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**PUBLIC DOCUMENT
TRADE SECRET DATA EXCISED**

February 13, 2015

- Via Email and Federal Express -

Darrell Nitschke, Executive Director
North Dakota Public Service Commission
State Capitol Building, Dept 408
600 East Boulevard
Bismarck, ND 59505-0480

RE: REQUEST FOR APPROVAL OF AN ADVANCE DETERMINATION OF PRUDENCE
FOR A POWER PURCHASE AGREEMENT WITH AURORA SOLAR, LLC FOR UP
TO 100 MW OF SOLAR GENERATION
CASE NO. PU-15-_____

Dear Mr. Nitschke:

Northern States Power Company, doing business as Xcel Energy, respectfully submits this Application to the North Dakota Public Service Commission for an Advance Determination of Prudence pursuant to North Dakota Century Code § 49-05-16, for up to 100 MW of nameplate solar generation to be added to the NSP System through a 20-year power purchase agreement with Aurora Solar, LLC, an affiliate of Geronimo Energy, LLC.

The Company's Application contains trade secret information. In accordance with Section 69-02-09-02 of the North Dakota Administrative Code, an Application for Trade Secret Protection is being provided along with a single copy of the trade secret version of the Application and supporting testimony in a sealed envelope marked **TRADE SECRET-PRIVATE**.

An original and nine copies of the public version of our Application are also being provided, along with the following:

- Direct testimonies of Company Witnesses Laura McCarten, Kurtis Haeger, and Paul Johnson, supporting the Company's Application;

**PUBLIC DOCUMENT –
TRADE SECRET DATA EXCISED**

- Verifications for the testimonies of Ms. McCarten, Mr. Haeger, and Mr. Johnson;
- CD containing the public version of the Application, testimonies and verifications, and Application for Trade Secret Protection; and
- A filing fee of \$175,000.

The Company is providing the \$175,000 filing fee as required by N.D.C.C. § 49-05-16(1)(b).

We look forward to working with the Commission in the review of this filing.

Sincerely,



DAVID H. SEDERQUIST
Sr. Consultant, Regulation & Finance
Enclosures

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

IN THE MATTER OF THE APPLICATION
OF NORTHERN STATES POWER
COMPANY FOR AN ADVANCE
DETERMINATION OF PRUDENCE FOR A
POWER PURCHASE AGREEMENT WITH
AURORA DISTRIBUTED SOLAR, LLC FOR
UP TO 100 MW OF SOLAR GENERATION

Case No. PU-15-_____

APPLICATION FOR ADVANCE DETERMINATION OF PRUDENCE

I. INTRODUCTION

Northern States Power Company, doing business as Xcel Energy, respectfully submits this Application to the North Dakota Public Service Commission for an Advance Determination of Prudence (ADP) pursuant to North Dakota Century Code § 49-05-16, for up to 100 MW of nameplate solar generation to be added to the NSP System¹ through a 20-year power purchase agreement (PPA) with Aurora Distributed Solar, LLC, an affiliate of Geronimo Energy, LLC (Geronimo Solar PPA).

The capacity and energy acquired under the Geronimo Solar PPA will be provided by distributed solar generation facilities to be located at up to 24 sites in Minnesota that interconnect to various Xcel Energy distribution substations. This application is made pursuant to N.D.C.C. § 49-05-16, the Settlement Agreement in Case No. PU-07-776, the Company's commitments in Case No. PU-12-59, and the Settlement Agreement in Case No. PU-12-813, *et. al.*

Our proposed resource addition to the NSP System will help (1) meet an identified capacity need of 150-500 MW on our system in the 2017-2019 time period that was identified in our 2010 Resource Plan, and (2) support our long-term solar energy commitments as described in our January 5, 2015 Resource Plan filing in Case No. PU-15-019.² To meet the need, we are proposing to add three new resources: (1) the

¹ The NSP System is comprised of generation, transmission, distribution and associated assets, designed to serve our approximately 1.8 million customers across five states: North Dakota, South Dakota, Minnesota, Wisconsin and Michigan. The Company plans, implements and operates the NSP System on an integrated basis, taking into account the needs of all of our customers and addressing the legal and policy requirements of all of our jurisdictions.

² Related filings that ultimately resulted in the resource presented in this application include: filings with the North Dakota Public Service Commission (Case Nos. PU-10-580, PU-13-194, PU-13-195) and Minnesota Public Utilities Commission (MPUC Docket Nos. E002/RP-10-825 and E002/CN-12-1240).

Geronimo Solar PPA, which is the subject of this Application; (2) Black Dog Unit 6, a 215 MW (nameplate) combustion turbine for which we have already received an ADP from the Commission in Case No. PU-13-194; and (3) the output from the 345 MW (nameplate) combined-cycle PPA with Mankato Energy Center, LLC, an affiliate of Calpine Corporation (the Calpine Project PPA).

We have determined that this portfolio of projects is a reasonable and prudent set of resources to meet the capacity need. As the Commission is aware, the Company initially proposed that our need be met with the addition of up to three new 215 MW natural gas combustion turbine units, with one of the combustion turbines (CT) located at our existing Black Dog plant (Black Dog Unit 6), in Burnsville, Minnesota, and the other two CTs (Red River Valley Units 1 and 2) located at a new plant to be constructed near Hankinson, North Dakota, in the Red River Valley.³ The Commission found these additions to be prudent and an ADP was granted for each of these resources.⁴

We acknowledged in Case No. PU-13-194, however, that it was not certain that the three proposed units reviewed in that Case would actually be constructed as we were also evaluating capacity proposals that were submitted in the Minnesota Public Utilities Commission's (MPUC) Competitive Acquisition Process (CAP) proceedings.⁵ In the CAP Docket (which is a mandatory process for Xcel Energy in Minnesota) the Company evaluated: (1) Black Dog Unit 6; (2) the Red River Valley Units; (3) the Calpine Project; (4) the Geronimo Solar Project; (5) a 150 MW combustion turbine project proposed by Invenergy to expand its existing Cannon Falls, Minnesota facility (Invenergy Project); and (6) a system purchase from Great River Energy.

In evaluating these resource options, our analysis showed that Black Dog Unit 6 in conjunction with either the Calpine Project or the Invenergy Project were least-cost

³ *In the Matter of the Application of Northern States Power Company for an Advance Determination of Prudence for Three Natural Gas Combustion Turbine Generators*, Case No. PU-13-194 (Gas CT Case), Application for Advance Determination of Prudence (Gas CT ADP) at 1-2.

⁴ The Commission granted the ADPs in its February 26, 2014 *Order Adopting Settlement* that resolved issues in a number of matters, including the Gas CT Case.

⁵ *In the Matter of the Petition of Northern States Power Company d/b/a Xcel Energy for Approval of Competitive Resource Acquisition Proposal and Certificate of Need*, Docket E-002/CN-12-1240, *In the Matter of a Draft Purchase Power Agreement with Geronimo Wind Energy, LLC, d/b/a Geronimo Energy, LLC*, Docket No. E-002/M-14-788, and *In the Matter of Draft Power Purchase Agreements with Calpine Corporation and Invenergy Thermal Development, and Proposed Price Terms for Black Dog Unit 6*, Docket No. E-002/M-14-789, ORDER APPROVING POWER PURCHASE AGREEMENT WITH CALPINE, APPROVING POWER PURCHASE AGREEMENT WITH GERONIMO AND APPROVING PRICE TERMS WITH XCEL, (Feb. 5, 2015)(February 2015 CAP Order). The CAP Docket is discussed in the Gas CT Case, Supplemental Testimony of James R. Alders (Alders Supp. Testimony) (Nov. 12, 2013) at 12.

options to fill the identified capacity need.⁶ With respect to our evaluation in the CAP Docket, which utilizes externality values required under Minnesota's resource evaluation process, our analysis demonstrated that the combination of Black Dog Unit 6 with the Calpine Project PPA, or the combination of Black Dog Unit 6 with the Invenergy Project PPA had less societal costs.⁷ However, evaluation of other resource options presented in the CAP Docket suggested other benefits could be derived with a larger resource portfolio consisting of the Geronimo Solar PPA in addition to Black Dog Unit 6 and the Calpine Project PPA.

Ultimately, we concluded that the Geronimo Solar PPA is a prudent resource to add capacity to the system and to further our renewable energy goals and obligations. It also provides fuel diversity and added flexibility to further reduce CO₂ and fossil-fuel emissions. When paired with the other resources we have selected – Black Dog Unit 6 and the Calpine Project PPA – the Geronimo Solar PPA provides additional diversity of resources on our system to meet our customers' needs at an overall reasonable cost.

Purchasing this solar capacity at this time provides several strategic benefits, including:

- Adding new capacity on the system at this time enhances flexibility for future decisions relating to potential retirements of older existing thermal resources on our system. This timing provides benefits by maximizing flexibility depending upon future circumstances.
- Adding carbon-free solar generation at this time provides a hedge against future natural gas price volatility and emerging environmental regulations that, if enacted, would make it increasingly likely that the Company's older coal resources may need to be replaced.
- Adding solar generation at this time allows the project to capture the benefit of a 30 percent investment tax credit (ITC) that is set to step down to 10 percent at the end of 2016.

The Company recognizes that this ADP is for a resource that is not least-cost on a Present Value of Revenue Requirements (PVRR) basis. We also recognize that this resource was chosen, in part, as a result of Minnesota's resource selection process that included consideration of that State's energy policies. This Application and supporting testimony will demonstrate the prudence of this resource addition under the present circumstances within the Company's integrated NSP System.

⁶ Case CT Case, Alders Supp. Testimony at 10-11.

⁷ Case CT Case, Alders Supp. Testimony at 23, and Table 5 at 26.

In support of this Application, the Company provides the Direct Testimony of Company Witnesses Ms. Laura McCarten, Mr. Paul B. Johnson, and Mr. Kurtis J. Haeger. Ms. McCarten's Direct Testimony provides additional information with respect to the CAP process, the selected resource, and the benefits of adding capacity at this time. Ms. McCarten also describes the issues raised in the Company's last rate case regarding the divergent energy policies among some of the states in which the Company provides electric service. Mr. Johnson provides information regarding the Strategist modeling supporting this filing. Mr. Haeger discusses the factors that affect the Company's forecasting of its need, as well as the considerations that impacted the Company's determination that the Calpine Project PPA, as well as the Geronimo Solar PPA and Black Dog Unit 6, are the appropriate resources to add to our system in light of the Company's down-stream capacity needs. Mr. Haeger also discusses the "Restack concept" embodied in our recent rate case Settlement Agreement, and how the Restack could be utilized in this proceeding.

The remainder of this Application will provide:

- Description of the Applicant;
- Communications and Service;
- Standard of Review;
- Determination of Need;
- Resource Selection Processes;
- Geronimo Solar PPA;
- Prudence of Geronimo Solar PPA; and
- Conclusion.

II. DESCRIPTION OF APPLICANT

Xcel Energy is a Minnesota corporation duly authorized to conduct business in the State of North Dakota as a foreign corporation. The Company conducts business in the State of North Dakota as a public utility subject to the jurisdiction and regulation of the Commission pursuant to Title 49 of the North Dakota Century Code. The name and address of Xcel Energy is:

Northern States Power (NSP) Company,
a Minnesota corporation
414 Nicollet Mall
Minneapolis, Minnesota 55401

Xcel Energy also operates in North Dakota from the following address:

Northern States Power (NSP) Company,
a Minnesota corporation
2302 Great Northern Drive
Fargo, North Dakota 58102

The Company's Certificate of Incorporation with amendments and Certificate of Authority were filed with the Commission on September 30, 2009 and October 12, 2009, respectively, in Case No. PU-09-664. Current Certificates of Good Standing issued by the North Dakota and Minnesota Secretaries of State were filed in the same docket on January 13, 2014, and are incorporated herein by reference.

Xcel Energy has service territory in five upper Midwest states including North Dakota. We presently serve over 112,000 retail electric customers in and around Fargo, Grand Forks, and Minot, North Dakota. We own approximately 304 miles of transmission lines and 19 substations in North Dakota.

III. COMMUNICATIONS AND SERVICE

We respectfully request that the following person be placed on the Commission's official service list for all official communications in this case:

David H. Sederquist Senior Consultant, Regulation and Finance Xcel Energy Services Inc. 2302 Great Northern Drive Fargo, ND 58102	Tiffany Hughes Records Specialist Xcel Energy Services Inc. 414 Nicollet Mall, 7th Floor Minneapolis, MN 55401
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IV. STANDARD OF REVIEW

North Dakota Century Code Section 49-05-16 (1)(d) authorizes the Commission to issue an ADP if it "determines that the resource addition is prudent." Section 49-05-16 (7) further provides that "[t]here is a rebuttable presumption that a resource addition located in the state is prudent."

This standard is similar to the "honestly and prudently invested" standard that the Commission uses for ratemaking. *See* N.D.C.C. § 49-06-02. The general prudence standard calls for determining whether the utility action was reasonable at the time it was taken under all relevant circumstances. *See* Charles F. Philips, Jr., *The Regulation of Public Utilities – Theory and Practice* at 292 (Public Utility Reports 1988); *see also* David. J. Muchow, William A. Mogel, *Energy Law and Transactions* at § 4.02[3][b] (2009). Under

N.D.C.C. § 49-05-16 (1), the Commission may issue an order approving the prudence of a proposed project if four conditions are met:

1. The public utility files with its application a projection of costs to the date of the anticipated commercial operation of the resource addition;
2. The public utility files with its application a fee in the amount of one hundred seventy-five thousand dollars;
3. The commission provides notice and holds a hearing, if appropriate, in accordance with section 49-02-02; and
4. The commission determine that the resource addition is prudent. For facilities located or to be located in this state the commission, in determining whether the resource addition is prudent, shall consider the benefits of having the resource addition located in this state.

V. DETERMINATION OF NEED

A. Forecasting Need

The assessment of whether there is a resource need is based on three primary factors: the Company's peak demand forecast; its reserve margins; and the maximum generation capability of its existing resources. In addition, in assessing need, the Company must look to the energy policies of its various jurisdictions and assess whether certain types of generation are needed to satisfy the legal and policy requirements in one or more of our jurisdictions. For example, the Company may need additional capacity of a particular type to meet relevant requirements, such as additional renewable energy to reduce green house gas and fossil fuel emissions to meet evolving federal and state limitations. In other words, we determine the need to add generation to our system based on a variety of requirements, including the requirement that we at all times (1) meet our customers' demand for electricity (peak demand); (2) ensure an adequate margin of excess capacity to reliably do so (reserve margins); and (3) have adequate capacity from the resources we have available to meet customer demand while maintaining our reserve margin.

In addition to analyzing peak demand in our forecasts, we also forecast our total annual energy requirements (sales plus transmission losses), including the impacts of Demand-Side Management. By doing so, we can assess not only our capacity needs but also the type of resource that will best address our energy needs. This analysis is necessary to determine if a baseload, intermediate, or peaking resource addition will

be the most appropriate type of resource to add to the system to address energy as well as capacity needs.

As part of our resource planning efforts, we develop forecasts of these variables to determine if there is a need to add more resources to our system in the future as well as what types of resources to add. As time goes on, forecasts can and do change and changing economic conditions impact the level and timing of the need. Accordingly, it is important to recognize that forecasts are essentially predictions of potential future circumstances based on a specific set of assumptions at a particular point in time.

Building electric generation is an expensive and time-consuming endeavor that must be planned well in advance in order to complete construction to match the anticipated need. Consequently, we must rely on our forecasts to determine if we have a need to add capacity to our system, recognizing that our forecasts may change over the long lead times inherent in generation development. To avoid the “analysis paralysis” that can be inherent in trying to forecast an uncertain and ever-changing future, we must at some point establish a need and then begin the long-lead-time process of selecting resources, obtaining regulatory approvals, permitting, developing, and constructing the generation resources.

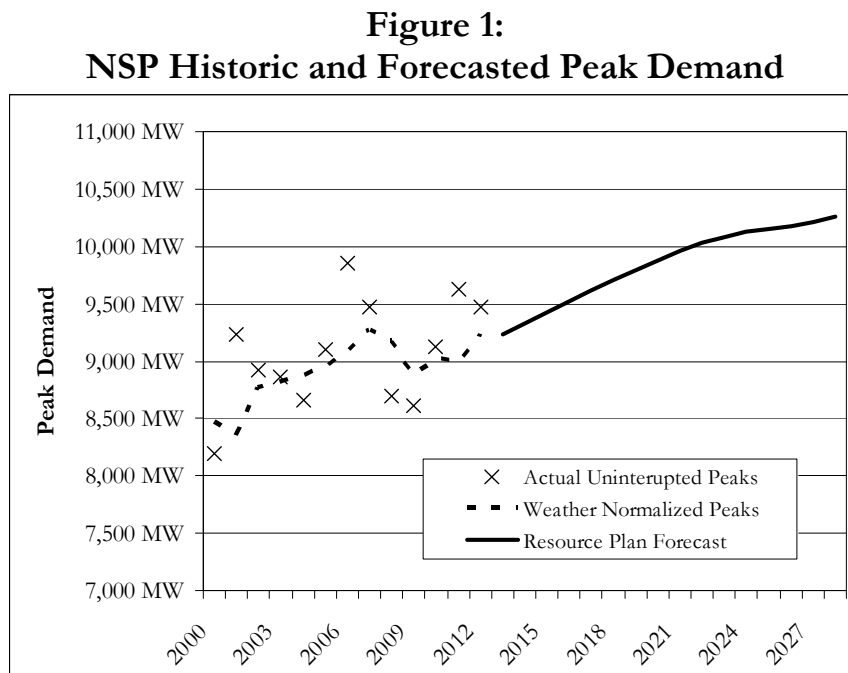
In general, we first determine if there is a system capacity need as part of the forecasting process utilized in our resource planning efforts. We then update that forecast to provide the best available information to our regulators as we begin the process to obtain regulatory input regarding which resources to select to meet that need. These forecasts, taken together, form the basis for our subsequent decisions on how to proceed rather than become stuck due to the “analysis paralysis” described above. As regulatory processes are ongoing, we may update our forecasts several times to determine if our initial analyses continue to demonstrate the appropriateness to add resources to our system based on the updated information.

1. Fall 2011 Forecast

In this Case, the forecast used to establish the capacity need of 150-500 MW was the Company’s updated Fall 2011 Forecast. The Fall 2011 Forecast updated the forecasting analysis in our 2010 Resource Plan, which first identified our capacity need. Mr. Haeger further describes in his Direct Testimony the forecast needs identified in our 2010 Resource Plan proceedings, the updates we made to that forecast, and the effects of the economic circumstances in that timeframe on our forecast.

The Fall 2011 Forecast (augmented with information through our Spring 2013 forecast) was the most up-to-date information available when the Company began the regulatory approval processes in North Dakota and Minnesota for the selection of appropriate resources to meet the identified need. This is the forecast underlying our analysis in the Gas CT Case, as well as the resource selection proceedings in the MPUC’s CAP Docket, and we advised that it was prudent to plan to meet the identified need in the Fall 2011 Forecast because “this ensures adequate generating capacity under all reasonable circumstances.”⁸ While subsequent forecasts have indicated a lower need in 2017-2019, we concluded it was appropriate to rely upon the Fall 2011 Forecast in our analysis and subsequent applications to provide consistency through the many reviews of our resource selections.

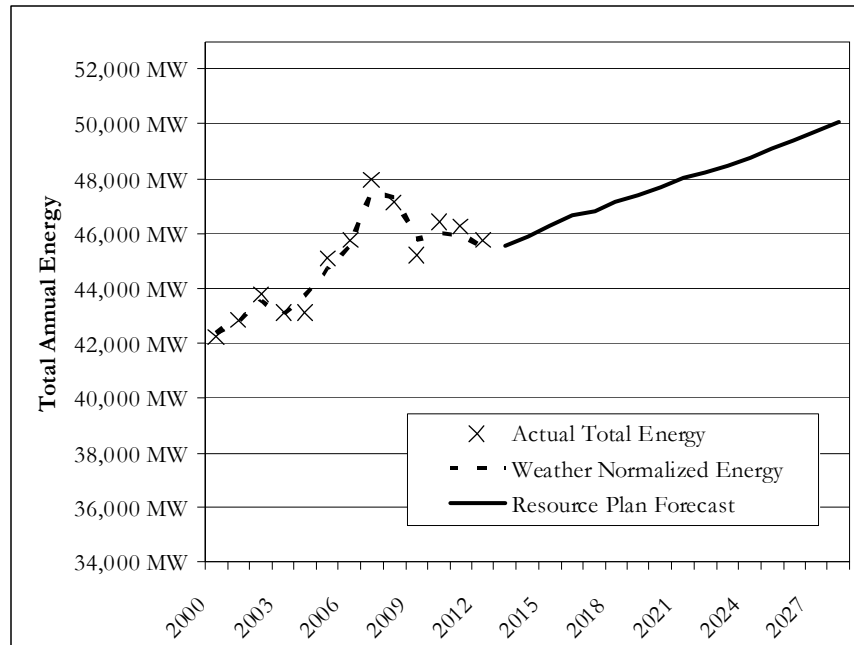
Figure 1 provides the Fall 2011 Forecast’s peak demands. As shown in Figure 1, from 2013 through 2020, the average rate of growth in our peak demand forecast is 1.0 percent.



Our total annual energy forecast is shown in Figure 2. The Fall 2011 Forecast assumed an average growth rate from 2013 to 2020 of 0.7 percent.

⁸ Gas CT ADP at 18.

**Figure 2:
NSP Historic and Forecasts Total Annual Energy**



Our Fall 2011 Forecast also took into consideration the reserve margin calculations specified by Midcontinent Independent System Operator, Inc., (MISO) using the criteria applicable at the time. MISO calculates the reserve margin percentage based on loss of load expectation (LOLE) studies that calculate how high the reserve margin must be to ensure that load will not have to be curtailed any more often than once in every 10 years. Comparing the load forecast plus reserve margin to the capacity ratings of Xcel Energy-owned resources plus purchased power, our system's forecasted capacity need is approximately 500 MW by 2019-2020 as shown in Table 1.

**Table 1:
System Capacity Need
(Fall 2011 Forecast)**

	2015	2016	2017	2018	2019	2020
Peak Forecast	9,428	9,524	9,613	9,708	9,799	9,881
<u>x 1+RM%</u>	<u>3.8%</u>	<u>3.8%</u>	<u>3.8%</u>	<u>3.8%</u>	<u>3.8%</u>	<u>3.8%</u>
= Total Obligation	9,786	9,885	9,977	10,076	10,170	10,255
<u>Resources</u>	2015	2016	2017	2018	2019	2020
Coal	2,331	2,331	2,331	2,331	2,331	2,331
Nuclear	1,610	1,610	1,610	1,610	1,610	1,610
Gas	3,476	3,534	3,437	3,424	3,424	3,424
Renewable	1,288	1,289	1,287	1,238	1,212	1,213
Other	92	-	-	-	-	-
<u>Load Management*</u>	<u>1,145</u>	<u>1,153</u>	<u>1,157</u>	<u>1,153</u>	<u>1,149</u>	<u>1,145</u>
Total	9,943	9,917	9,823	9,757	9,727	9,724
Long (Short)	157	32	(154)	(319)	(443)	(532)

* Includes reserves

Our Fall 2011 Forecast identified a capacity need of 154 MW in 2017, growing to 532 MW in 2020.

2. Subsequent Forecast Updates

Since developing our Fall 2011 Forecast, we have updated our demand forecast several times: in the Spring of 2012, in the Fall of 2012, in the Spring of 2013, and in 2014 as depicted in Figure 3 below. As described in Mr. Haeger’s Direct Testimony, this is a normal part of planning, but as a result, it is necessary to decide which forecast is the most prudent to use to make a resource addition to avoid the risk that “analysis paralysis” prevents the Company from timely meeting need as it materializes.

Most recently, the Company prepared a new forecast to support our recently-filed 2015 Resource Plan.⁹ The most recent forecast suggests weakening demand and the possibility that the Company will not need to add additional capacity to its system until approximately 2024. This suggests the Company could delay adding resources to its system at this time. However, in light of the various reviews and applications of

⁹ Case No. PU-15-019.

our Fall 2011 Forecast with respect to resource options and related timing, we are not relying on the forecast in the 2015 Resource Plan filing to support the need in this Case.

B. Forecast Uncertainty

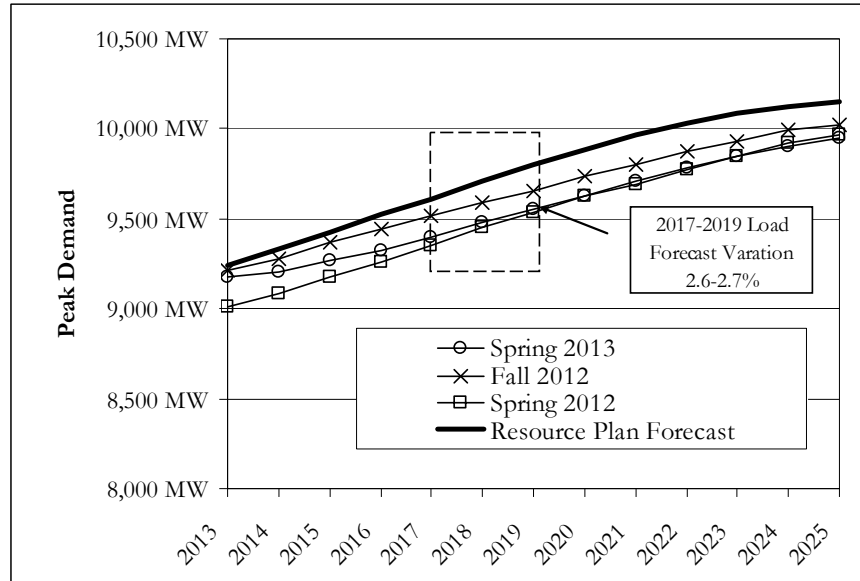
As described in greater detail in Mr. Haeger's Direct Testimony, peak demand forecasts are dependent on underlying assumptions regarding economic growth. If the assumptions change, the forecast will change. And if actual circumstances do not match the assumptions used, actual results will be different than the forecast results.

These assumptions can change dramatically with the ups and downs of the economy. For example, it has been difficult to predict what kind of economic conditions will result from the uneven recovery across the region from the 2008 recession. And it continues to be difficult to predict what impact current circumstances, such as the recent drop in oil prices, may have on our load growth. The Company's varying forecasts over the course of its resource planning process supports taking a conservative approach to ensure sufficient available generation to serve our customers' requirements under all reasonable circumstances.

Relatively small changes in economic growth rate assumptions can have a significant impact on the amount of needed resources. With a nearly 10,000 MW integrated system, a demand forecast change of only a few percent result in estimates varying by several hundred MWs. The variation in our load forecast occurs within a relatively tight range, however, and the amount of the variation is relatively small in the context of our total system peak demand.

As noted above, since the Fall of 2011 when our 2010 Resource Plan analysis was completed, the Company has updated its forecast several times. The total variation in forecasts has been about 250 MW, or 2.6 percent, in the 2017–2019 timeframe. Figure 3 shows the peak demand forecast changes.

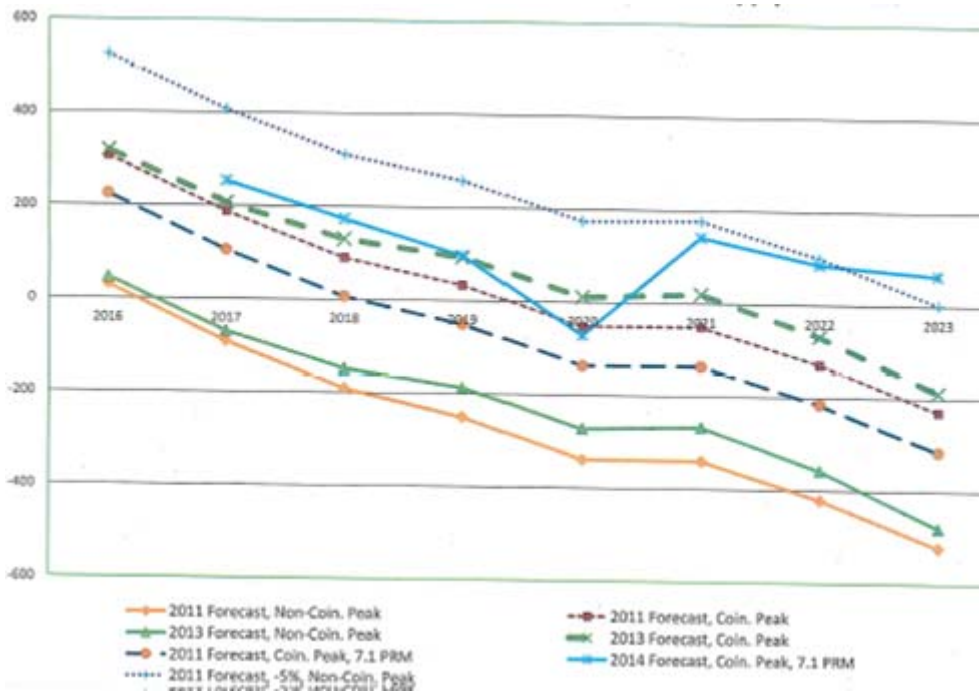
**Figure 3:
Variation in Peak Demand Forecasts**



These relatively small variations in our forecasts are primarily a reflection of the inherent uncertainty in forecasting, and we do not believe there is currently any indication of a definitive change in the future peak demand of our customers.

Figure 4 below, which includes a series of recent demand forecasts arising during our 2010 Resource Plan proceedings, illustrates the forecasting uncertainty and the potential that very small changes could result in a material swing in the required amount of capacity.

**Figure 4:
Impact of Coincident and Non-Coincident Peak Methodologies on
Resource Plan Need Forecasts**



Source: Department of Commerce, Docket No. E002/CN-12-1240 (December 10, 2014)

C. Implications of Forecast Variability

Xcel Energy generally takes a conservative approach to evaluating resource needs to ensure the Company has adequate resources to satisfy our obligation to serve under all reasonable circumstances. Forecast demand fluctuates over time, and sometimes significantly, based on small changes in economic indicators. Because resource decisions are made in the midst of this type of fluctuation, we must balance the cost of new generation against the risk of falling short or exposing our customers to too much market risk. In reaching that balance, we believe it is appropriate to plan for a range of outcomes. While this may sometimes mean that available capacity will exceed the identified need for a short period of time, this is preferable to incurring a shortfall of capacity. Further, this conservative planning approach insulates our customers from over-reliance on the MISO market due to routine variations in the availability of system resources.

The variability in our forecasts since the Fall 2011 Forecast, which established our baseline resource need, indicates that the NSP System could be in deficit between 2017 and 2024. Even our current forecast (used in the 2015 Resource Plan) shows that our capacity position in 2019 and 2020 is very near a deficit and any uptick in demand would put us in the position of needing to acquire market capacity. In

addition, this variability is impacted by the public policy choices that we are called upon to implement within our integrated NSP System.

The variability in our forecasts also indicates some uncertainty with respect to the size and timing of our capacity need. Consequently, the question is not if but when to make resource additions, and of what size and type. Answering these questions must also take into account known changes to our system in the out-years of our planning horizon to ensure we have sufficient capacity to address retiring generation, expiring PPAs, and other known issues that will affect our generation fleet.

While delaying making any resource decision until the actual timing and size of a capacity need is certain would limit the rate impacts of adding resources to our system, the drawback of this course of action is that it could require us to make the ultimate decision to add resources very near to the time they are needed. This would limit the opportunity to examine different options, since the urgency to meet an imminent capacity deficit will likely outweigh cost considerations in deciding which resource to select. Thus, we would likely be price takers in the marketplace as a result of the decision to add resources being made close to the timing of the need. Delaying a decision for more certainty may put us in a position where we cannot construct the needed resources in time to meet the need. This could lead to us being short on capacity and subject us to uncertain and volatile short term capacity market prices to obtain the significant amounts of capacity necessary to meet the needs of the large, integrated, NSP System.

Another course of action is to act conservatively in the face of uncertainty and make resource additions as a need is forecasted and have those additions be of a size and type to address the need in a way that also positions us well for the future. This approach is premised on the assumption that it is better for a utility to be long than short on capacity, since the utility has the obligation to serve all of its customers' needs under all reasonable circumstances and must have resources available to meet those needs. The benefits to this approach are that it provides the time needed to make resource decisions through the use of competitive processes to help bring down the cost of these resources. Additionally, it avoids exposing the Company - and ultimately customers - to short-term capacity markets and the price uncertainty inherent with such markets. The drawbacks to this approach are that it could lead to a system that is overbuilt in the short term, with the consonant cost impacts to customers.

We recognize that these two paths sit on opposite ends of the resource planning spectrum and that the most prudent approach to adding capacity to the NSP System lies somewhere in the middle. Mr. Haeger provides additional discussion in his Direct

Testimony with respect to balancing uncertainty and reliability. This ADP Application presents the difficult question of where along this spectrum is the appropriate point at which to make a resource decision. We believe our Application demonstrates the prudence of making resource additions now in spite of forecast uncertainty, which includes a recent forecast update that shows a slacking of demand.

VI. RESOURCE SELECTION PROCESS

Xcel Energy recognizes that that the Geronimo Solar PPA was selected in the Minnesota CAP Docket and that its selection is, in part, an outcome of energy policies in Minnesota. To put this ADP request in context, we begin with a description of the processes we undertook to select this resource.

A. Overview

The Company, along with its affiliate Northern States Power Company, a Wisconsin corporation, jointly plan for and operate the integrated NSP System. The NSP System serves over 1.8 million retail electric customers in Michigan, Minnesota, North Dakota, South Dakota, and Wisconsin. Because customers in these five states are served by the same system, we have been able to achieve significant economies of scale that provide benefits to all of our customers in all of the states we serve.¹⁰ We have been successfully planning for and managing the integrated NSP System to meet all of our customers' needs for almost 100 years.

The operation of the NSP System is subject to the regulatory oversight of five State utility commissions, as well as various stakeholders within each State. Each of the States in which we provide electric service has different regulatory constructs and oversight regimes. Two of the States in which we provide service – North Dakota and Minnesota – require a form of preapproval for the resources we select. The other states we serve generally determine the prudence of a resource addition when we seek to include those costs in rates through a rate case.¹¹

¹⁰ Our integrated system provides significant benefits to our customers and offers economies of scale benefits that could not be available from a smaller or single-jurisdiction utility. Our customers benefit from a *pro rata* share of our almost 1,800 MW of nuclear generation and associated carbon-free energy, over 3,000 MW of coal generation and 900 MW of advantageous Canadian hydro capacity and carbon-free energy.

¹¹ Resource review in South Dakota is handled through a prudence review when the utility files a rate case that proposes adding the resource to rate base. In Wisconsin and Michigan, the addition of new resources is subject to FERC-filed interchange agreements that the Xcel Energy operating companies in those States have with the Company.

We are required to balance the energy policies of all of the States in which we provide service. The Company appreciates the input and feedback from all of our regulators on appropriate resource choices and that we are constrained to follow the regulatory processes prescribed by lawmakers and regulators in each State.

In making resource choices we take into account existing and evolving environmental regulations; State public policy choices from each of our jurisdictions; changing customer expectations; the condition of our existing generation fleet, which is aging and will require significant change in the coming years; and emerging technologies that change the way energy is generated and delivered. This multifaceted set of issues sometimes means that we may choose a resource to meet state policy goals in an amount greater than what our forecast might suggest, particularly in a circumstance where we have experienced forecast volatility.

We have provided a robust discussion of all of these competing interests in our recent 2015 Resource Plan filing. However, we provide additional discussion of some of these critical issues here as they had an impact on our decision to seek an ADP for the Geronimo Solar PPA.

1. Evolving Environmental Regulations

New air, water, and waste regulations have been updated and adopted by the Environmental Protection Agency (EPA). Regulations for criteria pollutants - particularly oxides of nitrogen, sulfur dioxide, particulate matter, and ozone - continue to be updated and are likely to impose added constraints on operation of some power plants. The EPA has proposed its existing source Clean Power Plan, and has announced that it anticipates finalizing these new rules in mid-summer 2015. Further, Regional Haze Rules and other environmental regulations will also impact our generation fleet. Maintaining flexibility to comply with these requirements will be important over the coming years. These regulations inform our thinking as to (1) what will be necessary to maintain compliance at our generating facilities, and (2) what type of resource additions we may need in the future.

With that said, uncertainty surrounds some of the EPA's environmental regulations. The primary example is the EPA's existing source greenhouse gas (GHG) performance standard, known as the Clean Power Plan, or Section 111(d). The EPA has issued proposed rules, which are expected to be finalized in June 2015. The proposed 111(d) process will determine what compliance alternatives are available, whether each of our jurisdictions will implement unit-based or mass-based programs, whether they will collaborate with other states in multi-state plans, and how much of the CO₂ reduction burden they will assign to the Company versus other utilities. We

will not definitively know our share of the responsibility for meeting the attainment requirements in any of the states we serve, or our compliance options, until the states submit and EPA approves a state implementation plan (SIP).

Any final rule is likely to face legal challenges, which depending on whether or not the rule is stayed during litigation, may affect the timeline for SIP development. If the rule is not stayed, each State will draft plans and submit them to the EPA by the 2016 to 2018 timeframe, for approval one year later with compliance beginning in 2020. If the rule is stayed, it is unknown what the compliance obligations will be or when compliance obligations will begin.

The uncertainties surrounding these new and emerging regulations suggest that it is reasonable for us to hedge our system-wide portfolio now to provide multiple ways to ensure compliance with final regulations as they emerge.

2. Evolving NSP System

As we describe more fully in our 2015 Resource Plan, our integrated NSP System is evolving and may change significantly over the next 20 years. From 2025-2035, we will experience a reduction in energy resources due to power contracts expiring, plant retirements, and the expiration of our nuclear licenses. Fully 75 percent of our supply portfolio will need to be addressed by 2035.

First, the future of Sherco Units 1 and 2 is of considerable importance to the Company and our stakeholders. We anticipate that without the installation of costly Selective Catalytic Reduction (SCR) equipment, these units could not operate beyond 2030 under anticipated environmental requirements. As described in more detail in our 2015 Resource Plan, some of our stakeholders would prefer that these units be retired earlier while others may desire that the needed investments be made to preserve the potential for extended operations.

No decision on the future of Sherco Units 1 and 2 has been made. Indeed, we anticipate the future resolution of Sherco Units 1 and 2 will result in a significant policy debate among all of our stakeholders. Nevertheless, it will be important for the Company to have options in place to address the eventual outcome of that debate. Adding carbon-free generation to the system now provides flexibility as the policy debates on our supply mix play out.

Second, in 2023 we are planning to cease operation of the 153 MW Blue Lake Units 1-4 as these older oil-fired peaking units reach the end of their useful life. In 2025, our 825 MW Manitoba Hydro contracts expire. In 2026 and 2027, our contracts for

the output of the 262 MW Cottage Grove Combined Cycle Energy Center and existing 375 MW Combined Cycle unit at the Mankato Combined Cycle Energy Center expire. This is generation that will need to be replaced and having supply choices available to us provides additional flexibility in designing the optimal future supply mix.

Third, in 2030 our license to operate our 671 MW Monticello nuclear plant expires, and in 2033/34 our licenses for our 1,100 MW Prairie Island nuclear plant expires. At this time we only have authority to operate these units to the end of their existing licenses. Since nuclear is a crucial carbon-free, baseload resource, federal and state carbon goals will become more difficult to meet when these nuclear plants retire.

The potential turnover of all of this generation during the next 20 years (whether or not Sherco Units 1 and 2 are retired), suggests that a significant proportion of our baseload and intermediate generation resources may be in flux. It will be important for the Company to maintain plans to meet the capacity and energy needs of all of our customers while retaining flexibility and avoiding over-reliance on any one fuel source, specifically natural gas, given that most proposed thermal generation additions are fueled by natural gas.

3. Balancing State Energy Policies

One of the consequences of planning and running the system on an integrated basis is that we are required to address the energy policies of all of the states in which we serve. Sometimes this requires us to balance conflicting policy goals. While some states within our integrated system, such as Minnesota, have been active in pursuing state-specific energy-policy goals, other states, such as North Dakota, have chosen not to regulate as actively and have focused more on cost-of-service goals. In the last five years it has become increasingly challenging for the Company to maintain a workable balance as the energy policies of some of the states we serve diverge.

One important balance that has been increasingly prominent over the past few years is the balance between environmental policy goals on the one hand and least-cost planning principles on the other. For example, the Company has been a leader in advancing renewable energy in the upper Midwest and, for the most part, has been able to do so at reasonable costs. However, some of the requirements and targets imposed in Minnesota are higher than comparable requirements and targets in North Dakota, where the focus is more on least-cost resource planning principles. This dynamic creates both opportunities and challenges as we try to plan for an integrated system that meets the requirements of all of our customers.

B. Applicable Preapproval Processes

We provide a brief description of the relevant pre-approval processes that resulted in this Application. Ms. McCarten provides further discussion of these processes in her Direct Testimony.

1. North Dakota ADP Process

In North Dakota, when the Company seeks to acquire a resource for our system it will file an ADP Application to obtain the Commission's approval before the acquisition is made.¹²

In the Settlement Agreement of our 2007 North Dakota rate case,¹³ the Company agreed to a series of process changes that, among other things, require Xcel Energy to apply for an ADP from the Commission for any resource addition to the NSP System of 50 MW and larger. Prior to this time, the Company had no obligation in North Dakota to seek pre-approval of its resource additions. And, before the ADP process became law, the prudence of the Company's resource additions was subject to an after-the-fact prudence review in a rate case or a Fuel Cost Recovery (FCR) proceeding.

Our ADP filing obligation for larger additions was further refined in Case No. PU-12-59 to address Commission concerns about the timing of ADP filings. In that case we committed to coordinating our ADP applications with the timing of the Minnesota process. In Case No. PU-12-813, our most recent rate case, we again refined our ADP obligations through a settlement that provides that the Company may not recover the costs of any PPAs through the FCR rider without an ADP being granted by the Commission for any resource addition over 50 MW.¹⁴

Taken together, the Company views these obligations as creating a required resource pre-approval process in North Dakota that (1) defines the timing requirements for filing for Commission approval, and (2) results in a Commission prudence determination that is binding for the resource as if it were reviewed in a rate case.

¹² In her Direct Testimony accompanying this ADP application, Ms. McCarten discusses in more detail the history of the Company's obligations and practices with respect to seeking Commission approval for the addition of resources to the NSP System.

¹³ Case No. PU-07-776.

¹⁴ The Company notes that the Geronimo Solar PPA is structured in such a way that the Company makes a bundled capacity and energy payment. This bundled payment would be included in our FCR calculations.

2. Minnesota

In Minnesota, resource acquisitions are reviewed in a two-step process. First, resource needs are determined through Minnesota's resource planning proceedings before the MPUC.¹⁵ Second, the Company undergoes a MPUC designed acquisition process to obtain approval of adding the resource to meet the need.

Pursuant to Minn. Stat. § 216B.2422, subd. 5, the MPUC is empowered to establish a competitive bidding process under which a utility acquires a resource to meet a need identified in the 2010 Resource Plan process. Xcel Energy is subject to the MPUC's competitive process.¹⁶ The competitive bidding process that the MPUC has established for Xcel Energy is composed of two separate methodologies: "Track 1" and "Track 2."

The "Track 1" process is used in the circumstance where Xcel Energy is not seeking to construct the resource itself. That process provides that we use a competitive Request for Proposals (RFP) process. This is intended to ensure that the Company probes the market for the most cost-effective and appropriate proposals available. Since its implementation, the Track 1 process has been the primary method we have used to procure new resources, and we have entered into numerous PPAs with third-party vendors for generation selected through RFPs.

The "Track 2" process applies when the Company seeks to meet its identified resource need with a Company-owned, self-build project. The Track 2 process involves soliciting and evaluating alternative competitive proposals to the resource proposed by the Company. This is intended to ensure that the Company probes the market for resource proposals from independent power producers that may be more cost effective than the Company's self-build proposal.¹⁷

The Track 2 CAP consists of the following steps:

¹⁵ Minn. Stat. § 216B.2422. Resource review in South Dakota is handled through a prudence review when the utility files a rate case that proposes adding the resource to rate base.

¹⁶ *In the Matter of Northern States Power Company d/b/a Xcel Energy's Application for Approval of its 2004 Resource Plan*, Docket No. E002/RP-0-1752, ORDER ESTABLISHING RESOURCE ACQUISITION PROCESS, ESTABLISHING BIDDING PROCESS UNDER MINN. STAT. § 216B.2422, SUBD. 5, AND REQUIRING COMPLIANCE FILING at 6-7 (May 31, 2006) (2006 CAP Order).

¹⁷ While the Track 2 process for a self-build resource proposal by the Company has been in place since the Commission's 2006 CAP Order, the process has not been used prior to the current CAP Docket. The Company therefore had no previous experience with the complexities of selecting a resource pursuant to the Track 2 process before the current CAP docket was initiated by the MPUC.

- The MPUC identifies the resource need to be addressed in the competitive acquisition process through its resource planning order, which establishes parameters around size, type and timing;
- The Company submits its proposal with the information required in Minnesota rules and statutes governing certificate of need applications;
- On the same date the Company files its proposal, interested competitors provide their proposals in similar certificate-of-need-like detail, including proposed contract terms;
- After the MPUC determines that the proposal filings are adequate, a contested case is conducted before an administrative law judge. At the end of the hearing process the administrative law judge provides findings and recommendations to the MPUC;
- The MPUC considers the developed record, issues its resource selection, and grants any associated certificates of need; and
- In the event the MPUC selects a power provider proposal rather than the Company's self-build proposal, the Company and selected power provider have four months to negotiate a PPA and bring it back to the Commission for approval.

C. Outcomes of the North Dakota and Minnesota Approval Processes

We provide a brief description of the outcomes of the pre-approval processes that resulted in this Application. Mr. Haeger provides a further discussion of the results of the Minnesota process with respect to the Calpine Project PPA, the Geronimo PPA, and Black Dog Unit 6 in his Direct Testimony.

1. North Dakota

In the Gas CT Case, the Company sought an ADP from the Commission for our proposal to meet a capacity need of 150-500 MW by adding Black Dog Unit 6 and Red River Valley Units 1 and 2 to our system. As we described in our in our Gas CT ADP, the Company was simultaneously seeking approval from the MPUC for Black Dog Unit 6 and the Red River Valley Units under the CAP proceedings, which Xcel Energy was required to do under the Minnesota Track 2 process. We made our application at that time consistent with our commitment in Case No. PU-12-59 that we would apply for an ADP from the Commission at the same time we sought approval for a resource from the MPUC.

In the course of the Commission's consideration of whether to grant our ADP request, we explained that whether or when the Black Dog and Red River Valley

Units might be constructed was not clear due to potential fluctuations in forecast demand, and to the Minnesota Track 2 process which might identify other competitive proposals from independent power producers as more appropriate than our proposed units.

After discovery and a hearing before the Commission, a settlement was reached between the Company and Advocacy Staff that the Commission adopted. The settlement summarizes the substantive and procedural factors that led to the Commission granting ADPs for Black Dog Unit 6 and the Red River Valley Units:

As part of the Gas CT Cases, the Company proposed to construct two gas combustion turbines (CT) near Hankinson, North Dakota known as Red River Valley Unit 1 and Red River Valley Unit 2 to meet an identified capacity resource need in the 2017-2019 time frame. The record in the Gas CT Cases also reflects the fact that the Company may choose some alternative resource to meet that need instead of one or both of the proposed North Dakota based CTs. In light of the record in the Gas Cases, the Parties acknowledge that the Gas Cases identified the interest of the Commission in ensuring that the Company develops generation closer to its loads in North Dakota. The Parties further acknowledge that the record in the Gas CT Cases reflects the fact that diversifying the location of the Company's generation mix and locating generation closer to the Company's North Dakota loads provides some benefits to the Company's North Dakota customers as well as all of the other customers served by the Company.

In recognition of the fact that the Company's proposal to construct and own North Dakota based generation to meet its 2017-2019 resource need may not be implemented, but to obtain the benefits of North Dakota based generation identified in the Gas CT Cases, the Company hereby commits to develop up to 400 MW of thermal generation resources in North Dakota no later than 2036, consistent with the principles of orderly development of resources, the principle of least-cost development as provided in N.D. Admin. Code § 69-09-02-33, and general concepts of prudent resource planning to meet incremental additional resource needs that may arise in that time frame. In furtherance of the foregoing sentence, and not in limitation thereof, development of North Dakota based generation must be cost effective taking into account the benefits of locating generation nearer to North

Dakota loads and the benefits of geographic diversity of generation when compared to other alternatives.¹⁸

2. Minnesota

The Company's proposal to build Black Dog Unit 6 and the Red River Valley Units to meet its capacity need triggered the Track 2 process used in the MPUC's CAP docket. Proposals from Calpine, Invenergy, Geronimo Energy, and Great River Energy were also submitted in the CAP docket to compete with the Company's Gas CT proposals.

The MPUC selected three capacity resources to meet the up to 500 MW of capacity need identified in our Fall 2011 Forecast:

Resource (Nameplate)	Accredited Capacity	In-Service Date	Technology
Geronimo Solar Project (up to 100 MW)	Up to 71 MW	2016	Distributed Solar
Calpine Project (345 MW)	278 MW	2018 or 2019	Combined-Cycle Thermal
Black Dog Unit 6 (215 MW)	207 MW	2019	Combustion Turbine Thermal

In its May 23, 2014 Order explaining its resource selections, the MPUC focused on the importance of ensuring that adequate capacity is in place for the Company to meet all of its customers' requirements. Recognizing that the record contained a variety of forecasts and predictions of evolving MISO capacity requirements the Company must meet, the MPUC concluded that the resulting uncertainty warranted selecting resources that delivered enough capacity to avoid a potential shortfall in its ability to meet customer demand. The MPUC determined in these circumstances it was most appropriate to rely upon the Fall 2011 Forecast that had been fully analyzed in the resource planning proceeding, which showed the Company needed up to 500 MW of new capacity by 2019.¹⁹

The MPUC found that Geronimo's distributed solar generation proposal not only met a portion of the Company's capacity need, but had the added benefit of promoting

¹⁸ Revised Second Amended Comprehensive Settlement, Section II.B (pages 17-18, emphasis added), which is attached to the Commission's Order Adopting Settlement granting the ADPs sought in the Gas CT Case.

¹⁹ The MPUC also noted that various laws and policies that influence resource planning further supported its finding that we should add generation to our system in the 2017-19 timeframe. These policies include state and federal environmental requirements, Minnesota's solar and wind energy requirements, and MISO's reserve margin requirements.

beneficial environmental and socioeconomic policies set forth in state statute. The Commission also concluded that the record demonstrated that Black Dog Unit 6, Calpine proposed combined cycle unit, and Invenergy's proposed combustion turbine unit had comparable merits, and that one or more of these three gas units was needed to meet the Company's capacity need. The MPUC ordered the Company to refine its estimate of the costs for Black Dog Unit 6, and negotiate PPAs for both the Calpine and Invenergy projects, so that the Commission could then determine which of these resources should be selected to meet the Company's need. Based on its review of the PPAs the Company negotiated with Calpine and Invenergy, the MPUC selected Black Dog Unit 6 and the Calpine Project PPA to meet our need.

In its February 5, 2015 CAP Order, the MPUC reaffirmed these selections and ordered Xcel Energy to execute the Geronimo Solar PPA. It also approved the Calpine Project PPA that is being considered in a separate Case.

D. Implications of North Dakota and Minnesota Outcomes

The North Dakota and Minnesota pre-approval processes have resulted in divergent outcomes that require the Company to make difficult choices as to its next steps.

- The North Dakota process resulted in Commission approval of the Company's proposal to add up to three gas CTs (about 625 MW accredited capacity) to our system, with the flexibility to implement that proposal consistent with our need materializing.
- The Minnesota process resulted in the selection of only one of our proposed gas CTs in combination with the Calpine Project's combined-cycle capacity and the Geronimo Solar Project (about 586 MW accredited capacity), which provides different types of benefits to our system given a conservative assessment of our need.

While the two States' processes result in around 600 MW of new capacity, the profile and potential timing of the added generation differs. The benefits of the Geronimo Solar PPA are such that we respectfully request that the Commission conclude that it is a prudent resource selection. The Company believes that adding this resource provides a prudent path forward in light of our need to balance all of the requirements attendant to operating the integrated NSP System. Evolving environmental regulations and our goal to significantly reduce CO₂ and other fossil-fuel emissions suggest that this is an appropriate acquisition at this time.

We recognize, however, that the Commission may disagree with our choice to select a resource addition based primarily on the capacity benefits it provides, as well as compliance with Minnesota energy policies prescribing a certain amount of solar generation. The Commission may determine that the decision to add additional solar to the system at this time is not a choice that comports with its least-cost resource planning approach.

