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DIRECT TESTIMONY AND SCHEDULES
PHILIP JOSEPH "P.J." MARTIN

# STATE OF NORTH DAKOTA
# BEFORE THE
# NORTH DAKOTA PUBLIC SERVICE COMMISSION

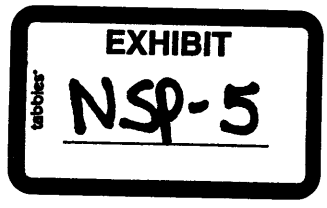
NORTHERN STATES POWER COMPANY
ADVANCE PRUDENCE – 1,550 MW WIND PORTFOLIO
APPLICATION

CASE NO. PU-17-____

## Resource Planning Testimony

Exhibit___ (PJM-1)

March 29, 2017



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# TABLE OF CONTENTS

## Schedules

# I. INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME AND TITLE.

A. My name is Philip Joseph "P.J." Martin. I am the Director, Resource Planning, for Northern States Power Company-Minnesota (NSPM or Xcel Energy or the Company).

Q. PLEASE DESCRIBE YOUR QUALIFICATIONS AND EXPERIENCE.

A. I have worked for Xcel Energy since August of 2015 in the areas of Strategic Asset Planning and Resource Planning. In my first role at Xcel Energy in the Strategic Asset Planning group, I focused primarily on business planning for the four operating companies at Xcel Energy. I assumed my current role as Director, Resource Planning in October of 2016.

Prior to joining Xcel Energy, I worked as a Portfolio Director and Energy Trader at ACES Power Marketing. In these roles, I engaged in trading and wholesale portfolio management activities on behalf of electric cooperatives, municipal utilities, IPPs, banks, and other customers. I also supported long-term planning and risk management efforts for these customers in the Midcontinent Independent System Operator, Inc. (MISO), PJM Interconnection, LLC (PJM), SERC, and other markets across the U.S. My statement of qualifications is provided as Exhibit ___(PJM-1), Schedule 1.

Q. WHAT ARE YOUR CURRENT RESPONSIBILITIES?

A. In my current role, I am responsible for the direction of electric resource planning for the five-state integrated Northern States Power Company system (NSP System), which provides electric service to customers in North

Dakota, South Dakota, Minnesota, Wisconsin, and Michigan. This includes assisting the Company in making reasonable and prudent acquisition decisions for electric generation resources. Among other things, I oversee our resource planning efforts using Strategist to conduct economic evaluations of potential resource additions, and oversee bid processes for new resource acquisitions.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony is to discuss, in detail, the resource additions that comprise the 1,550 MW portfolio of wind generation (the Wind Portfolio) that we propose to be added to the integrated NSP System. My testimony details the wind projects comprising the Wind Portfolio and supports the conclusion that the North Dakota Public Service Commission (Commission) should grant an advance determination of prudence (ADP) for the Wind Portfolio, in its entirety. My testimony covers the following topics:

- The process by which the projects comprising the Wind Portfolio were identified and developed, particularly the Company's Request for Proposals (RFP) and its analysis of the bids received;
- A detailed description of the projects comprising the Wind Portfolio; and
- A detailed economic analysis of the Wind Portfolio and its effect on rates.

# II. DEVELOPMENT OF THE WIND PORTFOLIO

## A. Integrated Resource Plan (IRP) Process

Q. WHAT PROMPTED THE COMPANY TO ISSUE AN RFP FOR WIND GENERATION?

A. As the Commission is aware, the Company periodically conducts an overall resource planning process to ensure that the integrated NSP System has the generation resources necessary to meet the needs of its customers in North Dakota, South Dakota, Minnesota, Wisconsin, and Michigan. In our 2016-2030 Upper Midwest IRP filed in North Dakota (Case No. PU-15-19) and Minnesota (Docket No. E002/RP-15-21), we proposed material wind additions.

Q. WHAT DID YOU PROPOSE IN THE 2016-2030 IRP FILING?

A. Our IRP filing included a proposal to acquire 1,400 MW of large-scale solar, 1,800 MW of wind, and 2,856 MW of natural gas-fired resources between 2016 and 2030. Within the first five years of the planning period (2016-2021), we proposed to add 400 MW of large-scale solar and 800 MW of large-scale wind.

Q. DID THAT PROPOSAL EVOLVE?

A. Yes. As our IRP proceeding progressed in Minnesota, it became clear that acquiring wind resources would be materially cost effective. Throughout the course of the proceeding, we continued to refine our analysis to identify the possible pros and cons of various resource planning options. Those modeling efforts indicated that material wind additions would be prudent to

lower overall system costs while the Federal Production Tax Credit (PTC) was available.

Q. WERE THERE INTERVENING FACTORS REGARDING THE COMPANY'S WIND PROPOSALS IN THE IRP?

A. Yes. In December 2015, the United States Congress passed, and President Obama signed into law, an extension of the Federal PTC. The PTC extension also provided for the phase-down of the tax credit for wind facilities commencing construction after December 31, 2016. The phase-down will occur annually in the following increments: the PTC amount is reduced by 20 percent for wind facilities commencing construction in 2017; the PTC amount is reduced by 40 percent for wind facilities commencing construction in 2018; the PTC amount is reduced by 60 percent for wind facilities commencing construction in 2019; and the PTC is altogether unavailable after 2019 unless it is reauthorized by Congress.

Q. DID THE COMPANY REVISE ITS PROPOSAL IN RESPONSE?

A. Yes. In order to take full advantage of the Federal PTCs when they were extended in December of 2015 and prior to their expiration, we modified the proposal to include acquisition of approximately 1,500 MW of wind resources.

Q. HOW DID THE MINNESOTA PUBLIC UTILITIES COMMISSION (MPUC) RESPOND TO THE MODIFIED PROPOSAL?

A. The MPUC ordered that the Company acquire at least 1,000 MW of wind by 2020. Company witness Mr. Aakash Chandarana discusses the specific findings of the MPUC.

## B. Building the Wind Portfolio

Q. PLEASE IDENTIFY HOW THE COMPANY DEVELOPED ITS 1,500 MW WIND PORTFOLIO.

A. The Company developed its Wind Portfolio through two separate but related efforts: (1) an RFP for purchased power agreements (PPA) and build-own-transfer (BOT) proposals; and (2) the development of 750 MW of Company-built wind generation (the Self-Build Projects).

Q. DID THE COMPANY UTILIZE A SPECIFIC PROCESS TO DEVELOP THE WIND PORTFOLIO?

A. Yes. During the course of the IRP proceeding, the MPUC approved a particular acquisition process for the Company to select at least 1,000 MW of wind additions. Mr. Chandarana discusses this process in more detail in his Direct Testimony.

Q. DID THE COMPANY FOLLOW THIS PROCESS?

A. Yes.

Q. FOR CONTEXT, PLEASE BRIEFLY DESCRIBE THIS PROCESS.

A. As I noted above, the process begins with one track for the PPA and BOT RFP, and another track for the Self-Build Projects. The MPUC also provided timelines for providing information related to these two steps to help ensure transparency and fairness. Company witness Mr. Aakash Chandarana discusses the development and analysis of the Company's self-build proposals. I discuss in detail the RFP process, below.

## C. Request for Proposal Process for PPA and BOT Projects

Q. AS THE COMPANY PREPARED THE RFP, DID XCEL ENERGY UNDERTAKE ANY MEASURES TO HELP ENSURE THAT THE RFP PROCESS PROVIDED ADEQUATE INFORMATION AND AVOIDED BIAS?

A. Yes. First, prior to the issuance of the RFP, we hired an independent auditor, Leidos Engineering, LLC (Leidos or the Auditor). Leidos' audit began on August 2, 2016 with the development of RFP documents, continued through the evaluation of proposals, and ended on December 8, 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 and address any potential bias in the evaluation criteria; and (3) verify that the evaluation criteria were applied in a fair manner. Leidos' Report is provided as Exhibit ___(PJM-1), Schedule 2.

Second, as explained in further detail below, we erected an internal conflicts wall between the Company personnel working on the RFP and the Company personnel assigned to the Self-Build Projects. The wall remained in place until the auditor signed off on the RFP short-list.

Q. WHEN WAS THE RFP RELEASED?

A. On September 22, 2016, in anticipation of the MPUC's decision in our Minnesota IRP, the Company issued the RFP, with a bid deadline of October 25, 2016.

Q. WHAT DID THE RFP CONTAIN?

A. It identified eligible resource options – namely wind projects within the MISO footprint interconnected in a state where NSP customers or generation resources are located, including Minnesota, Wisconsin, Michigan, North Dakota, or South Dakota; 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, wind farm technical specifications, and Standard Bidder Forms. The RFP identified proposal requirements, set forth a timeline of events and submittal requirements, and included communication protocols and points of contact. The RFP notice stated that all responses would be due on October 25, 2016.

Q. HOW DID THE COMPANY PROVIDE NOTICE OF THE RFP TO POTENTIAL BIDDERS?

A. We provided notice to potential bidders through news media outlets, as well as several government and industry publications and websites. The documents required for bids were also made available through Xcel Energy's website.

Q. WHEN DID THE COMPANY OPEN THE BIDS?

A. Bids were received at various points in time between the issuance of the RFP notice and the final due date, but all bids 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 information from the bids from biasing the process. These controls

included the conflicts wall described in our October filing with the MPUC,[1] the securing of all bid documents, and the limiting of access to these documents and the RFP team's analysis to prevent information sharing.

Q. DID XCEL ENERGY RECEIVE ADEQUATE RESPONSES TO THE RFP?

A. Yes. In fact the responses were robust. We received 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 PPA and BOT structures. The pricing included in many of the RFP responses was attractive, with more than thirty responses below $22/MWh on a levelized cost of energy (LCOE) basis from thirteen developers totaling as much as 5,700 MW of capacity.

Q. PLEASE PROVIDE A BRIEF OVERVIEW OF THE COMPANY'S RFP EVALUATION PROCESS.

A. The Company used a four-step process to evaluate the RFP bids received. First, the Company conducted a completeness review to ensure all required information and identified criteria were included in the bids. Second, the Company conducted a threshold review to ensure that all projects met certain requirements related to size, location, MISO interconnection, creditworthiness, etc. Third, the Company calculated the LCOE for all PPA and BOT proposals that met all completeness and threshold criteria. Finally, the Company conducted a non-price review. At the completion of the four-step review, the Company compiled its final ranking of proposed projects.

[1] *In the Matter of the Petition of Xcel Energy for Approval of the Acquisition of Wind Generation from the Company's 2016-2030 Integrated Res. Plan*, Docket No. E002/M-16-777, PETITION at Attachment A (Oct. 24, 2016).

Q. PLEASE DESCRIBE FURTHER THE FIRST STEP IN THE COMPANY'S EVALUATION OF THE RFP PROPOSALS.

A. The first step was to review the RFP proposals for completeness and to make sure they met the threshold criteria. Upon opening the proposals, at least two RFP Resource Planning Team individuals reviewed each proposal to confirm that all required information had been included (completeness review) and that each proposal met the threshold criteria identified in the RFP (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 removed from further consideration. Of the 95 separate proposals received, only six were disqualified on this basis; all of these met the completeness requirements but failed the threshold requirements.

