

Minnesota Public Utilities Commission

Staff Briefing Papers

Meeting Date: February 12, 2015**Agenda Item #6

Company: **Xcel Energy**

Docket No. **E002/M-14-162**

In the Matter of Petition for Approval of a Solar Portfolio to Meet Initial Solar Energy Standard

Issue(s): Should the Commission approve Xcel Energy's October 24, 2014 Petition for Approval of three solar Purchase Power Agreements?

Should the Commission approve Xcel Energy's Revised Request for approval of two solar Purchase Power Agreements, as described in the Company's reply comments?

What other actions should the Commission take in this proceeding?

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Relevant Documents

Xcel Petition for Approval (Public Version)October 24, 2014
NextEra Energy Resources commentsNovember 25, 2014
Department of Commerce comments December 8, 2014
Clean Energy Organizations comments December 8, 2014
Community Energy Renewables comments December 8, 2014
Minnesota Solar Energy Industry Association comments December 9, 2014
Department of Commerce reply comments December 17, 2014
Xcel Energy reply comments December 18, 2014
Department of Commerce second reply comments December 23, 2014

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I. Introduction

On October 24, 2014, Xcel Energy (Xcel) filed a Petition for Approval of three utility-scale solar projects, which represent the most competitive bids received in response to an all-solar request for proposals (RFP) the Company issued in April 2014. These projects¹ are:

- **Marshall Solar** – a 62.25 MW project located near Marshall, Minnesota to be developed by NextEra;
- **MN Solar I** – a 24.75 MW project located near Tracy, Minnesota to be developed by juwi solar, Inc.; and
- **North Star Solar** – a 100 MW project located near North Branch, Minnesota to be developed by Community Energy Resources.

Specifically, Xcel requests the Commission allow the output of the projects to count toward the Solar Energy Standard (Minn. Stat. § 216B.1691, subd. F) and for costs of the approved PPAs to be recoverable through the Fuel Clause Rider as allowed by Minn. Stat §216B.1645 upon its decision.

The instant docket (the solar RFP docket) materially overlaps with Xcel's recent competitive resource acquisition process (the RA process).² Xcel's October 24th Solar Petition was filed six weeks prior to the Commission's decision in the RA process, and in that Petition, Xcel requested the Commission approve all three solar RFP proposals (Marshall, MN Solar I, and North Star). However, in the RA process, Xcel outlined its intent to pursue one of two solar portfolios, each amounting to 187 MW of solar in total:

- Portfolio #1: Marshall, MN Solar I, and Aurora, or
- Portfolio #2: Marshall, MN Solar I, and North Star Solar.

Xcel had requested in both proceedings that the Commission make a single public interest determination with respect to which portfolio Xcel would procure. However, for several reasons, the Commission did not absorb the bids proposed in the solar RFP docket into the RA process. Ultimately, in its December 15, 2014 decision in the RA process, the Commission selected Geronimo's 100 MW Aurora project and directed Xcel to execute the PPA.

Because a solar proposal, Aurora, was selected in the RA process, Xcel withdrew its request for Commission approval of the 100 MW North Star Solar PPA (so not to exceed Xcel's 187 MW solar target). With the Aurora PPA approved, Xcel now requests approval of only two solar projects, the Marshall and MN Solar I PPAs, which collectively amount to the remaining 87 MW of Xcel's planned utility-scale solar portfolio.

¹ A brief summary of the projects is provided in Appendix A, and detailed project descriptions can be found in Xcel Energy's Petition for Approval at pages 8-12.

² Docket No. 12-1240

No party in the record disputes Xcel's request for the Commission to approve Marshall and MN Solar I. However, aside from Xcel's revised request, no party disputes the approval of the North Star Solar PPA, either.

Xcel's preference for limiting its solar additions to 187 MW (or, rather, excluding the 100 MW North Star Solar PPA) is based on three dominant factors: 1) balancing known, attractively priced bids with the potential for further decreases in the price of solar in the future, 2) balancing solar acquisition in this RFP proceeding with the Company's other solar initiatives, like Community Solar Gardens (CSG), and 3) procuring an amount consistent with Xcel's 2020 Solar Energy Standard (SES) requirements. According to Xcel, there are quantitative and qualitative reasons for this approach:

In the end, we realize that [the decision to exclude the North Star Solar PPA] is a close call. Taking advantage of the known low cost of the North Star Solar PPA now will contribute to the Company's progress in meeting the 10 percent SES goal. However, waiting for the inevitable reduction in capital costs and what we expect to be very robust customer response to our distributed solar programs will also allow us to make progress on the 10 percent SES goal, while also allowing us to learn from the construction and performance of these projects – and verify the capacity and energy values of utility scale solar in Minnesota before making a larger commitment.³

It is important to note that Xcel came to this proceeding with a specific cap on the amount of solar the Company would acquire, rather than allowing the bid prices to dictate the amount selected. With or without Aurora, the Company's plan is (and has been) to acquire an amount that will meet Xcel's 2020 SES compliance obligations by the end of 2016. This approach to SES compliance underlies all of Xcel's stated reasons to withdraw the North Star Solar PPA from consideration.

Naturally, other parties take different approaches and come to different recommendations. The Clean Energy Organizations recommend the Commission view the draft PPAs under a comprehensive statutory framework, which includes Xcel's 2020 SES obligations, but also the 2030 SES goal and the state's greenhouse gas reduction goals, among others. Yet another approach—advocated by the Department, the Minnesota Solar Energy Industry Association, and Community Energy Renewables (North Star)—is for the Commission to determine whether the proposals are cost-effective resources for Xcel's system. In the Department's analysis, the modeling suggests that under different sensitivities, certain solar packages reduce Xcel's system costs, while in others they do not.

The Commission could view this docket several different ways. First, this docket differs from the recent RA process in that this solar RFP docket is a process Xcel initiated of its own volition, whereas the Commission initiated the RA process to meet the resource needs identified in Xcel's 2011 Integrated Resource Plan. In other words, in this case Xcel is asking the Commission to determine that the Company's request to sign two additional solar PPAs is reasonable. From this

³ Xcel reply comments, pp. 3-4.

perspective, the Commission could view this docket strictly in terms of whether or not Xcel has made a reasonable request, not necessarily that this docket requires the Commission to make an open-ended public interest determination.

Alternatively, the Commission could contemplate all proposals individually and on their own merits, similar to the path taken in the RA process. This would allow the Commission to select the solar portfolio most aligned with the public interest, which could include approving zero, one, two, or three solar PPAs.

The Commission could also employ a combination of the two paths, beginning with Xcel's revised request—Marshall and MN Solar I—and then determining whether the North Star Solar PPA is a prudent investment as well. Xcel refers to the North Star Solar PPA as a “known low cost” proposal, and it would certainly be within the Commission's authority to find that this PPA is a cost effective resource and execution of it would be in the public interest.