As the Commission knows, the Restack is being developed to address just such a situation. At a high-level, adding a resource to the Restack will ensure that the Company's North Dakota customers pay a reasonable cost for the used and useful capacity and energy of any resource addition that the Company makes. As the Commission is aware, we are currently negotiating a Restack agreement with Staff consistent with the Settlement Agreement in Case No. PU-12-813. Should the Commission not deem the Geronimo Solar PPA prudent, we believe that this resource could be included in that agreement. Of course, the drawback of such an approach is that the Company is unable to recover its full cost of the resource. Mr. Haeger discusses in his Direct Testimony the implications of Commission denial of an ADP for this resource on our Restack efforts.

VII. THE GERONIMO SOLAR PPA

This section provides information on the Geronimo Solar Project and the terms of the PPA with the Company. We provide the Geronimo Solar PPA as Trade Secret Exhibit___(KJH-1), Schedule 2, and discuss its terms below.

A. General Description

The Geronimo Solar PPA has a 20-year term and provides for up to 100 MW of nameplate capacity from distributed solar facilities, ranging in size from 2 MW to 10 MW and located at up to 24 sites in Minnesota. Each of the solar facilities will interconnect to one of the Company's distribution substations, and utilizing excess available transfer capability will inject power into the system at distribution voltage.

The PPA is based upon the Company's Model Solar PPA, which has been used in several of the Company's jurisdictions where we have procured solar energy. This allowed the Company to utilize standardized terms and conditions that it has used with other projects and enhanced certainty and consistency with other contracts.

The pricing structure in the Geronimo Solar PPA provides for a single bundled per MWh capacity/energy price payment structure. This means that all payments are made on a per-MWh basis, and that there is no separate payment for capacity.

Geronimo has contractually committed that the solar generation will achieve approximately 71 percent capacity accreditation through the MISO resource adequacy protocols. This means that if the nameplate capacity of the project is 100 MW, the Company will receive about 71 MW of reliable MISO-accredited capacity. The PPA contains a mechanism to compensate the Company if the capacity level is less than committed in the PPA.

To accommodate Geronimo's tax equity financing of the project, the parties negotiated a single PPA structure covering all sites (each site referred to as a "phase"), with the possibility of the PPA being split into a maximum of three separate PPAs as needed post-COD for tax equity financing purposes. As a result of this structure, each phase is treated as a separate project pre-COD and the Company cannot terminate the single PPA because of any action or inaction of a particular phase that occurs prior to COD. The Company retains, however, pre-COD global default and termination rights for bad acts and defaults by the developer. This structure also provides the developer with flexibility to reduce the aggregate size of the facility if circumstances warrant. The maximum nameplate capacity that may be delivered under the PPA is capped at 100 MW.

In addition to the revenue provided under the PPA, the developer is entitled to a 30 percent ITC for all project phases that achieve commercial operation by the end of 2016. The 30 percent ITC will automatically reduce to 10 percent absent Congressional action for projects in-service beginning in 2017. This means that the decisions necessary for the development and construction of the solar generation to be in service by the end of 2016 are time sensitive.

B. Risk Allocation

The PPA addresses areas of risk in the following ways:

Delay/Termination of PPA. Geronimo's pricing depends in part on its phases qualifying for the ITC. There is no mechanism to increase the price if phases go into service after expiration or reduction of the ITC (currently scheduled to reduce from 30 to 10 percent at the end of 2016). However, the PPA allows Geronimo to stop development of phases and effectively reduce the size of the project if they are unable to complete them in time to qualify for the tax credit..

Transmission Interconnection Costs. None of the Project's phases require interconnection to the transmission grid; they are all connected to the Company's system at the distribution level. Geronimo bears all distribution interconnection costs.

Capacity and Capacity Accreditation Risk. The PPA can be up to 100 MW of nameplate capacity. The PPA includes a scale of damage payments that escalates the further the aggregate MW level of the PPA falls short of the 100 MW. In addition, failure to obtain 71 percent accreditation of the nameplate capacity it delivers results in damages for the period of the accredited capacity shortfall.

Curtailment Costs. The PPA provides a mechanism to determine whether and under what circumstances the facility's output is curtailed. These provisions are similar to what we normally include in our wind and other solar PPAs, modified only to account for the technical differences due to the distributed nature of the solar generation. We note that, unlike wind, solar is an "on-peak" resource and likely will experience fewer curtailments due to negative LMPs or system balancing issues. This is true for both distribution and transmission interconnected resources.

Environmental Risk. The Company will own all environmental and renewable energy credits.

Financial Risk. The Company negotiated pre-COD and post-COD security fund amounts to protect the Company generally from the range of financial risks associated with the Geronimo Solar Project PPA. In addition, Geronimo takes all ITC qualification risks.

Construction/Operational Risk. The Company accepted Geronimo's proposal that completed phases can be recognized as having achieved COD in a 120-day window that begins September 1, 2016 and ends December 31, 2016. For each phase that fails to achieve COD by December 31, 2016, Geronimo will have the option to complete additional project phases but will be required to pay liquidated damages until the phase achieves COD. The PPA also includes protective measures such as specific performance, step-in rights, actual damages, and termination.

Phase-In Approach. As previously discussed, the PPA provides flexibility both as to the timing of completing phases and the ultimate size of the completed project. In order to stage construction and to maximize the potential for project phases to qualify for the ITC, we anticipate that some number of phases may be completed before September 1, 2016, when the PPA authorizes the project to commence commercial operation at the contract price. The PPA provides that the Company will take pre-COD energy produced by a phase before that date. However, the pricing for this pre-COD energy is based on the prevailing market rate. Conversely, as mentioned before, if circumstances warrant, the developer can reduce the aggregate nameplate capacity of the facility by eliminating phases and paying the agreed-upon amount of capacity buy-down payment.

The Company pays the Solar Energy Payment Rate for the output of the project after the Commercial Operation Date. The amounts of that price are set forth in Trade Secret Exhibit ___(KJH-1), Schedule 2, Exhibit J, of the PPA, which is attached to Mr. Haeger's Direct Testimony.

C. Conditions Precedent

The Geronimo Solar PPA contains a number of conditions to the parties' performance under the contract. These conditions precedent are important to ensure that the parties appropriately manage their risks under the contract. There are certain risks that are beyond a party's reasonable control and which must be addressed for the project to go forward. Such risks include obtaining required governmental permits and approvals, obtaining required third-party contracts that are necessary for the project to be completed, and obtaining internal approvals of regulatory revisions of the PPA's terms. The PPA provides a mechanism for terminating the PPA if a required condition precedent fails to be obtained.

Geronimo must satisfy two primary conditions in order to be obligated to perform under the PPA. These conditions require obtaining by a specified date: (1) a master site permit for the project or individual site permits for each phase; and (2) satisfactory arrangements for the interconnection of the project phases. In the Company's experience, these conditions and the timelines presented for their completion are typical of the types of conditions we would expect.

The Company has one important condition precedent. Within 10 days after receipt of an order of the MPUC approving the PPA, the Company must request approval of the PPA from this Commission. The MPUC Order approving the Geronimo Solar PPA was issued on February 5, 2015. The present filing was made on February 13, 2015, within the 10 day window.

The Company's obligation under the PPA is to seek an order from the Commission making the affirmative determination that the Company's execution of the PPA is prudent and/or in the public interest, and that all costs incurred under the PPA are recoverable from our customers subject to ongoing prudency review of Company's performance and administration of the PPA. The Company retains the right to terminate the PPA if the Commission does not approve the PPA, or denies the Company recovery of the costs incurred under the PPA as currently allocated to North Dakota customers by ratemaking mechanisms currently in effect.

We note that this issue touches on a significant policy issue with respect to the impacts of divergent state energy policies on our integrated NSP System in the Upper Midwest. Pursuant to the Settlement Agreement in Case No. PU-12-813, *et. al*, we are currently examining ways that our integrated system can be restructured to avoid the policies of one state having unwanted impacts on the ratepayers of another state.

VIII. PRUDENCE OF THE GERONIMO SOLAR PPA

The Company respectfully requests that the Commission find our proposed acquisition of the up-to-100 MW (nameplate) Geronimo Solar PPA to be prudent under the circumstances. The PPA provides up to 71 MW of MISO accreditable capacity that helps meet the capacity need identified in our 2010 Resource Plan. It provides a carbon-free resource that will help us meet emerging federal and state environmental and renewable energy requirements. It also is consistent with the Company's goal of substantially expanding our solar portfolio during the current planning horizon as described in our 2015 Resource Plan filing. While the Company recognizes that the Geronimo Solar Project is not a least-cost resource on a PVRR basis, we respectfully request approval based on the capacity and environmental compliance benefits that it provides.

We recognize that the timing and staging of new renewable resources such as the Geronimo Solar PPA overlaps with other renewable resource matters currently before the Commission.²⁰ Xcel Energy acknowledges that our recent 2015 Resource Plan filing shows a modest capacity surplus in the 2017-2019 timeframe. Nevertheless, we believe the selection of this resource at this time is prudent and in the best interest of all of our customers on our integrated system. We also acknowledge that we propose in our 2015 Resource Plan that additional utility-scale solar resources be added to our system in later years.²¹ Nevertheless, in this section we explain why we believe the deployment of the Geronimo Solar PPA by 2016 is a prudent choice for our integrated system and, therefore, in the best interests of our customers in North Dakota.

²⁰ For example, our recent Resource Plan filing proposes adding 187 MW (nameplate) portfolio of solar PPAs arising from our recent solar RFP, and the Company is currently seeking an ADP for that resource portfolio in Case No. PU-14-810.

²¹ We explained in our Resource Plan (which was required to be filed on January 2, 2015) that it does not take into account the Geronimo Solar PPA and the other resources arising out of the MPUC's CAP Docket. The MPUC's December 15, 2014 oral decision and February 5, 2015 written order in the CAP Docket did not permit us to include those resources in the plan.

A. Costs of the Geronimo Solar Project

To evaluate the costs of the up to 100 MW Geronimo Solar Project, we used the Strategist resource planning model, and present the results in terms of Present Value Revenue Requirements (PVRR).²² Strategist simulates the operation of the NSP System and estimates the total cost of energy over the life of the project on a present value basis. We also use the model to test results under a range of input assumptions. To assess the impact on customer costs, we simulated the operation of the NSP System with and without the addition of the Geronimo Solar PPA. For purposes of this analysis we considered the PPA in isolation and not in combination with the other proposed new generation. In the next section, we provide a similar analysis on various combinations of the three generation resources we propose to be added to the system: the Geronimo Solar PPA, the Calpine Project PPA, and Black Dog Unit 6.

MISO generally dispatches solar production ahead of other generation such as gas and coal-based generation. Consequently, the more solar energy produced, the less fossil generation is operated. Therefore, when the energy from solar resources is produced, it displaces a similar amount of energy that would have been produced by the Company or otherwise purchased elsewhere. The Strategist analysis identifies a displacement of approximately 200,000 MWh of fossil generation, which accounts for the differences in cost of system operation with and without the solar resource addition.

1. Strategist Analysis of Geronimo Solar Project Using North Dakota Resource Planning Assumptions

We used the Strategist resource planning model again to evaluate our resource selection consistent with the requirements of this Commission. We used the same assumptions and forecast information as we did in the CAP Docket but express our modeling results as Present Value of Revenue Requirements (PVRR), consistent with North Dakota law. Our analysis estimates that system costs associated with the addition of the Geronimo Solar PPA are \$62 million higher than if the PPA was not added to the system. Table 2 provides the results of this analysis and various sensitivity tests.

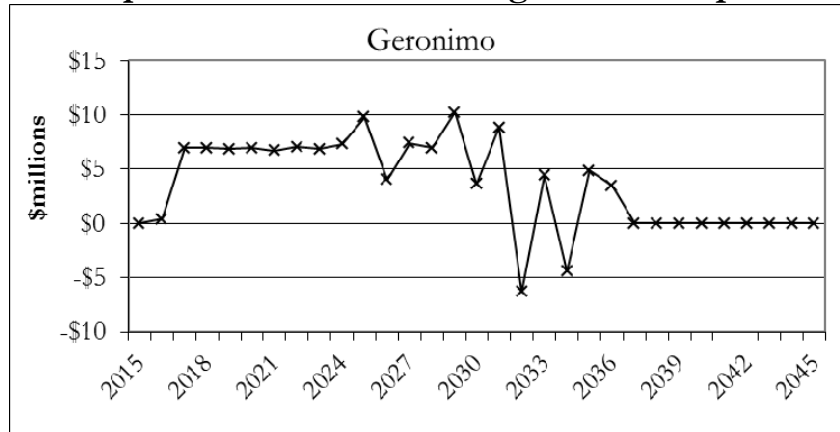
²² PVRR excludes any assumptions regarding the future cost of CO2 or externalities.

**Table 2:
Net PVRR Cost/Savings of Geronimo PPA for Key Sensitivities**

<u>Sensitivities =></u>	Base	2012 Load Forecast	Low Gas	High Gas	Markets Off	MN Assumptions (PVSC)
Geronimo PPA vs Base Case with ND Assumptions	\$62	\$71	\$76	\$44	\$49	\$35

Figure 5 below illustrates annual net costs or savings over the 20-year life of the Geronimo Solar PPA that lead to the \$62 million PVRR impact. As shown over the term, the Geronimo Solar Project moves from net cost to net savings on an annual basis in the out years due to the displacement of thermal resources.

**Figure 5:
Annual Net Costs (Savings)
Compared to Base Case Using ND Assumptions**



As mentioned, the Geronimo Solar PPA will displace other generation sources that serve the NSP System. Through this displacement of generation, the Geronimo Solar PPA provides the qualitative benefit of hedging our risk with respect to increases in fuel costs by displacing fossil based generation. The displacement of fossil based generation also provides a hedge against future environmental regulation, such as new carbon rules.

Figure 6 below illustrates the results of the Strategist dispatch simulations using the Base Case under North Dakota assumptions (i.e., a “Markets On” scenario with no additional renewable generation and no externalities or carbon cost). In this scenario Strategist may choose to purchase market energy to meet system need.

Approximately 60 percent of the solar generation displaces natural gas-based generation, 10 percent displaces coal, and 30 percent displaces market energy.

**Figure 6:
Strategist Simulations – Displaced Energy
Base Case Using ND Assumptions**

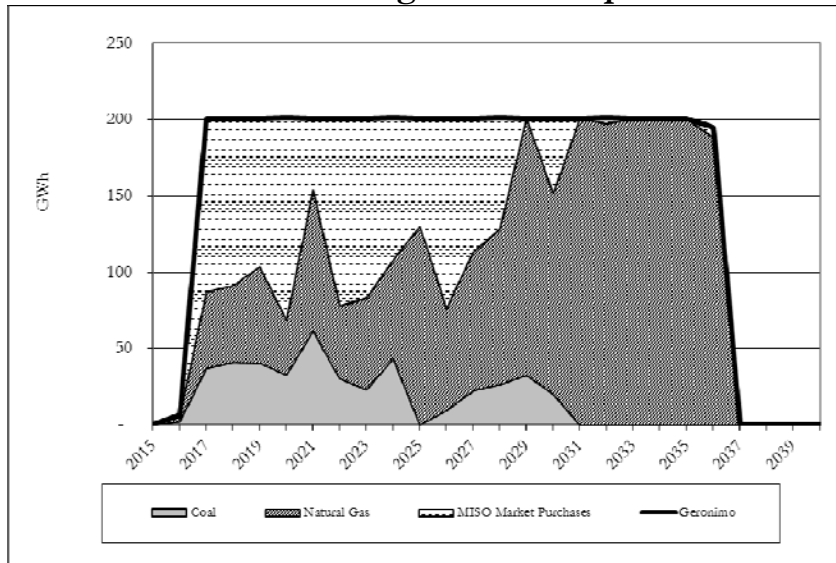
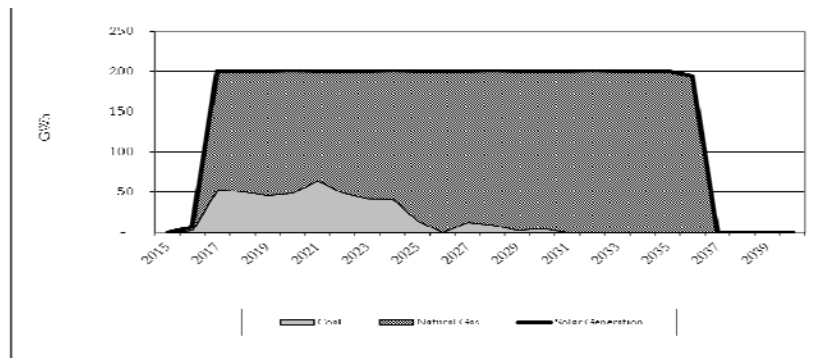


Figure 7 below illustrates the results of the Strategist dispatch simulations under the Markets Off scenario, when just the NSP System is analyzed and only the Company’s native generation is displaced by the Geronimo Solar PPA. In this scenario, the majority of the solar generation (approximately 89 percent) displaces natural gas-based generation, with the remaining 11 percent expected to displace coal generation.

**Figure 7:
Strategist Simulations – Displaced Energy
Markets Off**



As shown, the primary impact of the Geronimo Solar PPA on the operation of the NSP System is displaced generation from fossil fuel resources. This impact provides a qualitative hedge against both future environmental regulations and increases in natural gas prices. We also obtain additional benefits from the Geronimo Solar PPA

through the accreditable capacity value of the PPA, which Geronimo has committed will be 71 percent of the nameplate capacity of the PPA, or up to 71 MW.

To further illustrate the hedge value impact of these projects, Table 3 below shows the levels of natural gas consumption and market purchases for the Base Case using North Dakota assumptions (i.e. a view of the NSP System without the Geronimo Solar PPA), and the reduction that would occur in those levels due to the addition of the Geronimo Solar PPA to the system. As shown, the Geronimo Solar PPA is projected to displace 20 Bcf of natural gas and offset over 1.1 million MWhs of market purchases during the PPA’s 20-year term. This provides the Company a hedge against increases in the costs of natural gas and market energy.

**Table 3:
Hedge Value**

Total System 2017-2036	Natural Gas <i>bcf</i>	Market Purchases <i>GWh</i>
Base Case Using ND Assumptions	1,466	104,074
Geronimo	(20)	(1,138)

2. Estimated Customer Rate Impacts

While the Geronimo Solar PPA represents a large utility scale solar energy acquisition, we estimate that the customer rate impacts will be mitigated when spread across the entire system because the NSP System is so large in comparison. As shown in Table 4 below, our Strategist dispatch simulation forecasts that for most years, the rate impact of the Geronimo Solar Project will be nearly offset by decreases in the cost of fossil fuel and other purchased energy.

**Table 4:
Geronimo Solar PPA Impacts
(¢/kWh)**

GERONIMO	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Base Rates	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh
Fuel Clause	0.000¢/kWh	0.001¢/kWh	0.045¢/kWh	0.045¢/kWh	0.046¢/kWh	0.048¢/kWh	0.049¢/kWh	0.050¢/kWh	0.051¢/kWh	0.052¢/kWh	0.053¢/kWh
Avoided Fuel & Purchased Power	0.000¢/kWh	0.000¢/kWh	-0.028¢/kWh	-0.029¢/kWh	-0.030¢/kWh	-0.031¢/kWh	-0.033¢/kWh	-0.033¢/kWh	-0.035¢/kWh	-0.035¢/kWh	-0.030¢/kWh

Table 5 below estimates how average rates will be affected by the proposed solar projects. The initial rate impact of the Geronimo Solar PPA in 2017 is expected to be approximately 0.016¢ per kWh, or about 12¢ per month for a customer using 750

kWh, and stay at that level until 2025 when an expected decreased in the avoided fuel and purchased power benefit increases the net rate impact somewhat.

**Table 5:
Geronimo Solar Net Rate Impacts (10 Years)**

2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
0.000¢/ kWh	0.001¢/ kWh	0.016¢/ kWh	0.016¢/ kWh	0.016¢/ kWh	0.016¢/ kWh	0.016¢/ kWh	0.016¢/ kWh	0.016¢/ kWh	0.017¢/ kWh	0.023¢/ kWh

B. Other Benefits

In making resource selections, the Company considers factors in addition to cost. A number of those considerations are relevant to the selection of the Geronimo Solar PPA.

1. Capacity Hedge Benefit

Solar generation provides creditable capacity under MISO’s rules, which can be counted toward our load and capability requirements. In the current circumstance, this creates a capacity hedge in the event that our forecast demand rebounds as the economy improves.

Our recent 2015 Resource Plan filing shows a modest capacity surplus in the 2017-2019 timeframe. But as previously described, even small changes in forecast demand can have a significant impact on our supply requirements. If forecast demand changes by even one or two percent, it could wipe out any excess capacity and expose us to the MISO capacity market at a time when a number of baseload capacity resources are being retired, raising the potential for higher prices or even a capacity shortfall.

The Company’s current supply portfolio shows a modest amount of excess capacity (between 1 and 2.5%) from 2015 through 2018 and virtually no excess capacity on a system-wide basis in 2019 and 2020. In 2021, the system then regains excess capacity by increasing our current Manitoba Hydro purchase with anticipated new capacity that is under development. In 2024, however, we again show a system deficit of 234 MW. This load balance profile suggests that we are at risk of capacity deficits beginning in 2019 and 2020 if our projected loads change by even a very small amount. Indeed, even the 0.5 to 2.5 percent excess capacity shown on our assumed supply portfolio is modest given the normal forecast variability which can result in demand swings of 200 MW (2 percent) or more.

The 2015 Resource Plan data suggests that we are at risk of capacity shortfalls (both on a system-wide and North Dakota allocated share basis) in 2019-2020 due to small changes in customer loads. The normal variability we have experienced between load projections and actual results in recent years indicates it is appropriate to acquire additional generation as a hedge. While we could potentially purchase short-term capacity from the MISO voluntary capacity market at then-prevailing rates for any capacity shortfall, we must also consider that existing and proposed retirements of baseload units in the MISO footprint may result in a shortfall of capacity, leading to higher capacity prices in the MISO voluntary short-term capacity market. Prudent planning includes balancing the risk of exposure to the capacity market in the next five years against the cost of building additional capacity in the 2019/2020 time-frame, which will be necessary by 2024 in any event.

We also included a scenario in our 2015 Resource Plan analysis which reflects all of our currently contemplated resources. This includes: (1) the 98 MW creditable capacity (187 MW nameplate) of the solar portfolio which is the subject of Case No. PU-14-810; (2) the 278 MW creditable capacity (345 MW nameplate) of the Calpine Project PPA; (3) the up-to 71 MW creditable capacity (up to 100 MW nameplate) of the Geronimo Solar PPA; (4) the 207 MW creditable capacity (215 MW nameplate) of Black Dog Unit 6; (5) a new short-term (four-year) 75 MW capacity exchange with Manitoba Hydro; and (6) additional resources contemplated by our 2015 Resource Plan.²³ If all of this contemplated new generation is deployed, it will result in a system surplus in the 2019-2020 timeframe of about 6 to 7 percent (550 MW in 2019 and 685 MW in 2020) and address our resource need in 2024.

The following Table 6 provides a summary of the analysis on a system-wide basis:

²³ Please note, we expect to file for approval for the Manitoba Hydro contract from the Commission in the next several months. Because it is a short-term purchase, approval by the MPUC is not required.

**Table 6:
System Capacity Forecast (MW)
(2015 Forecast)**

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Long/(Short) (existing system)	177	142	242	91	8	0	231	182	163	(234)
Resources Approved by the MPUC	-	-	-	71 ³	278 ⁴ 71 ³	207 ⁵ 278 ⁴ 71 ³	556 ⁶	556 ⁶	556 ⁶	556 ⁶
Proposed Additional Resources	-	73 ¹	73 ¹	98 ² 73 ¹	98 ² 73 ¹	98 ²	98 ²	98 ²	98 ²	98 ²
Resources in the 2016 IRP Preferred Plan	-	-	-	-	-	-	89	89	118	171
Aggregate Additional Resources	-	73	73	243	551	684	773	773	803	855
Long/(Short) Position (assumes all additions)	177	216	315	334	559	685	1,004	956	965	621
Notes	1- Manitoba Hydro 75 MW additional capacity exchange (four years). 2- 187 MW Solar portfolio (98 MW accreditation) 3- Geronimo Solar Project PPA (2016 in-service; 2018 MISO accreditation) 4- Calpine Project PPA 5- Black Dog Unit 6 6- Geronimo PPA + Calpine Project PPA + Black Dog Unit 6									

We prepared a similar analysis showing the same information on a North Dakota load-allocated basis. The following Table 7 provides the output of that analysis:

**Table 7:
North Dakota Allocated System Capacity Forecast (MW)
(2015 Forecast)**

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
ND as a Percentage of NSP System	4.94	4.99	5.01	5.05	5.08	5.13	5.19	5.22	5.34	5.38
Long/(Short) (existing system)	9	7	7	5	0	0	12	10	9	(13)
ND Allocation of Additional Resources	-	4	4	12	28	35	40	40	43	46
Long/(Short) (assumes all additions)	9	11	11	17	28	35	52	50	52	33

This shows that on a North Dakota allocated basis, there is no excess capacity in 2019 and 2020. While the number increases again in 2021 due to the addition of new capacity from Manitoba Hydro, it is appropriate to plan the system to include additional capacity that addresses the 2019 and 2020 ‘pinch point’ and remains available in 2024 when we begin to experience forecasted capacity deficits.

2. Environmental Hedge Benefits

Solar generation provides an emissions-free energy source that can work well in combination with other capacity resources, such as natural gas facilities. As described above, environmental requirements that impact our integrated system are in a period of significant change. Increasing carbon-free generation will further our goals of early compliance with new and emerging emissions requirements and targets.

This resource addition will also position us to address issues identified in our 2015 Resource Plan beyond 2024. This includes the impacts of pending environmental regulation such as NO_x regulations that may impact the continued use of our Sherco Units 1 and 2, as well as EPA’s proposed Clean Power Plan. Furthermore, the Geronimo Solar PPA positions us to address known long-term changes to the NSP System that will result in the Company needing to replace or extend the operating lives of nearly 75 percent of the energy producing resources on the NSP System over the next 20 years.

We note that the Company has been a leader in advancing renewable energy in the upper Midwest and has been able to do so at reasonable costs for the most part.

Making choices to increase our renewable energy portfolio provides us with strategic flexibility to continue that leadership as well as ensure compliance with evolving requirements.²⁴ The Geronimo Solar PPA would be part of that deployment, fitting within our plans for the overall build-out of the integrated system.

3. ITC Qualification Benefit

The Geronimo Solar Project is dependent upon obtaining the 30% ITC to offset a significant proportion of the costs of the project. This tax credit applies to any project that goes into service by the end of 2016. The ITC automatically reduces to 10% for projects that go into service after 2016. We are not assuming that the existing higher ITC rate will be extended past its current expiration date. Further, solar economics are improving as solar installations increase, state and federal incentives continue, and solar technology design and manufacturing improvements advance. Customers are also increasingly interested in new energy choices. And state and federal policies are promoting solar as a way to reduce GHG emissions and support local economic development. Thus, pursuing additional solar generation at this time allows Geronimo to capture the higher ITC rate now and promote these other benefits of solar generation on our integrated system.

C. Analysis of Full Resource Portfolio (Calpine, Geronimo, Black Dog)

To provide context for the Commission's evaluation of our ADP request, we conducted additional analysis for the Commission's consideration. In this Section we provide modeling results that identify the costs of various combinations of the three resources we propose to acquire: Black Dog Unit 6, the Calpine Project PPA, and the Geronimo Solar PPA.²⁵ These three facilities are all part of the Company's selections to meet our identified capacity need. In the aggregate, these three projects reflect our proposed construction initiative of new generation in the 2016-2019 timeframe.

Tables 8 and 9 below presents the PVRR results of the specified combination of resources and the same sensitivity tests used above for the single facility under consideration in this Case.

²⁴ As part of our 2015 Resource Plan, the Company is proposing to add approximately 2,400 MW of utility-scale and customer-driven small solar resources over the next 15 years. This additional solar generation along with other resource choices should position us well for long-term compliance with greenhouse gas reductions. While our Resource Plan contemplates additional utility-scale solar being deployed in 2024 and beyond, we believe it is a reasonable policy choice to advance 100 MW of that target and deploy the Geronimo Solar PPA at this time.

²⁵ Since the Commission has already granted an ADP for Black Dog Unit 6, the analysis provided here is only intended to inform the Commission's consideration of this ADP application.

**Table 8:
PVRR Results (\$millions)**

<u>Scenarios</u>	<u>Base</u>	<u>2011 Load Forecast</u>	<u>Low Gas</u>	<u>High Gas</u>	<u>Markets Off</u>	<u>MN Assumptions (PVSC)</u>
Base case using ND Assumptions	\$44,949	\$49,279	\$41,260	\$50,050	\$45,957	\$51,971
Add Geronimo Solar PPA	\$45,011	\$49,350	\$41,336	\$50,094	\$46,006	\$52,005
Add Calpine Mankato CC PPA	\$44,937	\$49,257	\$41,271	\$50,010	\$45,883	\$51,944
Add Black Dog 6	\$44,836	\$49,162	\$41,159	\$49,923	\$45,825	\$51,868
Add Geronimo & Calpine	\$45,012	\$49,328	\$41,358	\$50,070	\$45,947	\$51,992
Add Calpine & BD6	\$44,842	\$49,155	\$41,186	\$49,902	\$45,767	\$51,849
Add Geronimo & Calpine & Black Dog 6	\$44,929	\$49,219	\$41,286	\$49,974	\$45,842	\$51,908

**Table 9:
Incremental PVRR from Base Case (\$millions)**

<u>Scenarios</u>	<u>Base</u>	<u>2011 Load Forecast</u>	<u>Low Gas</u>	<u>High Gas</u>	<u>Markets Off</u>	<u>MN Assumptions</u>
Base case using ND Assumptions	\$0	\$0	\$0	\$0	\$0	\$0
Add Geronimo Solar PPA	\$62	\$71	\$76	\$44	\$49	\$35
Add Calpine Mankato CC PPA	(\$11)	(\$22)	\$10	(\$40)	(\$74)	(\$27)
Add Black Dog 6 CT	(\$112)	(\$118)	(\$101)	(\$127)	(\$132)	(\$103)
Add Geronimo & Calpine	\$63	\$48	\$98	\$20	(\$10)	\$21
Add Calpine & Black Dog 6	(\$107)	(\$124)	(\$74)	(\$147)	(\$190)	(\$122)
Add Geronimo & Calpine & Black Dog 6	(\$20)	(\$60)	\$26	(\$76)	(\$115)	(\$63)

Notably, the addition of the Black Dog Unit 6 followed by the combination of Black Dog 6 and Calpine provide the highest PVRR savings. Further, the Geronimo Solar PPA in combination with the Calpine Project PPA and Black Dog Unit 6 provides a net reduction in the PVRR in all scenarios except the low gas case.

Figure 8 below shows the aggregate impact of the Geronimo Solar PPA, the Calpine Project PPA, and Black Dog Unit 6.

**Figure 8:
Annual Net Costs (Savings) (without CO2)
Compared to Base Case using ND Assumptions**

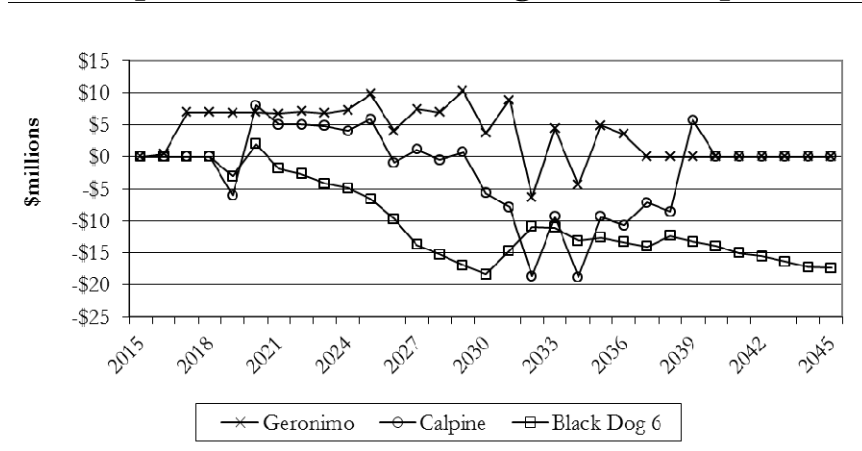


Figure 9 below illustrates the results of the Strategist dispatch simulations using the Base Case under North Dakota assumptions (i.e., a “Markets On” scenario with no additional renewable generation). In this scenario Strategist may choose to purchase market energy to meet system need. Approximately 85 percent of the aggregate generation displaces natural gas-based generation, 16 percent displaces market energy, with coal generation output having a net increase of 1 percent.

**Figure 9:
Strategist Simulations – Displaced Energy Base Case Using ND Assumptions
for Combination of Geronimo, Calpine, and Black Dog 6 Projects**

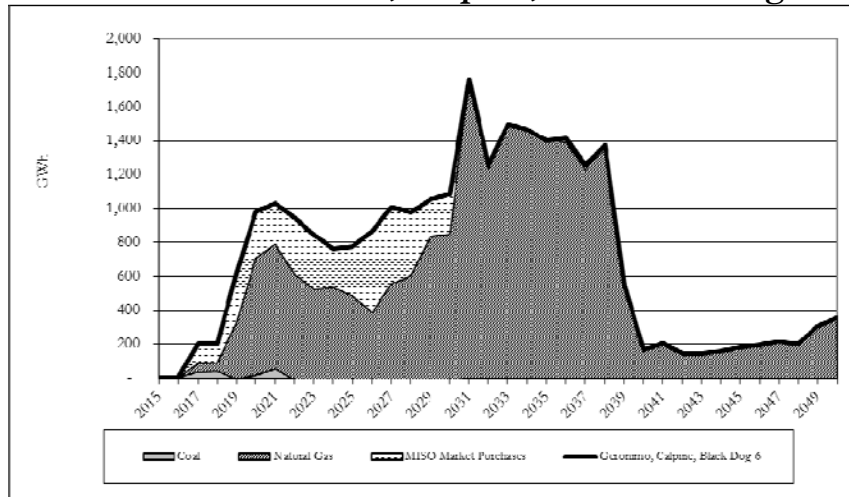


Table 10 below shows the rate impact of the various combinations.

**Table 10:
Annual Rate Impact Analysis**

GERONIMO	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Net Rate Impact	0.000¢/kWh	0.001¢/kWh	0.016¢/kWh	0.016¢/kWh	0.016¢/kWh	0.016¢/kWh	0.016¢/kWh	0.016¢/kWh	0.016¢/kWh	0.017¢/kWh	0.023¢/kWh
CALPINE	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Net Rate Impact	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	(0.014¢/kWh)	0.019¢/kWh	0.012¢/kWh	0.012¢/kWh	0.011¢/kWh	0.009¢/kWh	0.014¢/kWh
BLACK DOG 6	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Net Rate Impact	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	(0.007¢/kWh)	0.005¢/kWh	(0.004¢/kWh)	(0.006¢/kWh)	(0.010¢/kWh)	(0.011¢/kWh)	(0.015¢/kWh)
GERONIMO + CALPINE	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Net Rate Impact	0.000¢/kWh	0.001¢/kWh	0.016¢/kWh	0.016¢/kWh	0.003¢/kWh	0.035¢/kWh	0.027¢/kWh	0.028¢/kWh	0.026¢/kWh	0.032¢/kWh	0.023¢/kWh
CALPINE + BLACK DOG 6	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Net Rate Impact	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	(0.021¢/kWh)	0.018¢/kWh	0.029¢/kWh	0.019¢/kWh	0.009¢/kWh	0.006¢/kWh	0.003¢/kWh
GERONIMO + CALPINE + BLACK DOG 6	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Net Rate Impact	0.000¢/kWh	0.001¢/kWh	0.016¢/kWh	0.016¢/kWh	0.006¢/kWh	0.034¢/kWh	0.055¢/kWh	0.046¢/kWh	0.036¢/kWh	0.021¢/kWh	0.016¢/kWh

IX. CONCLUSION

In conclusion, the Company respectfully requests that the Commission grant an advance determination of prudence for the Company’s acquisition of the capacity and energy of the 20-year Geronimo Solar PPA as an appropriate resource for the Company’s integrated system. In the alternative, and if the Commission finds that purchasing this capacity is not in our North Dakota customers’ best interest, the Company requests that this purchase be found to be appropriate and eligible for inclusion and proxy pricing in the Restack.

Direct Testimony and Schedules
Laura McCarten

Before the North Dakota Public Service Commission
State of North Dakota

IN THE MATTER OF THE APPLICATION OF NORTHERN STATES POWER COMPANY
FOR AN ADVANCE DETERMINATION OF PRUDENCE FOR A POWER PURCHASE
AGREEMENT WITH AURORA DISTRIBUTED SOLAR, LLC FOR UP TO 100 MW OF
SOLAR GENERATION

Case No. PU-15_____
Exhibit__ (LM-1)

Policy Testimony

February 13, 2015

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V.	Prudence of the Geronimo Solar PPA	14
VI.	Conclusion	19

Schedules

Resume

Schedule 1

- 1 • Discuss the multi-state review process for our selection of the
2 Geronimo Solar PPA and the Company’s commitment to timely file
3 ADPs; and
- 4 • Discuss the rate, regulatory and resource planning impacts of this
5 purchase.

6
7 The Company respectfully requests that the Commission conclude that this
8 proposed resource addition is a prudent addition to the integrated NSP
9 System to help meet an identified capacity need and address other energy
10 policy objectives which are necessary for Company to implement as part of
11 its integrated system.¹

12
13 Q. WHO ARE THE WITNESSES FOR THE COMPANY IN THIS PROCEEDING?

14 A. In addition to my Policy Testimony, the Company sponsors the following
15 witnesses:

- 16 • *Kurtis J. Haeger* – who provides more detailed information with respect
17 to our resource planning efforts and proposed additions; and
- 18 • *Paul B. Johnson* – who provides information about the Company’s
19 Strategist model used for resource planning.

20
21 Q. IS THE GERONIMO SOLAR PROJECT THE ONLY RESOURCE THE COMPANY IS
22 PROPOSING TO PURSUE AT THIS TIME?

23 A. No. To meet the overall 150-500 MW need identified in our 2010 Resource
24 Plan (Case No. PU-10-580), we are proposing to add three new resources:

¹ Subsequent and related filings that ultimately resulted in the resource presented in this application include: filings with the North Dakota Public Service Commission (Case Nos. PU-10-580, PU-13-194, PU-13-195) and Minnesota Public Utilities Commission (MPUC Docket Nos. E002/RP-10-825 and E002/CN-12-1240).

1 (1) the Geronimo Solar PPA that is the subject of this Application; (2) Black
2 Dog Unit 6, a 215 MW (nameplate) combustion turbine that will be owned
3 by the Company and for which we have already received an ADP from the
4 Commission;² and (3) the output from the 345 MW (nameplate) combined-
5 cycle natural gas generator being developed by an affiliate of Calpine
6 Corporation (the Calpine Project PPA), that is the subject of an ADP
7 application that is being filed separately.

8
9 **II. DETERMINATION OF NEED**

10
11 Q. WHAT CAPACITY NEEDS HAS THE COMPANY IDENTIFIED IN THE 2017-2019
12 TIME FRAME?

13 A. As described in more detail in Company Witness Mr. Kurtis J. Haeger's and
14 Mr. Paul B. Johnson's Direct Testimonies, we have identified a capacity need
15 of up to 500 MW in 2019 for our five-state, integrated system.

16
17 **III. RESOURCE SELECTION PROCESSES**

18
19 Q. HOW DOES XCEL ENERGY PLAN AND MANAGE ITS INTEGRATED SYSTEM?

20 A. The integrated NSP System serves over 1.8 million retail electric customers
21 in Michigan, Minnesota, North Dakota, South Dakota, and Wisconsin. We
22 plan, operate and generally manage the system on an integrated basis to
23 provide service in all of these states. Because our customers in these five
24 states are served by the same system, we are able to achieve significant
25 economies of scale that provide benefits to all of our customers in all of the

² The Company applied for ADPs for Black Dog Unit 6 along with two other CTs that the Company proposed to meet its capacity need: Red River Valley Units 1 and 2. The Commission granted the ADPs in its February 26, 2014 *Order Adopting Settlement* in Case Nos. PU-13-194 and PU-13-195 (Gas CT Cases).

1 states we serve. In fact, we've been able to successfully plan for, and
2 manage, the integrated NSP System to meet all of our customers' needs for
3 almost 100 years.

4
5 Q. IS THE COMPANY SUBJECT TO ANY SPECIFIC REGULATORY PROCESSES TO
6 PROCURE RESOURCES TO MEET A FORECAST NEED?

7 A. Yes. Each of the states in which we provide electric service has different
8 regulatory constructs and oversight regimes. Three of our states – South
9 Dakota, Wisconsin and Michigan – do not put any preconditions on our
10 resource selection but rather rely on after-the-fact review in rate cases or
11 other after-the-fact review proceedings.

12
13 Minnesota requires a form of preapproval of the resources we select, and in
14 North Dakota we have agreed in previous rate Settlement Agreements to file
15 our Resource Plans and to request advanced determinations of prudence for
16 significant investments, as allowed under state law.

17
18 Q. WHAT IS THE NORTH DAKOTA RESOURCE ACQUISITION PROCESS THAT THE
19 COMPANY IS OBLIGATED TO IMPLEMENT?

20 A. In North Dakota in Case No. PU-07-776, the Company committed to filing
21 its resource plans with the Commission so that the Commission and its staff
22 may provide input into our current plans. We also committed to seek an
23 ADP for any new resource over 50 MW. Finally, in the settlement of our
24 last rate case (Case No. PU-12-813), we committed that we must obtain an
25 ADP before we can recover the costs of the resource through our Fuel
26 Clause Rider (FCR) mechanism.

27

1 Taken together, the Company views these obligations as creating a resource
2 pre-approval process in North Dakota that 1) defines the timing
3 requirements for filing and 2) results in a Commission prudence
4 determination that is binding in a future rate proceeding.

5
6 I note that the under the structure of the Geronimo Solar PPA we obtain
7 both the capacity and energy from the project, but the project is structured
8 so that we make payments based on production (*i.e.* energy). The costs of
9 this project would be recovered through our FCR.

10
11 Q. WHAT IS THE REQUIRED RESOURCE ACQUISITION PROCESS IN MINNESOTA
12 THAT IS APPLICABLE TO THE GERONIMO SOLAR PPA?

13 A. In Minnesota, resource acquisitions are to be reviewed in a two-step process.
14 First, resource needs are determined through the resource planning
15 proceedings before the Minnesota Public Utilities Commission (MPUC).³
16 Second, the Company undergoes a MPUC-designed competitive acquisition
17 process (CAP) to select the needed resource(s).

18
19 Q. WHY DOES MINNESOTA HAVE SUCH A DETAILED RESOURCE ACQUISITION
20 PROCESS FOR XCEL ENERGY?

21 A. Xcel Energy has a long history of procuring new generation resources
22 through a variety of competitive processes. For at least the last 15 years, the
23 Company has utilized competitive bidding to probe the marketplace and to
24 create price competition for the acquisition of long-term generating capacity.
25 We believe that this is one of the most prudent ways for us to acquire

³ Minn. Stat. § 216B.2422. Resource review in South Dakota is handled through a prudence review when the utility files a rate case that proposes adding the resource to rate base.

1 resources and is consistent with the MPUC's encouragement of the use of
2 competitive bidding consistent with Minnesota law.

3
4 During our 2004 Resource Plan in Minnesota, the MPUC became concerned
5 that our competitive bidding processes were not entirely adequate. In
6 particular, in the situation where Xcel Energy is proposing its own resource
7 alternative into the process, the MPUC perceived an inherent conflict of
8 interest in that Xcel Energy is both the evaluator and a bidder. As a result of
9 this concern, the MPUC called upon us to work with stakeholders to
10 develop a resource procurement process that would be fair and transparent
11 to all stakeholders.

12
13 Q. WHAT IS THE BASIS FOR THE MPUC RESOURCE SELECTION PROCESS?

14 A. I am not a lawyer but as I understand it, Minnesota law gives the MPUC
15 authority to select resources based upon competitive processes. Pursuant to
16 Minn. Stat. § 216B.2422, subd. 5, the MPUC is empowered to establish a
17 competitive bidding process to govern Xcel Energy's acquisition of a
18 resource or resources to meet an identified need.⁴ The MPUC implemented
19 this statutory authority during its review of our 2004 Resource Plan.⁵

20
21 Q. WHAT ARE THE PARAMETERS OF THE PROCUREMENT PROCESS THAT WERE
22 DEVELOPED IN THE COMPANY'S 2004 RESOURCE PLAN?

⁴ *In the Matter of Northern States Power Company d/b/a Xcel Energy's Application for Approval of its 2004 Resource Plan*, Docket No. E002/RP-0-1752, ORDER ESTABLISHING RESOURCE ACQUISITION PROCESS, ESTABLISHING BIDDING PROCESS UNDER MINN. STAT. § 216B.2422, SUBD. 5, AND REQUIRING COMPLIANCE FILING at 6-7 (May 31, 2006) (2006 CAP Order).

⁵ *In the Matter of Northern States Power Company d/b/a Xcel Energy's Application for Approval of its 2004 Resource Plan*, Docket No. E002/RP-0-1752, ORDER ESTABLISHING RESOURCE ACQUISITION PROCESS, ESTABLISHING BIDDING PROCESS UNDER MINN. STAT. § 216B.2422, SUBD. 5, AND REQUIRING COMPLIANCE FILING at 6-7 (May 31, 2006) (2006 CAP Order).

1 Recognizing the distinction between situations where Xcel Energy is
2 proposing its own resource alternative from those situations where Xcel
3 Energy is not proposing a resource alternative, the MPUC developed a two-
4 track system. This is sometimes referred to as “Track 1” (when no Xcel
5 Energy project is proposed) and “Track 2” (when an Xcel Energy project is
6 proposed).

7
8 Q. PLEASE BRIEFLY DESCRIBE THE TRACK 1 PROCESS.

9 A. The Track 1 process is used in the circumstance where Xcel Energy is not
10 seeking to construct the resource itself. That process provides that we
11 proceed through a competitive Request for Proposals (RFP) bidding
12 process. This is intended to ensure that the Company probes the market for
13 cost-effective and appropriate proposals under the circumstances. This
14 Track 1 process has been the primary method we have used to procure new
15 resources and we have entered into numerous PPAs with third-party
16 vendors for generation selected through RFPs.

17
18 Q. PLEASE DESCRIBE THE TRACK 2 PROCESS.

19 A. The Track 2 process applies when the Company seeks to meet its identified
20 resource need with a Company-owned, self-build project. Under the Track 2
21 process, the MPUC has prescribed the competitive acquisition process or
22 “CAP” mechanism. This process requires that we file a certificate of need
23 for the Company-proposed resource. Then, we solicit and evaluate
24 competing proposals from third-party vendors. The competing proposals
25 are evaluated through a contested case process to provide a thorough record
26 on the relative merits of the proposals. This process is intended to ensure

1 that independent power producers have an opportunity to sponsor
2 alternative proposals to the Company's self-build proposal.

3
4 Q. WHAT ARE THE STEPS IN THE TRACK 2 PROCESS?

5 A. The Track 2 process consists of the following steps:

- 6 1. The MPUC approves the resource need to be addressed in the
7 competitive acquisition process through its resource planning order,
8 which establishes parameters around size, type and timing;⁶
- 9 2. The Company submits its proposal with the information required in
10 Minnesota rules and statutes governing certificate of need applications;
- 11 3. On the same date the Company files its proposal, interested
12 competitors provide their proposals in similar certificate-of-need-like
13 detail, including proposed contract terms;
- 14 4. After the MPUC determines that the proposal filings are adequate, a
15 contested case is conducted before an administrative law judge. At the
16 end of the hearing process the administrative law judge provides
17 findings and recommendations to the MPUC;
- 18 5. The MPUC considers the developed record, issues its resource
19 selection, and grants any associated certificates of need; and
- 20 6. In the event the MPUC selects a power provider proposal rather than
21 the Company's self-build proposal, the Company and selected power
22 provider have four months to negotiate a power purchase agreement
23 and bring it back to the Commission for approval.

24

⁶ The MPUC found a need for up to 500 MW of additional capacity in Docket E002/RP-10-825. *In the Matter of Xcel Energy's 2011-2025 Integrated Resource Plan*, Docket No. E002/RP-10-825, ORDER APPROVING PLAN, FINDING NEED, ESTABLISHING FILING REQUIREMENTS, AND CLOSING DOCKET at 7 (March 5, 2013).

1 Q. WHY WAS THE “TRACK 2” PROCESS IMPLEMENTED IN THE SELECTION OF THE
2 GERONIMO SOLAR PPA AS A RESOURCE FOR THE COMPANY’S SYSTEM?

3 A. One of the other resources being considered in the Minnesota CAP Docket
4 was the Company’s 208 MW Black Dog Unit 6 project. Our proposal to
5 consider a self-build and Company-owned project triggered the Track 2
6 process.

7

8 Q. WAS THE TRACK 2 PROCESS UTILIZED PRIOR TO THAT PROCEEDING?

9 A. No. The Track 2 process was adopted by the MPUC in 2006 as part of our
10 2004 Resource Plan proceeding in Minnesota. After that time, we had a
11 number of resource acquisitions that were focused on PPA resources where
12 the Company did not seek to offer an alternative resource. In addition we
13 had several competitive bid situations where third party vendors bid
14 resources that were intended for us to purchase the asset once it was
15 constructed. Since the Company was not proposing a self-build option in
16 any of those processes, the Track 2 process was not triggered. As a result,
17 the CAP Docket was our first opportunity to employ this process and we
18 did not have a great deal of experience in implementing it.

19

20 Q. WHAT WAS THE OUTCOME OF THE MINNESOTA CAP DOCKET?

21 A. The MPUC selected three capacity resources to meet the identified capacity
22 need. They were: Black Dog Unit 6, the Calpine Project and the Geronimo
23 Solar Project.

24

25 In its May 23, 2014 Order explaining its resource selections, the MPUC took
26 a conservative approach to ensure we have adequate capacity in place for the
27 Company to meet all of its customers’ requirements. Recognizing that the

1 record in that proceeding contained a variety of forecasts and predictions of
2 evolving Midcontinent Independent System Operator, Inc., (MISO) capacity
3 requirements the Company must meet, the MPUC concluded that the
4 resulting uncertainty warranted selecting resources that delivered enough
5 capacity to avoid a potential shortfall in its ability to meet customer
6 demand.⁷

7
8 In its recent Order of February 5 in the CAP Docket, the MPUC reaffirmed
9 these selections and approved the Calpine Project PPA. It also ordered the
10 Company to execute the Calpine Project PPA that is being considered in a
11 separate Case.⁸

12
13 Q. WHAT ARE THE BENEFICIAL ENVIRONMENTAL AND SOCIOECONOMIC
14 POLICIES THAT SUPPORT THE SELECTION OF THE GERONIMO SOLAR
15 PROJECT?

16 A. The Company's resource portfolio is subject to a number of influences that
17 support the addition of carbon-free resources such as solar. First, new and
18 evolving federal air, water and waste regulations make compliance with
19 environmental regulations more challenging. Second, we are in a time of

⁷ The MPUC also noted that various laws and policies that influence resource planning further supported its finding that we should add generation to our system in the 2017-19 timeframe. These policies include state and federal environmental requirements, Minnesota's solar and wind energy requirements, and MISO's reserve margin requirements. May 23, 2014 Order at 26.

⁸ *In the Matter of the Petition of Northern States Power Company d/b/a Xcel Energy for Approval of Competitive Resource Acquisition Proposal and Certificate of Need*, Docket E002/CN-12-1240, *In the Matter of a Draft Purchase Power Agreement with Geronimo Wind Energy, LLC, d/b/a Geronimo Energy, LLC*, Docket No. E002/M-14-788, and *In the Matter of Draft Power Purchase Agreements with Calpine Corporation and Invenergy Thermal Development, and Proposed Price Terms for Black Dog Unit 6*, Docket No. E002/M-14-789, ORDER APPROVING POWER PURCHASE AGREEMENT WITH CALPINE, APPROVING POWER PURCHASE AGREEMENT WITH GERONIMO AND APPROVING PRICE TERMS WITH XCEL, (Feb. 5, 2015)(February 2015 CAP Order). The CAP Docket is discussed in the Gas CT's Case, Supplemental Testimony of James R. Alders (Alders Supp. Testimony) (Nov. 12, 2013) at 12.

1 potentially significant transition with the resources on our system. As
2 described in our 2015 Resource Plan, the future operation of our Sherco
3 Units 1 and 2 coal plant is in flux. Further, other power plant retirements
4 and PPA expirations mean that a substantial proportion of our generating
5 fleet will need to be renewed or replaced. Mr. Johnson's Direct Testimony
6 provides additional discussion on this topic. As many of these decisions will
7 be beyond the Company's control, having new generation available will
8 provide us with optionality.

