.
   c. During the evaluation process all proposers were given an equal opportunity to ensure that all materials required to be submitted under the requirements of the RFP were submitted to Xcel prior to the completion of scoring.
   d. I do not have a conflict of interest or perceived conflict of interest with any of the Bidders, their agents, partner firms or companies, or subcontractors (collectively "partners"). I have no direct or indirect family members amongst the employees, managers, or owners of any of the proponents or partners. For purposes of this document, family is defined as related to by direct current marriage, spouse, children, legal guardian, or adoption.
   e. I did not have any contact or communication with proponents or proponents' partners during the evaluation, for any reason other than what could be considered required email communication responding and acknowledging questions and answers and making follow up inquiries to

gain necessary data and information. All email communications were supplied to Resource Planning and logged.

f. I have fairly evaluated each proposal and I have conducted my evaluation in a manner that ensures a fair and competitive process and avoids the appearance of impropriety. Although I have discussed my findings, opinions, and scores with the other members of the evaluation teams and have considered their findings, opinions, and scores; I have conducted my evaluation independently and the scores I have given represent my assessment of the proposals. I have not been coerced, influenced, or asked to change my scores by any person in any way.

g. I have thoroughly reviewed the proposal material provided to me for my purpose in the evaluation process and have scored each proposal fully and completely to the best of my ability. I have read the required proposal to evaluate against the agreed-upon criteria.

h. I agree with and endorse the evaluation determination that the following four proposed projects, numbered i. through iv., are deemed as qualified and least-cost among the proposals received.

REDACTED

ii. Crowned Ridge 600 MW Hybrid PPA and BOT, proposed by NextEra Energy

REDACTED

iv. Lake Benton 100 MW BOT, proposed by NextEra Energy

3. All information is true and correct, to the best of my knowledge, information and belief.

Signature: Jonathan Adelman

Printed Name: Jonathan Adelman

Date: 4/5/18

NSP 2016 WIND RFP PROCESS
EVALUATION PERSONNEL
ATTESTATION STATEMENT

I, James J. Bodensteiner, hereby state that I am employed in the capacity of Principal Environmental Analyst by Xcel Energy, located at GO-2 (General Office, 414 Nicollet Mall, Minneapolis, MN. As such, I attest to the following concerning Xcel Energy's 2016 Wind RFP process during the period from issuance of the RFP on September 22, 2016 and up until selection on December 8, 2016 of the four short list projects that will move forward with negotiations ("RFP Process"):

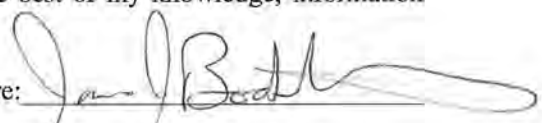
1. My role in the aforementioned RFP Process consists of reviewing and scoring of each bid's permitting/compliance and environmental study information including schedule and mitigation needs/planning.
2. I am making the attestations herein on behalf of myself.
    a. Except as disclosed in writing as part of this audit, any relationship(s) I may have with Bidders responding to this RFP has not biased the RFP process for or against any proposal or the self-build option nor afforded them information pertinent to the RFP process that was not otherwise available to all Bidders.
    b. The evaluation process adhered to what was outlined in the RFP document and Xcel's internal RFP process documents without any material or significant changes or deviations.
    c. During the evaluation process all proposers were given an equal opportunity to ensure that all materials required to be submitted under the requirements of the RFP were submitted to Xcel prior to the completion of scoring.
    d. I do not have a conflict of interest or perceived conflict of interest with any of the Bidders, their agents, partner firms or companies, or subcontractors (collectively "partners"). I have no direct or indirect family members amongst the employees, managers, or owners of any of the proponents or partners. For purposes of this document, family is defined as related to by direct current marriage, spouse, children, legal guardian, or adoption.
    e. I did not have any contact or communication with proponents or proponents' partners during the evaluation, for any reason other than what could be considered required email communication responding and acknowledging questions and answers and making follow up inquiries to

gain necessary data and information. All email communications were supplied to Resource Planning and logged.

f. I have fairly evaluated each proposal and I have conducted my evaluation in a manner that ensures a fair and competitive process and avoids the appearance of impropriety. Although I have discussed my findings, opinions, and scores with the other members of the evaluation teams and have considered their findings, opinions, and scores; I have conducted my evaluation independently and the scores I have given represent my assessment of the proposals. I have not been coerced, influenced, or asked to change my scores by any person in any way.

g. I have thoroughly reviewed the proposal material provided to me for my purpose in the evaluation process and have scored each proposal fully and completely to the best of my ability. I have read the required proposal to evaluate against the agreed-upon criteria.

3. All information is true and correct, to the best of my knowledge, information and belief.

Signature: 

Printed Name: James J. Bodensteiner

Date: 01-03-17

NSP 2016 WIND RFP PROCESS
EVALUATION PERSONNEL
ATTESTATION STATEMENT

I, Patrick M. Bourke, hereby state that I am employed in the capacity of Senior Consultant, Strategic Asset Planning by Xcel Energy, located at 401 Nicollet Mall, Minneapolis, Minnesota 55401. As such, I attest to the following concerning Xcel Energy's 2016 Wind RFP process during the period from issuance of the RFP on September 22, 2016 and up until selection on December 8, 2016 of the four short list projects that will move forward with negotiations ("RFP Process"):

1. My role in the aforementioned RFP Process consists of providing support with opening, evaluating and cataloguing bids and assessing bids for completeness and threshold.
2. I am making the attestations herein on behalf of myself.
    a. Except as disclosed in writing as part of this audit, any relationship(s) I may have with Bidders responding to this RFP has not biased the RFP process for or against any proposal or the self-build option nor afforded them information pertinent to the RFP process that was not otherwise available to all Bidders.
    b. The evaluation process adhered to what was outlined in the RFP document and Xcel's internal RFP process documents without any material or significant changes or deviations.
    c. During the evaluation process all proposers were given an equal opportunity to ensure that all materials required to be submitted under the requirements of the RFP were submitted to Xcel prior to the completion of scoring.
    d. I do not have a conflict of interest or perceived conflict of interest with any of the Bidders, their agents, partner firms or companies, or subcontractors (collectively "partners"). I have no direct or indirect family members amongst the employees, managers, or owners of any of the proponents or partners. For purposes of this document, family is defined as related to by direct current marriage, spouse, children, legal guardian, or adoption.
    e. I did not have any contact or communication with proponents or proponents' partners during the evaluation, for any reason other than what could be considered required email communication responding and acknowledging questions and answers and making follow up inquiries to

gain necessary data and information. All email communications were supplied to Resource Planning and logged.

f. I have fairly evaluated each proposal and I have conducted my evaluation in a manner that ensures a fair and competitive process and avoids the appearance of impropriety. Although I have discussed my findings, opinions, and scores with the other members of the evaluation teams and have considered their findings, opinions, and scores; I have conducted my evaluation independently and the scores I have given represent my assessment of the proposals. I have not been coerced, influenced, or asked to change my scores by any person in any way.

g. I have thoroughly reviewed the proposal material provided to me for my purpose in the evaluation process and have scored each proposal fully and completely to the best of my ability. I have read the required proposal to evaluate against the agreed-upon criteria.

h. I agree with and endorse the evaluation determination that the following four proposed projects, numbered i. through iv., are deemed as qualified and least-cost among the proposals received.

[redacted]

ii. Crowned Ridge 600 MW Hybrid PPA and BOT, proposed by NextEra Energy

[redacted]

iv. Lake Benton 100 MW BOT, proposed by NextEra Energy

3. All information is true and correct, to the best of my knowledge, information and belief.

Signature: 

Printed Name: Patrick M. Bourke

Date: December 28, 2016

NSP 2016 WIND RFP PROCESS
EVALUATION PERSONNEL
ATTESTATION STATEMENT

I, Timothy J. Carter, hereby state that I am employed in the capacity of Sr. Director, Risk Strategy and Control by Xcel Energy, located at 1800 Larimer St. Denver, CO 80202. As such, I attest to the following concerning Xcel Energy's 2016 Wind RFP process during the period from issuance of the RFP on September 22, 2016 and up until selection on December 8, 2016 of the four short list projects that will move forward with negotiations ("RFP Process"):

1. My role in the aforementioned RFP Process consists of oversight of the due diligences related to financial wherewithal of the bidders.
2. I am making the attestations herein on behalf of myself.
    a. Except as disclosed in writing as part of this audit, any relationship(s) I may have with Bidders responding to this RFP has not biased the RFP process for or against any proposal or the self-build option nor afforded them information pertinent to the RFP process that was not otherwise available to all Bidders.
    b. The evaluation process adhered to what was outlined in the RFP document and Xcel's internal RFP process documents without any material or significant changes or deviations.
    c. During the evaluation process all proposers were given an equal opportunity to ensure that all materials required to be submitted under the requirements of the RFP were submitted to Xcel prior to the completion of scoring.
    d. I do not have a conflict of interest or perceived conflict of interest with any of the Bidders, their agents, partner firms or companies, or subcontractors (collectively "partners"). I have no direct or indirect family members amongst the employees, managers, or owners of any of the proponents or partners. For purposes of this document, family is defined as related to by direct current marriage, spouse, children, legal guardian, or adoption.
    e. I did not have any contact or communication with proponents or proponents' partners during the evaluation, for any reason other than what could be considered required email communication responding and acknowledging questions and answers and making follow up inquiries to gain necessary data and information. All email communications were supplied to Resource Planning and logged.

f. I have fairly evaluated each proposal and I have conducted my evaluation in a manner that ensures a fair and competitive process and avoids the appearance of impropriety. Although I have discussed my findings, opinions, and scores with the other members of the evaluation teams and have considered their findings, opinions, and scores; I have conducted my evaluation independently and the scores I have given represent my assessment of the proposals. I have not been coerced, influenced, or asked to change my scores by any person in any way.

g. I have thoroughly reviewed the proposal material provided to me for my purpose in the evaluation process and have scored each proposal fully and completely to the best of my ability. I have read the required proposal to evaluate against the agreed-upon criteria.

~~h. I agree with and endorse the evaluation determination that the following four proposed projects, numbered a. through d., are deemed as qualified and least-cost among the proposals received.~~

Note: due to the limited scope of my engagement in this process I am unable to attest to subpart h.

3. All information is true and correct, to the best of my knowledge, information and belief.

Signature: Timothy J. Carter

Printed Name: Timothy J. Carter

Date: 12-23-16

NSP 2016 WIND RFP PROCESS
EVALUATION PERSONNEL
ATTESTATION STATEMENT

I, [name] Michael Cramer, hereby state that I am employed in the capacity of [job title] Transmission Evaluation by Xcel Energy, located at [address] Excel Engineering, Inc. As such, I attest to the following concerning Xcel Energy's 2016 Wind RFP process during the period from issuance of the RFP on September 22, 2016 and up until selection on December 8, 2016 of the four short list projects that will move forward with negotiations ("RFP Process"):

1. My role in the aforementioned RFP Process consists of [description of role] Transmission Non-Price Evaluation.
2. I am making the attestations herein on behalf of myself.
   a. Except as disclosed in writing as part of this audit, any relationship(s) I may have with Bidders responding to this RFP has not biased the RFP process for or against any proposal or the self-build option nor afforded them information pertinent to the RFP process that was not otherwise available to all Bidders.
   b. The evaluation process adhered to what was outlined in the RFP document and Xcel's internal RFP process documents without any material or significant changes or deviations.
   c. During the evaluation process all proposers were given an equal opportunity to ensure that all materials required to be submitted under the requirements of the RFP were submitted to Xcel prior to the completion of scoring.
   d. I do not have a conflict of interest or perceived conflict of interest with any of the Bidders, their agents, partner firms or companies, or subcontractors (collectively "partners"). I have no direct or indirect family members amongst the employees, managers, or owners of any of the proponents or partners. For purposes of this document, family is defined as related to by direct current marriage, spouse, children, legal guardian, or adoption.
   e. I did not have any contact or communication with proponents or proponents' partners during the evaluation, for any reason other than what could be considered required email communication responding and acknowledging questions and answers and making follow up inquiries to

gain necessary data and information. All email communications were supplied to Resource Planning and logged.

f. I have fairly evaluated each proposal and I have conducted my evaluation in a manner that ensures a fair and competitive process and avoids the appearance of impropriety. Although I have discussed my findings, opinions, and scores with the other members of the evaluation teams and have considered their findings, opinions, and scores; I have conducted my evaluation independently and the scores I have given represent my assessment of the proposals. I have not been coerced, influenced, or asked to change my scores by any person in any way.

g. I have thoroughly reviewed the proposal material provided to me for my purpose in the evaluation process and have scored each proposal fully and completely to the best of my ability. I have read the required proposal to evaluate against the agreed-upon criteria.

3. All information is true and correct, to the best of my knowledge, information and belief.

Signature: [signature]

Printed Name: Michael R Cronin

Date: 12/29/16

Excel Engineering Inc
5267 Program Ave 2nd floor
St. Paul, MN 55112-4975

NSP 2016 WIND RFP PROCESS
EVALUATION PERSONNEL
ATTESTATION STATEMENT

I, [name] GERALD DITTMANN, hereby state that I am employed in the capacity of [job title] CORPORATE DEVELOPMENT MANAGER by Xcel Energy, located at [address] 401 NICOLLET MALL, MPLS, MN. As such, I attest to the following concerning Xcel Energy's 2016 Wind RFP process during the period from issuance of the RFP on September 22, 2016 and up until selection on December 8, 2016 of the four short list projects that will move forward with negotiations ("RFP Process"):

1. My role in the aforementioned RFP Process consists of [description of role] EVALUATION OF BUILD-TRANSFER PROPOSALS SUBMITTED BY THIRD PARTY DEVELOPERS.
2. I am making the attestations herein on behalf of myself.
    a. Except as disclosed in writing as part of this audit, any relationship(s) I may have with Bidders responding to this RFP has not biased the RFP process for or against any proposal or the self-build option nor afforded them information pertinent to the RFP process that was not otherwise available to all Bidders.
    b. The evaluation process adhered to what was outlined in the RFP document and Xcel's internal RFP process documents without any material or significant changes or deviations.
    c. During the evaluation process all proposers were given an equal opportunity to ensure that all materials required to be submitted under the requirements of the RFP were submitted to Xcel prior to the completion of scoring.
    d. I do not have a conflict of interest or perceived conflict of interest with any of the Bidders, their agents, partner firms or companies, or subcontractors (collectively "partners"). I have no direct or indirect family members amongst the employees, managers, or owners of any of the proponents or partners. For purposes of this document, family is defined as related to by direct current marriage, spouse, children, legal guardian, or adoption.
    e. I did not have any contact or communication with proponents or proponents' partners during the evaluation, for any reason other than what could be considered required email communication responding and acknowledging questions and answers and making follow up inquiries to

gain necessary data and information. All email communications were supplied to Resource Planning and logged.

f. I have fairly evaluated each proposal and I have conducted my evaluation in a manner that ensures a fair and competitive process and avoids the appearance of impropriety. Although I have discussed my findings, opinions, and scores with the other members of the evaluation teams and have considered their findings, opinions, and scores; I have conducted my evaluation independently and the scores I have given represent my assessment of the proposals. I have not been coerced, influenced, or asked to change my scores by any person in any way.

g. I have thoroughly reviewed the proposal material provided to me for my purpose in the evaluation process and have scored each proposal fully and completely to the best of my ability. I have read the required proposal to evaluate against the agreed-upon criteria.

h. I agree with and endorse the evaluation determination that the following four proposed projects, numbered i. through iv., are deemed as qualified and least-cost among the proposals received.

REDACTED

ii. Crowned Ridge 600 MW Hybrid PPA and BOT, proposed by NextEra Energy

REDACTED

iv. Lake Benton 100 MW BOT, proposed by NextEra Energy

3. All information is true and correct, to the best of my knowledge, information and belief.

Signature: _____

Printed Name: Gerard Dittrich

Date: 12/28/16

NSP 2016 WIND RFP PROCESS
EVALUATION PERSONNEL
ATTESTATION STATEMENT

I, **Lesley Dubois**, hereby state that I am employed in the capacity of **independent energy reviewer** by Xcel Energy, located at **AWS Truepower, LLC 463 New Karner Road, Albany, New York**. As such, I attest to the following concerning Xcel Energy's 2016 Wind RFP process during the period from issuance of the RFP on September 22, 2016 and up until selection on December 8, 2016 of the four short list projects that will move forward with negotiations ("RFP Process"):

1. My role in the aforementioned RFP Process consists of **independently reviewing the reasonableness of the expected annual energy generation and resulting NCF estimates indicated for each submission**.
2. I am making the attestations herein on behalf of myself.
    a. Except as disclosed in writing as part of this audit, any relationship(s) I may have with Bidders responding to this RFP has not biased the RFP process for or against any proposal or the self-build option nor afforded them information pertinent to the RFP process that was not otherwise available to all Bidders.
    b. The evaluation process adhered to what was outlined in the RFP document and Xcel's internal RFP process documents without any material or significant changes or deviations.
    c. During the evaluation process all proposers were given an equal opportunity to ensure that all materials required to be submitted under the requirements of the RFP were submitted to Xcel prior to the completion of scoring.
    d. I do not have a conflict of interest or perceived conflict of interest with any of the Bidders, their agents, partner firms or companies, or subcontractors (collectively "partners"). ~~I have no direct or indirect family members amongst the employees, managers, or owners of any of the proponents or partners. For purposes of this document, family is defined as related to by direct current marriage, spouse, children, legal guardian, or adoption.~~While my husband is currently an employee of EDF Renewable, a firm who bid multiple projects into the RFP, in order to remain objective, I did not discuss with him my involvement in the review process nor was there any discussion around the projects submitted by EDF.

e. I did not have any contact or communication with proponents or proponents' partners during the evaluation, for any reason other than what could be considered required email communication responding and acknowledging questions and answers and making follow up inquiries to gain necessary data and information. All email communications were supplied to Resource Planning and logged.

f. I have fairly evaluated each proposal and I have conducted my evaluation in a manner that ensures a fair and competitive process and avoids the appearance of impropriety. Although I have discussed my findings, opinions, and scores with the other members of the evaluation teams and have considered their findings, opinions, and scores; I have conducted my evaluation independently and the scores I have given represent my assessment of the proposals. I have not been coerced, influenced, or asked to change my scores by any person in any way.

g. I have thoroughly reviewed the proposal material provided to me for my purpose in the evaluation process and have scored each proposal fully and completely to the best of my ability. I have read the required proposal to evaluate against the agreed-upon criteria.

3. All information is true and correct, to the best of my knowledge, information and belief.

Signature: Lesley Dubois

Printed Name: LESLEY DUBOIS

Date: 1/5/2017

NSP 2016 WIND RFP PROCESS
EVALUATION PERSONNEL
ATTESTATION STATEMENT

I, [name] KURTIS HAEGER, hereby state that I am employed in the capacity of [job title] Rotational Position by Xcel Energy, located at [address] 1800 Larimer St - Denver CO. As such, I attest to the following concerning Xcel Energy's 2016 Wind RFP process during the period from issuance of the RFP on September 22, 2016 and up until selection on December 8, 2016 of the four short list projects that will move forward with negotiations ("RFP Process"):

1. My role in the aforementioned RFP Process consists of [description of role] providing management oversight and economic evaluations associated with the LCOE calculators
2. I am making the attestations herein on behalf of myself.
    a. Except as disclosed in writing as part of this audit, any relationship(s) I may have with Bidders responding to this RFP has not biased the RFP process for or against any proposal or the self-build option nor afforded them information pertinent to the RFP process that was not otherwise available to all Bidders.
    b. The evaluation process adhered to what was outlined in the RFP document and Xcel's internal RFP process documents without any material or significant changes or deviations.
    c. During the evaluation process all proposers were given an equal opportunity to ensure that all materials required to be submitted under the requirements of the RFP were submitted to Xcel prior to the completion of scoring.
    d. I do not have a conflict of interest or perceived conflict of interest with any of the Bidders, their agents, partner firms or companies, or subcontractors (collectively "partners"). I have no direct or indirect family members amongst the employees, managers, or owners of any of the proponents or partners. For purposes of this document, family is defined as related to by direct current marriage, spouse, children, legal guardian, or adoption.
    e. I did not have any contact or communication with proponents or proponents' partners during the evaluation, for any reason other than what could be considered required email communication responding and acknowledging questions and answers and making follow up inquiries to

gain necessary data and information. All email communications were supplied to Resource Planning and logged.

f. I have fairly evaluated each proposal and I have conducted my evaluation in a manner that ensures a fair and competitive process and avoids the appearance of impropriety. Although I have discussed my findings, opinions, and scores with the other members of the evaluation teams and have considered their findings, opinions, and scores; I have conducted my evaluation independently and the scores I have given represent my assessment of the proposals. I have not been coerced, influenced, or asked to change my scores by any person in any way.

g. I have thoroughly reviewed the proposal material provided to me for my purpose in the evaluation process and have scored each proposal fully and completely to the best of my ability. I have read the required proposal to evaluate against the agreed-upon criteria.

h. I agree with and endorse the evaluation determination that the following four proposed projects, numbered i. through iv., are deemed as qualified and least-cost among the proposals received.