Xcel expects that the 187 MW portfolio requested in the solar RFP docket will provide 370 gigawatt-hours (GWh) of solar energy, which is 82 percent of Xcel's estimated 2020 SES compliance target of 450 GWh. Because Xcel can bank the solar renewable energy credits (S-RECs) it will receive from the proposals, Xcel's portfolio of the Aurora, Marshall, and MN Solar I PPAs, combined with anticipated residential solar projects, will, according to Xcel, “more than cover the Company's 1.5 percent solar mandate obligations through the next decade.”⁴ The Commission's decision to approve this amount, or direct Xcel to go beyond it, could depend on its view of several interrelated factors, such as total system costs, statutory mandates and goals other than the 2020 SES requirement, and the prospect for even more attractive pricing in future solar RFP or resource planning proceedings.

II. Xcel's Petition

In April 2014, Xcel issued an all-solar RFP seeking utility-scale solar projects ranging from 5 MW to 100 MW in size. Xcel specifically sought projects that could be in-service by end-of-year 2016 (in order to qualify for the 30 percent federal Investment Tax Credit) and in an amount which could meet the remainder of Xcel's 2020 SES compliance obligation. In its Petition, Xcel summarizes the response to the all-solar RFP as follows:

One hundred eleven proposals totaling over 2,100 MW of solar photovoltaic generating capacity were submitted by 36 developers...Submissions included a number of ownership structures from independently owned and operated facilities including C-BED proposals to offers of partnerships with the Company...Initial screening identified 15 projects, in aggregate totaling 630 MW of generation capacity, submitted by eleven companies, each with a levelized energy cost of \$85/MWh or less.⁵

⁴ Xcel reply comments, p. 3

⁵ Xcel Petition, p. 13

After initially screening the proposals by price, Xcel further evaluated the remaining 15 projects on their ability to interconnect with the transmission system. Xcel reviewed the status of each project's MISO interconnection request and potential transmission requirements, and based on this analysis, a number of projects were eliminated from consideration.

According to Xcel, "further due diligence supported the selection of three bidders," NextEra's Marshall proposal, juwi's MN Solar I proposal, and Community Energy Resources' North Star Solar proposal.⁶ These three bids proceeded to PPA negotiations, which were completed in September 2014. The three PPAs are fully negotiated, but unsigned PPAs. The projects are described briefly in Appendix A below and in more detail on pages 8-12 of Xcel's Petition for Approval.

A. *PPA Terms*

All three PPAs have 25-year terms, and the price for each PPA is designed on a pay for production basis. Also, under all three PPAs, Xcel would own all S-RECs generated by the facilities, which it could then use to meet its SES obligations under Minn. Stat. § 216B.1691. And, as is discussed in Appendix B, the SES encourages early adoption by allowing S-RECs generated before 2020 to be "banked" to be counted toward SES compliance later. Because these projects would come online in late 2016, Xcel would be able to bank the S-RECs from a full four years of production before it would be required to begin retiring them in 2021. According to Xcel, this "will result in a significant bank of RECs that can be used to maintain compliance throughout the 2020s."⁷

Xcel believes it will be advantageous to take a measured approach to solar acquisition. While the federal Investment Tax Credit (ITC) is set to decline from 30 percent to 10 percent in 2017, Xcel notes "one industry source predicts technology improvements over the next 5- 8 years will more than compensate for the reduction in federal incentives," which, if true, would allow it to "provide even greater value to our customers by delaying some portion of our solar resource acquisitions."⁸ Thus, Xcel believes that approving only the Marshall and MN Solar I projects would balance the benefits of current tax incentives and future solar production cost declines.

B. *Economic Analysis*

It is important to note that there is no economic analysis in Xcel's Petition that evaluates the solar RFP proposals in combination with Geronimo's Aurora project. Staff requested in discovery that Xcel run scenarios considering each solar RFP proposal alongside Aurora, but, as Xcel classified its response as "Highly Sensitive Trade Secret Information," it is not included here.

⁶ *Ibid*, p. 14

⁷ Xcel Energy Petition, October 24, 2014, at page 18.

⁸ *Ibid*.

Moreover, the economic analysis in Xcel's October 24th Petition uses the Strategist model to simulate "the operation of the NSP System **with and without the addition of the 187 MW of solar generation proposed in this Petition,**" which means with and without Marshall, MN Solar I, and North Star as one package, not a mix-and-match (and not including Aurora).⁹ Consequently, all of the tables and figures in Xcel's Petition reflect the value of all three solar RFP proposals, which includes North Star Solar, even though Xcel's revised request is for Commission approval of Marshall and MN Solar I only. (Tables 1 and 2 on pages 20 and 23 of Xcel's Petition include footnotes which mention the 87 MW package, but these footnotes do not lead to different economic conclusions.)

Table 1 below presents the differences in total system cost with and without Marshall, MN Solar I, and North Star Solar under a base case (or Reference Case) and five other scenarios. (Numbers in parentheses represent reductions in total system costs by adding all three PPAs.)

Table 1: Differences in Total System Cost with and without 187 MW Solar Addition

PVRR Cost (\$ millions)	Reference Case	Low Gas (1.4% growth rate)	Zero CO2 Externalities	Markets Off	+5% capacity Factor	-5% capacity factor
RFP Portfolio compared to displaced energy (net benefit)/ net cost	(\$47)	(\$16)	\$14	(\$56)	(\$44)	(\$49)

Note: For comparison with RFP Portfolio, the 87 MW portfolio comprised of the *Marshall Solar* and *MN Solar I* projects results in a total cost reduction of \$26 million for the Reference Case and a total cost increase of \$2 million for the \$0/ton CO2 case.

The scenario analysis shows that the solar RFP portfolio reduces system costs under a broad range of possible futures. In the Reference Case, the solar RFP portfolio results in a total cost reduction of \$47 million. As footnoted, the 87 MW portfolio comprised of Marshall and MN Solar I results in a total cost reduction of \$26 million.

With regard to rate impacts, Xcel states, "we estimate that the customer rate impacts will be very small... In fact, we expect that soon after initial operation, customers' overall bills will go from being slightly higher to gradually reducing to a net increase by 2025 of about \$.007/kWh."¹⁰ Table 4 below shows the annualized rate impacts from the three proposals.

⁹ Xcel Petition, p. 19.

¹⁰ Xcel Petition, p. 23.