9
10 The purchase of the output of the Geronimo Solar Project helps us satisfy
11 Minnesota's energy policies pertaining to renewable generation, including
12 both new solar mandates as well as solar energy goals established by the
13 Minnesota Legislature.⁹ We recognize that some of the requirements and
14 targets imposed in Minnesota are higher than comparable requirements and
15 targets in other states we serve. This dynamic creates both opportunities
16 and challenges as we try to plan for an integrated system that meets the
17 requirements of all of our customers in all of our jurisdictions.

18
19 Q. WHAT ARE SOME OF THE IMPLICATIONS OF THIS RESOURCE SELECTION IN
20 NORTH DAKOTA?

21 A. We believe that our resource choices are reasonable under the
22 circumstances. When considering the 10,000 MW integrated NSP System,
23 we believe it is appropriate for us to choose resources that balance the needs
24 of all of our stakeholders. While this may mean that the size, type and
25 timing of resource selections may not be exactly consistent with each
26 jurisdiction's energy policies, the overall effect on the system remains

⁹ Minn. Stat. Section 216B.1691.

1 consistent with our goal to provide high-quality and cost-effective service to
2 all of our customers in all of our states. In other words, we believe that the
3 benefits of the integrated system outweigh the costs and policy choices that
4 the multi-state system requires us to make.

5
6 Mr. Haeger discusses the implications of a Commission denial of an ADP
7 for this resource addition on both our Restack Agreement negotiations and
8 in the event the resource is not subject to the eventual Restack Agreement
9 process further in his Direct Testimony.

10 11 **IV. PROPOSAL TO MEET IDENTIFIED NEED**

12
13 Q. PLEASE DESCRIBE THE GERONIMO SOLAR PROJECT THAT IS PROPOSED TO BE
14 ADDED TO THE SYSTEM.

15 A. The Geronimo Solar Project consists of an up-to 100 MW nameplate
16 dispersed solar project located at up to 24 sites in Minnesota to be
17 interconnected to various Xcel Energy distribution substations. Each phase
18 of the project will be from 2 to 10 MW in size and will take advantage of
19 excess transfer capability at the interconnecting substation. It is
20 contemplated that the energy from these sites will sink directly in the local
21 area served by the interconnecting substation and that this energy will
22 essentially offset the energy needs of the local load affected by the respective
23 sites.

24
25 Geronimo's affiliate and the Company entered a 20-year PPA with a single
26 dollars per MWh price for energy. In exchange for that pricing the
27 Company receives all of the energy and capacity from the facility. The

1 developer has contractually committed that the project will achieve 71
2 percent capacity accreditation from MISO, meaning that a 100 MW
3 nameplate plant will provide 71 MW of MISO accreditable capacity. The
4 Geronimo Solar Project is scheduled to achieve commercial operation by the
5 end of 2016, in order for the project to take advantage of the 30 percent
6 investment tax credit (ITC) and to achieve full capacity accreditation from
7 MISO in 2017 or 2018.

8
9 The payment and other terms in the PPA are generally consistent with the
10 Company's other renewable energy PPAs, except to the extent necessary to
11 accommodate the specifics of this project. Mr. Johnson provides additional
12 discussion of the PPA terms in his Direct Testimony.

13
14 Q. WHY IS THIS PROPOSAL A PRUDENT WAY TO ADDRESS THE IDENTIFIED
15 RESOURCE NEED?

16 A. The Geronimo Solar PPA provides commercially-reasonable terms and
17 conditions that allow us to add capacity on the system and provides
18 additional benefits by facilitating our compliance with Minnesota's solar
19 energy requirements and goals. Mr. Haeger discusses Minnesota's solar
20 energy requirements and goals as well as the impact of the Geronimo Solar
21 Project on our compliance with them further in his Direct Testimony. Mr.
22 Johnson's Direct Testimony provides an analysis of the costs of this
23 contract.

24
25 Q. ARE THE COMPANY'S OBLIGATIONS UNDER THE PPAs CONDITIONED ON
26 APPROVAL OF THE COMMISSION?

1 A. Yes. The PPA contains what is known as a “condition precedent,” which
2 requires that the Commission grant “State regulatory Approval” such as an
3 ADP for each of the projects *before* the Company is required to perform
4 under the contracts. We also have the right to waive the condition
5 precedent and move forward with the projects if all required regulatory
6 approvals are not timely attained.

7
8 **V. PRUDENCE OF THE GERONIMO SOLAR PPA**
9

10 Q. WHAT IS THE COMPANY’S REQUEST IN THIS CASE?

11 A. Xcel Energy respectfully requests that the Commission find that our 20-year
12 PPA to purchase the output of the Geronimo Solar Project is prudent and a
13 reasonable selection under the circumstances.

14
15 Q. WHY DOES XCEL ENERGY THINK IT IS PRUDENT TO PURCHASE THE OUTPUT
16 OF THIS PROJECT AT THIS TIME?

17 A. The selection of this resource at this time is prudent and in the best interest
18 of all of our customers on our integrated system. As Mr. Haeger’s Direct
19 Testimony addresses, even small changes in forecast demand can have a
20 significant result on our supply requirements. We conclude that it is
21 appropriate to deploy additional solar resources under the circumstances that
22 will allow us to meet our customers’ requirements as well as our overall
23 environmental commitments through our integrated five-state system.

24
25 We have pursued a strategy of shifting our resource portfolio toward lower-
26 emission options while maintaining our focus on fuel diversity, affordability
27 and reliability. We think this is a reasonable approach in light of emerging

1 and evolving environmental regulation. Finally, satisfying the energy policies
2 and goals of Minnesota is reasonable in light of the overall size of our
3 integrated system and the overall benefits that this system provides to our
4 customers.

5
6 Q. IS THE COMPANY PURSUING OTHER SOLAR GENERATION AT THIS TIME?

7 A. Yes. In Case PU-14-810, Xcel Energy is requesting an ADP for a portfolio
8 of 187 MW (nameplate) of solar resources to partially meet the Company's
9 new Minnesota Solar Energy Standard under Minn. Stat. § 216B.1691, subd.
10 2f(a)-(c) that requires the Company to serve 1.5 percent of its Minnesota
11 retail customer load with solar energy by 2020, and establishes a 10 percent
12 solar energy objective for Minnesota by 2030.

13
14 In that case, we are proposing to purchase the energy from three solar
15 projects consisting of (1) a PPA for the output of a 62.25 MW solar facility
16 to be developed near Marshall, Minnesota; (2) a PPA for the output of a
17 24.75 MW solar facility to be developed near Tracy, Minnesota; and (3) a
18 PPA for the output of a 100 MW solar facility to be developed near North
19 Branch, Minnesota. We expect all of these projects to begin operation in
20 late 2016 to capture the 30 percent ITC benefit.

21
22 Q. HOW DOES THE PURCHASE DESCRIBED IN CASE PU-14-810 RELATE TO THE
23 PRESENT CASE?

24 A. As described in that case, the proposed 187 MW of solar purchase plus
25 additional small retail solar installations should be enough to satisfy the
26 Minnesota Solar Energy Standard. However, to further our carbon
27 reduction targets and meet the 10 percent by 2030 solar energy goal

1 described under Minn. Stat. Section 216B.1691, we project needing to install
2 an additional 1,700 MW of utility-scale solar as well as several hundred MW
3 of small solar. We believe it is an appropriate debate to consider the timing
4 of the installations necessary to meet our commitments.

5
6 Q. WHY WOULD THE COMPANY PURSUE GENERATION ABOVE THE SOLAR
7 ENERGY STANDARD?

8 A. It is appropriate to consider pursuing the minimum amount of solar
9 generation necessary to meet our legal requirements at this time and
10 deferring other purchases until later. The Company has recommended to
11 the MPUC that phasing in solar generation is appropriate and that 187 MW
12 of utility-scale solar generation is sufficient for the near term. However, we
13 recognize that there are other goals to be considered, including our need to
14 substantially reduce CO₂ emissions. Further, while the 10 percent by 2030
15 Minnesota target is not yet mandatory, we recognize that it is an important
16 target that our Minnesota regulators and stakeholders expect us to pursue
17 diligently. As a result, we conclude that the fundamental consideration here
18 is not whether to pursue additional solar generation but rather the
19 appropriate timing of such projects.

20
21 Q. WILL THE SELECTION OF THE GERONIMO SOLAR PROJECT IN MINNESOTA
22 PROMPT XCEL ENERGY TO REDUCE THE SIZE OF THE 187 MW PORTFOLIO?

23 A. We have previously recommended to the MPUC that, if they decided to
24 have us pursue the Geronimo Solar PPA, then the 187 MW solar energy
25 portfolio could be reduced. We are currently analyzing that
26 recommendation, recognizing that stakeholders have a variety of views on
27 the timing and extent of our solar investments. We recently filed reply

1 comments to the MPUC in the Solar RFP Docket (Docket No. E002/M-14-
2 162) in which we provided an update on this issue and recommended that
3 the MPUC reduce the 187 MW portfolio. We will provide the Commission
4 with an update as that issue is addressed.

5
6 Q. IT APPEARS THAT THE COMPANY’S CHOICE TO MAKE THIS RESOURCE
7 ADDITION IS BASED ON THE OUTCOME OF AN MPUC PROCEEDING, IS THIS
8 COMMISSION REQUIRED TO ACCEPT THE COMPANY’S RESOURCE CHOICES OR
9 THE COMPANY’S PROPOSED BALANCE OF DIVERGENT POLICY CHOICES?

10 A. No, the Commission retains the authority to reject our requested ADP based
11 on its own assessment of the record in this Case. However, we are
12 concerned that it will become increasingly difficult for us to maintain an
13 integrated five-state system if we can no longer balance the various policies
14 of our states. We recognize that the Commission may disagree with our
15 choice to conservatively assess our need and to address our overall
16 environmental goals, and with our selection of the Geronimo Solar PPA to
17 meet those needs.

18
19 Q. ARE THERE MECHANISMS AVAILABLE THAT CAN MITIGATE THE IMPACT OF
20 THE COMMISSION REJECTING THE COMPANY’S REQUEST ON THE
21 INTEGRATED SYSTEM?

22 A. Yes. As the Commission is aware, the Restack Agreement is designed to
23 address just such a situation. At a high-level, adding a resource to the
24 “restack process” will ensure that the Company’s North Dakota customers
25 pay for the marginal cost for the used and useful capacity and energy of any
26 resource addition that the Company makes but which is denied by this
27 Commission. We are currently negotiating a “Restack Agreement” with

1 Staff consistent with the settlement of our last rate case (Case No. PU-12-
2 813). Should the Commission not deem the Geronimo Solar PPA prudent,
3 we believe that this resource would be available to be included in that
4 agreement.

5
6 Q. WHAT ADVANTAGES DOES UTILIZING THE RESTACK PROCESS FOR THIS
7 RESOURCE ADDITION PROVIDE?

8 A. I reiterate that we believe that our resource addition is prudent and
9 respectfully request that the Commission grant our request for an ADP.
10 However, in the event that the Commission denies our request, we believe
11 that the Restack process provides a reasonable short- to mid-term solution
12 to mitigate the effects of the divergent energy policies between Minnesota
13 and North Dakota.

14
15 The Restack concept recognizes the used and useful nature of the capacity
16 and energy of our resource additions to the entirety of the Integrated
17 System, including North Dakota. By doing so it, it continues to allow us to
18 plan to meet the needs of all of our jurisdictions on an integrated basis. The
19 restack process also mitigates the cost impacts of certain policy choices of
20 other states on our North Dakota customers. By providing this interim
21 solution, an effective Restack Agreement will allow us the necessary time to
22 develop more permanent, long-term solutions in the context of an evolving
23 utility industry and NSP System.

24
25 Mr. Haeger provides additional discussion with respect to the Restack
26 Agreement and its effects on our integrated planning efforts in his Direct
27 Testimony.

1

2

VI. CONCLUSION

3

4 Q. PLEASE SUMMARIZE YOUR TESTIMONY.

5 A. The Company respectfully requests that the Commission grant an ADP for
6 this resource. While we recognize that the competing policies among our
7 states raise important issues for the Commission to consider, on balance we
8 believe this resource is a prudent addition to our integrated multi-state
9 system and it provides a reasonable way for the Company to further
10 important environmental goals.

11

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

13 A. Yes, it does.

STATE OF NORTH DAKOTA
BEFORE THE
PUBLIC SERVICE COMMISSION

IN THE MATTER OF THE APPLICATION
OF NORTHERN STATES POWER
COMPANY FOR AN ADVANCE
DETERMINATION OF PRUDENCE FOR
A POWER PURCHASE AGREEMENT
WITH AURORA DISTRIBUTED SOLAR,
LLC FOR UP TO 100 MW OF SOLAR
GENERATION

Case No. PU-15-_____

STATE OF MINNESOTA)
) ss.
COUNTY OF HENNEPIN)

Laura McCarten, being first duly sworn on oath, deposes and says that she is the Regional Vice President for Applicant Northern States Power Company, in the above captioned matter, that she has read the testimony and schedules submitted in the above captioned matter under her name, that they were prepared under her direction, that she knows the contents thereof, and that the same is true and correct to the best of her knowledge and belief.

Laura McCarten

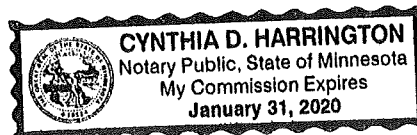
Laura McCarten

Subscribed and sworn to before me this 13 day of February, 2015.

Cynthia D. Harrington

Notary Public

My Commission Expires: 1-31-2020



Laura McCarten

Experience	2008-Present	Northern State Power-MN	Minneapolis, MN
	Regional Vice President, NSPM		
	<ul style="list-style-type: none">▪ For Xcel Energy's North Dakota service territory, responsible for regulatory and legislative interface and strategies, customer and community relations and public affairs, gas business development, and provide strategic leadership on initiatives to effectively serve customers.▪ For Xcel Energy's Minnesota service territory, responsible for community, state government and media relations.▪ For Xcel Energy's South Dakota service territory, responsible for regulatory and legislative interface and strategies, customer and community relations and public affairs, and provide strategic leadership on initiatives to effectively serve customers.		
	2006-2008	Xcel Energy	Minneapolis, MN
	Director, Regional Transmission Development		
	1997-2005	Xcel Energy	Minneapolis, MN
	Director, Minnesota Community Services		
	1994-1997	Xcel Energy	Mankato, MN
	Regional General Manager		
	1992-1994	Northern States Power	Minneapolis, MN
	Manager, Regulatory Affairs		
	1979-1991	Northern States Power	Minneapolis, MN
	Nuclear Generation: Spent Nuclear Fuel Project Manager, Engineer		
Education	1979	University of Wisconsin	Madison, WI
	Bachelor of Science in Nuclear Engineering		
Professional Development	<ul style="list-style-type: none">▪ Xcel Energy Leadership Advantage Program (2004)▪ University of Michigan Business School, Strategic Marketing Planning (1998)▪ University of Minnesota, Carlson School of Management, Minnesota Management Institute (1996)		
Community Service	<ul style="list-style-type: none">▪ Minneapolis Regional Chamber of Commerce, Chair of Board of Directors▪ North Central Electrical League, Board of Directors▪ Ordway Center for the Performing Arts, Board of Directors		

**PUBLIC DOCUMENT –
TRADE SECRET DATA EXCISED**

Direct Testimony and Schedules
Kurtis J. Haeger

Before the North Dakota Public Service Commission
State of North Dakota

In the Matter of the Application of Northern States Power Company for an
Advance Determination of Prudence for a Power Purchase Agreement with Aurora
Distributed Solar, LLC for up to 100 MW of Solar Generation

Case No. PU-15-_____
Exhibit ____ (KJH-1)

Resource Planning Policy Testimony

February 13, 2015

**PUBLIC DOCUMENT –
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Schedules

Resume
Geronimo Solar PPA

Schedule 1
Trade Secret Schedule 2

**PUBLIC DOCUMENT –
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I. INTRODUCTION AND QUALIFICATIONS

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27

Q. PLEASE STATE YOUR NAME AND TITLE.

A. My name is Kurtis J. Haeger. I am the Managing Director of Resource Planning for Xcel Energy Services Inc. (XES), the service company subsidiary of Xcel Energy.

Q. PLEASE DESCRIBE YOUR QUALIFICATIONS AND EXPERIENCE.

A. I have been employed by Xcel Energy or one of its predecessors for over 30 years and assumed my current position as Managing Director of Resource Planning in 2004.

I am responsible for managing the development and implementation of the electric resource plans for all the Operating Companies of Xcel Energy. I also have responsibility for managing the bidding and evaluation processes for acquiring new electric generation resources and for managing the technical analysis for supporting Xcel Energy’s regulatory filings associated with its requests to construct and own new generation facilities. Additionally, I am responsible for directing the analytical support for Xcel Energy’s renewable energy plan filings.

My resume is provided as Exhibit____(KJH), Schedule 1

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

A. I present the resource planning policy issues related to the Company’s requested Advanced Determination of Prudence (ADP) for the Geronimo Solar power purchase agreement (PPA), which is included as Trade Secret

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1 Exhibit___(KJH-1), Schedule 2 to my testimony. More specifically, I address
2 the following:

- 3 • The Company’s utilization of its Fall 2011 Forecast to establish this
4 need that is being met by the Geronimo Solar PPA;
- 5 • The impacts that demand forecast variability have on the nature and
6 timing of our resource acquisition decisions; and
- 7 • The impacts o four proposed resource acquisitions on the “Restack”
8 concept established in the Settlement Agreement in Case No. PU-12-
9 813.

II. RESOURCE NEED

10
11
12
13 Q. IS THE COMPANY PROPOSING ITS RESOURCE ADDITION TO MEET AN
14 IDENTIFIED NEED?

15 A. Yes. The Company has identified a need of between 150-500 MW of
16 additional capacity in the 2017-2019 time frame. Company Witness Mr. Paul
17 B. Johnson discusses this need further in his Direct Testimony.

18
19 Q. HOW DID THE COMPANY IDENTIFY THIS NEED?

20 A. Our capacity need is based on our updated Fall 2011 forecast (Fall 2011
21 Forecast). This forecast updated the initial demand and energy forecast
22 included in our 2010 Resource Plan.

23
24 Q. DID THIS INFORMATION ALSO FORM THE BASIS UNDERLYING THE COMPANY’S
25 FILINGS IN CASE NO. PU-13-194?

26 A. Yes, augmented with information from the Company’s Spring 2013 forecast,
27 the Fall 2011 Forecast is the forecast used in our advance determination of

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1 prudence application for Black Dog Unit 6 and Red River Valley Units 1 and 2
2 (Case No. PU-13-194 (Gas CTs Case)). Mr. Johnson discusses in his Direct
3 Testimony our resource planning efforts that led to our proposal in the Gas
4 CTs Case.

5
6 Q. WHAT NEED DID THE 2010 RESOURCE PLAN FORECAST IDENTIFY?

7 A. The initial forecast presented in our 2010 Resource Plan (Case No. PU-10-
8 580) identified a resource need of 963 MW BY 2020 AND 2,003 MW BY 2025.
9 To meet that need, the 2010 Resource Plan proposed a 680 MW combined
10 cycle gas plant to be built at the Company's existing Black Dog site along with
11 780 MW of combustion turbines (CT) by 2024.

12
13 Q. WHAT NEED DID THE FALL 2011 FORECAST IDENTIFY?

14 A. The Fall 2011 Forecast identified a capacity need of approximately 150 MW
15 beginning in 2017 that grows up to approximately 500 MW in 2019/2020, and
16 suggested a capacity need growing to 920 MW by 2024.

17
18 Q. WHAT ACCOUNTS FOR THE DIFFERENCE BETWEEN THE 2010 RESOURCE PLAN
19 FORECAST AND THE FALL 2011 FORECAST?

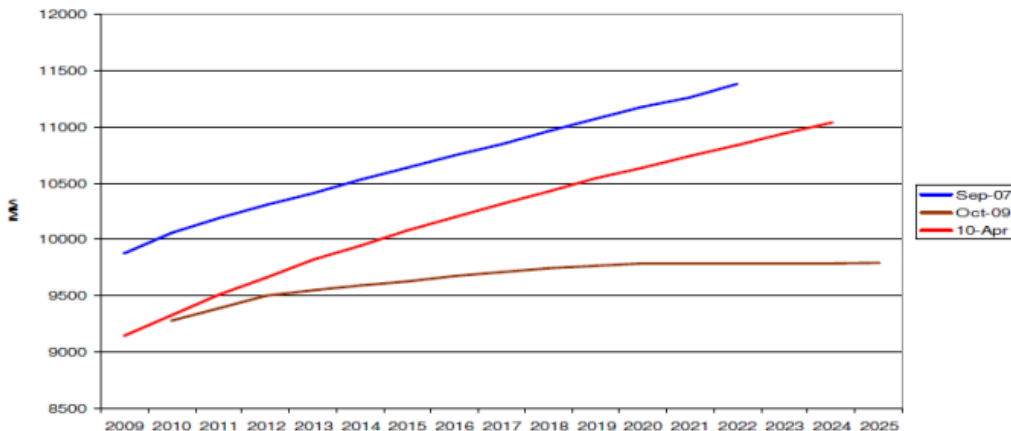
20 A. Peak demand forecasts vary as economic conditions change over time. The
21 forecast of future economic growth is one of the key measures that drives
22 growth in demand and energy. Due to the significant downturn of the
23 economy during the 2008 recession and the uncertainty in the recovery for the
24 five to six years that followed, accurately predicting economic factors along
25 with demand and energy usage has been a challenge. Attempting to predict
26 the magnitude and timing of an economic recovery has puzzled many, and has
27 also resulted in the Company having wide fluctuations in demand and energy

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1 forecasts during this time period. As a result, if actual circumstances do not
2 match the assumptions used to develop the forecast, then actual results will be
3 different than the forecasted results.

4
5 Our 2010 Resource Plan was the Company’s first Resource Plan that sought to
6 incorporate our estimates of the effect of the economic recovery from the
7 2008 recession. Figure 1.3 from our 2010 Resource Plan, below, demonstrates
8 the variability of our forecasts due to the 2008 recession and the expected
9 recovery that followed.

**Figure 1.3
Demand Forecast Over Time**



10
11 Our Spring 2010 forecast expected a stronger economic recovery than what
12 occurred. As a result, the 2010 forecast showed a rebound in need compared
13 to the 2009 forecast. By the fall of 2011, however, a more robust recovery
14 was not occurring and therefore the demand and energy need in the 2011 Fall
15 Forecast was less strong than we anticipated the previous year. While we
16 recognize that North Dakota has been experiencing growth at a faster pace
17 than the rest of the region, it has not been sufficient to offset the more

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1 sluggish recovery in the other jurisdictions served by the NSP System.

2

3 Q. HAS THE COMPANY UPDATED ITS FORECASTS SINCE THE FALL 2011
4 FORECAST?

5 A. Yes. Regularly updating our load forecasts is a normal part of our resource
6 planning efforts. Since developing our Fall 2011 Forecast, we have updated
7 our load forecast five times: in the spring of 2012, in the fall of 2012, in the
8 spring of 2013, in the fall of 2014, and in 2015.

9

10 Q. WHAT DID THESE FORECASTS UPDATES INDICATE?

11 A. In general our forecast updates since 2011 have continued to show a sluggish
12 recovery and a delay in the expected growth that we had forecast earlier. As a
13 result, the more recent updates have continued to show a slower rebound in
14 growth and a lower overall capacity need. Our 2015 Resource Plan forecast
15 indicated a capacity surplus of 313 MW in 2017 decreasing to 151 MW in
16 2019, and suggested a need of 165 MW in 2024.

17

18 Q. IS THE VARIABILITY IN THESE MORE RECENT FORECASTS UPDATES SIMILAR TO
19 THE VARIABILITY EXPERIENCED FROM 2008 TO 2011?

20 A. Yes, the variability in these subsequent updates is heavily influenced by the
21 same factors that accounted for the variability between our 2010 Resource
22 Plan forecast and our Fall 2011 Forecast. Since the recession of 2008, it has
23 been difficult to predict what kind of economic conditions will result due to
24 the uncertainty of the strength and timing of the economic recovery across the
25 region.

26

27 While the range of these more recent forecasts falls within an error band, or

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1 probability range, of only two to three percent, these changes result in varying
2 estimates of peak demand by approximately 250 MW within the 2016-2020
3 timeframe.

III. IMPLICATIONS OF NEED ASSESSMENT

4
5
6
7 Q. WHAT ARE THE IMPLICATIONS OF THE VARIABILITY OF DEMAND FORECASTS
8 OVER TIME?

9 A. The variability in our forecasts since the Fall 2011 Forecast, which established
10 our baseline resource need, indicates that the NSP System could be in deficit
11 between 2017 and 2024. And, while our most recent 2105 Resource Plan
12 forecast suggests weakening demand, this forecast also demonstrates that our
13 capacity position in 2019 and 2020 is very near a deficit. In other words, our
14 forecast updates have demonstrated a slackening of demand that could argue
15 to postpone making capacity additions. However, we believe that a
16 conservative approach to meeting our needs is appropriate at this time.

17
18 Q. PLEASE ELABORATE.

19 A. Fundamentally, this issue is related to the appropriate way to determine and
20 then meet resource needs. We could continually update our forecasts and
21 then only act when the size and timing of a need is absolutely certain. This
22 would require us to wait until very close in time for our need to develop to
23 ensure we have the certainty that there is a need to be filled. While this course
24 of action would postpone any investment until need is certain, it could
25 potentially significantly limit our options as to how to meet that need given
26 the lack of time to develop proposals and probe the market for cost effective
27 resources. Further, short term solutions such as capacity market purchases

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1 would leave us vulnerable to potentially increasing spot market pricing at the
2 exact time we would need to contract for capacity. In other words, meeting
3 the need and maintaining reliability would take precedence over cost
4 effectiveness.

5
6 On the other end of the spectrum, we could identify our needs many years out
7 and then work to meet that more uncertain need. This would give us plenty
8 of time to develop cost effective proposals and undergo all necessary
9 regulatory approvals, which can add years to the development cycle. The
10 advantages of such an approach is that the Company is in a position to be
11 flexible as to the timing of resource selection/construction, taking advantage
12 of periods when costs are lower, the market is not constrained, and financing
13 costs are possibly lower.

14
15 Ultimately, the most prudent course of action is somewhere between these
16 two extremes. It makes the most sense to move forward when a need is
17 sufficiently certain that it would make sense to add capacity to the system but
18 far enough into the future to allow the time necessary for the lengthy project
19 analysis, regulatory approval, and resource development processes.

20
21 Q. WHAT IS THE COMPANY'S RECOMMENDATION BASED ON THE VARIABILITY IN
22 THE FORECASTS OF THE COMPANY'S NEED?

23 A. Our recommended course of action is to act conservatively in the face of
24 uncertainty and make resource additions as a need is forecasted and have
25 those additions be of a size and type to address the need in a way that also
26 positions us well for the future. This approach is premised on the assumption
27 that it is better for a utility to be long than short on capacity, since the utility

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1 has the obligation to serve all of its customers’ needs under all reasonable
2 circumstances and must have resources available to meet those needs. The
3 benefits to this approach are that it provides the time needed to make resource
4 decisions through the use of competitive processes to help bring down the
5 cost of these resources. Additionally, it avoids exposing the Company - and
6 ultimately customers - to the short-term capacity markets and the price
7 uncertainty inherent with such markets. Company Witness Johnson discusses
8 further in his Direct Testimony how the Geronimo Solar PPA in combination
9 with the Calpine Project PPA and Black Dog Unit 6 appropriately address our
10 customer’s need under all reasonable circumstances, specifically including the
11 softer need forecast in our 2015 Resource Plan.

12
13 Q. ARE THERE OTHER CIRCUMSTANCES THAT WOULD ALSO SUPPORT THE
14 PRUDENCE OF MAKING RESOURCE ADDITIONS TO THE SYSTEM NOW?

15 A. Yes. Determining whether to add resources to the NSP System is a fact
16 specific determination. In this instance, we identified our need almost five
17 years ago and have moved forward in the project selection and regulatory
18 approval process consistent with that identified need. While we have been
19 doing this, our updated forecasts indicate a slackening of demand which could
20 argue against making a capacity addition at this time. However, this should be
21 weighed against several other factors including: (1) anticipated MISO-wide
22 capacity retirement; (2) the currently favorable interest rate and cost
23 environment; (3) an uncertain environmental regulatory environment; and (4)
24 low capacity surplus margins.

25

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1 Q. PLEASE DESCRIBE THE IMPACT THAT Midcontinent Independent System
2 Operator, Inc., (MISO)-WIDE CAPACITY RETIREMENTS WILL LIKELY HAVE ON
3 THE PRUDENCE OF MAKING A RESOURCE ADDITION AT THIS TIME.

4 A. Our analyses indicate that the cost of generation development, especially gas
5 fired generation, may become more expensive as demand for new gas-fired
6 generation increases due to the decommissioning of several coal plants in the
7 MISO footprint. The plant retirements are also expected to increase the costs
8 of short-term capacity in MISO’s voluntary short-term capacity markets as
9 such capacity becomes more valuable as resources are constrained. This
10 argues for making resource additions now, rather than waiting.

11
12 Q. PLEASE DESCRIBE HOW THE INTEREST RATE AND COST ENVIRONMENT IMPACT
13 THE PRUDENCE OF MAKING A RESOURCE ADDITION AT THIS TIME.

14 A. As relates to cost, the Calpine Project PPA represents some of the lowest cost
15 combined cycle capacity and energy we have seen. Locking in this low cost
16 resource will help to mitigate any tightening of capacity that may occur in the
17 MISO markets.

18
19 With respect to interest rates, low rates provide less expensive financing for
20 the Company’s project. Moving forward with the Black Dog 6 Project in this
21 low-interest rate environment can lock in cheaper financing now than risk
22 more expensive financing in the future.

23
24 Q. PLEASE DESCRIBE HOW AN UNCERTAIN ENVIRONMENTAL REGULATORY
25 ENVIRONMENT SUPPORTS ADDING RESOURCE ADDITIONS AT THIS TIME.

26 A. Positioning the NSP System for an uncertain regulatory future with respect to
27 greenhouse gas and other environmental requirements through the addition of

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1 new solar and gas-fired generation makes sense given that we would secure the
2 innovative use of solar as a capacity resource through the Geronimo Solar
3 PPA, and very attractive pricing for the Calpine Project PPA. Additionally,
4 gaining experience with managing solar capacity interconnected to our
5 distribution system also provides benefits now while positioning us for the
6 increase in the use of this generation type into the future.

7
8 Q. PLEASE DESCRIBE HOW THE ANTICIPATED MARGIN OF SURPLUS CAPACITY
9 AFFECTS THE PRUDENCE OF MAKING A RESOURCE ADDITION AT THIS TIME.

10 A. Our demand forecast variability, and the small margin that we have on our
11 current system, argue to move forward with capacity additions now in case our
12 forecasts turn out to be inaccurate and the NSP System could become short.

13
14 **IV. MPUC ASSESSMENT OF NEED**

15
16 Q. DID THE FALL 2011 FORECAST UPDATE FORM THE BASIS OF REGULATORY
17 REVIEW OF THE COMPANY'S PROPOSAL IN NORTH DAKOTA AND MINNESOTA?

18 A. Yes. At the time we made our initial filing in the Minnesota Competitive
19 Acquisition Process (CAP) proceeding (Docket No. E002/CN-12-1240), the
20 Fall 2011 Forecast was the most up-to-date information available. The Fall
21 2011 Forecast formed the underlying basis for establishing need in that
22 proceeding, but as I previously noted was updated several times.

23
24 Q. DID THE COMPANY ONLY RELY UPON THE UPDATED 2011 FORECAST IN
25 PRESENTING RESOURCE OPTIONS TO THE MINNESOTA PUBLIC UTILITIES
26 COMMISSION (MPUC)?

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1 A. No. Prior to the MPUC’s May 23, 2014 Order directing the Company to
2 negotiate PPAs with Geronimo, Calpine, and Invenergy so that the MPUC
3 could determine which of these resources to approve for acquisition to meet
4 our need, we updated our forecast through September 2013. This updated
5 forecast identified a slackening of need of 117 MW in 2017, 118 MW in 2018
6 and 123 MW in 2019.

7

8 Q. DID THE MPUC AGREE WITH THIS FORECAST UPDATE?

9 A. The MPUC considered the September 2013 update as a valid data point
10 from which to consider its decision. However, the MPUC did not conclude
11 that the September 2013 update justified changing their 2010 Resource Plan
12 conclusion that the NSP System requires between 150 and 500 MW of new
13 capacity in the 2017-2019 timeframe. To the contrary, the MPUC concluded
14 that the update, when coupled with all of the other data points in the record,
15 supported taking a conservative approach to plan for up to 500 MW of new
16 capacity.

17

18 Q. DID THE COMPANY PROVIDE ANY ADDITIONAL UPDATES?

19 A. Yes. On September 23, 2014 we made a compliance filing with the
20 MPUC, presenting draft PPAs the Company negotiated with Geronimo,
21 Calpine, and Invenergy. In that filing we updated our customer demand
22 forecast, and provided information about the then-current resource
23 assessment. We believed this information suggested that our capacity need
24 had changed from an *increasing need* to a *flat capacity surplus* through as late as
25 2023. This conclusion was supported by two factors: (1) continuing flat
26 demand growth, and (2) continuing evolution of the MISO reserve margin
27 requirements which suggested we required lower reserves than we had

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1 previously assumed. We suggested that the 2014 forecast update would
2 support a potential delay of two years or more in adding any new capacity to
3 our system.

4
5 Q. DID THE MPUC AGREE WITH THE COMPANY ON THIS POINT?

6 A. No. In its February 5, 2015 Order selecting the Geronimo Solar PPA and
7 Calpine Project PPA for execution, the MPUC found that it was more
8 appropriate to rely upon the forecasts that were used in our 2010 Resource
9 Plan, which supported a finding of 150-500 MW of capacity need in the
10 2017-2019 timeframe. The MPUC concluded that a conservative approach
11 was the most appropriate outcome. In order to ensure that adequate
12 generating capacity is installed in a timely fashion, it is necessary to adopt an
13 analysis and finalize the inputs in order to provide certainty and finality to
14 the decision-making process. As the MPUC stated in that Order:

15 Need assessments are necessarily approximate
16 and even the most analytic utilities must plan
17 for a range of outcomes. In this docket, the
18 Department has evaluated the consequences
19 of selecting various combinations of
20 generators under multiple scenarios –
21 including a scenario of lower-than-expected
22 demand. In short, Xcel’s latest demand
23 forecast, though new, was still within the
24 range of contingencies contemplated and
25 evaluated by the Department.

26 ***

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1 A. While our decision to add 500 MW of capacity to the system at this time is
2 prudent, we recognize that this is based on a conservative assessment of need
3 and that the Commission could make a different policy judgment. Further, we
4 recognize that the Commission could disagree with our choice of resources to
5 meet this need. If this were to occur, we respectfully request that any resource
6 for which the Commission does not grant an ADP be included in the
7 “Restack Agreement” that the Company is currently negotiating with
8 Commission Staff.

9

10 Q. WHY WOULD IT BE APPROPRIATE TO INCLUDE A RESOURCE FOR WHICH THE
11 COMMISSION DOES NOT GRANT AN ADP IN THE RESTACK?

12 A. The Company views the Restack as a reasonable short- to mid-term tool to
13 address the continuing divergence of state energy policies and their impact on
14 the integrated NSP System, which allows us the time to find a long-term
15 mechanism to address this continuing issue. Should the Commission not
16 deem our proposal – which implements the MPUC’s recommendation in the
17 CAP Docket both as to need and the resources to meet that need – prudent,
18 we believe that utilizing the Restack methodology for these resources will
19 provide an avenue that will allow us to continue to plan and operate the NSP
20 System on an integrated basis while long-term solutions to divergent energy
21 policies are developed.

22

23 Q. HOW WILL THE RESTACK ALLOW THE COMPANY TO CONTINUE TO PLAN AND
24 OPERATE THE NSP SYSTEM ON AN INTEGRATED BASIS?

25 A. As the Commission is aware, development of the Restack Agreement is
26 guided by ten negotiating principles adopted by the Commission in the
27 Settlement Agreement of our last rate case. Key among these principles is that

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1 any proxy pricing for restacked resources reflects both the energy and capacity
2 impacts of any new resource addition (such as those proposed by the
3 Company here) that have been rejected by the Commission. By addressing
4 both the capacity and energy impacts of new resource additions, the Restack
5 will recognize the used and useful nature of these resource additions to the
6 NSP System while mitigating the cost impact on our North Dakota customers
7 of energy policy decisions made in other states with which the Commission
8 does not concur.

9
10 The Settlement Agreement’s negotiating principles outlined that the
11 appropriate proxy pricing would reflect the marginal cost of the next unit of
12 capacity or energy available to be added to the system. We are continuing to
13 negotiate the appropriate proxy pricing for this “marginal” cost for both
14 capacity and energy with Commission Staff, which will establish the “used and
15 useful” pricing for any new resource additions subject to the Restack.

16
17 Q. WHY IS IT IMPORTANT THAT BOTH ENERGY AND CAPACITY IMPACTS BE
18 ACCOUNTED FOR IN THE RESTACK METHODOLOGY?

19 A. The Restack concept is premised on the ability to continue to plan and
20 operate the NSP System as an integrated whole while addressing the impact of
21 different state energy policies on our North Dakota customers. To meet these
22 objectives, we have proposed a methodology where a proxy price for energy
23 and capacity would replace the actual cost of the new resource addition in
24 rates. By utilizing a proxy price, the costs of the proposed new resource
25 addition can be measured against an objective standard (*i.e.* the cost of the
26 next increment of energy or capacity to the system) to determine what type of
27 “policy premium” exists for the resource addition. By accounting for capacity

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1 and energy, our North Dakota customers are still contributing to used and
2 useful resource on the integrated system and for the energy they use and the
3 capacity that is serving them.

4
5 Q. IF THE COMMISSION WERE TO DENY AN ADP FOR THE COMPANY’S PROPOSED
6 RESOURCE ADDITIONS BECAUSE IT DETERMINES THAT THERE IS NO NEED TO
7 ADD CAPACITY AT THIS TIME, BUT ALLOWS THESE RESOURCE ADDITIONS TO BE
8 INCLUDED IN THE RESTACK, WOULD NORTH DAKOTA CUSTOMERS BE PAYING
9 FOR ENERGY AND CAPACITY THAT THE COMMISSION DETERMINES IS NOT
10 NEEDED?

11 A. No. With respect to energy, as discussed in the Direct Testimony of Mr.
12 Johnson, our resource additions will likely displace the production of energy
13 from other resources on the system. Because the system must always balance
14 generation and load, all of our customers use the energy that is produced by
15 these new resource additions when they are generating.¹ Therefore, the
16 Restack is merely repricing energy that is being consumed by our North
17 Dakota customers.

18
19 Capacity, on the other hand, is additive to the system and does not displace
20 other capacity. Our resource planning efforts take into account the lumpy
21 nature of capacity additions when planning for the next capacity additions to
22 the system. By providing for capacity in the Restack Agreement, the
23 negotiating principles in our rate case Settlement Agreement recognize the
24 impact that capacity additions have on the need for and timing of the next
25 increment of capacity for the system.

¹ The Company may also sell energy to third parties. Under the Settlement Agreement in Case No. PU-12-813, we will credit back to customers 100% of the earnings on such sales.

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Q. WHY DOES CAPACITY HAVE TO BE ACCOUNTED FOR IN THE RESTACK TO MAINTAIN THE INTEGRITY OF THE INTEGRATED SYSTEM?

A. Our resource planning takes into account all accredited capacity on our system to determine the size and timing of our future capacity needs. By doing so, we account for all resources, including those added to meet other states’ energy policy goals such as solar resources, as well as traditional thermal resources. When the Company adds the capacity represented by the Geronimo Solar PPA and Calpine Project PPA, as well as Black Dog Unit 6, to the system, the size, type, and timing of any future resource additions will be affected.

In short, we plan and operate the NSP System on an integrated basis, and as a result the addition of new resources impacts our system-wide capacity needs into the future for all of the states we serve. If our North Dakota customers do not contribute to the addition of new used and useful capacity, I believe it would be inappropriate for us to allocate the new capacity to address any capacity shortfalls for our North Dakota load. Rather, the Company would seek to mitigate its inability to recover the costs of this new capacity either by reallocating it to other jurisdictions within our integrated system, or seek to sell the new capacity to a third party.

If this were to occur, we will no longer be able to manage the NSP System as an integrated whole since some capacity component of our resource additions – in this instance roughly 18 to 20 MW representing North Dakota’s allocation of the approximately 350 MW of capacity provided by the Geronimo Solar PPA and Calpine Project PPA – will not be available to the

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1 system. This will require us to plan for and manage our North Dakota load
2 on a separate basis than the remainder of the NSP System.

3
4 Q. WOULD THE OUTCOME BE THE SAME IF THE COMMISSION DENIED AN ADP
5 FOR THE COMPANY'S REQUESTED RESOURCE ADDITION AND DID NOT ALLOW
6 IT TO BE INCLUDED IN THE RESTACK.

7 A. Yes. As I mentioned, the Restack mechanism, with proxy pricing for capacity,
8 will provide short- to mid-term mitigation of the impact that different states'
9 determinations with respect to adding new capacity to our system may have
10 on our North Dakota customers while ensuring they contribute something
11 towards the used and useful capacity. We believe the Restack will provide us
12 with time to more completely address divergent energy policies. However, if
13 the Commission rejects our ADP, or if the Restack is rejected by the
14 Commission or does not account for capacity added to the system, we believe
15 that it will be challenging to continue to integrate our North Dakota
16 customers into the NSP System on a going forward basis.

17
18 Q. WILL THE COMPANY PROPOSE ANY ALTERNATIVES SHOULD THE COMMISSION
19 CHOOSE NOT TO ALLOW FOR CAPACITY PROXY PRICING FOR THOSE RESOURCES
20 FOR WHICH THERE IS NO DEMONSTRATED NEED?

21 A. We have demonstrated that our proposed resource additions are prudent and
22 respectfully request that the Commission grant our requested ADP. In the
23 alternative, we respectfully request that the Commission allow us to include
24 our resource additions in the Restack Agreement and address appropriate
25 implementation of capacity proxies as part of those negotiations. Should the
26 Commission reject our ADP and the Restack Agreement, it is incumbent

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1 upon the Company to propose solutions to the impact that divergent state
2 energy policies have on us and all of our customers.

3

4 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

5 A. Yes, it does.

Kurtis J. Haeger

Statement of Qualifications

I graduated from the University of Colorado, Boulder, in 1982 with a Bachelor of Science Degree in Civil Engineering and from the University of Colorado, Denver, in 1987, with a Master of Business Administration in Finance.

I began my employment with Public Service Company of Colorado in June 1982, as a Gas Distribution Engineer. In June 1988, I was promoted to Supervisor, Gas Utilization and Testing. In May 1990, I was promoted to System Planning & Forecasting Manager, and, in October 1994, I was promoted to Gas Supply and Planning Manager. Upon the merger between Public Service Company of Colorado and Southwestern Public Service Company in August 1997, I assumed the same position with New Century Services, Inc., the service company subsidiary of New Century Energies, Inc. In March 1999, I assumed the position of Director, Gas Business Support. Upon the merger between New Century Energies, Inc. and Northern States Power Company in August 2000, I was appointed to the position of Director, Gas Supply and Supply Planning for Xcel Energy Services Inc. In May 2004, I was promoted to the position of Managing Director, Resource Planning, the position I currently hold.

Since 1990, my responsibilities have included the development of forecasts of annual and daily gas requirements, long term price of gas forecasts, cost of gas budgets, business planning, strategic planning, long range gas supply planning and gas integrated resource planning, gas supply purchasing, the purchasing of gas transportation and storage services and electric resource planning for Public Service Company, Northern States Power Company and Southwestern Public Service. In my present position, I am

responsible for the resource planning and for the acquisition and bidding activities for electric generation on all of our electric systems.

I have presented testimony before the Colorado Public Utilities Commission in Docket Nos. 93A-561G, 94A-447G, 93S-001EG (95I-394G), 02A-267G, 98S-518G, 00A-415G, 97A-622G, 99A-549E, 00A-415G, 01A-181E, 02A-267G, 02S-315EG, 02A-541E, 03A-489EG and Application No. 34815. I have also sponsored testimony before the Federal Energy Regulatory Commission in Colorado Interstate Gas Co.'s rate case Docket Nos. RP93-99 and RP96-190, Northern Natural Gas Co.'s rate case Docket No. RP03-398 and before the Wyoming Public Service Commission, the North Dakota Commission, the Minnesota Commission and the Texas Commission in various electric and rate case proceedings.

SOLAR ENERGY PURCHASE AGREEMENT

BETWEEN

**NORTHERN STATES POWER COMPANY,
A MINNESOTA CORPORATION**

AND

**AURORA DISTRIBUTED SOLAR, LLC,
A DELAWARE LIMITED LIABILITY COMPANY**



- [date] -

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**SOLAR ENERGY PURCHASE AGREEMENT
BETWEEN
NORTHERN STATE POWER COMPANY, AND
AURORA DISTRIBUTED SOLAR, LLC**

This Solar Energy Purchase Agreement (this "PPA") is made this _____ (____) day of September 2014 ("Effective Date") by and between (i) **NORTHERN STATES POWER COMPANY**, a Minnesota corporation with a principal place of business at 414 Nicollet Mall, Minneapolis, Minnesota 55401 ("Company"), and (ii) **AURORA DISTRIBUTED SOLAR, LLC**, a Delaware limited liability company with a principal place of business at One Tech Drive, Suite 220, Andover, MA 01810 ("Seller"). Company and Seller are hereinafter referred to individually as a "Party" and collectively as the "Parties."

WHEREAS, Seller will either directly or through one or more Affiliates, develop, design, construct, interconnect, own, operate and maintain a multi-phase, multi-site, utility-scale solar energy generation facility with a projected total project size of AC 100 MW in aggregate nameplate capacity and expected to initially achieve 71 MW of Accredited Capacity based upon current rules and methodologies for calculating such capacity;

WHEREAS, Seller participated in Docket No. E-002/CN 12-1240 and proposed its distributed solar project; consisting of approximately 24 sites along Company's transmission or distribution lines, each site with a capacity of approximately 2 to 10 MW, for a Facility of up to AC 100 MW in aggregate nameplate capacity;

WHEREAS, on May 23, 2014, the Minnesota Public Utilities Commission issued "Order Directing Xcel to Negotiate Draft Agreement with Selected Parties" to order Company to negotiate this PPA with Seller and submit this PPA to the Minnesota Public Utilities Commission for review (the "Order");

WHEREAS, each of Seller's distributed solar sites will execute separate Interconnection Agreements in accordance with the Distribution Tariff to provide for the interconnection of each such site to the Distribution Authority's Distribution System; and

WHEREAS, Seller desires to sell and deliver and Company desires to accept and receive certain products and services delivered from Seller's Facility to the designated Points of Delivery at the prices and on the terms and conditions set forth in this PPA.

NOW THEREFORE, in consideration of the mutual covenants herein contained, the sufficiency and adequacy of which are hereby acknowledged, the Parties agree to the following:

Article 1 - Rules of Interpretation

1.1 Interpretation.

(A) Capitalized terms listed in this PPA shall have the meanings set forth in Exhibit A - Definitions or as otherwise defined in this PPA, whether in the singular or the plural or in the present or past tense. Words not otherwise defined in this PPA shall (i) have meanings as commonly used in the English language, (ii) be given their generally accepted meaning consistent with Good Utility Practice, and (iii) be given their well-known and generally accepted technical or trade meanings.

(B) The following rules of interpretation shall apply: (1) The masculine shall include the feminine and neuter; (2) references to "Articles," "Sections," or "Exhibits" shall be to articles, sections, or exhibits of this PPA except as the context may otherwise require; (3) all Exhibits are incorporated into this PPA; *provided, however, that* in the event of a conflict with the terms of this PPA, the PPA shall control; and (4) use of the words "include" or "including" or similar words shall be interpreted as "include without limitation" or "including, without limitation."

(C) This PPA was negotiated and prepared by both Parties with the advice and participation of counsel. The Parties have agreed to the wording of this PPA and none of the provisions hereof shall be construed against one Party on the ground that such Party is the author of this PPA or any part hereof.

(D) Unless specifically designated as DC, each reference to MW or kW contained herein, including any reference to Nameplate Capacity, shall be AC MW or AC kW, as applicable.

1.2 Interpretation with Other Agreements.

(A) This PPA does not provide Seller authorization to interconnect any Project Phase or the Facility or inject power into the Distribution System. Seller shall, to the extent required for the applicable Project Phase, contract for interconnection services in accordance with the Distribution Tariff. Seller acknowledges that any Interconnection Agreement Seller enters into is a separate contract with the Distribution Authority pursuant to the Distribution Tariff and the Interconnection Agreement and Distribution Tariff do not create or modify the Parties' rights and obligations under this PPA. For purposes of this PPA, Seller agrees that the Distribution Authority shall be deemed to be a separate and unaffiliated contracting party despite that such Distribution Authority is Company or an Affiliate of Company.

(B) This PPA does not provide for the supply of House Power. Seller shall contract with the Local Provider for the supply of House Power. Seller acknowledges that obtaining House Power is a separate contract and that the House Power contract does not create or modify the Parties' rights and obligations under this PPA. For purposes of this PPA, Seller agrees that the Local Provider shall be deemed to be a separate and unaffiliated contracting party despite that Local

Provider is Company or an Affiliate of Company. Subject to Seller's right to self-generate and consume energy concurrently generated by the Facility or as otherwise allowed by Applicable Law, Seller shall obtain House Power exclusively from the Local Provider.

1.3 Good Faith and Fair Dealing. The Parties shall act reasonably and in accordance with the principles of good faith and fair dealing in the performance of this PPA. Unless expressly provided otherwise in this PPA, (a) when this PPA requires the consent, approval, or similar action by a Party, such consent or approval shall not be unreasonably withheld, conditioned or delayed, and (b) wherever this PPA gives a Party a right to determine, require, specify or take similar action with respect to a matter, such determination, requirement, specification or similar action shall be Commercially Reasonable.

1.4 Waiver. The failure of either Party to enforce or insist upon compliance with or strict performance of any of the terms or conditions of this PPA, or to take advantage of any of its rights hereunder, shall not constitute a waiver or relinquishment of any such terms, conditions, or rights, but the same shall be and remain at all times in full force and effect.

Article 2 - Term and Termination

This PPA shall become effective as of the Effective Date, and shall remain in full force and effect until the Scheduled Termination Date, subject to early termination or extension as provided in this PPA or otherwise agreed to by the Parties. Applicable provisions of this PPA shall continue in effect after termination to the extent necessary to (i) provide for final billings, payments and adjustments, (ii) enforce or complete the duties, obligations or responsibilities of the Parties, and (iii) address any remedies or indemnifications, arising prior to termination.

Article 3 - Description

3.1 Transaction Structure.

(A) Maximum AC MW. Seller shall install sufficient Project Phases that, in the aggregate, achieve as close to as reasonably feasible but not exceeding AC 100 MW of Nameplate Capacity as of the Commercial Operation Date. Notwithstanding anything to the contrary herein, Seller acknowledges and agrees that the maximum aggregate AC MW Nameplate Capacity of all Project Phases associated with this PPA (or the aggregate of this PPA and all power purchase agreements with Seller or its Affiliates, as described in Section 3.3) shall not exceed AC 100 MW.

(B) Project Phases. The Parties acknowledge and agree that the Facility will be installed in up to 24 individual Project Phases and that each Project Phase will be located at a separate Site. The 24 Project Phases potentially comprising the Facility equal in excess of AC 100 MW and Seller shall manage

implementation of Project Phases to achieve as close to AC 100 MW of Nameplate Capacity as reasonably feasible without exceeding this amount.

1. For the period of time from **[TRADE SECRET DATA BEGINS...**

...TRADE SECRET DATA ENDS], each individual Project Phase shall be entitled to quiet enjoyment of the terms and provisions and the pro rata implementation of this PPA, each on a several and stand-alone basis regardless of whether all planned Project Phases are completed or otherwise achieve Commercial Operation.

2. Except as provided otherwise in Section 3.3 hereof, **[TRADE SECRET DATA BEGINS...**

...TRADE SECRET DATA ENDS], this PPA shall operate as a single contract between Company and Seller and the rights and obligations of all Project Phases shall be merged and Seller shall be jointly and severally responsible for performance of the terms and conditions of this PPA in connection with the Facility, which shall constitute all Project Phases on an aggregated basis. From such date forward during the remainder of the Term, the presence of Project Phases shall not limit or restrict Seller's obligations to Company under this PPA. From and after such date, Seller's obligations, including the Post-COD Security Fund, Committed Energy, Capacity Accreditation, and Post-COD Damage Cap, and the applicability of Seller Events of Default (including any right to terminate this PPA) shall be determined on a single-Facility basis, based on the actual installed Nameplate Capacity of the Facility as finally determined pursuant to this PPA.