[redacted]

ii. Crowned Ridge 600 MW Hybrid PPA and BOT, proposed by NextEra Energy

[redacted]

iv. Lake Benton 100 MW BOT, proposed by NextEra Energy

3. All information is true and correct, to the best of my knowledge, information and belief.

Signature: [signature]

Printed Name: Kurtis J. Hagen

Date: 12-28-16

NSP 2016 WIND RFP PROCESS
EVALUATION PERSONNEL
ATTESTATION STATEMENT

I, [name] Jon Londrum, hereby state that I am employed in the capacity of [job title] Mgr, Resource Planning Analytics by Xcel Energy, located at [address] 1800 Larimer St Denver, CO. As such, I attest to the following concerning Xcel Energy's 2016 Wind RFP process during the period from issuance of the RFP on September 22, 2016 and up until selection on December 8, 2016 of the four short list projects that will move forward with negotiations ("RFP Process"):

1. My role in the aforementioned RFP Process consists of [description of role] Calculation of LCOE's and bucket ranges.
2. I am making the attestations herein on behalf of myself.
   a. Except as disclosed in writing as part of this audit, any relationship(s) I may have with Bidders responding to this RFP has not biased the RFP process for or against any proposal or the self-build option nor afforded them information pertinent to the RFP process that was not otherwise available to all Bidders.
   b. The evaluation process adhered to what was outlined in the RFP document and Xcel's internal RFP process documents without any material or significant changes or deviations.
   c. During the evaluation process all proposers were given an equal opportunity to ensure that all materials required to be submitted under the requirements of the RFP were submitted to Xcel prior to the completion of scoring.
   d. I do not have a conflict of interest or perceived conflict of interest with any of the Bidders, their agents, partner firms or companies, or subcontractors (collectively "partners"). I have no direct or indirect family members amongst the employees, managers, or owners of any of the proponents or partners. For purposes of this document, family is defined as related to by direct current marriage, spouse, children, legal guardian, or adoption.
   e. I did not have any contact or communication with proponents or proponents' partners during the evaluation, for any reason other than what could be considered required email communication responding and acknowledging questions and answers and making follow up inquiries to

gain necessary data and information. All email communications were supplied to Resource Planning and logged.

f. I have fairly evaluated each proposal and I have conducted my evaluation in a manner that ensures a fair and competitive process and avoids the appearance of impropriety. Although I have discussed my findings, opinions, and scores with the other members of the evaluation teams and have considered their findings, opinions, and scores; I have conducted my evaluation independently and the scores I have given represent my assessment of the proposals. I have not been coerced, influenced, or asked to change my scores by any person in any way.

g. I have thoroughly reviewed the proposal material provided to me for my purpose in the evaluation process and have scored each proposal fully and completely to the best of my ability. I have read the required proposal to evaluate against the agreed-upon criteria.

h. I agree with and endorse the evaluation determination that the following four proposed projects, numbered i. through iv., are deemed as qualified and least-cost among the proposals received.

REDACTED

ii. Crowned Ridge 600 MW Hybrid PPA and BOT, proposed by NextEra Energy

REDACTED

iv. Lake Benton 100 MW BOT, proposed by NextEra Energy

3. All information is true and correct, to the best of my knowledge, information and belief.

Signature: _____

Printed Name: JON LANDRUM

Date: 12/28/16

PUBLIC DOCUMENT
NOT PUBLIC (OR PRIVILEGED) DATA HAS BEEN EXCISED
*Black rectangle indicates protected data.

NSP 2016 WIND RFP PROCESS
EVALUATION PERSONNEL
ATTESTATION STATEMENT

I, [name] PJ Martin, hereby state that I am employed in the capacity of [job title] Director, Resource Planning by Xcel Energy, located at [address] 401 Nicollet Mall Minneapolis, MN. As such, I attest to the following concerning Xcel Energy's 2016 Wind RFP process during the period from issuance of the RFP on September 22, 2016 and up until selection on December 8, 2016 of the four short list projects that will move forward with negotiations ("RFP Process"):

1. My role in the aforementioned RFP Process consists of [description of role] directing RFP preparations and execution, managing internal management communications.
2. I am making the attestations herein on behalf of myself.
    a. Except as disclosed in writing as part of this audit, any relationship(s) I may have with Bidders responding to this RFP has not biased the RFP process for or against any proposal or the self-build option nor afforded them information pertinent to the RFP process that was not otherwise available to all Bidders.
    b. The evaluation process adhered to what was outlined in the RFP document and Xcel's internal RFP process documents without any material or significant changes or deviations.
    c. During the evaluation process all proposers were given an equal opportunity to ensure that all materials required to be submitted under the requirements of the RFP were submitted to Xcel prior to the completion of scoring.
    d. I do not have a conflict of interest or perceived conflict of interest with any of the Bidders, their agents, partner firms or companies, or subcontractors (collectively "partners"). I have no direct or indirect family members amongst the employees, managers, or owners of any of the proponents or partners. For purposes of this document, family is defined as related to by direct current marriage, spouse, children, legal guardian, or adoption.
    e. I did not have any contact or communication with proponents or proponents' partners during the evaluation, for any reason other than what could be considered required email communication responding and acknowledging questions and answers and making follow up inquiries to

gain necessary data and information. All email communications were supplied to Resource Planning and logged.

f. I have fairly evaluated each proposal and I have conducted my evaluation in a manner that ensures a fair and competitive process and avoids the appearance of impropriety. Although I have discussed my findings, opinions, and scores with the other members of the evaluation teams and have considered their findings, opinions, and scores; I have conducted my evaluation independently and the scores I have given represent my assessment of the proposals. I have not been coerced, influenced, or asked to change my scores by any person in any way.

g. I have thoroughly reviewed the proposal material provided to me for my purpose in the evaluation process and have scored each proposal fully and completely to the best of my ability. I have read the required proposal to evaluate against the agreed-upon criteria.

h. I agree with and endorse the evaluation determination that the following four proposed projects, numbered i. through iv., are deemed as qualified and least-cost among the proposals received.

REDACTED

ii. Crowned Ridge 600 MW Hybrid PPA and BOT, proposed by NextEra Energy

REDACTED

iv. Lake Benton 100 MW BOT, proposed by NextEra Energy

3. All information is true and correct, to the best of my knowledge, information and belief.

Signature: _____

Printed Name: PJ Martin

Date: 1/3/17

NSP 2016 WIND RFP PROCESS
EVALUATION PERSONNEL
ATTESTATION STATEMENT

I, Thomas Mol, hereby state that I am employed in the capacity of Senior Resource Planning Analyst by Xcel Energy, located at 414 Nicollet Mall, Minneapolis, MN. As such, I attest to the following concerning Xcel Energy's 2016 Wind RFP process during the period from issuance of the RFP on September 22, 2016 and up until selection on December 8, 2016 of the four short list projects that will move forward with negotiations ("RFP Process"):

1. My role in the aforementioned RFP Process consists of opening bids, cataloging bids on SharePoint, assessing bids for completeness and threshold, managing the RFP e-mail account and all e-mail communications with bidders, preparing Q&A documents posted on the RFP website, managing the non-price evaluation, preparing the scoring documents that combine the LCOE evaluation and the non-price evaluation, participating in the short-list evaluation.
2. I am making the attestations herein on behalf of myself.
    a. Except as disclosed in writing as part of this audit, any relationship(s) I may have with Bidders responding to this RFP has not biased the RFP process for or against any proposal or the self-build option nor afforded them information pertinent to the RFP process that was not otherwise available to all Bidders.
    b. The evaluation process adhered to what was outlined in the RFP document and Xcel's internal RFP process documents without any material or significant changes or deviations.
    c. During the evaluation process all proposers were given an equal opportunity to ensure that all materials required to be submitted under the requirements of the RFP were submitted to Xcel prior to the completion of scoring.
    d. I do not have a conflict of interest or perceived conflict of interest with any of the Bidders, their agents, partner firms or companies, or subcontractors (collectively "partners"). I have no direct or indirect family members amongst the employees, managers, or owners of any of the proponents or partners. For purposes of this document, family is defined as related to by direct current marriage, spouse, children, legal guardian, or adoption.
    e. I did not have any contact or communication with proponents or proponents' partners during the evaluation, for any reason other than

what could be considered required email communication responding and acknowledging questions and answers and making follow up inquiries to gain necessary data and information. All email communications were supplied to Resource Planning and logged.

f. I have fairly evaluated each proposal and I have conducted my evaluation in a manner that ensures a fair and competitive process and avoids the appearance of impropriety. Although I have discussed my findings, opinions, and scores with the other members of the evaluation teams and have considered their findings, opinions, and scores; I have conducted my evaluation independently and the scores I have given represent my assessment of the proposals. I have not been coerced, influenced, or asked to change my scores by any person in any way.

g. I have thoroughly reviewed the proposal material provided to me for my purpose in the evaluation process and have scored each proposal fully and completely to the best of my ability. I have read the required proposal to evaluate against the agreed-upon criteria.

h. I agree with and endorse the evaluation determination that the following four proposed projects, numbered i. through iv., are deemed as qualified and least-cost among the proposals received.

REDACTED

ii. Crowned Ridge 600 MW Hybrid PPA and BOT, proposed by NextEra Energy

REDACTED

iv. Lake Benton 100 MW BOT, proposed by NextEra Energy

3. All information is true and correct, to the best of my knowledge, information and belief.

Signature: Thomas Mol

Printed Name: Thomas Mol

Date: 1/5/2017

PUBLIC DOCUMENT
NOT PUBLIC (OR PRIVILEGED) DATA HAS BEEN EXCISED
*Black rectangle indicates protected data.

NSP 2016 WIND RFP PROCESS
EVALUATION PERSONNEL
ATTESTATION STATEMENT

I, Mary Morrison, hereby state that I am employed in the capacity of Resource Planning Analyst by Xcel Energy, located at 401 Nicollet Mall, Minneapolis, MN. As such, I attest to the following concerning Xcel Energy's 2016 Wind RFP process during the period from issuance of the RFP on September 22, 2016 and up until selection on December 8, 2016 of the four short list projects that will move forward with negotiations ("RFP Process"):

1. My role in the aforementioned RFP Process consists of RFP logging, proposal screening, bidder communication, and completeness and threshold evaluator.
2. I am making the attestations herein on behalf of myself.
    a. Except as disclosed in writing as part of this audit, any relationship(s) I may have with Bidders responding to this RFP has not biased the RFP process for or against any proposal or the self-build option nor afforded them information pertinent to the RFP process that was not otherwise available to all Bidders.
    b. The evaluation process adhered to what was outlined in the RFP document and Xcel's internal RFP process documents without any material or significant changes or deviations.
    c. During the evaluation process all proposers were given an equal opportunity to ensure that all materials required to be submitted under the requirements of the RFP were submitted to Xcel prior to the completion of scoring.
    d. I do not have a conflict of interest or perceived conflict of interest with any of the Bidders, their agents, partner firms or companies, or subcontractors (collectively "partners"). I have no direct or indirect family members amongst the employees, managers, or owners of any of the proponents or partners. For purposes of this document, family is defined as related to by direct current marriage, spouse, children, legal guardian, or adoption.
    e. I did not have any contact or communication with proponents or proponents' partners during the evaluation, for any reason other than what could be considered required email communication responding and acknowledging questions and answers and making follow up inquiries to gain necessary data and information. All email communications were supplied to Resource Planning and logged.

f. I have fairly evaluated each proposal and I have conducted my evaluation in a manner that ensures a fair and competitive process and avoids the appearance of impropriety. Although I have discussed my findings, opinions, and scores with the other members of the evaluation teams and have considered their findings, opinions, and scores; I have conducted my evaluation independently and the scores I have given represent my assessment of the proposals. I have not been coerced, influenced, or asked to change my scores by any person in any way.

g. I have thoroughly reviewed the proposal material provided to me for my purpose in the evaluation process and have scored each proposal fully and completely to the best of my ability. I have read the required proposal to evaluate against the agreed-upon criteria.

h. I agree with and endorse the evaluation determination that the following four proposed projects, numbered i. through iv., are deemed as qualified and least-cost among the proposals received.

REDACTED

ii. Crowned Ridge 600 MW Hybrid PPA and BOT, proposed by NextEra Energy

REDACTED

iv. Lake Benton 100 MW BOT, proposed by NextEra Energy

3. All information is true and correct, to the best of my knowledge, information and belief.

Signature: Mary Morrison

Printed Name: Mary Morrison

Date: 1/3/2017

NSP 2016 WIND RFP PROCESS
EVALUATION PERSONNEL
ATTESTATION STATEMENT

I, Brendan Pleskow, hereby state that I am employed in the capacity of Principal Financial Consultant, Technical Accounting by Xcel Energy, located at 1800 Larimer, Suite 1200, Denver, CO 80202. As such, I attest to the following concerning Xcel Energy's 2016 Wind RFP process during the period from issuance of the RFP on September 22, 2016 and up until selection on December 8, 2016 of the four short list projects that will move forward with negotiations ("RFP Process"):

1. My role in the aforementioned RFP Process consists of reviewing RFPs for potential adverse accounting implications.
2. I am making the attestations herein on behalf of myself.
    a. Except as disclosed in writing as part of this audit, any relationship(s) I may have with Bidders responding to this RFP has not biased the RFP process for or against any proposal or the self-build option nor afforded them information pertinent to the RFP process that was not otherwise available to all Bidders.
    b. The evaluation process adhered to what was outlined in the RFP document and Xcel's internal RFP process documents without any material or significant changes or deviations.
    c. During the evaluation process all proposers were given an equal opportunity to ensure that all materials required to be submitted under the requirements of the RFP were submitted to Xcel prior to the completion of scoring.
    d. I do not have a conflict of interest or perceived conflict of interest with any of the Bidders, their agents, partner firms or companies, or subcontractors (collectively "partners"). I have no direct or indirect family members amongst the employees, managers, or owners of any of the proponents or partners. For purposes of this document, family is defined as related to by direct current marriage, spouse, children, legal guardian, or adoption.
    e. I did not have any contact or communication with proponents or proponents' partners during the evaluation, for any reason other than what could be considered required email communication responding and acknowledging questions and answers and making follow up inquiries to gain necessary data and information. All email communications were supplied to Resource Planning and logged.

f. I have fairly evaluated each proposal and I have conducted my evaluation in a manner that ensures a fair and competitive process and avoids the appearance of impropriety. Although I have discussed my findings, opinions, and scores with the other members of the evaluation teams and have considered their findings, opinions, and scores; I have conducted my evaluation independently and the scores I have given represent my assessment of the proposals. I have not been coerced, influenced, or asked to change my scores by any person in any way.

g. I have thoroughly reviewed the proposal material provided to me for my purpose in the evaluation process and have scored each proposal fully and completely to the best of my ability. I have read the required proposal to evaluate against the agreed-upon criteria.

h. I agree with and endorse the evaluation determination that the following four proposed projects, numbered a. through d., are deemed as qualified and least-cost among the proposals received.

3. All information is true and correct, to the best of my knowledge, information and belief.

Signature: 

Printed Name: BRENDAN PLESKOW

Date: 12/23/16

NSP 2016 WIND RFP PROCESS
EVALUATION PERSONNEL
ATTESTATION STATEMENT

I, [name] Sarah B. Schwartz, hereby state that I am employed in the capacity of [job title] Manager by Xcel Energy, located at [address] Eau Claire, WI. As such, I attest to the following concerning Xcel Energy's 2016 Wind RFP process during the period from issuance of the RFP on September 22, 2016 and up until selection on December 8, 2016 of the four short list projects that will move forward with negotiations ("RFP Process"):

1. My role in the aforementioned RFP Process consists of [description of role] member of the non-price wind evaluation team.
2. I am making the attestations herein on behalf of myself.
    a. Except as disclosed in writing as part of this audit, any relationship(s) I may have with Bidders responding to this RFP has not biased the RFP process for or against any proposal or the self-build option nor afforded them information pertinent to the RFP process that was not otherwise available to all Bidders.
    b. The evaluation process adhered to what was outlined in the RFP document and Xcel's internal RFP process documents without any material or significant changes or deviations.
    c. During the evaluation process all proposers were given an equal opportunity to ensure that all materials required to be submitted under the requirements of the RFP were submitted to Xcel prior to the completion of scoring.
    d. I do not have a conflict of interest or perceived conflict of interest with any of the Bidders, their agents, partner firms or companies, or subcontractors (collectively "partners"). I have no direct or indirect family members amongst the employees, managers, or owners of any of the proponents or partners. For purposes of this document, family is defined as related to by direct current marriage, spouse, children, legal guardian, or adoption.
    e. I did not have any contact or communication with proponents or proponents' partners during the evaluation, for any reason other than what could be considered required email communication responding and acknowledging questions and answers and making follow up inquiries to

gain necessary data and information. All email communications were supplied to Resource Planning and logged.

f. I have fairly evaluated each proposal and I have conducted my evaluation in a manner that ensures a fair and competitive process and avoids the appearance of impropriety. Although I have discussed my findings, opinions, and scores with the other members of the evaluation teams and have considered their findings, opinions, and scores; I have conducted my evaluation independently and the scores I have given represent my assessment of the proposals. I have not been coerced, influenced, or asked to change my scores by any person in any way.

g. I have thoroughly reviewed the proposal material provided to me for my purpose in the evaluation process and have scored each proposal fully and completely to the best of my ability. I have read the required proposal to evaluate against the agreed-upon criteria.

3. All information is true and correct, to the best of my knowledge, information and belief.

Signature: [signature]

Printed Name: Sarah B Schwartz

Date: 12/28/16

NSP 2016 WIND RFP PROCESS
EVALUATION PERSONNEL
ATTESTATION STATEMENT

I, [name] Nathan Svoboda, hereby state that I am employed in the capacity of [job title] Sr Operations Manager by Xcel Energy, located at [address] 228 Ind. Park Dr, Dexter, MN. As such, I attest to the following concerning Xcel Energy's 2016 Wind RFP process during the period from issuance of the RFP on September 22, 2016 and up until selection on December 8, 2016 of the four short list projects that will move forward with negotiations ("RFP Process"):

1. My role in the aforementioned RFP Process consists of [description of role] providing O+M and on-going capital estimates.
2. I am making the attestations herein on behalf of myself.
   a. Except as disclosed in writing as part of this audit, any relationship(s) I may have with Bidders responding to this RFP has not biased the RFP process for or against any proposal or the self-build option nor afforded them information pertinent to the RFP process that was not otherwise available to all Bidders.
   b. The evaluation process adhered to what was outlined in the RFP document and Xcel's internal RFP process documents without any material or significant changes or deviations.
   c. During the evaluation process all proposers were given an equal opportunity to ensure that all materials required to be submitted under the requirements of the RFP were submitted to Xcel prior to the completion of scoring.
   d. I do not have a conflict of interest or perceived conflict of interest with any of the Bidders, their agents, partner firms or companies, or subcontractors (collectively "partners"). I have no direct or indirect family members amongst the employees, managers, or owners of any of the proponents or partners. For purposes of this document, family is defined as related to by direct current marriage, spouse, children, legal guardian, or adoption.
   e. I did not have any contact or communication with proponents or proponents' partners during the evaluation, for any reason other than what could be considered required email communication responding and acknowledging questions and answers and making follow up inquiries to

gain necessary data and information. All email communications were supplied to Resource Planning and logged.

f. I have fairly evaluated each proposal and I have conducted my evaluation in a manner that ensures a fair and competitive process and avoids the appearance of impropriety. Although I have discussed my findings, opinions, and scores with the other members of the evaluation teams and have considered their findings, opinions, and scores; I have conducted my evaluation independently and the scores I have given represent my assessment of the proposals. I have not been coerced, influenced, or asked to change my scores by any person in any way.

g. I have thoroughly reviewed the proposal material provided to me for my purpose in the evaluation process and have scored each proposal fully and completely to the best of my ability. I have read the required proposal to evaluate against the agreed-upon criteria.

3. All information is true and correct, to the best of my knowledge, information and belief.

Signature: _____

Printed Name: Nathan Svoboda

Date: 12-27-16

Appendix C
Transmission Clarification Email

The following email (unaltered) was distributed to all Bidders on Monday, October 31 from Xcel via the NSP2016WINDRFP@XCELENERGY.COM email address. All Bidders responded affirmatively confirming they understand that they were responsible for all future transmission costs and therefore the proposal price(s) could not be subject to any future adjustments to a higher price.

"2016 NSP Wind RFP Bidders,

Thank you for your participation in the 2016 NSP Wind RFP. Considering the level of interest concerning the potential impact of MISO transmission interconnection related costs on Bidders' RFP Project bids, NSP is sending this email to ensure that Bidders fully understand and acknowledge their responsibility for all network upgrade and transmission interconnection costs associated with their RFP Projects.

Several sections of the RFP document address this issue. For example, Section 3.2 of the RFP document states that, "Bidders shall be responsible for all costs associated with interconnecting the RFP Project to the MISO system." In addition, Section 4.6 states that Bidders must offer firm pricing that is valid for a period of time and that indicative pricing is not acceptable. As such, NSP expects all bid prices to be firm and Bidders will not have the opportunity to adjust their price in the future if actual network upgrade and/or transmission interconnection costs are higher than expected. Bidders assume all risk associated with future transmission cost uncertainty.

Finally, in the RFP, NSP requested bid adjustment values to be used for internal transmission cost analyses. This information is not meant to allow Bidders the opportunity to adjust their BOT or PPA price in the future. A clarification was posted in the Q&A section of the RFP on October 21, 2016 which states:

> ***Question 24 Clarification:*** *The Bidder is not allowed to provide a bid increase mechanism, as a component of their bid. All bids must incorporate the full risk of any and all transmission costs assigned by MISO or any other RTO(s) and will be considered by NSP as a firm price bid. The information required in Addendum 1 – 10/4/16, does not change or modify this fundamental requirement of the RFP.*

Please respond to this email within five (5) business days confirming that you, as the Bidder, understand that you are responsible for all future transmission costs and therefore the bid price(s) you submitted for the purpose of this RFP cannot be subject to any future adjustments to a higher price.