Q. HOW DID THE COMPANY EVALUATE THE PROPOSALS THAT MET ALL COMPLETENESS AND THRESHOLD CRITERIA REQUIREMENTS?

A. For all proposals that were complete and met the threshold criteria, Xcel Energy calculated a levelized cost of energy (LCOE).

Q. WHY IS IT IMPORTANT TO CALCULATE THE LCOE?

A. Calculating the LCOE is important because it facilitates a fair comparison between projects.

Q. HOW WERE THE LCOES CALCULATED?

A. For the PPAs, the LCOE was calculated using the proposed energy generated and PPA payments.

For the BOTs, the LCOE was calculated using a capital-related revenue requirements model developed by Xcel Energy. Some of the inputs for this model were provided by the bidders, including the BOT payment terms, PPA pricing, and net capacity factors/energy production estimates. Estimates for ongoing operations and maintenance (O&M) and capital expenditures were provided by Xcel Energy. Additional assumptions related to deferred tax impacts on pricing were used, consistent with the assumptions used in calculating pricing for the Company's Self-Build Projects. Ongoing maintenance and capital expenditures for the BOT proposals were determined using a methodology developed by an Xcel Energy engineer who was designated to assist with the RFP process. In order to ensure an unbiased approach, this methodology was approved by the Auditor prior to the bid submittal deadline.

Q. DID THE COMPANY EVALUATE CRITERIA OTHER THAN LCOE?

A. Yes. The Company used non-price scoring and qualitative risk assessment measures 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.

Q. WHAT DID THE COMPANY DO WITH THE RESULTS OF THE LCOE CALCULATIONS AND THE NON-PRICE SCORING AND QUALITATIVE RISK ASSESSMENT MEASURES?

A. Based on the LCOE calculations and the other measures, the Company developed a final ranking of the BOT and PPA projects, which gave us a short-list of projects on which to proceed to negotiations. Projects were sorted by LCOE score first. In the event that two projects were within ten percent of each other based on LCOE, these projects were placed into a single group and the non-price scores were used to determine the ultimate ranking within each group. In other words, prices within ten percent of each other were considered equal and the non-price scores acted as the tie-breaker.

Q. WHO DEVELOPED THE FINAL RANKING?

A. The evaluation was conducted by two separate teams to help maintain an unbiased evaluation. The LCOE 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 review for BOT projects. This work was done in consultation with the Auditor to avoid bias.

Q. WHAT WAS THE RESULT OF THE BID EVALUATION PROCESS?

A. On December 9, 2016, the Company presented to Leidos its short-list, comprised of the highest-ranking RFP responses. The short-list also included back-up projects to replace any shortlisted project that might withdraw during the negotiation process. The Auditor approved the short-list before we entered negotiations. Table 1, below, identifies the short-list and back-up project approved by the Auditor.

**Table 1: RFP Shortlist**

| Project Name | Developer | Size | Location | Type | Rank |
|---|---|---|---|---|---|
| **[TRADE SECRET DATA BEGINS** | | | | | |
| | | | | | |
| | | | | | **TRADE SECRET DATA ENDS]** |
| Crowned Ridge | NextEra Energy | 600 MW | Codington County, SD | PPA & BOT | Short List |
| **[TRADE SECRET DATA BEGINS** | | | | | |
| | | | | | |
| | | | | | **TRADE SECRET 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 Counties, ND | PPA | Back-Up |
| **[TRADE SECRET DATA BEGINS** | | | | | |
| | | | | | |
| | | | | | **TRADE SECRET DATA ENDS]** |

Q. WHEN DID THE CONTRACT NEGOTIATIONS BEGIN?

A. We held initial conversations with the parties whose bids were selected for the short-list on December 15, 2016.

Q. WHAT WERE SOME OF THE KEY POINTS MADE BY THE COMPANY DURING THE NEGOTIATIONS?

A. In negotiations, we reaffirmed that all projects were required to meet the covenants set forth in the RFP notice and that many of the covenants were non-negotiable. This included the requirement that bidders bear certain of the project risks, including transmission risk. The Company similarly identified as non-negotiable a bidder's ability to achieve a stated Commercial Operation Date (COD) and provide transmission capability sufficient to allow for the full PTC tax benefit. 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. One of the shortlisted bidders formally withdrew its BOT bid from consideration indicating that it would not be able to support the security requirements.

Q. DID THE COMPANY CONDUCT DUE DILIGENCE EFFORTS AS PART OF ITS EVALUATION OF THE PROPOSALS ?

A. Yes. Concurrent with negotiations, the Company began thorough 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 **[TRADE SECRET BEGINS TRADE SECRET DATA ENDS]**, 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, withdrew its bid on January 11, 2017.

Q. WHAT DID THE COMPANY DO IN RESPONSE TO THE WITHDRAWALS?

A. In response to the withdrawals, the Company entered negotiations with the two projects identified as backups. Of the backup projects, only the ALLETE Clean Energy #1 project negotiations proved to be successful. Significant time and effort was dedicated to negotiating the other backup project, however, despite best efforts, the Company was unable to reach agreement with the developer.

Q. WHAT WAS THE FINAL RESULT OF THE COMPANY'S RFP SELECTION PROCESS?

A. The RFP 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).

## D. Compiling the Wind Portfolio

Q. HOW DID YOU GO ABOUT CREATING A PORTFOLIO OF BOTH SELF-BUILD AND RFP PROJECTS?

A. After the Auditor approved our short-list and we entered into contract negotiations with those parties, we removed the screening wall and began analyzing the Wind Portfolio as a whole.

Q. HOW DO THE SELF-BUILD PROJECTS FIT TOGETHER WITH THE PPA AND BOT PROJECTS THAT EMERGED FROM THE RFP?

A. The seven projects in the Wind Portfolio represent the results of a careful process to identify projects that are least-cost, adhere to all of the Company's

requirements, and are prudent. Each of the projects is cost-effective and will result in significant customer benefits on its own. Considered in the aggregate, the projects deliver an even greater customer benefit, and are therefore prudent.

Q. DID THE COMPANY CONSIDER THE AGGREGATE SIZE OF THE WIND PORTFOLIO?

A. Yes. We recognize that 1,550 MW is a significant amount of wind additions. However, the size of our recommended portfolio is driven by the very attractive pricing that can be achieved by capturing the full benefit of the Federal PTCs. Consequently, acting now to secure this immense value for our customers is prudent and allows our customers to share in the benefits of the expiring Federal PTCs. In addition, given the transmission risk inherent in some of the proposed wind additions due to MISO queue position, we believe that the size of the Wind Portfolio prudently moderates the risk that some projects may fail due to transmission interconnection cost uncertainty.

Q. HOW DOES THE PRICING FOR THE PROJECTS IN THE WIND PORTFOLIO COMPARE WITH THE COMPANY'S PAST RENEWABLE ADDITIONS?

A. The projected costs for all of these projects are lower than any of our past renewable additions. By way of comparison, the Company's most recent wind projects have an LCOE in the range of **[TRADE SECRET BEGINS TRADE SECRET ENDS]** while the current proposed wind resource additions have LCOEs in the range of **[TRADE SECRET BEGINS TRADE SECRET ENDS]**.

Q. DID THE COMPANY CONSIDER THE MIX OF OWNED PROJECTS AND PURCHASED POWER?

A. Yes. The proposed Wind Portfolio is comprised of various ownership structures: Self-Build Projects, BOT projects, and PPAs. Xcel Energy already has a significant wind generation portfolio of approximately 2,600 MW—more than 125 wind PPAs totaling more than 1,700 MW of contracted wind generation capacity, and 850 MW of Company-owned wind resources. If our proposed 1,550 MW Wind Portfolio is approved, it will balance our wind generation to 48 percent Company-owned resources and 52 percent PPAs. This ownership mix balances the risks and benefits for the Company and our customers.

Q. DID THE COMPANY CONSIDER THE ECONOMIC EFFECTS OF THE WIND PORTFOLIO IN THE AGGREGATE?

A. Yes. I will address that later in my testimony as part of the economic analysis section.

Q. SHOULD THE COMMISSION CONSIDER THE PROJECTS AS ONE INTEGRATED PORTFOLIO?

A. Yes. We have evaluated each of these seven projects individually, and as one portfolio, from both a long-term perspective and near-term rate impact perspective. We recognize that the Company has filed a single application for the entire Wind Portfolio. However, we understand the Commission may elect to issue an ADP for certain projects in the Wind Portfolio and not others.

# III. PROJECT DESCRIPTIONS

Q. PLEASE DESCRIBE THE COMPANY'S PROPOSED RESOURCE ACQUISITIONS.

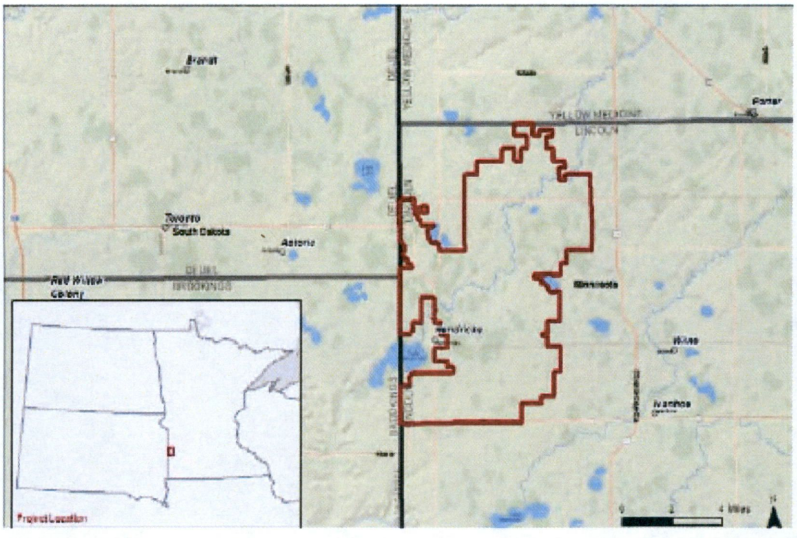
A. We are proposing to acquire seven wind projects, totaling approximately 1,550 MW of additional generation resources. These seven wind projects are comprised of four Self-Build Projects (Blazing Star I, Blazing Star II, Foxtail, and Freeborn), the Crowned Ridge project (part of which is a PPA and part of which is a BOT), one BOT project (Lake Benton), and one PPA project (Clean Energy #1). I describe each in turn, below.

## A. Blazing Star I

Q. PLEASE DESCRIBE THE LOCATION OF THE BLAZING STAR I PROJECT.

A. Blazing Star I, a Self-Build Project being developed by Geronimo Energy (Geronimo), is located on approximately 37,200 acres in Hansonville, Hendricks, and Marble Townships, in Lincoln County, Minnesota. The site is in the wind-rich Buffalo Ridge area, near the Minnesota-South Dakota border. Figure 1, below, is a visual of the project location.

**Figure 1: Blazing Star I Project Location**




Q. PLEASE DESCRIBE THE CAPACITY AND ANTICIPATED PERFORMANCE OF THE BLAZING STAR I PROJECT.

A. The Blazing Star I project will have 200 MW of nameplate capacity. Our wind performance analysis predicts a net capacity factor of approximately **[TRADE SECRET BEGINS TRADE SECRET ENDS]**. We project average Annual Energy Production (AEP) of approximately **[TRADE SECRET BEGINS TRADE SECRET ENDS]**, depending on final layout and turbine selection.