3. Seller agrees to use Commercially Reasonable Efforts to achieve, or cause the achievement of, the milestones set forth in Exhibit B-Overall Construction Milestones, to construct, interconnect, own, operate, and maintain all Project Phases of the Facility. The initial descriptions of the proposed Project Phases and their corresponding Sites that may become Project Phases hereunder are further described in Exhibit C - Initial Descriptions of Project Phases. The Parties acknowledge and agree that the list of potential Project Phases set forth as of the date hereof in Exhibit C-Initial Descriptions of Project Phases includes proposed solar energy projects that may not become part of the Facility hereunder. Seller shall have the right to amend Exhibit C-Initial Descriptions of Project Phases by adding, removing or adjusting Project Phases upon written Notice to Company, *provided, however*, that no such changes shall affect Seller's obligations under this PPA with respect to the sale and delivery of the products and services hereunder or cause the aggregate of all Project Phases to equal more than AC 100 MW of Nameplate Capacity in the aggregate (subject to adjustment as described in Section 3.3).

4. Prior to the commencement of construction of a Project Phase, Seller shall provide Company with written notice of its intent to commence construction of such Project Phase. Seller shall provide (i) a description of the applicable Project Phase, updated from the description included for such potential Project Phase in Exhibit C- Initial Descriptions of Project Phases, (ii) a scaled map

that identifies such Project Phase, its corresponding Site and the location of such Project Phase, (iii) a description of such Project Phase's Interconnection Point, and Interconnection Facilities, and (iv) a description of such Project Phase's Point of Delivery and other important facilities.

(C) Exclusive Remedies Prior to COD. Company specifically acknowledges and agrees that the Liquidated Delay Damages and the Nameplate Capacity Buy-Down Payment shall be Company's sole and exclusive remedy for the delay or failure in completion of any Project Phase(s). The Parties specifically recognize that Company's damages associated with either of (i) delays in completing any Project Phase(s), or (ii) Seller's achievement of an AC 100 MW Facility will be significant but will be difficult to quantify and that the Liquidated Delay Damages and Nameplate Capacity Buy-Down Payment are a reasonable approximation of such damages. Seller explicitly acknowledges that any Liquidated Delay Damages and/or Nameplate Capacity Buy-Down Payment accrued under this PPA are reasonable and do not constitute an unenforceable penalty.

(D) Project Phase Completion/Commercial Operation Date. Seller shall be entitled to submit, and Company agrees to accept, completed Project Phase Completion Declarations (pursuant to Section 4.3) for Project Phases beginning as early as June 1, 2015, subject to the terms and conditions of this PPA. The Commercial Operation Date shall occur on the earlier of December 31, 2016 and the date Seller provides Company with written Notice of a list of all completed Project Phases for which a Project Phase Completion Declaration has been confirmed by the Company and a statement that the aggregate of all such completed Project Phases shall constitute the Facility, *provided, however, that* Seller may not issue such Notice prior to September 1, 2016.

1. In the event that, as of the Commercial Operation Date, the aggregate Nameplate Capacity of the Facility is less than **[TRADE SECRET DATA BEGINS... ...TRADE SECRET DATA ENDS]**, Seller shall, no later than the date described in Section 3.1(E) and Section 3.1(F) below, pay to Company (subject to the applicable Damage Caps): (i) any Liquidated Delay Damages arising from Project Phase(s) that are completed after the Commercial Operation Date, and (ii), if applicable, any required Nameplate Capacity Buy-Down Payment.

2. Upon paying any required Liquidated Delay Damages and/or making the Nameplate Capacity Buy-Down Payment, the Parties shall reset the aggregate Nameplate Capacity of the Facility to an amount equal to the aggregate of all Project Phases for which a Project Phase Completion Declaration has been confirmed by Company (pursuant to Section 4.3) and the Nameplate Capacity of the Facility shall be deemed to be such amount for all purposes for the Term. Corresponding and concurrent proportional adjustments shall be made by the Parties to the respective amounts of Seller's other obligations hereunder, including corresponding proportional reductions to the Post-COD Security Fund, Committed Solar Energy, Capacity Accreditation and Post-COD Damage Cap.

3. On the later of (i) the Commercial Operation Date (if Seller's Commercial Operation Date Notice includes Project Phases of at least **[TRADE SECRET DATA BEGINS... ...TRADE SECRET DATA ENDS]**), or (ii) the date Seller makes the required payments of Liquidated Delay Damages and/or Nameplate Capacity Buy-Down Payment (if Seller's Commercial Operation Date Notice includes Project Phases of less than **[TRADE SECRET DATA BEGINS... ...TRADE SECRET DATA ENDS]**), Seller's pre-COD obligations (including with respect to the Pre-COD Security Fund, Liquidated Delay Damages, Nameplate Capacity Buy-Down Payment and the Pre-COD Damage Cap) shall expire. For the avoidance of doubt, such pre-COD obligations shall be effective until all accrued and applicable Liquidated Delay Damages and Nameplate Capacity Buy-Down Payment obligations have been satisfied, subject to the Pre-COD Damage Cap.

4. Seller's post-COD obligations under this PPA, except the Post-COD Security Fund, shall become effective upon the Commercial Operation Date. The Post-COD Security Fund shall be put in place no later than the expiration of Seller's pre-COD obligations described in the preceding paragraph.

5. Company acknowledges and agrees that, after satisfaction or waiver of all conditions precedent set forth in Article 6 hereof **[TRADE SECRET DATA BEGINS...**

...TRADE SECRET DATA ENDS], Company has no right to terminate this PPA with respect to a specific Project Phase except as set forth in Section 12.1(A), (B), (C), (D), (E), and (G) as applicable to only that specific Project Phase (and Company acknowledges and agrees that any such termination right of Company only applies to the specific Project Phase giving rise to such right and the other Project Phases shall not be affected thereby). For the avoidance of doubt, if Company terminates this PPA as to any Project Phase as authorized by this paragraph, such termination shall not lessen any of Seller's obligations under this PPA, including the obligation to achieve the amount of committed Nameplate Capacity or pay applicable damages for any shortfall as provided herein. Further, Company acknowledges and agrees that, during such time period, Company has no right to terminate this PPA in total except as set forth in Section 12.1(H). From and after **[TRADE SECRET DATA BEGINS...**

...TRADE SECRET DATA ENDS], the limitation on Company's right to terminate the PPA set forth in the previous sentence shall be eliminated and the termination of the PPA for the occurrence of any uncured Event of Default after such date shall apply equally to the entire Facility, regardless of the number or ownership of any Project Phases, including any allocation of aggregate obligations described in Section 3.3 below.

(E) Project Phase Delay. Upon the Commercial Operation Date, Seller shall provide Notice to Company of the aggregate AC MW of all Project Phases that have a confirmed Project Phase Completion Declaration in accordance with Section 4.3.

1. If the aggregate total Nameplate Capacity as of the Commercial Operation Date is at or greater than **[TRADE SECRET DATA BEGINS...
...TRADE SECRET DATA ENDS]** the Facility, for purposes of this PPA, shall be deemed to be the actual AC MW of the aggregate of all Project Phases, not to exceed AC 100 MW (subject to allocation as described in Section 3.3 below).

2. If the aggregate total as of such date is less than **[TRADE SECRET DATA BEGINS...
...TRADE SECRET DATA ENDS]**, the following shall apply:

a. Seller may seek to complete additional Project Phase(s) and obtain confirmed Project Phase Completion Declaration(s) after the COD and for no more than ninety (90) Days after the Commercial Operation Date, *provided, however, that* if during such period Seller provides a written opinion from a mutually agreeable independent engineer that additional Project Phases can reasonably be completed within an additional ninety (90) Day period, then Seller shall be allowed a total period not to exceed one hundred-eighty (180) Days after the Commercial Operation Date. Upon completion of any additional Project Phase(s) pursuant to this paragraph, Seller shall provide updated Notice to Company showing the number of AC MW that have been added since the original Notice, the date any new Project Phase(s) received a confirmed Project Phase Completion Declaration (pursuant to Section 4.3), the aggregate total of AC MW of the Facility as of such date, and a calculation showing the amount of Liquidated Delay Damages owed as a result of adding such additional Project Phase(s).

b. Seller shall pay Liquidated Delay Damages for every AC MW of any additional Project Phase(s) Nameplate Capacity that is added to the Facility after the Commercial Operation Date, up to AC 100 MW. For the avoidance of doubt, if Seller elects to add, after the Commercial Operation date, MW above **[TRADE SECRET DATA BEGINS...
...TRADE SECRET DATA ENDS]**, Seller must pay Delay Liquidated Damages for such additional MW above **[TRADE SECRET DATA BEGINS...
...TRADE SECRET DATA ENDS]**.

c. Such Liquidated Delay Damages shall be due immediately upon the occurrence and shall be paid within ten (10) Days after Company's written request. All accrued Liquidated Delay Damages must be paid prior to Company being obligated to confirm any Project Phase Completion Declaration. Company is not obligated to accept any Project Phase(s) as part of the Facility for which any Liquidated Delay Damages are owed but have not been paid.

d. As of the date of receipt of confirmation of the Project Phase Completion Declaration for the final additional Project Phase(s) added to the Facility as described in this Section 3.1, Seller shall reset the aggregate Nameplate Capacity of the Facility upon payment of the Liquidated Delay Damages. Resetting the aggregate Nameplate Capacity of the Facility shall not change the COD. In such circumstances, if the Facility is still less than **[TRADE SECRET DATA BEGINS...
...TRADE SECRET DATA ENDS]**, Seller shall be obligated to

pay to Company the Nameplate Capacity Buy-Down Payment for the difference between AC 100 MW and such reset amount as described in Section 3.1(F) below.

3. If the aggregate total as of the Commercial Operation Date is AC zero (0) MW, Section 12.1(H) shall be available to Company.

(F) Nameplate Capacity Buy-Down Payment. Effective as of (i) the date described in Section 3.1(E)(2)(d) above or (ii) in the event Seller does not elect to add any additional Project Phases to the Facility, the Commercial Operation Date, Seller shall determine and fix the aggregate Nameplate Capacity of the Facility. In the event that the aggregate Nameplate Capacity as of such date is fixed at an amount less than **[TRADE SECRET DATA BEGINS... ...TRADE SECRET DATA ENDS]**, then Seller shall make one of the following payments to Company:

1. In the event that such aggregate Nameplate Capacity of the Facility is **[TRADE SECRET DATA BEGINS... ...TRADE SECRET DATA ENDS]**,

then the difference between **[TRADE SECRET DATA BEGINS... ...TRADE SECRET DATA ENDS]** and the actual aggregate Nameplate Capacity shall be determined in kilowatts. The Nameplate Capacity Buy-Down Payment for such shortfall shall equal the product of such difference multiplied by **[TRADE SECRET DATA BEGINS... ...TRADE SECRET DATA ENDS]**. Upon Seller making such payment, each of the aggregate Nameplate Capacity of the Facility and Seller's obligations with respect to performance of this PPA shall be adjusted to the actual aggregate Nameplate Capacity for the remainder of the Term and Seller's obligations under this PPA shall be reduced as described in paragraph (D)(2) of this Section 3.1.

2. In the event that such aggregate Nameplate Capacity of the Facility is **[TRADE SECRET DATA BEGINS... ...TRADE SECRET DATA ENDS]**,

then the difference between **[TRADE SECRET DATA BEGINS... ...TRADE SECRET DATA ENDS]** and the aggregate Nameplate Capacity shall be determined in kilowatts. The Nameplate Capacity Buy-Down Payment for such shortfall shall equal the product of such difference multiplied by **[TRADE SECRET DATA BEGINS... ...TRADE SECRET DATA ENDS]** plus the amount of **[TRADE SECRET DATA BEGINS... ...TRADE SECRET DATA ENDS]** representing an amount owed for the shortfall between **[TRADE SECRET DATA BEGINS... ...TRADE SECRET DATA ENDS]**.

Upon Seller making such payment, each of the aggregate Nameplate Capacity of the Facility and Seller's obligations with respect to performance of this PPA shall be adjusted to the actual aggregate Nameplate Capacity for the remainder of the Term and Seller's obligations under this PPA shall be reduced as described in paragraph (D)(2) of this Section 3.1.

3. In the event the aggregate Nameplate Capacity of the Facility is **[TRADE SECRET DATA BEGINS... ...TRADE SECRET DATA ENDS]**, Seller shall pay a Nameplate Capacity Buy-Down Payment equal to

[TRADE SECRET DATA BEGINS... ...TRADE SECRET DATA ENDS].

Upon Seller making such payment, the aggregate Nameplate Capacity of the Facility and Seller's obligations with respect to performance of this PPA shall be adjusted to the actual aggregate Nameplate Capacity for the remainder of the Term and Seller's obligations under this PPA shall be reduced as described in paragraph (D)(2) of this Section 3.1.

4. Company may draw from the Pre-COD Security Fund to pay any portion of the Nameplate Capacity Buy-Down Payment and such Pre-COD Security Fund shall remain in place and available to Company until satisfaction of all such obligations.

5. The Parties expressly agree that the Nameplate Capacity Buy-Down Payment does not constitute an Event of Default and payment of such amount is not a remedy or a penalty. Rather, the Nameplate Capacity Buy-Down Payment is a negotiated payment allowing Seller to reduce the size of the Facility under specified circumstances and reflects the value of such reduction to Company in light of Company's obligation to purchase specified amounts of solar power under Minnesota law.

3.2 General Design of the Facility.

(A) Seller shall design, construct, operate and maintain each Project Phase of the Facility according to Good Utility Practice(s) and the Interconnection Agreement.

(B) Each Project Phase shall include all equipment necessary to successfully interconnect with the Distribution System for the delivery of the Facility's output to the Point of Delivery.

(C) Each Project Phase shall include all equipment and telecommunications capabilities necessary to communicate with Company's SCADA System. Each Project Phase(s) that has Nameplate Capacity equal to 5 MW or greater in size shall also include, at such Project Phase, all equipment necessary for AGC operation pursuant to this PPA.

(D) Each Project Phase shall include all equipment specified in Exhibit C – Initial Description of Project Phases or otherwise reasonably necessary to fulfill Seller's obligations under this PPA.

3.3 Potential for Multiple Power Purchase Agreements. The Parties acknowledge and agree that, Seller and its Affiliates will be seeking Tax Equity Financing for the Project Phases following the Effective Date of this PPA, and such Tax Equity Financing may be obtained from more than one Financing Party. Accordingly, at any time following the Effective Date and prior to or on December 31, 2015, Seller may provide Company written Notice advising Company of Seller's need

to subdivide the Project Phases into no more than two additional power purchase agreements to facilitate Seller's Tax Equity Financing efforts.

(A) Company shall agree to enter into up to two additional power purchase agreements with Seller or an Affiliate of Seller who has the same Ultimate Parent Entity as Seller, *provided, however, that* Company shall not be obligated to agree to terms and conditions that are different from the terms of this PPA (except as described in paragraph (B) below) and the aggregate of this PPA and all other power purchase agreements entered into pursuant to this Section 3.3 shall not exceed AC 100 MW.

(B) In the event Seller provides Company with Notice that its efforts to seek Tax Equity Financing will be facilitated by entry into up to two additional power purchase agreements, then (i) Seller or its Affiliates will transfer ownership of the applicable Project Phases to one or two (as applicable) additional project company entities, (ii) Company agrees to enter into one or two (as applicable) additional power purchase agreements with such additional project company entities, on the same terms and conditions set forth herein (with such adjustments to account for their respective facility characteristics, including Nameplate Capacity, Interconnection Points, Points of Delivery, Committed Solar Energy, Capacity Accreditation and other characteristics specific to each such Project Phases), and (iii) the Parties shall amend and modify this PPA to adjust such characteristics of the Facility accordingly.

Article 4 - Implementation

4.1 Project Development.

(A) **[TRADE SECRET DATA BEGINS...
...TRADE SECRET DATA ENDS]**, Seller shall complete an environmental site assessment ("Environmental Site Assessment") of the Sites of the Project Phases to be included in the Facility (except for potential Project Phases that Seller has deemed to no longer be viable as a Project Phases hereunder) and shall disclose to Company any Environmental Contamination identified in that investigation and confirm that such Environmental Contamination has been remediated or is capable of being remediated and that the Site remains appropriate for its intended use by Seller. Seller shall promptly inform Company if due to any Environmental Contamination Seller is constrained in a way that will limit, reduce, interfere with or preclude Seller's ability to perform its obligations under this PPA, along with a statement of whether and to what extent this circumstance may limit or preclude Seller's ability to perform under this PPA. Seller shall provide Company with written recommendations to overcome any such issue(s) that would allow Seller to fully perform under this PPA. Upon request, Seller shall provide Company a copy of the Environmental Site Assessment report and any backup data; *provided, however, that* the Environmental Site Assessment and backup data shall be deemed Confidential Information pursuant to Section 20.18. Throughout the Term, Seller shall ensure that any Environmental Contamination identified at the Facility or

Site that has been caused by Seller or its Affiliates is promptly remediated. Seller shall promptly disclose to Company the presence of any material Environmental Contamination or the existence of any enforcement, legal, or regulatory action or proceeding relating to such alleged violation or alleged presence of Environmental Contamination.

(B) Seller shall at its own expense enter the Construction Contract and all other major contracts necessary to the successful development of, construction of, operation of and delivery from the Facility with qualified and experienced contractors. Upon written request by Company, Seller shall provide Company with a memorandum of agreement executed by Seller and the contractor party to the Construction Contract and all other major contracts, which memorandum shall set forth the basic terms of such contract, including the names of the parties thereto, the date of such contract, a summary of any products or services to be provided or in lieu thereof, at Seller's option, a copy of the Construction Contract or other major contract (provided that Seller shall be permitted to redact pricing and other sensitive information).

(C) Prior to the Commercial Operation Date, Seller shall (i) submit monthly progress reports to Company in a form agreed upon by the Parties advising Company of the current status of each Construction Milestone, any significant developments or delays along with an action plan for making up delays, and Seller's best estimate of the Commercial Operation Date; (ii) provide copies of reports submitted to the Facility Financing Party relating to status, progress and development of the Facility; and (iii) invite Company to participate in quarterly meetings to discuss the progress reports, answer questions, and assess the schedule. Seller shall make all relevant contractors available to Company in order to keep Company fully informed on the status of the development.

(D) Upon request, Company shall have the right to monitor the construction, start-up, testing, and operation of the Facility at the applicable Project Phase for compliance with this PPA; *provided, however, that* Company shall comply with all of Seller's applicable safety and health rules and requirements and Company and its representatives shall execute Seller's standard indemnification and hold harmless agreement applicable to all visitors at the Facility. Company's monitoring of the Facility shall not be construed as inspections or endorsing the design thereof nor as any express or implied warranties including performance, safety, durability, or reliability of the Facility.

(E) Seller shall obtain and pay for all Permits necessary for the construction, ownership, operation and maintenance of the Facility and the generation and delivery of any output from the Facility to the Points of Delivery. Seller shall keep Company reasonably informed as to the status of its permitting efforts. Seller shall promptly inform Company of any Permits it is unable to obtain, that are delayed, limited, suspended, terminated or otherwise constrained in a way that will limit, reduce, interfere with or preclude Seller's ability to perform its obligations under this PPA, along with a statement of whether and to what extent this

circumstance may limit or preclude Seller's ability to perform under this PPA. Seller shall provide Company with written recommendations to overcome any such issue(s) with any Permits to allow Seller to fully perform under this PPA. Upon reasonable request, Company shall have the right to inspect and obtain copies of all Permits held by Seller.

(F) Seller shall notify Company (i) sufficiently in advance of any known upcoming significant inspections by any Governmental Authority relating to the Facility that would be reasonably likely to adversely affect Seller's Permits, to allow Company the opportunity to attend, and (ii) promptly after any unscheduled or impromptu inspection with a description of the nature and outcome of such inspection.

4.2 Commercial Operation. Subject to extension as authorized in this PPA, the Facility shall achieve Commercial Operation of the Facility no later than the Commercial Operation Date. Seller agrees to use Commercially Reasonable Efforts to achieve the Construction Milestones set forth in Exhibit B - Construction Milestones; *provided, however*, that Seller shall have no liability under this PPA, and it shall not be an Event of Default hereunder, in the event Seller does not achieve any such Construction Milestone, other than the Commercial Operation Date, by the corresponding date.

4.3 Project Phase Completion Conditions. Seller shall provide Company a Notice, substantially in the form attached hereto as Exhibit M, of the date Seller believes a Project Phase or a group of Project Phases has achieved completion of the conditions set forth in this Section 4.3 (a "Project Phase Completion Declaration") along with all supporting documentation of the satisfaction or occurrence of all such conditions. Company shall have up to ten (10) Business Days to review such evidence and raise any Commercially Reasonable objections to Seller's satisfaction of any of the Project Phase Completion Conditions; *provided, however, that* such Notice shall be deemed accepted by Company if Company fails to object within such time period and, *provided further*, that Company shall provide Seller with a written statement of its confirmation or no objection regarding the satisfaction of such conditions, even if such confirmation or lack of objection is due to Company's failure to timely respond, promptly following Seller's written request therefor. Seller may provide Notice of completion of the Project Phase Completion Conditions on an individual and incremental basis pending resolution of any objections; *provided, however, that* Company shall in all cases have up to five (5) Business Days to review and object to each Notice (as described above). The Project Phase Completion Conditions are:

(A) an officer of Seller, authorized to bind Seller and who is familiar with the applicable Project Phase(s), has provided written confirmation that (1) all necessary and material Permits with respect to such Project Phase have been obtained and are in full force and effect, (2) Seller is in compliance with this PPA in all material respects, (3) such Project Phase(s) is or are available to commence normal operations in accordance with Seller's operating agreements, Construction Contract,

and applicable manufacturers' warranties, (4) the applicable Project Phase is in material compliance with the Distribution Tariff, (5) Seller is in material compliance with its obligations under the corresponding Interconnection Agreement(s), (6) such Project Phase(s) is or are fully interconnected to the Distribution System, has been tested, has achieved initial synchronization, and has been successfully operated at a generation level reasonably acceptable to the Distribution Authority, without experiencing any abnormal or unsafe operating conditions on any interconnected system, (7) Seller has completed any testing of such Project Phase(s) and the corresponding Interconnection Facilities required by the applicable Interconnection Agreement(s) and Distribution Tariff, and (8) Seller has made all other arrangements necessary to deliver the output of such Project Phase(s) to the corresponding Point(s) of Delivery;

(B) an independent registered professional engineer's certification has been obtained by Seller and provided to Company stating that the applicable Project Phase(s) has or have been completed in all material respects, except for punch list items that do not have a Material Adverse Effect on the ability of such Project Phase(s) to operate for its or their intended purpose, and, if applicable, incomplete Solar Units allowed pursuant to Section 4.3(D) below;

(C) Seller has demonstrated (1) the reliability of the applicable Project Phase(s)' communications systems and communication interface with Company's EMCC and, to the extent applicable to such Project Phase(s), is capable of receiving and reacting to signals from Company's SCADA System, and (2) to the extent applicable to such Project Phase(s), all AGC equipment is installed and operational; and

(D) at least ninety-five percent (95%) of the Solar Units comprising such Project Phase(s) and associated equipment sufficient to allow such Solar Units to generate and deliver Solar Energy to the corresponding Point(s) of Delivery have been completed.

4.4 Following Project Phase Completion. From and after the date a Project Phase has met and satisfied the Project Phase Completion Conditions (as described in Section 4.3) and until the Commercial Operation Date, all of the rights and duties of the Parties shall commence and continue with respect to such Project Phase hereunder. Seller shall be solely responsible for allocating payments from Company for products and services hereunder among the completed Project Phases. Furthermore, upon and following the Commercial Operation Date, Seller shall be entitled to receive the Solar Energy Payment Rate in connection with its performance hereunder.

4.5 Stage 1 Energy and Stage 2 Energy.

(A) Seller shall have the right to deliver Solar Energy and associated RECs to Company from and after June 1, 2015 and prior to September 1, 2016 ("Stage 1 Energy") from any Project Phase that is undergoing testing or has received

a confirmed Project Phase Completion Notice. Company shall accept and purchase all Stage 1 Energy at the Stage 1 Energy Price. Seller shall not be entitled to Compensable Curtailment Energy payment prior to the COD in connection with Stage 1 Energy under Section 8.2. Prior to the COD, Company shall use Commercially Reasonable Efforts to minimize discretionary curtailments by Company that would otherwise constitute Compensable Curtailment Energy if the curtailment had occurred after the COD.

(B) Seller shall have the right to deliver Solar Energy and associated RECs to Company from September 1, 2016 until the Commercial Operation Date ("Stage 2 Energy") from any Project Phase that is undergoing testing or has received a confirmed Project Phase Completion Notice. Company shall accept and purchase all Stage 2 Energy at the Stage 2 Energy Price. Seller shall not be entitled to Compensable Curtailment Energy payment prior to the COD in connection with Stage 2 Energy under Section 8.2. Prior to the COD, Company shall use Commercially Reasonable Efforts to minimize discretionary curtailments by Company that would otherwise constitute Compensable Curtailment Energy if the curtailment had occurred after the COD.

(C) The following procedures shall apply for testing a Project Phase.

1. At least 30 Days prior to the date when Seller expects to start generating any energy from any Project Phase, Seller shall coordinate the production and delivery of energy from such Project Phase with Company for the purpose of testing the Project Phase's equipment. The Parties shall cooperate to facilitate Seller's testing of each such Project Phase as necessary to satisfy the Project Phase Completion Conditions for such Phase.

2. Seller shall promptly provide Company and Market Operator or other transmission authority designated by Company with the information necessary to have such Project Phase registered with the transmission system for inclusion in any generation modeling maintained by the regional transmission authority, sufficiently in advance to allow such Project Phase to be registered in such model prior to generating any Stage 1 Energy or Stage 2 Energy. Upon receipt of such information, Company will cooperate reasonably to assist in the registration of the Facility to allow generation of Stage 1 Energy or Stage 2 Energy.

Article 5 - Delivery

5.1 Electric Delivery Arrangements. Seller shall be responsible for making, maintaining and paying the costs associated with the interconnection of each Project Phase of the Facility to the Distribution System. Seller shall comply with the Distribution Authority's requirements for each interconnection and shall comply with all requirements set forth in the applicable Distribution Tariff. The Interconnection Request for each Project Phase shall request interconnection service as authorized under the applicable Distribution Tariff. To the extent applicable during the Term, Company shall be the market participant as defined by the MISO tariff for each

Project Phase and for the Facility, and shall timely file all necessary registration and other required filings to become market participant for each Project Phase in order to allow for all energy sales contemplated herein to occur.

(A) Seller authorizes Company to contact and obtain information concerning each Project Phase of the Facility and Interconnection Facilities directly from any person or entity and, upon request, Seller shall confirm such authorization in writing to Company, the Distribution Authority or MISO in such form as requested by Company or the Distribution Authority.

(B) Seller shall be responsible for all interconnection, electric losses, and ancillary service arrangements and costs required to deliver the output from each Project Phase of the Facility to its corresponding Point of Delivery.

(C) Company shall be responsible for all electric losses, and ancillary service arrangements and costs required to transmit and deliver the output from each Project Phase of the Facility at and beyond its corresponding Point of Delivery. If at any time during the Term, the Distribution Provider changes or the Interconnection Facilities cease to be subject to the Distribution Tariff, then the Parties shall cooperate in good faith to amend this PPA in a manner to mitigate the impact of such changes on the Parties and to facilitate the delivery of output from the Point of Delivery to Company's customers at the least possible incremental cost to Company; *provided, however, that* such actions shall not materially adversely affect either Party's rights, benefits, risks or obligations under this Agreement.

5.2 Electric Metering Devices.

(A) All Electric Metering Devices used to measure energy shall be owned, installed, and maintained in accordance with the applicable Interconnection Agreement at no cost to Company under this PPA.

1. For purposes of this PPA, meter readings will be adjusted to reflect losses from the Electric Metering Devices to the applicable Point of Delivery based initially on the amount specified by the manufacturer for expected losses, *provided, however, that* the Operating Committee may revise this loss adjustment based on actual experience.

2. Seller shall arrange any necessary authorization to provide Company access to all Electric Metering Devices for all purposes necessary to perform under this PPA and shall provide Company the opportunity to be present at any time when such Electric Metering Devices are to be inspected and tested or adjusted.

(B) Either Party may elect to install and maintain, at its own expense, backup metering devices at any Project Phase ("Back-Up Metering"), *provided, however, that* the specifications, installation and testing of any such Back-Up Metering shall be consistent with the requirements for the Electric Metering Devices. Upon written request, the installing Party shall conduct retests requested by the other

Party. The actual cost of any retest shall be borne by the Party requesting the test, unless, upon such retest, Back-Up Metering is inaccurate by more than one percent (1%), in which case the cost of the retest shall be borne by the installing Party. If requested in writing, the installing Party shall provide copies of any inspection or testing reports to the requesting Party.

(C) If an Electric Metering Device or Back-Up Metering, fails to register, or if the measurement is inaccurate by more than one percent, an adjustment shall be made correcting all measurements as follows:

1. If the Electric Metering Device is found to be defective or inaccurate, the Parties shall use Back-Up Metering, if installed, to determine the amount of such inaccuracy, *provided, however, that* Back-Up Metering has been tested and maintained and adjusted for losses on the same basis as the Electric Metering Device. If Back-Up Metering is not installed, or Back-Up Metering is also found to be inaccurate by more than one percent (1%), the Parties shall use the best available information for the period of inaccuracy, adjusted as agreed by the Parties for losses to the Point of Delivery.

2. If the Parties cannot agree on the actual period during which the inaccurate measurements were made, the period shall be the shorter of (i) the last one-half of the period from the last previous test of the Electric Metering Device to the test that found the Electric Metering Device to be defective or inaccurate, or (ii) one hundred eighty (180) Days immediately preceding the test that found the Electric Metering Device to be defective or inaccurate.

3. To the extent that the adjustment period covers a period of deliveries for which payment has already been made by Company, Company shall use the corrected measurements as determined in accordance with this Article 5 to re-compute the amount due for the period of the inaccuracy and, in accordance with Article 9, will adjust the next regular bill to reflect such re-computed amount, *provided however, that* payment of such difference by the owing Party shall be made not later than thirty (30) Days after the owing Party receives notice of the amount due.

Article 6 - Conditions Precedent

6.1 Company CPs.

(A) On September 23, 2014, Company filed an unexecuted draft of this PPA with the Minnesota Public Utilities Commission pursuant to the requirements of the Order. No later than ten (10) Days after receipt of an order from the Minnesota Public Utilities Commission authorizing Company to execute this PPA, Company shall file this PPA with the North Dakota Public Service Commission. Seller shall cooperate with Company's effort to seek State Regulatory Approval.

(B) Either Party shall have the right to terminate this PPA, without any further financial or other obligation to the other as a result of such termination, by Notice to the other Party not more than ten (10) Days after the earlier of: (i) fourteen

(14) Days after receipt of written determinations by both State Regulatory Agencies that together do not constitute State Regulatory Approval, or (ii) six (6) months following the written request for State Regulatory Approval without receipt of State Regulatory Approval. If a Party fails to terminate this PPA in the time allowed by this paragraph, such Party shall be deemed to have waived its right to terminate this PPA under this Section 6.1 and this PPA shall remain in full force and effect thereafter.

6.2 Seller CPs. Either Party shall have the right to terminate this PPA, without any further financial or other obligation to the other as a result of such termination, by Notice within fourteen (14) Days following the failure of Seller to satisfy or waive in its sole discretion any of the following conditions precedent (the “Seller CPs”) by the indicated deadline:

<u>Seller CP</u>	<u>Deadline</u>
(1) Receipt by Seller of a final, non-appealable Master Site Permit or equivalent Permit for each Project Phase, reasonably acceptable to Seller.	December 31, 2015
(2) Seller and the Distribution Authority shall have entered into mutually-satisfactory arrangements for the interconnection of the Project Phases of the Facility that are reasonably acceptable to Seller (see note below)	December 31, 2015.

If Seller fails to terminate this PPA in the times allowed by this Section 6.2, the Seller CPs shall be deemed to have been waived and this PPA shall remain in full force and effect thereafter.

Article 7 - Sale and Purchase

7.1 General Obligation.

(A) Beginning on the Commercial Operation Date, Seller shall generate from the Facility, deliver to the applicable Point of Delivery, and sell to Company, and Company shall receive and purchase at the applicable Points of Delivery, the Solar Energy (not to exceed AC 100 MW in the aggregate at the Points of Delivery) and other products and services required by this PPA. Seller shall not curtail or interrupt deliveries from the Facility as required by this PPA for economic reasons of any type whatsoever; *provided, however, that* Seller’s obligation to generate, deliver and sell to Company the Solar Energy and other products and services required hereunder shall be excused during Seller Excuse Hours.

(B) Title and risk of loss of the products and services transacted by this PPA shall transfer from Seller to Company at the applicable Points of Delivery.

7.2 Committed Solar Energy. Seller covenants to deliver the Committed Solar Energy to the Points of Delivery, except as otherwise provided in this Agreement (including during Seller Excuse Hours). Beginning at the end of the first Commercial Operation Year and continuing at the end of each Commercial Operation Year thereafter for the balance of the Term, Seller shall, no later than 90 Days after the end of such Commercial Operation Year, provide to Company (i) a calculation of the actual output of the Facility for the just-completed Commercial Operation Year (including adjustments per Exhibit L) against the Committed Solar Energy for such year.

7.3 AGC/SCADA.

(A) Beginning on the Commercial Operation Date, Company shall dispatch the applicable Project Phases to which AGC applies through the EMCC AGC system. All Project Phases for which AGC is not required shall be dispatched through the SCADA system. Seller shall faithfully implement dispatch and other instructions through AGC or SCADA, as the case may be.

(B) Subject to the applicable compensation obligations of Company for Compensable Curtailment Energy as described in this PPA, Company may notify Seller, by telephonic communication or through use of the AGC Set-Point (for those Project Phases utilizing AGC), to curtail the delivery of Solar Energy to Company from any applicable Project Phases, for any reason and in its sole discretion and Seller shall promptly comply with such notification as soon as reasonably possible in accordance with Good Utility Practices.

(C) Company shall use its Commercially Reasonable Efforts to communicate electronically to the applicable Project Phase(s) respective AGC or SCADA Systems. Seller shall use its Commercially Reasonable Efforts to ensure that, throughout the Term, the applicable Project Phase(s)' respective AGC or SCADA System are capable of functioning within the margin of error specified in the solar facility's control system manufacturer's energy set point margin of error.

(D) Seller shall use its Commercially Reasonable Efforts to ensure that, for the applicable Project Phases to which AGC applies, Facility AGC Remote/Local status is in "Remote" set-point control during normal operations.

7.4 Compensation for Other Products and Services.

(A) The Parties acknowledge that existing and future Applicable Laws create value in the ownership, use or allocation of RECs. To the full extent allowed by such Applicable Law, Company shall own or be entitled to claim all RECs to the extent such credits may exist or be created during the Term associated with Stage 1 Energy, Stage 2 Energy, Solar Energy, and any Excess Solar Energy delivered to and paid for by Company.

1. Seller hereby automatically and irrevocably assigns to Company all rights, title and authority for Company to register the Eligible Energy

Resource and own, hold and manage such RECs in Company's own name and to Company's account, including any rights associated with any renewable energy information or tracking system that exists or may be established (including but not limited to participants in any applicable REC Registration Program and the United States government) with regard to monitoring, registering, tracking, certifying, or trading such credits. Seller hereby authorizes Company to act as its agent for the purposes of registering the Eligible Energy Resource, and tracking and certifying RECs, and Company has full authority to hold, sell or trade such RECs to its own account of said renewable energy information or tracking systems. Upon the request of Company, at no cost to Company, (i) Seller shall deliver or cause to be delivered to Company such attestations/certifications of RECs, and (ii) Seller shall cooperate with Company's reasonable requests in connection with registration and certification of RECs.

2. Seller shall provide the information needed for Company to make all applications and/or filings required by Applicable Law for REC accreditation and for the provision of such RECs to Company within the Midwest Renewable Energy Trading System program for the Facility. To the extent possible during the Term, Seller and Company will implement and maintain a Forward Certificate Transfer, as defined in the current Midwest Renewable Energy Trading System Program Operating Procedures (rev. April 23, 2010), to allow RECs to be directly deposited into Company's account. Company may, at its election, pursue other or alternative REC qualifications or certifications with respect to the Solar Energy purchased by Company from any Project Phase of the Facility, and Seller agrees to cooperate in good faith with Company in connection therewith, *provided, however, that* Seller shall not be required to incur any third-party out-of pocket cost or expense in connection with such cooperation or such other or alternative RECs.

(B) Seller shall make available to Company all Generation Benefits and any available Ancillary Services associated with the Facility that Seller actually receives at no additional charge under this PPA. Any compensation Seller receives under the Interconnection Agreement or otherwise for Generation Benefits or any available Ancillary Services associated with the Facility and its output shall be provided to Company at no additional cost to Company under this PPA. Seller shall credit Company, as a reduction to Seller's monthly invoice or other mutually agreed mechanism, for any compensation that Seller receives for Generation Benefits or any available Ancillary Services.(net of costs or expenses incurred by Seller and its Affiliates to obtain such benefits or provide such services). Notwithstanding the above, with respect to (i) new Generation Benefits not in existence on the Effective Date and/or (ii) in the event a Governmental Authority implements new or revised requirements for generators (such as the Facility or any Project Phase) to obtain Generation Benefits that require Seller or its Affiliates to incur costs or expenses to obtain such benefits, then Seller shall be entitled to reduce the amount of credit to Company under this paragraph by an amount sufficient to allow Seller to recover such costs and expenses; *provided that* Seller shall not reduce the credit below zero and any excess of such costs and expenses over the amount of such credit in any Commercial Operation Year shall instead be carried forward as a reduction to such

credit in the following Commercial Operation Years (and any such excess prior to the Commercial Operation Date shall be carried over to the initial Commercial Operation Year). In the event that Company receives all or a portion of such compensation related to any such Generation Benefits related to the Facility or any Project Phase, Company shall promptly remit such compensation to Seller.

1. Seller shall use Commercially Reasonable Efforts to maximize the availability of Generation Benefits and Ancillary Services available from the Facility; *provided, however, that* Seller shall not be required to (i) operate its Facility in a manner that reduces the real output of the Facility in order to maximize any Generation Benefits and Ancillary Services for Company, or (ii) make any additional capital expenditures or incur any increased operating expenses in connection with such efforts.

2. In the event a Governmental Authority or Distribution Authority implements new or revised requirements for generators to create, modify, change, or supply Ancillary Services, requiring Seller to install additional equipment after the Commercial Operation Date to meet such requirements, then Seller shall be allowed to reduce the amount owed to Company for such Generation Benefits by an amount sufficient to recover the cost of such additional equipment and operating expenses incurred in obtaining and transferring such benefits to Company; *provided, however, that* the amount of credit shall in no event be less than zero. Any excess of such cost over the amount of the credit in any year shall instead be carried forward as a reduction of the amount of the credit in subsequent years.

Article 8 - Payment Calculations

8.1 Solar Energy Payment Rate.

(A) Prior to the Commercial Operation Date, Company shall pay Seller for Stage 1 Energy and Stage 2 Energy, as applicable, delivered to the Points of Delivery pursuant to Section 4.5.

(B) Commencing on the Commercial Operation Date, Company shall pay Seller the Solar Energy Payment Rate for Solar Energy delivered to the applicable Points of Delivery from all Project Phases of the Facility. The Solar Energy Payment Rate for a specific Commercial Operation Year shall be effective on the first Day of the calendar month following the calendar month in which the applicable anniversary of COD occurs (for example, if COD occurs on December 10, 2016, the Renewable Energy Payment Rate for the second Commercial Operation Year as described in Exhibit J shall be effective as of January 1, 2018).

(C) In the event that the Solar Energy in any Commercial Operation Year (including any Compensable Curtailment Energy) exceeds one hundred fifteen percent (115%) of the Committed Solar Energy ("Excess Solar Energy"), Company shall pay Seller at a rate equal to the Stage 1 Energy Price for all such Excess Solar Energy and RECs associated therewith, delivered by Seller to Company for such

Commercial Operation Year. After such Commercial Operation Year, the Parties obligations shall resume pursuant to this PPA. Seller shall notify Company upon Seller's delivery of Solar Energy hereunder that exceeds 110% of the Committed Solar Energy for a Commercial Operation Year.

8.2 Curtailment Energy Payment Rate.

(A) If delivery of Solar Energy from any Point of Delivery is curtailed by Company pursuant to Section 7.3, or there is an Economic Curtailment, then:

1. the Parties shall determine the quantity of Solar Energy that would have been produced by the Facility (i) during those periods of time when the Facility (or any Project Phase) is on AGC and the AGC Set-Point is set at a level that will not allow the entire Facility Nameplate Capacity to be deliverable by determining the difference between Potential Energy and the delivered Solar Energy, and (ii) during those periods of time when the Facility (or any Project Phase) is not on AGC or the AGC Set-Point is set at a level that will allow the Facility Nameplate Capacity to be deliverable by determining the amount that would have been available for delivery had its generation not been so curtailed ("Compensable Curtailment Energy").

2. Compensable Curtailment Energy shall be the number of MWh represented by the Potential Energy less the Solar Energy actually delivered and measured by the applicable Electric Metering Devices during the period of curtailment.

3. Company shall pay to Seller for such Compensable Curtailment Energy all amounts that Seller would have received from Company under this PPA had such Compensable Curtailment Energy actually been delivered.

(B) For purposes of determining Compensable Curtailment Energy, the amount of Potential Energy at any given time shall be calculated using the best-available data and methods to determine an accurate representation of the amount of Solar Energy.

1. To the extent available, Company agrees to use Seller's real time Park Potential (for the curtailed Project Phase(s)) communicated to Company through the SCADA System as the proxy for Potential Energy, except to the extent that Park Potential is demonstrated not to accurately reflect the Potential Energy (plus or minus two percent (2%) over a period of one month).

2. During those periods of time when the Park Potential is unavailable or does not accurately represent Potential Energy, the Parties shall use the best available data obtained through Commercially Reasonable methods to determine the Potential Energy.

(C) Seller shall be entitled to, but not obligated to, sell any curtailed energy and associated RECs to third parties to whom Seller is able to successfully

transact and deliver; *provided, however, that* the net amount realized for such sale shall offset amounts owed by Company for Compensable Curtailment Energy. Company shall reasonably cooperate with any such sales, and Seller accepts sole responsibility to obtain rights to deliver such energy at no cost to Company. Seller accepts all risk of the unavailability of delivery rights during any curtailment.

(D) Notwithstanding anything in this Article 8 to the contrary, curtailments or reductions of delivery for any of the following reasons shall constitute "Non-Compensable Curtailments" and shall be excluded from Compensable Curtailment Energy, and no payment shall be due Seller under paragraph (A) above for curtailments of delivery of Solar Energy arising out of or resulting from

1. an Emergency declared by the Distribution Authority that prevents or restricts Seller from delivering Solar Energy to the applicable Point(s) of Delivery;

2. any breach or default of Seller under the applicable Interconnection Agreements that prevents or restricts Seller from delivering Solar Energy to the applicable Point of Delivery;

3. maintenance outages, whether planned or unplanned, of any part of the Distribution System or any testing of the Distribution System to the extent such maintenance outage or testing requires a restriction or reduction to the output of the Facility or Distribution System;

4. Seller's failure to maintain in full force and effect any Permit to construct and/or operate the Facility to the extent such failure prevents the Seller from delivering Solar Energy to the applicable Point of Delivery;

5. Seller's failure to maintain and utilize the applicable communications system (whether AGC or through the SCADA System) or its failure or refusal to respond to instructions from the EMCC in a manner consistent with the terms of this Agreement.

Article 9 - Billing and Payment

9.1 Billing.

(A) The billing period shall be the calendar month. Within ten (10) Days after the end of any month, Company will provide to Seller a statement containing the applicable billing parameters based on Company's reading of the Electric Metering Devices and Company's assessment of the amount due during the previous calendar month. No later than fifteen (15) Business Days after the end of each month, Seller shall submit an invoice to Company in a form and by a method mutually agreed to by the Parties showing the payment amount due Seller during the previous calendar month, specifying the Solar Energy and other products and services provided, all billing parameters, rates and factors, and any other data reasonably relevant to the calculation of payments due to Seller.

(B) Seller shall include an explanation of any items in dispute, as well as all supporting documentation upon which Seller relies. Billing disputes shall be resolved in accordance with Section 9.3.

(C) All billing data based on metered deliveries to Company shall be based on meter readings in accordance with Section 5.2.

9.2 Payment. Unless otherwise specified herein, undisputed payments shall be payable by check or electronic funds transfer, as designated by the owed Party, on or before the fifteenth (15th) Business Day following receipt of the invoice. Remittances received by mail will be considered to have been paid when due if the postmark indicates the payment was mailed on or before the fifteenth (15th) Business Day following receipt of the billing invoice.

(A) If a payment is late, a late payment charge shall be applied to the unpaid balance for the number of days payment was late and shall be added to the next billing statement. Late payment charges shall include interest calculated using the prime rate of interest as published on the date of the invoice in *The Wall Street Journal* (or, if unavailable, an equivalent publication on or about that date).

(B) Company at any time may offset against amounts owed to Seller, any liquidated amounts, accrued damages and other payments, and undisputed billing errors and adjustments, which are owed by Seller pursuant to this PPA.

(C) Seller and Company shall net their obligations to each other under this PPA, and payment of the net amount will discharge all mutual undisputed obligations between the Parties.

9.3 Billing Disputes. Either Party may dispute invoiced amounts, but shall pay at least the undisputed portion on or before the date due. To resolve any billing dispute, the Parties shall use the procedures set forth in Article 13. When the billing dispute is resolved, the Party owing shall pay the amount owed within five (5) Business Days of the date of such resolution, without late payment interest except to the extent that it shall have been established that the amount owed was not disputed in good faith, in which case late payment interest charges shall be calculated on the amount found not to have been disputed in good faith in accordance with the provisions of Section 9.2.

Article 10 - Operations and Maintenance

10.1 Operation and Administration

(A) Seller shall directly or indirectly staff, control, and operate the Facility consistent with Good Utility Practices and the Operating Procedures. During daylight hours and/or when the Facility is capable of operation, personnel shall be available at all times via telephone or other electronic means with (i) the capability of remotely operating and stopping the Facility within ten (10) minutes, and (ii) the ability to be present at the Site within six (6) hours.

(B) Seller shall comply with the applicable requirements of NERC, ERO, Distribution Authority, FERC, State Regulatory Agencies, or successor organizations, Company requirements, Governmental Authority, and Good Utility Practice in the operation of the Facility.

(C) Seller shall be responsible for providing accurate and timely updates on the current availability of the Facility to Company's EMCC. Seller shall provide to Company a day-ahead availability forecast in accordance with Exhibit H - Operating Standards (AGC Protocols, Data Collection). Seller acknowledges that such forecasting is consistent with the reporting requirements required for compliance with NERC standards intended to maintain reliability. Seller, as the generator, is primarily responsible for complying with the NERC standards and reporting the information to Distribution Authority, ERO or other reliability coordinator. Company agrees to provide the forecasted information to the reliability coordinator on Seller's behalf; *provided, however, that* Seller shall remain responsible to ensure the reliability and accuracy of forecasts and any changes to the real-time or forecast availability of the Facility; and *provided further, that* the Parties acknowledge and agree that such forecasts are estimates prepared by Seller in good faith and based upon the data and information available to Seller as of the date such forecasts are made and, as a result, are subject to risks, uncertainties and other factors that may cause the actual results to differ from such forecasts.

10.2 Facility Maintenance.

(A) Seller shall maintain the Facility in accordance with Good Utility Practice and relevant equipment manufacturers' requirements. Seller shall coordinate its regular maintenance requirements for the Facility with Company. Beginning with the first calendar month following COD and continuing through the balance of the Term, Seller shall provide monthly Maintenance Schedules to Company in writing not later than the fifteenth (15th) Day of the preceding month ("Maintenance Schedule").

(B) Except as otherwise agreed to by Company, Seller shall minimize the amount of scheduled maintenance during On-Peak Months to the full extent consistent with Good Utility Practices. During each Business Day of an On-Peak Month, Seller shall use Commercially Reasonable Efforts to (i) maximize the amount of Solar Energy produced by the Facility, and (ii) minimize the extent and duration of Forced Outages.

(C) When Forced Outages occur at a Project Phase, Seller shall notify Company's EMCC of the existence, nature, start time, and expected duration of the Forced Outage as soon as practical, but in no event later than thirty (30) minutes after Seller becomes aware that the Forced Outage has occurred. Seller shall promptly inform Company's EMCC of changes in the expected duration of the Forced Outage unless relieved of this obligation by Company's EMCC for the duration of the Forced Outage.

10.3 Books and Records.

(A) Seller shall maintain an accurate and up-to-date operating log, in electronic format, at Seller's headquarters or at some other mutually-agreeable location, with records of production for each clock hour; changes in operating status; Forced Outages; information required by Applicable Law, Governmental Authority, Distribution Authority, State Regulatory Agency(s), or the ERO in the prescribed format; and other information reasonably requested by Company.

(B) Seller and Company shall each keep complete and accurate records and all other data required by each of them for the purposes of proper administration of this PPA, including such records as may be required by Governmental Authorities, Distribution Authority, NERC or ERO, or the State Regulatory Agency(s) as applicable. All records of Seller pertaining to the operation of a Facility shall be maintained in Seller's Minnesota headquarters or such other location as is mutually agreed to by the Parties.

(C) Each Party shall keep all books and records necessary for metering, billing and payment and shall provide the other Party Commercially Reasonable access to those records.

(D) Company may audit and examine from time to time upon request and during normal business hours: (i) Seller's Operating Procedures, (ii) equipment manuals and Operating Records, and (iii) data kept by Seller relating to transactions under and administration of this PPA, by Company with Applicable Law and relevant accounting standards. Seller shall maintain all such records in Seller's Minnesota headquarters or some other mutually agreeable location and shall cooperate with Company's audit rights under this Section 10.3.

10.4 Operating Committee and Operating Procedures.

(A) Company and Seller shall each appoint one representative and one alternate representative to act as the Operating Committee in matters relating to the Parties' performance obligations under this PPA and to develop operating arrangements for the generation, delivery and receipt of any output from the Facility. Operating Committee representatives shall be included in Exhibit D - Notices and Contact Information.

(B) The Operating Committee may develop mutually agreeable written Operating Procedures consistent with the requirements of this PPA, to address matters of day-to-day communications; key personnel; operations-center interface; metering, telemetering, telecommunications, and data acquisition procedures; operations and maintenance scheduling and reporting; reports; operations log; testing procedures; and such other matters as may be mutually agreed upon by the Parties.

(C) The Operating Committee shall review the requirements for operational communications from time to time after the date hereof and may agree on

modifications thereto to the extent necessary or convenient for operation of the Facility in accordance with this PPA.

(D) The Operating Committee shall have authority to act in all technical and day-to-day operational matters relating to performance of this PPA and to attempt to resolve disputes or potential disputes; *provided, however, that* except to the extent explicitly provided for in this PPA, such representatives and the Operating Committee shall not have the authority to amend or modify any provision of this PPA.

10.5 Access to Facility. Appropriate representatives of Company shall have access to the Facility with Commercially Reasonable prior notice, to read meters and perform inspections as may be appropriate to facilitate the performance of this PPA. While at the Facility, such representatives shall observe such Commercially Reasonable safety precautions as may be required by Seller and shall conduct themselves in a manner that will not interfere with the operation of the Facility. Upon request, Company and its representatives shall execute Seller's standard indemnification and hold-harmless agreement applicable to all visitors at the Facility.

10.6 Capacity Accreditation.

(A) Company has certain planning, operating and reporting requirements. Exhibit N of this PPA is a copy of the MISO resource adequacy requirements for intermittent generation-non wind.

(B) Seller's Facility was selected in the Order in part because of statements made to the Minnesota Public Utilities Commission that the Facility would be capable of initially achieving Accredited Capacity as of the Commercial Operation Date at a ratio of seventy-one percent (71%) of its aggregate installed Facility Nameplate Capacity. From and after **[TRADE SECRET DATA BEGINS...**

...TRADE SECRET DATA ENDS],

Seller shall use Commercially Reasonable Efforts to achieve Accredited Capacity, at or above the applicable Accredited Capacity for the applicable Commercial Operation Year as set forth on Exhibit J hereto, based upon, utilizing and applying the Accredited Capacity Testing Procedures (except as described in paragraph 2 below).

1. Commencing during the first Commercial Operation Year, Seller shall test all completed Project Phases to determine the Accredited Capacity applicable for the succeeding MISO planning year. The Parties acknowledge that the definition of "Accredited Capacity" in this PPA incorporates the Accredited Capacity Testing Procedures to determine accredited capacity for solar generation facilities. Seller shall report the authorized level of Accredited Capacity to Company based on the outcome of such testing.

