



**ENVIRONMENTAL LAW & POLICY CENTER**  
Protecting the Midwest's Environment and Natural Heritage

December 1, 2014

Burl W. Haar

Executive Secretary  
Minnesota Public Utilities Commission  
121 7<sup>th</sup> Place East, Suite 350  
St. Paul, MN 55101

Re: Reply Comments  
Docket No. E002/M-13-867

Dear Dr. Haar:

The Environmental Law & Policy Center, Interstate Renewable Energy Council and the Vote Solar Initiative (collectively "National Groups") submit the attached Reply Comments in response to the Commission's October 9, 2014 Notice of Reply Comment Period.

We are aware that the Commission this morning granted MnSEIA's request for a two-month extension of the Reply Comment Period in this docket. However, the National Groups would like to offer these comments and suggestions for the record now, before the launch of Xcel Energy's Community Solar Garden Program. We will engage with Xcel Energy and other stakeholders on these and other issues over the next two months and will follow-up with any additional information for the Commission to consider on the new February 1, 2015 Reply Comment deadline.

Please feel free to contact me with any questions you may have regarding this filing.

Respectfully Submitted,

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PUBLIC UTILITIES COMMISSION**

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Nancy Lange	Commissioner
Dan Lipschultz	Commissioner
Betsy Wergin	Commissioner

**In the Matter of the Petition of Northern  
States Power Company, d/b/a Xcel  
Energy, for approval of its proposed  
Community Solar Gardens Program**

**Docket No. E-002/M-13-867**

**REPLY COMMENTS OF THE ENVIRONMENTAL LAW & POLICY CENTER,  
INTERSTATE RENEWABLE ENERGY COUNCIL AND THE VOTE SOLAR  
INITIATIVE**

**OVERVIEW**

The Environmental Law & Policy Center (“ELPC”), the Interstate Renewable Energy Council (“IREC”) and the Vote Solar Initiative (“Vote Solar”) (collectively “National Groups”) submit the attached Reply Comments in response to the Commission’s October 9, 2014 Notice in the above-noted docket. We are aware that the Commission this morning granted MnSEIA’s request for a two-month extension of the Reply Comment Period in this docket. However, the National Groups would like to offer these comments and suggestions for the record now, before the launch of Xcel Energy’s Community Solar Garden Program (“CSG” Program). We will engage with Xcel Energy and other stakeholders on these and other issues over the next two months and will follow-up with any additional information for the Commission to consider on the new February 1, 2015 Reply Comment deadline.

The National Groups have participated and coordinated with other Minnesota-based groups, including Fresh Energy, in the proceedings and discussions leading up to the launch of Xcel’s CSG program. Collectively, we have also participated in community solar, net metering,

interconnection and other solar market development policies and programs in dozens of other states across the country. Based on anecdotal evidence and our experience in other states, we believe that Xcel's CSG program will generate a very significant volume—potentially several hundreds of megawatts—of new interconnection requests and project applications from project developers within a short period after the program opens. This will create challenges and opportunities for Xcel, the Commission and other stakeholders.

The first and most immediate challenge will be to ensure that Xcel can process and move large volumes of new solar garden capacity through the Company's interconnection study process in a timely manner. The National Groups, particularly IREC, have a great deal of experience in interconnection regulatory proceedings at the Federal Energy Regulatory Commission ("FERC") and in many U.S. states. These Reply Comments describe several innovations and best practices that the Commission should consider in order to streamline and expedite the interconnection process in Minnesota and avoid lengthy and costly "bottlenecks" in Xcel's interconnection queue.

The second, longer-term, challenge for the Commission will involve decisions regarding the best way to adjust bill credits for new CSG projects in the future to provide transparency, clarity and predictability to the developing solar market in Minnesota, while avoiding detrimental "boom/bust" cycles that have plagued solar programs in some other states and countries. We believe the initial enhanced bill-credit rate of approximately \$0.115/kWh for large commercial customers and \$0.145/kWh for residential customers will lead to an immediate "boom" in new CSG development in Minnesota. This is a very positive development that will help secure a foothold for a growing solar industry in Minnesota. But policy-driven "booms" in any market have a tendency to "bust" if they are not actively managed. Thus, the Commission

should closely monitor market response to the initial CSG rates and initiate stakeholder conversations now regarding proactive strategies for future bill credit adjustments for new projects that can help promote transparency and long-term stability in the market. These Reply Comments provide some suggestions and examples from other programs to help inform these proactive discussions, including consideration of a “capacity-block” incentive structure used successfully by the California Solar Initiative (“CSI”). We also suggest future consideration of bill credit adders or other mechanisms to promote CSG development on brownfields or other strategic locations on the distribution grid.

The launch of the CSG program presents a tremendous opportunity for the Commission and all stakeholders to create jobs, expand consumer access to affordable clean energy, diversify the grid, reduce air and water pollutants, and build a new and vibrant solar industry from the ground up in Minnesota. The long-term success of this program may hinge on the Commission’s responses to the interconnection and bill credit challenges that will likely arise in the first year of the program. The National Groups appreciate the opportunity to share perspectives, expertise, and lessons learned from our experiences in other jurisdictions and hope that our continuing participation provides useful information for the Commission’s ongoing management of this landmark program.