Thank you,

2016 NSP Wind RFP Team

Northern States Power

2016 Request for Wind Proposals
NSP2016WINDRFP@XCELENERGY.COM*"*

BOT
PPA
Hybrid PPA/BOT

Decision	Bid Number	Bidder	Project	Project Bid Name	Capacity	Bid Type	LCOE Final	10% Bucket Threshold	Bucket	Non-price Score
[PROTECTED DATA BEGINS										

PROTECTED DATA ENDS]

Decision	Bid Number	Bidder	Project	Project Bid Name	Capacity	Bid Type	LCOE Final	10% Bucket Threshold	Bucket	Non-price Score

[PROTECTED DATA BEGINS

PROTECTED DATA ENDS]

PUBLIC DOCUMENT
NOT PUBLIC (OR PRIVILEGED) DATA HAS BEEN EXCISED
*DOCUMENT IS TRADE SECRET IN ITS ENTIRETY

Execution FINAL

WIND ENERGY PURCHASE AGREEMENT

BETWEEN

NORTHERN STATES POWER COMPANY

AND

CROWNED RIDGE WIND, LLC

- March 7, 2017 -

Execution Copy

PURCHASE AND SALE AGREEMENT
(Crowned Ridge Wind II)

Dated as of March 6, 2017

by and between

NORTHERN STATES POWER COMPANY

as Buyer

and

ESI ENERGY, LLC

as Seller

Execution Copy

PURCHASE AND SALE AGREEMENT
(Lake Benton II)

Dated as of March 6, 2017

by and between

NORTHERN STATES POWER COMPANY

as Buyer

and

ESI ENERGY, LLC

as Seller

[Execution Version]

WIND ENERGY PURCHASE AGREEMENT

BETWEEN

NORTHERN STATES POWER COMPANY, A MINNESOTA CORPORATION AND

AND

ALLETE CLEAN ENERGY, INC.

Xcel Energy

- March 13, 2017 -

PUBLIC DOCUMENT
NOT PUBLIC (OR PRIVILEGED) DATA HAS BEEN EXCISED
*DOCUMENT IS TRADE SECRET IN ITS ENTIRETY

Execution Version

MASTER SUPPLY AGREEMENT

between

CAPITAL SERVICES, LLC

as Buyer

and

VESTAS-AMERICAN WIND TECHNOLOGY, INC.

as Supplier

Dated as of September 15, 2016

PUBLIC DOCUMENT
NOT PUBLIC (OR PRIVILEGED) DATA HAS BEEN EXCISED
*DOCUMENT IS TRADE SECRET IN ITS ENTIRETY

Execution Version

PURCHASE AND SALE AGREEMENT

between

ESI ENERGY, LLC

a Delaware limited liability company

as Seller

and

NORTHERN STATES POWER COMPANY,

a Minnesota corporation

as Buyer

dated as of September 21, 2016

Foxtail Wind Project

Execution Version

PURCHASE AND SALE AGREEMENT

between

GERONIMO ENERGY, LLC,

a Delaware limited liability company

as Seller

and

NORTHERN STATES POWER COMPANY,

a Minnesota corporation

as Buyer

dated as of September 21, 2016

Blazing Star Wind Project

Execution Version

PURCHASE AND SALE AGREEMENT

between

GERONIMO ENERGY, LLC,

a Delaware limited liability company

as Seller

and

NORTHERN STATES POWER COMPANY,

a Minnesota corporation

as Buyer

dated as of September 21, 2016

Blazing Star 2 Wind Project

Execution Version

PURCHASE AND SALE AGREEMENT

by, between and among

INVENERGY WIND DEVELOPMENT NORTH AMERICA LLC

as Seller,

FREEBORN WIND ENERGY LLC

as the Company,

and

NORTHERN STATES POWER COMPANY, A MINNESOTA CORPORATION

as Buyer

dated as of September 21, 2016

Freeborn Wind Project

I. Strategist Modeling Assumptions

1. Discount Rate and Capital Structure

The discount rate used for levelized cost calculations and the present value of modeled costs is 6.62 percent. This is the after-tax weighted average cost of capital from the 2016-2030 Upper Midwest Resource Plan.

The rates shown in Table 1 were calculated by taking a weighted average of Minnesota (85 percent) and Wisconsin (15 percent) information from the January 2014 Corporate Assumptions Memo.

Table 1: Capital Structure

	Capital Structure	Allowed Return	Before tax Elec. WACC	After tax Elec. WACC
L-T Debt	45.24%	5.12%	2.33%	1.37%
Common Equity	52.56%	9.89%	5.24%	5.24%
S-T Debt	2.20%	0.64%	0.01%	0.01%
Total			7.58%	6.62%

2. Inflation Rates

The inflation rates are used for existing resources, generic resources, and other costs related to general inflationary trends in the modeling. The inflation rates are developed using long-term forecasts from Global Insight. The labor and non-labor inflation rates are from the February 2016 Corporate Assumptions Memo. The General inflation rate is from the "Chained Price Index for Total Personal Consumption Expenditures" published in the third quarter of 2015.

- Variable O&M inflation – 50% labor inflation and 50% non-labor inflation – 2.88%.
- Fixed O&M inflation – 75% labor inflation and 25% non-labor inflation – 3.07%.
- General inflation – The inflation rate used for construction (capital) costs and any other escalation factor related to general inflationary trends is 2.0%.

3. Reserve Margin

The reserve margin at the time of MISO's peak is 7.8 percent. The coincidence factor between the NSP System and MISO system peak is 5 percent. Therefore, the effective reserve margin is:

$$(1 - 5\%) * (1 + 7.8\%) - 1 = 2.41\%.$$

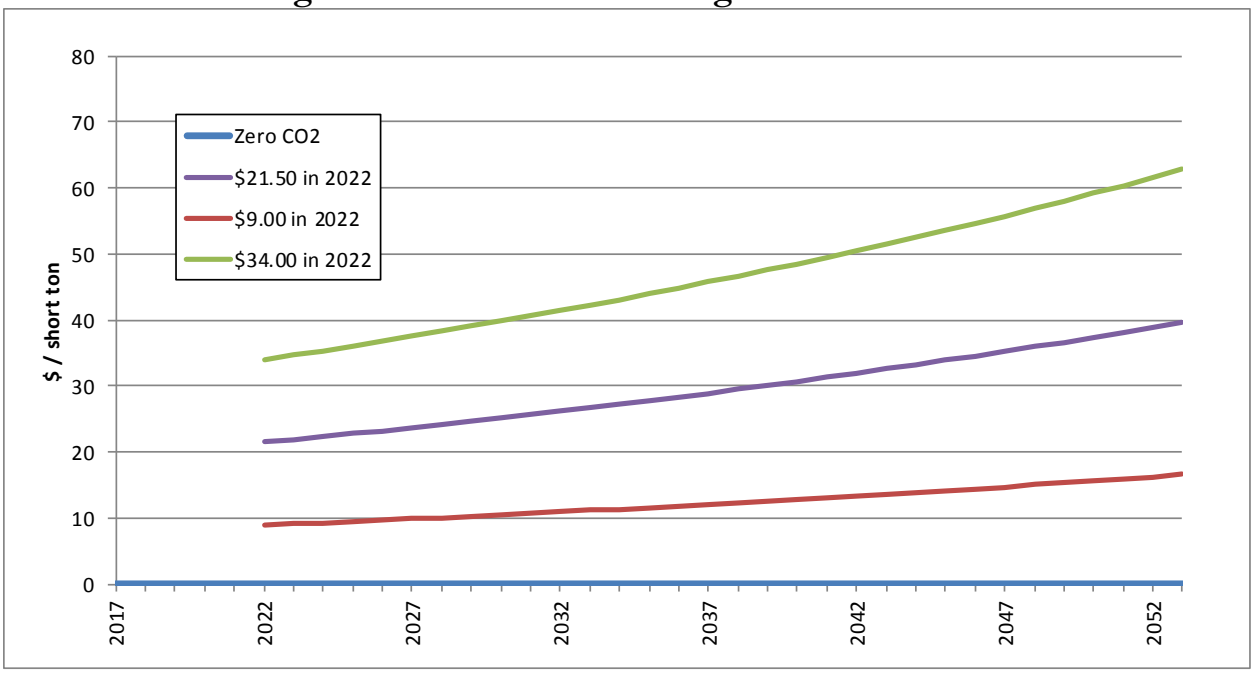
Table 2: Reserve Margin

Reserve Margin	
Coincidence Factor	5.00%
MISO Coincident Peak Reserve Margin %	7.80%
Effective RM Based on Non-coincident Peak	2.41%

4. Regulated CO_2 Costs

Figure 1 shows the annual Regulated CO_2 Costs used in the analysis. The base assumption is $21.50 per short ton starting in 2022 which is the average of $9 per short ton and $34 per short ton. The range of Regulated CO_2 Costs is drawn from the Minnesota Public Utilities Commission's Order Establishing 2016 and 2017 Estimate of Future Carbon Dioxide Regulation Costs in Docket No. E999/CI-07-1199 issued August 5, 2016. All prices escalate at general inflation.

Figure 1: Carbon Dioxide Regulated CO2 Cost



5. Externality Costs

Externality Costs are based on the high values from the Minnesota Public Utilities Commission's Notice of Comment Period on Updated Environmental Externality Values issued June 16, 2016 (Docket Nos. E999/CI-93-583 and E999/CI-00-1636) and are shown in Table 3 below. Prices are shown in 2016 dollars and escalate at general inflation. Sulfur dioxide assumed zero cost due to a large surplus of allowances, a weak sales market, and zero externality cost per Commission policy.

Table 3: Externality Costs

MPUC Updated Externality Prices				
2016 $ per short ton				
	Urban	**Metro Fringe**	**Rural**	**<200mi**
NOx	$1,466	$399	$153	$153
PM10	$9,627	$4,326	$1,282	$1,282
CO	$3	$2	$1	$1
Pb	$5,808	$2,990	$671	$671

6. Demand and Energy Forecast

The Fall 2016 Load Forecast developed by the Xcel Energy Load Forecasting group is used. The Fall 2016 Load Forecast and the Fall 2014 Load Forecast used in the 2016-2030 Upper Midwest Resource Plan have pertinent differences. The changes between forecasts are being driven primarily by actual sales and peak demand results in 2015 and 2016. The Fall 2014 forecast called for increasing sales in 2015 and 2016, while sales in each of these years actually decreased. The same occurred for weather normalized peak demand, which saw declines in each year as opposed to projected increases in the Fall 2014 forecast.

The residential and small C/I sectors experienced lower than expected sales in 2015 and 2016 due to use per customer declining at a faster rate than projected in 2014. Projected growth in the sand mining industry did not materialize, which impacted both the small C/I and the large C/I sectors, particularly in Wisconsin. In addition, the Fall 2014 forecast for large C/I sales did not reflect the expected loss of load beginning in 2018 resulting from Flint Hills' CHP project.

Table 4: Fall 2016 Demand and Energy Forecast

Demand (MW)				Energy (GWh)			
Year	Model Output	W/ Hist DSM, Building Code Adj	Final w DSM/Eff Adjustments	Year	Model Output	W/ Hist DSM, Building Code	Final w DSM/Eff Adjustments
2017	10,409	9,350	9,206	2017	50,843	45,440	44,557
2018	10,453	9,453	9,243	2018	50,822	45,779	44,457
2019	10,529	9,588	9,309	2019	51,150	46,432	44,672
2020	10,605	9,695	9,318	2020	51,606	47,071	44,855
2021	10,719	9,848	9,369	2021	52,044	47,665	45,006
2022	10,797	9,996	9,423	2022	52,280	48,284	45,227
2023	10,871	10,106	9,432	2023	52,474	48,648	45,192
2024	10,933	10,205	9,430	2024	52,804	49,192	45,327
2025	11,042	10,340	9,464	2025	53,215	49,831	45,578
2026	11,114	10,462	9,485	2026	53,406	50,307	45,657
2027	11,183	10,593	9,515	2027	53,572	50,841	45,791
2028	11,264	10,730	9,551	2028	53,938	51,629	46,165
2029	11,388	10,849	9,569	2029	54,372	52,148	46,302
2030	11,488	10,982	9,677	2030	54,599	52,637	46,837
2031	11,575	11,075	9,737	2031	54,795	52,930	47,170
2032	11,670	11,163	9,791	2032	55,177	53,337	47,601
2033	11,801	11,288	9,883	2033	55,627	53,814	48,134
2034	11,906	11,376	9,968	2034	55,866	54,071	48,442
2035	12,000	11,451	10,045	2035	56,112	54,328	48,750
2036	12,103	11,524	10,110	2036	56,565	54,742	49,147
2037	12,235	11,624	10,210	2037	57,042	55,180	49,602
2038	12,342	11,697	10,282	2038	57,306	55,403	49,824
2039	12,436	11,753	10,339	2039	57,562	55,614	50,036
2040	12,536	11,814	10,399	2040	58,005	56,010	50,415
2041	12,665	11,900	10,485	2041	58,476	56,434	50,855
2042	12,766	11,956	10,541	2042	58,697	56,604	51,025
2043	12,852	11,993	10,578	2043	58,925	56,778	51,200
2044	12,963	12,055	10,641	2044	59,350	57,150	51,556
2045	13,091	12,135	10,721	2045	60,190	57,941	52,362
2046	13,182	12,179	10,765	2046	60,352	58,050	52,471
2047	13,286	12,236	10,822	2047	60,760	58,406	52,827
2048	13,391	12,293	10,879	2048	61,353	58,942	53,347
2049	13,496	12,350	10,936	2049	61,576	59,118	53,539
2050	13,601	12,407	10,993	2050	61,985	59,474	53,895
2051	13,706	12,464	11,050	2051	62,393	59,830	54,251
2052	13,810	12,521	11,107	2052	62,998	60,378	54,783
2053	13,915	12,579	11,164	2053	63,209	60,542	54,964

7. DSM Forecast

The DSM forecast assumes impacts expected at a 75 percent rebate level which equals roughly 1.5 percent of sales through the planning period.

Table 5: DSM Forecast

Year	Energy (MWh)	Demand (MW)
2017	884	173
2018	1,322	255
2019	1,761	337
2020	2,216	473
2021	2,659	613
2022	3,057	739
2023	3,455	876
2024	3,865	1,013
2025	4,252	1,150
2026	4,651	1,287
2027	5,049	1,425
2028	5,464	1,562
2029	5,846	1,699
2030	5,800	1,745
2031	5,760	1,800
2032	5,736	1,855
2033	5,680	1,910
2034	5,629	1,911
2035	5,578	1,909
2036	5,595	1,919
2037	5,578	1,919
2038	5,578	1,919
2039	5,578	1,919
2040	5,595	1,919
2041	5,578	1,919
2042	5,578	1,919
2043	5,578	1,919
2044	5,595	1,919
2045	5,578	1,919
2046	5,578	1,919
2047	5,578	1,919
2048	5,595	1,919
2049	5,578	1,919
2050	5,578	1,919
2051	5,578	1,919
2052	5,595	1,919
2053	5,578	1,919

8. Demand Response Forecast

The 2016 Load Management Forecast developed by the Xcel Energy Load Research group is used. The table below shows the July demand.

Table 6: 2016 Load Management Forecast

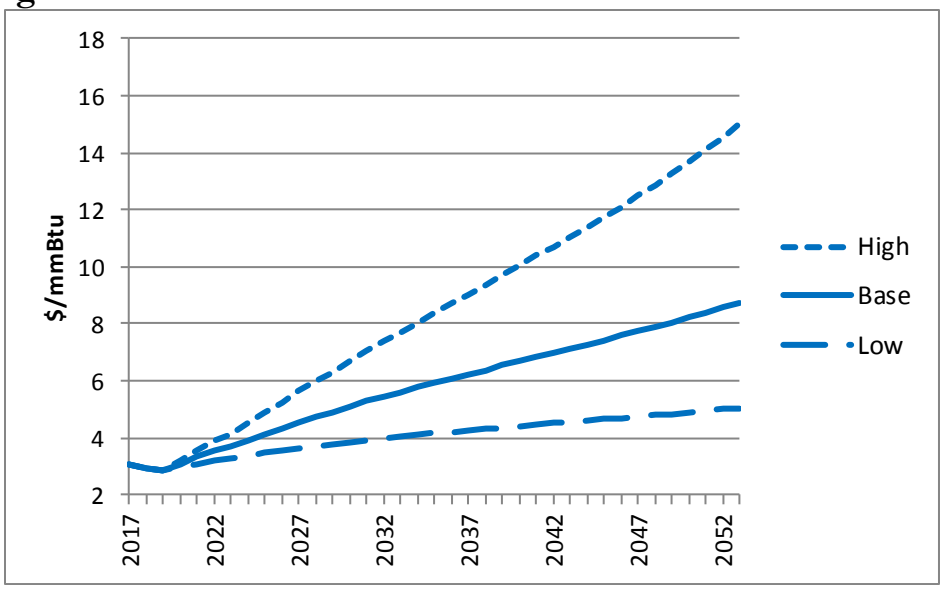
July Demand (MW)	2017	2018	2019	2020	2021	2022	2023	2024
LMF	921	930	940	948	957	966	974	983
July Demand (MW)	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
LMF	990	994	994	992	988	984	980	976
July Demand (MW)	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**
LMF	972	968	964	961	957	953	950	946
July Demand (MW)	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**	**2047**	**2048**
LMF	943	939	936	932	929	925	922	918
July Demand (MW)	**2049**	**2050**	**2051**	**2052**	**2053**			
LMF	915	912	908	905	901			

9. Natural Gas Price Forecasts

Henry Hub natural gas prices are developed using a blend of market information (New York Mercantile Exchange futures prices) and long-term fundamentally-based forecasts from Wood Mackenzie, Cambridge Energy Research Associates (CERA) and Petroleum Industry Research Associates (PIRA).

Gas Prices as of August 31, 2016 were used. High and low gas price sensitivities were performed by adjusting the growth rate up and down by 50 percent from the base natural gas cost forecast starting in year 2020.

Figure 2: Ventura Natural Gas Price Forecast and Sensitivities



10. Natural Gas Transportation Costs

Gas transportation variable costs include the gas transportation charges and the Fuel Lost & Unaccounted (FL&U) for all of the pipelines the gas flows through from the Ventura Hub to the generators facility. The FL&U charge is stated as a percentage of the gas expected to be consumed by the plant, effectively increasing the gas used to operate the plant, and is at the price of gas commodity being delivered to the plant. Table 13 contains gas transportation charges for generic thermal resources.

11. Natural Gas Demand Charges

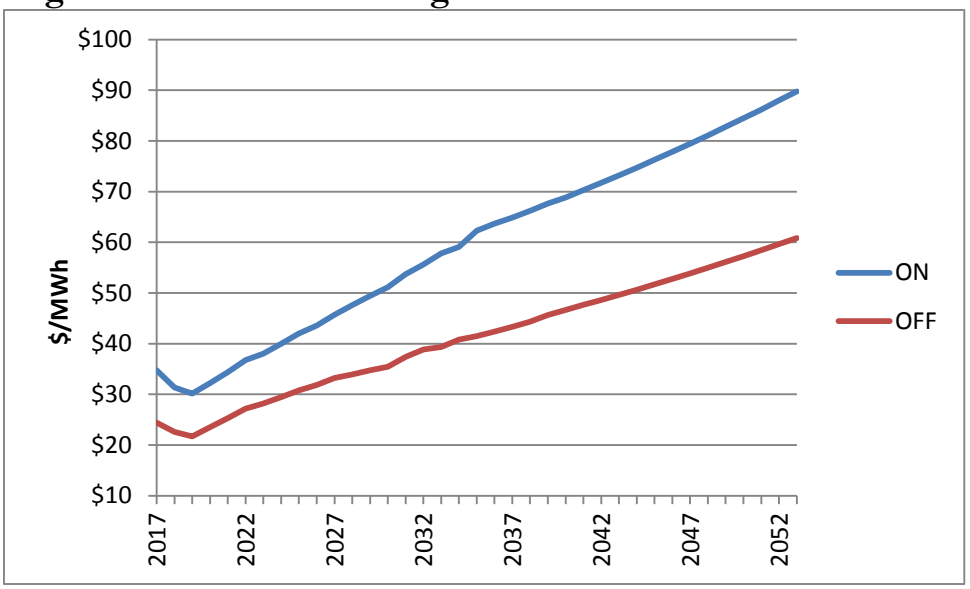
Gas demand charges are fixed annual payments applied to resources to guarantee that natural gas will be available (normally called "firm gas"). Typically, firm gas is obtained to meet the needs of the winter peak as enough gas is normally available during the summer. Table 13 contains gas demand charges for generic thermal resources.

12. Electric Power Market Prices

In addition to resources that exist within the NSP System, the Company is a participant in the MISO Market. Electric power market power prices are developed

using a blend of market information from the Intercontinental Exchange for near-term prices and long-term fundamentally-based forecasts from Wood Mackenzie, CERA and PIRA. Figure 3 below shows the market prices under zero cost CO_2 assumptions.