Table 4: Annual Rate Impact Analysis – NSP System

	2015	2016	2017	2018	2019	2020
Base Rates	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh
Fuel Clause	0.000¢/kWh	0.008¢/kWh	0.054¢/kWh	0.055¢/kWh	0.055¢/kWh	0.056¢/kWh
Avoided Fuel & Purchased Power	0.000¢/kWh	-0.004¢/kWh	-0.034¢/kWh	-0.035¢/kWh	-0.042¢/kWh	-0.044¢/kWh
Net Rate Impact	0.000¢/kWh	0.003¢/kWh	0.020¢/kWh	0.020¢/kWh	0.013¢/kWh	0.012¢/kWh

	2021	2022	2023	2024	2025
Base Rates	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh	0.000¢/kWh
Fuel Clause	0.057¢/kWh	0.057¢/kWh	0.058¢/kWh	0.059¢/kWh	0.060¢/kWh
Avoided Fuel & Purchased Power	-0.044¢/kWh	-0.046¢/kWh	-0.048¢/kWh	-0.051¢/kWh	-0.052¢/kWh
Net Rate Impact	0.013¢/kWh	0.011¢/kWh	0.010¢/kWh	0.008¢/kWh	0.007¢/kWh

The primary benefit of the RFP Portfolio is displaced generation from fossil fuel resources. As shown in the rate impact analysis in Table 4 above, the annualized impact of costs to be recovered through the Fuel Clause Rider is largely offset by reductions to Avoided Fuel and Purchased Power. However, the Strategist model also tracks benefits from avoided CO₂ emissions and creditable capacity value. Table 2 below illustrates how the levelized costs of the PPAs are offset by the value of avoided fossil fuel generation, capacity credit, and avoided CO₂. The result is a net levelized savings of \$9.97 for every megawatt-hour generated by the RFP Portfolio over the 25-year term.

Table 2: Levelized Cost Analysis - \$/MWh – Excluding CO₂ and Externalities

	Solar RFP Portfolio
PPA Price	\$73.20
Avoided Fossil Fuel	(\$59.39)
Capacity Credit	(\$14.86)
Avoided CO ₂	(\$8.92)
Net Cost (Benefit)	(\$9.97)

The levelized cost of all three PPAs is \$73.20/MWh, as shown in Table 2 above. The avoided fossil fuel benefit and the capacity credit value of the RFP portfolio amounts to \$74.25/MWh. In other words, there is a net benefit to the three-PPA portfolio of \$1.05/MWh, even when only considering the avoided fuel and capacity credit values. When avoided CO₂ emissions are included, there is a net savings of \$9.97/MWh over the 25-year terms of the three PPAs.

Another potential benefit of the solar proposals is what Xcel refers to as a “hedge value.” In the “Markets On” scenario—where Strategist can purchase market energy to meet system needs—approximately 45 percent of the solar energy generation displaces market energy otherwise selected by the model. While managing energy market volatility is a benefit difficult to estimate

with perfect precision, the qualitative benefit of the solar proposals is that they can generate inexpensive electricity during extreme weather events or severe grid congestion conditions.

Staff Comment

Since there was a total cost increase under one of the six sensitivities evaluated—the “No CO₂ and No Externalities” sensitivity—an argument could be made that the three-PPA package may not be cost-effective, if not for environmental reasons. However, Staff notes that, first, Minn. Stat. § 216H.06 requires that the CO₂ values set by the Commission “must be used in all electricity generation resource acquisition proceedings.”¹¹ Applying this requirement clearly tips the scale in favor of selecting the three-PPA portfolio. Second, under the levelized cost analysis (instead of the Strategist modeling), even without considering any value for avoided CO₂, the levelized benefit of avoided fuel and the capacity credit value together outweigh the levelized costs of the three solar PPAs. So it may depend on which type of analysis is preferable, or which Strategist scenario is preferable, but the modeling as a whole certainly suggests the three-PPA portfolio is economic. This conclusion is magnified considerably when the Commission’s CO₂ values, developed pursuant to Minn. Stat. § 216H.06, are applied to the analysis.

C. Certificate of Need Exemption

Xcel stated in its filing that the Commission previously determined in Docket No. E002/RP-04-1752 that if it approves a PPA under the Commission-approved Track 1 competitive bidding process, a certificate of need would not be required as provided under Minn. Stat. § 216B.2422, subd. 5.¹²

Therefore, Xcel concluded that since the PPAs were part of a Track 1 bidding process, a certificate of need would not be required. Parties agree that a certificate of need should not be required, but disagree on which exemption should be utilized (discussed further below).

D. Additional Provisions

Facility Sale or Transfer

In its initial comments, the Department voiced concerns about the PPA’s Right of First Offer (ROFO) provisions, which provide the Company the opportunity to negotiate to purchase the facility if the developer seeks to sell the facility to an unaffiliated third party.¹³ Specifically, the Department sought an explanation of how the costs would be recovered if Xcel exercised its ROFO option for any of the PPAs.

In response, the Company explained that the purchase of any of the PPAs would require Commission review and approval in advance, pursuant to Minn. Stat. § 216B.50, subd. 1, which states: “No public utility shall sell, acquire, lease, or rent any plant as an operating unit or system

¹¹ Minn. Stat. 216H.06

¹² Certificate of Need is not required for facility less than 50 MW - Minn. Stat. 216B.2421, Subd. 2.

¹³ The Department’s full discussion of ROFO provisions in the three PPAs can be found on pages 10-12 of its December 8, 2014 comments.

in this state for a total consideration in excess of \$100,000 . . . without first being authorized so to do by the commission.” Once the purchase was completed, the facility would be subject to Commission regulation as part of the Company’s owned generation fleet. The Department found this approach reasonable, and recommended that the Commission condition that the purchase of any of the three facilities first be approved by the Commission.¹⁴ The Department also recommended the Commission condition that transfer of the PPAs to a third party must also receive Commission approval in advance. The Department noted this was in order to protect Xcel’s ratepayers from possible changes to the PPA if transferred. These conditions are reflected in the decision alternatives below.

Staff Comment

Staff agrees that potential Xcel ownership of any of the facilities would require prior approval by the Commission pursuant to Minn. Stat. § 216B.50. Therefore it is up to the Commission whether it is necessary make an explicit requirement for Xcel to obtain approval from the Commission as it is reflected in statute and acknowledged by Xcel.

However, notification to the Commission of a PPA transfer to a third party is not a statutory requirement. The Commission has in previous instances required through its approval orders that it be *notified* of a transfer.¹⁵ Staff believes the Department recommendation to require Commission approval in advance of such a transfer is appropriate.

Condition Precedent Modification

Xcel offered in its reply comments that specific PPA language recently approved by the Commission in Docket No. E002/CN-12-1240 regarding a condition precedent could also be applied to the solar RFP PPAs if the Commission deemed the language appropriate.¹⁶ The language was modified on the Aurora PPA to more clearly define from which state regulatory agencies Xcel would seek preapproval.¹⁷

III. Parties’ Comments

In addition to Xcel, the parties to this proceeding are: the Department of Commerce, the Clean Energy Organizations (CEO), Community Energy Renewables (CER), the Minnesota Solar Energy Industry Association (MnSEIA), and NextEra Energy Resources (NextEra).

¹⁴ Department of Commerce, reply comments, at page 2.

¹⁵ Staff notes that those provisions appeared to have been ordered due to issues specific to those dockets, see – e.g. Commission Docket No. E002/M-11-801 and E002/M-04-1426.

¹⁶ Staff has included the replacement language in Appendix D.

¹⁷ The Solar RFP PPAs in this instant docket were submitted in October 2014, prior to the Commission’s modification of the Aurora Solar PPA in December 2014 in Docket No. E002/CN-12-1240.