Q. WHAT IS THE PROJECTED LCOE FOR THE BLAZING STAR I PROJECT?

A. The projected LCOE for the Blazing Star I project is **[TRADE SECRET BEGINS TRADE SECRET ENDS]**.

Q. WHAT ARE THE ESTIMATED CAPITAL COSTS FOR BLAZING STAR I?

A. Total capital costs for the Blazing Star I project are currently estimated at approximately **[TRADE SECRET BEGINS TRADE**

**SECRET ENDS]**, which includes the estimated transmission upgrades and interconnection costs as well as anticipated siting and permitting costs.

Q. WHAT IS THE CONSTRUCTION SCHEDULE FOR BLAZING STAR I?

A. We expect our primary construction activities on the Blazing Star I project will occur in 2019. However, engineering and some procurement will occur in 2018, as well as some construction pending approval of the various regulatory filings. The current schedule contemplates that wind turbine generators will be delivered to the Blazing Star I site in time to begin turbine erection in 2019. Under the current estimated schedule, we anticipate that commercial operation will be achieved by December 2019. This timeline allows full use of the PTCs, because the construction will be completed well within four years from the end of the year in which construction commenced. Variables that may affect the construction schedule include regulatory activity, weather, and the timeliness of interconnection.

Q. PLEASE DESCRIBE HOW AND WHEN BLAZING STAR I WILL INTERCONNECT TO THE TRANSMISSION GRID.

A. The Blazing Star I project will interconnect at a new substation on the Brookings County – Lyon County 345 kV line. In March 2015, the developer applied to MISO for the interconnection of Blazing Star I. Blazing Star I will be studied under the MISO February 2016 DPP Study Cycle, which started in February 2017. The MISO System Impact Study will determine what transmission constraints must be addressed to maintain system reliability. The Facility Studies that will follow will determine the improvements that must be made – and the cost of those improvements. The results of the Facility Studies will be used to complete the generator

interconnection agreement (GIA).[2] The developer is responsible for pursuing the necessary approvals to interconnect the Blazing Star I Project with the MISO transmission system.

Q. WHAT ARE THE EXPECTED TRANSMISSION NETWORK UPGRADE AND INTERCONNECTION COSTS FOR BLAZING STAR I?

A. The likely upgrades needed to partially or fully fund the project include: **[TRADE SECRET BEGINS**

**TRADE SECRET ENDS]**

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

Q. HOW ACCURATE ARE THESE COST ESTIMATES?

A. While we believe our estimates are reasonably accurate given this stage of development, final costs will not be known until the Facility Studies are complete and a GIA is executed. We will not know whether the project qualifies for Network Resource Interconnection Service (NRIS) from MISO until the System Impact Studies have been completed. However, we have

[2] We expect the Facility Studies to be completed within the next 12 months, with a signed GIA to follow thereafter.

applied for Network Integration Transmission Service (NITS) for the full 200 MW of Blazing Star I. NITS, like NRIS, will allow the project to qualify as a capacity resource upon completion of all required network upgrades.

Q. DOES THE COMPANY ANTICIPATE SIGNIFICANT WIND CURTAILMENT IN CONNECTION WITH THE BLAZING STAR I PROJECT?

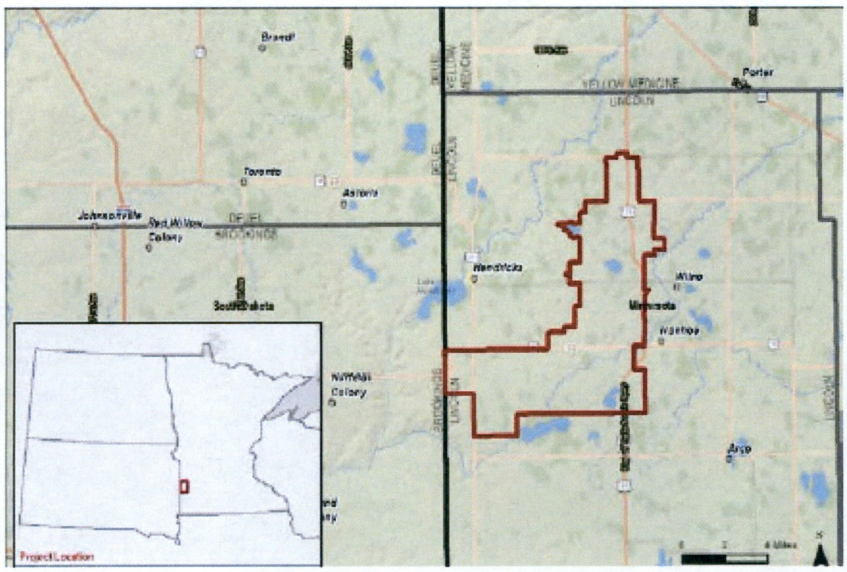
A. Blazing Star I's point of interconnection on the Brookings-Lyon County 345 kV line will limit congestion between Blazing Star and the Company's load, and should result in reasonably limited levels of curtailment. The project's expected late 2019 in-service date also allows time to construct many of the required network upgrades.

## B. Blazing Star II

Q. PLEASE DESCRIBE THE LOCATION OF THE BLAZING STAR II PROJECT.

A. The Blazing Star II project, another Self-Build Project being developed by Geronimo, extends the Blazing Star I project footprint east and south, on approximately 30,000 acres of predominantly active crop land. Figure 2, below, shows the project location.

**Figure 2: Blazing Star II Project Location**




Q. PLEASE DESCRIBE THE CAPACITY AND ANTICIPATED PERFORMANCE OF THE BLAZING STAR II PROJECT.

A. The Blazing Star II project will have 200 MW of nameplate capacity. Our wind performance analysis predicts a net capacity factor of approximately **[TRADE SECRET BEGINS TRADE SECRET ENDS]**. We project average AEP of approximately **[TRADE SECRET BEGINS TRADE SECRET ENDS]**, depending on final layout and turbine selection.

Q. WHAT IS THE PROJECTED LCOE FOR BLAZING STAR II?

A. The projected LCOE for the Blazing Star II project is **[TRADE SECRET BEGINS TRADE SECRET ENDS]**.

Q. WHAT ARE THE ESTIMATED CAPITAL COSTS FOR THE BLAZING STAR II PROJECT?

A. Total capital costs for Blazing Star II are currently estimated at approximately **[TRADE SECRET BEGINS TRADE SECRET ENDS]**, which includes the estimated transmission upgrades and interconnection costs as well as anticipated siting and permitting costs.

Q. WHAT IS THE CONSTRUCTION SCHEDULE FOR BLAZING STAR II?

A. We expect our primary construction activities on the Blazing Star II project will occur in 2019 and early 2020. Engineering and some procurement will occur in 2018 and early 2019. The current schedule contemplates that wind turbine generators will be delivered to the Blazing Star II site in time to begin turbine erection in 2020. Under the current estimated schedule, we anticipate that commercial operation will be achieved by September 2020. This timeline allows full use of the PTCs, because the construction will be completed well within four years from the end of the year in which construction commenced. As with Blazing Star I, variables that may affect the construction schedule include regulatory activity, weather, and the timeliness of interconnection.

Q. PLEASE DESCRIBE HOW AND WHEN BLAZING STAR II WILL INTERCONNECT TO THE COMPANY'S TRANSMISSION SYSTEM.

A. The Blazing Star II project will interconnect at the new substation installed for Blazing Star I. In May 2016, the developer applied to interconnect Blazing Star II to the Company's transmission system with MISO. Blazing Star II will be studied under the MISO August 2016 DPP Study Cycle. The MISO System Impact Study will determine what transmission constraints

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

Q. WHAT ARE THE EXPECTED TRANSMISSION NETWORK UPGRADE AND INTERCONNECTION COSTS FOR BLAZING STAR II?

A. The likely upgrades that Blazing Star II will have to partially or fully fund include: **[TRADE SECRET BEGINS**

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

Q. HOW ACCURATE ARE THESE COST ESTIMATES?

A. While we believe our estimates are reasonably accurate given the phase of development, final costs will not be known until the Facility Studies are complete and a GIA is executed. We will not know whether the project qualifies for NRIS until the System Impact Studies have been completed. However, we have applied with MISO for NITS for the full 200 MW of the

project. NITS, like NRIS, will allow the project to qualify as a capacity resource upon completion of all required network upgrades.

Q. DOES THE COMPANY ANTICIPATE SIGNIFICANT WIND CURTAILMENT IN CONNECTION WITH BLAZING STAR II?

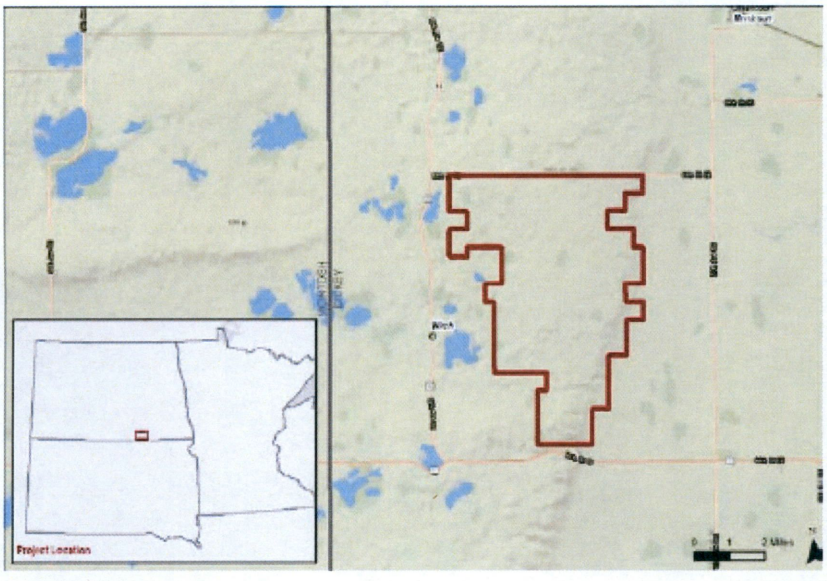
A. As with Blazing Star I, Blazing Star II's point of interconnection on the Brookings – Lyon County 345 kV Line will limit congestion between Blazing Star II and the Company's load, and should result in reasonably limited levels of curtailment. The project's expected 2020 in-service date also allows time to construct many of the required network upgrades.

## C. Foxtail

Q. WHERE IS THE FOXTAIL PROJECT LOCATED?

A. The Foxtail Self-Build Project, which is being developed by an affiliate of NextEra Energy Inc. (NextEra), is located on an approximately 20,000 acre site located 20 miles west of Ellendale, North Dakota, bordering the prairie pothole region. The site is primarily grazing, farming, and rolling open fields. Figure 3, below, is a visual of Foxtail's location.

**Figure 3: Foxtail Project Location**




Q. IS NEXTERA AN EXPERIENCED DEVELOPER OF WIND PROJECTS?

A. Yes. NextEra 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.

Q. PLEASE DESCRIBE THE CAPACITY AND ANTICIPATED PERFORMANCE OF THE FOXTAIL PROJECT.

A. The Foxtail project will have 150 MW of nameplate capacity. Our wind performance analysis predicts a net capacity factor of **[TRADE SECRET BEGINS TRADE SECRET ENDS]**. We project average AEP of approximately **[TRADE SECRET BEGINS TRADE SECRET ENDS]**, depending on final layout and turbine selection.