2. Notwithstanding anything herein to the contrary, in the event that MISO changes its requirements and protocols for determining Accredited Capacity, Seller shall conduct the tests required under this Section 10.6 in compliance with each of (i) such new MISO requirements and protocols and (ii) the

Accredited Capacity Testing Procedures. For purposes of compliance with this PPA, Seller's Accredited Capacity shall be deemed to be the higher value determined using the two such methods.

3. In the event that at any time after the Commercial Operation Date, Seller's Accredited Capacity falls below the applicable Accredited Capacity threshold for the applicable Commercial Operation Year as such threshold is adjusted to the extent necessary to account for any curtailment, all as further described in Exhibit J, then Seller shall compute the Accredited Capacity of the Facility based on the MISO requirements as reflected in Exhibit N and as otherwise provided herein. In the event such Accredited Capacity is lower than the Accredited Capacity threshold set forth in Exhibit J for such applicable Commercial Operation Year ("Accredited Capacity Shortfall"), then Seller shall pay to Company liquidated damages in the amount of **[TRADE SECRET DATA BEGINS... ...TRADE SECRET DATA ENDS]** of Accredited Capacity Shortfall for each month that the Accredited Capacity Shortfall exists ("Accredited Capacity Shortfall Liquidated Damages"). Payment of such Accredited Capacity Shortfall Liquidated Damages shall be subject to the Post-COD Damage Cap. Seller may pay the Accredited Capacity Shortfall Liquidated Damages as an offset to its monthly invoice, *provided, however*, that Company reserves the right to draw from the Post-COD Security Fund for payment of any outstanding Accredited Capacity Shortfall Liquidated Damages. Seller explicitly acknowledges that any Accredited Capacity Shortfall Liquidated Damages accrued under this PPA are reasonable and do not constitute an unenforceable penalty. For the avoidance of doubt, no Accredited Capacity Shortfall Liquidated Damages shall be due or payable by Seller with respect to the first Commercial Operation Year.

10.7 Real Time Data.

(A) For the Project Phases to which AGC is applicable, Seller shall communicate all data necessary for Company to integrate such Project Phases into Company's EMCC in real time through the Facility's SCADA System in accordance with the AGC Protocols. Seller shall maintain such Project Phases' respective SCADA Systems so that each is capable of interfacing with and reacting to Company's AGC Set-Point and responding to signals from the Company's EMCC in accordance with the AGC Protocols.

1. For such Project Phases, Seller shall use Commercially Reasonable Efforts to adjust the real time Park Potential when Company communicates to Seller a measured difference of plus or minus two percent (2%) between the metered Solar Energy, during a time where there was no AGC Set-Point, and Park Potential.

2. In the event that Company reasonably concludes that Seller is not (i) providing the data required by this Section 10.6, (ii) interfacing with and reacting to Company's AGC Set-Point as required by this PPA, and/or (iii) providing Park Potential data within the required margin of error, then upon Notice

from Company, Seller shall, at Seller's expense, take those actions necessary to fully comply with this paragraph. Upon Seller's request, Company shall cooperate with Seller in taking any such actions.

(B) For the Term of this PPA Seller shall maintain one meteorological station at each Project Phase of the Facility. Beginning on the Commercial Operation Date (and up to sixty (60) Days prior thereto, if so requested by Company on reasonable prior notice), Seller shall provide Company, at Seller's expense, real time unit performance and meteorological data for all Solar Units and the meteorological station at the Facility in accordance with Exhibit H - Operating Standards (AGC Protocols, Data Collection) for the Term of this PPA. Seller shall undertake to maintain Seller-owned data collection systems that are compatible with Company's PI. Seller shall ensure that real time communications capabilities are available and maintained for the transmission to Company's PI. Seller shall ensure that all meteorological equipment at a minimum meets the specifications set forth in Exhibit H - Operating Standards (AGC Protocols, Data Collection). Company shall be entitled to disclose data gathered through the Company's PI to third parties as Confidential Information subject to the provisions of Section 20.18. Company shall have the right to disclose data gathered through the Company's PI system publicly; *provided, however, that* such data is (i) masked to obscure the origin of the data and (ii) aggregated so that the data cannot be correlated and used by competitors of Seller and/or the suppliers of Solar Units.

Article 11 - Security

11.1 Security Fund.

(A) No later than thirty (30) Days following the Parties' receipt of the initial written order of the Minnesota Public Utilities Commission approving this PPA on terms and conditions satisfactory to Company in its sole discretion, Seller shall establish, fund, and maintain a Security Fund that is available to pay any amount due to Company pursuant to this PPA, and to provide Company security that Seller will satisfy its obligations under this PPA.

1. The Security Fund shall equal the Pre-COD Security Fund up to the date described in Section 3.1(D)(3), and the Post-COD Security Fund on and after such date for the remainder of the Term.

2. Seller shall replenish the Security Fund within fifteen (15) Business Days after Company makes a draw on the Security Fund as authorized by this PPA, up to the required amount; *provided, however, that* Seller shall not be required to replenish the Security Fund to a level in excess of the remaining amount of the applicable Damage Cap. Notwithstanding the foregoing, Seller shall replenish all amounts drawn from the Security Fund in respect of damages described in Section 12.3(C).

(B) Company may draw from the Security Fund such amounts as are necessary to recover amounts owing to Company that have not been timely paid pursuant to this PPA, including any damages due to Company and any amounts for which Company is entitled to indemnification under this PPA. Company may, in its sole discretion, draw all or any part of such amounts due to it from any form of security to the extent available pursuant to this Article 11 and in any sequence Company may select; *provided however*, that Company may not draw amounts in excess of any applicable Damage Caps. Company's failure or delay to draw any amount from the Security Fund in any instance shall not prejudice Company's rights to subsequently recover such amount from the Security Fund or in any other manner.

(C) The Security Fund shall be maintained at Seller's expense, shall be originated by or deposited in a financial institution or company ("Issuer") satisfying the requirements of this Article 11, and shall be in the form of one or more of the following instruments:

1. The Security Fund may be in the form of an irrevocable standby letter of credit in the form and substance of Exhibit G-1 - Form of Letter of Credit, and any material changes to such Exhibit shall be subject to review and approval by Company at its sole discretion (the "Letter of Credit").

a. The Issuer for the Letter of Credit shall have and maintain an unsecured bond rating (unenhanced by third-party support) equivalent to A- or better as determined by all rating agencies that have provided such a rating, and if ratings from either Standard & Poor's or Moody's are not available, then equivalent ratings from alternate rating sources reasonably acceptable to Company. If such rating is equivalent to A-, the Issuer must not be on credit watch or have a negative outlook by any rating agency.

b. The Letter of Credit must be for a minimum term of three hundred sixty (360) Days. Seller shall give Company at least thirty (30) Days' advance Notice prior to any expiration or earlier termination of the Letter of Credit. Seller shall cause the renewal or extension of the Letter of Credit or other authorized security for additional consecutive terms of three hundred sixty (360) Days or more (or, if shorter, the remainder of the Term) more than thirty (30) Days prior to each expiration date of the security. If the Letter of Credit or other security is not renewed or extended at least thirty (30) Days prior to its expiration date or otherwise is terminated early, Company shall have the right to draw immediately upon the security and to place the amounts so drawn, at Seller's cost and with Seller's funds, in an interest bearing escrow account in accordance with sub-paragraph (2) below, until and unless Seller provides a substitute form of such security meeting the requirements of this Article 11.

2. The Security Fund may be in the form of United States currency, in which Company holds a first and exclusive perfected security interest, deposited with an Issuer who is a state or federally chartered commercial bank with operations in the State in which the Facility is located (or such other escrow agent

acceptable to Company in its sole discretion) in an account under which Company is designated as beneficiary with sole authority to draft from the account or otherwise access the security (the "Escrow Account"). The Escrow Account shall be established pursuant to an Escrow Agreement substantially in the form attached as Exhibit G-3 - Escrow Agreement. Funds held in the Escrow Account may be deposited in a money-market fund, short-term treasury obligations, investment-grade commercial paper and other liquid investment-grade investments with maturities of three months or less, with all investment income thereon to be taxable to, and to accrue for the benefit of, Seller. After the Commercial Operation Date, Periodic sweeps by Seller for recovery of interest earned by the escrowed funds shall be allowed, and, at any time the balance in the Escrow Account exceeds the required amount of security, the escrow agent may remit any excess to Seller.

3. Following COD, the Security Fund may consist of a guaranty substantially in the form of Exhibit G-2 - Form of Guaranty, from an Issuer with a minimum net worth of at least \$200,000,000 and a senior unsecured credit rating (unenhanced by third-party support) equivalent to BBB+ or better as determined by all rating agencies that have provided such a rating, and if ratings from both Standard & Poor's and Moody's (or if either one or both are not available, equivalent ratings from alternate rating sources reasonably acceptable to Company). If such senior unsecured credit rating of the Issuer is exactly equivalent to BBB+, the Issuer must not be on credit watch or have a negative outlook by a rating agency. If the credit rating of the Issuer is downgraded or there has been a change that has a Material Adverse Effect in the creditworthiness of the Issuer, then Seller shall be required to convert the guarantee provided by such Issuer to a Security Fund instrument meeting the criteria set forth in either sub-paragraph (1) or sub-paragraph (2) (of this Section 11.1(C)) above no later than ten (10) Business Days after receiving information from or about the Issuer that the Issuer no longer satisfies the requirements of this paragraph.

(D) Promptly upon any draw upon the Security Fund, Company shall give Notice to Seller of the amount thereof and the reason therefor, including the obligation(s) that Seller has not satisfied which entitled Company to draw on the Security Fund.

(E) Seller may change the form of the Security Fund at any time and from time to time upon Commercially Reasonable prior Notice to Company; *provided, however, that* the Security Fund must at all times satisfy the requirements of this Article 11.

(F) Company may reevaluate from time to time the then-existing Security Fund of Seller to determine, in a Commercially Reasonable manner, whether (i) it continues to satisfy the requirements in this PPA or (ii) there has been a change that has a Material Adverse Effect on the creditworthiness of the Issuer, such that it does not or, with the passage of time, it will no longer satisfy the requirements of this PPA. If Company determines, in a Commercially Reasonable manner, that there has been an event that has caused, or will cause, with the passage of time, Seller's

Security to no longer satisfy the requirements of this PPA, then Company shall provide prompt Notice to Seller of such event and after receipt of such Notice, Seller shall be required to provide alternative Security that satisfies the terms of this PPA. Notwithstanding the above, Company shall not be entitled to request a change to the Security Fund posted by Seller hereunder so long as the Issuer of such security continues to meet the requirements set forth for an Issuer in this Section 11.1.

(G) The Security Fund shall survive termination of this PPA to be available to pay any amounts owed to Company arising prior to or upon termination. Promptly following (i) the end of the Term and the completion of all of Seller's obligations under this PPA, or (ii) termination of this PPA for any reason prior to the end of the Term, Company shall determine the amount, if any, owed by Seller for any obligations or damages arising out of this PPA. Company may draw such amount and shall release the balance of the Security Fund (including any accumulated interest, if applicable) to Seller.

(H) Seller shall reimburse Company for the incremental direct expenses (including the fees and expenses of counsel) incurred by Company in connection with the preparation, negotiation, execution and/or release (including making a draw of funds) of any security instruments, and other related documents, used by Seller to establish and maintain the Security Fund pursuant to Seller's obligations under this Article 11.

Article 12 - Default and Remedies

12.1 Events of Default. Any of the following events shall constitute an Event of Default of the specified Party if such event has not been cured within the cure period specified for such event:

(A) Either Party's failure to make any payment to the other Party as required by this PPA, including invoices pursuant to Article 9, Liquidated Delay Damages, any required Nameplate Capacity Buy-Down Payment, Actual Damages, any required indemnification, or any other required payment, and such amount remains unpaid for a period of ten (10) Business Days after the date the defaulting Party receives Notice from the non-defaulting Party that the amount is overdue.

(B) Either Party's application for, or consent (by admission of material allegations of a petition or otherwise) to, the appointment of a receiver, trustee or liquidator for a Party or for all or substantially all of its assets, or its authorization of such application or consent, or the commencement of any proceedings seeking such appointment against it without such authorization, consent or application, which proceedings continue undismissed or unstayed for a period of sixty (60) Days from its inception.

(C) Either Party's authorization or filing of a voluntary petition in bankruptcy or application for or consent (by admission of material allegations of a petition or otherwise) to the application of any bankruptcy, reorganization,

readjustment of debt, insolvency, dissolution, liquidation or other similar law of any jurisdiction or the institution of such proceedings against a Party without such authorization, application or consent, which proceedings remain undismitted or unstayed for sixty (60) Days from its inception or which result in adjudication of bankruptcy or insolvency within such time.

(D) Either Party's unauthorized assignment of this PPA or Change of Control, immediately upon its occurrence and without further notice from the non-defaulting Party.

(E) Any material representation or warranty made by a Party in this PPA that is proven to have been false in any material respect when made.

(F) Any material representation or warranty made by a Party in this PPA ceases to remain true during the Term if such cessation would reasonably be expected to result in a Material Adverse Effect on the non-defaulting Party immediately upon its occurrence and without further notice from the non-defaulting Party; and if such misrepresentation is not remedied within ten (10) Business Days after Notice thereof is received by the defaulting Party; *provided, however, that*, if the default is not reasonably capable of being cured within the ten (10) Business Day cure period specified above, the defaulting Party will have such additional time (not exceeding an additional forty-five (45) Days) as is reasonably necessary to cure the failure, so long as the Party promptly commences and diligently pursues the cure.

(G) Seller's failure to establish and maintain the Security Fund as and in the amounts required that remains uncured for five (5) Business Days after Company provides Notice of Seller's failure.

(H) Solely when the circumstances described and provided for in Section 3.1(E)(3) apply (and in no other circumstance), Seller's failure to complete any Project Phase(s) on or before the Commercial Operation Date; *provided, however, that* Seller shall have ninety (90) Days from and after the Commercial Operation Date to complete any Project Phase(s) that are actively under construction, and *provided, further, that* if during such ninety (90) Day period, Seller provides a written opinion from a mutually agreeable independent engineer that Seller can reasonably complete Project Phases totaling an aggregate of AC 95 MW Nameplate Capacity within an additional ninety (90) Day period, then Seller shall be allowed a total period not to exceed one hundred-eighty (180) Days after the Commercial Operation Date to achieve confirmed Project Phase Completion Declarations for any applicable Project Phases, *provided further that* Liquidated Delay Damages shall have been paid throughout the entire period of delay and that no additional cure period for such default shall be required.

(I) Seller's failure, commencing twelve (12) months after the COD, to deliver at least eighty five percent (85%) of the Committed Solar Energy. Seller's failure to deliver Committed Solar Energy shall be measured during each twelve (12) month period ending on the anniversary of the Commercial Operation Date

("Committed Solar Energy Measurement Period"), utilizing data from the previous twelve (12) months. For the avoidance of doubt, the first Committed Solar Energy Measurement Period will commence at the end of the first Commercial Operation Year.

1. To the extent such failure to deliver Committed Solar Energy is attributable to (i) Seller Excuse Hours; (ii) actual solar irradiation falling below the Expected Solar Irradiation for the twelve (12) month Period, as calculated using the methodology set forth in Exhibit L; or (iii) curtailment by Company under Sections 7.3 and 8.2, the contribution of such occurrences shall be imputed into the calculation of Committed Solar Energy for the purposes of, and only for the purposes of, establishing a Default of Seller under this paragraph. Seller shall be permitted to add and/or replace Solar Units on the Site if and to the extent reasonably required to cure Seller's default pursuant to this paragraph.

2. This Event of Default shall be curable and deemed cured if (i) within thirty (30) Days following the end of the applicable Committed Solar Energy Measurement Period, Seller cures the reason(s) for such default (or, if such cure cannot reasonably be effected within thirty (30) Days, Seller commences to cure such default within thirty (30) days and then diligently pursues such cure to completion as soon as practicable thereafter), and (ii) as a result of such efforts, during the twelve (12) month period subsequent to the applicable Committed Solar Energy Measurement Period, the production of Solar Energy by the Facility (adjusted as provided in paragraph 1 equals or exceeds ninety five percent (95%) of the Committed Solar Energy.

3. Seller shall keep Company apprised at least monthly of Seller's cure efforts under this Section 12.1(l), if any.

(J) The failure by either Party to perform or observe any other material obligation to the other Party under this PPA, that is not excused by Force Majeure; *provided however, that*: (i) neither Party shall be entitled to terminate this PPA on account of this Event of Default unless such failure shall remain unremedied for thirty (30) Days after Notice thereof shall have been given by the non-defaulting Party; and (ii) if the Event of Default is not reasonably capable of being cured within the thirty (30) Day cure period specified above, the defaulting Party will have such additional time (not exceeding an additional ninety (90) Days) as is reasonably necessary to cure the failure, so long as the Party promptly commences the cure within the initial 30-Day cure period and diligently pursues the cure to completion thereafter.

12.2 Remedies. Upon the occurrence of any Event of Default of this PPA, the non-defaulting Party may pursue all rights and remedies available to it at law and in accordance with the terms of this PPA. Except as explicitly provided to the contrary in this PPA, each right or remedy of the Parties provided for in this PPA shall be cumulative of and shall be in addition to every other right or remedy provided for in this PPA, and the exercise of one or more of the rights or remedies provided for

herein shall not preclude the simultaneous or later exercise by such Party of any other rights or remedies provided for herein.

(A) Termination and Damages. For any uncured Event of Default, the non-defaulting Party may, at its option, do any, some, or all of the following:

1. Offset from any payments due from the non-defaulting Party any amount otherwise due, including any unpaid Liquidated Delay Damages or Actual Damages;

2. Seek Actual Damages in such amounts and on such basis for the default as authorized by this PPA;

3. In the case of an Event of Default by Seller, draw on the Security Fund for any unpaid Liquidated Delay Damages and Actual Damages, or any other required and unpaid amount;

4. In the case of an Event of Default by Seller occurring after the Commercial Operation Date, exercise Company's Step-In Rights.

5. Terminate this PPA immediately upon Notice, without penalty or further obligation to the defaulting Party. Upon the termination of this PPA under this Section 12.2, the non-defaulting Party shall be entitled to receive from the defaulting Party, subject to the Damage Caps, all of the Liquidated Delay Damages and Actual Damages in connection with the Event of Default resulting in such termination.

(B) Liquidated Delay Damages. Seller shall be liable to pay Company Liquidated Delay Damages, subject to the Pre-COD Damage Cap, as a liquidated damage and not a penalty for any Project Phase that is completed after the Commercial Operation Date on the terms and conditions as follows:

1. Provided Seller actually pays Liquidated Delay Damages as and when owed, the payment of such Liquidated Delay Damages shall be Company's sole and exclusive remedy for Seller's completion of any Project Phase(s) after the Commercial Operation Date. Liquidated Delay Damages shall be payable in lieu of Actual Damages accrued for the period during which Liquidated Delay Damages are assessed. The Parties specifically recognize that Company's damages associated with the addition of any Project Phase(s) after the Commercial Operation Date will be significant but that it will be difficult to quantify those damages.

2. All Liquidated Delay Damages shall begin to accrue on the Day after the Commercial Operation Date as may be extended pursuant to this PPA as described in Section 3.1.

(C) Actual Damages. For all Events of Default arising after the COD, the non-defaulting Party shall be entitled to receive from the defaulting Party all direct damages proximately caused by such Event of Default ("Actual Damages") incurred

by the non-defaulting Party; *provided, however, that* if an Event of Default has occurred and has continued uncured for a period of three hundred sixty-five (365) Days, then, except in the event of an intentional or willful breach of non-payment by the defaulting Party with respect to the amounts payable under this PPA, the non-defaulting Party shall be required to either waive its right to collect further damages on account of such Event of Default or elect to terminate this PPA. If Seller is the defaulting Party, the Parties agree that Actual Damages recoverable by Company hereunder on account of an Event of Default of Seller may include the present value of the Replacement Power Costs, subject to the applicable Damage Cap. If Company is the defaulting Party, the Parties agree that Actual Damages recoverable by Seller hereunder on account of an Event of Default of Company may include the present value of Replacement Sales Amount and the value of any ITC and ITC Recapture Amount determined on an after-tax basis, that are lost by Seller or an Affiliate, or are required to be repaid by Seller or an Affiliate due to an Event of Default of Company that Seller has not been able to mitigate after use of Commercially Reasonable Efforts.

(D) Specific Performance. In addition to the other remedies specified in this Article 12, in the event that any Event of Default of Seller is not cured within the applicable cure period set forth herein, Company may elect to treat this PPA as being in full force and effect and Company shall have the right to specific performance. By way of example, if the breach by Seller arises from a failure by a third party operating the Facility pursuant to an operating agreement entered into with Seller, and Seller fails or refuses to enforce its rights under the operating agreement that would result in the cure, or partial cure, of the Event of Default, Company's right to specific performance shall include the right to obtain an order compelling Seller to enforce its rights under the operating agreement.

12.3 Limitation on Damages.

(A) Except as otherwise provided in this Section 12.3, (i) Seller's aggregate financial liability to Company for Liquidated Delay Damages and all other amounts (including the Nameplate Capacity Buy-Down Payment) prior to the date ninety (90) Days following the Commercial Operation Date shall not exceed Pre-COD Damage Cap, and (ii) Seller's aggregate financial liability to Company for Actual Damages from and after the COD shall not exceed the Post-COD Damage Cap (collectively the "Damage Cap(s)").

(B) If at any time during the Term, Company incurs damages in excess of a Damage Cap that Seller does not agree to pay when billed by Company, Company shall have the right to terminate this PPA upon Notice.

(C) The Damage Caps shall not apply to Actual Damages arising out of any of the following events:

1. damage to Company-owned facilities caused by Seller's failure to adhere to Good Utility Practices;

2. Seller's intentional misrepresentation or misconduct in connection with this PPA or the operation of the Facility;

3. the sale or diversion by Seller to a third party of any capacity or energy committed to Company under this PPA except to the extent permitted by this PPA;

4. Seller's failure (i) to maintain insurance coverages in the types and amounts required by this PPA, or (ii) to apply any insurance proceeds to restoration of damaged equipment of the Facility following a casualty except to the extent allowed by this PPA;

5. any claim for indemnification under this PPA;

6. any Environmental Contamination caused by Seller in connection with this PPA; or

7. damages incurred by Company in connection with any bankruptcy or insolvency proceeding involving Seller, including Company's loss of the benefit of its bargain due to rejection or other termination of this PPA in such proceeding.

(D) The Parties confirm that the express remedies and measures of damages provided in this PPA satisfy the essential purposes hereof. If no remedy or measure of damages is expressly herein provided, the obligor's liability shall be limited to Actual Damages only. ***Neither Party shall be liable to the other Party for consequential, incidental, punitive, exemplary, special, equitable or indirect damages, lost profits or other business interruption damages by statute, in tort or contract (except to the extent expressly provided herein);*** provided, however, that if either Party is held liable to a third party for such damages and the Party held liable for such damages is entitled to indemnification from the other Party hereto, the indemnifying Party shall be liable for, and obligated to reimburse the indemnified Party for, such damages. The Parties agree that direct damages for Seller include the value of any ITC and ITC Recapture Amount, determined on an after-tax basis, that are lost by Seller or an Affiliate, or are required to be repaid by Seller or an Affiliate due to an Event of Default of Company that Seller has not been able to mitigate after use of Commercially Reasonable Efforts. To the extent any damages required to be paid hereunder are liquidated, the Parties acknowledge that the damages are difficult or impossible to determine, that otherwise obtaining an adequate remedy is inconvenient, and that the liquidated damages constitute a reasonable approximation of the harm or loss.

12.4 Duty to Mitigate. Each Party agrees that it has a duty to mitigate damages and covenants that it will use Commercially Reasonable Efforts to minimize any damages it may incur as a result of the other Party's performance or non-performance of the PPA.

Article 13 - Dispute Resolution

(A) In the event of any dispute arising under this PPA (a “Dispute”), within ten (10) Business Days following Notice by either Party, (i) each Party shall appoint a representative, and (ii) the representatives shall meet, negotiate and attempt in good faith to resolve the Dispute quickly, informally and inexpensively. In the event the representatives cannot resolve the Dispute within thirty (30) Days after the first meeting, either Party may request that consideration and resolution of the Dispute be transferred to a designated representative of each Party’s senior management. Within ten (10) Days following such a request, each Party shall submit a written summary of the Dispute describing the issues and claims to a senior officer of each Party designated to address the Dispute. Within ten (10) Business Days after receipt of each Party’s Dispute summaries, the senior management representatives for both Parties shall negotiate in good faith to resolve the Dispute. If such senior management representatives are unable to resolve the Dispute thereafter, either Party may seek available legal remedies.

(B) If no Notice has been issued within twenty four (24) months following the occurrence of events or circumstances giving rise to the Dispute (regardless of the knowledge or potential knowledge of either Party of such events and circumstances), the Dispute and all claims related thereto shall be deemed waived and the aggrieved Party shall thereafter be barred from proceeding thereon.

(C) SELLER AND COMPANY EACH HEREBY KNOWINGLY, VOLUNTARILY AND INTENTIONALLY WAIVE ANY RIGHTS THEY MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY LITIGATION BASED HEREON, OR ARISING OUT OF, UNDER, OR IN CONNECTION WITH, THIS PPA OR ANY COURSE OF CONDUCT, COURSE OF DEALING, STATEMENTS (WHETHER ORAL OR WRITTEN) OR ACTIONS OF SELLER AND COMPANY RELATED HERETO AND EXPRESSLY AGREE TO HAVE ANY DISPUTES ARISING UNDER OR IN CONNECTION WITH THIS PPA BE ADJUDICATED BY A JUDGE OF THE COURT HAVING JURISDICTION WITHOUT A JURY.

Article 14 - Force Majeure

14.1 Applicability of Force Majeure. A Party shall be relieved of its obligations to perform this PPA and shall not be considered to be in default with respect to any obligation under this PPA if and to the extent such Party is prevented from fulfilling such obligation by Force Majeure, *provided, however, that:* (i) such Party gives prompt Notice describing the circumstances and impact of the Force Majeure; (ii) the relief from its obligations sought by such Party is of no greater scope and of no longer duration than is required by the Force Majeure; (iii) such Party proceeds with due diligence to overcome the Force Majeure and resumes performance of its obligations under this PPA; and (iv) such Party provides Notice prior to the conclusion of the Force Majeure.

14.2 Limitations on Effect of Force Majeure.

(A) Force Majeure shall only relieve a Party of such obligations as are actually precluded by the Force Majeure.

(B) In no event will the existence of Force Majeure extend this PPA beyond its stated Term.

(C) If a Force Majeure affecting Seller continues for an uninterrupted period of one hundred eighty (180) Days from its inception (with respect to Force Majeure occurring prior to COD) or three hundred sixty-five (365) Days from its inception (with respect to Force Majeure occurring after COD), Company may, within 60 Days following the end of such period, terminate this PPA upon Notice to Seller, without further obligation by either Party except as to costs and balances incurred prior to the effective date of such termination; *provided, however, that* if the Force Majeure is one that can be corrected through repair or restoration work to the Facility or other actions by Seller, and Seller provides evidence that it is diligently pursuing such actions, then Company shall not have the right to terminate this Agreement for an additional ninety (90) day period during any suspension so long as (i) Seller is using Good Utility Practice to complete such repair work, restoration or such other actions, and (ii) prior to expiration of the initial one hundred eighty (180) or three hundred sixty-five (365) Day period, Seller informs and provides reasonable proof to Company of Seller's intention and ability to undertake and complete such actions.

14.3 Delays Attributable to Company. Seller shall be excused from performing its obligations under this PPA where Seller can establish that such a failure was caused by (i) any delay or failure by Company to perform its obligations under this PPA, or (ii) any delay or failure by the Distribution Authority to perform its obligations under the Distribution Tariff or any Interconnection Agreement, in each case whether or not caused by Force Majeure ("Delay Conditions"); *provided, however, that* in the event of such Delay Conditions, Seller's obligations hereunder shall be extended for a period of time equal to the duration of the Delay Conditions.

(A) For the avoidance of doubt, Seller's failure to complete any Project Phase in time to qualify for any Tax Benefits, for any reason, including Delay Conditions, Force Majeure, the acts or inaction of the Distribution Authority or of any third party, or any Event of Default, except as expressly provided in Section 14.3(B), shall not give rise to any damages payable by Company (or an increase in the price for Solar Energy) associated with or arising from such failure resulting in the Facility not qualifying for Tax Benefits or other tax incentives, grants or credits.

(B) The limitation set forth in Section 14.3(A) shall not apply to any situation when Seller can establish that the failure to complete any Project Phase(s) (i) actually caused any Project Phase or the Facility not to qualify for Tax Benefits or other tax incentives, grants or credits and (ii) was solely caused by Company's willful misconduct or gross negligence in its performance of this PPA or by an Event of Default by Company of this PPA.

Article 15 - Representations and Warranties

15.1 General Representations and Warranties. Each Party hereby represents and warrants to the other as follows, which representations and warranties will be deemed to be repeated, if applicable, by each Party throughout the Term:

(A) It is a valid separate legal entity, duly organized, validly existing and in good standing under Applicable Law. It is qualified to do business in the State in which the Facility is located and each other jurisdiction where the failure to so qualify would have a Material Adverse Effect on the business or financial condition of the other Party; it has all requisite power and authority to conduct its business, to own its properties, and to execute, deliver, and perform its obligations under this PPA.

(B) The Party's execution, delivery, and performance of all of its obligations under this PPA have been duly authorized by all necessary corporate action, and do not and will not:

1. require any consent or approval by any governing corporate or management body, other than that which has been obtained and is in full force and effect (evidence of which shall be delivered to the other Party upon its request);

2. violate any Applicable Law, or violate any provision in any formation documents, the violation of which would reasonably be expected to have a Material Adverse Effect on the representing Party's ability to perform its obligations under this PPA;

3. result in a breach or constitute a default under the representing Party's formation documents or bylaws, or under any agreement relating to its management or affairs or any indenture or loan or credit agreement, or any other agreement, lease, or instrument to which it is a party or by which it or its properties or assets may be bound or affected, the breach or default of which would reasonably be expected to have a Material Adverse Effect on the representing Party's ability to perform its obligations under this PPA; or

4. result in, or require the creation or imposition of any mortgage, deed of trust, pledge, lien, security interest, or other charge or encumbrance of any nature (other than as may be contemplated by this PPA) upon or with respect to any of the assets or properties of the representing Party now owned or hereafter acquired, the creation or imposition of which could reasonably be expected to have a Material Adverse Effect on the representing Party's ability to perform its obligations under this PPA.

(C) This PPA is a valid and binding obligation of the representing Party.

(D) The execution and performance of this PPA will not conflict with or constitute a breach or default under any contract or agreement of any kind to which the representing Party is a party or any judgment, order, or Applicable Law, applicable to it or its business.

(E) Within the meaning of the United States bankruptcy code, (i) this PPA constitutes a “master netting agreement,” (ii) all transactions pursuant to this PPA constitute “forward contracts” or a “swap agreement,” (iii) the representing Party is a “forward contract merchant” and “master netting agreement participant,” and (iv) all payments made or to be made pursuant to this PPA constitute “settlement payments.”

(F) It is (i) an “eligible contract participant” as defined in Section 1a(12) of the Commodity Exchange Act, as amended, 7 U.S.C. §1a(12); (ii) a producer, processor, or commercial user of, or a merchant handling, the commodity which is the subject of this PPA, or the products or byproducts thereof; and (iii) entering into this PPA solely for purposes related to its business as such.

(G) This PPA grants each Party the contractual right to “cause the liquidation, termination or acceleration” of the transactions within the meaning of Sections 556, 560 and 561 of the bankruptcy code, as they may be amended, superseded or replaced from time to time. Upon a bankruptcy, a non-defaulting Party shall be entitled to exercise its rights and remedies under this PPA in accordance with the safe harbor provisions of the bankruptcy code set forth in, inter alia, Sections 362(b)(6), 362(b)(17), 362(b)(27), 362(o), 546(e), 548(d)(2), 556, 560 and 561, as they may be amended, superseded or replaced from time to time.

15.2 Seller’s Specific Representation. To the best knowledge of Seller, and except for those Permits identified in Exhibit F - Seller’s Permits which are the required Permits that will be obtained by Seller in the ordinary course of business, all Permits, or other action required by any Governmental Authority to authorize Seller’s execution, delivery and performance of this PPA have been duly obtained and are in full force and effect.

15.3 Company’s Specific Representation. To the best knowledge of Company, and except for the State Regulatory Approval identified in Section 6.1, all approvals, authorizations, consents, or other action required by any Governmental Authority to authorize Company’s execution, delivery and performance of this PPA, have been duly obtained and are in full force and effect.

Article 16 - Insurance

16.1 Evidence of Insurance. No later than commencement of construction and then annually on or before December 1 of each year during the Term thereafter (and at such other times as may be reasonably requested by Company from time to time), Seller shall provide Company with two copies of insurance certificates acceptable to Company evidencing that insurance coverages for the Facility are in

compliance with the specifications for insurance coverage set forth in Exhibit E – Insurance Coverage to this PPA. Such certificates shall (a) name Company as an additional insured (except workers’ compensation); (b) provide a waiver of any rights of subrogation against Company, its Affiliates and their officers, directors, agents, subcontractors, and employees; and (c) indicate that the Commercial General Liability policy has been endorsed as described above. All policies shall be written with insurers with an AM Best rating of at least A-VII or a Standard & Poor’s rating of at least A. All policies shall be written on an occurrence basis, except as provided in Section 16.2. All policies shall contain an endorsement that Seller’s policy shall be primary in all instances regardless of like coverages, if any, carried by Company. Seller’s liability under this PPA is not limited to the amount of insurance coverage required herein.

16.2 Term and Modification of Insurance.

(A) All insurance required under this PPA shall cover occurrences during the Term and for a period of two years after the Term. In the event that any insurance as required herein is commercially available only on a “claims-made” basis, such insurance shall provide for a retroactive date not later than the date of this PPA and such insurance shall be maintained by Seller for a minimum of six years after the Term.

(B) In order to maintain Commercially Reasonable coverage amounts, Company may request Seller (through a certificate from an independent insurance advisor of recognized national standing certifying that such coverage amounts are not reflecting the standard practice for electric generating plants of similar type, geographic location and design) to modify the insurance minimum limits specified in Exhibit E. Seller shall make all Commercially Reasonable Efforts to comply with any such request and, in the event it cannot so comply, Seller shall provide written notice to Company, accompanied by a certificate from an independent insurance advisor of recognized national standing, certifying that such a request is not reasonably available and commercially feasible in the commercial insurance market for electric generating plants of similar type, geographic location and design.

(C) If any insurance required to be maintained by Seller hereunder ceases to be reasonably available and commercially feasible in the commercial insurance market, Seller shall provide Notice to Company, accompanied by a certificate from an independent insurance advisor of recognized national standing, certifying that such insurance is not reasonably available and commercially feasible in the commercial insurance market for electric generating plants of similar type, geographic location and capacity. Upon receipt of such Notice, Seller shall attempt to obtain other insurance that would provide comparable protection against the risk to be insured.

16.3 Application of Proceeds. Seller shall apply any insurance proceeds to reconstruction of the Facility following a casualty; *provided* that Seller shall only be obligated under this Section 16.3 if an independent engineer, mutually agreed upon

by the Parties, provides a written opinion that such application of proceeds will be sufficient to assure the restoration of at least 90% of the aggregate nameplate capacity of the applicable Project Phase(s) or the Facility as a whole; *provided, however*, this Section 16.3 shall not act in any way as a waiver of any of Company's rights under this PPA.

Article 17 - Indemnity

17.1 Indemnification. Each Party (the "Indemnifying Party") agrees to indemnify, defend and hold harmless the other Party (the "Indemnified Party") from and against all third-party claims, demands, losses, liabilities, penalties, and expenses (including attorneys' fees) for personal injury or death to persons and damage to the Indemnified Party's real property and tangible personal property or facilities or the property of any other person or entity to the extent arising out of, resulting from, or caused by (i) an Event of Default or other breach under this PPA, (ii) violation of Applicable Laws, (iii) negligent or tortious acts, errors, or omissions, or (iv) intentional acts or willful misconduct of the Indemnifying Party, its Affiliates, directors, officers, employees, or agents.

(A) This indemnification obligation shall apply notwithstanding any negligent or intentional acts, errors or omissions of the Indemnified Party, but the Indemnifying Party's liability to indemnify the Indemnified Party shall be reduced in proportion to the percentage by which the Indemnified Party's negligent or intentional acts, errors or omissions caused the damages.

(B) Neither Party shall be indemnified for its damages resulting from its sole negligence, intentional acts or willful misconduct. These indemnity provisions shall not be construed to relieve any insurer of its obligation to pay claims consistent with the provisions of a valid insurance policy.

(C) Nothing in this Section 17.1 shall enlarge or relieve Seller or Company of any liability to the other for any breach of this PPA.

17.2 Notice of Claim. Promptly after receipt by a Party of any claim or notice of the commencement of any action, administrative proceeding, legal proceeding, or investigation as to which the indemnity provided for in this Article 17 may apply, the Indemnified Party shall give Notice thereof to the Indemnifying Party. The Indemnifying Party shall assume the defense thereof with counsel designated by such Party and satisfactory to the Indemnified Party, *provided, however, that* if the defendants in any such action include both the Indemnified Party and the Indemnifying Party and the Indemnified Party shall have reasonably concluded that there may be legal defenses available to it which are different from or additional to, or inconsistent with, those available to the Indemnifying Party, the Indemnified Party shall have the right to select and be represented by separate counsel, at the Indemnifying Party's expense, unless a liability insurer is willing to pay such costs.

17.3 Settlement of Claim. If the Indemnifying Party fails to assume the defense of a claim meriting indemnification, the Indemnified Party may at the expense of the Indemnifying Party contest, settle, or pay such claim, *provided, however, that* settlement or full payment of any such claim may be made only following consent of the Indemnifying Party or, absent such consent, written opinion of the Indemnified Party's counsel that such claim is meritorious or warrants settlement.

17.4 Amounts Owed. Except as otherwise provided in this Article 17, in the event that a Party is obligated to indemnify and hold the other Party and its successors and assigns harmless under this Article 17, the amount owing to the Indemnified Party will be the amount of the Indemnified Party's actual loss net of any insurance proceeds received by the Indemnified Party following a Commercially Reasonable effort by the Indemnified Party to obtain such insurance proceeds.

Article 18 - Financing Party Provisions

18.1 Accommodation of Facility Financing Party. To facilitate Seller's obtaining of financing to construct and operate the Facility, Company shall make Commercially Reasonable Efforts to provide such consents to collateral assignment, certifications, representations, information or other documents, as may be reasonably requested by Seller or the Facility Financing Party in connection with the financing of the Facility consistent with the terms set forth in Exhibit I – Financing Party Consent Provisions (generally, a "Financing Party Consent"); *provided, however, that* in providing a Financing Party Consent, Company shall have no obligation to alter or modify the terms of the PPA or provide any consent or enter into any agreement, in each case that has a Material Adverse Effect on any of Company's rights, benefits, risks, or obligations under this PPA. Seller shall reimburse, or shall cause the Facility Financing Party to reimburse, Company for the incremental direct expenses (including the reasonable fees and expenses of counsel) incurred by Company in the preparation, negotiation, execution and/or delivery of the Financing Party Consent and any documents requested by Seller or the Facility Financing Party, and provided by Company, pursuant to this Section 18.1. Seller shall provide Company with a Notice identifying the Facility Financing Party and providing appropriate contact information for the Facility Financing Party.

18.2 Facility Financing Party Notice and Right to Cure. Seller shall provide Company with a Notice identifying the Facility Financing Party and providing appropriate contact information for the Facility Financing Party. Following receipt of such Notice, Company shall provide Notice of any breach or default of Seller to the Facility Financing Party, and Company will accept a cure performed by the Facility Financing Party, so long as the cure is accomplished within the applicable cure period set forth in this PPA or the Financing Party Consent.

18.3 Notice of Facility Financing Party Action. Within ten (10) Days following Seller's receipt of each Notice from the Facility Financing Party of default, or Facility

Financing Party's intent to exercise any remedies under the Financing Documents, Seller shall deliver a copy of such Notice to Company.

18.4 Officer Certificates. Each Party shall deliver or cause to be delivered to the other Party certificates of its officers, accountants, engineers or agents as to matters as may be reasonably requested, and shall make available personnel and records relating to the Facility to the extent that the requesting Party requires the same in order to fulfill any regulatory reporting requirements, or to assist the requesting Party in litigation, including administrative proceedings before utility regulatory commissions.

Article 19 - Assignment and Other Transfer Restrictions

19.1 Transfer Without Consent Is Null and Void. Except for any Permitted Transfer, any Change of Control or sale, transfer, or assignment of any interest in the Facility or in this PPA made without fulfilling the requirements of this PPA shall be null and void and a breach of this PPA.

(A) Except as permitted in this Section 19.1, neither Party shall assign this PPA or any portion thereof, without the prior written consent of the other Party, which consent shall not be unreasonably withheld, conditioned or delayed; *provided, however, that* (i) at least thirty (30) Days' prior Notice of any proposed assignment requiring consent shall be given to the other Party; (ii) any assignee shall expressly assume the assignor's obligations under this PPA unless otherwise agreed by the other Party; (iii) no assignment shall relieve the assignor of its obligations under this PPA in the event the assignee fails to perform, unless the other Party waives in writing the assignor's continuing obligations under this PPA; (iv) no assignment shall impair any security given by Seller unless such security has been replaced in accordance with Article 11; and (v) before this PPA is assigned by Seller, the assignee must first obtain such approvals as may be required by all applicable Governmental Authorities. For the avoidance of doubt, the requirements delineated in clauses (ii) through (iv) of this Section 19.1(A) shall apply to all assignments, including Permitted Transfers.

1. Seller's consent shall not be required for Company to assign this PPA to an Affiliate of Company; *provided, however, that* Company shall remain liable for obligations incurred under this PPA unless released in accordance with the terms of this PPA. In the event that a permitted assignee of Company is an entity that provides retail electric service in the State in which the Facility is located and is subject to rate and quality service regulation under the jurisdiction of the State Regulatory Agency and has or attains an Investment Grade, Seller shall release Company from its obligations under this PPA if Company requests to be so released by Notice to Seller.

2. Company's consent shall not be required for Seller to assign this PPA for collateral purposes to a Facility Financing Party or assign this PPA to Geronimo Wind Energy, LLC, dba Geronimo Energy, LLC or one of its

Affiliates if (i) in the case of Seller's assignment to an Affiliate of Geronimo Wind Energy, LLC, dba Geronimo Energy, LLC the resulting credit profile is no less favorable than Geronimo Wind Energy, LLC, dba Geronimo Energy, LLC, which determination will be made by Company in its commercially reasonable judgment, and (ii) if Seller is not relieved of its obligations under this PPA as the result of such assignment. Seller shall notify Company of any such assignment no later than thirty (30) Days after the assignment. Notwithstanding the foregoing, such assignment shall be effective only upon Geronimo Wind Energy, LLC, dba Geronimo Energy, LLC providing Company with evidence that the Security Fund required by Article 11 is in place.

(B) Any Change of Control of Seller, whether voluntary or by operation of law, shall require the prior written consent of Company, which shall not be unreasonably withheld; *provided, however, that* Company shall have no obligation to provide any such consent prior to the fulfillment and expiration of all rights conferred pursuant to Section 19.2. For the avoidance of doubt, the Parties acknowledge and agree that Seller shall not be relieved of its obligations under this PPA as the result of any Change of Control unless Company agrees in writing in advance to waive Seller's continuing obligations under this PPA.

19.2 ROFO and PFT. Seller hereby grants Company a right of first offer ("ROFO") on terms set forth in this PPA.

(A) At any time after the Commercial Operation Date, if Seller or any Affiliate of Seller seeks to offer to convey the Facility or a majority of the LLC interests in Seller to an unaffiliated third party, then Seller shall provide written notice of such sale or transfer to Company (the "ROFO Notice").

1. Seller shall allow Company sixty (60) Days after the ROFO Notice to negotiate in good faith with Seller the terms of the sale of the Facility of a majority of the LLC interests in Seller. If Company desires to enter into such negotiation, then Company shall notify Seller of such decision within fifteen (15) Days of receipt of Seller's ROFO Notice.

2. Seller will provide, in a timely manner, information regarding the Facility that is reasonable or customary to allow Company to perform due diligence and to negotiate in good faith for the purchase of the Facility or the majority of the LLC interests in Seller. If Company exercises its ROFO rights, and Seller, in Seller's sole discretion, accepts an offer made in connection thereto, then the Parties shall have an additional thirty (30) Day period to sign definitive agreements. Seller shall cooperate in all respects necessary for Company to exercise its ROFO rights.

3. If Company does not exercise its ROFO rights, or if Company exercises such rights but Seller does not accept the offer made by Company in connection thereto, then Seller shall have the right to sell the Facility or a majority of LLC interests in Seller to any person within one hundred eighty (180) Days

of the expiration date of Company's ROFO rights and such transaction shall not be subject to Section 19.2, *provided, however*, that such transaction shall be subject to Section 19.1.

(B) To the extent Seller proposes a Pending Facility Transaction that does not otherwise trigger Company's ROFO rights, Seller shall give Company at least ninety (90) Days prior Notice of such Pending Facility Transaction (a "PFT Notice") in order to provide Company with an opportunity to discuss and negotiate with Seller the possible sale of the Facility to Company. Any PFT Notice shall include a fair summary of Seller's plans with respect to the Facility in connection with the proposed Pending Facility Transaction, to the extent then known by Seller. Seller shall have no obligation to sell nor shall Company have any obligation to purchase the Facility, following any PFT Notice, *provided, however, that* issuance of a PFT Notice shall not relieve Seller of its obligations to provide a ROFO Notice if and when applicable pursuant to this Section 19.2.

(C) Notwithstanding anything to the contrary contained in this Article 19, any transaction or proposed transaction that is either a Permitted Transfer or does not constitute a Change of Control shall not trigger any obligations of Seller or create any rights of Company under this Section 19.2.

19.3 Subcontracting. Seller may subcontract its duties or obligations under this PPA without the prior written consent of Company; *provided, however, that* no such subcontract shall relieve Seller of any of its duties or obligations hereunder.

Article 20 - Miscellaneous

20.1 Notices. Notices required by this PPA shall be in writing and addressed to the other Party, including the other Party's representative on the Operating Committee, at the addresses noted in Exhibit D – Notices and Contact Information as either Party updates them from time to time by Notice to the other Party. Notices shall be either hand delivered or mailed, postage prepaid. If mailed, Notices shall be simultaneously sent by facsimile or other electronic means. Any Notice shall be deemed to have been received by the close of the Business Day on which it was hand delivered or transmitted electronically (unless hand delivered or transmitted after the close of the Business Day, in which case it shall be deemed received at the close of the next Business Day). Real-time or routine communications concerning Facility operations shall be exempt from this Section 20.1.

20.2 Taxes and Change of Law.

(A) Seller shall be solely responsible for any and all present or future taxes and other impositions of Governmental Authorities relating to the construction, ownership or leasing, operation or maintenance of the Facility, or any components or appurtenances thereof, any sales or *ad valorem* taxes relating to the Facility, or any taxes on the products and services generated by Seller, sold and delivered to

Company at the Points of Delivery. Seller's prices under Article 8 are inclusive of such taxes and impositions during the Term.

(B) Company shall be solely responsible for the payment of any taxes imposed by Governmental Authorities on the Solar Energy purchased under this PPA beyond the Points of Delivery.

(C) The Parties shall cooperate to minimize tax exposure; *provided, however, that* neither Party shall be obligated to incur any financial burden to reduce taxes for which the other Party is responsible hereunder. All electric energy delivered by Seller to Company hereunder shall be sales for resale, with Company reselling such electric energy. Company shall obtain and provide Seller with any certificates required by any Governmental Authority, or otherwise reasonably requested by Seller to evidence that the deliveries of electric energy hereunder are sales for resale.

20.3 Applicable Laws. Each Party shall at all times comply with all Applicable Laws, except for any non-compliance that, individually or in the aggregate, could not reasonably be expected to have a material effect on the business or financial condition of the Party or its ability to fulfill its commitments hereunder.

(A) As applicable, each Party shall give all required notices, shall procure and maintain all necessary governmental permits, licenses, and inspections necessary for performance of this PPA, and shall pay its respective charges and fees in connection therewith.

(B) Each Party shall promptly disclose to the other, any violation of any Applicable Laws arising out of or in connection with the Facility and this PPA.

(C) Upon permanent cessation of generation from the Facility, Seller shall decommission the Facility, remove the Facility and remediate the Site as, if and when required by Applicable Laws.

20.4 Fines and Penalties.

(A) Seller shall pay when due all fees, fines, penalties or costs incurred by Seller or its agents, employees or contractors for noncompliance by Seller, its employees, or subcontractors with any provision of this PPA, or any contractual obligation, Permit or requirements of Applicable Law, except for such fines, penalties and costs that are being actively contested in good faith and with due diligence by Seller and for which adequate financial reserves have been set aside to pay such fines, penalties or costs in the event of an adverse determination.

(B) If fees, fines, penalties, or costs are claimed or assessed against Company by any Governmental Authority due to noncompliance by Seller, its employees, or subcontractors with any provision of this PPA, or any contractual obligation, Permit or requirements of Applicable Law, or if the work of Seller or any of its contractors or subcontractors is delayed or stopped by order of any Governmental Authority due to noncompliance by Seller, its employees, or subcontractors with any

provision of this PPA, or any contractual obligation, Permit or requirements of Applicable Law, Seller shall reimburse and hold Company harmless against any such costs incurred by Company, including claims for indemnity or contribution made by third parties against Company in accordance with Article 17.

(C) Company shall pay when due all fees, fines, penalties or costs incurred by Company or its agents, employees or contractors for noncompliance by Company, its employees, or subcontractors with any provision of this PPA, or any contractual obligation, Permit or requirements of Applicable Law, except for such fines, penalties and costs that are being actively contested in good faith and with due diligence by Company and for which adequate financial reserves have been set aside to pay such fines, penalties or costs in the event of an adverse determination.

(D) If fees, fines, penalties, or costs are claimed or assessed against Seller by any Governmental Authority due to noncompliance by Company, its employees, or subcontractors with any provision of this PPA, or any contractual obligation, Permit or requirements of Applicable Law, or, if the work of Seller or any of its contractors or subcontractors is delayed or stopped by order of any Governmental Authority due to noncompliance by Company, its employees, or subcontractors with any provision of this PPA, or any contractual obligation, Permit or requirements of Applicable Law, Company shall reimburse and hold the applicable Seller harmless against any such costs incurred by Seller, including claims for indemnity or contribution made by third parties against Seller in accordance with Article 17.

20.5 Rate Changes.

(A) The terms and conditions and the rates for service specified in this PPA shall remain in effect for the term of the transaction described herein. Absent the Parties' written agreement, this PPA shall not be subject to change by application of either Party pursuant to Section 205 or 206 of the Federal Power Act.

(B) Absent the agreement of all Parties to the proposed change, the standard of review for changes to this PPA whether proposed by a Party, a non-party, or FERC acting *sua sponte* shall be the "public interest" standard of review set forth in United Gas Pipe Line v. Mobile Gas Service Corp., 350 U.S. 332 (1956) and Federal Power Commission v. Sierra Pacific Power Co., 350 U.S. 348 (1956) (the Mobile-Sierra doctrine), as interpreted in Morgan Stanley Capital Group, Inc. v. Public Util. Dist. No. 1, 128 S. Ct. 2733 (2008).

20.6 Disclaimer of Third-Party Beneficiary Rights. In executing this PPA, Company does not and does not intend to extend its credit or financial support for the benefit of any third parties lending money to or having other transactions with Seller. Nothing in this PPA shall be construed to create any duty to, or standard of care with reference to, or any liability to, any person not a party to this PPA.

20.7 Relationship of the Parties.

(A) This PPA shall not be interpreted to create an association, joint venture, or partnership between the Parties nor to impose any partnership obligation or liability upon either Party. Except as specifically provided for in this PPA to the contrary, neither Party shall have any right, power, or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as an agent or representative of, the other Party.

(B) Seller shall be solely liable for the payment of all wages, taxes, and other costs related to the employment of persons to perform such services, including all federal, state, and local income, social security, payroll, and employment taxes and statutorily mandated workers' compensation coverage. None of the persons employed by Seller shall be considered employees of Company for any purpose; nor shall Seller represent to any person that he or she is or shall become a Company employee.

20.8 Equal Employment Opportunity Compliance Certification. Seller acknowledges that as a government contractor Company is subject to Applicable Laws regarding equal employment opportunity and affirmative action. Such Applicable Laws may also be applicable to Seller as a subcontractor to Company. All such Applicable Laws shall be deemed to be incorporated herein as required by Applicable Law, including 41 C.F.R. §60-1.4(a)(1)-(7).