Department of Commerce

The Department recommends the Commission **approve all three solar RFP projects**. Furthermore, the Commission should require that a transfer of any of the PPAs to a third party, or purchase of any of the three facilities by Xcel, must first be approved by the Commission.

Procedurally, the Department recommends the Commission:

- Allow Xcel to count the solar energy from the PPAs toward its SES compliance,
- Allow Xcel to recover from its Minnesota ratepayers **only its Minnesota jurisdictional costs** of each PPA via the Fuel Clause Rider;
- Require Xcel to file with the Commission the Company's plan for cost recovery if Xcel exercises its Right of First Offer (ROFO) option with any of the PPAs.

The Department's recommendation that the Commission approve all three solar PPAs is, of course, different than Xcel's request for approval of Marshall and MN Solar I only. The Department recommends the North Star Solar PPA should also be approved for two main reasons: 1) cost, and 2) the possibility Aurora does not move forward.

Regarding the cost of the portfolios of solar projects, the Department's modeling suggests that adding North Star, in addition to Marshall and MN Solar I, reduces Xcel's total system costs (in Present Value Societal Costs, or PVSC, terms).

The Department's model tested the costs of the following solar portfolios:

- Portfolio 1: Marshall Solar, MN Solar I, and Aurora (*Xcel's Revised Request*)
- Portfolio 2: Marshall Solar, MN Solar I, and North Star Solar (*No Aurora PPA*)
- Portfolio 3: Marshall Solar, MN Solar I, North Star Solar, and Aurora (*All Four*)

Table 2 below compares the difference between Xcel's revised request, Portfolio 1 (without North Star Solar), to the solar portfolios which include North Star Solar (Portfolios 2 and 3). The numbers in parentheses indicate reductions in system costs relative to Xcel's revised request.

Table 2: Comparison of Portfolios 2 and 3 with Portfolio 1

	PVSC (\$,000)		
	All Variables at High	All Variables at Mid	All Variables at Low
Portfolio 1	\$0	\$0	\$0
Portfolio 2	(\$54,556)	(\$63,600)	(\$62,976)
Portfolio 3	(\$59,452)	(\$18,420)	\$5,444

As shown in the table, the three portfolios were stressed under ranges of several "Variables," including high/medium/low gas prices, wind prices, coal prices, CO₂ costs, and capital costs.

Under all conditions in Portfolio 2, and under mid- and high-cost conditions in Portfolio 3, adding North Star Solar reduces system costs relative to not adding it. Therefore, the

Department recommends approval of all three solar PPAs, since doing so would minimize Xcel's total system costs.¹⁸ As shown by Portfolio 2, which does not include Aurora, the value of North Star Solar is magnified considerably without the Aurora PPA.

This finding from Portfolio 2 connects to the Department's second major concern, which is the risk that Aurora may not ultimately move forward. A final execution of the PPA between Aurora and Xcel is pending upon its approval by the North Dakota Public Service Commission (NDPSC). If the NDPSC does not approve Aurora, Xcel may, under the terms of the contract, terminate its PPA with Geronimo. The Department notes in its responsive comments that "the very attractive North Star Solar Project may not be viable anymore" in the event Xcel terminates the Aurora PPA, and Xcel would not meet 1.5 percent generation from solar energy in 2020 by adding Marshall Solar and MN Solar I alone.¹⁹

Cost Recovery

The Department concluded that based on its review of the PPAs and Minn. Stat. 216B.1691 and based on the Department's conclusion that Solar Portfolio 2 represents the least-cost resources to meet Minn. Stat. 216B.1691, subd. 2f, the Department recommends that the Commission allow the Company to apply the solar energy produced by the three RFP PPAs toward its Solar Energy Standard.

In its supplemental reply comments, the Department further clarified one of its recommendations by adding: "[the Commission] allow Xcel to recover from its Minnesota ratepayers only its Minnesota jurisdictional costs of each of the PPA via the Fuel Clause Rider."²⁰ The Department's clarification refers to PPA language stipulating that if Xcel is unable to obtain approval to recover the Minnesota and North Dakota jurisdictionally allocated costs of the projects from Minnesota and/or North Dakota ratepayers, it may terminate the agreements.^{21,22} Staff believes the Department's modification is clarifying that the Department does not recommend recovery of North Dakota jurisdictional costs through the Fuel Clause Rider.

Clean Energy Organizations

CEO recommends the Commission **approve all three solar RFP projects.**

Whereas the Department bases its recommendations largely on its own modeling findings, CEO's comments are more qualitative. CEO emphasizes that the modeling in the record clearly shows that all three projects are cost-effective and to the ratepayers' benefit, but CEO also discusses the broader statutory framework under which the modeling should be considered.

¹⁸ Department of Commerce, second reply comments. p. 5

¹⁹ Department of Commerce, second reply comments, p. 3

²⁰ Page 3.

²¹ The ramifications of the newer PPA condition precedent used by Xcel (and highlighted here by the Department in its explicit language to only allow recovery from MN ratepayers the MN jurisdictional costs) was discussed in staff briefing papers on the Geronimo-Aurora PPA. Document ID: [201412-105038-01](#), at page 21, Section VIII.

²² This provision is similar to the language the Commission approved in the Aurora PPA in Docket No. E002/CN-12-1240.

According to CEO, “The question before the Commission requires it to exercise its legislative function consistent with the policies expressed in state law.”²³ In this proceeding, the 2020 SES compliance milestone is quite naturally in focus, but CEO’s overall position is to consider cost-effective renewable energy projects through a wider lens. For example, Minnesota’s greenhouse gas reduction goals require emissions reductions of 30 percent by 2025 and 80 percent by 2050. The Energy Planning statute (Minn. Stat. §216C.05, subd. 1) declares that “the state has a vital interest in providing for...the development and use of renewable energy resources wherever possible.” At the federal level, the U.S. Environmental Protection Agency has proposed rules to limit CO₂ emissions from existing power plants, and the proposals solicited through this proceeding will enable Xcel to lower its cost of compliance.

Even if the conversation is restricted to the SES, CEO notes that, while the SES has a floor of 1.5 percent, the Statute states it is “the energy goal of the state of Minnesota that, by 2030, ten percent of the retail electric sales in Minnesota be generated by solar energy.”²⁴ Thus, exceeding the SES floor is not only in ratepayers’ interests, but it is in line with state energy policy.

Finally, CEO addresses Xcel’s position to risk some loss in available tax benefits today in order to create value from lower solar prices at some point in the future, as solar technology improves. In short, CEO contends that given what is known today, waiting for technological improvements is an unnecessary risk to take when it is known that cost-effective renewable energy is currently available to Xcel’s ratepayers.

Community Energy Renewables, NextEra, and MnSEIA

Community Energy Renewables (CER) and NextEra filed comments in support of their respective North Star Solar and Marshall solar proposals. CER and NextEra discuss the projects themselves and include a discussion of the socioeconomic benefits they will provide.

