STATE OF MINNESOTA
PUBLIC UTILITIES COMMISSION

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March 2, 2015

In the Matter of the Petition of Northern States Power Company, dba Xcel Energy, for Approval of Its Proposed Community Solar Garden Program

Docket No. E002/M-13-867

REPLY COMMENTS BY SUNSHARE, LLC

SunShare, LLC respectfully submits these Reply Comments in response to the Commission's October 9, 2014 and January 28, 2015 notices in in this docket. As a courtesy to staff, we organize these comments according to the issue categories used in said notices.

SUMMARY

In summary, we request that the Commission move quickly to provide the requested market and interconnection certainty necessary to allow for a successful 2015 CSG construction and residential-marketing season.

Also, while SunShare appreciates this opportunity to comment on CSG VOS rate-design issues, we believe that the current CSG rate structure is working well, and that the Commission should retain this default rate structure for at least the first two years of Xcel's new Solar*Rewards Community program.

I. REPLY COMMENTS REGARDING OCTOBER 9, 2014 NOTICE

Topic 1: CSG VOS subscriber rate needed to reasonably allow for the creation, financing, and accessibility of solar gardens.

Creation and Financing

We believe that the current CSG bill-credit rate (as structured over a 25-year term) is sufficient to allow for the "creation" and "financing" of solar gardens in general, so long as the S*RC rate structure and the federal Investment Tax Credit remain stable and predictable for current and new CSG projects. In addition to allowing us to create and finance CSG projects, this stability and predictability allows us to support long-term hiring and employment in the state.

Under the current S*RC rate, SunShare is working to develop a significant number of ground-mounted distributed solar projects across a range of Minnesota counties. *See* Exhibit A (filed under trade secret). This portfolio of Community Solar Gardens will be able to serve and accommodate a

broad range of subscribers, including rural, suburban, and urban subscribers, regardless of their customer class.

At the same time, we are seeing a healthy level of subscriber interest, including RFPs (request for proposals) from local-government customers asking for customized project-development arrangements, driving custom contracts and project-related customer benefits not available through traditional utility-scale solar projects.

SunShare is not developing rooftop CSG sites at this time, in part because the current ARR (applicable retail rate) bill-credit rate is too low to support the additional project cost and complexity associated with the individuality of each rooftop. In addition, rooftop systems may typically produce less energy than ground-mounted arrays, due to shading and a lower angle to the sun.

Subscriber Accessibility

SunShare's subscriber-sales efforts are currently focused on school districts, universities, non-profit organizations, faith congregations, local governments, small commercial, and large commercial subscribers, among other categories of non-residential customers.

In addition, SunShare is very excited about serving the residential subscriber market. In Colorado, we already serve hundreds of residential customers, including over 350 kilowatts of low-income subscriptions spread across nearly 100 low-income families.

Here in Minnesota, we have begun subscribing our first residential customers. In the last two weeks, our team has logged over 100 hours exhibiting at three large community events within Xcel's service territory, including the five-day Minneapolis Home & Garden Show.[1]

But our residential-sales efforts are being hindered by outstanding uncertainty regarding the S*RC program and CSG interconnection.[2] In our experience, residential customers typically expect near-term project construction and commissioning before they are willing to sign a Community Solar subscriber agreement. Yet it would be irresponsible to promise service dates for thousands of residential customers before we have more clarity on the outstanding issues related to CSG interconnection. Unless resolved in the near term, these uncertainties around CSG interconnection also threaten to delay our plans to hire the additional staff needed for a significant residential marketing push in 2015.

In terms of the CSG rate design, other CSG developers are likely still evaluating whether the residential subscriber rate (currently about 2.5 cents higher than the commercial subscriber rate) is high enough to justify hiring, training, and equipping a residential-sales staff.[3]

Thus, when designing the CSG VOS adder rate structure, the Commission should bolster residential-customer accessibility by preserving the relatively higher bill-credit rate currently available

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[1] In 2014, the Home & Garden Show attracted an estimated audience of over 70,000 residential customers.

[2] *See* SunShare February 24, 2015 Comments, 13-867, at 2-7 (regarding uncertainties that may delay or prevent 2015 CSG construction).