Q. WHAT IS THE PROJECTED LCOE FOR THE FOXTAIL PROJECT?

A. The projected LCOE for the Foxtail project is **[TRADE SECRET BEGINS TRADE SECRET ENDS]**.

Q. WHAT ARE THE ESTIMATED COSTS FOR THE FOXTAIL PROJECT?

A. Total capital costs for the Foxtail project are currently estimated at approximately **[TRADE SECRET BEGINS TRADE SECRET ENDS]**, which includes the estimated transmission upgrades and interconnection costs, as well as anticipated siting and permitting costs.

Q. WHAT IS THE CONSTRUCTION SCHEDULE FOR FOXTAIL?

A. We expect our primary construction activities on the Foxtail project will occur in 2018 and 2019, with engineering and some procurement occurring in 2017. The current schedule contemplates that wind turbine generators will be delivered to the Foxtail project site in time to begin turbine erection in 2019. Under the current estimated schedule, we anticipate that commercial operation will be achieved by September 2019. This timeline allows full use of the PTCs, because the construction will be completed well within four years from the end of the year in which construction commenced. Variables that may affect the construction schedule include regulatory activity and weather.

Q. PLEASE DESCRIBE HOW AND WHEN FOXTAIL WILL INTERCONNECT TO THE COMPANY'S TRANSMISSION SYSTEM.

A. The Foxtail project will interconnect at the new substation tapping the Wishek–Ellendale 230 kV line located in eastern North Dakota. In November 2013, NextEra applied to MISO to interconnect the Foxtail

project to the Montana-Dakota Utilities (MDU) transmission system, connecting to the MDU 230 kV Ellendale–Tatanka transmission line at a new substation. Foxtail was studied under the MISO August 2014 DPP Study Cycle. All MISO System Impact Studies and Facility Studies have been completed and are identified in the executed Foxtail GIA dated August 30, 2016. The GIA is currently being updated to support the specifics of the construction, including the turbines and schedule. We expect no change in the commercial operation date. The GIA shows that the project will be granted 150 MW of NRIS upon completion of all required network upgrades.

Q. WHAT ARE THE EXPECTED TRANSMISSION NETWORK UPGRADE AND INTERCONNECTION COSTS FOR FOXTAIL?

A. The required upgrades include: (1) construction of a new interconnection substation; (2) reconductoring MDU's Ellendale–Foxtail 230 kV transmission line; and (3) reconductoring Western Area Power Administration's (WAPA) Mandan–Ward 230 kV transmission line. The cost of all upgrades, with the exception of the WAPA upgrade, is known. The final WAPA costs will not be known until a Facilities Study is completed and a facility construction agreement is executed. The WAPA system is in the SPP region rather than the MISO region, so facilities upgrades in both MISO and SPP must be studied and potentially constructed.

We have estimated the costs of the WAPA upgrade based on our knowledge and review of the Mandan–Ward facility, and included it with the known costs from the completed MISO studies. We have estimated the network

upgrades for the Foxtail project at approximately **[TRADE SECRET BEGINS TRADE SECRET ENDS]** and interconnection costs at approximately **[TRADE SECRET BEGINS TRADE SECRET ENDS]**.

Q. DOES FOXTAIL ENJOY A REBUTTABLE PRESUMPTION OF PRUDENCE?

A. Yes. As a project located in North Dakota, there is a rebuttable presumption that Foxtail is prudent. In his Direct Testimony, Company witness Mr. Aakash Chandarana discusses the prudence of the Foxtail project, as well as the benefits of having the resource addition located in North Dakota.

Q. DOES THE COMPANY ANTICIPATE SIGNIFICANT WIND CURTAILMENT IN CONNECTION WITH THE FOXTAIL PROJECT?

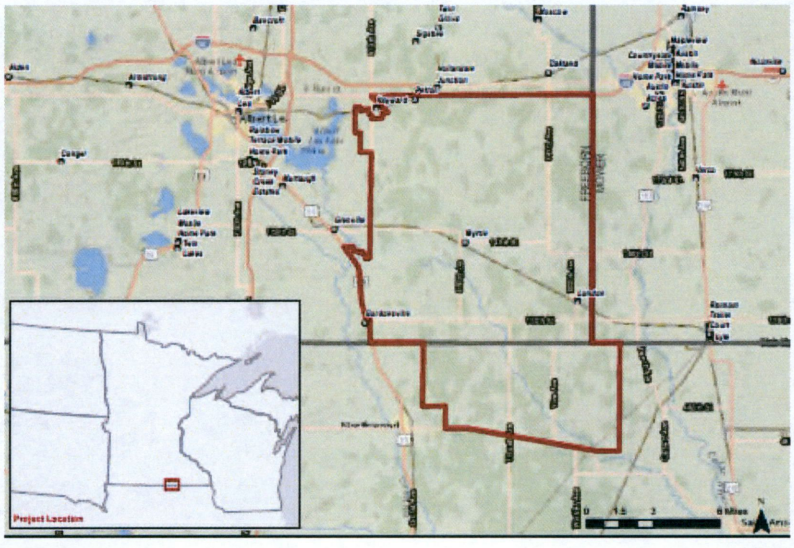
A. The Foxtail project interconnects to the Ellendale area 230 kV system, which will be significantly more robust once the Big Stone–Brookings 345 kV Multi-Value Project (MVP) line goes into service in 2017 and the Ellendale–Big Stone 345 kV MVP line goes into service in 2019. This connection also provides a significant 345 kV path to the Twin Cities load center. In addition, as part of the development of this project, all 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. Foxtail's expected 2019 in-service date also allows ample time to construct many of the required network upgrades.

## D. Freeborn

Q. WHERE IS THE FREEBORN PROJECT LOCATED?

A. The Freeborn wind project, a Self-Build Project being developed by an affiliate of Invenergy Wind Development LLC (Invenergy), is located on an approximately 40,000 acre site east of Glenville, Minnesota—partially in Minnesota's Freeborn County and partially in Iowa's Worth and Mitchell Counties Figure 4, below, shows the location of the Freeborn project.

**Figure 4: Freeborn Project Location**




Q. PLEASE DESCRIBE THE CAPACITY AND ANTICIPATED PERFORMANCE OF THE FREEBORN PROJECT.

A. The Freeborn project will have 200 MW of nameplate capacity. Our wind performance analysis predicts a net capacity factor of approximately **[TRADE SECRET BEGINS TRADE SECRET ENDS]**. We additionally project average AEP of approximately **[TRADE SECRET**

**BEGINS TRADE SECRET ENDS]**, depending on final layout and turbine selection.

Q. WHAT IS THE ESTIMATED LCOE FOR FREEBORN?

A. The projected LCOE for the Freeborn project is [**TRADE SECRET BEGINS TRADE SECRET ENDS**].

Q. WHAT ARE THE ESTIMATED COSTS FOR THE FREEBORN PROJECT?

A. Total capital costs for the Freeborn project are currently estimated at approximately **[TRADE SECRET BEGINS TRADE SECRET ENDS]**, which includes the estimated transmission upgrades and interconnection costs as well as anticipated siting and permitting costs.

Q. WHAT IS THE CONSTRUCTION SCHEDULE FOR FREEBORN?

A. Land acquisition is currently underway and expected to be completed later this spring. We currently expect that approximately 50 to 75 MW of this project—including its point of interconnection—will be located in Minnesota's Freeborn County and that the remaining 125 to 150 MW will be located in Iowa's Worth and Mitchell Counties.

We expect our primary construction activities on the Freeborn project will occur in 2020, with engineering and some procurement in 2018 and 2019. The current schedule contemplates that wind turbine generators will be delivered to the site in time to begin turbine erection in 2020. Under the current estimated schedule, we anticipate that commercial operation will be achieved by early December 2020. This timeline allows full use of the PTCs, because the construction will be completed well within four years from the

end of the year in which construction commenced. Variables that may affect the construction schedule include regulatory activity, weather, and the timeliness of interconnection.

Q. PLEASE DESCRIBE HOW AND WHEN FREEBORN WILL INTERCONNECT TO THE COMPANY'S TRANSMISSION SYSTEM.

A. The Freeborn project will interconnect at ITC Midwest's existing Glenworth 161 kV substation located in southeastern Minnesota. In November 2014, Invenergy applied to interconnect the Freeborn project to ITC Midwest's transmission system. 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.

While final interconnection and transmission upgrade costs will not be known until the Facility Studies are complete and the GIA is executed, upgrades identified to-date include: **[TRADE SECRET BEGINS**

**TRADE SECRET ENDS]**. Invenergy is responsible for pursuing the necessary approvals to interconnect Freeborn with the upper Midwest transmission system.

Q. WHAT ARE THE ESTIMATED TRANSMISSION NETWORK UPGRADE AND INTERCONNECTION COSTS FOR FREEBORN?

A. We have estimated the costs of transmission network upgrades and interconnection costs for the Freeborn project identified through the MISO

studies process, and included them in our project costs. We have estimated the network upgrades at approximately **[TRADE SECRET BEGINS TRADE SECRET ENDS]** and interconnection costs at approximately **[TRADE SECRET BEGINS TRADE SECRET ENDS]**, based on our knowledge and review of the facilities involved and included this cost in our estimate.

Q. DOES THE COMPANY ANTICIPATE SIGNIFICANT WIND CURTAILMENT IN CONNECTION WITH THE FREEBORN PROJECT?

A. The Freeborn 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.

## E. Crowned Ridge

Q. WHERE IS THE CROWNED RIDGE PROJECT LOCATED?

A. The Crowned Ridge wind project, a 600 MW (300 MW PPA and 300 MW BOT) wind energy generation facility, will be located in northeastern South Dakota, in Codington, Deuel, and Grant Counties in South Dakota. Figure 5, below, shows the location of Crowned Ridge.

**Figure 5: Crowned Ridge Project Location**


Q. PLEASE DESCRIBE THE CAPACITY AND ANTICIPATED PRODUCTIVITY OF CROWNED RIDGE.

A. The Crowned Ridge project will have 600 MW of nameplate capacity. 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. Based on analysis performed by our consultant AWS, we anticipate a net capacity factor of approximately **[TRADE SECRET BEGINS TRADE SECRET ENDS]**. We additionally project average AEP of approximately **[TRADE SECRET BEGINS TRADE SECRET ENDS]**, depending on final layout and turbine selection.

Q. WHAT ARE THE ESTIMATED COSTS FOR CROWNED RIDGE?

A. The Crowned Ridge project has been offered into the RFP in two parts: a BOT with NSP purchasing the project upon completion for **[TRADE SECRET BEGINS TRADE SECRET ENDS]**, which

includes the total purchase price, Xcel Energy's direct costs, and AFUDC, and a PPA with the purchase price of electric energy starting at **[TRADE SECRET BEGINS**

**TRADE SECRET ENDS]**. The combined BOT and PPA bids equate to an LCOE of **[TRADE SECRET BEGINS**

**TRADE SECRET ENDS]**. The LCOE for the BOT only portion of the bid amounted to **[TRADE SECRET BEGINS**

**TRADE SECRET ENDS]**. The LCOE for the PPA only portion of the bid amounted to **[TRADE SECRET BEGINS**

**TRADE SECRET ENDS]**.

Q. WHAT IS THE CONSTRUCTION SCHEDULE FOR CROWNED RIDGE?

A. Land acquisition is currently underway and expected to be completed by March 2017. The anticipated COD is the fourth quarter of 2019. The Crowned Ridge project will be built by NextEra. The construction and permitting timeline are consistent with the ability to achieve 100 percent PTC value on the full 600 MW proposed by the bidder.