CER’s North Star Solar project is a 100 MW solar facility located on approximately 800 acres of active farmland roughly 40 miles northeast of Minneapolis. The site is immediately adjacent to the Chisago 500-345-115 kV substation, and a preliminary MISO feasibility study found there were “essentially no adverse network contingencies associated with the project and the proposed interconnection.”²⁵ Also, this point of interconnection “is at a very liquid and robust point on the system,” and CER believes its project is uniquely and advantageously sited such that it will enable Xcel’s natural gas facilities to affordably offer load following and other ancillary services.

NextEra’s 62.25 MW Marshall project would also be located at an existing substation, the recently upgraded Lyon County substation. As a part of the CapX2020 expansion, the upgraded Lyon County substation now has connections to the new Brookings County to Twin Cities 345 kV transmission line. Like North Star Solar, Marshall is also currently in the MISO

²³ Clean Energy Organizations comments, p. 8

²⁴ Minn. Stat. § 216B.1691, subd. 2f(c).

²⁵ Community Energy Renewables comments, p. 8.

interconnection queue, and the completion of MISO's system planning analysis will ensure its project is reliably interconnected.

Both CER and NextEra discuss the economic contributions of their solar projects. According to CER, the North Star Solar project is expected to make more than \$300,000 in annual property tax payments, or \$7-8 million over the project life. In addition, the project will create 250-300 construction jobs and up to a dozen permanent jobs during operations.²⁶ According to NextEra, Marshall Solar expects to employ approximately 140-160 workers during the construction phase and will contribute approximately \$140,000 annually in state production taxes over the operational life of the project.

The Minnesota Solar Energy Industry Association (MnSEIA) and CER disagree with Xcel's decision to withdraw the North Star Solar PPA from the Commission's consideration for approval, and both parties specifically disagree with Xcel's reasoning that future solar price declines will outweigh the tax credits benefits presently available. MnSEIA agrees with Xcel that the solar industry will continue to reduce costs for solar, but these reductions will follow "a less than predictable timeline."²⁷ It is unclear if these cost reductions would come soon enough to offset the declining ITC. CER calculates that "[i]f technology improvements lead to average cost declines of two to four percent annually over the coming years, then it will take five to ten years to offset the reduction in the federal ITC."²⁸

CER also notes that the cost of solar energy projects "are driven in significant part by capital costs, particularly long-term interest rates, which are generally at historic lows."²⁹ Over the long-term, interest rates could reasonably be expected to rise, possibly *increasing* the cost of solar projects compared to today's pricing. CER does not make this claim with certainty, of course, and raises the point only to emphasize that several factors, not just the ITC, affect future cost curves for solar energy projects. In this proceeding, though, the combination of all financial variables considered demonstrates that the North Star Solar project is a prudent investment.

IV. Staff Discussion

Xcel's Petition for Approval of Marshall and MN Solar I (amounting to a combined 87 MW) will, with the Aurora PPA, produce enough S-RECs to satisfy the Company's 2020 SES requirements through at least 2025.³⁰ Therefore, acquiring all three solar RFP proposals could be viewed either as exceeding the Company's 2020 SES compliance obligation or as making progress toward the 2030 solar energy goal of the state of Minnesota, both of which would be accurate.

²⁶ *Ibid.* p. 9.

²⁷ MnSEIA comments, p. 2.

²⁸ Community Energy Renewables comments, p. 11.

²⁹ *Ibid.* p. 12.

³⁰ The Company would still need to satisfy its SES requirement to procure 0.15 percent of its sales from generation by solar PV devices with a nameplate capacity of 20 kW or less. An extended discussion of S-REC banking can be found in Appendix B.

However, debating the differences in interpretation of the SES and the relative magnitude of a requirement versus a goal may be unnecessary in this case, for at least two reasons. First, according to Xcel's analysis, even when CO₂ and externalities are excluded from the model, the levelized cost of the solar projects is offset by the avoided generation and capacity credit values.³¹ In other words, according to the modeling, the projects are cost-effective resources, on a levelized basis, to meet Xcel's overall system needs, not just its SES requirements.

Second, while it could appear that an amount of solar above the 2020 SES requirement is excessive, these proposals constitute only a small fraction of Xcel's long-term solar procurement plan. According to Xcel's recently filed 2015 resource plan,³² Xcel's Preferred Plan includes adding approximately 2,400 MW of utility-scale and small-scale solar resources, almost all of which is added in 2024-2030. From a resource planning perspective, then, the 2020 *requirement* and the 2030 *goal* are treated on equivalent terms, since Xcel plans to add solar resources in an amount which complies with both. This is not to suggest the 2020 requirement is unimportant, but rather to observe the amount of solar disputed in this proceeding (100 MW) is minimal relative to the amount included in Xcel's long-term solar action plan (2,400 MW). As such, it may be more instructive to discuss the solar proposals on the basis of cost rather than on the basis of aligning with a minimum obligation in 2020.

In a similar vein, as discussed previously, Xcel and the parties discuss the merits of securing presently available tax credit benefits versus limiting the amount of solar acquisition because of future advancements to solar technology. While the ITC certainly matters in the context of evaluating the economics of these proposals, staff believes the broader ITC versus technology improvement discussion may be somewhat overstated and out of place here, given where the parties are at in this stage of the proceeding and the Company's long-term solar plan. In this proceeding, the only separation between Xcel and the parties is, essentially, whether the Commission should approve the 100 MW North Star Solar PPA. An additional 100 MW by 2016 will not materially interfere with Xcel's long-term strategy to invest in possibly more advanced, potentially less expensive solar technology in the future, especially considering Xcel's plan to add 2.4 gigawatts (GW) of solar in the next fifteen years. The ITC versus technological improvement question could carry a different weight, in staff's view, if the Company's plan was to add only minimal amounts of solar in 2020-2030, but this is not the case. Thus, any possible ratepayer benefit to defer, as Xcel puts it, "a known low cost" project would be very small when considering the ultimate makeup of Xcel's entire SES compliance portfolio.

Furthermore, focusing predominantly on the trade-off between the ITC and future technological improvements seems to imply that all else would be held constant, or at least is far less important. But as Community Energy Renewables points out, supply and demand dynamics, interest rates, MISO interconnection, and several other factors are all part of a project's costs. In the evaluation phase, proposals are considered on whether there is a *net* benefit, by comparing total project costs to the value of several variables, such as displacing existing generation, hedging against market volatility, avoiding future capacity, and reducing CO₂ emissions, all of which are dynamic and subject to change. While it may be instructive to discuss how various

³¹ Xcel Petition, p. 22.

³² Docket No. 15-21.

factors could change or stay the same in the very near-term—for example, whether a tax credit could expire or whether the wholesale market is momentarily risky—speculating several years into the future contains enormous uncertainty with respect to both solar prices and tax policy to be able to conclude with much confidence one way or another that there is a benefit to delay.