[3] *See also* SunShare's February 24, 2015 Comments, at 2-7 (noting a number of issues regarding Xcel's interconnection process and timelines that could reasonably chill CSG developers' plans to ramp-up residential sales during the 2015 season).

to residential subscribers. This feature, present in the current CSG rate structure, means that gardens with more subscribers will make more money.

Topic 2: Escalation of CSG VOS rate over the life of the contract.

The ARR and CSG VOS rate structures (as developed in this docket so far) have two different rate escalators (fixed vs. variable) that provide two different sets of subscriber benefits.

For this reason, if the Commission does order a CSG VOS rate, it should allow CSG projects the option of electing either escalator treatment. Subscribers that place higher value on bill-credit certainty could then elect the fixed escalator, while subscribers that are more interested in maximizing 25-year value could elect the floating escalator. By allowing the two options, this approach would also increase the ability of CSG projects to secure financing.

Topic 3: Expectations and preferences of potential solar garden subscribers.

No comment.

Topic 4: Expected costs of Community Solar Gardens.

Market-specific installed costs are tracked by various market observers, including Lawrence Berkeley National Laboratory, which reports that the 2013 median installed cost for Minnesota commercial projects sized 10-100 kW was $5.10 per watt.[4] The same September 2014 report shows that the 2013 median installed costs for commercial projects sized above 100 kW in California, Massachusetts, and New Jersey range from $3.40 to $4.30 per watt.[5]

Apart from basic Engineering, Procurement and Construction (EPC) costs, SunShare and other CSG developers must also pay sizable Xcel Energy program deposits, application fees, interconnection fees, and (potential) system upgrade costs. For information on these costs as specific to SunShare, see attached Exhibit B (filed under trade secret).

As described in our February 24 comments, under Xcel Minnesota's current S*RC business rules, developers of 1-megawatt CSGs enter the interconnection process essentially "cost blind." For this reason, we won't know our true cost for interconnection studies and engineering upgrade until Xcel reveals them to us.[6]

In general, cost categories for CSG developers like SunShare include, but are not limited to:

1. Land acquisition / 25+ year land lease
2. Upfront fees and deposits associated with Xcel S*RC program (discussed above)

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[4] Barbose *et al.*, Tracking the Sun VII: An Historical Summary of the Installed Price of Photovoltaics in the United States from 1998 to 2013, Lawrence Berkeley National Laboratory (Sept. 2013), at Fig. 17, *available at* http://emp.lbl.gov/publications/tracking-sun-vii-historical-summary-installed-price-photovoltaics-united-states-1998-20.

[5] *Id.*, at Fig. 18.

[6] SunShare February 24, 2015 Comments at 4.

3. Land-use zoning and permitting
4. Interconnection fees, engineering studies, and equipment upgrades (discussed above)
5. Engineering, Procurement, and Construction (EPC)
6. Sunk costs due to project attrition
7. Cost of capital (including at-risk pre-construction development capital, construction debt, sponsor project equity, long term debt, and tax-equity costs).
8. Developer costs (including payroll, office rent, and overhead)
9. Subscriber marketing and acquisition costs (higher for residential customers)
10. Remote solar-array monitoring
11. Solar Energy Production Tax (under Minn. Stat. 272.0295)
12. Insurance costs
13. Cost of 25-year CSG operation and maintenance plans, including sustainable landscaping
14. Xcel S*RC program annual fees and metering costs
15. Subscriber maintenance costs (incl. processing subscription-change requests)
16. Project decommissioning costs

We would expect many (though not all) of these cost components to decline with increasing market and project scale (as enabled by CSG co-location).

Finally, it is worth keeping in mind the cost-evidence provided by the MN-based cooperative utilities that are themselves developing Community Solar projects. As Solar Interveners noted in their October 1, 2014 Comments:

> [A]t least five Minnesota-based cooperative utilities have announced subscriber pricing for a utility-sponsored community solar offering . . . The range of subscriber costs for these five projects runs from $3.07 to $4.74 per watt (DC), with the largest system being 245 kW in size.
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> . . . [C]ooperative utilities may have access to relatively lower cost labor, interconnection, insurance, subscriber marketing, and land (*e.g.*, utility-owned or controlled land near distribution infrastructure). In addition, Xcel's S*RC program includes a number of program-specific fees and cost components . . . .[7]

Topic 5: Information and data on project financing.