Q. WHAT IS THE POINT OF INTERCONNECTION FOR CROWNED RIDGE?

A. The point of interconnection for the Crowned Ridge project will be Otter Tail Power's Big Stone South substation near Big Stone City, South Dakota.

Q. PLEASE DESCRIBE THE INTERCONNECTION CONSIDERATIONS RELATED TO CROWNED RIDGE.

A. For purposes of the MISO interconnection study cycle, the Crowned Ridge project has three separate parts, each accounting for 200 MW of the project's total capacity. The first part was submitted as part of the February

2015 MISO study group. For this first part, the full System Impact Study has been finalized and the GIA was executed and made effective as of 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 part of the project was submitted **[TRADE SECRET BEGINS TRADE SECRET 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 **[TRADE SECRET BEGINS TRADE SECRET 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 of the Crowned Ridge project will be evaluated **[TRADE SECRET BEGINS TRADE SECRET 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 System Impact Study, which we believe will be completed by **[TRADE SECRET BEGINS TRADE SECRET ENDS]**. Excel Engineering did not provide an estimate of anticipated interconnection and upgrade costs for this portion of

the Crowned Ridge project as this portion was not yet formally in the MISO queue.

Q. AS TO EACH OF THE THREE REQUESTS ABOVE, HOW ARE INTERCONNECTION RISKS MITIGATED WITH RESPECT TO CROWNED RIDGE?

A. The first 200 MW portion of Crowned Ride has transmission cost certainty as a result of the executed GIA, and we believe that the MISO queue positions of the second and third portions are 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 PTCs. Finally, while the last 200 MW portion is subject to more risk and uncertainty, **[TRADE SECRET BEGINS**

**TRADE SECRET ENDS]**.

Q. ARE THERE WIND CURTAILMENT ISSUES WITH CROWNED RIDGE?

A. 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. The significant 345 kV path east to the Twin Cities load center will limit congestion between Crowned Ridge and the load. The project's expected

2019 in-service date also allows ample time to construct many of the required network upgrades.

## F. Lake Benton

Q. WHERE IS THE LAKE BENTON PROJECT LOCATED?

A. The Lake Benton BOT wind project will be a 100 MW wind energy generation facility in southwestern Minnesota. The project is located in Pipestone County southeast of Lake Benton, Minnesota. Figure 6, below, shows the project's location.

**Figure 6: Lake Benton Project Location**


Q. IS THE LAKE BENTON PROJECT RELATED TO AN EXISTING WIND GENERATION FACILITY?

A. The Lake Benton project is a repowering of the existing Lake Benton II wind facility, which has been in operation since May 2000 and currently contracts its power through a PPA to NSP.

Q. WHO IS THE DEVELOPER FOR THE LAKE BENTON PROJECT?

A. It will be built by NextEra.

Q. PLEASE DESCRIBE THE CAPACITY AND TECHNOLOGY OF LAKE BENTON.

A. The Lake Benton project will have 100 MW of nameplate capacity. Based on analysis performed by our consultant AWS, we anticipate a net capacity factor of approximately **[TRADE SECRET BEGINS TRADE SECRET ENDS]**. We additionally project average AEP of approximately **[TRADE SECRET BEGINS TRADE SECRET ENDS]**, depending on final layout and turbine selection.

Q. WHAT ARE THE ESTIMATED COSTS FOR THE LAKE BENTON PROJECT?

A. The Lake Benton project has been offered into the RFP as a BOT with NSP purchasing the project upon completion for **[TRADE SECRET BEGINS TRADE SECRET ENDS]**, which includes the total purchase price, Xcel Energy's direct costs, and AFUDC, along with other ownership costs amounts to an LCOE of **[TRADE SECRET BEGINS TRADE SECRET ENDS]**. 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 **[TRADE SECRET BEGINS TRADE SECRET ENDS]** demonstrating a reduction in cost of about **[TRADE SECRET BEGINS TRADE SECRET ENDS]** when compared to the LCOE of the proposed project.

Q. WHAT IS THE CONSTRUCTION SCHEDULE FOR LAKE BENTON?

A. Easements for the operating site are currently held by NSP under the current PPA and, as a result, land acquisition is already complete. The anticipated COD is fourth quarter 2019. 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.

Q. PLEASE DESCRIBE HOW AND WHEN LAKE BENTON WILL INTERCONNECT TO THE COMPANY'S TRANSMISSION SYSTEM.

A. The point of interconnection for Lake Benton will be NSP's Buffalo Ridge and Chanarambie substations. The project will utilize the grandfathered interconnection rights assigned to Lake Benton Power Partners under the Mid-Continent Area Power Pool (MAPP) (MISO's precursor) but will be required to obtain a generator interconnection agreement under MISO's material modification process. 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.

## G. ALLETE Clean Energy #1

Q. WHERE IS THE CLEAN ENERGY #1 PROJECT LOCATED?

A. The Clean Energy #1 project will be a 100 MW wind energy generation facility located northeast of Glen Ullin, North Dakota, in Mercer and Morton Counties, about 40 miles west and 8 miles north of Bismarck. Figure 7, below, shows the project's location.

**Figure 7: Clean Energy #1 Project Location**


Q. WHO IS DEVELOPING THE CLEAN ENERGY #1 PROJECT?

A. The project is being developed by ALLETE Clean Energy (ACE). It is adjacent to the Bison Wind projects that were developed by ACE affiliate Minnesota Power. 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.

Q. PLEASE DESCRIBE THE CAPACITY AND ANTICIPATED PERFORMANCE OF THE CLEAN ENERGY #1 PROJECT.

A. The Clean Energy #1 project will have 105.6 MW of nameplate capacity. Based on analysis performed by our consultant AWS, we anticipate a net capacity factor of approximately **[TRADE SECRET BEGINS TRADE SECRET ENDS]**. We additionally project average AEP of approximately **[TRADE SECRET BEGINS TRADE SECRET ENDS]**, depending on final layout and turbine selection.

Q. WHAT IS THE PRICE OF ENERGY UNDER THE PPA?

A. The Clean Energy #1 project has been offered into the RFP as a PPA, with NSP purchasing the power from Clean Energy #1 at a price of **[TRADE SECRET BEGINS TRADE SECRET ENDS]**.

Q. WHAT IS THE CONSTRUCTION SCHEDULE FOR CLEAN ENERGY #1?

A. ACE has secured land under option agreements, which will be converted to long-term easement agreements prior to the start of construction. Construction is expected to be completed in time for a COD in the fourth quarter of 2019. The construction and permitting timeline are consistent with the ability to achieve 100 percent PTC value.

Q. PLEASE DESCRIBE HOW AND WHEN CLEAN ENERGY #1 WILL INTERCONNECT TO THE COMPANY'S TRANSMISSION SYSTEM.

A. 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 interconnection (POI). 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 meet its 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.

Q. DOES THE COMPANY ANTICIPATE SIGNIFICANT CURTAILMENT IN CONNECTION WITH THE CLEAN ENERGY #1 PROJECT?

A. The Clean Energy #1 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 the Ellendale–Big Stone 345 kV MVP line goes into service in 2019, which will benefit the Clean Energy #1 project and reduce congestion.

Q. DOES CLEAN ENERGY #1 ENJOY A REBUTTABLE PRESUMPTION OF PRUDENCE?

A. Yes. As a project located in North Dakota, there is a rebuttable presumption that Clean Energy #1 is prudent. In his Direct Testimony, Company witness Aakash Chandarana discusses the prudence of the Clean Energy #1 project, as well as how the project's location in North Dakota will bring benefits to North Dakota.

## IV. ECONOMIC ANALYSIS OF THE WIND PORTFOLIO

Q. HOW DID THE COMPANY EVALUATE THE COST-EFFECTIVENESS OF THE PROJECTS COMPRISING THE WIND PORTFOLIO?

A. We principally used the Strategist resource planning model (Strategist).

Q. WHAT IS STRATEGIST?

A. Strategist is a modeling program that 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. Strategist can be used to test results under a range of input assumptions, also known as sensitivities. The Company uses this tool, which is industry standard, for the majority of its resource planning efforts.

Q. HOW DID THE COMPANY USE STRATEGIST TO ANALYZE THE SEVEN PROJECTS IN THE WIND PORTFOLIO?

A. We used Strategist to simulate the operation of the NSP System through 2053, with and without the addition of the 1,550 MW of wind generation proposed in the Wind Portfolio.

By reducing the amount of fossil fuel purchases and the amount of energy that is purchased from the market, thereby reducing the Company's overall fuel and purchased power costs, wind generation creates cost savings. Our Strategist analysis accounts for these cost savings, as well as the impact of the capital commitments or PPA payments associated with adding the wind generation projects.

Q. WHAT WAS THE RESULT OF THE STRATEGIST ANALYSIS?

A. We evaluated the proposed wind projects both on an individual basis and as a total portfolio, in order to analyze the benefits of each individual project as well as the combined benefits of the entire 1,550 MW Wind Portfolio. The results of the Strategist analysis show that these new wind resources will result in net savings for our customers under all sensitivities analyzed. Table 2, below, shows the Present Value of Revenue Requirement (PVRR) savings. The PVRR savings do not include $CO_2$ costs or other externality costs and do not include the surplus capacity credit.

**Table 2: Incremental PVRR Savings from Reference Case ($millions)**

| | PVRR | | | | |
|---|---|---|---|---|---|
| | Mkts On | Mkts Off | Mkts Off | Mkts On | Mkts Off |
| | Base | Dump Energy Credit | No Dump Energy Credit | Low Gas | Preferred Plan Renewables |
| Reference Case | 0 | 0 | 0 | 0 | 0 |
| BOT Crown Ridge | (372) | (342) | (317) | (271) | (291) |
| PPA Crown Ridge | (361) | (331) | (306) | (260) | (280) |
| Lake Benton | (77) | (92) | (90) | (39) | (96) |
| Clean Energy | (38) | (42) | (36) | (8) | (64) |
| Blazing Star 1 | (279) | (233) | (216) | (216) | (191) |
| Blazing Star 2 | (197) | (188) | (174) | (122) | (184) |
| Foxtail | (161) | (149) | (138) | (106) | (154) |
| Freeborn | (192) | (184) | (173) | (120) | (181) |
| All | (1,599) | (1,541) | (1,319) | (1,053) | (1,411) |

Q. WHAT DOES THIS TABLE SHOW?

A. It shows that the proposed Wind Portfolio provides significant benefits. Over the life of the Wind Portfolio, we are anticipating savings on a PVRR basis (exclusive of externality costs) of approximately $1.6 billion for the entire NSP System. The seven projects provide significant savings to our

customers over their lives, both individually and as a portfolio, even under the conservative sensitivity cases studied.