Staff does not mean to suggest that the tax credit benefit versus technological improvement debate is unimportant. If the Commission is inclined, it can direct Xcel to discuss the issue more thoroughly in the Company's Annual SES Reports, or the assumptions could be included and vetted in the modeling in a resource plan or future solar acquisition proceeding, and thus be more informative to the Commission's decision. For this proceeding, though, rather than trying to answer with confidence whether the end-of-year 2016 ITC benefit will be outweighed by technological advancements in 2024 and beyond, a more practical approach may be to review the PPAs based on whether the proposals are in the ratepayers' interests and whether they advance state energy goals.

Furthermore, staff does not suggest that the difference between a 187 MW solar portfolio and a 287 MW solar portfolio (including Aurora and North Star) is an insignificant amount. After all, Xcel began this all-solar RFP process with a portfolio of only 4 MW of solar in total, so in comparison to the amount of solar Xcel presently has on its system, it should be noted that even the Company's revised request introduces a major change with regard to the Company's system operations.³³ However, the legitimacy of the argument to delay 100 MW of solar *on the basis of future technological improvements* is not supported quantitatively in this proceeding and on some level appears inflated in comparison to the 2.4 GW of solar Xcel plans to procure to meet the 2030 SES goal. Still, the Commission could arrive at a reasonable conclusion that two PPAs is preferable to three by taking a systems perspective, noting that doing so could enable Xcel to establish a "learning curve" with utility-scale solar and its role in grid management.

Overall, staff makes no recommendations to the decision options regarding the approval of two versus three solar proposals, because staff's view is that the selection of two versus three PPAs (or none) will rest largely on the Commission's view of this docket. As outlined in the Introduction of this briefing paper, the Commission could view this proceeding strictly in terms of whether Xcel's request to add 87 MW via two PPAs is a reasonable one. Alternatively, the Commission could decide whether the PPA in dispute, North Star Solar, is a cost-effective addition as well. While making no recommendation regarding its approval, staff's position is consistent with the parties in that this record supports the reasonableness of the North Star Solar PPA for a variety of reasons, including cost and state energy policy.

Cost Recovery

Staff believes the record demonstrates that, depending on the weight given to different factors and arguments, either Portfolio could be justified as a cost effective method for meeting the RES. Therefore, staff recommends that the Commission allow the Company to recover costs via its Fuel Clause Rider and to apply the solar energy produced by any approved PPA to count toward its RES requirements.

³³ Docket No. 12-1240, Xcel responses to PUC Information Request #5.

Certificate of Need Exemption and the Track 1 Process

Xcel's Petition indicates that the three PPAs before the Commission were part of a Commission-approved Track 1 Bidding Process approved for use by the Commission in Docket No. E002/RP-04-1752. Pursuant to Minn. Stat. 216B.2422, subd. 5 (Bidding Process CN Exemption), PPAs approved via this process are exempt from obtaining a certificate of need. Therefore, Xcel concluded that these projects are exempt from Certificate of Need requirements.

The Department in its comments noted that the SES was passed after the Commission decided the issues in Xcel's last IRP, and, as a result, the Commission did not require Xcel to pursue the addition of solar in its last IRP [the first step of the Track 1 process].^{34,35}

Track 1 – Step 1: The Commission issues its Resource Plan Order, which identifies the size, type and timing of the resources Xcel needs, requires Xcel to send RFPs to potential bidders by certain dates specified in the Order, and sets dates for Xcel to file a contingency plan and to file signed contracts with the Commission.

The Department concluded that the projects would not be exempt under the bidding exemption statute cited by Xcel; instead, the Department referred to the CN exemption afforded by Minn. Stat. 216B.243, Subd. 9 (RES PPA CN Exemption). The Department concluded that if the Commission finds the contracts are a reasonable and prudent approach to meeting Xcel's renewable energy obligations under Minn. Stat. 216B.1691—including consideration of each of the factors provided in the RES PPA CN Exemption statute (outlined below)—then the facility would be exempt from the certificate of need requirements under the RES PPA CN Exemption.³⁶

Staff agrees with the Department's assessment and has additional concerns regarding the use of the Track 1 Bidding Process CN Exemption in this instance. Staff does not believe Xcel followed the Commission-approved Track 1 Process and, therefore, staff concludes a Bidding Process CN Exemption is not appropriate. As the Department notes, the Solar RFP did not stem from an IRP Order. If it had, the Commission would have been able to set parameters for Xcel's need and set the timing for Xcel to submit proposals—both of which are contemplated in the Track 1 Process. Therefore, staff believes granting the RES PPA CN Exemption is more appropriate. To be clear, staff does not believe that the bidding process Xcel initiated was compromised; rather, staff is only suggesting the Bidding Process CN Exemption is not the appropriate exemption. The same issue arose in a recent Xcel-initiated bidding process/Wind RFP, and in that docket the Commission elected to use the RES PPA CN Exemption.³⁷

³⁴ May 31, 2006 *Order Establishing Resource Acquisition Process, Establishing Bidding Process Under Minn. Stat. 216B.2422, Subd. 5 and Requiring Compliance Filing* in Docket RP-04-1752.

³⁵ A full summary of the Track 1 Process, as outlined in a compliance filing from Xcel Energy on August 28, 2006 is attached as Appendix E.

³⁶ The Department qualifies that their conclusion does not mean that 187 MW of solar in 2016 is not needed; only that it was not identified in Xcel's Resource Plan.

³⁷ See Docket No. E003/M-13-603 and 13-716 *Order[s] Approving Acquisitions with Conditions*, December 13, 2013.

Thus far, Xcel has only used the (Track 1-like) self-initiated bidding processes for RES-related facilities, so the Commission has not needed to directly address whether Xcel followed the Commission-approved Track 1 process and whether to authorize the Bidding Process CN Exemption. However, staff wishes to alert Xcel that if it attempts to use a self-initiated process for a non-RES-related facility, the Company (or the project developer) may not succeed in obtaining a certificate of need exemption from the Commission. Staff believes there is a value in the Track 1 process, which was developed collaboratively by the Commission, DOC and Xcel following many years of experience with Xcel's competitive bidding process. The process establishes a clear and transparent procedure, beginning with the IRP process and providing the Commission several opportunities to provide oversight throughout the RFP process. Under the process followed by Xcel, the Commission had no role in setting parameters or in the oversight of the process. Staff believes these steps (or Commission approved variations) are important to ensure a fair and transparent process and to determine the prudence of granting a certificate of need exemption.

Staff agrees with the DOC and the Parties that the projects subject to CN requirements (Marshall and North Star Solar), if approved, fulfill the criteria listed in Minn. Stat. 216B.243, Subd. 9.³⁸

Renewable Energy Standard Exemption – Minn. Stat. § 216B.243 Subd. 9

Subd. 9. Renewable energy standard facilities. This section does not apply to a wind energy conversion system or a solar electric generation facility that is intended to be used to meet the obligations of section 216B.1691; provided that, after notice and comment, the commission determines that the facility is a reasonable and prudent approach to meeting a utility's obligations under that section. When making this determination, the commission must consider:

- (1) the size of the facility relative to a utility's total need for renewable resources;
- (2) alternative approaches for supplying the renewable energy to be supplied by the proposed facility;
- (3) the facility's ability to promote economic development, as required under section 216B.1691, subdivision 9;
- (4) the facility's ability to maintain electric system reliability;
- (5) impacts on ratepayers; and
- (6) other criteria as the commission may determine are relevant.