Typical CSG project investors include a major tax-equity player (*e.g.*, bank or insurance company) that can take advantage of the current federal ITC (investment tax credit). We also rely on equity and debt financing. In general, solar finance is complicated and expensive – and yet it is a necessary part of CSG developers' ability to deliver community solar at an economically efficient scale, and thus serve many different diverse groups of subscribers.

[7] Fresh Energy October 1, 2014 Comments, 13-867, at 4-5.

The solar industry has a wide range of high-quality suppliers and manufacturers with excellent track records, warranties, and supply chains. Typical contractors include both large and small contractors, union and non-union labor, and local and national players.

In January 2015, SunShare announced that Mortenson will serve as the full engineering, procurement and construction (EPC) contractor for our solar gardens in Minnesota.[8]

Topic 6: Information on the potential impact of federal programs and credits.

As the Commission is likely already aware, the federal ITC (investment tax credit) is currently scheduled to step down from 30 to 10 percent after December 31, 2016. All else being equal, this could put significant upward pressure on the cost of project capital for CSG developers.

Topic 7: Any information and data on solar-cost trends.

The cost of solar panels and other major equipment has declined significantly over the past few years. Due to global supply-and-demand factors and international trade tariffs, industry experts do not predict additional dramatic cost drops within the next few years. Rather, one would expect to see a more steady annual decline in installed costs, as efficiency, scale, and expertise grow within the Minnesota market.

In October 2014, the Minnesota Department of Employment and Economic Development ("DEED") published a status report on clean-energy jobs here in Minnesota. According to that report, "Average annual wages in the clean energy economy are 42 percent higher than the statewide average for all jobs", with average annual wages of roughly $70,000 for the state's solar industry.[9]

Topic 8: Differentiated financial adder.

SunShare believes that it will be important for the Commission to retain its current three-tiered CSG rate structure under a CSG VOS approach – for example, by specifying larger VOS adders for small commercial and residential customers, respectively. As noted under Topic 1 (above), a relatively high bill-credit rate is necessary to develop a near-term market for residential subscribers.

The Commission could also use the CSG VOS adder rate as a "fine-tuning knob" to help guide project sizes and locations.

Topic 9: Potential CSG VOS adder designs.

Of the three approaches outlined in the Commission's October 9, 2014 Notice, SunShare only finds merit in the idea of a Declining Incentive Schedule. This approach provides multi-year certainty to the market, allowing developers to efficiently plan for future step-downs in the adder

[8] SunShare January 13, 2015 Press Release, "SunShare and Mortenson Announce Strategic Agreement to Develop and Build Community Solar Gardens in Minnesota," *available at* http://goo.gl/l4Oy3X.

[9] Minn. Department of Employment & Economic Development, "Minnesota Clean Energy Economy Profile" (October 2014), at 5, *available at* http://mn.gov/deed/images/MN_CleanEnergyEconomyProfile_FullReport.pdf.

rate. We note that the Environmental Law and Policy Center and SoCore Energy, LLC (among others), have previously filed comments supportive of this approach.[10]

Topic 10: Identifying a funding source for any incentives offered by the Commission.

No comment.

Topic 11: Size of the incentive budget.

No comment.

Topic 12: Recommended timeline for determination of the appropriate CSG VOS rate adders and transition to CSG VOS rate.

SunShare believes that the current CSG rate structure is working well, and that the Commission should retain this default rate structure for at least the first two years of Xcel's new Solar*Rewards Community program. Given the significant number of unresolved implementation issues already facing S*RC program applicants, a rate transition in 2015 or the first half of 2016 would likely introduce additional financial complexity and business-transition costs that would be unhelpful during the program's first 18 months.[11]

This timeline would also allow the Commission time to collect additional relevant market information (including CSG interconnection costs related to Xcel-required engineering and equipment) before deciding on the proper design and/or magnitude of the CSG VOS adder.

Topic 13: Any legal issues the Commission should consider in developing an incentive.