Q. WHAT ASSUMPTIONS DID THE COMPANY MAKE IN DEVELOPING THIS ANALYSIS?

A. In general, we believe we took a conservative approach in assessing the economic impacts of the Wind Portfolio. Under our base assumptions, we allow market sales or purchases (Markets-On) to best simulate the true interaction between our generation portfolio and the MISO market. We also analyzed sensitivities where we do not allow energy purchases or sales (Markets-Off). This is consistent with past analysis of resource additions in North Dakota. 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. In a Markets-On scenario we model the interaction of the NSP System with the larger MISO energy markets to determine how the energy from the Wind Portfolio will likely be utilized through MISO's central dispatch. As required by North Dakota statute, no environmental externality costs are included in the analysis. Our modeling assumptions are provided as Exhibit __,(PJM-1), Schedule 3.

Q. PLEASE DESCRIBE THE MARKETS-OFF/DUMP ENERGY CREDIT SENSITIVITY.

A. In this sensitivity (the second column in the previous table), we utilized a Markets-Off view. When we utilize a Markets-Off view, Strategist simulates the NSP System in isolation and serves the System with the System's own resources. To the extent the System is generating more energy that its load can utilize, Strategist considers the excess energy as "dump energy" and

assigns a value to the energy to simulate sales of the excess energy. The value attributed to the dump energy is 50 percent of the market LMP. This view identifies the value of the Wind Portfolio to the NSP System as a standalone system.

Q. PLEASE DESCRIBE THE MARKETS-OFF/NO DUMP ENERGY CREDIT SENSITIVITY.

A. This sensitivity is the same as the Markets-Off/Dump Energy Credit sensitivity except it does not provide any credit for dump energy. This view provides insight into the value of the Wind Portfolio to the NSP System merely from fuel savings, without accounting for energy sales. Even under this sensitivity, the Wind Portfolio provides significant benefits: $1.3 billion on a PVRR basis.

Q. PLEASE DESCRIBE THE MARKETS-ON/LOW GAS SENSITIVITY.

A. This sensitivity is similar to our Markets-On base case except it assumes lower gas prices than the base case. In this sensitivity, the NSP System is modeled as part of the larger MISO footprint, and the model allows both for economy market purchases to be made in lieu of generating from the NSP System and for energy to be sold into the MISO markets. Because gas prices are a material driver of energy market prices, this sensitivity provides insight into the economic advantages of the Wind Portfolio should gas prices (and therefore market prices) be lower than expected.

Q. PLEASE DESCRIBE THE MARKETS-OFF/PREFERRED PLAN RENEWABLES SENSITIVITY.

A. This sensitivity assumes a Markets-Off view and the addition of the other resources approved in our most recent IRP by the MPUC.

Q. WHAT DO YOU CONCLUDE FROM THIS ANALYSIS?

A. I conclude that the Wind Portfolio will provide material cost savings to the NSP System in all scenarios analyzed.

Q. DID XCEL ENERGY PERFORM OTHER SENSITIVITY ANALYSIS?

A. Yes. We also considered other sensitivities, including varying project lives, variations in O&M and capital costs, variations in wind capacity factors, and variations in gas prices. Table 3, below identifies the outcomes of these analyses. As shown in Table 3, the Wind Portfolio provides material cost savings to the NSP System in all scenarios analyzed.

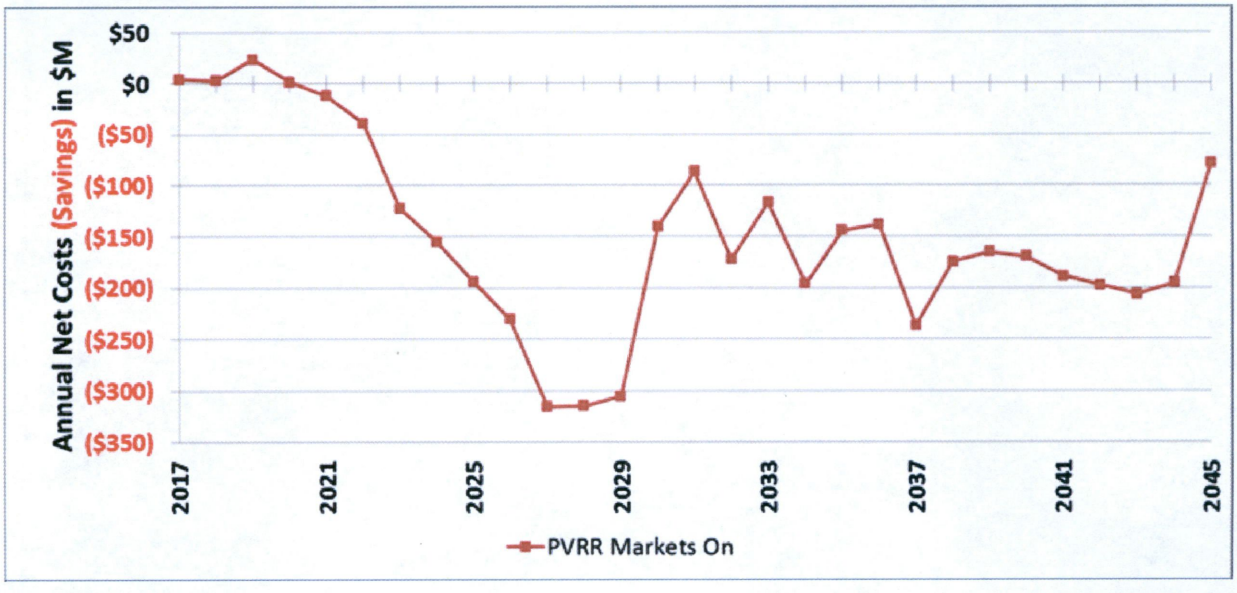
**Table 3: Additional Sensitivity Analysis**
**Incremental PVRR Savings from Reference Case ($millions)**

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

Q. DID THE COMPANY ANALYZE HOW THESE COST SAVINGS EVOLVE OVER THE LIFE OF THE PROJECTS?

A. Yes. To understand how the costs (savings) change over time, Figure 8 below visually portrays the annual costs (savings) impacts of the total portfolio as compared to the Reference Case.

**Figure 8: Annual Costs (Savings) Compared to Reference Case**




Q. WHAT DOES FIGURE 8 DEMONSTRATE?

A. Figure 8 provides system-wide impacts based on the most prevalent ratemaking treatment across our System and demonstrates that the addition of the Wind Portfolio will create a net cost to the NSP System of $23 million in 2019. While the Strategist model relies on the most prevalent ratemaking treatment of the System, actual revenue requirement will be based on the ratemaking treatment utilized in each jurisdiction. 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 8,

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.

Q. ARE THERE OTHER WAYS TO LOOK AT THESE SAVINGS?

A. Yes. 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 net present value as the actual cost streams generated by Strategist.

Q. WHAT WERE THE RESULTS OF YOUR ANALYSIS OF THE LEVELIZED COSTS?

A. 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 fuel costs and avoided capacity costs. Table 4 illustrates how the levelized costs of the proposed projects are more than offset by the value of avoided generation costs.

**Table 4: 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] |

* Value for Clean Energy #1 reflects the cost impacts during the 20-year life of the PPA term.

Q. DID THE COMPANY CONSIDER HOW ADDING WIND GENERATION RELATES TO THE POSSIBILITY THAT GAS PRICES MAY GO UP IN THE FUTURE?

A. Yes. 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, Table 5 shows a base volume of natural gas and the delta avoided by the studied projects.

**Table 5: 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) |

Q. WHAT IS THE ESTIMATED IMPACT OF ADDING THE WIND PORTFOLIO ON THE RATES PAID BY THE COMPANY'S NORTH DAKOTA CUSTOMERS?

A. 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. To put it another way, production from the Wind Portfolio will displace other generation on our System, or purchases in the MISO wholesale market, that would be at higher marginal costs.

Q. PLEASE EXPLAIN HOW YOU REACHED THAT CONCLUSION.

A. 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. I note that the Strategist model relies on a system-wide calculation of revenue requirement developed by applying the most prevalent ratemaking treatment across our system. Actual revenue requirement will be based on the ratemaking treatment utilized in each jurisdiction. 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 North Dakota 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 North Dakota rate case order.

Q. HOW WILL THE RATE IMPACT CHANGE OVER THE FIRST FEW YEARS AS THE WIND PORTFOLIO IS BEING DEVELOPED AND IMPLEMENTED?

A. Table 6 shows the forecasted incremental annual impact of the wind additions through 2022, from the perspective of revenue requirements. 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 6: Incremental North Dakota Revenue Requirement Impact of Proposed Portfolio in North Dakota, $M**

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|
| New Ownership Wind, 1250MW | 0.2 | 0.2 | 1.7 | 4.1 | 5.2 | 4.0 |
| New PPA Wind, 400MW | 0.0 | 0.0 | 0.1 | 1.3 | 1.3 | 1.4 |
| Production Cost Savings | 0.0 | 0.0 | (0.3) | (2.3) | (3.2) | (3.5) |
| MISO Purchases | 0.0 | 0.0 | (0.1) | (1.4) | (1.4) | (1.2) |
| MISO Sales | 0.0 | 0.0 | (0.2) | (3.0) | (4.3) | (4.6) |
| Wind Congestion Costs* | 0.0 | 0.0 | 0.1 | 0.8 | 1.1 | 1.1 |
| Wind Integration Costs | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.2 |
| Wind Coal Cycling Costs | 0.0 | 0.0 | 0.0 | 0.4 | 0.5 | 0.5 |
| **Net Costs** | **0.2** | **0.2** | **1.3** | **0.1** | **(0.7)** | **(2.1)** |

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

Q. HOW WILL THESE CHANGES IN REVENUE REQUIREMENTS BE REFLECTED ON NORTH DAKOTA CUSTOMERS' BILLS?

A. Table 7, below, shows the forecasted incremental impact on average monthly bills in North Dakota based on the revenue requirement impacts show in Table 5. I note that the actual impact on each customer class will vary depending on the specific ratemaking treatment in each jurisdiction. 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 $0.44 per month.

**Table 7: Incremental Average Monthly Bill Impacts**

| *Rate Class Impacts* | **2017** | **2018** | **2019** | **2020** | **2021** | **2022** |
|---|---|---|---|---|---|---|
| **Residential** | $0.08 | $0.05 | $0.44 | $(0.11) | $(0.41) | $(0.92) |
| **Commercial Non-Demand** | $0.12 | $0.08 | $0.66 | $(0.16) | $(0.60) | $(1.36) |
| **C&I Demand** | $2.69 | $1.87 | $15.19 | $(3.69) | $(13.90) | $(31.44) |
| **Lighting** | $0.06 | $0.04 | $0.31 | $(0.11) | $(0.33) | $(7.90) |

## V. CONCLUSION

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. The Company undertook a detailed and rigorous process to identify projects that would take advantage of the very low cost of wind generation while minimizing risk. We identified seven projects that will deliver financial benefits to our customers and hedge against future increases in the cost of fuel and government regulation. We used the Strategist model to estimate the cost of energy from our system over the life of the projects. Over the term of the contracts, we anticipate that customers will save, conservatively, approximately $1.6 billion. Even if natural gas prices grow at only half the forecasted rate, the projects are still expected to create benefits for our customers. The seven projects in the Wind Portfolio are prudent and reasonable, and the Commission should grant an ADP for them.

Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?

A. Yes, it does.

# Philip Joseph "P.J." Martin
## Director, Resource Planning and Bidding
## NSPM

Philip Joseph "P.J." Martin is the Director, Resource Planning and Bidding for Northern States Power Company – Minnesota. He is responsible for the direction of electric resource planning for the NSP System, which provides electric service to customers in North Dakota, South Dakota, Minnesota, Wisconsin, and Michigan.

Martin joined Xcel Energy in August 2015 as Director, Strategic Asset Planning where he focused primarily on business planning for the four operating companies at Xcel Energy. In October 2016, he was promoted to his current role.

Prior to joining Xcel Energy, Martin was a Portfolio Direct and Energy Trader at ACES Power Marketing. In these roles, he engaged in trading and wholesale portfolio management activities on behalf of electric cooperatives, municipal utilities, IPPs, banks, and other customers. He also supported long-term planning and risk management efforts for these customers in MISO, PJM, SERC, and other markets across the United States.

Martin received his B.A. in international relations from Dartmouth College and his Master of Business Administration degree with an emphasis in finance from East Carolina University.

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

Xcel Energy

January 23, 2017

leidos

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## Table of Contents

## Table of Contents



## List of Appendices



## List of Tables

# 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.

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[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.

## EXECUTIVE SUMMARY

- 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 *supra* 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 *supra* note 2.

[8] See *supra* 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 *supra* 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 |
|---|
| Confidentiality |
| Bid Certification |
| Cover Sheet |
| Pricing PPA |
| Pricing Ownership or BOT |
| O&M and Ongoing Capex BOT |
| Construction Milestones |
| Technical Description |
| Production Profile |
| Representation Authorization |
| Interconnection Details_v3 |
| Creditworthiness |
| Siting Environmental PPA |
| 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<br>Title | Company | Role |
|---|---|---|
| **Jonathan Adelman**<br>**AVP Strategic Resource and Business Planning** | Xcel Energy | Executive Management oversight |
| **Kurt Haeger**<br>**Executive Consultant** | Xcel Energy | LCOE Modeling and RFP compliance with Corporate Strategy and Business objectives |
| **PJ Martin**<br>**Director Strategic Resource Planning** | Xcel Energy | Direct RFP preparations and execution, manage internal management communications and completeness and threshold evaluator |
| **Thomas Mol**<br>**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**<br>**Resource Planning Analyst II** | Xcel Energy | RFP logging, proposal screening, Bidder communication and completeness and threshold evaluator |
| **Jon Landrum**<br>**Manager Resource Planning Analytics** | Xcel Energy | LCOE modeling |
| **Patrick Bourke**<br>**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<br>Title | Company | Role |
|---|---|---|---|
| **BOT Generation Performance Verification** | Lesley Dubois<br>Jerry Dittman | AWS<br>Xcel Energy | Verify BOT and PPA capacity factors to be used in LCOE |
| **BOT O&M/Cap Ex** | Nathan Svoboda<br>Senior Manager Operations | Xcel Energy | Develop procedure to determine O&M and capital expenditures for BOT to be used in LCOE<br>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<br>Manager Siting and Land Rights | Xcel Energy | Site Control and Land Rights Due Diligence |
| **Environmental Permits** | Jim Bodensteiner<br>Principle Environmental Analyst | Xcel Energy | Environmental Permit Due Diligence |
| **Finance and Credit** | Tim Carter<br>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<br>Principal Financial Consultant | Xcel Energy | Responsible for the accounting treatment assessment in Non-Price review |
| **Model BOT Project Term Sheet** | Jerry Dittmann<br>Manager Business Development | Xcel Energy | Model BOT project term sheet exceptions |
| **BOT Project Technical Specifications** | Jerry Dittmann<br>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.

## Section 4

| | | | |
|---|---|---|---|
| | | 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.

# 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**

# Table of Contents
# Northern States Power Company
# 2016 Wind Resources RFP

# Appendices

***Appendix A***
Proposal Forms and Instructions

***Appendix B***
Attachment A - NSP's Model Wind Power Purchase Agreement
Attachment B - NSP's Wind Farm Technical Requirements
Attachment C - NSP's Model Term Sheet for the Purchase and Sale of an Operational Wind Project

***Index of Appendix A Forms***

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

## 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: _____

Printed Name: Jonathan Adelson

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"):

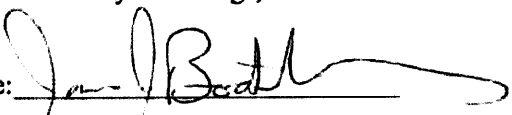
1. My role in the aforementioned RFP Process consists of reviewing and scoring of each bid's permitting/compliance and environmental study information including schedule and mitigation needs/planning.
2. I am making the attestations herein on behalf of myself.
    a. Except as disclosed in writing as 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 Dittmann

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 evaluation associated with the LCOE calculations
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: Kurtis J. Haeger

Date: 12-28-16

NSP 2016 WIND RFP PROCESS
EVALUATION PERSONNEL
ATTESTATION STATEMENT

I, [name] Jon Landrum, hereby state that I am employed in the capacity of [job title] Mgr, Resource Planning Analytics by Xcel Energy, located at [address] 800 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: Jon L

Printed Name: JON LANDRUM

Date: 12/28/16

NSP 2016 WIND RFP PROCESS
EVALUATION PERSONNEL
ATTESTATION STATEMENT

I, [name] P J . 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

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. Schubert, 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: _____

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.*

**Appendix C**

*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"

# 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:

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

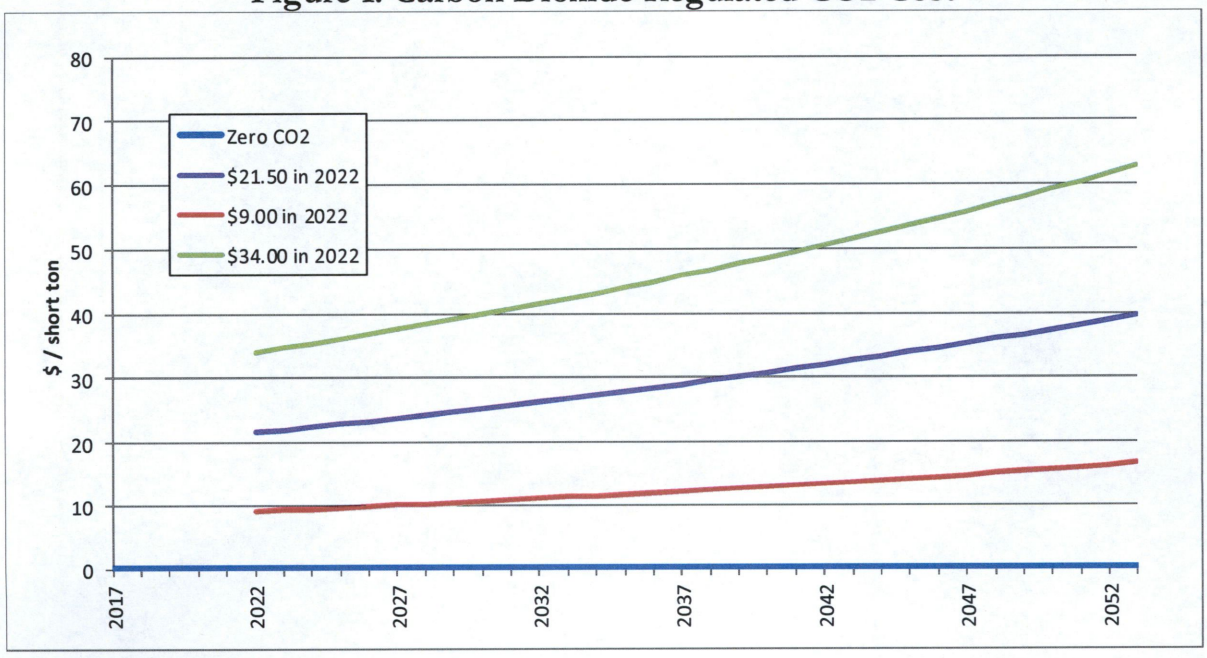
**Table 2: Reserve Margin**

| 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<br>2016 $ per short ton | | | | |
|---|---|---|---|---|
| | | | | |
| 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**

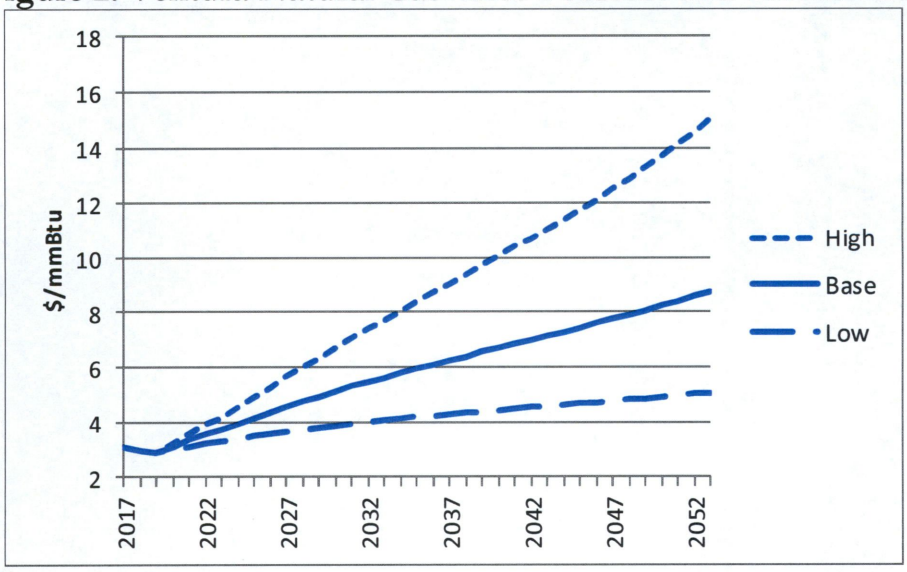
| July Demand (MW) | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|
| LMF | 921 | 930 | 940 | 948 | 957 | 966 | 974 | 983 |
| **July Demand (MW)** | **2025** | **2026** | **2027** | **2028** | **2029** | **2030** | **2031** | **2032** |
| LMF | 990 | 994 | 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.

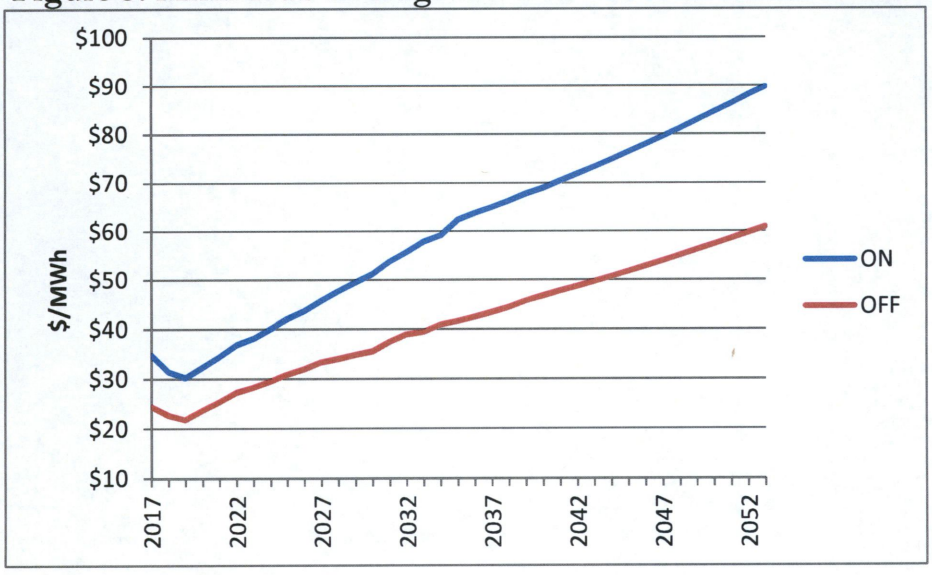
11. Natural Gas Demand Charges

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.