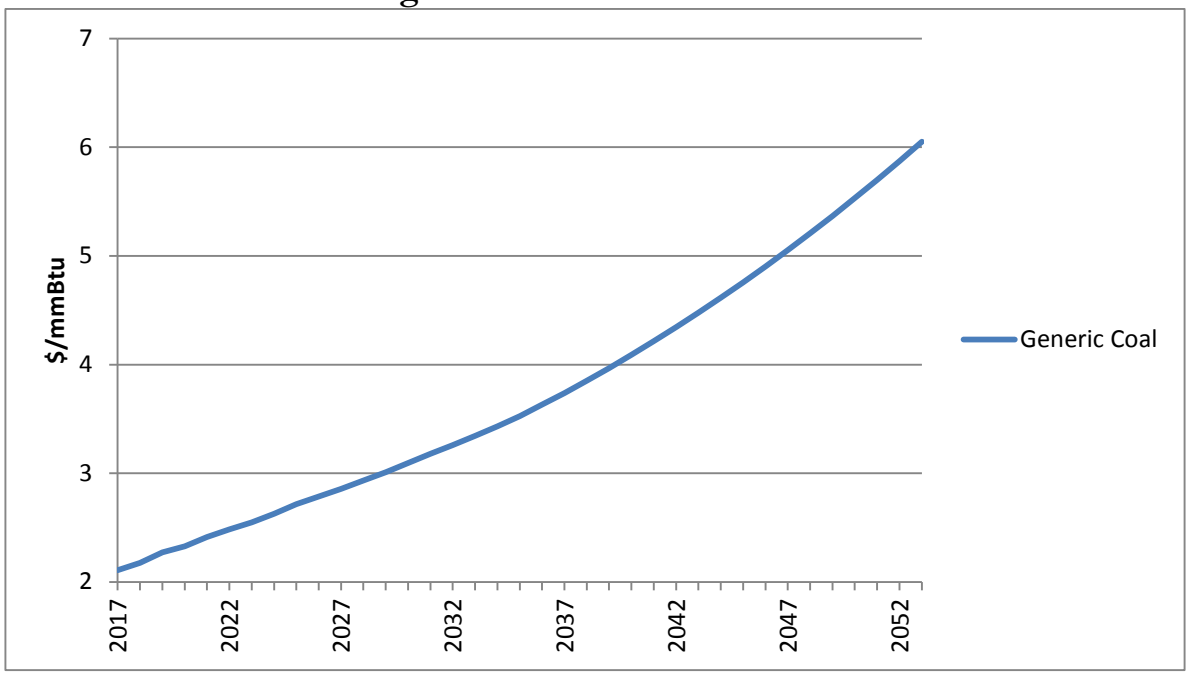
Figure 3: Minn Hub Average On and Off Peak Market Price



13. Coal Price Forecast

Coal price forecasts are developed using two major inputs: the current contract volumes and prices combined with current estimates of required spot volumes and prices. Typically coal volumes and prices are under contract on a plant by plant basis for a one to five year term with annual spot volumes filling the estimated fuel requirements of the coal plant based on recent unit dispatch. The spot coal price forecasts are developed from price forecasts provided by Wood Mackenzie, JD Energy, and John T Boyd Company, as well as price points from recent Request for Proposal (RFP) responses for coal supply. Layered on top of the coal prices are transportation charges, SO_2 costs, freeze control and dust suppressant, as required.

Figure 4: Coal Price Forecast



14. Surplus Capacity Credit

The credit is applied for all twelve months of each year and is priced at the avoided capacity cost of a generic combustion turbine.

Table 7: Surplus Capacity Credit

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
$/kW-mo	4.84	4.94	5.03	5.14	5.24	5.34	5.45	5.56	5.67	5.78

	2027	2028	2029	2030	2031	2032	2033	2034	2035
$/kW-mo	5.90	6.02	6.14	6.26	6.39	6.51	6.64	6.78	6.91

	2036	2037	2038	2039	2040	2041	2042	2043	2044
$/kW-mo	7.05	7.19	7.33	7.48	7.63	7.78	7.94	8.10	8.26

	2045	2046	2047	2048	2049	2050	2051	2052	2053
$/kW-mo	8.43	8.59	8.77	8.94	9.12	9.30	9.49	9.68	9.87

15. Transmission Delivery Costs

Generic 2x1 combined cycle (CC), generic combustion turbine (CT), generic wind and generic solar have assumed transmission delivery costs. The table below shows the transmission delivery costs on a $/kW basis. The CC and CT costs were developed

based on the average of several potential sites in the Minnesota. The general site locations were investigated by Transmission Access for impacts to the transmission grid and expected resulting upgrade costs

Table 8: Transmission Delivery Costs

	$/kw
CC	$ 429
CT	$ 158
Solar	$ 70
Wind	$ 96

16. Interconnection Costs

Estimates of interconnection costs of the generic resources were included in the capital cost estimates.

17. Effective Load Carrying Capability (ELCC) Capacity Credit for Wind Resources

Existing wind units is based on current MISO accreditation. New wind additions are given a capacity credit equal to 15.6 percent of their nameplate rating per MISO 2017/2018 Wind Capacity Report.

18. ELCC Capacity Credit for Utility Scale Solar Photovoltaic (PV) Resources

Utility scale generic solar PV additions used in modeling the alternative plans were given a capacity credit equal to 50 percent of the AC nameplate capacity. This value is the MISO proposed solar capacity credit for the 2016/2017 planning year.

19. Spinning Reserve Requirement

Spinning Reserve is the on-line reserve capacity that is synchronized to the grid to maintain system frequency stability during contingency events and unforeseen load swings. The level of spinning reserve modeled is 94 MW and is based on a 12 month rolling average of spinning reserves carried by the NSP System within MISO.

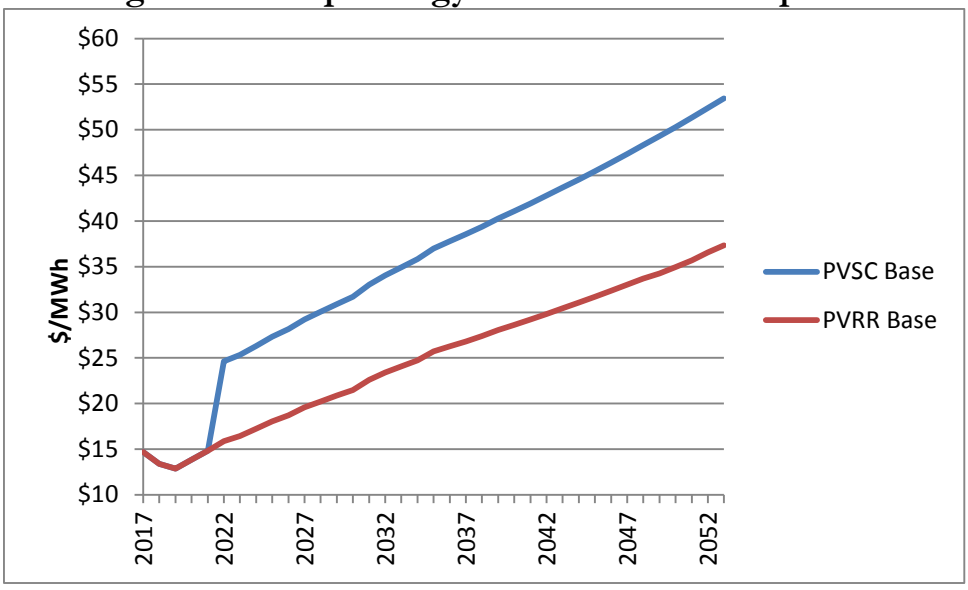
20. Emergency Energy Costs

Emergency Energy Costs were assigned in the Strategist model if there were not enough resources available to meet energy requirements. The cost was set at $500/MWh in 2014 escalating at inflation which is about $150/MWh more than an oil unit with an assumed heat rate of 15 mmBtu/MWh. Emergency energy occurs only in rare instances.

21. Dump Energy Credit

Dump energy occurs whenever generation cannot be reduced enough to balance with load, a situation that occurs when hourly modeled non-dispatchable renewable generation resources combined with minimum turn-down capabilities of must-run thermal units exceeds the Company's hourly load. Under base assumptions, it is assumed the dump energy can be sold into the MISO market for one-half of the all-hours average market price. The Dump Energy Credit is not used in sensitivities that model the Company's interactions with the MISO market on an hourly basis.

Figure 5: Dump Energy Credit Base Assumptions



22. Wind Integration Costs

Wind integration costs were priced based upon the results of the NSP System Wind Integration Cost Study. Wind integration costs contain five components:

1. MISO Contingency Reserves

2. MISO Regulating Reserves
3. MISO Revenue Sufficiency Guarantee Charges
4. Coal Cycling Costs
5. Gas Storage Costs

The complete Wind Integration Study is included in Appendix M of the 2015 Upper Midwest Resource Plan. The results of the study as used in Strategist are shown below. The Coal Cycling Costs are zero after 2040 because the last coal unit on the Company's system in the modeling retires in 2040.

Table 9: Wind Integration Costs

	Wind Integration $/MWh		Coal Cycling $/MWh	
	Existing Resources	New Resources	Existing Resources	New Resources
2016	0.41	0.42	0.75	1.26
2017	0.42	0.43	0.77	1.28
2018	0.43	0.44	0.78	1.31
2019	0.44	0.45	0.80	1.33
2020	0.44	0.46	0.82	1.36
2021	0.45	0.46	0.83	1.39
2022	0.46	0.47	0.85	1.41
2023	0.47	0.48	0.87	1.44
2024	0.48	0.49	0.88	1.47
2025	0.49	0.50	0.90	1.50
2026	0.50	0.51	0.92	1.53
2027	0.51	0.52	0.94	1.56
2028	0.52	0.53	0.96	1.59
2029	0.53	0.54	0.98	1.62
2030	0.54	0.55	1.00	1.66
2031	0.55	0.56	1.01	1.69
2032	0.56	0.58	1.04	1.72
2033	0.58	0.59	1.06	1.76
2034	0.59	0.60	1.08	1.79
2035	0.60	0.61	1.10	1.83
2036	0.61	0.62	1.12	1.87
2037	0.62	0.63	1.14	1.90
2038	0.64	0.65	1.17	1.94
2039	0.65	0.66	1.19	1.98
2040	0.66	0.67	1.21	2.02
2041	0.67	0.69	-	-
2042	0.69	0.70	-	-
2043	0.70	0.71	-	-
2044	0.72	0.73	-	-
2045	0.73	0.74	-	-
2046	0.74	0.76	-	-
2047	0.76	0.77	-	-
2048	0.77	0.79	-	-
2049	0.79	0.80	-	-
2050	0.81	0.82	-	-
2051	0.82	0.83	-	-
2052	0.84	0.85	-	-
2053	0.86	0.87	-	-

23. Wind Congestion Costs

Wind Congestion Costs were developed by Xcel Energy Transmission Planning group from PROMOD LMP simulations for years 2020 and 2025 using the MTEP 16 database. Based on those simulations, we included congestion cost of $2.71 per MWh in 2020, escalating at 2% thereafter, for all new wind including the 1,550MW proposed wind portfolio.

Table 10: Wind Congestion Costs

	Wind Congestion $/MWh	
	Existing Resources	New Resources
2017	-	-
2018	-	-
2019	-	2.66
2020	-	2.71
2021	-	2.77
2022	-	2.82
2023	-	2.88
2024	-	2.93
2025	-	2.99
2026	-	3.05
2027	-	3.11
2028	-	3.18
2029	-	3.24
2030	-	3.31
2031	-	3.37
2032	-	3.44
2033	-	3.51
2034	-	3.58
2035	-	3.65
2036	-	3.72
2037	-	3.80
2038	-	3.87
2039	-	3.95
2040	-	4.03
2041	-	4.11
2042	-	4.19
2043	-	4.28
2044	-	4.36
2045	-	4.45
2046	-	4.54
2047	-	4.63
2048	-	4.72
2049	-	4.81
2050	-	4.91
2051	-	5.01
2052	-	5.11
2053	-	5.21

24. Assumption and Sensitivity Descriptions

The modeling uses the following assumptions and sensitivities. The assumptions and sensitivities can be combined in one simulation result, for example all runs have either the PVSC Base assumption or the PVRR Base assumption. These Base Assumptions are combined with the Sensitivities to test the modeling results for critical variables.

Table 11: Assumption and Sensitivity Descriptions

Base Assumptions	Assumption Description
PVSC Base	All Strategist expansion plans are optimized under the PVSC Base assumption. PVSC Base includes the Regulated CO2 Cost of $21.50 per short ton in 2022, Externality Costs, Surplus Capacity Credit, and Dump Energy Credit. Optimized expansion plans were completed using the PVSC Base assumption and the PVSC Base assumption combined with the following sensitivities: Preferred Plan Renewables, 30-Year Life, and 20-Year Life.
PVRR Base	This assumption removes Regulated CO2 Costs, Externality Costs, and the Surplus Capacity Credit from the PVSC Base assumption.

Sensitivities	Sensitivity Description
Markets On	This sensitivity removes the Dump Energy Credit and models the Company's hourly purchases and sales in the MISO market.
Preferred Plan Renewables	This sensitivity adds 150MW of additional wind in 2026 and 1200MW of additional utility-scale solar by 2030.
No Dump Energy Credit	This sensitivity removes the Dump Energy Credit.
30-Year Life	This sensitivity extends the operating life of all the Company-owned projects from 25 years to 30 years in the Company's proposed wind portfolio.
20-Year Life	This sensitivity shortens the operating life of all the Company-owned projects from 25 years to 20 years in the Company's proposed wind portfolio.
+5% Cap Factor	This sensitivity increases the expected capacity factor by 5% for all wind projects in the Company's proposed wind portfolio.
-5% Cap Factor	This sensitivity decreases the expected capacity factor by 5% for all wind projects in the Company's proposed wind portfolio.
High On-Going Costs	This sensitivity increases the on-going costs of all the Company-owned projects in the Company's proposed wind portfolio. On-going O&M is increased 10% and on-going cap ex is increased 30%.
Low On-Going Costs	This sensitivity decreases the on-going costs of all the Company-owned projects in the Company's proposed wind portfolio. On-going O&M is decreased 10% and on-going cap ex is decreased 30%.
Low Gas Price	This sensitivity decreases the annual year-over-year percent change in natural gas prices by 50% starting in year 2020.
High Gas Price	This sensitivity increases the annual year-over-year percent change in natural gas prices by 50% starting in year 2020.
Zero CO2	This sensitivity removes the Regulated CO2 Cost. The Externality Cost for CO2 is included from 2017-2053.
Low CO2	This sensitivity changes the Regulated CO2 Cost from $21.50 per short ton in 2022 to $9 per short ton in 2022.
High CO2	This sensitivity changes the Regulated CO2 Cost from $21.50 per short ton in 2022 to $34 per short ton in 2022.

25. Distributed Generation and Community Solar Gardens

Consistent with the January 2016 Supplement of the 2016-2030 Upper Midwest Resource Plan, distributed solar additions have been accelerated by 422 MW in the pre-2021 timeframe in anticipation of the completion of several Solar*Reward Community projects and continuing our commitment to growing renewable resources. In addition, the costs and payment terms have been revised to payments for 20 years at 12¢/kWh.

26. Owned Unit Modeled Operating Characteristics and Costs

Company owned units were modeled based upon their tested operating characteristics and historical or projected costs. Below is a list of typical operating and cost inputs for each company owned resource.

a. Retirement Date
b. Maximum Capacity
c. Current Unforced Capacity (UCAP) Ratings
d. Minimum Capacity Rating
e. Seasonal Deration
f. Heat Rate Profiles
g. Variable O&M
h. Fixed O&M
i. Maintenance Schedule
j. Forced Outage Rate
k. Emission rates for SO_2, NO_x, CO_2, Mercury and particulate matter (PM)
l. Contribution to spinning reserve
m. Fuel prices
n. Fuel delivery charges

27. Thermal Power Purchase Agreement (PPA) Operating Characteristics and Costs

PPAs are modeled based upon their tested operating characteristics and contracted costs. Below is a list of typical operating and cost inputs for each thermal PPA.

a. Contract term
b. Maximum Capacity
c. Minimum Capacity Rating
d. Seasonal Deration
e. Heat Rate Profiles
f. Energy Schedule
g. Capacity Payments
h. Energy Payments
i. Maintenance Schedule
j. Forced Outage Rate
k. Emission rates for SO_2, NO_x, CO_2, Mercury and PM
l. Contribution to spinning reserve
m. Fuel prices
n. Fuel delivery charges

28. Renewable Energy PPAs and Owned Operating Characteristics and Costs

PPAs are modeled based upon their tested operating characteristics and contracted costs. Company owned units were modeled based upon their tested operating characteristics and historical or projected costs. Below is a list of typical operating and cost inputs for each renewable energy PPA and owned unit.

a. Contract term
b. Name Plate Capacity
c. Accredited Capacity
d. Annual Energy
e. Hourly Patterns
f. Capacity and Energy Payments
g. Integration Costs

Wind hourly patterns were developed through a "Typical Wind Year" process where individual months were selected from the years 2014-2016 to develop a typical year. Actual generation data from the selected months were used to develop the profiles for each wind farm. For farms where generation data was not complete or not available, data from nearby similar farms were used.

Solar hourly patterns were taken from the Fall 2013 and updated to reflect the ELCC as stated above. The fixed panel pattern is an average of the four orientations and three years (2008-2010) of data and single-axis tracking pattern is an average of three years of data.

29. Generic Assumptions

Generic resources were modeled based upon their expected operating characteristics and projected costs. Below is a list of typical operating and cost inputs for each generic resource.

<u>Thermal</u>

a. Retirement Date
b. Maximum Capacity
c. UCAP Ratings
d. Minimum Capacity Rating

e. Seasonal Deration
f. Heat Rate Profiles
g. Variable O&M
h. Fixed O&M
i. Maintenance Schedule
j. Forced Outage Rate
k. Emission rates for SO_2, NO_x, CO_2, Mercury and PM
l. Contribution to spinning reserve
m. Fuel prices
n. Fuel delivery charges

Renewable

a. Contract term
b. Name Plate Capacity
c. Accredited Capacity
d. Annual Energy
e. Hourly Patterns
f. Capacity and Energy Payments
g. Integration Costs

Tables 12-14 below show the assumptions for the generic thermal and renewable resources.

Table 12: Thermal Generic Information (Costs in 2016 Dollars)

Resource	Coal	Coal w/ Seq	2x1 CC	1x1 CC	CT	Small CT	Biomass
Nameplate Capacity (MW)	511	511	778.3	291.1	229.9	103.4	50
Summer Peak Capacity with Ducts (MW)	NA	NA	766.3	NA	NA	NA	NA
Summer Peak Capacity without Ducts (MW	485	485	649.8	290.2	226.1	100.8	50
Cooling Type	Dry	Dry	Dry	Dry	NA	Wet	Wet
Capital Cost ($/kw)	3,758	5,487	963	1,212	626	1,572	4,731
Electric Transmission Delivery ($/kw)	NA	NA	429	NA	158	NA	NA
Gas Demand ($/kw-yr)	0	0	8.96	11.98	0	0	0
Book life	30	30	40	40	30	30	30
Fixed O&M Cost ($000/yr)	16,973	25,546	7,813	4,299	614	886	5,382
Variable O&M Cost ($/MWh)	2.92	11.00	3.20	1.82	2.36	1.88	4.88
Ongoing Capital Expenditures ($/kw-yr)	9.96	24.31	4.50	4.97	6.11	1.93	14.67
Heat Rate with Duct Firing (btu/kWh)	NA	NA	7725	NA	NA	NA	NA
Heat Rate 100% Loading (btu/kWh)	9,156	12,096	6,822	7,830	9,942	8,867	14,421
Heat Rate 75% Loading (btu/kWh)	9,190	12,565	6,905	8,010	11,048	9,688	14,580
Heat Rate 50% Loading (btu/kWh)	9,710	13,600	6,943	8,583	14,601	11,161	15,570
Heat Rate 25% Loading (btu/kWh)	11,245	17,140	7,583	9,798	NA	15,067	18,650
Forced Outage Rate	6%	7%	3%	3%	3%	2%	4%
Maintenance (weeks/year)	2	5	5	4	2	2	7
CO2 Emissions (lbs/MMBtu)	216	9	118	118	118	118	211
SO2 Emissions (lbs/MWh)	0.447	0.371	0.005	0.005	0.007	0.007	0.577
NOx Emissions (lbs/MWh)	0.45	0.62	0.06	0.05	0.30	0.08	1.01
PM10 Emissions (lbs/MWh)	0.14	0.14	0.01	0.01	0.01	0.01	0.43
Mercury Emissions (lbs/Million MWh)	0.00007	0.00010	0.00000	0.00000	0.00000	0.00000	0.00017

Table 13: Renewable Generic Information (Costs in 2016 Dollars)

Resource	PTC Wind	Non-PTC Wind	30% ITC Solar	10% ITC Solar
Nameplate Capacity (MW)	200	200	50	50
ELCC Capacity Credit (MW)	29.6	29.6	25	25
Capital Cost ($/kw)	$1,312	$1,312	$1,094	$1,094
Electric Transmission Delivery ($/kw)	$96	$96	$70	$70
Book life	25	25	25	25
O&M Cost ($000/yr)	$4,617	$4,617	$471	$471
Ongoing Capital Expenditures ($000/yr)	$1,979	$1,979	$0	$0
Land Lease Payments ($000/yr)	$1,131	$1,131	$0	$0

Table 14: Renewable Generic ECC Costs - $/MWh

Year	PTC Wind	Non-PTC Wind	30% ITC Solar	10% ITC Solar
2019	14			
2020	15		44	
2021	15		45	
2022	15		46	
2023	16		47	
2024	16		48	
2025	16	38	48	52
2026	17	39	49	53
2027	17	40	50	54
2028	17	40	51	56
2029	18	41	52	57
2030	18	42	54	58
2031	18	43	55	59
2032	19	44	56	60
2033	19	45	57	61
2034	19	46	58	63
2035	20	47	59	64
2036	20	47	60	65
2037	21	48	61	66
2038	21	49	63	68
2039	22	50	64	69
2040	22	51	65	70
2041	22	52	67	72
2042	23	53	68	73
2043	23	54	69	75
2044		56	71	76
2045		57		78
2046		58		79
2047		59		81
2048		60		83
2049		61		84

II. Strategist Modeling Outputs

1. Savings by Project

The wind portfolio projects were run in isolation to show the benefits by project. Figure 1 and Table 1 show the incremental savings by project under PVSC Base Assumptions. Figure 2 and Table 2 show the incremental savings by project under PVRR Base Assumptions. The sum of the individual projects annual net costs

(savings) when summed do not equal the net annual net costs (savings) of the entire 1,550MW proposed portfolio.