According to the plain text of the CSG statute, the CSG VOS rate is "calculated under section 216B.164, subdivision 10."[12] That subdivision, in turn, provides that:

> The commission may not authorize a utility to charge an alternative tariff rate that is lower than the utility's applicable retail rate until three years after the commission approves an alternative tariff for the utility.

As we understand it, this language was intended to create a "rate floor" for the first three years of the value-of-solar methodology – thus providing the rate certainty that solar developers (SunShare included) would need to mobilize capital and experienced personnel to serve the Minnesota market.

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[10] Environmental Law and Policy Center December 1, 2014 Reply Comments, 13-867, at 15-16 ("a declining capacity-block program [would] relieve some of the pressure on the Commission to identify the 'right' bill credit incentive on an ex ante basis and allow the bill credit to adjust based on actual market response."). *See also* SoCore Energy, LLC October 1, 2014 Comments, 13-867, at 2 ("The structure and timing of the adder adjustment periods must be transparent and predictable for all market participants . . . Avoiding sudden or unpredictable price shifts and 'boom-bust' cycles is of paramount importance.").

[11] For unresolved implementation issues, *see* SunShare February 24, 2015 Comments, at 2-7.

[12] Minn. Stat. 216B.1641(d).

For this reason, we believe the Commission may not authorize a utility to pay a CSG VOS rate plus adder "that is lower than the utility's applicable retail rate" until three years after the Commission first approved the VOS tariff methodology.[13]

II. REPLY COMMENTS REGARDING JANUARY 28, 2015 NOTICE

The Commission's January 28, 2015 Notice of Second Extension of Comment Period included two new topics open for Comment.

Topic 1: Procedure and timing for a Commission review and possible adjustment of the solar REC value to be paid by Xcel for subscribed energy.

As with the VOS and ARR rate calculation, we believe the Commission should scrutinize any proposed adjustment to the solar REC value to ensure that Xcel's Section 9 tariff continues to meet the requirements of Minn. Stat. 216B.1641. In addition, SunShare requests an appropriate comment and reply comment period to so that we and other stakeholders may comment on the reasonableness of any proposed sREC price adjustment.

Topic 2: Additional issues related to the implementation of the CSG program that parties believe are appropriate for Commission consideration at this time.

SREC compensation for unsubscribed energy

Under Xcel's current S*RC business rules, SunShare and other CSG developers must elect to sell all (or none) of the sRECs associated with a given CSG project to Xcel at the time of S*RC project application.[14] Xcel will thus receive all sRECs generated by gardens that elect to sell sRECs to Xcel. Unfortunately, Xcel has taken the position that it cannot compensate CSG Operators for sRECs produced by unsubscribed generation – despite the fact that Xcel is receiving those sRECs.[15]

We thus respectfully ask the Commission to clarify that Xcel must pay CSG developers for the valuable sRECs they deliver to Xcel associated with unsubscribed CSG energy.

CSG interconnection rules and concerns

As described at length in our February 24 Comments, we believe there are at least six issues regarding Xcel's CSG interconnection rules that require near-term clarification by the Commission, to sustain a healthy 2015 CSG construction season.[16]

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[13] *See* Commission's April 1, 2014 Order Approving Distributed Solar Value Methodology, 14-65.

[14] Xcel Energy MN Rate Book, Section 10, Sheet No. 84. ("the Community Solar Garden Operator indicates its election to transfer the solar RECs to the Company . . . This election shall remain in place for the Term").

[15] According to the December 17, 2014 Minutes of the S*RC Implementation Workgroup, Xcel Energy believes that it would need Commission approval before it may pay CSG Operators for the sRECs delivered by unsubscribed CSG capacity. *See* Xcel Energy Feb. 27, 2015 Compliance Filing, Stakeholder Minutes, at 58.

[16] *See* SunShare's February 24, 2015 Comments (incorporated herein by reference), at 2-7.

As noted in our February 24 Comments, we believe there may also be the need for an incentive structure for Xcel Energy to encourage and allow for rapid interconnection of distributed solar.[17]

Very truly yours,

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[17] SunShare February 24, 2015 Comments, 13-867, at 2.

EXHIBIT A

Trade secret.

EXHIBIT B

Trade secret.