³⁸ The MN Solar I project is not by definition a Large Energy Facility as it is less than 50 MW, therefore does not require a CN pursuant to Minn. Stat. § 216B.243.

V. Commission Options

Approval [Minn. Stat. § 216B.1645, Subd. 1]

1. Approve the **Marshall Solar** proposal as a cost-effective, reasonable and prudent approach for Xcel to meet its eligible energy technology obligations under the Renewable Energy Standards, Minn. Stat. § 216B.1691. Require Xcel to file the executed contract within 10 days of the written order in this docket.
2. Approve the **MN Solar 1** proposal as a cost-effective, reasonable and prudent approach for Xcel to meet its eligible energy technology obligations under the Renewable Energy Standards, Minn. Stat. § 216B.1691. Require Xcel to file the executed contract within 10 days of the written order in this docket.
3. Approve the **North Star Solar** proposal as a cost-effective, reasonable and prudent approach for Xcel to meet its eligible energy technology obligations under the Renewable Energy Standards, Minn. Stat. § 216B.1691. Require Xcel to file the executed contract within 10 days of the written order in this docket.
4. Approve the **North Star Solar** proposal as a cost-effective, reasonable and prudent approach for Xcel to meet its eligible energy technology obligations under the Renewable Energy Standards, Minn. Stat. § 216B.1691. Require Xcel to file the executed contract within 10 days of execution, if pursued.

Select
Option 3
OR 4 (or
neither)

PPA Terms

5. Condition that a transfer of any of the PPAs to a third party or purchase of any of the three facilities by Xcel must first be approved by the Commission. [DOC]
6. Find that, upon exercising its Right of First Offer option with any of the three PPAs, Xcel must file with the Commission its plan for recovery of the costs of purchasing the facility. [DOC]
7. Modify the PPAs as outlined in Appendix D to clarify that the Condition Precedent regarding State Regulatory Agency Cost Recovery did not intend to apply to costs allocated to South Dakota, Wisconsin, and Michigan. [Xcel]

Cost Recovery / SES Compliance

8. Allow the solar energy produced by the approved PPAs to be counted toward Xcel's Solar Energy Standard requirements. [DOC]
9. Allow Xcel to recover from its Minnesota ratepayers the costs of the approved PPAs via the Fuel Clause Rider.
10. Allow Xcel to recover from its Minnesota ratepayers only its *Minnesota jurisdictional* costs of each of the approved PPAs via the Fuel Clause Rider. [DOC]

Select
Option 9
OR 10 (or
neither)

CN Exemption

11. Exempt approved projects subject to CN requirements under Minn. Stat. 216B.243, Subd. 9 (RES PPA CN Exemption). [DOC]
12. Exempt approved projects subject to CN requirements under Minn. Stat. 216B.2422, Subd. 5 (Bidding Process CN Exemption). [Xcel]
13. Take some other action.

Staff Recommendations:

Options 1-4

Staff provides no recommendation on options 1-4 other than to note that options 3 and 4 are *either/or* (or take no action).

Options 5 and 6

Staff believes that the DOC recommendations regarding Commission approval of Xcel *ownership* and cost recovery of any of the owned facilities is required by statute, but a PPA *transfer* to a third party is not required by statute. Therefore staff recommends Option 5, and believes selection of Option 6 is discretionary.

Option 7

It may be beneficial to have the approval orders use the same terminology as Xcel's other Solar PPAs (Aurora), as the language provides clarification, but the modification does not make a material change to the PPA.

Option 8

Staff believes the DOC's intention in recommendation 8 is reflected in options 1-4 and further, it may not be necessary since the Commission has already outlined in other orders³⁹ the process for energy produced in renewable PPAs to be counted toward the RES or SES.

Options 9-10

Staff takes no recommendation on option 9 and 10, but notes the options are *either/or*.

Options 11-13

Staff recommends option 11 for reasons outlined in the briefing papers.

³⁹ See, e.g., Order issued June 1, 2004, Docket E999/CI-03-869, establishing which utilities are subject to the REO/RES and standards for demonstrating compliance; Order issued October 19, 2004 (same docket), implementing Minn. Stat. sec. 216B.1691, Order Issued December 18, 2007 (same docket), establishing a shelf life for RECs, requiring generation units to register in MRETS; Order issued December 4, 2008 (same docket), establishing that only RECs registered in MRETS may be used to measure RES compliance; Order issued April 25, 2014, Docket E999/CI-13-542, establishing shelf life for solar RECs used to meet the SES and requiring solar facilities to be registered in MRETS for demonstrating compliance with the SES.

Appendix A

Project Summaries

On pages 6 and 7 of its Petition for Approval, Xcel Energy provided the following brief project descriptions:

Marshall Solar is a 62.25 MW solar energy project near Marshall, Minnesota that will consist of 30° fixed tilt configuration, photovoltaic modules. It will be developed, owned and operated by NextEra Energy Resources up through commercial operation. The PPA is for 25 years, and similar to wind-related PPAs, the pricing is designed on a pay for production basis. We expect the project to begin operating in late 2016.

MN Solar I is a 25 MW solar energy project near Tracy, Minnesota that will be developed, owned and operated by juwi solar, Inc. up through commercial operation. It will consist of a ground-mounted single-axis tracking system of multi-crystalline solar cells, and will interconnect at a new substation on the Tracy to Walnut Grove 69 kV line. The PPA is for 25 years, and similar to wind-related PPAs, the pricing is designed on a pay for production basis. We expect the project to begin operating in late 2016.

North Star Solar is a 100 MW solar energy project located near North Branch, Minnesota that will be developed, owned and operated by Community Energy Renewables, LLC up through commercial operation. It will consist of single axis tracking panels, and will interconnect at the existing Chisago County Substation. The PPA is for 25 years, and similar to wind-related PPAs, the pricing is designed on a pay for production basis. We expect the project to begin operating in late 2016.

In addition to these summaries and the table below, more information on the projects can be found in Xcel's Petition for Approval in the following locations: Marshall Solar (pages 8-10); MN Solar I (pages 10-11); and North Star Solar (pages 11-12).