Figure 10: Annual PVSC Net Costs (Savings) by Project in $millions

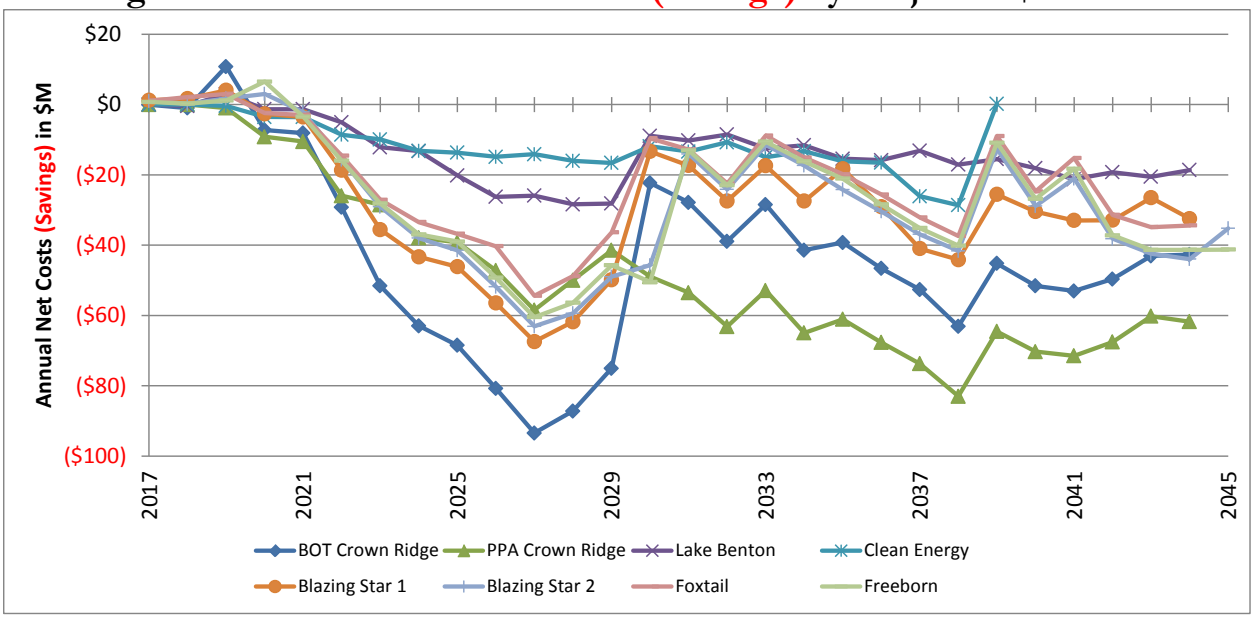


Table 1: Annual PVSC Net Costs (Savings) by Project in $millions

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
BOT Crown Ridge	(0)	(1)	11	(7)	(8)	(29)	(52)	(63)	(68)	(81)	(93)	(87)	(75)	(22)	(28)
PPA Crown Ridge	0	0	(1)	(9)	(11)	(26)	(29)	(38)	(39)	(47)	(58)	(50)	(41)	(49)	(54)
Lake Benton	0	(0)	3	(1)	(1)	(5)	(12)	(13)	(20)	(26)	(26)	(28)	(28)	(9)	(10)
Clean Energy	0	0	(0)	(4)	(4)	(9)	(10)	(13)	(14)	(15)	(14)	(16)	(17)	(12)	(13)
Blazing Star 1	1	2	4	(3)	(4)	(19)	(36)	(43)	(46)	(56)	(67)	(62)	(50)	(13)	(17)
Blazing Star 2	1	0	2	3	(2)	(16)	(29)	(38)	(41)	(52)	(63)	(59)	(49)	(46)	(14)
Foxtail	1	2	3	(2)	(3)	(15)	(27)	(33)	(37)	(40)	(54)	(49)	(36)	(10)	(13)
Freeborn	1	0	1	7	(3)	(16)	(28)	(37)	(39)	(49)	(60)	(56)	(46)	(50)	(13)

	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
BOT Crown Ridge	(39)	(28)	(41)	(39)	(47)	(53)	(63)	(45)	(52)	(53)	(50)	(43)	(43)	
PPA Crown Ridge	(63)	(53)	(65)	(61)	(68)	(74)	(83)	(65)	(70)	(71)	(68)	(60)	(62)	
Lake Benton	(9)	(12)	(12)	(15)	(16)	(13)	(17)	(15)	(18)	(21)	(19)	(21)	(19)	
Clean Energy	(11)	(15)	(13)	(16)	(17)	(26)	(29)	0						
Blazing Star 1	(27)	(17)	(27)	(18)	(29)	(41)	(44)	(26)	(30)	(33)	(33)	(27)	(32)	
Blazing Star 2	(24)	(11)	(17)	(24)	(30)	(37)	(42)	(13)	(29)	(21)	(38)	(42)	(44)	(35)
Foxtail	(22)	(9)	(15)	(20)	(26)	(32)	(37)	(9)	(25)	(15)	(31)	(35)	(34)	
Freeborn	(23)	(11)	(16)	(21)	(28)	(35)	(40)	(11)	(27)	(18)	(37)	(41)	(41)	(41)

Figure 2: Annual PVRR Net Costs (Savings) by Project in $millions

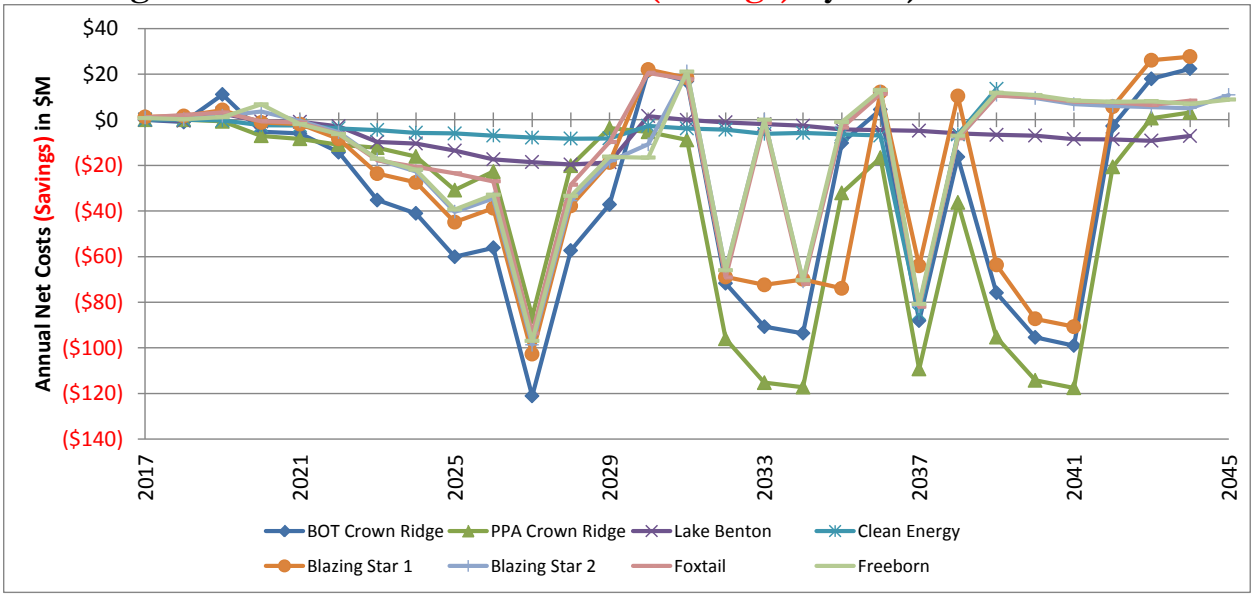


Table 2: Annual PVRR Net Costs (Savings) by Project in $millions

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
BOT Crown Ridge	(0)	(1)	11	(5)	(6)	(14)	(35)	(41)	(60)	(56)	(121)	(57)	(37)	21	17
PPA Crown Ridge	0	0	(1)	(7)	(8)	(11)	(12)	(16)	(31)	(23)	(86)	(20)	(4)	(5)	(9)
Lake Benton	0	(0)	3	(1)	(1)	(3)	(10)	(10)	(14)	(17)	(19)	(20)	(19)	2	(0)
Clean Energy	0	0	(0)	(2)	(2)	(4)	(5)	(6)	(6)	(7)	(8)	(8)	(8)	(3)	(4)
Blazing Star 1	1	2	4	(1)	(2)	(8)	(24)	(27)	(45)	(39)	(103)	(38)	(19)	22	18
Blazing Star 2	1	0	2	4	(1)	(5)	(17)	(23)	(40)	(35)	(99)	(35)	(18)	(11)	21
Foxtail	1	2	3	(1)	(1)	(6)	(18)	(21)	(24)	(27)	(94)	(28)	(10)	21	18
Freeborn	1	0	1	7	(2)	(6)	(17)	(22)	(39)	(33)	(97)	(33)	(16)	(17)	21

	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
BOT Crown Ridge	(72)	(91)	(94)	(10)	4	(88)	(16)	(76)	(95)	(99)	(3)	18	22	
PPA Crown Ridge	(96)	(115)	(117)	(32)	(17)	(109)	(36)	(95)	(114)	(118)	(21)	1	3	
Lake Benton	(1)	(2)	(3)	(4)	(5)	(5)	(6)	(7)	(7)	(8)	(9)	(9)	(7)	
Clean Energy	(4)	(6)	(6)	(6)	(7)	(85)	(6)	14						
Blazing Star 1	(69)	(72)	(70)	(74)	12	(64)	10	(64)	(87)	(91)	6	26	28	
Blazing Star 2	(66)	(0)	(71)	(3)	12	(82)	(8)	11	10	7	6	6	5	11
Foxtail	(69)	(1)	(72)	(3)	11	(82)	(8)	10	10	8	8	6	8	
Freeborn	(66)	0	(70)	(1)	13	(81)	(7)	12	11	8	8	8	7	9

2. Expansion Plans

The Reference Case is represented as Table 3. The proposed 1,550MW wind portfolio under Base Assumptions is represented as Table 4 which includes no other new wind or utility-scale solar additions after 2020. The proposed 1,550MW wind portfolio under the Preferred Plan Renewables sensitivity is represented as Table 5 which includes 150MW of new wind and 1,200MW of new utility-scale solar by 2030 in addition to the 1,550MW wind portfolio proposal.

Table 3: Reference Case Expansion Plan

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Large Solar	262	-	-	-	-	-	-	-	-	-	-	-	-	-
Generic Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wind Projects	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CT	-	-	232	-	-	-	-	-	1,150	460	-	-	-	-
CC	-	-	345	-	-	-	-	-	-	-	778	-	-	-
Sherco CC	-	-	-	-	-	-	-	-	-	-	786	-	-	-

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Large Solar	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generic Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wind Projects	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CT	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	778	778	-	778	778	-	778	-	778	-	778	-	-	-
Sherco CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	2045	2046	2047	2048	2049	2050	2051	2052	2053	Total
Large Solar	-	-	-	-	-	-	-	-	-	262
Generic Wind	-	-	-	-	-	-	-	-	-	-
Wind Projects	-	-	-	-	-	-	-	-	-	-
CT	-	-	230	-	230	230	-	-	-	2,532
CC	-	-	-	778	-	-	-	-	-	7,347
Sherco CC	-	-	-	-	-	-	-	-	-	786

Table 4: Wind Portfolio Expansion Plan

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Large Solar	262	-	-	-	-	-	-	-	-	-	-	-	-	-
Generic Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wind Projects	-	-	1,150	400	-	-	-	-	-	-	-	-	-	-
CT	-	-	232	-	-	-	-	-	920	460	230	460	-	-
CC	-	-	345	-	-	-	-	-	-	-	-	-	-	-
Sherco CC	-	-	-	-	-	-	-	-	-	-	786	-	-	-

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Large Solar	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generic Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wind Projects	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CT	-	230	-	-	-	-	-	-	-	-	-	-	-	-
CC	778	-	778	-	1,556	-	-	778	778	-	778	-	-	-
Sherco CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	2045	2046	2047	2048	2049	2050	2051	2052	2053	Total
Large Solar	-	-	-	-	-	-	-	-	-	262
Generic Wind	-	-	-	-	-	-	-	-	-	-
Wind Projects	-	-	-	-	-	-	-	-	-	1,550
CT	-	-	-	-	-	-	-	-	-	2,532
CC	-	778	-	-	778	-	-	-	-	7,347
Sherco CC	-	-	-	-	-	-	-	-	-	786

Table 5: Wind Portfolio Expansion Plan with Preferred Plan Renewables

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Large Solar	262	-	-	-	-	300	100	200	100	100	-	400	-	-
Generic Wind	-	-	-	-	-	-	-	-	-	150	-	-	-	-
Wind Projects	-	-	1,150	400	-	-	-	-	-	-	-	-	-	-
CT	-	-	232	-	-	-	-	-	460	460	230	230	-	-
CC	-	-	345	-	-	-	-	-	-	-	-	-	-	-
Sherco CC	-	-	-	-	-	-	-	-	-	-	786	-	-	-

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Large Solar	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generic Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wind Projects	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CT	-	460	-	-	230	230	-	-	-	-	-	-	-	-
CC	778	-	-	778	778	-	778	-	778	-	778	-	-	-
Sherco CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	2045	2046	2047	2048	2049	2050	2051	2052	2053	Total
Large Solar	-	-	-	-	-	-	-	-	-	1,462
Generic Wind	-	-	-	-	-	-	-	-	-	150
Wind Projects	-	-	-	-	-	-	-	-	-	1,550
CT	-	-	-	-	-	-	-	-	-	2,532
CC	778	-	-	778	-	-	778	-	-	7,347
Sherco CC	-	-	-	-	-	-	-	-	-	786

Final Consolidated NSP Wind Self-Build & BOT Projects
Revenue Requirements and LCOE as of March 13, 2017
In Millions

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
Self-Builds																																														
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	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
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Costs (if PPA less than 25 years)																																													
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Total Revenue Requirements																																													
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Jurisdictional Impact of Proposed Wind Additions - System Resource

Strategist Reference Case: Full Optimization with Solar Gardens/DG and Sherco Retirements. SHC CC selected in 2027. Energy Market Sales to MISO modeled.

Revenue Requirements, $M

	2017	2018	2019	2020	2021	2022
Strategist Capacity Costs	1,301	1,245	1,327	1,290	1,398	1,384
New Ownership Wind, 1250MW	0	0	0	0	0	0
Production Costs	1,179	1,170	1,205	1,253	1,334	1,396
New PPA Wind, 400MW	0	0	0	0	0	0
MISO Purchases	46	56	52	55	50	41
MISO Sales	-153	-128	-116	-140	-157	-175
Wind Congestion Costs*	0	0	0	0	0	0
Wind Integration Costs	4	4	4	4	4	4
Wind Coal Cycling Costs	7	7	7	7	7	7
Net Costs	2,384	2,354	2,479	2,468	2,636	2,656

MN Jur Allocator:

	2017	2018	2019	2020	2021	2022
73.44%	955	914	975	947	1,027	1,016
73.45%	-	-	-	-	-	-
73.21%	863	857	882	917	977	1,022
73.21%	-	-	-	-	-	-
73.21%	34	41	38	40	37	30
73.21%	(112)	(94)	(85)	(103)	(115)	(128)
73.21%	-	-	-	-	-	-
73.21%	3	3	3	3	3	3
73.45%	5	5	5	5	5	5
	1,748	1,726	1,818	1,810	1,933	1,948

* Congestion Costs reflected as cost adder to wind generation rather than lower generator LMP. Only modeled on new wind.

Strategist Wind Portfolio Case: Same as **Reference Case** except adds 1550MW of wind projects. 1150MW Owned and 400MW PPA. SHC CC selected in 2027. Energy Market Sales to MISO modeled.

Revenue Requirements, $M

	2017	2018	2019	2020	2021	2022
Strategist Capacity Costs	1,301	1,245	1,327	1,290	1,398	1,384
New Ownership Wind, 1150MW	4	3	31	74	93	73
Production Costs	1,179	1,170	1,199	1,212	1,277	1,332
New PPA Wind, 400MW	0	0	2	24	24	25
MISO Purchases	46	56	51	30	24	19
MISO Sales	-153	-128	-120	-195	-236	-259
Wind Congestion Costs*	0	0	1	15	19	20
Wind Integration Costs	4	4	4	6	7	7
Wind Coal Cycling Costs	7	7	7	14	17	17
Net Costs	2,388	2,357	2,502	2,470	2,624	2,617

MN Jur Allocator:

	2017	2018	2019	2020	2021	2022
73.44%	955	914	975	947	1,027	1,016
73.45%	3	2	23	55	69	54
73.21%	863	857	878	887	935	975
73.21%	-	-	1	17	18	18
73.21%	34	41	37	22	18	14
73.21%	(112)	(94)	(88)	(143)	(173)	(190)
73.21%	0	0	1	11	14	14
73.21%	3	3	3	5	5	5
73.45%	5	5	5	10	12	12
	1,751	1,728	1,835	1,811	1,924	1,919

* Congestion Costs reflected as cost adder to wind generation rather than lower generator LMP. Only modeled on new wind.

Delta

		2017	2018	2019	2020	2021	2022
Delta Modeled Costs		4.0	2.8	23.2	1.2	-12.4	-39.2
	Wind Coal Cycling	0	0	0	7	9	10
Delta Costs		4.0	2.8	22.8	-6.0	-21.8	-48.8

		2017	2018	2019	2020	2021	2022
Delta Modeled Costs		2.9	2.1	17.1	1.1	-8.8	-28.5
	Wind Coal Cycling	0	0	0	5	7	7
Delta Costs		2.9	2.1	16.8	-4.2	-15.7	-35.5

NPV, $M

Delta Modeled Costs	-1,588
Wind Coal Cycling	118
Delta Costs	-1,706

Incremental Revenue Requirement Impact Proposed Portfolio, $M

	2017	2018	2019	2020	2021	2022
New Ownership Wind, 1250MW	4.0	2.8	30.6	74.3	93.3	73.1
New PPA Wind, 400MW	0.0	0.0	2.0	23.8	24.2	24.6
Production Cost Savings	0.0	0.0	(5.6)	(41.4)	(57.4)	(63.7)
MISO Purchases	0.0	0.0	(1.0)	(25.4)	(26.0)	(21.6)
MISO Sales	0.0	0.0	(4.4)	(54.6)	(78.4)	(83.9)
Wind Congestion Costs*	0.0	0.0	1.1	14.9	19.3	19.7
Wind Integration Costs	0.0	0.0	0.1	2.4	3.1	3.2
Wind Coal Cycling Costs	0.0	0.0	0.4	7.2	9.4	9.6
Net Costs	**4.0**	**2.8**	**23.2**	**1.2**	**(12.4)**	**(39.2)**

* Congestion Costs reflected as cost adder to wind generation rather than lower generator LMP.

2017 Revenue Requirement Impact - System Resource

Strategist Reference Case: Full Optimization with Solar Gardens/DG and Sherco Retirements. SHC CC selected in 2027. Energy Market Sales to MISO modeled.

Revenue Requirements, $M

	2017	MN Jur Allocator	Class Alloc	2017 MN Jur	Res	Commercial Non Demand	C&I Demand	Ltg
Strategist Capacity Costs	1,301	73.44%	D10S	955	333	36	587	0
New Ownership Wind, 1250MW	0	73.45%	D10S & E8760	-	0	0	0	0
Production Costs	1,179	73.21%	E8760	863	252	29	578	4
New PPA Wind, 400MW	0	73.21%	E8760	-	0	0	0	0
MISO Purchases	46	73.21%	E8760	34	10	1	23	0
MISO Sales	-153	73.21%	E8760	(112)	-33	-4	-75	0
Wind Congestion Costs*	0	73.21%	E8760	-	0	0	0	0
Wind Integration Costs	4	73.21%	E8760	3	1	0	2	0
Wind Coal Cycling Costs	7	73.45%	D10S& E8760	5	2	0	3	0
Net Costs	2,384			1,748	565	62	1,118	3

* Congestion Costs reflected as cost adder to wind generation rather than lower generator LMP. Only modeled on new wind.

Strategist Wind Portfolio Case: Same as **Reference Case** except adds 1550MW of wind projects. 1150MW

Revenue Requirements, $M

	2017	MN Jur Allocator	Class Alloc	2017 MN Jur	Res	Commercial Non Demand	C&I Demand	Ltg
Strategist Capacity Costs	1,301	73.44%	D10S	955	333	36	587	0
New Ownership Wind, 1150MW	4	73.45%	D10S & E8760	3	1	0	2	0
Production Costs	1,179	73.21%	E8760	863	252	29	578	4
New PPA Wind, 400MW	0	73.21%	E8760	0	0	0	0	0
MISO Purchases	46	73.21%	E8760	34	10	1	23	0
MISO Sales	-153	73.21%	E8760	-112	-33	-4	-75	0
Wind Congestion Costs*	0	73.21%	E8760	0	0	0	0	0
Wind Integration Costs	4	73.21%	E8760	3	1	0	2	0
Wind Coal Cycling Costs	7	73.45%	D10S & E8760	5	2	0	3	0
Net Costs	2,388			1,751	566	62	1,120	3

* Congestion Costs reflected as cost adder to wind generation rather than lower generator LMP. Only modeled on new wind.

Delta

Delta Modeled Costs	4.0			2.9	0.9	0.1	2.0	0.0
Wind Coal Cycling	0			0	0	0	0	0
Delta Costs	4.0			2.9	0.9	0.1	2.0	0.0

Estimated Bill Impacts					
Annual kWh Sales	30,198,398,036	8,529,184,811	902,953,534	20,601,575,792	164,683,899
Impact per kWh	0.000097	0.000101	0.000109	0.000095	0.000072
Average kWh per Month per Cust	1,934	624	865	35,925	502
Average Monthly Bill Impact		**$0.06**	**$0.09**	**$3.41**	**$0.04**

2018 Revenue Requirement Impact - System Resource

Strategist Reference Case: Full Optimization with Solar Gardens/DG and Sherco Retirements. SHC CC selected in 2027. Energy Market Sales to MISO modeled.