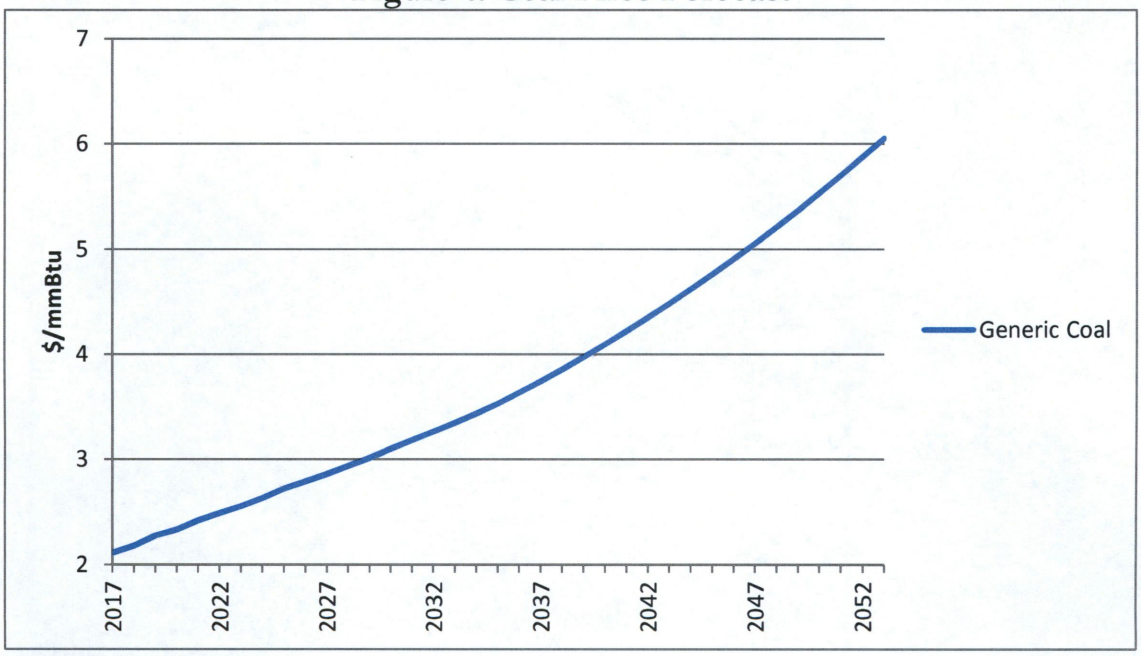
**Figure 3: Minn Hub Average On and Off Peak Market Price**



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.

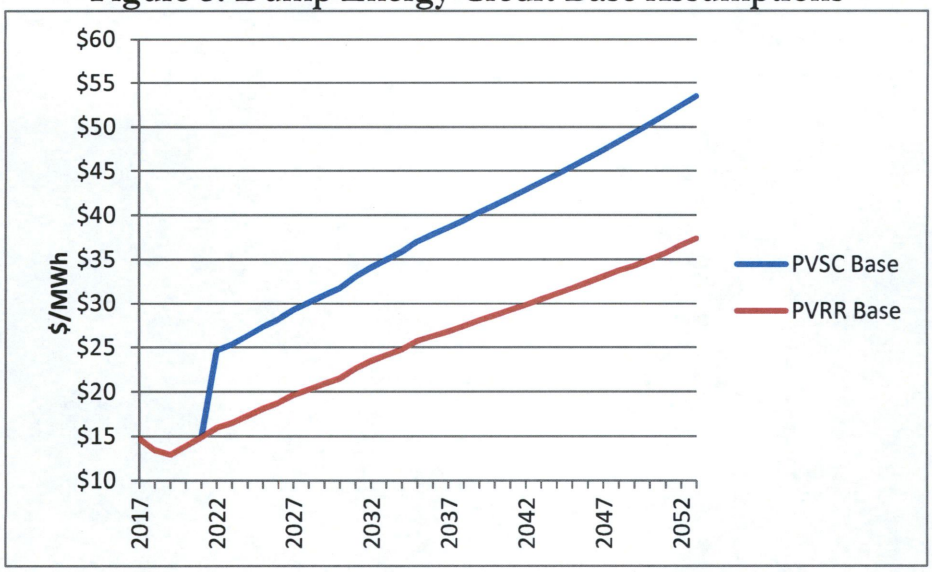
20. Emergency Energy Costs

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 Extemality 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**

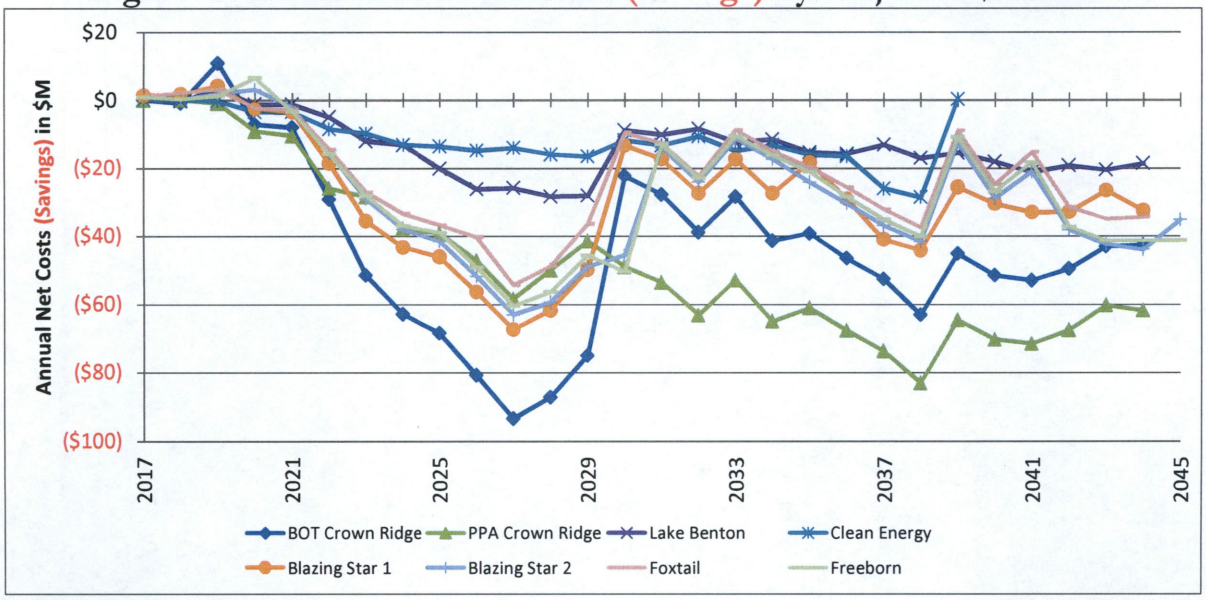



**Table 1: Annual PVSC Net Costs (Savings) by Project in $millions**

| | 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**

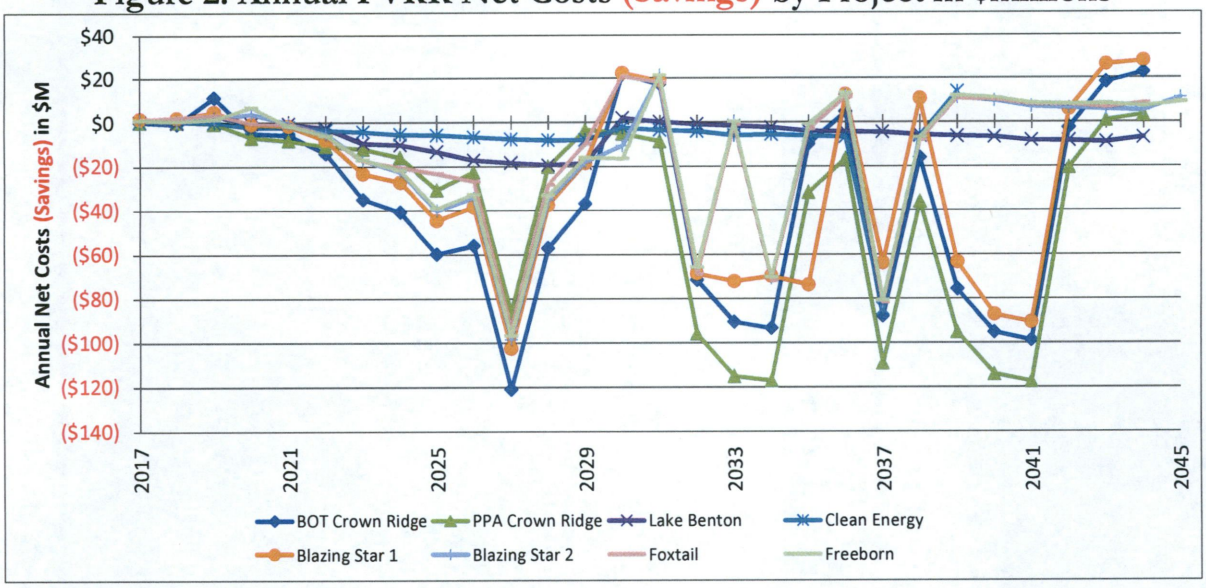



**Table 2: Annual PVRR Net Costs (Savings) by Project in $millions**

| | 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.

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# 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 |

Northern States Power Company

# 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 |

**STATE OF NORTH DAKOTA**
**BEFORE THE**
**NORTH DAKOTA PUBLIC SERVICE COMMISSION**

NORTHERN STATES POWER COMPANY
ADVANCE PRUDENCE – 1,550 MW WIND PORTFOLIO
APPLICATION

CASE NO. PU-17-___

## VERIFICATION

STATE OF MINNESOTA )
)ss.
COUNTY OF HENNEPIN )

Philip Joseph Martin, being first duly sworn on oath, deposes and says that he is the Director of Resource Planning and Bidding for Xcel Energy Services Inc. on behalf of Applicant Northern States Power Company, a Minnesota corporation, in the above-captioned matter, that the testimony and schedules submitted in the above-captioned matter under his name were prepared under his direction, that he knows the contents thereof, and that the same is true and correct to the best of his knowledge and belief.

Philip Joseph Martin

Subscribed and sworn to before me on this 27th day of March, 2017.

Notary Public
My Commission Expires: 1/31/2020

JOHN S. LIVINGSTON
NOTARY PUBLIC - MINNESOTA
My Commission Expires
January 31, 2020