Project	Size (MW)	Site Description	Point of Interconnection
<i>Marshall</i> (NextEra)	62.5	464 acres in an agricultural area east of Marshall, MN	At the existing NSP Lyon County substation, at 69 kV
<i>MN Solar I</i> (juwi)	24.75	166 acres in an agricultural area north of Tracy, MN	At a new substation on the Tracy to Walnut Grove 69 kV line
<i>North Star Solar</i> (CER)	100	800 acres in an agricultural area southeast of North Branch, MN	At the existing NSP Chisago County Substation, at 115kV

Appendix B

S-REC Banking

In 2007, the Commission established a four-year expiration period, or “shelf life,” for renewable energy credits, meaning the RECs generated in a given year are able to be retired for RES compliance in that year or any of the four following years.⁴⁰ The SES addressed the shelf life of SRECs as follows:

Minn. Stat. 216B.1691, Subd 2f (f) Notwithstanding any law to the contrary, a solar renewable energy credit associated with a solar photovoltaic device installed and generating electricity in Minnesota after August 1, 2013, but before 2020 may be used to meet the solar energy standard established under this subdivision.

In Docket 13-532, the Commission interpreted this provision to be an incentive for early adoption of solar energy, and it determined that the four-year shelf life for SRECs would not commence until January 2020.⁴¹ This means an SREC that is generated between August 2013 and December 2019 would be eligible for retirement any time before 2024. And because each of the proposed projects would come online by 2016, the facilities would be generating SRECs for four full years before Xcel will be required to make its first SREC retirements in 2021.

In addition to the potential generation from the PPAs in this docket, Xcel will likely have significant solar PV generation from its Solar*Rewards and Community Solar Garden (CSG) programs, as well as the recently approved 100 MW Aurora solar facility. According to Staff’s calculations, with the Aurora facility and even a conservative estimate⁴² of generation from CSG, Xcel would generate over 1.5% of its retail electric sales from solar PV in 2020 by adding only Marshall Solar and MN Solar I. In this case, Xcel’s ability to “bank” SRECs from 2017 through 2020 would be moot, as it would be generating enough SRECs in 2020 to meet its SES obligations in 2021.

However, as the Department notes in its Second Reply Comments, final execution of the Aurora and PPA is pending upon its approval by the North Dakota Public Service Commission (NDPSC). If the NDPSC does not approve Aurora, Xcel has the option to terminate its PPA with Geronimo. If Xcel terminated this PPA, it would no longer generate 1.5% of its retail electric sales from solar PV in 2020 by adding Marshall Solar and MN Solar 1 alone. According to Staff’s calculations, however, the Company could still meet its initial SES obligations by adding Marshall Solar, MN Solar 1, and 50 MW of CSG. Even though the Company would only be generating less than 1% of its retail electric sales from solar PV in 2020, it would have “banked” enough SRECs to meet its SES obligations through at least 2024.

⁴⁰ *In the Matter of a Commission Investigation into a Multi-State Tracking and Trading System for Renewable Energy Credits*, Order Establishing Initial Protocols for Trading Renewable Energy Credits, Docket No. E-999/CI-04-1616, December 18, 2007.

⁴¹ *In the Matter of the Implementation of Solar Energy Standards Pursuant to 2013 Amendments to Minnesota Statutes, Section 216B.1691*, Order Clarifying Solar Energy Standard Requirements and Setting Annual Reporting Requirements, Docket No. E-999/CI-13-542, April 25, 2014.

⁴² In its calculation, Staff assumed 50 MW of CSG generation would be added in 2017, with no additions thereafter. In its first round of applications, Xcel has received applications for 420 MW of CSG.

Appendix C

Power Purchase Agreement Language Regarding State Regulatory Approval

Article 6 - Conditions Precedent

6.1 Company CPs.

(A) No later than 45 Days after the Effective Date of this PPA, the Company shall file this PPA with the State Regulatory Agencies, pursuant to relevant regulatory requirements, seeking State Regulatory Approval. 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 a written order from either or both State Regulatory Agency/ies that singly or in the aggregate do not constitute State Regulatory Approval, or imposing conditions on State Regulatory Approval unsatisfactory to Company, or (ii) six (6) months following the filing hereof with the State Regulatory Agencies without receipt of State Regulatory Approval.

(C) Notwithstanding the foregoing, in the event that any State Regulatory Agency finds that 100% of the costs incurred by Company under this PPA is recoverable from ratepayers within that State (without application of jurisdictional allocators or other reductions to reflect multi-state operations), then the inability or failure to obtain approval from the other State Regulatory Agency shall not give rise to Company's right to terminate this PPA under this Section 6.1 and Company shall waive any rights it may otherwise have to terminate the PPA for failure to obtain State Regulatory Approval

(D) If either Party fails to terminate this PPA in the time allowed by this Section 6.1, each 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.

Appendix D

Proposed Revised - Power Purchase Agreement Language Regarding State Regulatory Approval

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.*

Exhibit A -- DEFINITIONS

“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 prudence review of Company's performance and administration of this PPA.

Appendix E

Track 1 Process Description from Xcel's August 2006 Compliance Filing in Docket No. E002/RP-04-1752

This track will provide an independent auditor's report, use of a standard contract as the starting point in every bidding process and a contingency plan in the event of an unsuccessful bidding process. The main steps of the RFP process are:

1. The Commission issues Resource Plan Order
 - Indicating the size, type and timing of the resources Xcel Energy needs;
 - Approving a standard contract to be used by independent power producers for the intermediate, peaking, and wind resources;
 - Requiring Requests for Proposals ("RFP") for the intermediate, peaking, and wind needs identified in the Order,
 - Requiring Xcel Energy to use an independent auditor to certify our process for obtaining and evaluating responses to the RFP is unbiased;
 - Setting the timing for Xcel Energy to file its proposal for each separate resource; and
 - Potentially setting the timing for completion of the resource acquisition process.
2. A targeted RFP for peaking, intermediate or renewable resources is issued (consistent with any timing specified in the Commission Order). The RFP will include the standard contract.
3. Bidders file their proposals with Xcel Energy pursuant to the RFP.
4. Xcel Energy files the contingency plan on the same date bids are due.
5. Xcel Energy makes selections and begins negotiations with the selected vendor.
6. Xcel Energy files the Independent Auditor certification, within 20 days of the selections. (Xcel Energy would not file a "selection report" or similar filing but would proceed directly to negotiations.)
7. Xcel Energy files for approval of a proposed power purchase agreement with the selected vendor within one year of the RFP issuance or other date specified by the Commission. The power purchase agreement petition must demonstrate that the proposed contract and its cost recovery would be reasonable. Alternatively, the Company files a statement of reasons why the negotiations have not been successfully completed. Under the alternative, the Commission could decide whether to have negotiations continue, to have the contingency plan pursued or consider some other option.
8. If the Commission approves the power purchase agreement the project would proceed to obtain any remaining permits, but a certificate of need would not be required per Minn. Stat. §216B.2422, subd. 5.
9. Upon receipt of all needed permits, the project proceeds with construction.

Other Details

Consistent with the desire to keep the process moving rapidly, the above process would eliminate pre-filing of the RFP with the Commission and interim selection reports that would require comments or otherwise delay the start of negotiation of the PPA This would not prevent the Department of Commerce review of the selections.

A timeline is provided in Appendix A. If the process does not produce a petition for approval of a PPA following the one-year period, the Commission can determine whether to allow more time, or direct the Company to move forward with the contingency plan or seek additional information.