Revenue Requirements, $M

	2018	MN Jur Allocator	Class Alloc	2018 MN Jur	Res	Commercial Non Demand	C&I Demand	Ltg
Strategist Capacity Costs	1,245	73.44%	D10S	914	319	34	562	0
New Ownership Wind, 1250MW	0	73.45%	D10S & E8760	0	0	0	0	0
Production Costs	1,170	73.21%	E8760	857	250	29	574	4
New PPA Wind, 400MW	0	73.21%	E8760	0	0	0	0	0
MISO Purchases	56	73.21%	E8760	41	12	1	28	0
MISO Sales	-128	73.21%	E8760	-94	-27	-3	-63	0
Wind Congestion Costs*	0	73.21%	E8760	0	0	0	0	0
Wind Integration Costs	4	73.21%	E8760	3	1	0	2	0
Wind Coal Cycling Costs	7	73.45%	D10S& E8760	5	2	0	3	0
Net Costs	2,354			1,726	556	61	1,106	3

* Congestion Costs reflected as cost adder to wind generation rather than lower generator LMP. Only modeled on new wind.

Strategist Wind Portfolio Case: Same as **Reference Case** except adds 1550MW of wind projects. 1150MW

Revenue Requirements, $M

	2018	MN Jur Allocator	Class Alloc	2018 MN Jur	Res	Commercial Non Demand	C&I Demand	Ltg
Strategist Capacity Costs	1,245	73.44%	D10S	914	319	34	562	0
New Ownership Wind, 1150MW	3	73.45%	D10S & E8760	2	1	0	1	0
Production Costs	1,170	73.21%	E8760	857	250	29	574	4
New PPA Wind, 400MW	0	73.21%	E8760	0	0	0	0	0
MISO Purchases	56	73.21%	E8760	41	12	1	28	0
MISO Sales	-128	73.21%	E8760	-94	-27	-3	-63	0
Wind Congestion Costs*	0	73.21%	E8760	0	0	0	0	0
Wind Integration Costs	4	73.21%	E8760	3	1	0	2	0
Wind Coal Cycling Costs	7	73.45%	D10S & E8760	5	2	0	3	0
Net Costs	2,357			1,728	557	61	1,107	3

* Congestion Costs reflected as cost adder to wind generation rather than lower generator LMP. Only modeled on new wind.

Delta

Delta Modeled Costs	2.8		2.1	0.6	0.1	1.4	0.0
Wind Coal Cycling	0		0	0	0	0	0
Delta Costs	2.8		2.1	0.6	0.1	1.4	0.0

Estimated Bill Impacts					
Annual kWh Sales	30,058,398,474	8,444,795,893	905,934,815	20,547,544,723	160,123,042
Impact per kWh	0.000068	0.000072	0.000076	0.000067	0.000052
Average kWh per Month per Cust	1,910	613	861	35,575	486
Average Monthly Bill Impact		**$0.04**	**$0.07**	**$2.38**	**$0.03**

2019 Revenue Requirement Impact - System Resource

Strategist Reference Case: Full Optimization with Solar Gardens/DG and Sherco Retirements. SHC CC selected in 2027. Energy Market Sales to MISO modeled.

Revenue Requirements, $M

	2019	MN Jur Allocator	Class Alloc	2019 MN Jur	Res	Commercial Non Demand	C&I Demand	Ltg
Strategist Capacity Costs	1,327	73.44%	D10S	975	340	36	599	0
New Ownership Wind, 1250MW	0	73.45%	D10S & E8760	-	0	0	0	0
Production Costs	1,205	73.21%	E8760	882	258	29	591	4
New PPA Wind, 400MW	0	73.21%	E8760	-	0	0	0	0
MISO Purchases	52	73.21%	E8760	38	11	1	26	0
MISO Sales	-116	73.21%	E8760	(85)	-25	-3	-57	0
Wind Congestion Costs*	0	73.21%	E8760	-	0	0	0	0
Wind Integration Costs	4	73.21%	E8760	3	1	0	2	0
Wind Coal Cycling Costs	7	73.45%	D10S& E8760	5	2	0	3	0
Net Costs	2,479			1,818	586	64	1,163	4

* Congestion Costs reflected as cost adder to wind generation rather than lower generator LMP. Only modeled on new wind.

Strategist Wind Portfolio Case: Same as **Reference Case** except adds 1550MW of wind projects. 1150MW

Revenue Requirements, $M

	2019	MN Jur Allocator	Class Alloc	2019 MN Jur	Res	Commercial Non Demand	C&I Demand	Ltg
Strategist Capacity Costs	1,327	73.44%	D10S	975	340	36	599	0
New Ownership Wind, 1150MW	31	73.45%	D10S & E8760	23	7	1	15	0
Production Costs	1,199	73.21%	E8760	878	257	29	588	4
New PPA Wind, 400MW	2	73.21%	E8760	1	0	0	1	0
MISO Purchases	51	73.21%	E8760	37	11	1	25	0
MISO Sales	-120	73.21%	E8760	(88)	-26	-3	-59	0
Wind Congestion Costs*	1	73.21%	E8760	1	0	0	1	0
Wind Integration Costs	4	73.21%	E8760	3	1	0	2	0
Wind Coal Cycling Costs	7	73.45%	D10S & E8760	5	2	0	3	0
Net Costs	2,502			1,835	591	65	1,175	4

* Congestion Costs reflected as cost adder to wind generation rather than lower generator LMP. Only modeled on new wind.

Delta

Delta Modeled Costs	23.2		17.1	5.1	0.6	11.4	0.1
Wind Coal Cycling	0		0	0	0	0	0
Delta Costs	22.8		16.8	5.0	0.6	11.2	0.1

Estimated Bill Impacts					
Annual kWh Sales	30,183,606,357	8,377,368,089	907,826,101	20,743,453,301	154,958,866
Impact per kWh	0.000566	0.000605	0.000633	0.000549	0.000433
Average kWh per Month per Cust	1,905	604	857	35,681	468
Average Monthly Bill Impact		**$0.37**	**$0.54**	**$19.57**	**$0.20**

2020 Revenue Requirement Impact - System Resource

Strategist Reference Case: Full Optimization with Solar Gardens/DG and Sherco Retirements. SHC CC selected in 2027. Energy Market Sales to MISO modeled.

Revenue Requirements, $M

	2020	MN Jur Allocator	Class Alloc	2020 MN Jur	Res	Commercial Non Demand	C&I Demand	Ltg
Strategist Capacity Costs	1,290	73.44%	D10S	947	330	35	582	0
New Ownership Wind, 1250MW	0	73.45%	D10S & E8760	-	0	0	0	0
Production Costs	1,253	73.21%	E8760	917	268	31	615	4
New PPA Wind, 400MW	0	73.21%	E8760	-	0	0	0	0
MISO Purchases	55	73.21%	E8760	40	12	1	27	0
MISO Sales	-140	73.21%	E8760	(103)	-30	-3	-69	0
Wind Congestion Costs*	0	73.21%	E8760	-	0	0	0	0
Wind Integration Costs	4	73.21%	E8760	3	1	0	2	0
Wind Coal Cycling Costs	7	73.45%	D10S& E8760	5	2	0	3	0
Net Costs	2,468			1,810	583	64	1,160	4

* Congestion Costs reflected as cost adder to wind generation rather than lower generator LMP. Only modeled on new wind.

Strategist Wind Portfolio Case: Same as **Reference Case** except adds 1550MW of wind projects. 1150MW

Revenue Requirements, $M

	2020	MN Jur Allocator	Class Alloc	2020 MN Jur	Res	Commercial Non Demand	C&I Demand	Ltg
Strategist Capacity Costs	1,290	73.44%	D10S	947	330	35	582	0
New Ownership Wind, 1150MW	74	73.45%	D10S & E8760	55	16	2	36	0
Production Costs	1,212	73.21%	E8760	887	259	30	594	4
New PPA Wind, 400MW	24	73.21%	E8760	17	5	1	12	0
MISO Purchases	30	73.21%	E8760	22	6	1	15	0
MISO Sales	-195	73.21%	E8760	(143)	-42	-5	-96	-1
Wind Congestion Costs*	15	73.21%	E8760	11	3	0	7	0
Wind Integration Costs	6	73.21%	E8760	5	1	0	3	0
Wind Coal Cycling Costs	14	73.45%	D10S & E8760	10	3	0	7	0
Net Costs	2,470			1,811	583	64	1,160	4

* Congestion Costs reflected as cost adder to wind generation rather than lower generator LMP. Only modeled on new wind.

Delta

Delta Modeled Costs	1.2		1.1	0.6	0.1	0.5	0.0
Wind Coal Cycling	7		5	2	0	3	0
Delta Costs	-6.0		-4.2	-1.1	-0.1	-3.0	0.0

Estimated Bill Impacts					
Annual kWh Sales	30,254,100,951	8,301,292,835	915,907,193	20,886,918,947	149,981,975
Impact per kWh	0.000036	0.000072	0.000061	0.000022	-0.000110
Average kWh per Month per Cust	1,896	594	859	35,672	451
Average Monthly Bill Impact		**$0.04**	**$0.05**	**$0.78**	**-$0.05**

2021 Revenue Requirement Impact - System Resource

Strategist Reference Case: Full Optimization with Solar Gardens/DG and Sherco Retirements. SHC CC selected in 2027. Energy Market Sales to MISO modeled.

Revenue Requirements, $M

	2021	MN Jur Allocator	Class Alloc	2021 MN Jur	Res	Commercial Non Demand	C&I Demand	Ltg
Strategist Capacity Costs	1,398	73.44%	D10S	1,027	358	38	631	0
New Ownership Wind, 1250MW	0	73.45%	D10S & E8760	-	0	0	0	0
Production Costs	1,334	73.21%	E8760	977	286	33	655	4
New PPA Wind, 400MW	0	73.21%	E8760	-	0	0	0	0
MISO Purchases	50	73.21%	E8760	37	11	1	25	0
MISO Sales	-157	73.21%	E8760	(115)	-34	-4	-77	0
Wind Congestion Costs*	0	73.21%	E8760	-	0	0	0	0
Wind Integration Costs	4	73.21%	E8760	3	1	0	2	0
Wind Coal Cycling Costs	7	73.45%	D10S& E8760	5	2	0	3	0
Net Costs	2,636			1,933	623	68	1,238	4

* Congestion Costs reflected as cost adder to wind generation rather than lower generator LMP. Only modeled on new wind.

Strategist Wind Portfolio Case: Same as **Reference Case** except adds 1550MW of wind projects. 1150MW

Revenue Requirements, $M

	2021	MN Jur Allocator	Class Alloc	2021 MN Jur	Res	Commercial Non Demand	C&I Demand	Ltg
Strategist Capacity Costs	1,398	73.44%	D10S	1,027	358	38	631	0
New Ownership Wind, 1150MW	93	73.45%	D10S & E8760	69	20	2	46	0
Production Costs	1,277	73.21%	E8760	935	273	31	626	4
New PPA Wind, 400MW	24	73.21%	E8760	18	5	1	12	0
MISO Purchases	24	73.21%	E8760	18	5	1	12	0
MISO Sales	-236	73.21%	E8760	(173)	-50	-6	-116	-1
Wind Congestion Costs*	19	73.21%	E8760	14	4	0	9	0
Wind Integration Costs	7	73.21%	E8760	5	2	0	3	0
Wind Coal Cycling Costs	17	73.45%	D10S & E8760	12	4	0	8	0
Net Costs	2,624			1,924	621	68	1,232	4

* Congestion Costs reflected as cost adder to wind generation rather than lower generator LMP. Only modeled on new wind.

Delta

Delta Modeled Costs	-12.4		-8.8	-2.2	-0.3	-6.2	-0.1
Wind Coal Cycling	9		7	2	0	4	0
Delta Costs	-21.8		-15.7	-4.4	-0.5	-10.7	-0.1

Estimated Bill Impacts					
Annual kWh Sales	30,374,663,650	8,253,981,163	923,725,211	21,049,208,092	147,749,184
Impact per kWh	-0.000290	-0.000268	-0.000291	-0.000297	-0.000436
Average kWh per Month per Cust	1,890	586	860	35,698	443
Average Monthly Bill Impact		**-$0.16**	**-$0.25**	**-$10.60**	**-$0.19**

2022 Revenue Requirement Impact - System Resource

Strategist Reference Case: Full Optimization with Solar Gardens/DG and Sherco Retirements. SHC CC selected in 2027. Energy Market Sales to MISO modeled.

Revenue Requirements, $M

	2022	MN Jur Allocator	Class Alloc	2022 MN Jur	Res	Commercial Non Demand	C&I Demand	Ltg
Strategist Capacity Costs	1,384	73.44%	D10S	1,016	354	38	624	0
New Ownership Wind, 1250MW	0	73.45%	D10S & E8760	-	0	0	0	0
Production Costs	1,396	73.21%	E8760	1,022	299	34	685	4
New PPA Wind, 400MW	0	73.21%	E8760	-	0	0	0	0
MISO Purchases	41	73.21%	E8760	30	9	1	20	0
MISO Sales	-175	73.21%	E8760	(128)	-37	-4	-86	-1
Wind Congestion Costs*	0	73.21%	E8760	-	0	0	0	0
Wind Integration Costs	4	73.21%	E8760	3	1	0	2	0
Wind Coal Cycling Costs	7	73.45%	D10S& E8760	5	2	0	3	0
Net Costs	2,656			1,948	627	69	1,248	4

* Congestion Costs reflected as cost adder to wind generation rather than lower generator LMP. Only modeled on new wind.

Strategist Wind Portfolio Case: Same as **Reference Case** except adds 1550MW of wind projects. 1150MW

Revenue Requirements, $M

	2022	MN Jur Allocator	Class Alloc	2022 MN Jur	Res	Commercial Non Demand	C&I Demand	Ltg
Strategist Capacity Costs	1,384	73.44%	D10S	1,016	354	38	624	0
New Ownership Wind, 1150MW	73	73.45%	D10S & E8760	54	16	2	36	0
Production Costs	1,332	73.21%	E8760	975	285	32	653	4
New PPA Wind, 400MW	25	73.21%	E8760	18	5	1	12	0
MISO Purchases	19	73.21%	E8760	14	4	0	9	0
MISO Sales	-259	73.21%	E8760	(190)	-55	-6	-127	-1
Wind Congestion Costs*	20	73.21%	E8760	14	4	0	10	0
Wind Integration Costs	7	73.21%	E8760	5	2	0	4	0
Wind Coal Cycling Costs	17	73.45%	D10S & E8760	12	4	0	8	0
Net Costs	2,617			1,919	619	68	1,229	4

* Congestion Costs reflected as cost adder to wind generation rather than lower generator LMP. Only modeled on new wind.

Delta

Delta Modeled Costs	-39.2		-28.5	-8.0	-0.9	-19.4	-0.1
Wind Coal Cycling	10		7	2	0	5	0
Delta Costs	-48.8		-35.5	-10.2	-1.2	-24.0	-0.2

Estimated Bill Impacts					
Annual kWh Sales	30,548,125,033	8,344,126,332	923,157,557	21,134,416,777	146,424,368
Impact per kWh	-0.000932	-0.000960	-0.001004	-0.000918	-0.000990
Average kWh per Month per Cust	1,887	588	853	35,584	437
Average Monthly Bill Impact		**-$0.56**	**-$0.86**	**-$32.65**	**-$0.43**

RTF High-Level Revenue Requirement Impact-Minnesota

Revenue Requirement Impact ($ in millions)		**2017 Test Period**				
	Alloc	MN Jur	Res	Commercial Non Demand	C&I Demand	Ltg
Main RTF Differences						
Biomass	E8760	0.00	0.00	0.00	0.00	0.00
CBED Wind	E8760	0.00	0.00	0.00	0.00	0.00
Solar	E8760 & D10S	0.00	0.00	0.00	0.00	0.00
Replacement cost for Biomass, CBED Wind, Solar	E8760	0.00	0.00	0.00	0.00	0.00
New wind net of fuel savings	E8760 & D10S	0.17	0.05	0.01	0.11	0.00
Net Impact of Jurisdicitonal Planning	E8760 & D10S	0.00	0.00	0.00	0.00	0.00
Sherco 1 & 2 Retirements	E8760 & D10S	0.00	0.00	0.00	0.00	0.00
Additional Acctg & IT	A&G	0.00	0.00	0.00	0.00	0.00
Total-Pseudo-Separation		0.17	0.05	0.01	0.11	0.00
Legal Separation Differences						
Pseudo-Separation Differences except A&G		0.17	0.05	0.01	0.11	0.00
Additional A&G	A&G	0.00	0.00	0.00	0.00	0.00
Financing difference	Labor	0.00	0.00	0.00	0.00	0.00
Service Co Allocations	A&G	0.00	0.00	0.00	0.00	0.00
Transmission	D10S	0.00	0.00	0.00	0.00	0.00
Transaction Costs	A&G	0.00	0.00	0.00	0.00	0.00
Total		0.17	0.05	0.01	0.11	0.00
Estimated Bill Impacts						
Pseudo-Separation						
Annual kWh Sales		30,198,398,036	8,529,184,811	902,953,534	20,601,575,792	164,683,899
Impact per kWh			$0.000006	$0.000006	$0.000005	$0.000004
Average kWh per Month per Customer			624	865	35,925	502
Average Monthly Bill Impact			**$0.00**	**$0.01**	**$0.19**	**$0.00**
Average Monthly Bill Impact - New Wind Only			**$0.00**	**$0.01**	**$0.19**	**$0.00**
Legal Separation						
Annual kWh Sales		30,198,398,036	8,529,184,811	902,953,534	20,601,575,792	164,683,899
Impact per kWh			$0.000006	$0.000006	$0.000005	$0.000004
Average kWh per Month per Customer			624	865	35,925	502
Average Monthly Bill Impact			**$0.00**	**$0.01**	**$0.19**	**$0.00**

RTF High-Level Revenue Requirement Impact-Minnesota

Revenue Requirement Impact ($ in millions)		**2018 Test Period**				
	Alloc	MN Jur	Res	Commercial Non Demand	C&I Demand	Ltg
Main RTF Differences						
Biomass	E8760	0.00	0.00	0.00	0.00	0.00
CBED Wind	E8760	0.00	0.00	0.00	0.00	0.00
Solar	E8760 & D10S	0.00	0.00	0.00	0.00	0.00
Replacement cost for Biomass, CBED Wind, Solar	E8760	0.00	0.00	0.00	0.00	0.00
New wind net of fuel savings	E8760 & D10S	0.12	0.03	0.00	0.08	0.00
Net Impact of Jurisdicitonal Planning	E8760 & D10S	0.00	0.00	0.00	0.00	0.00
Sherco 1 & 2 Retirements	E8760 & D10S	0.00	0.00	0.00	0.00	0.00
Additional Acctg & IT	A&G	0.00	0.00	0.00	0.00	0.00
Total-Pseudo-Separation		0.12	0.03	0.00	0.08	0.00
Legal Separation Differences						
Pseudo-Separation Differences except A&G		0.12	0.03	0.00	0.08	0.00
Additional A&G	A&G	0.00	0.00	0.00	0.00	0.00
Financing difference	Labor	0.00	0.00	0.00	0.00	0.00
Service Co Allocations	A&G	0.00	0.00	0.00	0.00	0.00
Transmission	D10S	0.00	0.00	0.00	0.00	0.00
Transaction Costs	A&G	0.00	0.00	0.00	0.00	0.00
Total		0.12	0.03	0.00	0.08	0.00
Estimated Bill Impacts						
Pseudo-Separation						
Annual kWh Sales		30,058,398,474	8,444,795,893	905,934,815	20,547,544,723	160,123,042
Impact per kWh			$0.000004	$0.000004	$0.000004	$0.000003
Average kWh per Month per Customer			613	861	35,575	486
Average Monthly Bill Impact			**$0.00**	**$0.00**	**$0.14**	**$0.00**
Average Monthly Bill Impact - New Wind Only			**$0.00**	**$0.00**	**$0.14**	**$0.00**
Legal Separation						
Annual kWh Sales		30,058,398,474	8,444,795,893	905,934,815	20,547,544,723	160,123,042
Impact per kWh			$0.000004	$0.000004	$0.000004	$0.000003
Average kWh per Month per Customer			613	861	35,575	486
Average Monthly Bill Impact			**$0.00**	**$0.00**	**$0.14**	**$0.00**

RTF High-Level Revenue Requirement Impact-Minnesota

Revenue Requirement Impact ($ in millions)		**2019 Test Period**				
	Alloc	MN Jur	Res	Commercial Non Demand	C&I Demand	Ltg
Main RTF Differences						
Biomass	E8760	0.00	0.00	0.00	0.00	0.00
CBED Wind	E8760	0.00	0.00	0.00	0.00	0.00
Solar	E8760 & D10S	0.00	0.00	0.00	0.00	0.00
Replacement cost for Biomass, CBED Wind, Solar	E8760	0.00	0.00	0.00	0.00	0.00
New wind net of fuel savings	E8760 & D10S	0.90	0.27	0.03	0.60	0.00
Net Impact of Jurisdicitonal Planning	E8760 & D10S	0.00	0.00	0.00	0.00	0.00
Sherco 1 & 2 Retirements	E8760 & D10S	0.00	0.00	0.00	0.00	0.00
Additional Acctg & IT	A&G	0.00	0.00	0.00	0.00	0.00
Total-Pseudo-Separation		0.90	0.27	0.03	0.60	0.00
Legal Separation Differences						
Pseudo-Separation Differences except A&G		0.90	0.27	0.03	0.60	0.00
Additional A&G	A&G	0.00	0.00	0.00	0.00	0.00
Financing difference	Labor	0.00	0.00	0.00	0.00	0.00
Service Co Allocations	A&G	0.00	0.00	0.00	0.00	0.00
Transmission	D10S	0.00	0.00	0.00	0.00	0.00
Transaction Costs	A&G	0.00	0.00	0.00	0.00	0.00
Total		0.90	0.27	0.03	0.60	0.00
Estimated Bill Impacts						
Pseudo-Separation						
Annual kWh Sales		30,183,606,357	8,377,368,089	907,826,101	20,743,453,301	154,958,866
Impact per kWh			$0.000032	$0.000033	$0.000029	$0.000023
Average kWh per Month per Customer			604	857	35,681	468
Average Monthly Bill Impact			**$0.02**	**$0.03**	**$1.03**	**$0.01**
Average Monthly Bill Impact - New Wind Only			**$0.02**	**$0.03**	**$1.03**	**$0.01**
Legal Separation						
Annual kWh Sales		30,183,606,357	8,377,368,089	907,826,101	20,743,453,301	154,958,866
Impact per kWh			$0.000032	$0.000033	$0.000029	$0.000023
Average kWh per Month per Customer			604	857	35,681	468
Average Monthly Bill Impact			**$0.02**	**$0.03**	**$1.03**	**$0.01**