20.9 Survival of Obligations. Cancellation, expiration, or earlier termination of this PPA shall not relieve the Parties of obligations, including warranties, remedies, or indemnities, that by their nature should survive such cancellation, expiration, or termination, which obligations shall survive for the period of the applicable statute(s) of limitation.

20.10 Severability. In the event any of the terms, covenants, or conditions of this PPA, its Exhibits, or the application of any such terms, covenants, or conditions, shall be held invalid, illegal, or unenforceable by any court or administrative body having jurisdiction, all other terms, covenants, and conditions of the PPA and their application not adversely affected thereby shall remain in force and effect; *provided, however, that* Company and Seller shall negotiate in good faith to attempt to implement an equitable adjustment in the provisions of this PPA with a view toward effecting the purposes of this PPA by replacing the provision that is held invalid, illegal, or unenforceable with a valid provision the economic effect of which comes as close as possible to that of the provision that has been found to be invalid, illegal or unenforceable.

20.11 Complete Agreement; Amendments. The terms and provisions contained in this PPA constitute the entire agreement between Company and Seller with respect to the Facility and shall supersede all previous communications, representations, or agreements, either verbal or written, between Company and Seller with respect to the sale of any output from the Facility. This PPA, including

Exhibits, may be amended, changed, modified, or altered in accordance with the terms of this PPA; *provided, however, that* such amendment, change, modification, or alteration shall be in writing.

20.12 Binding Effect. This PPA is binding upon and shall inure to the benefit of the Parties hereto and their respective successors, legal representatives, and assigns.

20.13 Headings. Captions and headings used in this PPA are for ease of reference only and do not constitute a part of this PPA.

20.14 Counterparts. This PPA may be executed in counterparts, and each executed counterpart shall have the same force and effect as an original instrument.

20.15 Governing Law. The interpretation and performance of this PPA and each of its provisions shall be governed and construed in accordance with the laws of the State in which the Facility is located, exclusive of conflict of laws principles. The Parties submit to the exclusive jurisdiction of the state courts of the State in which the Facility is located, and venue is hereby stipulated as the capital city of such State or such other city as mutually agreed to by the Parties.

20.16 Press Releases and Media Contact. Upon the request of either Party, the Parties shall develop a mutually agreed joint press release to be issued describing the location, size, type and timing of the Facility, the long-term nature of this PPA, and other relevant factual information about the relationship. In the event, during the Term, either Party is contacted by the media concerning this PPA or the Facility, the contacted Party shall inform the other Party of the existence of the inquiry, any questions asked, and the substance of any information provided to the media.

20.17 Exhibits. Either Party may change the information in Exhibit D – Notices and Contact Information at any time by Notice without the approval of the other Party. All other Exhibits may be changed to the extent allowed by specific provisions of this PPA or with the mutual consent of both Parties.

20.18 Confidentiality.

(A) Although this PPA is not Confidential Information, the Parties acknowledge and agree that during the course of the performance of their respective obligations under this PPA, either Party may need to provide information to the other Party, which the disclosing party deems confidential, proprietary or a trade secret ("Confidential Information").

1. Confidential Information shall include all documentation and data, including special techniques, methods, computer programs and software, that the disclosing Party considers proprietary or trade secret and furnishes to the receiving Party and wants the receiving Party to treat as Confidential Information. Disclosing Party shall designate Confidential Information by clear and distinct

notation on such documentation or by equivalent method, and shall be treated as such by the receiving Party. Documentation and data not so designated need not be considered by the receiving Party to be proprietary or trade secret; *provided, however, that* any and all data and documentation regarding Facility output, performance, outages and similar operational information shall be considered Confidential Information without the need for further designation if any disclosure thereof would be in a form or by a means that associates such data or documentation with the Facility or Seller or any of its Affiliates, or from which a reasonable person could make such an association. The disclosing Party hereby grants to the receiving Party authority to use Confidential Information for the purposes of this PPA, including keeping electronic copies of such Confidential Information. The receiving Party agrees to keep such Confidential Information confidential, except as set forth in this Section 20.18, to use it for work necessary to the performance of this PPA, and not to sell, transfer, sublicense, disclose or otherwise make available any such Confidential Information to others; *provided, however, that* Confidential Information may be disclosed by the receiving Party (i) to the agents, employees, advisors, consultants, or potential or actual debt or equity investors of the receiving Party, subject to their acceptance of the obligations of confidentiality imposed hereby and for whose violations of this requirement of confidentiality the receiving Party shall be responsible and (ii) pursuant to Applicable Law, including all Laws and regulations governing disclosure to the State Regulatory Authority.

2. Confidential Information shall not include any data or information that:

a. can be documented was in the public domain as allowed by this Section 20.18, or through no fault or action of the receiving Party at the time it was disclosed by the disclosing Party to the receiving Party or at any time thereafter;

b. can be documented was independently developed by the receiving Party;

c. can be documented was known to the receiving Party from an ultimate source other than the disclosing Party without breach of this PPA by the receiving Party;

d. is disclosed by a Party, in connection with such Party's performance of its obligations under this PPA, to its consultants or contractors or other third parties who are in turn subject to a confidentiality agreement with the disclosing Party to treat the information at least with the care required by this PPA; or

e. is legally requested or required (by oral questions, interrogatories, requests for information or documents, subpoena, civil investigative demand or similar process or, in the opinion of its counsel, by Applicable Laws) to be disclosed in a judicial or administrative proceeding other than a proceeding before the State Regulatory Agency; *provided, however, that* the Party requested or required to

make a disclosure shall promptly notify the non-disclosing Party, no later than five (5) Days after such request or requirement and prior to disclosure so that the non-disclosing Party may seek an appropriate protective order and/or waive compliance with the terms of this Section 20.18.

3. In proceedings before the State Regulatory Agency, a Party may disclose Confidential Information pursuant to the State Regulatory Agency's procedures relating to confidential information; *provided, however, that* if the designation of such information as Confidential Information is contested or a Party is required to disclose information which a Party has labeled "Highly Confidential Information," the Party requested or required to make a disclosure shall promptly notify the non-disclosing Party, no later than five (5) Days after such request or requirement and prior to disclosure so that the non-disclosing Party may seek an appropriate protective order and/or waive compliance with the terms of this Section 20.18.

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IN WITNESS WHEREOF, the Parties have executed this PPA.

Seller:

**Aurora Distributed Solar, LLC,
a Delaware limited liability company**

By: _____

Its: _____

Company:

**Northern States Power Company,
a Minnesota Corporation**

By: _____

David Sparby, President and CEO
Northern States Power Company, a Minnesota
Corporation

EXHIBIT A DEFINITIONS

The following terms shall have the meanings set forth herein:

“AC” means alternating electric current.

“Actual Damages” has the meaning set forth in Section 12.2(C).

“Accredited Capacity” means the higher amount of generating capacity associated with the Facility for which capacity credit can be given toward meeting a load-serving entity’s anticipated peak demand requirements plus reserve margin, pursuant to the applicable MISO resource adequacy requirements, as described in (i) Exhibit N or (ii) the Accredited Capacity Testing Procedures, in effect at the time, or substantially similar resource adequacy methodology.

“Accredited Capacity Shortfall Liquidated Damages” has the meaning set forth in Section 10.6 of this PPA.

“Accredited Capacity Shortfall” has the meaning set forth in Section 10.6 of this PPA.

“Accredited Capacity Testing Procedures” means either the (i) procedures described in Exhibit N or (ii) the MISO testing requirements, methodologies and protocols in existence and used at the time to determine accredited capacity for solar generation facilities.

“Affiliate” means any person or entity that directly or indirectly controls, is under the control of, or is under common control with, the named entity by the power to direct or cause the direction of the management of the policies of named entity, whether through ownership interest, by contract or otherwise. Geronimo Wind Energy, LLC dba Geronimo Energy, LLC shall be deemed an Affiliate of Seller. Each Tax Equity Investor shall be deemed to be an Affiliate of Seller for purposes of this PPA.

“AGC” or “Automatic Generation Control” means the equipment and capability of an electric generation facility to automatically adjust the generation quantity within the applicable balancing authority with the purpose of interchange balancing and specifically, the applicable Project Phase’s capability of accepting AGC Set-Point electronically and automatically adjusting and regulating such Project Phase’s energy production via its SCADA System.

“AGC Protocols” means the protocols attached hereto as Exhibit H - Operating Standards (AGC Protocols, Data Collection), as modified in accordance with Section 10.4.

“AGC Remote/Local” means a handshake electronic signal sent from the Project Phase(s) to which AGC is applicable to the EMCC AGC system, and from the EMCC AGC system to each such Project Phase, indicating each such Project Phase is receiving AGC Set-Point locally (from the facility) or remotely (EMCC AGC system) and is following that AGC Set-Point.

“AGC Set-Point” means the Company-generated analog or digital signal sent by the SCADA System to the Project Phase(s) to which AGC is applicable, representing the maximum Solar Energy output for such Project Phase(s).

“Ancillary Services” means those ancillary services (by whatever name) as well as those other services and products that may be included in the Distribution Tariff from time to time, which are associated, directly or indirectly, with the capacity of the Facility or the transmission of energy from the Facility. The Parties acknowledge that as of the Effective Date, the Distribution Tariff does not include provision for any such ancillary services.

“Applicable Law” means all laws, statutes, treaties, codes, ordinances, regulations, certificates, orders, licenses and permits of any Governmental Authority that are applicable to a Party, the business of a Party or the Facility, now in effect or hereafter enacted; amendments to or interpretations of any of the foregoing by a Governmental Authority having jurisdiction; and all applicable judicial, administrative, arbitration and regulatory decrees, judgments, injunctions, writs, orders, awards or like actions.

“Back-Up Metering” shall have the meaning set forth in Section 5.2(B).

“Business Day” means any Day that is not a Saturday, a Sunday, or a NERC recognized holiday.

“Change of Control” means the occurrence of any one of the following events with respect to Seller or any direct or indirect owner of a majority of the ownership interests in any Project Phase: (i) a transfer of a majority of the ownership interests in Seller or such owner of a Project Phase, as applicable; or (ii) any consolidation or merger of Seller or such owner of a Project Phase in which Seller or such owner, as the case may be, is not the continuing or surviving entity, or (iii) a sale or conveyance of any direct or indirect ownership interest in Seller following which Enel or any Affiliate thereof is no longer the direct or indirect owner of at least 50% of the ownership interests of Seller, *provided, however*, that a Change of Control shall not be deemed to have occurred as a result of (1) transactions exclusively among Affiliates of Seller, (2) any refinancing or replacing of the Facility Financing by Seller, or any of its respective Affiliates, including any Tax Equity Financing liquidation or monetization; (3) the financing obtained to develop, construct and operate any Project Phase, including any Tax Equity Financing, backleverage financing or credit derivative arrangement; (4) any exercise by the Facility Financing Party of its rights and remedies under the Financing Documents (including under any construction debt Financing Documents), (5) a change of the Ultimate Parent Entity of Seller, (6)

changes of control of any such upstream entity of Seller that is a publicly traded entity and that result or arise from the fact that such entity is publicly traded, including changes of voting control due to sales and purchases of equity interests in such entity in the market and changes to the composition of such entity's board of directors or similar governing body at meetings of holders of equity interests of such entity; (7) any transaction in which Seller offered to and Company declined to acquire the applicable Facility or enter into a Change of Control; (6) any transaction, the sole purpose of which is to change the jurisdiction of Seller's organization; (8) any change of economic and voting rights triggered in Seller's organization documents arising from the financing of the applicable Facility and that does not result in the transfer of ownership, economic or voting rights in any entity that had no such rights immediately prior to the change, or (9) a transaction, the result of which is to sell all or substantially all of the assets of Seller to another entity (the "Surviving Entity"); *provided* that the Surviving Entity is owned directly or indirectly by the members of Seller immediately following such transaction in substantially the same proportions as their ownership of Seller's equity securities immediately preceding such transaction; and *provided, further*, that the Surviving Entity expressly assumes all of Seller's obligations under this PPA.

"Code" means the Internal Revenue Code of 1986, as amended.

"Commercial Operation" means the period beginning on the Commercial Operation Date and continuing through the Term of this PPA.

"Commercial Operation Date" or "COD" means 12:00 am on the date following the date Seller provides the Notice authorized by Section 3.1(D) of this PPA or such other date as is mutually agreed upon by the Parties.

"Commercial Operation Year" means any consecutive 12 month period during the Term, commencing with the Commercial Operation Date or any of its anniversaries.

"Commercially Reasonable" or "Commercially Reasonable Efforts" means, with respect to any action required to be made, attempted or taken by a Party under this PPA, the level of effort in light of the facts known to such Party at the time a decision is made that: (a) can reasonably be expected to accomplish the desired action at a reasonable cost; (b) is consistent with Good Utility Practices; and (c) takes into consideration the amount of advance notice required to take such action, the duration and type of action and the competitive environment in which such action occurs.

"Committed Solar Energy" for any period means the megawatt-hours of Solar Energy committed to be delivered to the Company by Seller from the Facility in such period, set forth in Exhibit J – Committed Solar Energy, Solar Energy Payment Rate and Accredited Capacity (by Commercial Operation Year), as such may be adjusted in accordance with this PPA or finalized as described in Exhibit J. For any period that does not coincide with a Commercial Operation Year, Committed Solar Energy shall

be calculated as the month-weighted sum of the Committed Solar Energy falling in each of the two Commercial Operation Years using expected monthly generation profile data, set forth in Exhibit K - Expected Monthly Generation Profile.

“Committed Solar Energy Measurement Period” shall have the meaning set forth in Section 12.1(l)

“Company” shall have the meaning set forth in the first paragraph of this PPA.

“Compensable Curtailment Energy” shall have the meaning set forth in Section 8.2(A)(1).

“Confidential Information” shall have the meaning set forth in Section 20.18(A).

“Construction Contract” means the contract or contracts providing for the engineering, procurement, construction, acquisition, manufacture, delivery and installation of the generating and step-up transformation equipment that is to be part of the Facility and the engineering, procurement and construction of the Facility.

“Construction Milestones” means the dates set forth in Exhibit B – Construction Milestones.

“Damage Caps” shall have the meaning set forth in Section 12.3(A).

“Day” means a calendar day.

“DC” means direct electric current.

“Dispute” shall have the meaning set forth in Article 13.

“Distribution Authority” means the business unit within Company responsible for operating the Interconnection Facilities, and the distribution system applicable to Seller and the Project Phases pursuant to the Distribution Tariff.

“Distribution System” means the contiguously interconnected electric distribution facilities over which the Distribution Authority has rights (by ownership or contract) to deliver electric energy to Company’s retail customers.

“Distribution Tariff” means Section 10 of the Northern States Power Company Minnesota retail electric rate tariff, as amended from time to time, the Distributed Generation, Standard Interconnection and Power Purchase Tariff.

“Economic Curtailment” shall mean curtailments of delivery of Solar Energy that arise from Company’s scheduling and other market participation activities as may be required of Seller by the Market Operator, if any, including any such curtailment arising from any energy offer made by, or on behalf of, Company with respect to the Facility. If Seller asserts that any curtailment was an Economic Curtailment and

Company disputes that such curtailment arose from such scheduling or market participation activities of Company, Company shall furnish to Seller, subject to Section 20.18, copies of such records of Company relating to Company's scheduling and market participation activities as Seller reasonably requests for purposes of resolving the dispute.

"Effective Date" shall have the meaning set forth in the introductory paragraph.

"Electric Metering Devices" means revenue quality meters, metering equipment and data processing equipment used to measure, record or transmit data relating to the Solar Energy output from the Facility, including the metering current transformers and the metering voltage transformers.

"Eligible Energy Resource" means any resource that qualifies as a renewable energy resource eligible to be certified to receive, claim, own or use Renewable Energy Credits pursuant to the protocols and procedures developed and approved by the State Regulatory Agency in the REC Registration Program.

"Emergency" means any condition or situation that causes the Distribution Authority to disconnect the Facility due to a system emergency and imminent danger to the public as provided in an applicable Interconnection Agreement.

"Enel" means Enel Green Power, S.p.A.

"Energy Markets Control Center" or "EMCC" means Company's merchant representatives responsible for dispatch of generating units, including the Facility.

"Environmental Contamination" means the introduction or presence of Hazardous Materials at such levels, quantities or location, or of such form or character, as to constitute a violation of Applicable Law and present a material risk under Applicable Laws that a Site will not be available or usable for the purposes contemplated by this PPA.

"ERO" means the Electric Reliability Organization certified by FERC pursuant to Section 215 of the Federal Power Act or any successor organization; the Midwest Reliability Organization is the certified ERO as of the date of this PPA.

"Escrow Account" shall have the meaning set forth in Section 11(C)(2).

"Event of Default" shall have the meaning set forth in Article 12.

"Excess Solar Energy" shall have the meaning set forth in Section 8.1(C).

"Expected Solar Irradiance" for any 12-month period means the annual average solar irradiation values for the Site of each Project Phase contained in the NREL Solar Prospector TMY file for the coordinates of such Site (as further described in Exhibit C hereto The Expected Solar Irradiance (global horizontal) for the entire

Facility shall be as described on Exhibit C as updated by Seller in connection with the finalization of the potential Project Phases that will be included in the Facility.

“Facility” means Seller’s electric generating facilities, associated balance of plant, parts and equipment consistent with the warranties for the major components, and all equipment necessary to interconnect to the Distribution System, that are made up of the Project Phases. including all of the following: Seller’s equipment, buildings, Solar Units, generators, inverters, step-up transformers, output breakers, facilities necessary to connect to the Interconnection Points, protective and associated equipment, improvements, and other tangible assets, contract rights, easements, rights of way, surface use agreements and other interests or rights in real estate reasonably necessary for construction, operation, maintenance, generation and delivery of the capacity and energy subject to this PPA.

“Facility Financing” means the obligations of Seller or its Affiliates to any lender and/or equity investor (including so-called “tax equity” investors) pursuant to the Financing Documents, or any portfolio financing, including principal of, premium on and interest on indebtedness, fees, expenses or penalties; amounts due upon acceleration, prepayment or restructuring; swap or interest rate hedging breakage costs; and any claims or interest due with respect to any of the foregoing. For the avoidance of doubt, Facility Financing includes any amount of cash and tax attributes allocated to Facility Financing Party and any Tax Equity Financing.

“Facility Financing Party” means, collectively, any parties providing any Facility Financing and any successors or assigns thereto and any Tax Equity Investors.

“Federal Power Act” means the provisions of 16 U.S.C. §791(A) *et seq.* and amendments or supplements thereto.

“FERC” means the Federal Energy Regulatory Commission or any successor agency.

“Financing Documents” means the documents associated with any Tax Equity Financing and the agreements equity contribution, loan and credit agreements, notes, bonds, indentures, security agreements, lease financing agreements, mortgages, deeds of trust, interest rate exchanges, swap agreements and other documents relating to the development, bridge, construction or permanent debt and/or equity financing for the Facility or any Project Phases, including any credit enhancement, credit support, working capital financing, portfolio financing, or refinancing documents, and any and all amendments, modifications, or supplements to the foregoing that may be entered into from time to time at the discretion of Seller in connection with development, construction, ownership, leasing, operation or maintenance of the Facility or any Project Phases.

“Financing Party Consent” shall have the meaning set forth in Section 18.2.

“Force Majeure” means an event or circumstance that prevents a Party from performing its obligations under this PPA, which event or circumstance (i) is not

within the control of or the result of the fault or negligence of the Party claiming its occurrence, and (ii) by exercise of due diligence and foresight could not reasonably have been avoided, including (A) acts of God; (B) sudden action of the elements such as floods, earthquakes, hurricanes, tornados, major storms that restrict transportation or access to an applicable Project Phase, lightning, fire, ice storms, smoke or other particulates from volcanoes; (C) sabotage; the discovery of Native American burial grounds not evidenced in Seller's Environmental Site Assessment environmental assessment of any Site; (D) the discovery of endangered species, as defined by Applicable Law; (E) vandalism beyond that which could reasonably be prevented by Seller; (F) terrorism; war; riots; explosion; blockades; insurrection; (G) except as set forth in clause (e) below, labor strikes, slowdowns or labor disruptions (in which case the affected Party shall have no obligation to settle the strike or labor dispute on terms it deems unreasonable); (H) serial manufacturing and/or design defects in the Solar Units or other major components comprising a Project Phase only in the event and to the extent that such occurrence is, would be or would have been (without regard for the passing of time) a serial defect under the applicable Seller's Solar Unit supply agreement(s) or Construction Contract for such Project Phase; (I) actions or inactions by any Governmental Authority taken after the Effective Date (including the adoption or change in any rule, Applicable Law or regulation or environmental constraints lawfully imposed by such Governmental Authority) but only if such requirements, actions, or failures to act prevent or delay performance; and (J) inability, despite due diligence, to obtain any licenses, permits, or approvals required by any Governmental Authority following COD, *provided, however, that Force Majeure shall not include:* (a) inability, or excess cost, to procure any equipment necessary to perform the obligations of this PPA; (b) acts or omissions of a third party, unless such acts or omissions are themselves excused by reason of Force Majeure; (c) mechanical or equipment breakdown or inability to operate, attributable to circumstances occurring within design criteria and normal operating tolerances of similar equipment designed to be located in the local vicinity, unless such breakdown or condition was itself caused by an event of Force Majeure; (d) changes in market conditions; or (e) any labor strikes, slowdowns, work stoppages, or other labor disruptions limited to Seller, Seller's Affiliates, or any third party employed by Seller to work on the Facility.

"Forced Outage" means any condition at the Facility that requires the immediate and unplanned removal of any Project Phase, the reduction of such Project Phase by at least the greater of (i) 10% and (ii) AC 1 MW, or the reduction of production from the Facility by AC 10 MW or more, resulting from immediate mechanical/electrical/hydraulic control system trips and operator-initiated trips in response to abnormal Facility conditions or alarms.

"Generation Benefits" means existing or future environmental benefits or attributes, economic and other related carbon credits, carbon offsets, carbon allowances or benefits, Renewable Energy Credits or green tags, carbon dioxide emissions credits, and avoided or reduced carbon dioxide emissions that are attributable to Energy generated by the Seller and sold to Company under this PPA, whether pursuant to or arising from any Governmental Authority or international

agreement or treaty, *provided, however, that* this definition excludes (i) any credits, offsets or other benefits arising out of or associated with any emission or pollutant other than carbon dioxide emissions, and (ii) any Tax Benefits.

“Good Utility Practices” means the practices, methods, standards and acts engaged in or approved by a significant portion of the applicable segment of the solar energy electric power generation industry pertaining to facilities of the same type as and similar size and location to the Facility that, at a particular time, in the exercise of Commercially Reasonable judgment, in light of the facts that are known, or reasonably should have been known, at the time a decision was made, would have been expected to accomplish the desired result in a manner consistent with Applicable Law, Permits, codes, standards, equipment manufacturer’s recommendations, reliability, safety, environmental protection, economy, and expedition. Good Utility Practices is not limited to the optimum practice, method, standard or act to the exclusion of all others, but rather to those practices, methods, standards and acts generally acceptable or approved by a significant portion of the applicable segment of the solar energy electric power generation industry in the relevant region, during the relevant period.

“Governmental Authority” means any federal, state, local or municipal governmental body; any governmental, quasi-governmental, regulatory or administrative agency, commission, body or other authority exercising or entitled to exercise any administrative, executive, judicial, legislative, policy, regulatory or taxing authority or power; or any court or governmental tribunal.

“Hazardous Materials” means any substance, material, gas, or particulate matter that is regulated by any local Governmental Authority, any applicable State, or the United States of America, as an environmental pollutant or dangerous to public health, public welfare, or the natural environment, including protection of non-human forms of life, land, water, groundwater, and air, including any material or substance that is (i) defined as “toxic,” “polluting,” “hazardous waste,” “hazardous material,” “hazardous substance,” “extremely hazardous waste,” “solid waste” or “restricted hazardous waste” under any provision of local, state, or federal law; (ii) petroleum, including any fraction, derivative or additive; (iii) asbestos; (iv) polychlorinated biphenyls; (v) radioactive material; (vi) designated as a “hazardous substance” pursuant to the Clean Water Act, 33 U.S.C. §1251 *et seq.*; (vii) defined as a “hazardous waste” pursuant to the Resource Conservation and Recovery Act, 42 U.S.C. §6901 *et seq.*; (viii) defined as a “hazardous substance” pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §9601 *et seq.*; (ix) defined as a “chemical substance” under the Toxic Substances Control Act, 15 U.S.C. §2601 *et seq.*; or (x) defined as a pesticide under the Federal Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C. §136 *et seq.*

“House Power” means retail power to the Facility, for purposes of unit start-up or shut-down, or for any other purpose.

“Indemnified Party” shall have the meaning set forth in Section 17.1.

“Indemnifying Party” shall have the meaning set forth in Section 17.1.

“Interconnection Agreement” means each separate agreement for interconnection of one or more Project Phases to the Distribution System, as such agreement may be amended from time to time. For purposes of this PPA, the Interconnection Agreement shall be interpreted to include any third party facility construction agreement or other Agreement required by the Distribution Authority to interconnect the Facility in accordance with the Distribution Tariff.

“Interconnection Facilities” means those facilities designated in the applicable Interconnection Agreement for the direct purpose of interconnecting any Project Phase of the Facility at an Interconnection Point, along with any easements, rights of way, surface use agreements and other interests or rights in real estate reasonably necessary for the construction, operation and maintenance of such facilities, whether owned by Seller, the Distribution Authority or another entity.

“Interconnection Point” means, with respect to Project Phase, the physical point within the operational authority of Distribution Authority, as specified in the Interconnection Agreement, at which electrical interconnection is made between such Project Phase of the Facility and the Distribution System in accordance with the Distribution Tariff and the corresponding Interconnection Agreement.

“Investment Grade” means a long-term credit rating (corporate or long-term senior unsecured debt) of (a) Baa3 or higher by Moody’s, and (b) BBB- or higher by S&P.

“Issuer” shall have the meaning set forth in Article 11.

“ITC” means an investment tax credit applicable to electricity produced from certain renewable resources pursuant to Code §48.

“ITC Recapture Amount” means the amount payable (determined on an after-tax basis) to the IRS by Seller under Code §50(a) due to Seller’s ineligibility for ITC after such time as Seller or its Affiliate, Tax Equity Investor or Facility Financing Party has claimed the ITC.

“kW” means kilowatt.

“kWh” means kilowatt hour.

“Letter of Credit” shall have the meaning set forth in Section 11(C)(1).

“Liquidated Delay Damages” means \$70 per MW of Nameplate Capacity (AC) per Day.

“Local Provider” means the utility providing House Power to the Facility.

“Maintenance Schedule” has the meaning set forth in Section 10.2(A).

“Market Operator” means the entity that instructs market participants and/or generators to regulate generation assets, including the Facility, within any energy market in which Company participates with respect to the Solar Energy or Capacity Attributes based on price-based offer curves for the purpose of matching generation output to system load demand while maintaining bulk electric system reliability. If such entity is also the Distribution Provider, then “Market Operator” shall be construed to mean such entity acting in its capacity as the entity that instructs market participants and/or generators to regulate generation assets, including the Facility, within the energy market in which Company participates with respect to the Solar Energy or Capacity Attributes based on price-based offer curves for the purpose of matching generation output to system load demand while maintaining bulk electric system reliability.

“Master Site Permit” means a site permit issued by the State Regulatory Agency for Facilities up to an aggregate of 100 AC MW of Nameplate Capacity, pursuant to Minnesota Statutes Chapter 216E and Minnesota Rules Chapter 7850.

“Material Adverse Effect” means any effect (or effects taken together) that is materially adverse to the present or future business, operations, assets, liabilities, properties, results in operations, or condition (financial or otherwise), prospects, or property of a Party, its business, or this PPA.

“MISO” means the Midcontinent Independent System Operator, Inc., a non-profit, Delaware corporation, or successor organization.

“MW” means megawatt or one thousand kW.

“MWh” means megawatt hours.

“Nameplate Capacity” means the designed maximum output for any Project Phase or the Facility as designated by the equipment manufacturer(s) or in the aggregate of any such Project Phase or the Facility (AC MW), as applicable.

“Nameplate Capacity Buy-Down Payment” means the payment required pursuant to Section 3.1(F).

“NERC” means the North American Electric Reliability Corporation or any successor organization.

“Non-Compensable Curtailment” shall have the meaning set forth in Section 8.2.

“Notice(s)” shall have the meaning set forth in Section 20.1.

“On-Peak Months” means the months of January, February, June, July, August, September and December.

“Operating Committee” means one representative each from Company and Seller pursuant to Section 10.4.

“Operating Procedures” means those procedures developed pursuant to Section 10.4, if any.

“Operating Records” means all agreements associated with the Facility, operating logs, blueprints for construction, operating manuals, all warranties on equipment, and all documents, whether in printed or electronic format, that Seller uses or maintains for the operation of the Facility.

“Order” shall have the meaning set forth in the recitals.

“Park Potential” means the number provided to the Company in real time through the Company’s SCADA System in accordance with the AGC Protocols, which depicts Seller’s real time calculation of the Potential Energy capable of being provided by the Facility or any Project Phase to Company as measured at the Point of Delivery. Park Potential shall be calculated as the aggregate energy available in real time for delivery at the Point of Delivery using the best-available data obtained through Commercially Reasonable methods, and shall be dependent upon measured plane-of-array solar insolation, temperature, barometric pressure, Solar Unit availability, derate(s) and line losses, and any other adjustment necessary to accurately reflect the Potential Energy at the Points of Delivery.

“Party” and “Parties” shall have the meanings set forth in the introductory paragraph.

“Pending Facility Transaction” or “PFT” means (i) any proposed Change of Control of Seller, (ii) the issuance by Seller or any of its Affiliates of a request for proposals or the response by Seller or any of its Affiliates to a request for proposal or similar process (e.g., auction) for the purchase or sale to any unaffiliated third party of any equity interests in Seller or the Facility, or any group(s) of assets or equity interests that includes the Facility, (iii) the commencement by Seller or any of its Affiliates of substantive negotiations with any unaffiliated third party with respect to the sale of any equity interests in Seller or the Facility, or any group(s) of assets or equity interests that includes the Facility, and (iv) the execution by Seller or any of its Affiliates of any letter of intent, memorandum of understanding or similar document, whether or not legally binding, which contemplates the sale or lease to an unaffiliated third party of any equity interests in Seller or the Facility or any group(s) of assets or equity interests that includes the Facility, *provided, however, that* a PFT does not include (w) any financing, refinancing, Tax Equity Financing, or replacing of the Facility Financing by Seller or any of its Affiliates; (x) any transaction between and among Affiliates of Seller; (y) any transaction or proposed transaction that would not constitute a Change of Control and/or that constitutes a Permitted Transfer, and (z) any transaction in which Company declined to exercise its ROFO rights.

“Permit(s)” means all applicable construction, land use, air quality, emissions control, environmental and other permits, licenses and approvals from any Governmental Authority required under Applicable Laws for construction, ownership, operation and maintenance of the Facility and the generation and delivery of any output from the Facility to Company.

“Permitted Transfer” means any of the following:

- (i) transactions among Affiliates of Seller, including any corporate reorganization, merger, combination or similar transaction or transfer of assets or ownership interests involving Seller or its Affiliates, *provided, however,* that the equity interests in Seller (excluding interests held by Facility Financing Party) continue to be held, directly or indirectly, no less than fifty percent (50%) by Enel,
- (ii) any exercise by a Facility Financing Party of its rights and remedies under the Financing Documents,
- (iii) a Change of Control of the Ultimate Parent Entity of Seller,
- (iv) any change of economic and voting rights triggered in Seller’s organization documents arising from the financing of the Facility and which does not result in the transfer of ownership, economic or voting rights in any entity that had no such rights immediately prior to the change,
- (v) the direct or indirect transfer of shares of or equity interests in Seller to a Tax Equity Investor; or
- (vi) a transfer of the Facility or any Project Phases packaged with any of the following:
 - a. all or substantially all of the assets of Seller’s Ultimate Parent Entity;
 - b. all or substantially all of the renewable energy generation portfolio of Seller’s Ultimate Parent Entity; or
 - c. all or substantially all of the solar generation portfolio of Seller’s Ultimate Parent Entity; provided, however, that in the case of (c), the Facility does not represent more than fifty percent (50%) of the generation of such solar generation portfolio; andprovided further that in the case of each of (a), (b) and (c), the entity that operates the Facility following such transfer is (or contracts with) a Qualified Operator.

“PFT Notice” shall have the meaning set forth in Section 19.2(C).

“Environmental Site Assessment” shall have the meaning set forth in Section 4.1(A).

“PI” means the “plant information” system as described and implemented in Section 10.6(B).

“Point of Delivery” means each of the physical points within the operational authority of the Distribution Authority at which Seller makes available to Company and delivers to Company the Solar Energy being provided by Seller to Company from a Project Phase of the Facility under this PPA.

“Post-COD Damage Cap” means [TRADE SECRET DATA BEGINS...
...TRADE SECRET DATA ENDS].

“Post-COD Security Fund” means [TRADE SECRET DATA BEGINS...
...TRADE SECRET DATA ENDS].

“Potential Energy” means the quantity of the energy that Seller is capable of delivering at the Points of Delivery. In the event that Park Potential is not a reliable proxy for Potential Energy pursuant to Section 8.2(B), Potential Energy shall be calculated as the aggregate energy available for delivery at the Points of Delivery using the best-available data obtained through Commercially Reasonable methods, and shall be dependent upon measured solar resource, power curves, Solar Unit availability, derate(s) and line losses, and any other adjustment necessary to accurately reflect the Facility’s (or, if applicable, a Project Phase’s) capability to produce and deliver energy to the applicable Points of Delivery.

“PPA” shall have the meaning set forth in the introductory paragraph.

“Pre-COD Damage Cap” means [TRADE SECRET DATA BEGINS...
...TRADE SECRET DATA ENDS].

“Pre-COD Security Fund” means an amount equal to [TRADE SECRET DATA BEGINS...
...TRADE SECRET DATA ENDS].

“Project Phase” means one or more (as the context requires) of Seller’s electric generating facilities, associated balance of plant, parts and equipment consistent with the warranties for the major components, and all equipment necessary to interconnect to the Distribution System, with the following characteristics separate and apart from all other phases: (i) a separate Site, (ii) proposed to interconnect through the Distribution System utilizing a separate Interconnection Agreement pursuant to the Distribution Tariff, (iii) a separate Point of Delivery and Electric Metering Devices, and (v) is of a size from approximately 2 MW to no more than 10 MW of Nameplate Capacity. The initial listing of potential Project Phases is found in Exhibit C-Initial Description of Project Phases.

“Project Phase Completion Conditions” means all of the requirements that must be satisfied by Seller as a prerequisite to a Project Phase achieving the requirements set forth in Section 4.3.

“Project Phase Completion Declaration” has the meaning set forth in Section 4.3.

“Qualified Operator” means any affiliate of Seller, or an operator of solar generation facilities that demonstrates to Company’s reasonable satisfaction that it has sufficient experience to successfully operate the Facility, including a minimum of three (3) years’ experience in the solar energy generation and operation business, and owns, controls or operates a minimum of 100 MW of solar energy generation capacity.

“REC Registration Program” means any State, regional or federal program established to register Eligible Energy Resources and create and certify RECs arising from energy generated from such Resources, including any rights associated with any renewable energy information or tracking system that exists or may be established by Applicable Law with regard to monitoring, registering, tracking, certifying, or trading such credits. For purposes of this Agreement as of the Effective Date, the REC Registration Program means the Midwest Renewable Energy Trading System Program.

“Renewable Energy Credits” or “RECs” means a contractual right to the full set of non-energy attributes, including any and all credits, benefits, emissions reductions, offsets, and allowances, howsoever entitled, directly attributable to a specific amount of capacity and/or electric energy generated from an Eligible Energy Resource, including any benefits as may be created under any existing or future statutory or regulatory scheme (federal, state, or local) by virtue of or due to the Facility’s actual energy production or the Facility’s energy production capability because of the Facility’s environmental or renewable characteristics or attributes, including any Renewable Energy Credits or similar rights arising out of or eligible for consideration in the REC Registration Program. For the avoidance of doubt, “RECs” excludes Tax Benefits.

“Replacement Power Costs” means the costs that would be incurred by Company, after the Commercial Operation Date, that are necessary to replace the products and services that Seller was required to provide under this PPA, but failed to so provide, less the sum of any payments from Company to Seller, under this PPA, that were eliminated as a result of such failure; *provided, however*, that the net amount shall never be less than zero in the aggregate (it being agreed that any hour that yields a negative result will be included in the computation, but the aggregate result for all hours shall never be less than zero) and, if the calculation, in the aggregate, results in a number less than zero, the aggregate number shall be deemed to be zero. Replacement Power Costs shall be determined as follows:

Replacement Power Costs = (A + B + C) – D, where

“A” is the product of (x) the number of MW of the Nameplate Capacity (AC) and (y) the applicable market price for AC capacity made available to Company’s system;

“B” is the sum of (i) the weighted average product of the number of MWh of energy purchased by Company to replace any of the Committed Solar Energy that was not delivered under this PPA and the applicable market price for energy delivered to Company’s system at a point nearest to the applicable Point(s) of Delivery for the hour, and (ii) the weighted average product of the MWh of energy derived in clause (i) and the actual cost of registered RECs for that number of MWh;

“C” is an amount equal to the actual cost of tariff charges, ancillary services, fuel and fuel transportation and related penalties that could not be avoided or mitigated and transaction charges to deliver reasonably available energy to Company in amounts equal to the number of MWh for which Replacement Power Costs are owed; and

“D” is the product of the Committed Solar Energy that was not delivered under this PPA and the Solar Energy Payment Rate.

“Replacement Sales Amount” means the sum of any payments which Company should have made but did not make to Seller less the revenue received, if any, by Seller for sales in mitigation of damages with respect to the Solar Energy and other products and services that Company was required to accept and purchase under this PPA, but failed to purchase.

“ROFO” shall have the meaning set forth in Section 19.2.

“ROFO Notice” shall have the meaning set forth in Section 19.2(A).

“SCADA” means supervisory control and data acquisition.

“Scheduled Termination Date” means 11:59 pm on the date that is the twentieth (20th) anniversary of the COD.

“Security Fund” means the letter of credit, escrow fund, guaranty and/or other collateral that Seller is required to establish and maintain, pursuant to Article 11, as security for Seller’s performance under this PPA.

“Seller” shall have the meaning set forth in the introductory paragraph.

“Seller Excuse Hours” means those hours during which Seller is unable to schedule or deliver Solar Energy to Company as a result of (A) Non-Compensable Curtailments; (B) Force Majeure; (C) Economic Curtailments; and (D) any unexcused failure of Company to perform any obligation of Company under this PPA that causes Seller to be unable to generate or deliver Solar Energy to the Point of Delivery.

“Site” means the separate parcel of real property on which a Project Phase will be constructed and located, including any easements, rights of way, surface use agreements and other interests or rights in real estate reasonably necessary for the

construction, operation and maintenance of such Project Phase. Each Site is more specifically described in Exhibit C - Facility Description to this PPA.

“Solar Energy” means the net electric energy generated from (or, with respect to any curtailed energy, capable of being generated from) an Eligible Energy Resource utilizing solar irradiance as its source of electric generation in compliance with Minn. Stat. Section 216B.1691, including any and all associated RECs and delivered to the Point of Delivery as measured by the Electric Metering Devices installed pursuant to Section 5.2. Solar Energy shall be of a power quality of 60 cycle, three-phase alternating current that is compliant with the Interconnection Agreement. Solar Energy shall be net of energy self-generated and concurrently consumed by the Facility, and net of losses prior to the Points of Delivery.

“Solar Energy Payment Rate” means the rate as shown in Exhibit J – Committed Solar Energy, Solar Energy Payment Rate and Accredited Capacity (by Commercial Operation Year).

“Solar Units” means the equipment necessary for the Facility to collect sunlight at the Sites and convert it into electricity or thermal energy. Solar Units include photovoltaic arrays and tracking devices.

“Stage 1 Energy” shall have the meaning set forth in Section 4.5(A).

“Stage 1 Energy Price” means a payment rate equal to the price per MWh for energy in the MISO day-ahead market at the pricing node designated as nsp.nsp (or such reasonable and mutually-agreed successor pricing node), less \$2 per MWh.

“Stage 2 Energy” shall have the meaning set forth in Section 4.5(B).

“Stage 2 Energy Price” means a payment rate of seventy percent (70%) of the Solar Energy Payment Rate applicable as of the Commercial Operation Date.

“State Regulatory Agency(s)” means the Minnesota Public Utilities Commission or any successor agencies in the State of Minnesota and the North Dakota Public Service Commission or any successor agencies in the State of North Dakota.

“State Regulatory Approval” means a final, written order of one State Regulatory Agency, or if needed, both State Regulatory Agencies, that does not impose conditions unsatisfactory to the Company and is not subject to application for rehearing, re-argument and reconsideration, and that makes the affirmative determination that Company’s execution of this PPA is prudent and/or in the public interest, and that those costs incurred by Company under this PPA as presently allocated by ratemaking mechanisms to Company’s Minnesota and North Dakota jurisdictions are recoverable, in the aggregate, from the Company’s Minnesota and/or North Dakota retail customers. The preceding is subject only to the requirement that the State Regulatory Agency retains ongoing prudency review of Company’s performance and administration of this PPA.

“Tax Benefits” means any and all (i) tax credits based on ownership of, investment in or energy production from the Facility or any portion thereof, including the production credit and the investment credit described, respectively, in Sections 45 and 48 of the Code, as amended, and any other similar tax credits that may be available to any Seller based upon ownership of or energy production from any portion of its Facility, (ii) grants based on ownership of, investment in or energy production from the Facility or any portion thereof, including the grant described in Section 1603 of the American Recovery and Reinvestment Tax Act of 2009, and (iii) other tax benefits, credits and/or grants, including depreciation and other cost recovery deductions, and/or cash payments from a taxing authority arising in connection with ownership of, investment in, or operation of the Facility, or any portion thereof, in each case allocated, allowed, allowable, assigned, awarded, certified or otherwise transferred or granted to Seller or its Affiliate or Company by any Governmental Authority in any jurisdiction in connection with any Project Phase or the Facility.

“Tax Equity Financing” means a transaction or series of transactions involving one or more investors seeking a return that is enhanced by tax credits and/or tax depreciation (each a “Tax Equity Investor”) and generally (i) described in Revenue Procedures 2001-28 (sale-leaseback (with or without “leverage”)), 2007-65 (flip partnership) or 2014-12 (flip partnership and master tenant partnership) as those revenue procedures are reasonably applied or analogized to a solar project transaction (as opposed to a wind farm or rehabilitated real estate) or (ii) contemplated by Section 50(d)(5) of the Code , as amended (a pass-through lease).

“Term” means the period of time during which this PPA shall remain in full force and effect as further defined in Article 2.

“Ultimate Parent Entity” shall have the meaning set forth under Section 7A of the Clayton Act, 15 U.S.C. §18a, also known as the Hart-Scott-Rodino Antitrust Improvements Act of 1976. For the avoidance of doubt (and notwithstanding the foregoing), the Ultimate Parent Entity of Seller as of the Effective Date shall be either Enel or Enel S.p.A.

* * * * *

EXHIBIT B

OVERALL CONSTRUCTION MILESTONES

[TRADE SECRET DATA BEGINS...

...TRADE SECRET DATA ENDS]

EXHIBIT C
INITIAL DESCRIPTIONS OF PROJECT PHASES

Facility	GPS Coordinates	Gross Acres	Applied Interconnection MWs AC	Expected Solar Irradiance kWh/m2/yr
Albany	N45.641536, W94.599465	230	10	1372
Annandale	N45.250813, W94.111136	68	6	1383
Atwater	N45.140809, W94.769319	40	4	1394
Brooten	N45.508304, W95.125572	12.8	1.5	1383
Chisago County	N45.452567, W92.902101	62	7.5	1376
Dodge Center	N44.026, W92.882	68.9	6.5	1391
Eastwood	N44.154883, W93.916250	44.5	5.5	1391
Fiesta City	N44.955163, W95.688693	24	2.5	1413
Hastings	N44.759294, W92.824906	41	5	1376
Lake Emily	N44.320552, W93.904056	46	5	1398
Lake Pulaski	N45.196, W93.812	75.88	8.5	1387
Lawrence Creek	N45.401744, W92.693699	74.4	4	1372
Lester Prairie	N44.908663, W94.028319	29.9	3.5	1391
Mayhew Lake	N45.619, W94.152	36	4	1380
Montrose	N45.055776, W93.923189	34	4	1398
Paynesville	N45.391063, W94.721433	298.25	10	1391
Pine Island	N44.204948, W92.663715	40	4	1387
Pipestone	N44.003685, W96.335801	15.85	2	1442

PUBLIC DOCUMENT -
TRADE SECRET DATA EXCISED
Model Solar Energy Purchase Agreement

Scandia	N45.301665, W92.800848	24	2.5	1358
Waseca	N44.092142, W93.530960	100.6	10	1402
West Faribault	N44.274971, W93.310803	44	5.5	1394
West Waconia	N 44.793445, W93.901329	77.13	8.5	1398
Wyoming	N45.307612 , W92.981732	69	7	1380
Zumbrota	N44.299, W92.69	40.13	3.5	1387
			Exhibit L	1389

EXHIBIT D
NOTICES AND CONTACT INFORMATION

Company	Seller
<p>Notices: Thomas A. Imbler Vice President, Commercial Operations Xcel Energy Services Inc. 1800 Larimer Street, Suite 1000 Denver, CO 80202 Phone: 303.571.7414</p> <p>Jessica Collins Renewable Purchased Power Manager Xcel Energy Services Inc. 1800 Larimer Street, Suite 1000 Denver, CO 80202 Phone: 303.571.7740</p>	<p>Notices: Michael Storch EVP Enel Green Power North America, Inc. One Tech Drive, Suite 220 Andover, MA 01810 Phone: 978-296-6805</p> <p>General Counsel Enel Green Power North America, Inc. One Tech Drive, Suite 220 Andover, MA 01810 generalcounsel@enel.com</p>
<p>Operating Committee Representative: Jessica Collins Renewable Purchased Power Manager Xcel Energy Services Inc. 1800 Larimer Street, Suite 1000 Denver, CO 80202 Phone: 303.571.7740</p> <p>Alternate: Andy Sulkko Purchased Power Analyst Xcel Energy Services Inc. 1800 Larimer Street, Suite 1000 Denver, CO 80202 Phone: 303.571.6529</p>	<p>Operating Committee Representative: Mark McGrail Senior Director Energy Management Enel Green Power North America, Inc. One Tech Drive, Suite 220 Andover, MA 01810 Phone: 978-296-6815</p> <p>Alternate: Roberto Rosner Manager Enel Green Power North America, Inc. One Tech Drive, Suite 220 Andover, MA 01810 Phone: 978-296-6807</p>

<p>Real-Time Contact Information</p> <p><i>Real-time Communications Contact:</i> Generation Dispatch desk (24-hr coverage) Phone: 303.571.6280 Fax: 303.571.7305</p> <p><i>Distribution Operation Contact:</i> Position: Real Time Distribution Ops Phone: 303.571.2764 Fax: 303.571.2779 E-mail: michael.i.boughner@xcelenergy.com</p>	<p>Real-Time Contact Information</p> <p>Control and Monitoring Room CMR Operations Operator Enel Green Power North America, Inc. One Tech Drive, Suite 220 Andover, MA 01810 978-686-4386</p> <p>Sean Reid CMR Manager Enel Green Power North America, Inc. One Tech Drive, Suite 220 Andover, MA 01810 978-296-6845</p>
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EXHIBIT E
INSURANCE COVERAGE

TYPE OF INSURANCE	MINIMUM LIMITS OF COVERAGE
Commercial General Liability (CGL) and commercial umbrella	Prior to COD: \$6,500,000 Following COD: \$11,000,000 Combined single limit each occurrence and the aggregate, where applicable. If CGL insurance contains a general aggregate limit, it shall apply separately to the Facility. (Umbrella policy may be used to satisfy the limits.)

CGL insurance shall cover liability arising from premises, operations, independent contractors, products/completed operations, contracts, property damage, personal injury all with limits as specified above. CGL insurance shall include ISO endorsement CG 24 17 (or an equivalent endorsement) which modifies the definition of "insured contract" to eliminate the exclusion of easement or license agreements in connection with construction or demolition operations on or within 50 feet of a railroad. There shall be no endorsement or modification of the CGL insurance limiting the scope of coverage for liability arising from explosion, collapse, or underground property damage.

Company shall be included as an insured under the CGL policy, and under the commercial umbrella insurance. The commercial umbrella insurance shall provide coverage over the top of the CGL insurance, the Business Automobile Liability insurance, and the Employers Liability insurance.

The CGL and commercial umbrella insurance to be obtained by or on behalf of Seller shall be endorsed as follows:

Such insurance as afforded by this policy for the benefit of Company shall be primary as respects any claims, losses, damages, expenses, or liabilities arising out of this PPA, and insured hereunder, and any insurance carried by Company shall be in excess of and noncontributing with insurance afforded by this policy.

Business Automobile Liability	\$1,000,000 combined single limit (each accident), including all Owned, Non-Owned, Hired and Leased Autos.
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Business Automobile Liability insurance shall be written on ISO form CA 00 01, CA 00 05, CA 00 12, CA 00 20, or a substitute form providing equivalent liability coverage.

Workers Compensation	Statutory Requirements. Seller may comply with these requirements through the use of a qualified self-insurance plan.
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Employers Liability	\$1,000,000 each accident for bodily injury by accident, or \$1,000,000 each employee for
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	bodily injury by disease.
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Builder's Risk	Replacement value of the Facility or Maximum Foreseeable Loss (MFL) may be used to establish the Builder's Risk insurance limit, provided, however, that Company shall have the right to approve the amount.
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Builder's Risk insurance, or an installation floater, shall include coverage for earthquake and flood, collapse, faulty workmanship, materials and design, testing of machinery or equipment, freezing or changes in temperature, debris removal, and partial occupancy.

Environmental Impairment Liability	\$1,000,000 each occurrence
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All-Risk Property insurance covering physical loss or damage to the Facility	Full replacement value of the Facility or Maximum Foreseeable Loss (MFL) may be used to establish the All-Risk property insurance limit. A deductible may be carried, which deductible shall be the absolute responsibility of Seller. Company shall be given the right to review and approve any MFL.
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All-Risk Property insurance shall include: (i) coverage for fire, flood, storm, tornado and earthquake with respect to facilities similar in construction, location and occupancy to the Facility, with sublimits of no less than \$1,000,000 each for flood and earthquake; and (ii) Boiler and Machinery insurance covering all objects customarily subject to such insurance, including boilers and Units, in an amount equal to the MFL or other agreed-to limit.

Business Interruption insurance	Amount required to cover Seller's continuing or increased expenses, resulting from full interruption, for a period of 12 calendar months.
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Business Interruption insurance shall cover loss of revenues or the increased expense to resume operations attributable to the Facility by reason of total or partial suspension or delay of, or interruption in, the operation of the Facility as a result of an insured peril covered under All-Risk Property insurance as set forth above, to the extent available on Commercially Reasonable terms as determined by Company, subject to a Commercially Reasonable deductible that shall be the responsibility of Seller. Notwithstanding any other provision of this PPA, Seller shall not be required to have Business Interruption insurance until the Commercial Operation Date.