RTF High-Level Revenue Requirement Impact-Minnesota

Revenue Requirement Impact ($ in millions)		**2020 Test Period**				
	Alloc	MN Jur	Res	Commercial Non Demand	C&I Demand	Ltg
Main RTF Differences						
Biomass	E8760	5.1	1.5	0.2	3.4	0.0
CBED Wind	E8760	2.0	0.6	0.1	1.4	0.0
Solar	E8760 & D10S	0.9	0.3	0.0	0.6	0.0
Replacement cost for Biomass, CBED Wind, Solar	E8760	(2.5)	(0.7)	(0.1)	(1.7)	(0.0)
New wind net of fuel savings	E8760 & D10S	(2.1)	(0.6)	(0.1)	(1.4)	(0.0)
Net Impact of Jurisdicitonal Planning	E8760 & D10S	0.0	0.0	0.0	0.0	0.0
Sherco 1 & 2 Retirements	E8760 & D10S	1.0	0.3	0.0	0.7	0.0
Additional Acctg & IT	A&G	0.7	0.3	0.0	0.4	0.0
Total-Pseudo-Separation		5.2	1.6	0.2	3.4	0.0
Legal Separation Differences						
Pseudo-Separation Differences except A&G		4.5	1.3	0.2	3.0	0.0
Additional A&G	A&G	0.0	0.0	0.0	0.0	0.0
Financing difference	Labor	0.0	0.0	0.0	0.0	0.0
Service Co Allocations	A&G	(2.3)	(0.7)	(0.1)	(1.5)	(0.0)
Transmission	D10S	(3.9)	(1.3)	(0.1)	(2.4)	0.0
Transaction Costs	A&G	1.0	0.4	0.0	0.6	0.0
Total		(0.7)	(0.4)	(0.0)	(0.3)	0.0
Estimated Bill Impacts						
Pseudo-Separation						
Annual kWh Sales		30,254,100,951	8,301,292,835	915,907,193	20,886,918,947	149,981,975
Impact per kWh			$0.000193	$0.000196	$0.000163	$0.000151
Average kWh per Month per Customer			594	859	35,672	451
Average Monthly Bill Impact			**$0.11**	**$0.17**	**$5.82**	**$0.07**
Average Monthly Bill Impact - New Wind Only			**-$0.04**	**-$0.07**	**-$2.42**	**-$0.03**
Legal Separation						
Annual kWh Sales		30,254,100,951	8,301,292,835	915,907,193	20,886,918,947	149,981,975
Impact per kWh			-$0.000047	-$0.000039	-$0.000014	$0.000132
Average kWh per Month per Customer			594	859	35,672	451
Average Monthly Bill Impact			**-$0.03**	**-$0.03**	**-$0.52**	**$0.06**

RTF High-Level Revenue Requirement Impact-Minnesota

Revenue Requirement Impact ($ in millions)		**2021 Test Period**				
	Alloc	MN Jur	Res	Commercial Non Demand	C&I Demand	Ltg
Main RTF Differences						
Biomass	E8760	5.1	1.5	0.2	3.4	0.0
CBED Wind	E8760	2.0	0.6	0.1	1.4	0.0
Solar	E8760 & D10S	0.9	0.3	0.0	0.6	0.0
Replacement cost for Biomass, CBED Wind, Solar	E8760	(2.6)	(0.8)	(0.1)	(1.7)	(0.0)
New wind net of fuel savings	E8760 & D10S	(3.3)	(1.0)	(0.1)	(2.2)	(0.0)
Net Impact of Jurisdicitonal Planning	E8760 & D10S	0.0	0.0	0.0	0.0	0.0
Sherco 1 & 2 Retirements	E8760 & D10S	1.0	0.3	0.0	0.7	0.0
Additional Acctg & IT	A&G	0.7	0.3	0.0	0.4	0.0
Total-Pseudo-Separation		4.0	1.3	0.1	2.6	0.0
Legal Separation Differences						
Pseudo-Separation Differences except A&G		3.3	1.0	0.1	2.2	0.0
Additional A&G	A&G	0.0	0.0	0.0	0.0	0.0
Financing difference	Labor	0.0	0.0	0.0	0.0	0.0
Service Co Allocations	A&G	(2.4)	(0.8)	(0.1)	(1.5)	(0.0)
Transmission	D10S	(3.9)	(1.4)	(0.1)	(2.4)	0.0
Transaction Costs	A&G	1.0	0.4	0.0	0.6	0.0
Total		(2.0)	(0.8)	(0.1)	(1.2)	0.0
Estimated Bill Impacts						
Pseudo-Separation						
Annual kWh Sales		30,374,663,650	8,253,981,163	923,725,211	21,049,208,092	147,749,184
Impact per kWh			$0.000152	$0.000151	$0.000124	$0.000121
Average kWh per Month per Customer			586	860	35,698	443
Average Monthly Bill Impact			**$0.09**	**$0.13**	**$4.42**	**$0.05**
Average Monthly Bill Impact - New Wind Only			**-$0.07**	**-$0.10**	**-$3.68**	**-$0.04**
Legal Separation						
Annual kWh Sales		30,374,663,650	8,253,981,163	923,725,211	21,049,208,092	147,749,184
Impact per kWh			-$0.000096	-$0.000088	-$0.000056	$0.000100
Average kWh per Month per Customer			586	860	35,698	443
Average Monthly Bill Impact			**-$0.06**	**-$0.08**	**-$2.02**	**$0.04**

RTF High-Level Revenue Requirement Impact-Minnesota

Revenue Requirement Impact ($ in millions)		**2022 Test Period**				
	Alloc	MN Jur	Res	Commercial Non Demand	C&I Demand	Ltg
Main RTF Differences						
Biomass	E8760	5.1	1.5	0.2	3.4	0.0
CBED Wind	E8760	2.0	0.6	0.1	1.4	0.0
Solar	E8760 & D10S	0.9	0.3	0.0	0.6	0.0
Replacement cost for Biomass, CBED Wind, Solar	E8760	(2.8)	(0.8)	(0.1)	(1.9)	(0.0)
New wind net of fuel savings	E8760 & D10S	(4.8)	(1.4)	(0.2)	(3.2)	(0.0)
Net Impact of Jurisdicitonal Planning	E8760 & D10S	1.0	0.3	0.0	0.7	0.0
Sherco 1 & 2 Retirements	E8760 & D10S	1.0	0.3	0.0	0.7	0.0
Additional Acctg & IT	A&G	0.8	0.3	0.0	0.4	0.0
Total-Pseudo-Separation		3.2	1.0	0.1	2.1	0.0
Legal Separation Differences						
Pseudo-Separation Differences except A&G		2.5	0.8	0.1	1.6	0.0
Additional A&G	A&G	0.0	0.0	0.0	0.0	0.0
Financing difference	Labor	0.0	0.0	0.0	0.0	0.0
Service Co Allocations	A&G	(2.4)	(0.8)	(0.1)	(1.6)	(0.0)
Transmission	D10S	(4.0)	(1.4)	(0.1)	(2.5)	0.0
Transaction Costs	A&G	1.0	0.4	0.0	0.6	0.0
Total		(3.0)	(1.0)	(0.1)	(1.8)	0.0
Estimated Bill Impacts						
Pseudo-Separation						
Annual kWh Sales		30,548,125,033	8,344,126,332	923,157,557	21,134,416,777	146,424,368
Impact per kWh			$0.000125	$0.000124	$0.000097	$0.000090
Average kWh per Month per Customer			588	853	35,584	437
Average Monthly Bill Impact			**$0.07**	**$0.11**	**$3.46**	**$0.04**
Average Monthly Bill Impact - New Wind Only			**-$0.10**	**-$0.15**	**-$5.40**	**-$0.06**
Legal Separation						
Annual kWh Sales		30,548,125,033	8,344,126,332	923,157,557	21,134,416,777	146,424,368
Impact per kWh			-$0.000126	-$0.000120	-$0.000086	$0.000067
Average kWh per Month per Customer			588	853	35,584	437
Average Monthly Bill Impact			**-$0.07**	**-$0.10**	**-$3.08**	**$0.03**

CERTIFICATE OF SERVICE

I, Lynnette Sweet, 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 No. E002/M-16-777

Dated this 16th day of March 2017

/s/
_____
Lynnette Sweet
Regulatory Administrator

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
David	Aafedt	daafedt@winthrop.com	Winthrop & Weinstine, P.A.	Suite 3500, 225 South Sixth Street Minneapolis, MN 554024629	Electronic Service	No	OFF_SL_16-777_M-16-777
Michael	Ahern	ahern.michael@dorsey.com	Dorsey & Whitney, LLP	50 S 6th St Ste 1500 Minneapolis, MN 554021498	Electronic Service	No	OFF_SL_16-777_M-16-777
Jorge	Alonso	jorge.alonso@state.mn.us	Public Utilities Commission	121 7th Place East Suite 350 St. Paul, MN 55101	Electronic Service	No	OFF_SL_16-777_M-16-777
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	Yes	OFF_SL_16-777_M-16-777
Christopher	Anderson	canderson@allete.com	Minnesota Power	30 W Superior St Duluth, MN 558022191	Electronic Service	No	OFF_SL_16-777_M-16-777
Alison C	Archer	alison.c.archer@xcelenergy.com	Xcel Energy	414 Nicollet Mall FL 5 Minneapolis, MN 55401	Electronic Service	Yes	OFF_SL_16-777_M-16-777
Joseph	Atkins	N/A		105 Hardman Ct South St Paul, MN 55075-2468	Paper Service	No	OFF_SL_16-777_M-16-777
Donna	Attanasio	dattanasio@law.gwu.edu	George Washington University	2000 H Street NW Washington, DC 20052	Electronic Service	No	OFF_SL_16-777_M-16-777
Andrew	Bahn	Andrew.Bahn@state.mn.us	Public Utilities Commission	121 7th Place E., Suite 350 St. Paul, MN 55101	Electronic Service	No	OFF_SL_16-777_M-16-777
Ryan	Barlow	Ryan.Barlow@ag.state.mn.us	Office of the Attorney General-RUD	445 Minnesota Street Bremer Tower, Suite 1400 St. Paul, Minnesota 55101	Electronic Service	No	OFF_SL_16-777_M-16-777

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
James J.	Bertrand	james.bertrand@stinson.com	Stinson Leonard Street LLP	150 South Fifth Street, Suite 2300 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_16-777_M-16-777
Thomas R	Brause	tbrause@otpco.com	Otter Tail Power Company	PO Box 496 215 S Cascade St Fergus Falls, MN 56538-0496	Electronic Service	No	OFF_SL_16-777_M-16-777
B. Andrew	Brown	brown.andrew@dorsey.com	Dorsey & Whitney LLP	Suite 1500 50 South Sixth Street Minneapolis, MN 554021498	Electronic Service	No	OFF_SL_16-777_M-16-777
Christina	Brusven	cbrusven@fredlaw.com	Fredrikson Byron	200 S 6th St Ste 4000 Minneapolis, MN 554021425	Electronic Service	No	OFF_SL_16-777_M-16-777
Michael J.	Bull	mbull@mncee.org	Center for Energy and Environment	212 Third Ave N Ste 560 Minneapolis, MN 55401	Electronic Service	No	OFF_SL_16-777_M-16-777
James	Canaday	james.canaday@ag.state.mn.us	Office of the Attorney General-RUD	Suite 1400 445 Minnesota St. St. Paul, MN 55101	Electronic Service	No	OFF_SL_16-777_M-16-777
Thomas	Carlson	thomas.carlson@edf-re.com	EDF Renewable Energy	10 2nd St NE Ste. 400 Minneapolis, Minnesota 55413	Electronic Service	No	OFF_SL_16-777_M-16-777
Jennifer	Christensen	jchristensen@gpisd.net	Great Plains Institute	2801 21st Ave S Suite 220 Minneapolis, MN 55407	Electronic Service	No	OFF_SL_16-777_M-16-777
Jeanne	Cochran	Jeanne.Cochran@state.mn.us	Office of Administrative Hearings	P.O. Box 64620 St. Paul, MN 55164-0620	Electronic Service	Yes	OFF_SL_16-777_M-16-777
John	Coffman	john@johncoffman.net	AARP	871 Tuxedo Blvd. St, Louis, MO 63119-2044	Electronic Service	No	OFF_SL_16-777_M-16-777

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Brad	Crabtree	N/A	Great Plains Institute	2801 21st Ave S Suite 220 Minneapolis, MN 55407	Paper Service	No	OFF_SL_16-777_M-16-777
George	Crocker	gwillc@nawo.org	North American Water Office	PO Box 174 Lake Elmo, MN 55042	Electronic Service	No	OFF_SL_16-777_M-16-777
Carl	Cronin	Regulatory.records@xcelenergy.com	Xcel Energy	414 Nicollet Mall FL 7 Minneapolis, MN 554011993	Electronic Service	No	OFF_SL_16-777_M-16-777
Leigh	Currie	lcurrie@mncenter.org	Minnesota Center for Environmental Advocacy	26 E. Exchange St., Suite 206 St. Paul, Minnesota 55101	Electronic Service	No	OFF_SL_16-777_M-16-777
Jeffrey A.	Daugherty	jeffrey.daugherty@centerpointenergy.com	CenterPoint Energy	800 LaSalle Ave Minneapolis, MN 55402	Electronic Service	No	OFF_SL_16-777_M-16-777
Patricia	DeBleeckere	tricia.debleeckere@state.mn.us	Public Utilities Commission	Suite 350 121 Seventh Place East St. Paul, MN 55101	Electronic Service	No	OFF_SL_16-777_M-16-777
James	Denniston	james.r.denniston@xcelenergy.com	Xcel Energy Services, Inc.	414 Nicollet Mall, Fifth Floor Minneapolis, MN 55401	Electronic Service	No	OFF_SL_16-777_M-16-777
Elizabeth	Dickinson			384 Hall St. Paul, MN 55107	Paper Service	No	OFF_SL_16-777_M-16-777
Ian	Dobson	ian.dobson@ag.state.mn.us	Office of the Attorney General-RUD	Antitrust and Utilities Division 445 Minnesota Street, 1400 BRM Tower St. Paul, MN 55101	Electronic Service	No	OFF_SL_16-777_M-16-777

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
John	Doll	john@johndollsd40.org		10918 Southview Drive Burnsville, MN 55337	Paper Service	No	OFF_SL_16-777_M-16-777
Randall	Doneen	randall.doneen@state.mn.us	Department of Natural Resources	500 Lafayette Rd, PO Box 25 Saint Paul, MN 55155	Electronic Service	No	OFF_SL_16-777_M-16-777
Brian	Draxten	bhdraxten@otpco.com	Otter Tail Power Company	P.O. Box 496 215 South Cascade Street Fergus Falls, MN 565380498	Electronic Service	No	OFF_SL_16-777_M-16-777
Tristan	Duncan	tlduncan@shb.com	Shook Hardy & Bacon, L.L.P.	2555 Grand Blvd. Kansas City, MO 64108	Electronic Service	No	OFF_SL_16-777_M-16-777
Ed	Ehlinger	Ed.Ehlinger@state.mn.us	Minnesota Department of Health	P.O. Box 64975 St. Paul, MN 55164-0975	Electronic Service	No	OFF_SL_16-777_M-16-777
Kristen	Eide Tollefson	N/A	R-CURE	28477 N Lake Ave Frontenac, MN 55026-1044	Paper Service	No	OFF_SL_16-777_M-16-777
Bret	Eknes	bret.eknes@state.mn.us	Public Utilities Commission	Suite 350 121 7th Place East St. Paul, MN 551012147	Electronic Service	No	OFF_SL_16-777_M-16-777
Betsy	Engelking	betsy@geronimoenergy.com	Geronimo Energy	7650 Edinborough Way Suite 725 Edina, MN 55435	Electronic Service	No	OFF_SL_16-777_M-16-777
Kate	Fairman	kate.frantz@state.mn.us	Department of Natural Resources	Box 32 500 Lafayette Rd St. Paul, MN 551554032	Electronic Service	No	OFF_SL_16-777_M-16-777
John	Farrell	jfarrell@ilsr.org	Institute for Local Self-Reliance	1313 5th St SE #303 Minneapolis, MN 55414	Electronic Service	No	OFF_SL_16-777_M-16-777

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Emma	Fazio	emma.fazio@stoel.com	Stoel Rives LLP	33 South Sixth Street Suite 4200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_16-777_M-16-777
Sharon	Ferguson	sharon.ferguson@state.mn.us	Department of Commerce	85 7th Place E Ste 280 Saint Paul, MN 551012198	Electronic Service	No	OFF_SL_16-777_M-16-777
Mike	Fiterman	mikefiterman@libertydiversified.com	Liberty Diversified International	5600 N Highway 169 Minneapolis, MN 55428-3096	Electronic Service	No	OFF_SL_16-777_M-16-777
Stephen	Fogel	Stephen.E.Fogel@XcelEnergy.com	Xcel Energy Services, Inc.	816 Congress Ave, Suite 1650 Austin, TX 78701	Electronic Service	Yes	OFF_SL_16-777_M-16-777
Dave	Frederickson	Dave.Frederickson@state.mn.us	MN Department of Agriculture	625 North Robert Street St. Paul, MN 551552538	Electronic Service	No	OFF_SL_16-777_M-16-777
Bruce	Gerhardson	bgerhardson@otpco.com	Otter Tail Power Company	PO Box 496 215 S Cascade St Fergus Falls, MN 565380496	Electronic Service	No	OFF_SL_16-777_M-16-777
Travis	Germundson	travis.germundson@state.mn.us		Board of Water & Soil Resources 520 Lafayette Rd Saint Paul, MN 55155	Electronic Service	No	OFF_SL_16-777_M-16-777
Allen	Gleckner	gleckner@fresh-energy.org	Fresh Energy	408 St. Peter Street Ste 220 Saint Paul, Minnesota 55102	Electronic Service	No	OFF_SL_16-777_M-16-777
Julie	Goehring	N/A		708 70 Ave. NW Moorhead, MN 56560	Paper Service	No	OFF_SL_16-777_M-16-777

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Janet	Gonzalez	Janet.gonzalez@state.mn.us	Public Utilities Commission	Suite 350 121 7th Place East St. Paul, MN 55101	Electronic Service	No	OFF_SL_16-777_M-16-777
Bill	Grant	Bill.Grant@state.mn.us	Minnesota Department of Commerce	85 7th Place East, Suite 500 St. Paul, MN 55101	Electronic Service	No	OFF_SL_16-777_M-16-777
Thomas J.	Grever	tgrever@shb.com	Shook, Hardy &Bacon L.L.P.	2555 Grand Blvd. Kansas City, MO 64108	Electronic Service	No	OFF_SL_16-777_M-16-777
J Drake	Hamilton	hamilton@fresh-energy.org	Fresh Energy	408 St Peter St Saint Paul, MN 55101	Electronic Service	No	OFF_SL_16-777_M-16-777
Robert	Harding	robert.harding@state.mn.us	Public Utilities Commission	Suite 350 121 7th Place East St. Paul, MN 55101	Electronic Service	No	OFF_SL_16-777_M-16-777
Annete	Henkel	mui@mnutilityinvestors.org	Minnesota Utility Investors	413 Wacouta Street #230 St.Paul, MN 55101	Electronic Service	No	OFF_SL_16-777_M-16-777
Patrick	Hentges		City Of Mankato	P.O. Box 3368 Mankato, MN 560023368	Paper Service	No	OFF_SL_16-777_M-16-777
Lynn	Hinkle	lhinkle@mnseia.org	Minnesota Solar Energy Industries Association	2512 33rd Ave South #2 Minneapolis, MN 55406	Electronic Service	No	OFF_SL_16-777_M-16-777
John	Hole	jhole@misoenergy.org	MISO	1125 Energy Park Dr St. Paul, MN 55108	Electronic Service	No	OFF_SL_16-777_M-16-777

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Michael	Hoppe	il23@mtn.org	Local Union 23, I.B.E.W.	932 Payne Avenue St. Paul, MN 55130	Electronic Service	No	OFF_SL_16-777_M-16-777
David	Hough	N/A	Hennepin County Administration	A2303 Government Center 300 S 6th St Minneapolis, MN 55487-0233	Paper Service	No	OFF_SL_16-777_M-16-777
Kari	Howe	kari.howe@state.mn.us	DEED	332 Minnesota St, #E200 1ST National Bank Bldg St. Paul, MN 55101	Electronic Service	No	OFF_SL_16-777_M-16-777
Anne	Hunt	anne.hunt@ci.stpaul.mn.us	City of St. Paul	390 City Hall 15 West Kellogg Boulevard Saint Paul, MN 55102	Electronic Service	No	OFF_SL_16-777_M-16-777
Anne	Jackson	anne.jackson@state.mn.us	MN Pollution Control Agency	520 Lafayette Road St Paul, MN 55115	Electronic Service	No	OFF_SL_16-777_M-16-777
Alan	Jenkins	aj@jenkinsatlaw.com	Jenkins at Law	2265 Roswell Road Suite 100 Marietta, GA 30062	Electronic Service	No	OFF_SL_16-777_M-16-777
Linda	Jensen	linda.s.jensen@ag.state.mn.us	Office of the Attorney General-DOC	1800 BRM Tower 445 Minnesota Street St. Paul, MN 551012134	Electronic Service	No	OFF_SL_16-777_M-16-777
Richard	Johnson	Rick.Johnson@lawmoss.com	Moss & Barnett	150 S. 5th Street Suite 1200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_16-777_M-16-777
Kevin D.	Johnson	kdjohnson@stoel.com	Stoel Rives LLP	Suite 4200 33 South Sixth Street Minneapolis, MN 55402	Electronic Service	No	OFF_SL_16-777_M-16-777

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Craig	Johnson	cjohnson@lmc.org	League of Minnesota Cities	145 University Ave. W. Saint Paul, MN 55103-2044	Electronic Service	No	OFF_SL_16-777_M-16-777
Sarah	Johnson Phillips	sjphillips@stoel.com	Stoel Rives LLP	33 South Sixth Street Suite 4200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_16-777_M-16-777
Clark	Kaml	clark.kaml@state.mn.us	Public Utilities Commission	121 E 7th Place, Suite 350 Saint Paul, MN 55101	Electronic Service	No	OFF_SL_16-777_M-16-777
Mark J.	Kaufman	mkaufman@ibewlocal949.org	IBEW Local Union 949	12908 Nicollet Avenue South Burnsville, MN 55337	Electronic Service	No	OFF_SL_16-777_M-16-777
Will	Kaul	wkaul@grenergy.com	Great River Energy	12300 Elm Creek Blvd Maple Grove, MN 553694718	Electronic Service	No	OFF_SL_16-777_M-16-777
Ray	Kirsch	Raymond.Kirsch@state.mn.us	Department of Commerce	85 7th Place E Ste 500 St. Paul, MN 55101	Electronic Service	No	OFF_SL_16-777_M-16-777
Jerome	Kleis	N/A		12060 Sherburne Ave Becker City Hall Becker, MN 55308-4694	Paper Service	No	OFF_SL_16-777_M-16-777
Kate	Knuth	kate.knuth@gmail.com		2347 14th Terrace NW New Brighton, MN 55112	Electronic Service	No	OFF_SL_16-777_M-16-777
Hank	Koegel	hank.koegel@edf-re.com	EDF Renewable Eenrgy	10 2nd St NE Ste 400 Minneapolis, MN 55413-2652	Electronic Service	No	OFF_SL_16-777_M-16-777
Thomas	Koehler	TGK@IBEW160.org	Local Union #160, IBEW	2909 Anthony Ln St Anthony Village, MN 55418-3238	Electronic Service	No	OFF_SL_16-777_M-16-777

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Mara	Koeller	mara.n.koeller@xcelenergy.com	Xcel Energy	414 Nicollet Mall 5th Floor Minneapolis, MN 55401	Electronic Service	Yes	OFF_SL_16-777_M-16-777
Frank	Kohlasch	frank.kohlasch@state.mn.us	MN Pollution Control Agency	520 Lafayette Rd N. St. Paul, MN 55155	Electronic Service	No	OFF_SL_16-777_M-16-777
Michael	Krikava	mkrikava@briggs.com	Briggs And Morgan, P.A.	2200 IDS Center 80 S 8th St Minneapolis, MN 55402	Electronic Service	No	OFF_SL_16-777_M-16-777
Ganesh	Krishnan	ganesh.krishnan@state.mn.us	Public Utilities Commission	Suite 350121 7th Place East St. Paul, MN 55101	Electronic Service	No	OFF_SL_16-777_M-16-777
Karen	Kromar	karen.kromar@state.mn.us	MN Pollution Control Agency	520 Lafayette Rd Saint Paul, MN 55155	Electronic Service	No	OFF_SL_16-777_M-16-777
Rick	Lancaster	rlancaster@grenergy.com	Great River Energy	12300 Elm Creek Blvd Maple Grove, MN 553694718	Electronic Service	No	OFF_SL_16-777_M-16-777
Thomas	Landwehr	tom.landwehr@state.mn.us	Department of Natural Resources	Box 37, 500 Lafayette Rd St. Paul, Minnesota 55155	Electronic Service	No	OFF_SL_16-777_M-16-777
Peder	Larson	plarson@larkinhoffman.com	Larkin Hoffman Daly & Lindgren, Ltd.	8300 Norman Center Drive Suite 1000 Bloomington, MN 55437	Electronic Service	No	OFF_SL_16-777_M-16-777
Douglas	Larson	dlarson@dakotaelectric.com	Dakota Electric Association	4300 220th St W Farmington, MN 55024	Electronic Service	No	OFF_SL_16-777_M-16-777
Chuck	Legatt	N/A	Liberty Paper Inc	13500 Liberty Ln Becker, MN 55308-4623	Paper Service	No	OFF_SL_16-777_M-16-777

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
John	Lindell	john.lindell@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012130	Electronic Service	Yes	OFF_SL_16-777_M-16-777
Mark S	Lindquist	mark.lindquist@state.mn.us	Natural Resources Dept	261 Highway 15 S DNR S Region HQ New Ulm, MN 56073-8915	Electronic Service	No	OFF_SL_16-777_M-16-777
Eric	Lipman	eric.lipman@state.mn.us	Office of Administrative Hearings	PO Box 64620 St. Paul, MN 551640620	Electronic Service	No	OFF_SL_16-777_M-16-777
Paula	Maccabee	Pmaccabee@justchangelaw.com	Just Change Law Offices	1961 Selby Ave Saint Paul, MN 55104	Electronic Service	No	OFF_SL_16-777_M-16-777
Susan	Mackenzie	susan.mackenzie@state.mn.us	Public Utilities Commission	121 7th Place E Ste 350 St. Paul, MN 551012147	Electronic Service	No	OFF_SL_16-777_M-16-777
Peter	Madsen	peter.madsen@ag.state.mn.us	Office of the Attorney General-DOC	Bremer Tower, Suite 1800 445 Minnesota Street St. Paul, Minnesota 55101	Electronic Service	No	OFF_SL_16-777_M-16-777
Kavita	Maini	kmaini@wi.rr.com	KM Energy Consulting LLC	961 N Lost Woods Rd Oconomowoc, WI 53066	Electronic Service	No	OFF_SL_16-777_M-16-777
Pam	Marshall	pam@energycents.org	Energy CENTS Coalition	823 7th St E St. Paul, MN 55106	Electronic Service	No	OFF_SL_16-777_M-16-777
Mary	Martinka	mary.a.martinka@xcelenergy.com	Xcel Energy Inc	414 Nicollet Mall 7th Floor Minneapolis, MN 55401	Electronic Service	Yes	OFF_SL_16-777_M-16-777
John	Marty	jmarty@senate.mn		75 Rev Dr Martin Luther King Jr Blvd Rm 323 Saint Paul, MN 55155	Electronic Service	No	OFF_SL_16-777_M-16-777

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Matt	Massman	matt.massman@state.mn.us	Department of Administration	200 Administration Bldg. St. Paul, MN 55155	Electronic Service	No	OFF_SL_16-777_M-16-777
Daryl	Maxwell	dmaxwell@hydro.mb.ca	Manitoba Hydro	360 Portage Ave FL 16 PO Box 815, Station Main Winnipeg, Manitoba R3C 2P4 Canada	Electronic Service	No	OFF_SL_16-777_M-16-777
Susan	Medhaug	Susan.medhaug@state.mn.us	Department of Commerce	Suite 280, 85 Seventh Place East St. Paul, MN 551012198	Electronic Service	No	OFF_SL_16-777_M-16-777
Thomas	Melone	Thomas.Melone@AllcoUS.com	Minnesota Go Solar LLC	222 South 9th Street Suite 1600 Minneapolis, Minnesota 55120	Electronic Service	No	OFF_SL_16-777_M-16-777
Brian	Meloy	brian.meloy@stinson.com	Stinson,Leonard, Street LLP	150 S 5th St Ste 2300 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_16-777_M-16-777
Herbert	Minke	hminke@allete.com	Minnesota Power	30 W Superior St Duluth, MN 55802	Electronic Service	No	OFF_SL_16-777_M-16-777
David	Moeller	dmoeller@allete.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	No	OFF_SL_16-777_M-16-777
Andrew	Moratzka	andrew.moratzka@stoel.com	Stoel Rives LLP	33 South Sixth St Ste 4200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_16-777_M-16-777
Dorothy	Morrissey	dorothy.morrissey@state.mn.us	Public Utilities Commission	121 7th Place East Suite 350 St. Paul, MN 55101	Electronic Service	No	OFF_SL_16-777_M-16-777

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	OFF_SL_16-777_M-16-777
Alan	Muller	alan@greendel.org	Energy & Environmental Consulting	1110 West Avenue Red Wing, MN 55066	Electronic Service	No	OFF_SL_16-777_M-16-777
Brian	Napstad	bnapstad@yahoo.com	Board of Water and Soil Resources	51227 Long Point Place McGregor, MN 55780	Electronic Service	No	OFF_SL_16-777_M-16-777
Carl	Nelson	cnelson@mncee.org	Center for Energy and Environment	212 3rd Ave N Ste 560 Minneapolis, MN 55401	Electronic Service	No	OFF_SL_16-777_M-16-777
J	Newberger	Jnewberger1@yahoo.com	State Rep	14225 Balsam Blvd Becker, MN 55308	Electronic Service	No	OFF_SL_16-777_M-16-777
David	Niles	david.niles@avantenergy.com	Minnesota Municipal Power Agency	220 South Sixth Street Suite 1300 Minneapolis, Minnesota 55402	Electronic Service	No	OFF_SL_16-777_M-16-777
Rolf	Nordstrom	rnordstrom@gpisd.net	Great Plains Institute	2801 21ST AVE S STE 220 Minneapolis, MN 55407-1229	Electronic Service	No	OFF_SL_16-777_M-16-777
Steven	Nyhus	swnyhus@flaherty-hood.com	Flaherty & Hood PA	525 Park St Ste 470 Saint Paul, MN 55103	Electronic Service	No	OFF_SL_16-777_M-16-777
Adam	Oliver	N/A		12060 Sherburne Ave Becker City Hall Becker, MN 55308	Paper Service	No	OFF_SL_16-777_M-16-777

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Carol A.	Overland	overland@legalectric.org	Legalectric - Overland Law Office	1110 West Avenue Red Wing, MN 55066	Electronic Service	No	OFF_SL_16-777_M-16-777
Lee	Paddock	lpaddock@law.gwu.edu	George Washington University Law School	2000 H Street, NW Washington, DC 20052	Electronic Service	No	OFF_SL_16-777_M-16-777
Bob	Patton	bob.patton@state.mn.us	MN Department of Agriculture	625 Robert St N Saint Paul, MN 55155-2538	Electronic Service	No	OFF_SL_16-777_M-16-777
Joshua	Pearson	joshua.pearson@edf-re.com	EDF Renewable Energy	15445 Innovation Drive San Diego, CA 92128	Electronic Service	No	OFF_SL_16-777_M-16-777
Ewald	Petersen	N/A		13880 Business Center Sherburne County Government Center Elk River, MN 55330-1692	Paper Service	No	OFF_SL_16-777_M-16-777
Jason	Pfingsten	N/A	Liberty Paper Inc	13500 Liberty Ln Becker, MN 55308-4623	Paper Service	No	OFF_SL_16-777_M-16-777
Gayle	Prest	gayle.prest@minneapolismn.gov	City of Mpls Sustainability	350 South 5th St, #315 Minneapolis, MN 55415	Electronic Service	No	OFF_SL_16-777_M-16-777
Greg	Pruszinske	gpruszinske@ci.becker.mn.us	City of Becker	Box 250 12060 Sherburne Ave Becker, Minnesota 55308	Electronic Service	No	OFF_SL_16-777_M-16-777
Greg	Pruszinski	N/A		12060 Sherburne Ave Becker City Hall Becker, MN 55308	Paper Service	No	OFF_SL_16-777_M-16-777

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Michelle	Rebholz	michelle.rebholz@state.mn.us	Public Utilities Commission	Suite 350121 Seventh Place East St. Paul, MN 55101	Electronic Service	No	OFF_SL_16-777_M-16-777
Pat	Renner	pat@vote-climate.org		4236 Wooddale Ave S St Louis Park, Minnesota 55416	Paper Service	No	OFF_SL_16-777_M-16-777
Kevin	Reuther	kreuther@mncenter.org	MN Center for Environmental Advocacy	26 E Exchange St, Ste 206 St. Paul, MN 551011667	Electronic Service	No	OFF_SL_16-777_M-16-777
John	Riebel	N/A		13880 Business Center Dr NW Sherburne County Government Center Elk River, MN 55330-1692	Paper Service	No	OFF_SL_16-777_M-16-777
Amanda	Rome	amanda.rome@xcelenergy.com	Xcel Energy	414 Nicollet Mall FL 5 Minneapoli, MN 55401	Electronic Service	No	OFF_SL_16-777_M-16-777
Laureen	Ross McCalib	lrossmccalib@grenergy.com	Great River Energy	12300 Elm Creek Boulevard Maple Grove, MN 55369-4718	Electronic Service	No	OFF_SL_16-777_M-16-777
Mike	Rothman	mike.rothman@state.mn.us	Department of Commerce	85 7th Pl E Ste 500 Saint Paul, MN 55105	Electronic Service	No	OFF_SL_16-777_M-16-777
Richard	Savelkoul	rsavelkoul@martinsquires.com	Martin & Squires, P.A.	332 Minnesota Street Ste W2750 St. Paul, MN 55101	Electronic Service	No	OFF_SL_16-777_M-16-777
John	Saxhaug	john_saxhaug@yahoo.com		3940 Harriet Ave Minneapolis, MN 55409	Electronic Service	No	OFF_SL_16-777_M-16-777

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Larry L.	Schedin	Larry@LLSResources.com	LLS Resources, LLC	332 Minnesota St, Ste W1390 St. Paul, MN 55101	Electronic Service	Yes	OFF_SL_16-777_M-16-777
LauraSue	Schlatter	LauraSue.Schlatter@state.mn.us	Office of Administrative Hearings	PO Box 64620 St. Paul, MN 55164-0620	Electronic Service	No	OFF_SL_16-777_M-16-777
Christopher	Schoenherr	cp.schoenherr@smmpa.org	SMMPA	500 First Ave SW Rochester, MN 55902-3303	Electronic Service	No	OFF_SL_16-777_M-16-777
Jamie	Schrenzel	jamie.schrenzel@state.mn.us	Minnesota Department of Natural Resources	500 Lafayette Road Saint Paul, MN 55155	Electronic Service	No	OFF_SL_16-777_M-16-777
Inga	Schuchard	ischuchard@larkinhoffman.com	Larkin Hoffman	8300 Norman Center Drive Suite 1000 Minneapolis, MN 55437	Electronic Service	No	OFF_SL_16-777_M-16-777
Janet	Shaddix Elling	jshaddix@janetshaddix.com	Shaddix And Associates	Ste 122 9100 W Bloomington Frwy Bloomington, MN 55431	Electronic Service	No	OFF_SL_16-777_M-16-777
Ken	Smith	ken.smith@districtenergy.com	District Energy St. Paul Inc.	76 W Kellogg Blvd St. Paul, MN 55102	Electronic Service	No	OFF_SL_16-777_M-16-777
Jessie	Smith	N/A	Prairie Island Indian Community	5636 Sturgeon Lake Road Welch, MN 55089	Paper Service	No	OFF_SL_16-777_M-16-777
Joshua	Smith	joshua.smith@sierraclub.org		85 Second St FL 2 San Francisco, California 94105	Electronic Service	Yes	OFF_SL_16-777_M-16-777

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Beth H.	Soholt	bsoholt@windonthewires.org	Wind on the Wires	570 Asbury Street Suite 201 St. Paul, MN 55104	Electronic Service	No	OFF_SL_16-777_M-16-777
Anna	Sommer	anna@sommerenergy.com	Sommer Energy LLC	PO Box 766 Grand Canyon, AZ 86023	Electronic Service	No	OFF_SL_16-777_M-16-777
Ron	Spangler, Jr.	rlspangler@otpco.com	Otter Tail Power Company	215 So. Cascade St. PO Box 496 Fergus Falls, MN 565380496	Electronic Service	No	OFF_SL_16-777_M-16-777
Mark	Spurr	mspurr@fvbenergy.com	International District Energy Association	222 South Ninth St., Suite 825 Minneapolis, Minnesota 55402	Electronic Service	No	OFF_SL_16-777_M-16-777
Sean	Stalpes	sean.stalpes@state.mn.us	Public Utilities Commission	121 E. 7th Place, Suite 350 Saint Paul, MN 55101-2147	Electronic Service	No	OFF_SL_16-777_M-16-777
Byron E.	Starns	byron.starns@stinson.com	Stinson Leonard Street LLP	150 South 5th Street Suite 2300 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_16-777_M-16-777
Donna	Stephenson	dstephenson@grenergy.com	Great River Energy	12300 Elm Creek Boulevard Maple Grove, MN 55369	Electronic Service	No	OFF_SL_16-777_M-16-777
John Linc	Stine	john.stine@state.mn.us	MN Pollution Control Agency	520 Lafayette Rd Saint Paul, MN 55155	Electronic Service	No	OFF_SL_16-777_M-16-777
James M.	Strommen	jstrommen@kennedy-graven.com	Kennedy & Graven, Chartered	470 U.S. Bank Plaza 200 South Sixth Street Minneapolis, MN 55402	Electronic Service	No	OFF_SL_16-777_M-16-777

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Robert	Stupar	rob.stupar@enel.com	Enel Green Power North America, Inc.	816 Connecticut Avenue NW Suite 600 Washington, DC 20006	Electronic Service	No	OFF_SL_16-777_M-16-777
Eric	Swanson	eswanson@winthrop.com	Winthrop Weinstine	225 S 6th St Ste 3500 Capella Tower Minneapolis, MN 554024629	Electronic Service	No	OFF_SL_16-777_M-16-777
Steve	Taylor	steve.taylor@co.sherburne.mn.us	Sherburne County	13880 Hwy 10 Elk River, MN 55330	Electronic Service	No	OFF_SL_16-777_M-16-777
Douglas	Tiffany	tiffa002@umn.edu	University of Minnesota	316d Ruttan Hall 1994 Buford Avenue St. Paul, MN 55108	Electronic Service	No	OFF_SL_16-777_M-16-777
Erik J	Tomlinson	erik@sourcewater-solutions.com	SourceWater Solutions	500 Robert St N Unit 508 Saint Paul, MN 55101-4455	Electronic Service	No	OFF_SL_16-777_M-16-777
Jessica	Tritsch	jessica.tritsch@sierraclub.org	Sierra Club	2327 E Franklin Ave Minneapolis, MN 55406	Electronic Service	No	OFF_SL_16-777_M-16-777
Erin	Vaughn	evaughn@shb.com	Shook, Hardy &Bacon L.L.P.	2555 Grand Blvd. Kansas City, MO 64108	Electronic Service	No	OFF_SL_16-777_M-16-777
Lisa	Veith	lisa.veith@ci.stpaul.mn.us	City of St. Paul	400 City Hall and Courthouse 15 West Kellogg Blvd. St. Paul, MN 55102	Electronic Service	No	OFF_SL_16-777_M-16-777
Kodi	Verhalen	kverhalen@briggs.com	Briggs & Morgan	2200 IDS Center 80 South Eighth Street Minneapolis, Minnesota 55402	Electronic Service	No	OFF_SL_16-777_M-16-777

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Julie	Voeck	julie.voeck@nee.com	NextEra Energy Resources, LLC	700 Universe Blvd Juno Beach, FL 33408	Electronic Service	No	OFF_SL_16-777_M-16-777
Scott	Weicht	N/A	Adolfson & Peterson	6701 West 23rd Street Minneapolis, MN 55426	Paper Service	No	OFF_SL_16-777_M-16-777
Jason	Willett	jason.willett@metc.state.mn.us	Metropolitan Council	390 Robert St N Saint Paul, MN 55101-1805	Electronic Service	No	OFF_SL_16-777_M-16-777
Samantha	Williams	swilliams@nrdc.org	Natural Resources Defense Council	20 N. Wacker Drive Ste 1600 Chicago, IL 60606	Electronic Service	No	OFF_SL_16-777_M-16-777
Alexis	Williams	williams@fresh-energy.org	Fresh Energy	408 St. Peter St Suite 220 St. Paul, MN 55102	Electronic Service	No	OFF_SL_16-777_M-16-777
Cam	Winton	cwinton@mnchamber.com	Minnesota Chamber of Commerce	400 Robert Street North Suite 1500 St. Paul, Minnesota 55101	Electronic Service	No	OFF_SL_16-777_M-16-777
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_16-777_M-16-777
Charles	Zelle	charlie.zelle@state.mn.us	Department of Transportation	MN Dept of Transportation 395 John Ireland Blvd St. Paul, MN 55155	Electronic Service	No	OFF_SL_16-777_M-16-777
Jonathan G.	Zierdt	N/A	Greater Mankato Growth	1961 Premier Dr Ste 100 Mankato, MN 56001	Paper Service	No	OFF_SL_16-777_M-16-777
Patrick	Zomer	Patrick.Zomer@lawmoss.com	Moss & Barnett a Professional Association	150 S. 5th Street, #1200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_16-777_M-16-777