EXHIBIT F
SELLER'S PERMITS

Aurora Distributed Solar, LLC Required Approvals

Regulatory Authority	Permit/Approval
Federal Approvals	
U.S. Army Corps of Engineers	Wetland Delineation Approvals
	Jurisdictional Determination
	Federal Clean Water Act Section 404 Permit(s)
U.S. Fish and Wildlife Service	Section 7 Consultation
	Review for Threatened and Endangered Species
Environmental Protection Agency (Region 5) (EPA) in coordination with the Minnesota Pollution Control Agency (MPCA)	Spill Prevention Control and Countermeasure (SPCC) Plan
	Phase I Environmental Site Assessment
Lead Federal Agency	Federal Section 106 Review
Federal Land Manager (BLM, USBR, Forest Service)	Right-of-Way Crossing
National Historic Preservation Act	Class I Literature Review / Class III Cultural Field Survey
U.S. Department of Agriculture	Form AD-1006
	Conservation / Grassland / Wetland Easement and Reserve Program Releases and Consents
	FSA Mortgage Subordinations & Site-Specific Environmental Assessments
Federal Energy Regulatory Commission	Exempt Wholesale Generator Self Cert. (EWG)
	Qualifying Facilities (QF) Certification
	Market-Based Rate Authorization
Federal Emergency Management Agency	Flood Plain Designations
State of Minnesota Approvals	
Minnesota Board of Water and Soil Resources	Wetland Conservation Act Approval
Minnesota Department of Labor and Industry	Building Plan Review and Permits
Minnesota Public Utilities Commission	Site Permit for Large Electric Generating Plant (LEGP)
	Exemption from Certificate of Need for LEGP
Minnesota State Historic Preservation Office (SHPO)	Cultural and Historic Resources Review and Review of State and National Register of Historic Sites and Archeological Survey

Aurora Distributed Solar, LLC Required Approvals

Regulatory Authority	Permit/Approval
Minnesota Pollution Control Agency	Section 401 Water Quality Certification
	National Pollutant Discharge Elimination System Permit (NPDES) – MPCA General Storm water Permit for Construction Activity
	Very Small Quantity Generator (VSQG) License – Hazardous Waste Collection Program
	Aboveground Storage Tank (AST) Notification Form
Minnesota Department of Health	Environmental Bore Hole (EBH)
	Water Supply Well Notification
	Plumbing Plan Review
Minnesota Department of Natural Resources	License to Cross Public Land and Water
	Public Waters Work Permit
Minnesota Department of Transportation	Utility Permits on Trunk Highway Right of Way
	Oversize/Overweight Permit for MNDOT/State Highways
	Access Driveway Permits for MNDOT/State Roads
Local Approvals	
Watershed District	Grading Permit, Land Alteration Permit, Stormwater Permit
Counties	Driveway Permit, Right-of-Way/Utility Permit, Wetland Conservation Act Approval, Parcel Split, Platting, Demolition, Hazardous Waste Disposal Pre-demolition, Conditional Use Permit.
Townships	Driveway Permit, Parcel Split, Platting, Right-of-Way/Utility Permit, Conditional Use Permit

EXHIBIT G
FORM OF SECURITY DOCUMENTS

EXHIBIT G-1
FORM OF LETTER OF CREDIT

LETTERHEAD OF ISSUING BANK

Irrevocable Standby Letter of Credit
No.: _____ Date of Issuance: _____
Initial Expiration Date: [Must be at least one
year after date of issuance]

Beneficiary: _____ Applicant: _____

As the issuing bank ("Issuer"), we, [Name of Issuing Bank], hereby establish this irrevocable Standby Letter of Credit No. _____ (this "Letter of Credit") in favor of the above-named beneficiary ("Beneficiary") for the account of the above-named applicant ("Applicant") in the amount of USD \$ _____ (_____ U.S. Dollars).

Beneficiary may draw all or any portion of this Letter of Credit at any time and from time to time and Issuer will make funds immediately available to Beneficiary upon presentation of Beneficiary's draft(s) at sight in the form attached hereto as Exhibit A ("Sight Draft"), drawn on Issuer and accompanied by this Letter of Credit. All Sight Draft(s) must be signed on behalf of Beneficiary, and signator must indicate his or her title or other official capacity. No other documents will be required to be presented. Issuer will effect payment under this Letter of Credit within 24 hours after presentment of the Sight Draft(s). Payment shall be made in U.S. Dollars with Issuer's own funds in immediately available funds.

Issuer will honor any Sight Draft(s) presented in compliance with the terms of this Letter of Credit at the Issuer's letterhead office, the office located at _____, or any other full service office of the Issuer on or before the above stated expiration date, as such expiration date may be extended hereunder. Partial and multiple draws and presentations are permitted on any number of occasions. Following any partial draw, Issuer will endorse this Letter of Credit and return the original to Beneficiary.

Issuer acknowledges that this Letter of Credit is issued pursuant to the provisions of that certain Solar Energy Purchase Agreement between the Beneficiary and the Applicant dated as of _____, 201_ (as the same may have been or may be amended from time to time, the "PPA"). Notwithstanding any reference in this Letter of Credit to the PPA

or any other documents, instruments or agreements, or references in the PPA or any other documents, instruments or agreements to this Letter of Credit, this Letter of Credit contains the entire agreement between Beneficiary and Issuer relating to the obligations of Issuer hereunder.

This Letter of Credit will be automatically extended each year without amendment for a period of one year from the expiration date hereof, as extended, unless at least thirty (30) days prior to the expiration date, Issuer notifies Beneficiary by registered mail or overnight courier that it elects not to extend this Letter of Credit for such additional period. Notice of non-extension will be given by Issuer to Beneficiary at Beneficiary's address set forth herein or at such other address as Beneficiary may designate to Issuer in writing at Issuer's letterhead address.

This Letter of Credit is transferable in its entirety (but not in part) and only at the counter of the Issuer. Issuer agrees that it will affect any transfers immediately upon presentation to Issuer of this Letter of Credit and all amendments (if any) and a completed written transfer request in the form attached hereto as Exhibit B. Such transfer will be effected at no cost to Beneficiary. Any transfer fees assessed by Issuer will be payable solely by Applicant, and the payment of any transfer fees will not be a condition to the validity or effectiveness of the transfer or this Letter of Credit.

Issuer waives any rights it may have, at law or otherwise, to subrogate to any claims Beneficiary may have against Applicant or Applicant may have against Beneficiary.

This Letter of Credit is subject to the Uniform Customs and Practice for Documentary Credits (2007 Revision), International Chamber of Commerce Publication No. 600 (the "UCP"), except to the extent that the terms hereof are inconsistent with the provisions of the UCP, including but not limited to Articles 14(B) and 36 of the UCP, in which case the terms of this Letter of Credit shall govern. With respect to Article 14(B) of the UCP, Issuer shall have a reasonable amount of time, not to exceed three (3) banking days following the date of Issuer's receipt of documents from the Beneficiary (to the extent required herein), to examine the documents and determine whether to take up or refuse the documents and to inform Beneficiary accordingly.

In the event of an act of god, riot, civil commotion, insurrection, war or any other cause beyond Issuer's control that interrupts Issuer's business and causes the place for presentation of this Letter of Credit to be closed for business on the last day for presentation, the expiry date of this Letter of Credit will be automatically extended without amendment to a date thirty (30) calendar days after the place for presentation reopens for business.

ISSUER:

By: _____
AUTHORIZED SIGNATURE
Its: _____

EXHIBIT A
(TO LETTER OF CREDIT)

SIGHT DRAFT

\$ _____

At sight, pay to the order of [Name of Beneficiary to be inserted], the amount of USD \$ _____ (_____ and 00/100ths U.S. Dollars).

Drawn under [Name of Issuer to be inserted] Standby Letter of Credit No. _____.

Dated: _____, 20____

[Name of Beneficiary to be inserted]

By: _____

Its Authorized Representative

[Title or Other Official Capacity to be inserted]

To: [Name and Address of Issuer to be inserted]

EXHIBIT B
(TO LETTER OF CREDIT)

FORM OF TRANSFER REQUEST

IRREVOCABLE STANDBY LETTER OF CREDIT NO: _____

CURRENT BENEFICIARY:

APPLICANT:

TO: [NAME OF ISSUING BANK]

The undersigned, as the current "Beneficiary" of the above referenced Letter of Credit, hereby requests that you reissue the Letter of Credit in favor of the transferee named below [INSERT TRANSFEREE NAME AND ADDRESS BELOW]:

From and after the date this transfer request is delivered to the Issuer, all rights of the undersigned Beneficiary in such Letter of Credit are transferred to the transferee, and the transferee shall have the sole rights as Beneficiary thereof, including sole rights relating to any amendments, whether increases or extensions or other amendments agreed between the parties, whether now existing or hereafter made. All amendments are to be advised directly to the transferee without necessity of any consent of or notice to the undersigned transferor.

DATED: _____

[NAME OF BENEFICIARY]

[NOTARY ACKNOWLEDGMENT]

By: _____
Name: _____
Title: _____

[TO BE SIGNED BY A PERSON PURPORTING TO BE AN AUTHORIZED REPRESENTATIVE OF THE BENEFICIARY AND INDICATING THEIR TITLE OR OTHER OFFICIAL CAPACITY, AND ACKNOWLEDGED BY A NOTARY PUBLIC.]

EXHIBIT G-2
FORM OF GUARANTY

This Guaranty is executed and delivered as of this ____ day of _____, 20__ by _____, a _____ ("Guarantor"), in favor of **Northern States Power Company, a Minnesota corporation** ("Company"), in connection with the performance by _____, a _____ company ("Seller"), of a Solar Energy Purchase Agreement dated _____, 201_ between Seller and Company [as amended by _____ dated _____] (the "PPA").

- RECITALS -

A. Seller is planning to construct, own, and operate a solar power electric generation facility having nameplate capacity of approximately ____ MW (AC) to be located in _____ County, Minnesota (the "Facility").

B. Seller and Company have entered into the PPA for the purchase and sale of capacity and electrical energy from the Facility on the terms and conditions set forth therein.

C. Seller is controlled directly or indirectly by Guarantor. Guarantor expects to derive substantial benefits from the performance of the PPA by Seller and Company. Pursuant to Article 11 of the PPA, Guarantor has agreed to execute and deliver this Guaranty as the Post-COD Security Fund (as defined in the PPA) to guarantee the obligations of Seller as provided in this Guaranty.

NOW, THEREFORE, in consideration of the foregoing, Guarantor agrees as follows:

- AGREEMENT -

1. Guaranty. Subject to the provisions of this Guaranty, Guarantor hereby absolutely, irrevocably, unconditionally, and fully guarantees to Company the due, prompt, and complete observance, performance, and discharge of each and every payment obligation of Seller under the PPA (the "Obligations"). This is a guaranty of payment, not of collection, and as such, Company shall not be required to institute, pursue, or exhaust any remedies against Seller before instituting suit, obtaining judgment, and executing thereon against Guarantor under this Guaranty.

2. Maximum Liability. Notwithstanding anything herein to the contrary, Guarantor's maximum liability under this Guaranty shall be limited to (\$US_____), [Note: the Post-COD Security Amount specified in the PPA to be inserted here] plus reasonable costs of collection with respect to any valid claim(s) made by Company hereunder that are incurred in the enforcement or protection of the rights of Company, as further described in Section 10 hereof.

3. Rights of Company. Guarantor hereby grants to Company, in Company's discretion and without the need to notify or obtain any consent from Guarantor, and without termination, impairment, or any other effect upon Guarantor's duties hereunder, the power and authority from time to time:

(a) to renew, compromise, extend, accelerate, or otherwise change, substitute, supersede, or terminate the terms of performance of any of the Obligations, in each case in accordance with the PPA;

(b) to grant any indulgences, forbearances, and waivers, on one or more occasions, for any length of time, with respect to Seller's performance of any of the Obligations; and

(c) to accept collateral, further guaranties, and/or other security for the Obligations, and, if so accepted, then to impair, exhaust, exchange, enforce, waive, or release any such security.

4. Performance. If any of the Obligations are not performed according to the tenor thereof, and any applicable notice and cure period provided by the PPA has expired ("Default"), Guarantor shall within ten (10) business days after receipt of written demand by Company pay, reimburse, and indemnify Company for and against any liabilities, damages, and related costs (including reasonable attorneys' fees) incurred by Company as a result of any failure by Seller to perform the Obligation in Default, all in such manner and at such times as Company may reasonably direct.

5. Satisfaction. Satisfaction by Guarantor of any duty hereunder incident to a particular Default or the occurrence of any other Default shall not discharge Guarantor except with respect to the Default satisfied, it being the intent of Guarantor that this Guaranty be continuing until such time as all of the Obligations have irrevocably been discharged in full, at which time this Guaranty shall automatically terminate. If at any time the performance of any Obligation by Seller or Guarantor is rescinded or voided under the federal Bankruptcy Code or otherwise, then Guarantor's duties hereunder shall continue and be deemed to have been automatically reinstated, restored, and continued with respect to that Obligation, as though the performance of that Obligation had never occurred, regardless of whether this Guaranty otherwise had terminated or would have been terminated following or as a result of that performance.

6. Notice of Acceptance. Guarantor waives and acknowledges notice of acceptance of this Guaranty by Company.

7. Waivers by Guarantor. Guarantor hereby waives and agrees not to assert or take advantage of:

(a) all set-offs, counterclaims, and, subject to Section 4 above, all presentments, demands for performance, notices of non-performance, protests, and notices of every kind that may be required by Applicable Laws (as defined in the PPA);

(b) any right to require Company to proceed against Seller or any other person, or to require Company first to exhaust any remedies against Seller or any other person, before proceeding against Guarantor hereunder;

(c) any defense based upon an election of remedies by Company;

(d) any duty of Company to protect or not impair any security for the Obligations;

(e) the benefit of any laws limiting the liability of a surety;

(f) any duty of Company to disclose to Guarantor any facts concerning Seller, the PPA or the Facility, or any other circumstances, that would or allegedly would increase the risk to Guarantor under this Guaranty, whether now known or hereafter learned by Company, it being understood that Guarantor is capable of and assumes the responsibility for being and remaining informed as to all such facts and circumstances; and

(g) until all Obligations in Default have been fully paid and/or performed, any rights of subrogation, contribution, reimbursement, indemnification, or other rights of payment or recovery for any payment or performance by it hereunder. For the avoidance of doubt, if any amount is paid to Guarantor in violation of this provision, such amount shall be held by Guarantor for the benefit of, and promptly paid to, Company.

8. Cumulative Remedies. The rights and remedies of Company hereunder shall be cumulative and not alternative to any other rights, powers, and remedies that Company may have at law, in equity, or under the PPA. The obligations of Guarantor hereunder are independent of those of Seller and shall survive unaffected by the bankruptcy of Seller. Company need not join Seller in any action against Guarantor to preserve its rights set forth herein.

9. Representations and Warranties. Guarantor represents and warrants to Company as follows:

(a) Guarantor is a [corporation][_____], duly organized, validly existing, and in good standing under the laws of the state of its [incorporation][formation]. Seller is a direct or indirect wholly-owned subsidiary of Guarantor. Guarantor has all necessary corporate power and authority to execute and deliver this Guaranty and to perform its obligations hereunder.

(b) The execution, delivery and performance of this Guaranty has been duly and validly authorized by all requisite [corporate] actions of Guarantor and is not in violation of any law or judgment of court or government agency . This Guaranty has been duly and validly executed and delivered by Guarantor and constitutes a legal, valid and binding obligation of Guarantor, enforceable against Guarantor in accordance with its terms.

10. Collection Costs. Guarantor hereby agrees to pay to Company, upon demand, and in addition to the maximum liability set forth in Section 2 hereof, all reasonable attorneys' fees and other reasonable expenses which Company may expend or incur in enforcing the Obligations against Seller and/or enforcing this Guaranty against Guarantor, whether or not suit is filed, including, without limitation, all such attorneys' fees and other expenses incurred by Company in connection with any insolvency, bankruptcy, reorganization, arrangement, or other similar proceedings involving Seller that in any way affect the exercise by Company of its rights and remedies hereunder.

11. Severability. Should any one or more provisions of this Guaranty be determined to be illegal or unenforceable, all other provisions nevertheless shall be effective.

12. Waiver or Amendment. No provision of this Guaranty or right of Company hereunder can be waived, nor can Guarantor be released from Guarantor's duties hereunder, except by a writing duly executed by Company. This Guaranty may not be modified, amended, revised, revoked, terminated, changed, or varied in any way whatsoever except by the express terms of a writing duly executed by Company.

13. Successors and Assigns. This Guaranty shall inure to the benefit of and bind the successors and assigns of Company and Guarantor. Guarantor shall be entitled to a release of its obligations under this Guaranty in the event, and as and to the extent, Company accepts other Post-COD Security Fund in substitution for this Guaranty.

14. Governing Law. This Guaranty shall be governed by and construed in accordance with the law of the State of Minnesota without regard to the principles of conflicts of law thereof.

15. Notices. All notices, requests, claims, demands, and other communications hereunder shall be in writing and shall be given (and shall be deemed to have been duly given upon receipt) by delivery in the manner contemplated by the PPA, addressed as follows:

(a) *if to Company:* as provided in the PPA

(b) *if to Guarantor:* _____

Attn:
Phone: (____) _____
Fax: (____) _____

with a copy to: _____

Attn:

EXHIBIT G-3
FORM OF ESCROW AGREEMENT

This Escrow Agreement ("Agreement") is entered into and effective this ___ day of _____, _____ by and among _____ ("Seller"), **Northern States Power Company, a Minnesota corporation** ("Company") and _____ ("Escrow Agent").

- RECITALS -

WHEREAS, Seller and Company are parties to a Solar Energy Purchase Agreement dated _____, 201_ (the "PPA"), pursuant to which Seller agrees to build and operate an electric generating facility in _____ County, Minnesota (the "Facility") and to sell energy from the Facility to Company. Capitalized terms used but not otherwise defined herein shall have the meanings ascribed to them in the PPA; and

WHEREAS, Article 11 of the PPA requires Seller to provide security in favor of Company in amounts set forth in the PPA, up to a total of \$_____ (the "Escrow Total"); and

WHEREAS, Seller has elected to establish and deliver funds (the "Escrow Funds") into an escrow account with Escrow Agent to meet its PPA security obligations, and Seller, Company and Escrow Agent agree to enter into this Agreement to define the terms of that account.

NOW, THEREFORE, in consideration of the foregoing and the mutual covenants and other consideration set forth in this Agreement and the PPA, and other good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, the parties agree as follows:

- AGREEMENT -

1. Appointment of Escrow Agent. On the terms, and subject to the conditions, set forth in this Agreement, Seller and Company hereby appoint Escrow Agent as their agent and custodian to hold, invest and distribute the Escrow Funds and all interest and investment earnings thereon (the "Escrow Interest") in accordance with this Agreement. To the extent any Escrow Interest accrues during the term of this Agreement, such Escrow Interest shall be added to but shall not be included as part of the principal amount of the Escrow Funds except as set forth in Section 5.

2. Delivery of Funds to Escrow Agent.

a. Seller shall deposit with Escrow Agent an amount equal to \$_____ on or before _____ on or before [the date required by the PPA].

b. Escrow Agent shall retain and disburse the Escrow Funds pursuant to the terms of this Agreement. The execution and full performance of this Agreement by Seller and Escrow Agent, and retention and disbursement by Escrow Agent of the

Escrow Funds pursuant to the terms hereof, fully satisfies Seller's initial obligations under Article 11 of the PPA to establish and maintain a security fund. Escrow Agent shall hold the Escrow Funds under the terms of this Agreement and distribute the Escrow Funds only in accordance with Section 5.

c. The Escrow Funds shall, for all purposes, be considered property of Seller unless and until distributed to Company in accordance with this Agreement. To protect Company prior to such distribution, Seller hereby grants to Company a first priority security interest in all of Seller's right, title and interest in and to the Escrow Funds held under this Agreement for the purpose of securing Seller's obligations under the PPA. However, any release of any portion of the Escrow Funds to Company in accordance with this Agreement shall act as an automatic termination of Company's security interest in the Escrow Funds so released. Seller authorizes Company to file such financing statements and other documents as Company reasonably deems necessary or advisable to protect Company's rights in the Escrow Funds. Each party will sign such documents (including, upon the request of Company a control agreement), provide such information, send such notices and take such other actions as any other party reasonably requests to consummate more effectively the intent and purpose of the parties under this Section 2(c).

3. Investment. Escrow Agent shall hold and invest the Escrow Funds only in accordance with the terms of this Agreement. At the written direction of Seller, Escrow Agent shall invest and reinvest the Escrow Funds in cash or one or more of the following short-term securities: a money-market fund, short-term treasury obligations, investment-grade commercial paper and other liquid investment-grade investments with maturities of three (3) months or less. All investments of the Escrow Funds shall be held by, or registered in the name of, Escrow Agent or its nominee. All Escrow Interest and investment income earned on the Escrow Funds shall accrue for the benefit of, and be taxable to, Seller.

4. Distributions of Escrow Funds by Escrow Agent. Escrow Agent shall hold the Escrow Funds until instructed or otherwise required to deliver the same or any portion thereof in accordance with Section 5.

5. Distributions.

a. Escrow Interest. Once Escrow Funds being held by Escrow Agent reach the Escrow Total, Seller may be paid Escrow Interest earned on the Escrow Funds at times and amounts in Seller's discretion as long as the amount of the Escrow Funds does not, as a result, become less than the Escrow Total.

b. Release at End of Term; Substitution of Security. After the full and final satisfaction of all of Seller's obligations under the PPA, any Escrow Funds remaining with Escrow Agent after all deductions for any damages or other allowed charges made by Company, and all accrued Escrow Interest, shall be released to Seller. If Seller provides a letter of credit or other security under the PPA in form and substance as required by the PPA and in the full amount of the Escrow Total to secure

Seller's obligations to Company prior to the expiration or termination of the PPA, the Escrow Funds and any Escrow Interest shall be released to Seller upon the delivery to Company of such effective letter of credit or security mechanism as permitted by the PPA.

c. Escrow Claims by Company. During the term of the PPA, Company may draw all or any portion of the Escrow Funds to the extent necessary to recover amounts owing to Company pursuant to the PPA that are not the subject of a good faith dispute, including any damages due to Company and any amounts for which Company is entitled to indemnification under the PPA. Each claim against the Escrow Funds under this Agreement shall be made by Company by delivering to Escrow Agent a certificate, in substantially the form of Exhibit A attached hereto, specifying the nature of the claim (a "Claim Certificate"). A copy of each Claim Certificate shall also be delivered to Seller contemporaneously with provision to Escrow Agent. Escrow Agent shall pay to Company the amount of Escrow Funds set forth in the Claim Certificate, in accordance with the Claim Certificate, on the first business day after it receives the Claim Certificate.

d. Regulations of the Comptroller of the Currency. Company and Seller acknowledge that regulations of the Comptroller of the Currency grant Company and Seller the right to receive brokerage confirmations of any security transactions as they occur. Company and Seller specifically waive such notifications to the extent permitted by law, and Seller will receive monthly cash transaction statements that will detail all investment transactions.

6. Rights and Obligations of Escrow Agent.

a. Duties.

i. Escrow Agent hereby accepts its obligations under this Agreement and represents that it has the legal power and authority to enter into this Agreement and to perform its obligations hereunder. Escrow Agent agrees that all Escrow Funds held by Escrow Agent under this Agreement shall be segregated from all other property held by Escrow Agent and shall be identified as being held in connection with this Agreement. Segregation may be accomplished by appropriate identification on the books and records of Escrow Agent. Escrow Agent's documents and records with respect to the transactions contemplated by this Agreement shall be available for examination by authorized representatives of Company and Seller. Escrow Agent will deliver to Company and Seller written statements not less than quarterly summarizing any activity with respect to the Escrow Funds (including the amount of interest and earnings thereon) and detailing the balance of the Escrow Funds.

ii. This Agreement may be terminated only by a writing executed by all of Company, Seller and Escrow Agent.

iii. In the event that this Agreement is scheduled to expire or terminate during the term of the PPA, and Seller has not provided security pursuant to the PPA required to replace this Agreement, Company may draw the entire balance of Escrow Funds, up to the Escrow Total, within five (5) business days of the scheduled expiration or termination date, and without regard to any objection asserted by Seller, provided Company holds the Escrow Funds it draws in escrow until the earlier of (i) the date Seller provides adequate replacement security in compliance with the PPA, or (ii) the date Company is entitled to draw and retain all or any portion of the Security Fund under the PPA.

b. No Other Duties. Escrow Agent shall not have any duties or responsibilities under this Agreement except as expressly set forth herein.

c. Escrow Fee. Escrow Agent shall be entitled to receive solely from Seller (a) compensation for its regular services as escrow agent under this Agreement and (b) reimbursement for all reasonable and necessary out-of-pocket expenses incurred by Escrow Agent in fulfilling its obligations under this Agreement, including, without limitation, reasonable fees and disbursements of legal counsel. Such compensation and reimbursement obligations shall be paid from time to time as incurred. In no circumstance will Company have any obligation to pay any amount to Escrow Agent arising out of or under this Agreement.

d. Resignation of Escrow Agent. Escrow Agent may at any time resign by giving thirty (30) days' advance written notice of such resignation to Company and Seller. Upon such resignation, Escrow Agent shall not be discharged from its obligations under this Agreement until (a) a successor escrow agent, as mutually agreed on by Seller and Company, shall have been appointed, (b) the successor escrow agent shall have executed and delivered an Escrow Agreement in substantially the form of this Agreement and (c) all Escrow Funds then held by Escrow Agent under this Agreement shall have been delivered to such successor escrow agent.

e. Liability of Escrow Agent. Escrow Agent shall not be liable for any action taken in accordance with the terms of this Agreement, including, without limitation, any distribution of the Escrow Funds in accordance with Section 4, as long as the action was taken in good faith. Escrow Agent shall not be liable for any other act or failure to act under or in connection with this Agreement, except for its own negligence or intentional tortious misconduct. Seller and Company agree to indemnify, defend and hold Escrow Agent harmless from and against all claims, causes of action, costs, judgments, losses and damages arising out of or related to this Agreement, except for any such claims, causes of action, costs, judgments, losses or damages arising from or related to any breach of this Agreement by Escrow Agent or negligent or intentional tortious actions or omissions of Escrow Agent.

f. Reliance on Documentary Evidence. Escrow Agent shall be entitled to rely on any written notice, certificate, affidavit, letter, document or other communication that is reasonably believed by Escrow Agent to be genuine and to have been signed or sent by the proper party or parties, and on statements contained therein,

without further inquiry or investigation. Notwithstanding anything to the contrary in this Agreement, Escrow Agent may act on any written instructions given jointly by Company and Seller.

g. Interpleader. If Company and Seller shall disagree about the interpretation of this Agreement, or about the rights and obligations or the propriety of any act contemplated by Escrow Agent hereunder, then Escrow Agent may, within its reasonably exercised discretion, file an action of interpleader in the appropriate court of competent jurisdiction and deposit all of the applicable Escrow Funds with such court.

7. Termination of Agreement. This Agreement shall continue through the date on which all obligations of Seller under the PPA have been fully satisfied or all of the Escrow Funds shall have been paid to Company pursuant to the terms of this Agreement.

8. Taxes. Taxes on distributions of the Escrow Funds shall be paid by Seller.

9. Notices. All notices and other communications (including all certificates delivered pursuant to Section 5) under this Agreement by Company or Seller to Escrow Agent shall be delivered contemporaneously to the other parties in the same manner as provided to Escrow Agent. All notices and other communications under this Agreement shall be given in writing and shall be personally delivered, sent by facsimile transmission or sent to the applicable parties at their respective addresses indicated in this Section 9 by registered or certified U.S. mail, return receipt requested and postage prepaid, or by private overnight mail courier service, as follows:

If to Seller, to:

Attention: _____
Phone: _____
Fax: _____

If to Company:

Manager, Renewable Purchases
Xcel Energy Services Inc.
1800 Larimer Street, Suite 1000
Denver, CO 80202
Phone: (303) 571-_____
Fax: (303) 571-7002

If to Escrow Agent, to:

Attention: _____
Phone: _____
Fax: _____

or to such other person or address as any party shall have specified by notice in writing to the other parties. If personally delivered, such communication shall be deemed delivered upon actual receipt; if sent by facsimile transmission, such communication shall be deemed delivered the day of the transmission, or if the transmission is not made on a business day, the first business day after transmission (and sender shall bear the burden of proof of delivery); if sent by overnight courier pursuant to this Section 9, such communication shall be deemed delivered upon receipt; and if sent by U.S. mail pursuant to this Section 9, such communication shall be deemed delivered as of the date of delivery indicated on the receipt issued by the relevant postal service or, if the addressee fails or refuses to accept delivery, as of the date of such failure or refusal.

10. Miscellaneous.

a. Captions. All titles, subject headings, section titles and similar items are provided for the purpose of reference and convenience and are not intended to be inclusive, definitive or to affect the meaning of the contents or scope of the Agreement.

b. No Third-Party Beneficiary. No provision of this Agreement is intended to nor shall in any way inure to the benefit of any customer, property owner or other third party, so as to constitute any such person a third-party beneficiary under this Agreement, or of any one or more of the terms hereof, or otherwise give rise to any cause of action in any person not a party hereto.

c. Integration; Amendment. This Agreement constitutes the entire agreement among the parties relating to the transactions described herein and supersedes any and all prior oral or written understandings. No amendment of, addition to or modification of any provision hereof shall be binding on the parties, and no party shall be deemed to have waived any provision or any remedy available to it unless such amendment, addition, modification or waiver is in writing and signed by a duly authorized officer or representative of the applicable party or parties.

d. Governing Law. The Agreement is made in the state in which the Facility is located and shall be interpreted and governed by the laws of such state or the laws of the United States, as applicable.

e. Good Faith and Fair Dealing; Reasonableness. The parties agree to act reasonably and in accordance with the principles of good faith and fair dealing in the performance of this Agreement. Unless expressly provided otherwise in this Agreement, (i) whenever this Agreement requires the consent, approval or similar action of a party, such consent, approval or similar action shall not be unreasonably withheld or delayed, and (ii) whenever this Agreement gives a party a right to determine, require, specify or take similar action with respect to matters, such determination, requirement, specification or similar action shall be reasonable.

f. Severability. Should any provision of this Agreement be or become void, illegal or unenforceable, the validity or enforceability of the other provisions of this Agreement shall not be affected and shall continue in force. The parties will, however, use their reasonable best endeavors to agree on the replacement of the void, illegal or unenforceable provisions with legally acceptable clauses that correspond as closely as possible to the sense and purpose of the affected provision and this Agreement as a whole.

g. Cooperation. The parties agree to cooperate reasonably with each other in the implementation and performance of this Agreement. Such duty to cooperate shall not require any party to act in a manner inconsistent with its rights under this Agreement.

h. Execution in Counterparts and by Facsimile Distribution. This Agreement may be executed in two (2) or more counterparts and by different parties on separate counterparts, all of which shall be considered one and the same agreement and each of which shall be deemed an original. This Agreement may be executed and delivered by facsimile, and the parties agree that such facsimile execution and delivery shall have the same force and effect as delivery of an original document with original signatures.

[This space intentionally left blank.]

IN WITNESS WHEREOF, the undersigned have caused this Agreement to be duly executed as of the date first set forth above.

Dated:

By: _____

Name: _____

Its: _____

Dated:

**Northern States Power Company, a
Minnesota corporation**

By: _____

Name: _____

Its: _____

Dated:

_____ **(Escrow Agent)**

By: _____

Name: _____

Its: _____

EXHIBIT A TO ESCROW AGREEMENT

ESCROW CLAIM CERTIFICATE

TO: _____

This Certificate is issued pursuant to that certain Escrow Agreement, dated as of _____, 20____, by and among Company, Seller and you, as Escrow Agent (the "Escrow Agreement"). Capitalized terms used but not otherwise defined in this Certificate shall have the meaning ascribed to them in the Escrow Agreement.

The undersigned representative of Company hereby certifies that Company is entitled to receive Escrow Funds in the amount of \$_____ pursuant to the terms of the Escrow Agreement and the PPA, due to the following (generally):_____

_____.

Accordingly, subject to the terms of the Escrow Agreement, you are hereby instructed to distribute, on the first business day after your receipt of this Certificate, the sum of \$_____ from the Escrow Funds to the undersigned by wire transfer to the following account:

Bank: _____

Account: _____

Routing Number: _____

Date: _____, 20_____

**Northern States Power Company, a
Minnesota corporation**

By: _____

Name: _____

Title: _____

EXHIBIT H
OPERATING STANDARDS
(AGC Protocols, Data Collection)

1. AGC Electronic Communications Between Company and Seller

Company will receive and send AGC Set-Point and related data over an analog or digital line. The data points covered under this PPA, as described below, may overlap data requirements for the Distribution Provider, Distribution Authority or Company's Solar Forecasting group.

2. Data Points to Be Sent from Seller to Company via AGC

The following data points will be transmitted via AGC from Seller to Company and represent Facility level data:

Description	Units
AGC Set-Point (echo)	MW
Power demand	MW
Actual power	MW
Park Potential	MW
Actual reactive power	Mvars
Average voltage	kV
Number of units online and running	Integer
AGC status	Remote/Local

3. Response Times and Limitations of Facility in Regards to AGC

The following protocols outline the expectations around responding to the AGC Set-Point. Except in the case of the frequency of changes, these protocols will be generally bound by the manufacturers' specifications for the equipment that Seller has chosen for the Facility.

a. Required Response Time. The Facility will respond to the AGC Set-Point within the maximum Solar Unit manufacturers' specifications. The response time will vary based on the mix of available Solar Units and the current level of output of the Facility. The required response time will be subject to change based upon any change in the Solar Unit manufacturers' specifications for ramp rate.

b. Allowable Variances in Excess of AGC Set-Point. Once the Facility has reached the AGC Set-Point, there may be variances in excess of such set-point up to two percent (2%) on average as measured during a 10-minute period. This is due to changing solar conditions vs. the manufactures' specifications for responding to those

new conditions provided irradiance conditions allow for achieving the assigned AGC Set-Point.

c. Frequency of Changes. Company can send a new AGC Set-Point to the Facility as frequently as the Solar Unit manufacturer's specifications allow, using the specification for the least frequent change to output. If, however, the AGC Set-Point is below 10% of Park Potential, then Company will be restricted from changing the AGC Set-Point for 30 minutes to prevent the Solar Units from cycling on and off.

d. Range of AGC Set-Point. The range of set-point values can be between zero percent (0%) and one hundred percent (100%) of Park Potential.

4. Backup Communications

In the event of an AGC failure, the Company and Seller shall communicate via telephone in order to correct the failure.

5. Data Collection

Concurrently with the Commercial Operation Date, Seller will deliver to Company a report showing (i) manufacturer, model and year of all panels, inverters and meteorological instrumentation and (ii) the latitude and longitude of the center of the solar panels for every inverter and every meteorological station. Seller will also transmit and provide to Company the real-time data set forth below, refreshed as frequently as allowed by the SCADA System, not to exceed fifteen (15) minute intervals.

A. Two (2) data points from each inverter:

1. Inverter generation (kW)
2. Inverter availability

B. Five (5) data points from the meteorological station(s):

1. Global horizontal insolation (GHI)
2. Plane-of-array insolation (POA) using a reference cell
3. Temperature
4. Wind speed (mph)
5. Wind direction (degrees relative to true north)

Seller shall provide a map and key for each inverter sufficient to allow Company to correlate the data received through Company's data historian system to each individual inverter.

EXHIBIT I
FINANCING PARTY CONSENT PROVISIONS

In the event Seller collaterally assigns its rights hereunder to the Facility Financing Party as security, any related Financing Party Consent will contain provisions substantially as follows:

1. Seller and Company will neither modify nor terminate the PPA, other than as provided therein, without the prior written consent of the Facility Financing Party.
2. The Facility Financing Party shall have the right, but not the obligation, to do any act required to be performed by Seller under the PPA, and any such act performed by the Facility Financing Party shall be as effective to prevent or cure a default as if done by Seller itself.
3. If Company becomes entitled to terminate the PPA due to an uncured Event of Default by Seller, Company shall not terminate the PPA unless it has first given notice of such uncured Event of Default to the Facility Financing Party and has given the Facility Financing Party the same cure period afforded to Seller under Section 12.1 of the PPA, plus an additional thirty (30) Days beyond Seller's cure period to cure any monetary Event of Default and an additional sixty (60) Days beyond Seller's cure period to cure any non-monetary Event of Default; *provided, however*, that if the Facility Financing Party requires possession of the Facility in order to cure the Event of Default, and if the Facility Financing Party diligently seeks possession, the Facility Financing Party's additional thirty (30) Day or sixty (60) Day, as applicable, cure period shall not begin until foreclosure is completed, a receiver is appointed or possession is otherwise obtained by or on behalf of the Facility Financing Party.
4. Neither the Facility Financing Party nor any other participant in the Facility Financing shall be obligated to perform or be liable for any obligation of Seller under the PPA until and unless any of them assumes possession of the Facility through the exercise of the Facility Financing Party's rights and remedies.
5. Any party taking possession of the Facility through the exercise of the Facility Financing Party's rights and remedies shall remain subject to the terms of the PPA and shall assume all of Seller's obligations under the PPA, both prospective and accrued, including the obligation to cure any then-existing defaults capable of cure by performance or the payment of money damages. In the event that the Facility Financing Party or its successor assumes the PPA in accordance with this paragraph 5, Company shall continue the PPA with the Facility Financing Party or its successor, as the case may be, substituted wholly in the place of Seller.
6. Within ninety (90) Days of any termination of the PPA in connection with any bankruptcy or insolvency Event of Default of Seller, the Facility Financing Party (or its successor) and Company shall enter into a new power purchase agreement on the same terms and conditions as the PPA and for the period that would have been remaining under the PPA but for such termination.

EXHIBIT L

METHODOLOGY FOR ADJUSTING THE TWELVE-MONTH COMMITTED SOLAR ENERGY VALUE FOR DIFFERENCES IN ACTUAL SOLAR IRRADIATION AND EXPECTED SOLAR IRRADIATION

The adjustment to the 12-month average calculation of total Committed Solar Energy is appropriate only when actual solar irradiation falls below the total Expected Solar Irradiation for the relevant period as agreed to by the Parties.

As an illustrative example, Table 1 below provides the historical generation and solar irradiation between the months of January and December 2017, the adjustments to the Committed Solar Energy related to this irradiation and the resulting 12-month Committed Solar Energy percentage for a hypothetical solar generating facility. The steps taken in the calculations, and referenced sections in the PPA, are provided below.

Step 1 – Actual Solar Irradiation to Expected Solar Irradiation

The Expected Solar Irradiation is determined on a monthly basis by calculating the mean monthly values of the NREL Solar Prospector TMY data set referenced under the definition of “Expected Solar Irradiation” in the PPA. The Expected Solar Irradiation relevant to Seller is the global horizontal irradiance as finalized and established in the final Project Phase descriptions in Exhibit C, as described in and pursuant to the PPA (PPA, Exhibit A, definition of “Expected Solar Irradiation”; Table 1 - Column B).

The actual monthly solar irradiation is determined by the pyranometer reading at a Project Phase Site for the applicable month. (Table 1 - Column C). By dividing the actual solar irradiation by the Expected Solar Irradiation for such Site, a ratio is calculated for each month (Table 1 - Column D).

Seller shall provide Company with the NREL Solar Prospector TMY data including the pyranometer reading pertaining to the Facility, and all pertinent data regarding the solar irradiation adjusted Committed Solar Energy calculation whenever an adjustment is made by Seller.

Step 2 – Adjustments to Committed Solar Energy

The Committed Solar Energy on a monthly basis is determined by multiplying the expected monthly generation profile (Exhibit K of PPA and column E in Table 1) by the annual Committed Solar Energy (Exhibit J of PPA and Column F in Table 1) for the relevant year of operation. The resulting monthly Committed Solar Energy is adjusted down (pursuant to Section 12(I) of the PPA) by multiplying the Committed Solar Energy by any monthly actual to Expected Solar Irradiation ratio that is below the expected amount (Table 1 - Column G).

The actual generation delivered is equal to the MWh that were produced and delivered per the PPA. (Table 1 - Column H.)

Step 3 – Committed Solar Energy Percentage

In the final step, the summation of the 12 months of actual generation is divided by the summation of the 12 months adjusted Committed Solar Energy to determine the Committed Solar Energy percentage (Table 1 - Column I).

Nov.								
Dec.								

EXHIBIT M
FORM OF PROJECT PHASE COMPLETION DECLARATION

AURORA DISTRIBUTED SOLAR, LLC
PHASE PROJECT COMPLETION DECLARATION

Reference is hereby made to the Solar Energy Purchase Agreement, dated as of August __, 2014 (as amended, restated, supplemented or otherwise modified from time to time, the "PPA"), by and between Aurora Distributed Solar, LLC, a Delaware limited liability company ("Seller"), and Northern States Power Company, a Minnesota corporation ("Company"). This Phase Project Completion Declaration notice (this "Phase Project Completion Declaration") is delivered pursuant to Section 4.3 of the PPA. Capitalized terms not otherwise defined herein shall have the meanings set forth in the PPA.

The undersigned, [____], being the duly elected and acting [____] of Seller, certifies on behalf of Seller that, with respect to the Project Phase described on Annex A hereto:

1. All necessary and material Permits with respect to such Project Phase have been obtained and are in full force and effect;
2. Seller is in compliance with the PPA in all material respects with respect to such Project Phase;
3. Such Project Phase is available to commence normal operations in accordance with Seller's operating agreements, Construction Contract for such Project Phase, and applicable manufacturers' warranties;
4. Such Project Phase is in material compliance with the Distribution Tariff;
5. Seller is in material compliance with its obligations under the Interconnection Agreement for such Project Phase;
6. Such Project Phase is fully interconnected to the Distribution System, has been tested, has achieved initial synchronization, and has been successfully operated at a generation level reasonably acceptable to the Distribution Authority, without experiencing any abnormal or unsafe operating conditions on any interconnected system;
7. Seller has completed any testing of such Project Phase and the corresponding Interconnection Facilities required by the applicable Interconnection Agreement and Distribution Tariff; and
8. Seller has made all other arrangements necessary to deliver the output of such Project Phase to its Point of Delivery.

In addition, the undersigned hereby confirms that, with respect to such Project Phase:

1. An independent registered professional engineer's certification has been obtained by Seller is attached hereto as Annex B, stating that such Project Phase has been completed in all material respects, except for punch list items that do not have a Material

Adverse Effect on the ability of such Project Phase(s) to operate for its or their intended purpose, and, if applicable, incomplete Solar Units allowed pursuant to Section 4.3(D) of the PPA;

2. Seller has demonstrated (a) the reliability of the applicable Project Phase's communications systems and communication interface with Company's EMCC and, to the extent applicable to such Project Phase, is capable of receiving and reacting to signals from Company's SCADA System, and (b) to the extent applicable to such Project Phase, all AGC equipment is installed and operational; and
3. At least ninety percent (90%) of the Solar Units comprising such Project Phase and associated equipment sufficient to allow such Solar Units to generate and deliver Solar Energy to such Project Phase's Point of Delivery have been completed.

Pursuant to Section 3.1(B)(4) of the PPA, the attached description of the Project Phase in Annex A hereto shall be the updated version of the description of such Project Phase for purposes of the PPA, including with respect to the Expected Solar Irradiance of such Project Phase's Site and such Project Phase's portion of the overall Committed Solar Energy.

[Signature page follows]

IN WITNESS WHEREOF, I have executed this certificate as an authorized officer of Seller as of this ____ day of _____, 201__.

By: _____
Name: _____
Title: _____

Annex A

Project Phase Description

[To include: (i) a description of the applicable Project Phase, updated from the description included for such potential Project Phase in Exhibit C to the PPA, (ii) a scaled map that identifies such Project Phase, its corresponding Site and the location of such Project Phase, (iii) a description of such Project Phase's Interconnection Point, and Interconnection Facilities, and (iv) a description of such Project Phase's Point of Delivery and other important facilities. Also include Expected Solar Irradiance of such Project Phase's Site and such Project Phase's portion of the overall Committed Solar Energy.]

Annex B

Copy of Independent Registered Professional Engineer's Certification

EXHIBIT N

**COPY OF THE MISO RESOURCE ADEQUACY REQUIREMENTS FOR
INTERMITTENT GENERATION-NON WIND**

[See attached]



Resource Adequacy Business Practice Manual
BPM-011-r13
Effective Date: JAN-01-2014

4.2.2.1 Wind Capacity Credit Calculation

MISO calculates specific wind capacity credit for each wind farm and applies it to its registered maximum capability in the Commercial Model or its registered Capacity through the LMR or External Resource registration process. The wind capacity credit MW for the MISO system is allocated to each wind farm based on its capacity value at each of MISO's top 8 highest coincident peaks that occurred during the Summer. The Wind Capacity Credit Report includes analysis and results. This calculation is done on a CPNode basis for wind farms that are registered in MISO's Commercial Model, and on a wind farm basis as submitted through the Planning Resource registration process for External Resources and Behind the Meter Generation. A wind farm that does not have any commercial operation history will receive a wind capacity credit equivalent to the system wide wind capacity credit from the ELCC study, for their initial Planning Year, and thereafter metered data will be used in order to calculate its future wind farm specific wind capacity credit. If no metered data is available, then the wind farm will receive a capacity credit of 0%.

Planning Year	Total System Wind Capacity Credit
2012-2013	14.7%
2013-2014	13.3%

4.2.2.4 Intermittent Generation and Dispatchable Intermittent Resources – Non-wind

For Run of River Hydro, the median hourly integrated net output from the most recent three (3) years up to the most recent fifteen (15) years for hours ending 1500-1700 EST for all days of the Summer (June, July, August) shall be used. If 15 years of historic data is not available for this period when the 15 year time period is chosen, or is no longer relevant due to environmental, operational, regulatory or other restrictions, all available relevant data shall be used and accumulated until the 15 year requirement is met.

Once the number of years and methodology is chosen and submitted as GVTC requirements, the same number of years must be submitted in future GVTC data collection.

All other Intermittent Generation and Dispatchable Intermittent Resources will have their annual UCAP value determined based on the 3 year historical average output of the resource for hours 1500-1700 EST for the most recent Summer months (June, July, and August). For non-wind powered Intermittent Generation and Dispatchable Intermittent Resources Market Participants



Resource Adequacy Business Practice Manual
BPM-011-r13

Effective Date: JAN-01-2014

will need to supply this historical data to MISO by October 31 of each year in order to have their UCAP value determined.

Non-wind powered Intermittent Generation and Dispatchable Intermittent Resources that are new, upgraded or returning from extended outages shall submit all operating data for the prior Summer with a minimum of 30 consecutive days, in order to have their capacity registered with MISO. An example of a qualified extended outage is a resource that does not have a transmission path due to a planned or forced transmission outage.

Resources that experience changing characteristics during the historical period due to changing nameplate capability will have the historical data adjusted by a ratio of the current nameplate rating divided by the nameplate rating in effect at the time the data was collected. For resources that experience partial outages not related to the supply of fuel (e.g. water conditions), regular maintenance, or shutdowns due to safety concerns (e.g. high water), the historical data may be prorated upward to reflect the expected value as if all units had been on line. For units that experience reduced output due to reasons outside of management control data from these periods may be excluded from the calculation of UCAP. MISO will consider reasons outside management control based on the DMC codes entered in GADS for resources that report data. The annual UCAP will be the three year average output value after the adjustments as described above have been made.

An increase in unit capability for Intermittent Generation and Dispatchable Intermittent Resources that are solely powered by wind after the annual UCAP values have been established will require written notification from the Market Participant to a member of the Resource Adequacy Team in order to update the values. This notification is due by March 1st prior to the Planning Year.

UCAP options for units with derates prior to the GVTC test date are further explained in Appendix J.4.

Direct Testimony and Schedules
Paul B. Johnson

Before the North Dakota Public Service Commission
State of North Dakota

Application of Northern States Power Company
for an Advance Determination of Prudence for a Power Purchase Agreement with
Aurora Distributed Solar, LLC for Up to 100 MW of Solar Generation

Case No. PU-15-_____
Exhibit____(PBJ-1)

Resource Need and Geronimo Solar PPA Testimony

February 13, 2015

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Schedules

Resume	Schedule 1
--------	------------

1 **I. INTRODUCTION**

2
3 Q. PLEASE STATE YOUR NAME AND TITLE.

4 A. My name is Paul B. Johnson. I am Director of Resource Planning and
5 Bidding for Xcel Energy.

6
7 Q. PLEASE DESCRIBE YOUR QUALIFICATIONS AND EXPERIENCE.

8 A. I have worked for Xcel Energy since July 2014 in the area of resource
9 planning. In my current role, I am responsible for the direction and oversight
10 of electric Resource Planning for the five-state integrated Northern States
11 Power Company system (NSP System), which provides electric service to
12 customers in North Dakota, South Dakota, Minnesota, Wisconsin, and
13 Michigan.

14
15 My responsibilities include directing the development of resource plans,
16 working closely with modeling to complete the analyses required for those
17 plans. I also oversee the development and execution of Request for Proposals
18 (RFP), the modeling for asset acquisition assessments, and provide long-term
19 pricing guidance for purchased power negotiations. In addition, I lead the
20 effort to provide resource analysis and planning guidance for regulatory
21 filings, information requests needed by various departments, and NSP
22 executives. My resume is provided as Exhibit___(PBJ-1), Schedule 1.

23
24 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

25 A. I discuss the capacity resource need that is the basis for the Company's
26 proposal to enter into a 20-year power purchase agreement (PPA) with Aurora
27 Solar, LLC, an affiliate of Geronimo Energy, LLC (Geronimo Solar PPA),

1 including the factors and analysis that went into determining the resource
2 need. I also discuss the terms of the Geronimo Solar PPA, and our analysis of
3 the PPA's costs and benefits for our ratepayers.

4
5 Q. PLEASE SUMMARIZE YOUR TESTIMONY.

6 A. The Company performs a rigorous analysis to estimate its resource needs
7 many years into the future, using econometric and other assumptions and
8 variables a basis for its determinations. I identify in my testimony the
9 challenges and difficulties in accurately assessing future generation capacity
10 requirements, and provide the range of probable need we face based on the
11 best available information we have. Company Witness Mr. Kurtis J. Haeger
12 discusses in his Direct Testimony the variability in our demand forecasts that
13 led to the Company's determination of a capacity need of 150-500 MW by the
14 end of the decade.

15
16 I then discuss the terms of the Geronimo Solar PPA, highlighting known risks
17 and the steps taken to mitigate those risks. I also provide a detailed analysis of
18 the costs and benefits of the PPA for our ratepayers to aid the Commission in
19 its determination of the PPA's prudence.

20
21 **II. RESOURCE NEED**

22
23 Q. HOW IS THE COMPANY'S RESOURCE NEED DETERMINED?

24 A. The Company's assessment of resource need is based on three primary
25 factors: (1) peak demand forecast; (2) required reserve margins; and (3) the
26 maximum generation capability of existing resources. The peak demand
27 forecast is based on an econometric model using a combination of variables,

1 including weather-normalized native energy requirements and peak producing
2 weather by month. The reserve margins are based on the reserve margin
3 calculations used by the Midwest Independent System Operator, Inc.,
4 (MISO), the regional transmission organization to which the Company
5 belongs. Finally, the maximum generation capability of existing resources is
6 based on NSP System operational data.

7
8 In addition to analyzing peak demand, we also forecast our total annual energy
9 requirements based on projected sales and transmission line losses, which
10 includes the impact of Demand-Side Management on our total sales. This not
11 only contributes to our assessment of a capacity need, but also allows us to
12 assess the type of resource that will best meet our energy needs, that is,
13 whether the best option in light of capacity and energy needs is the addition of
14 a baseload, intermediate, or peaking resource to our system or some
15 combination of those types of resources.

16
17 Q. WHAT IS THE COMPANY'S NEED?

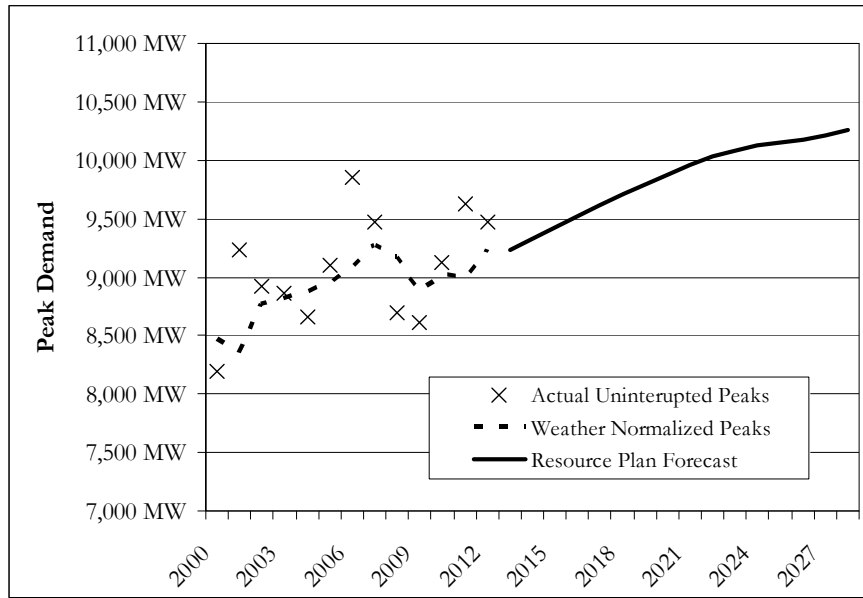
18 A. The Company's need is 150-500 MW by 2019/2020, based on our updated
19 Fall 2011 forecast (Fall 2011 Forecast). This forecast updated the initial
20 forecasting included in our 2010 Resource Plan. Augmented with information
21 from the Company's Spring 2013 forecast, the Fall 2011 Forecast is the
22 forecast that was used in our advance determination of prudence application
23 for Black Dog Unit 6 and Red River Valley Units 1 and 2 (Case No. PU-13-
24 194 (Gas CT's Case)).

25
26 Q. PLEASE DESCRIBE THE COMPONENTS OF THE FALL 2011 FORECAST.

27 A. Figure 1 provides the Fall 2011 Forecast's peak demands. As shown in Figure

1 1, from 2013 through 2020, the average rate of growth in our peak demand
2 forecast is 1.0 percent.

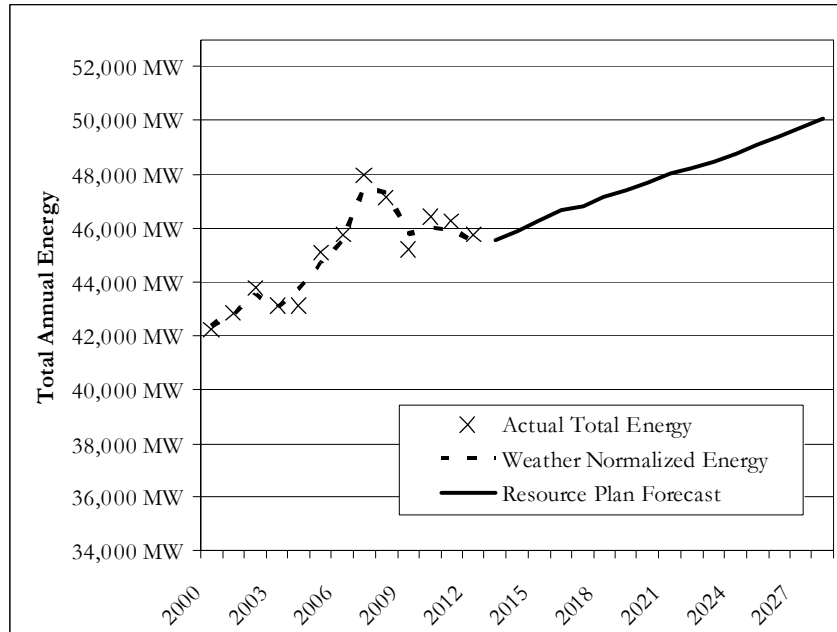
3
4 **Figure 1:**
5 **NSP Historic and Forecasted Peak Demand**



6
7
8 Our total annual energy forecast is shown in Figure 2. The Fall 2011 Forecast
9 assumed an average growth rate from 2013 to 2020 of 0.7 percent.

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**Figure 2:
NSP Historic and Forecasts Total Annual Energy**



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Our Fall 2011 Forecast also took into consideration the reserve margin calculations specified by MISO using the criteria applicable at the time. MISO calculates the reserve margin percentage based on loss of load expectation (LOLE) studies that calculate how high the reserve margin must be to ensure that load will not have to be curtailed any more often than once in every ten years. Comparing the load forecast plus reserve margin to the capacity ratings of Xcel Energy-owned resources plus purchased power, our system's forecasted capacity need is around 500 MW by 2019-2020, as shown in Table 1.

1
2
3

**Table 1:
System Capacity Need
(Fall 2011 Forecast)**

	2015	2016	2017	2018	2019	2020
Peak Forecast	9,428	9,524	9,613	9,708	9,799	9,881
<u>x 1+RM%</u>	<u>3.8%</u>	<u>3.8%</u>	<u>3.8%</u>	<u>3.8%</u>	<u>3.8%</u>	<u>3.8%</u>
= Total Obligation	9,786	9,885	9,977	10,076	10,170	10,255
<u>Resources</u>	2015	2016	2017	2018	2019	2020
Coal	2,331	2,331	2,331	2,331	2,331	2,331
Nuclear	1,610	1,610	1,610	1,610	1,610	1,610
Gas	3,476	3,534	3,437	3,424	3,424	3,424
Renewable	1,288	1,289	1,287	1,238	1,212	1,213
Other	92	-	-	-	-	-
<u>Load Management*</u>	<u>1,145</u>	<u>1,153</u>	<u>1,157</u>	<u>1,153</u>	<u>1,149</u>	<u>1,145</u>
Total	9,943	9,917	9,823	9,757	9,727	9,724
Long (Short)	157	32	(154)	(319)	(443)	(532)

* Includes reserves

4

As shown in Table 1, our Fall 2011 Forecast identified a capacity need of 153 MW in 2017, growing to 532 MW in 2020.

6

7

Q. PLEASE DESCRIBE THE UNCERTAINTY RELATING TO CHANGES IN HOW MISO CALCULATES RESERVE MARGINS.

9

A. The way MISO calculates the generation reserve margins necessary to ensure system reliability has been subject to on-going change. Starting in 2013, MISO's reserve margin calculation for individual utility systems will change to reflect the utility's peak demand *at the time of the region's peak*, rather than the utility's own peak. The Company's demand at the MISO peak has varied

14

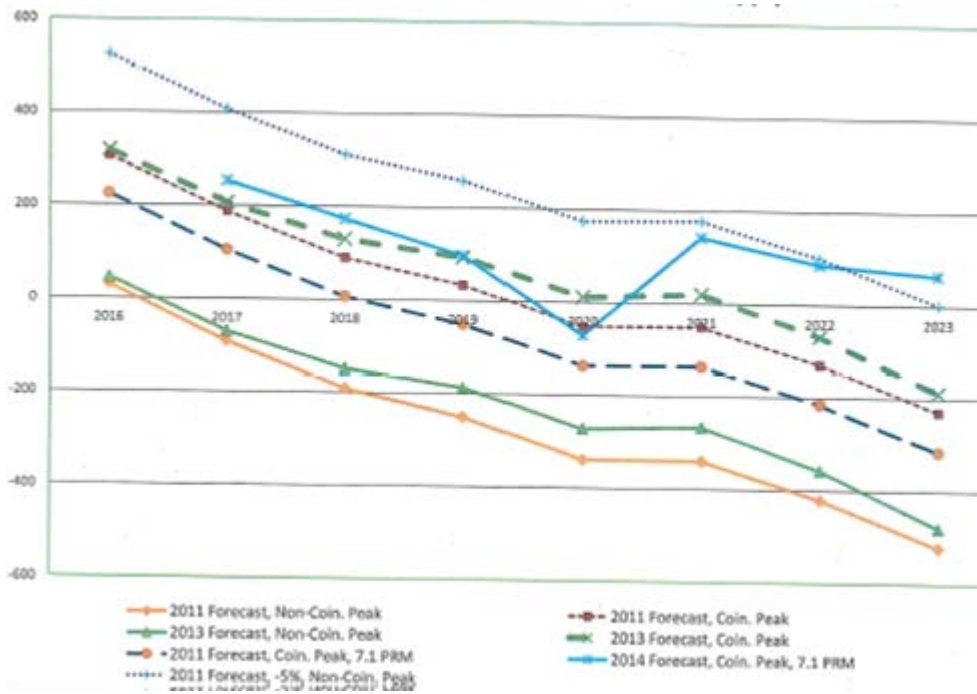
1 substantially, and has not been coincident with MISO's in five of the last eight
2 summer seasons – averaging approximately five percent lower than our own
3 peak.

4
5 Because our peak has not been coincident with MISO's, this methodology
6 change reduces our reserve obligation. For 2013, the Company's reserve
7 margin was approximately 200-300 MW lower than what we used in 2010
8 Resource Plan analysis. Relatively small changes in coincidence factors,
9 combined with adjustments in MISO's UCAP capacity calculations and
10 adjustments in MISO's annual loss of load expectation calculations, can swing
11 reserve requirements on our system measurably. However, it is not clear at
12 this time how reserve calculations might change between now and the 2017-
13 2019 time period for which we currently have identified resource needs.

14
15 Figure 3 below illustrates the impact of this uncertainty by applying the
16 coincident and non-coincident methodologies to various demand forecasts
17 considered during our 2010 Resource Plan proceedings. The figure shows
18 that very small changes can result in material swings in the required amount of
19 capacity.

20

1 **Figure 3:**
 2 **Impact of Coincident and Non-Coincident Peak Methodologies on**
 3 **Resource Plan Need Forecasts**



4 Source: Department of Commerce, Docket No. E002/CN-12-1240 (Dec. 10, 2014)

5
 6
 7 Q. WHAT IS THE MOST RECENT FORECAST OF THE COMPANY'S NEED IN ITS 2015
 8 RESOURCE PLAN?

9 A. The Company's recently filed Resource Plan shows a modest amount of
 10 excess capacity (between 1 and 2.5 percent) from 2015 through 2018 and
 11 virtually no excess capacity on a system-wide basis in 2019 and 2020. In 2021,
 12 the system then regains a small amount of excess capacity by increasing our
 13 current Manitoba Hydro purchase with anticipated new capacity that is under
 14 development. In 2024, however, we again show a system deficit of 234 MW.
 15 This load balance profile suggests that we are at risk of capacity deficits
 16 beginning in 2019 and 2020 if our projected loads change by even a very small
 17 amount. Indeed, even the 0.5 to 2.5 percent excess capacity shown on our

1 assumed supply portfolio is modest given that normal forecast variability can
2 result in demand swings of 200 MW (2 percent) or more.

3
4 Q. WHAT ARE THE COMPANY'S OPTIONS FOR MANAGING THIS RISK OF CHANGES
5 IN CUSTOMER LOAD FROM WHAT IS FORECASTED?

6 A. The normal variability we have experienced between load projections and
7 actual results in recent years indicates it is appropriate to acquire additional
8 generation as a hedge. While we recognize that we could potentially purchase
9 short-term capacity from the MISO voluntary capacity market at then-
10 prevailing rates for any capacity shortfall, we must also consider that existing
11 and proposed retirements of baseload units in the MISO footprint may result
12 in a shortfall of capacity across the footprint leading to higher capacity prices
13 in the MISO voluntary short-term capacity market. Prudent planning includes
14 balancing the risk of exposure to the capacity market in the next five years
15 against the cost of building additional capacity in the 2019/2020 time-frame,
16 which will be necessary by 2024 in any event.

17
18 Our 2015 Resource Plan includes a scenario that reflects all of our currently
19 contemplated resources. This includes: (1) the 98 MW creditable capacity
20 (187 MW nameplate) of the solar portfolio which is the subject of Case No.
21 PU-14-810; (2) the 278 MW creditable capacity (345 MW nameplate) of the
22 Calpine Project PPA; (3) the up-to 71 MW creditable capacity (100 MW
23 nameplate) of the Geronimo Solar PPA; (4) the 207 creditable capacity of
24 the Black Dog 6 combustion turbine unit (215 MW nameplate); (5) a new
25 short-term (four-year) 75 MW capacity exchange with Manitoba Hydro; and
26 (6) additional resources contemplated in our 2015 Resource Plan. If all of this
27 contemplated new generation is deployed, it will result in a system surplus in

1 the 2019-2020 timeframe of about 6 to 7 percent (550 MW in 2019 and 685
 2 MW in 2020) and address our resource need in 2024.

3
 4 Table 2 provides a summary of this analysis on a system-wide basis:

5
 6 **Table 2:**
 7 **System Capacity Forecast (MW)**
 8 **(2014 Forecast)**

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Long/(Short) (existing system)	177	142	242	91	8	0	231	182	163	(234)
Resources Approved by the MPUC	-	-	-	71 ³	278 ⁴ 71 ³	207 ⁵ 278 ⁴ 71 ³	556 ⁶	556 ⁶	556 ⁶	556 ⁶
Proposed Additional Resources	-	73 ¹	73 ¹	98 ² 73 ¹	98 ² 73 ¹	98 ²	98 ²	98 ²	98 ²	98 ²
Resources in the 2016 IRP Preferred Plan	-	-	-	-	-	-	89	89	118	171
Aggregate Additional Resources	-	73	73	243	551	684	773	773	803	855
Long/(Short) Position (assumes all additions)	177	216	315	334	529	685	1,004	956	965	621
Notes	1- Manitoba Hydro 75 MW additional capacity exchange (four years). 2- 187 MW Solar portfolio (98 MW accreditation) 3- Geronimo Solar Project PPA (2016 in-service; 2018 MISO accreditation) 4- Calpine Project PPA 5- Black Dog Unit 6 6- Geronimo PPA + Calpine Project PPA + Black Dog Unit 6									

9
 10 Q. WHAT IS THE IMPACT IN NORTH DAKOTA?

11 A. We prepared a similar analysis showing the same information on a North
 12 Dakota load-allocated basis. The following Table 3 provides the output of
 13 that analysis:

**Table 3:
North Dakota Allocated System Capacity Forecast (MW)
(2014 Forecast)**

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
ND as a Percentage of NSP System	4.94	4.99	5.01	5.05	5.08	5.13	5.19	5.22	5.34	5.38
Long/(Short) (existing system)	9	7	7	5	0	0	12	10	9	(13)
ND Allocation of Additional Resources	-	4	4	12	28	35	40	40	43	46
Long/(Short) (assumes all additions)	9	11	11	17	28	35	52	50	52	33

This shows that on a North Dakota allocated basis, there is no statistical excess capacity in 2019 and 2020. While the number increases again in 2021 due to the addition of new capacity from Manitoba Hydro, it is appropriate to plan the system to include additional capacity that addresses the 2019 and 2020 ‘pinch point’ and remains available in 2024 when we begin to experience forecasted capacity deficits.

III. GERONIMO SOLAR PPA

Q. PLEASE DESCRIBE THE GERONIMO SOLAR PPA?

A. The 20-year Geronimo Solar PPA will provide up to 100 MW of nameplate capacity from distributed solar facilities located at up to 24 sites in Minnesota, and ranging in size from 2 to 10 MW. Each solar facility will interconnect to the Company’s distribution substations, utilizing excess available transfer capability to inject power into the system at distribution voltage.

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The PPA is based upon the Company’s Model Solar PPA, which has been used in several jurisdictions to procure solar energy. This allowed the Company to utilize standardized terms and conditions that it has used with other solar generation, resulting in enhanced certainty and consistency with other Company contracts.

Q. WHAT ARE THE PRINCIPAL TERMS OF THE GERONIMO SOLAR PPA?

A. The Geronimo Solar PPA has a single bundled per MWh capacity/energy price structure. This means that all payments to Geronimo are on a per-MWh basis, with no separate payment for capacity. Geronimo is contractually committed to obtain approximately 71 percent capacity accreditation for the total nameplate capacity it achieves under the PPA. This means that if the nameplate capacity of the project is 100 MW, the Company will obtain about 71 MW of accredited capacity pursuant to the MISO accreditation process. The PPA contains a mechanism to compensate the Company if the capacity level is less than Geronimo has committed to in the PPA.

To accommodate tax equity financing, the parties negotiated a single PPA structure covering all of the solar facility sites (each site referred to as a “phase”), with the possibility of the PPA being split into a maximum of three separate PPAs as needed post-COD for tax equity financing purposes. As a result of this structure, each phase is treated as a separate project pre-COD, and the Company cannot terminate the single PPA because of any action or inaction with respect to a particular phase that occurs prior to COD. The Company retains, however, pre-COD global default and termination rights for bad acts and defaults by Geronimo. This structure also provides Geronimo

1 the flexibility to reduce the aggregate size of the nameplate capacity of the
2 PPA if circumstances warrant. The maximum nameplate capacity that may be
3 delivered under the PPA is capped at 100 MW.

4
5 Geronimo is also entitled to a 30 percent investment tax credit (ITC) for all
6 project phases that achieve commercial operation by the end of 2016. The
7 30 percent ITC will automatically reduce to 10 percent absent Congressional
8 action for projects going into service beginning in 2017. This means that
9 development and construction decisions are time-sensitive for Geronimo to
10 ensure that all the phases covered by the PPA will timely qualify for the
11 available ITC at the end of 2016.

12
13 Q. PLEASE DESCRIBE THE RISKS OF THE PPA.

14 A. The Geronimo Solar PPA had risks with respect to (1) potential delay; (2)
15 transmission interconnection; (3) total capacity and capacity accreditation; (4)
16 curtailment costs; (5) environmental costs; (6) financial security; (7)
17 construction and operational issues; and (8) the phase-in approach to the
18 distributed facility sites.

19
20 Q. PLEASE DESCRIBE HOW THE DELAY RISK HAS BEEN MITIGATED?

21 A. Geronimo's pricing depends in part on its phases qualifying for the ITC.
22 There is no mechanism to increase the price if phases go into service after
23 expiration or reduction of the ITC (currently scheduled to reduce from 30 to
24 10 percent at the end of 2016). However, the PPA allows Geronimo to stop
25 development of phases and effectively reduce the size of the project if they are
26 unable to complete them in time to qualify for the ITC.

27

1 Q. WHAT IS THE RISK WITH RESPECT TO TRANSMISSION INTERCONNECTION COST?

2 A. None of the Project's phases require interconnection to the transmission grid;
3 they are all connected to the Company's system at the distribution level.
4 Geronimo bears all distribution interconnection costs.

5

6 Q. WHAT ARE THE CAPACITY AND CAPACITY ACCREDITATION RISKS AND HOW
7 HAVE THEY BEEN MITIGATED?

8 A. The PPA can deliver up to 100 MW of nameplate capacity. To incentivize
9 Geronimo to deliver the highest possible capacity up to that cap, the PPA
10 includes a scale of damage payments that escalates the further the aggregate
11 MW level of the PPA falls short of the 100 MW cap. In addition, failure to
12 obtain 71 percent accreditation of the actual nameplate capacity delivered
13 under the PPA results in damages for the period of the accredited capacity
14 shortfall.

15

16 Q. PLEASE DESCRIBE THE COMPANY'S MITIGATION OF THE CURTAILMENT RISK.

17 A. The PPA provides a mechanism to determine whether and under what
18 circumstances the facility's output is curtailed. These provisions are similar to
19 those typically included in our wind and other solar PPAs, modified only to
20 account for technical differences related to the PPA's distributed solar facility
21 sites. Curtailments arising out of the operation of the system are generally not
22 compensable, while curtailments arising for economic reasons generally are
23 compensable. This is because economic curtailments will be initiated when it is
24 more economic for the Company to curtail the resource (due to negative
25 LMPs, for example) than to let the resource continue to generate (at negative
26 prices). Economic curtailment limits the total cost paid by customers. Unlike
27 wind, solar is an "on-peak" resource and will likely experience fewer

1 curtailments due to negative LMPs or system balancing issues. This is true for
2 both distribution and transmission interconnected resources.

3
4 Q. HOW DOES THE PPA MITIGATE THE RISK OF ENVIRONMENTAL COSTS?

5 A. Under the PPA, the Company will own the environmental and renewable
6 energy credits.

7
8 Q. WHAT IS THE MITIGATION OF THE FINANCIAL RISK OF THE PPA?

9 A. The Company negotiated pre-COD and post-COD security fund amounts to
10 protect the Company generally from the range of financial risks associated
11 with the Geronimo Solar PPA. In addition, Geronimo takes all ITC
12 qualification risks.

13
14 Q. PLEASE DESCRIBE THE MITIGATION OF THE PPA'S CONSTRUCTION AND
15 OPERATIONAL RISKS.

16 A. The Company accepted Geronimo's proposal that completed phases can be
17 recognized as having achieved COD in a 120-day window that begins
18 September 1, 2016, and ends December 31, 2016. For each phase that fails to
19 achieve COD by December 31, 2016, Geronimo will have the option to
20 complete additional project phases, but will be required to pay liquidated
21 damages until the phase achieves COD. The PPA also includes protective
22 measures such as specific performance, step-in rights, actual damages, and
23 termination.

24
25 Q. HOW HAVE THE RISKS ASSOCIATED WITH THE PHASE-IN APPROACH TO THE
26 DISTRIBUTED SOLAR FACILITY SITES BEEN MITIGATED?

27 A. As I previously explained, the PPA has been negotiated to provide flexibility

1 both as to the timing of completing phases and the aggregate capacity of all
2 completed phases. In order to stage construction and to maximize the
3 potential for project phases to qualify for the ITC, we anticipate that some
4 number of phases may be completed before September 1, 2016, when the PPA
5 authorizes the project to commence commercial operation at the contract price.
6 The PPA provides that the Company will take pre-COD energy produced by a
7 phase before that date. However, the pricing for this pre-COD energy is
8 based on the prevailing market rate. Conversely, as mentioned before, if
9 circumstances warrant, the developer can reduce the aggregate nameplate
10 capacity of the PPA by eliminating phases and making the agreed-upon
11 capacity buy-down payment to the Company.

12
13 Q. WHAT IS THE MITIGATION FOR THE RISKS ASSOCIATED WITH GOVERNMENTAL
14 AND OTHER THIRD PARTY APPROVALS AND AUTHORIZATIONS?

15 A. These risks include obtaining required governmental permits and approvals,
16 obtaining required third-party contracts that are necessary for the project to be
17 completed, and internal approvals of regulatory revisions of the PPA's terms.
18 The PPA's "conditions precedent" provide a mechanism for terminating the
19 PPA if these are not obtained. There are two primary conditions that
20 Geronimo must meet to perform under the PPA: (1) a master site permit for
21 all the facility sites in the aggregate or individual site permits for each phase;
22 and (2) satisfactory arrangements for the interconnection of the project
23 phases.

24
25 The Company has one important condition precedent. Within ten days after
26 receipt of an order of the MPUC approving the PPA, The Company must
27 request approval of the PPA from this Commission. The MPUC Order

1 approving the Geronimo Solar PPA was issued February 5, 2015. The present
2 filing was made on February 13, 2015, within the ten day window.

3
4 The Company's obligation under the PPA is to seek an order from the
5 Commission that affirmatively states the Company's execution of the PPA is
6 reasonable, in the public interest, and that all costs incurred under the PPA are
7 recoverable from our customers subject to ongoing prudency review of
8 Company's performance and administration of the PPA. The Company
9 retains the right to terminate the PPA if the Commission does not approve
10 the PPA, or denies the Company recovery of the costs incurred under the
11 PPA as currently allocated to North Dakota customers by ratemaking
12 mechanisms currently in effect.

13 14 **IV. PRUDENCE OF GERONIMO SOLAR PPA**

15
16 Q. WHAT FACTORS SHOULD BE CONSIDERED IN DETERMINING THE PRUDENCE OF
17 THE GERONIMO SOLAR PPA?

18 A. The two principal factors are (1) whether the Geronimo Solar PPA is
19 appropriate to meet the Company's identified need, and if so, (2) does it
20 effectively meet the need at a reasonable cost. Mr. Haeger addresses how the
21 addition of the up to 71 MW of capacity from the Geronimo Solar PPA meets
22 our need, and I address how the PPA meets that need at a reasonable cost.

23
24 Q. HOW DID THE COMPANY ANALYZE THE WHETHER THE GERONIMO SOLAR
25 PPA MEETS THE COMPANY'S NEED AT A REASONABLE COST?

26 A. The Company used the Strategist resource planning model to evaluate the
27 costs of the up-to-100 MW Geronimo Solar PPA. Strategist simulates the

1 operation of the NSP System and estimates the total cost of energy over the
2 life of the project on a present value basis. We also used the model to test
3 results under a range of input assumptions. To assess the impact on customer
4 costs, we simulated the operation of the NSP System with and without the
5 addition of the Geronimo Solar PPA. For purposes of this analysis we
6 considered the PPA in isolation and not in combination with the other
7 proposed new generators.

8
9 MISO generally dispatches solar production ahead of other generation such as
10 gas and coal-based generation. Consequently, the more solar energy
11 produced, the less fossil generation is operated. And when the energy from
12 solar resources is produced, it displaces a similar amount of energy that would
13 either have been produced by the Company or purchased elsewhere. The
14 Strategist analysis identifies a displacement of approximately 200,000 MWh of
15 fossil generation, which accounts for the differences in the cost of system
16 operation with and without the Geronimo Solar PPA.

17
18 We also conducted various “sensitivity tests” to evaluate how the Geronimo
19 Solar PPA will affect system costs under different circumstances. The
20 sensitivities analyzed include the effect on system costs if one assumes (1) the
21 Fall 2011 Forecast of capacity need of 150-500 MWs in the 2017-2019
22 timeframe), (2) no MISO market purchases available to supplement system
23 resources (Markets Off), and (3) higher and lower gas costs. Table 4 below
24 provides the results of these analyses.

25

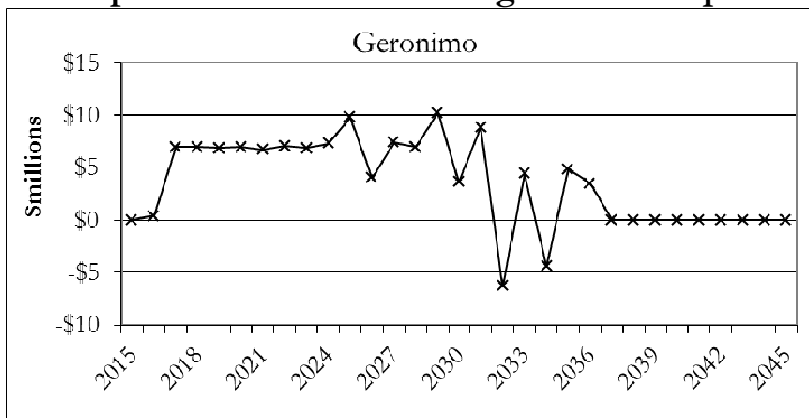
1 **Table 4:**
 2 **Net PVRR Cost/Savings of Geronimo PPA for Key Sensitivities**

<u>Sensitivities</u> =>	Base	2012 Load Forecast	Low Gas	High Gas	Markets Off	MN Assumptions (PVSC)
Geronimo PPA vs Base Case with ND Assumptions	\$62	\$71	\$76	\$44	\$49	\$35

3
 4
 5 Q. HOW ARE THE GERONIMO SOLAR PPA COSTS SPREAD OVER TIME?

6 A. Figure 4 below illustrates annual net costs or savings over the 20-year life of
 7 the PPA for the Geronimo Solar Project that lead to the \$62 million PVRR
 8 impact. As shown over the term, the Geronimo Solar Project moves from net
 9 cost to net savings on an annual basis in the out years due to the displacement
 10 of thermal energy resources.

11
 12 **Figure 4:**
 13 **Annual Net Costs (Savings)**
 14 **Compared to Base Case Using ND Assumptions**

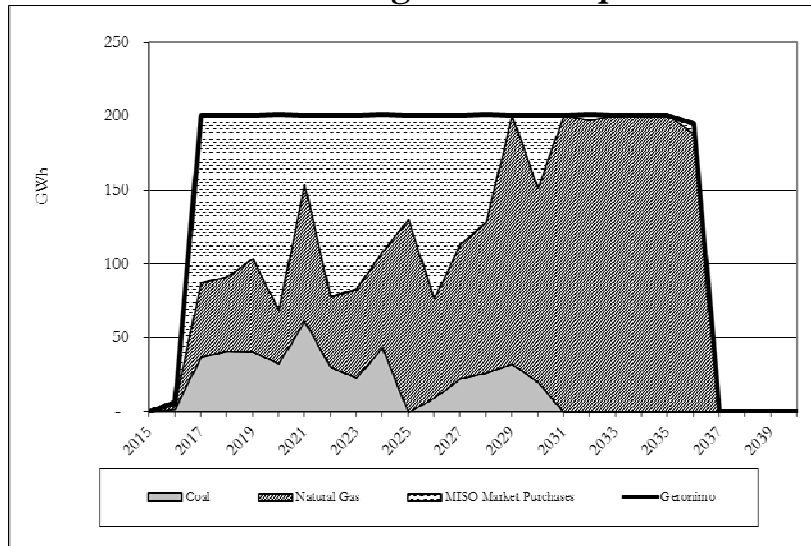


15
 16
 17 Q. WHAT IS THE PROFILE OF THE MORE EXPENSIVE GENERATION THAT THE
 18 CALPINE PROJECT PPA DISPLACES?

19 A. Figure 5 below illustrates the results of the Strategist dispatch simulations
 20 using the Base Case under North Dakota assumptions (i.e., a “Markets On”
 21 scenario with no additional renewable generation and no externalities or

1 carbon cost). In this scenario Strategist may choose to purchase market
2 energy to meet system need. Approximately 60 percent of the solar
3 generation displaces natural gas-based generation, 10 percent displaces coal,
4 and 30 percent displaces market energy.

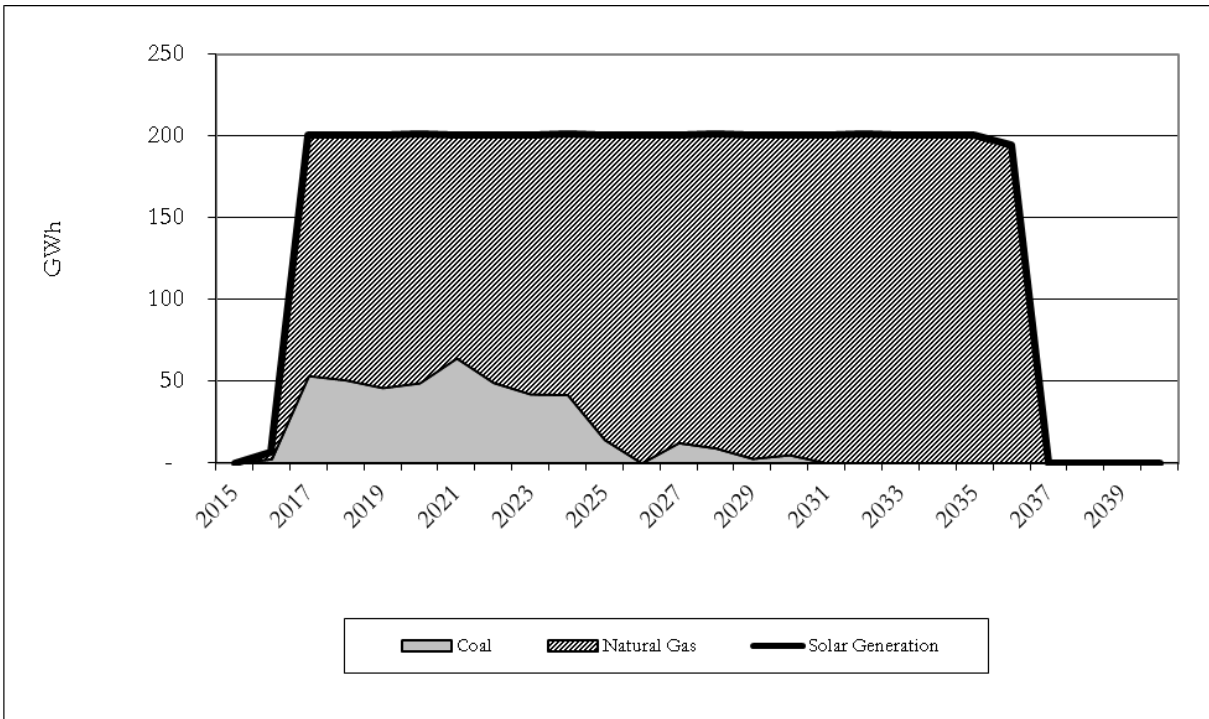
5
6 **Figure 5:**
7 **Strategist Simulations – Displaced Energy**
8 **Base Case Using ND Assumptions**



9
10
11 Figure 6 below illustrates the results of the Strategist dispatch simulations
12 under the Markets Off scenario, when just the NSP System is analyzed and
13 only the Company's native generation is displaced by the Geronimo Solar
14 Project. In this scenario, the majority of the solar generation (approximately
15 89 percent) displaces natural gas-based generation, with the remaining 11
16 percent is expected to displace coal generation.

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**Figure 6:
Strategist Simulations – Displaced Energy
Markets Off**



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To further illustrate the magnitude of the displacement of fossil fuel generation, we analyzed the impact of the Geronimo Solar PPA on our use of natural gas and energy market purchases to meet our customers’ demand. Table 5 below shows the levels of natural gas consumption and market purchases for the Base Case using North Dakota assumptions (i.e. the NSP System without the Geronimo Solar Project), and the reduction that would occur in those levels due to the addition of the Geronimo Solar PPA to the system. As shown in the table, the Geronimo Solar PPA is projected to displace 20 Bcf of natural gas and offset over 1.1 million MWhs of market purchases during its 20-year term. This provides the Company a hedge against increases in the costs of natural gas and market energy.

**Table 5:
Hedge Value**

Total System 2017-2036	Natural Gas <i>bcf</i>	Market Purchases <i>GWh</i>
Base Case Using ND Assumptions	1,466	104,074
Geronimo	(20)	(1,138)

Q. WHAT IMPACTS WILL THE GERONIMO SOLAR PPA HAVE ON CUSTOMER RATES?

A. While the Geronimo Solar Project represents a large utility scale solar energy acquisition, we estimate that the customer rate impacts will be mitigated when spread across the entire system, because the NSP System is so large in comparison. As shown in Table 6 below, our Strategist dispatch simulation forecasts that for most years the rate impact of the Geronimo Solar Project will be nearly offset by decreases in the cost of fossil fuel and other purchased energy.

**Table 6:
Geronimo Solar PPA Impacts
(¢/kWh)**

GERONIMO	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Base Rates	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh
Fuel Clause	0.000¢/kWh	0.001¢/kWh	0.045¢/kWh	-0.045¢/kWh	0.046¢/kWh	0.048¢/kWh	0.049¢/kWh	0.050¢/kWh	0.051¢/kWh	0.052¢/kWh	0.053¢/kWh
Avoided Fuel & Purchased Power	0.000¢/kWh	0.000¢/kWh	-0.028¢/kWh	-0.029¢/kWh	-0.030¢/kWh	-0.031¢/kWh	-0.033¢/kWh	-0.033¢/kWh	-0.035¢/kWh	-0.035¢/kWh	-0.030¢/kWh

Table 7 below estimates how average rates will be affected by the Geronimo Solar PPA. The initial rate impact in 2017 is expected to be approximately 0.016¢ per kWh, or about 12¢ per month for a customer using 750 kWh, and stay relatively flat at that level through 2024. The net rate impact will increase somewhat in 2025 when the benefit of avoided fuel and purchased power decreases due to a shift in our mix of system resources and fixed PPA prices approaching the level of anticipated market energy prices.

**Table 7:
Geronimo Solar Net Rate Impacts (10 Years)**

2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
0.000¢ /kWh	0.001¢ /kWh	0.016¢ /kWh	0.016¢ /kWh	0.016¢ /kWh	0.016¢ /kWh	0.016¢ /kWh	0.016¢ /kWh	0.016¢ /kWh	0.017¢ /kWh	0.023¢ /kWh

Q. DID THE COMPANY IDENTIFY ANY OTHER BENEFITS OF THE GERONIMO SOLAR PPA?

A. Yes. We identified two qualitative benefits of the Geronimo Solar PPA in addition to the quantifiable benefits identified above: (1) an environmental hedge benefit; and (2) the ITC qualification benefit.

Q. PLEASE DESCRIBE THE GERONIMO SOLAR PPA'S ENVIRONMENTAL HEDGE BENEFIT.

A. Solar generation provides an emissions-free energy source that can work well in combination with other capacity resources, such as natural gas facilities. Increasing carbon-free generation will further our goals of early compliance with new and emerging emissions requirements and targets.

As noted in our 2015 Resource Plan, this includes pending environmental regulation such as NOx regulations that may impact the continued use of our Sherco Units 1 and 2, as well as EPA's proposed Clean Power Plan. As part of that plan, the Company is proposing to add approximately 2,400 MW of utility-scale and customer-driven small solar resources over the next 15 years. This additional solar generation along with other resource choices should position us well for long-term compliance with greenhouse gas reductions. While our Resource Plan contemplates additional utility-scale solar being deployed in 2024 and beyond, we believe it is a reasonable policy choice to

1 advance 100 MW of that target and deploy the Geronimo Solar Project at this
2 time.

3
4 Furthermore, the Geronimo Solar PPA positions us to address known long-
5 term changes to the NSP System beyond 2024. These changes will result in
6 the Company needing to replace or extend the operating lives of nearly 75
7 percent of the energy producing resources on the NSP System over the next
8 20 years.

9
10 Q. PLEASE EXPLAIN THE ITC QUALIFICATION BENEFIT OF THE GERONIMO
11 SOLAR PPA.

12 A. The Geronimo Solar Project is dependent upon obtaining the 30 percent ITC
13 to offset a significant proportion of the costs of the project. The 30 percent
14 ITC applies to any project that goes into service by the end of 2016. The ITC
15 automatically reduces to 10 percent for projects that go into service after 2016,
16 and we are not assuming that the higher ITC rate will be renewed to prevent
17 the imminent reduction in this significant generation subsidy.

18
19 Our customers are increasingly interested in new energy choices, and state and
20 federal policies are promoting solar as a way to reduce GHG emissions and
21 support local economic development. Thus, there is a benefit in pursuing
22 additional solar generation at this time to capture the higher ITC generation
23 subsidy and realize the other benefits of solar generation on our integrated
24 system.

25

**V. PRUDENCE OF PROPOSED RESOURCE PORTFOLIO
(BLACK DOG, CALPINE, AND GERONIMO)**

Q. DID THE COMPANY ANALYZE THE COSTS AND BENEFITS OF THE ENTIRE RESOURCE PORTFOLIO IT IS PROPOSING?

A. Yes. To provide context for the Commission’s evaluation of this ADP request, we conducted modeling that identifies the costs of various combinations of the three resources we propose to acquire: Black Dog Unit 6, the Calpine Project PPA, and the Geronimo Solar PPA. Tables 8 and 9 below present the PVRR results of the specified combinations of resources, and the results of the same sensitivity tests that we conducted for the Calpine Project PPA.

**Table 8:
PVRR Results (\$millions)**

Scenarios	Base	2011 Load Forecast	Low Gas	High Gas	Markets Off	MN Assumptions (PVSC)
Base case using ND Assumptions	\$44,949	\$49,279	\$41,260	\$50,050	\$45,957	\$51,971
Add Geronimo Solar PPA	\$45,011	\$49,350	\$41,336	\$50,094	\$46,006	\$52,005
Add Calpine Mankato CC PPA	\$44,937	\$49,257	\$41,271	\$50,010	\$45,883	\$51,944
Add Black Dog 6	\$44,836	\$49,162	\$41,159	\$49,923	\$45,825	\$51,868
Add Geronimo & Calpine	\$45,012	\$49,328	\$41,358	\$50,070	\$45,947	\$51,992
Add Calpine & BD6	\$44,842	\$49,155	\$41,186	\$49,902	\$45,767	\$51,849
Add Geronimo & Calpine & Black Dog 6	\$44,929	\$49,219	\$41,286	\$49,974	\$45,842	\$51,908

**Table 9:
Incremental PVRR from Base Case (\$millions)**

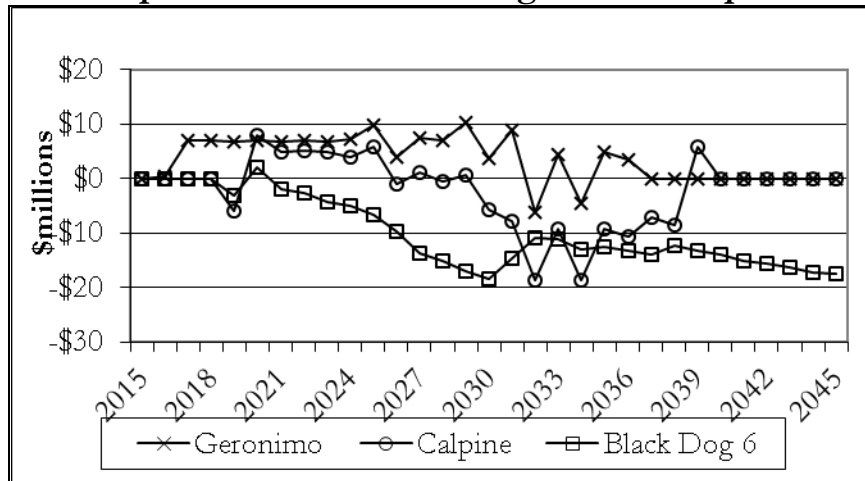
Scenarios	Base	2011 Load Forecast	Low Gas	High Gas	Markets Off	MN Assumptions
Base case using ND Assumptions	\$0	\$0	\$0	\$0	\$0	\$0
Add Geronimo Solar PPA	\$62	\$71	\$76	\$44	\$49	\$35
Add Calpine Mankato CC PPA	(\$11)	(\$22)	\$10	(\$40)	(\$74)	(\$27)
Add Black Dog 6 CT	(\$112)	(\$118)	(\$101)	(\$127)	(\$132)	(\$103)
Add Geronimo & Calpine	\$63	\$48	\$98	\$20	(\$10)	\$21
Add Calpine & Black Dog 6	(\$107)	(\$124)	(\$74)	(\$147)	(\$190)	(\$122)
Add Geronimo & Calpine & Black Dog 6	(\$20)	(\$60)	\$26	(\$76)	(\$115)	(\$63)

1 Notably, the addition of the Calpine Project PPA together with Black Dog
 2 Unit 6 provides the most Present Value of Revenue Requirements (PVRR)
 3 savings of the combinations provided. Further, including the Geronimo Solar
 4 PPA in combination with the Calpine Project PPA and Black Dog Unit 6
 5 provides a net reduction in the PVRR in all scenarios except the low gas case.

6
 7 Q. WHAT IS THE AGGREGATE IMPACT OF ADDING THE THREE RESOURCES OVER
 8 TIME?

9 A. Figure 7 below shows the aggregate impact of the Geronimo Solar PPA, the
 10 Calpine Project PPA, and Black Dog Unit 6.

11
 12 **Figure 7:**
 13 **Annual Net Costs (Savings) (without CO2)**
 14 **Compared to Base Case using ND Assumptions**

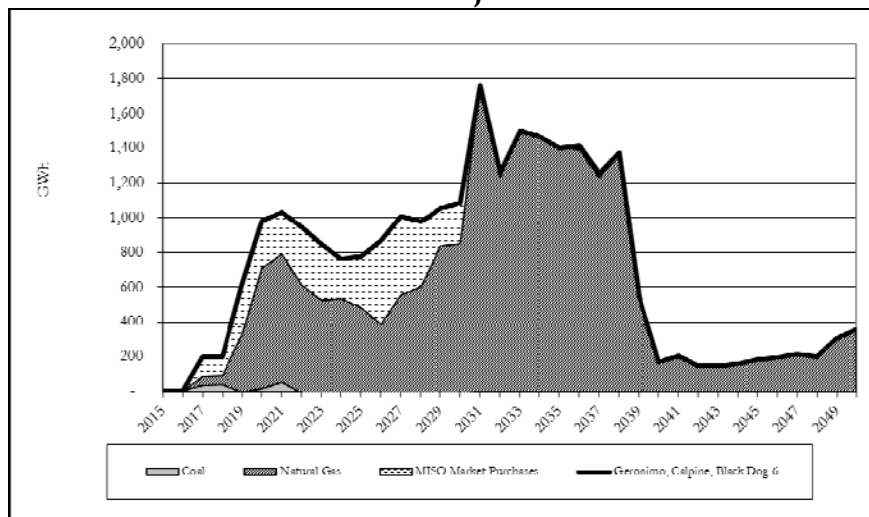


15
 16
 17 Q. WHAT IS THE PROFILE OF THE MORE EXPENSIVE ENERGY DISPLACED BY THE
 18 ADDITION OF BLACK DOG UNIT 6, THE CALPINE PROJECT PPA, AND THE
 19 GERONIMO PPA?

20 A. Figure 8 below illustrates the results of the Strategist dispatch simulations for
 21 the Base Case using North Dakota assumptions (i.e., a “Markets On” scenario

1 with no additional renewable generation). In this scenario Strategist may
 2 choose to purchase market energy to meet system need. Approximately 85
 3 percent of the aggregate generation displaces natural gas-based generation, 16
 4 percent displaces market energy, and coal generation has a net output increase
 5 of 1 percent over the analysis period (2014-2053).

6
 7 **Figure 8:**
 8 **Strategist Simulations - Displaced Energy Base Case Using ND**
 9 **Assumptions for combination of Geronimo, Calpine, and Black Dog 6**
 10 **Projects**



11
 12
 13 As shown, the overall impact of adding all three resources on the operation of
 14 the NSP System is displaced natural gas generation.

15
 16 Q. WHAT IS THE AGGREGATE RATE IMPACT OF ADDING BLACK DOG UNIT 6, THE
 17 CALPINE PROJECT PPA, AND THE GERONIMO PPA TO THE SYSTEM?

18 A. Table 10 below shows the rate impact of the various combinations.

19

1
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**Table 10:
Annual Rate Impact Analysis**

GERONIMO	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Net Rate Impact	0.000¢/kWh	0.001¢/kWh	0.016¢/kWh	0.016¢/kWh	0.016¢/kWh	0.016¢/kWh	0.016¢/kWh	0.016¢/kWh	0.016¢/kWh	0.017¢/kWh	0.023¢/kWh
CALPINE	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Net Rate Impact	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	(0.014¢/kWh)	0.019¢/kWh	0.012¢/kWh	0.012¢/kWh	0.011¢/kWh	0.009¢/kWh	0.014¢/kWh
BLACK DOG 6	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Net Rate Impact	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	(0.007¢/kWh)	0.005¢/kWh	(0.004¢/kWh)	(0.006¢/kWh)	(0.010¢/kWh)	(0.011¢/kWh)	(0.015¢/kWh)
GERONIMO + CALPINE	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Net Rate Impact	0.000¢/kWh	0.001¢/kWh	0.016¢/kWh	0.016¢/kWh	0.003¢/kWh	0.035¢/kWh	0.027¢/kWh	0.028¢/kWh	0.026¢/kWh	0.032¢/kWh	0.023¢/kWh
CALPINE + BLACK DOG 6	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Net Rate Impact	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	(0.021¢/kWh)	0.018¢/kWh	0.029¢/kWh	0.019¢/kWh	0.009¢/kWh	0.006¢/kWh	0.003¢/kWh
GERONIMO + CALPINE + BLACK DOG 6	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Net Rate Impact	0.000¢/kWh	0.001¢/kWh	0.016¢/kWh	0.016¢/kWh	0.006¢/kWh	0.034¢/kWh	0.055¢/kWh	0.046¢/kWh	0.036¢/kWh	0.021¢/kWh	0.016¢/kWh

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5 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

6 A. Yes, it does.

Paul B. Johnson
Director Resource Planning and Bidding
Northern States Power
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Minneapolis, MN 55345
612-330-5656
[*paul.b.johnson@xcelenergy.com*](mailto:paul.b.johnson@xcelenergy.com)

PROFESSIONAL EXPERIENCE

Director Resource Planning and Bidding

July 2014 –Present

Xcel Energy, Minneapolis, MN

- Develop and direct the systems, processes and personnel required to prepare effective and prudent long term system plans for each of the four Xcel Energy operating utilities.
- Develop and direct the systems, processes and personnel required to conduct effective and fair power solicitation processes to procure needed power and energy to meet native load demand and energy requirements and achieve cost reductions in the Xcel supply portfolios.
- Direct acquisition of up to 800 MW per year of additional capacity and for management of the various state resource planning processes in a manner to fulfill requirements and meet company objectives meeting native load requirements and company asset growth goals.

Manager Power Supply Planning

March 2012—June 2014

Old Dominion Electric Cooperative (ODEC), Glen Allen, VA, a large G&T Cooperative serving 11 distribution cooperative members located in VA, MD and DE who serve over 1.3 million customers with a peak load of about 3000 MW.

- Directed long term power supply area of ODEC managing all ongoing power supply analysis, requests for proposals, PPA negotiations for renewable and thermal resources and planning analysis and issue or hot topic updates responsive to ODEC Board requests which meets monthly.
- Directed selection, implementation and ongoing management and updates of all planning models and data sources used for long term planning.
- Worked effectively and collaboratively with all areas of ODEC to successfully fulfill corporate and business unit objectives for current budget year.
- Actively develop staff providing growth opportunities within power supply planning and with other areas of ODEC.
- Kept abreast of developments and trends in PJM and electric industry and evaluate potential impact as a part of long term planning efforts and updates to executive management and Board members.

President, S&P Energy, LLC

October 2011--February 2012

I formed S&P Energy LLC October 2011 in response to interest by others in my network to work with other consulting firms and development companies with all aspects of renewable project development and marketing (permitting, interconnection, off-take prospects and contracting, RFP responses, etc.).

- Worked as contract consultant with Bridge Energy Group as key resource for interconnection report development and filing support for large Californian utility to the California ISO involving over 120 reports (November 2011 through January 2012)
- Pursued consulting contract negotiations for work with a couple renewable project developers and biomass fuel production facility developers.

Sr. Manager, Development North central and Eastern Regions

April 2009—May 2011

RES Americas, Minneapolis, MN, a national wind and solar project development and construction company. I have management responsibility of regional office in Minneapolis under Regional Vice

President Minneapolis Office has active project pipeline of nearly 2000 MW.

- Direct project management responsibility for development and power marketing of 300 MW Wind Project in southeastern, MN Successfully initiated and navigated permitting to advanced stage resulting in MPUC unanimous October 2010 approval of site permit and certificate of need. Led effort to successfully gain unanimous Mower County Commissioner approval of permits for two transmission routes and three substation sites. Provided direction and support for project interconnection options and study evaluation and effective and timely interaction with Midwest Independent System Operator (MISO) staff.
- As member of company-wide management team participated in 2010 effort to evaluate and refine RES Americas business strategy and identify key implementation efforts.
- Established and maintained project marketing relationships and RFP follow-up with electric utilities in MN, WI, IA, OH and TN.
- Actively monitored renewable market project development and sale opportunities which resulted in relationships with new power purchase prospects in upper Midwest and Eastern US.
- Led effort to evaluate potential biomass fuel opportunity and led effort to develop a biomass fuel business plan for generation market in US and Europe. This effort relied on extensive biomass fuel and biomass power market research.
- Identified and completed initial due diligence for potential acquisition of biomass fuel planting, harvesting and combustion technologies for utility-scale greenfield and retrofit biomass power generation projects.
- Completed preliminary work on strategic approach for wind project development in eastern US based on current and projected changes in renewable market and electric utility generation plans.

Several key positions with Minnesota Power, Duluth, MN **June 1999—April 2009**

An 1800 MW investor-owned electric utility serving 140,000 customers.

Renewable Energy Project Development Manager **October 2006—April 2009**

- Developed and led turbine 2008 purchase solicitation, screening and contract negotiation process which resulted in executed contract for 33 turbine project in North Dakota.
- Developed and gained management support for capital budget and project development plan for several 100 MW of wind generation development. Supported executive management's effort to secure budget and initial project approval.
- Initiated and continued to direct multi-year wind prospecting effort which resulted in met tower siting and installation on several project site in northeastern Minnesota. Prospecting effort also identified large area with high average winds within economic distance of grid interconnection. Oversaw successful wind option acquisition effort with sufficient land and wind rights to support substantial wind project development.
- Provided site control and project information necessary to maintain interconnection study process and avoid higher study costs.
- Developed and directed 2004 and 2007 All Source Request for Proposals through bid completeness, evaluation, short-list, contract negotiation and filing with state public utilities commission (all filed contracts approved).
- Successfully led negotiation team for four wind-based power purchase agreements totally 156 MW.
- Developed, maintains and directs implementation of renewable strategy responsive to corporate strategy and direction of key state and federal policies.
- Developed and managed relationships with major wind developers, turbine suppliers and regulators essential for continuing to increase wind portion of Minnesota Power renewable power supply.
- Managed hand-off to project construction team of permitted, sited projects with turbines.
- Provided liaison as needed with MP executive management, outside consultants and key landowners to resolve issues and keep wind generation project progress on schedule.

Strategic Initiatives—Project Leader

September 2002—October 2006

- Directed development and implementation of long term power supply request for proposals for renewable, bridge transactions and long term purchases; evaluation and PPA negotiation completion by mid-2005.
- Led multi-area effort to develop and maintain MP's long term plan and develop and defend MP's biennial 15-year Resource Plan filed in September 2004.
- Developed long term power sales responses to RFPs and manage post-bid submittal follow-up through buyer screening and short-list announcement
- Identified long term power market and generation technology developments, trends, events and provide assessment executive management.
- Led and manage multi-area generation strategy development to support executive management decisions.
- Managed long term generation asset sale process including buyer due diligence and definitive agreement development.
- Tracked and provided assessments of regional generation development and performance of existing regional generation.

Generation Development –Project Leader

June 1999—August 2002

- Managed internal generation development agreement compliance.
- Identified and screened generation development opportunities as key member of generation development team and lead project due diligence under executive management direction.
- Led effort to deploy and integrate price forecasting and generation opportunity evaluation tools into management decision processes.
- Monitored electric industry and key data sources for competitive intelligence and use this information to improve timing and focus of generation development.

ELECTRIC UTILITY INDUSTRY COMMITTEE LEADERSHIP OPPORTUNITIES

- Edison Electric Institute Renewables Committee. Committee developed policy proposals on federal renewable policy initiatives to reflect position of member investor-owned utilities)
- EPRI Storage and Renewables Task Force (Biomass/Waste Fuel Working Group Chair) Efforts resulted in gaining \$85 million DOE funding commitment to complete engineering and build first 100 MW biomass power using “whole tree energy” technology. Also chaired national biomass technology symposium jointly hosted by EPRI and DOE in Washington, DC.

EDUCATION

Bachelor of Science and Master of Arts Environmental Studies

Bemidji State University. Bemidji, MN

Completed extensive graduate studies in organic chemistry, ecology, macro/micro economics, environmental law, politics of pollution and many special topic research papers requiring peer defense. Degree was designed to prepare students to understand industrial environmental issues and regulatory requirements, pollution control and renewable technologies, law and associated environmental impacts. Served as graduate assistant in library and physics lab. Completed graduate internship with regional development commission providing technical support to environmental projects.