### **DESCRIPTION OF NATIONAL POLICY GROUPS**

ELPC is a 501(c)(3) non-profit organization that works throughout the Midwest and Great Plains on national and regional clean energy development, pollution reduction, transportation and land use reform, and natural resources protection issues. ELPC’s interdisciplinary staff of public interest attorneys, environmental business specialists, and public policy advocates have particular expertise in renewable energy and distributed generation market

development policy, including the development of interconnection and net metering standards, intervention in utility rate cases, and incentive program design. ELPC has recently been or is currently involved in solar and other energy-related regulatory proceedings in Illinois, Indiana, Iowa, Michigan, Minnesota, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. ELPC is also a supporting member of the Grow Solar Partnership, which is supported by the U.S. Department of Energy's SunShot Initiative to provide technical assistance, resources, and professional development to help eliminate market barriers and reduce the non-hardware balance of system costs ("soft costs") of grid-tied solar PV in Minnesota, Wisconsin, and Illinois.<sup>1</sup> Through all of our work, ELPC puts into practice our belief that environmental progress and economic development can be achieved together.

IREC is a 501(c)(3) non-profit organization, which has worked for over 30 years to enable greater use of clean energy in a sustainable way by: (1) introducing regulatory policy innovations that empower consumers and support a transition to a sustainable energy future; (2) removing technical constraints to distributed energy resource integration; and (3) developing and coordinating national strategies and policy guidance to provide consistency on these policies, centered on best practices and solid research. The scope of IREC's work includes implementing shared renewable energy (also known as community renewable energy) programs to expand options for consumers that cannot host a renewable energy system on-site. As part of this work, IREC has developed *Model Rules for Shared Renewable Energy Programs* (Model Rules), in collaboration with Vote Solar, and tracks shared renewables program and project activity

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<sup>1</sup> The Grow Solar Partnership began in 2012 with funding from the U.S. Department of Energy SunShot Initiative (<http://energy.gov/eere/sunshot/sunshot-initiative>). With renewed support from SunShot as part of the Rooftop Solar Challenge, the Grow Solar Team is now working with a network of regional partners in Minnesota, Wisconsin, and Illinois to eliminate solar market barriers, improve interconnection and net metering policies, facilitate the adoption of solar permitting, planning, and zoning best practices, and develop model finance arrangements for solar installations. (See <http://www.growsolar.org/>).

nationally in our Shared Solar Program Catalog.<sup>2</sup> In addition to the instant proceeding, IREC participated or is currently participating in the development and the implementation of shared renewables programs in Colorado, California, and Washington, DC. The scope of IREC's work also includes updating interconnection processes to facilitate deployment of distributed energy resources (DER) under high deployment scenarios. IREC has recently been or is currently involved in interconnection proceedings in Illinois, North Carolina, Ohio, Massachusetts, California and Hawaii. IREC also participated in the proceeding at Federal Energy Regulatory Commission (FERC) to revise the Small Generator Interconnection Procedure (SGIP), and is deeply familiar with the SGIP and the rationale for the recent changes. In addition, IREC has published *Model Interconnection Procedures*, which capture best practices with respect to interconnection.<sup>3</sup>

Vote Solar is a 501(c)(3) non-profit organization whose mission is to foster economic opportunity, promote energy security and fight climate change by making solar a mainstream resource. Vote Solar works at the state level across the country and has been engaged in solar issues in regulatory proceedings in Colorado, Arizona, Utah, Nevada, California, Idaho, Wisconsin, Georgia, New York, and Massachusetts. Vote Solar was engaged in the development of rules for implementing Colorado Community Solar Gardens (C.R.S. 40-2-127), and most recently in the "Super Solar Gardens" proceeding submitted to the Colorado PUC by Xcel Energy as Solar\*Connect.

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<sup>2</sup> IREC's Model Rules and Program Catalog are available on IREC's web site at [www.irecusa.org/regulatory-reform/shared-renewables](http://www.irecusa.org/regulatory-reform/shared-renewables).

<sup>3</sup> Available at [www.irecusa.org/wp-content/uploads/2013-IREC-Interconnection-Model-Procedures.pdf](http://www.irecusa.org/wp-content/uploads/2013-IREC-Interconnection-Model-Procedures.pdf).

## COMMENTS

### **I. The Anticipated Robust Market Response to Xcel's Community Solar Gardens Program May Require Revisions to Minnesota's Interconnection Process and Procedures.**

Minnesota law requires any Community Solar Gardens program to include “uniform standards, fees, and processes for the interconnection of community solar garden facilities....” Minn. Stat. 216B.1641(e)(2). In previous rounds of comments, several commenters, including Fresh Energy, IREC, and TruNorth, expressed concern that Xcel’s existing interconnection procedures may not be adequate to handle the anticipated influx of interconnection applications resulting from the CSG program, which could unduly delay implementation of solar gardens. In its April 7, 2014 Order in this docket, the Commission stated that it will “require Xcel to complete engineering studies and interconnection cost estimates” for solar-garden applicants within a 20- to 40-day timeline, depending on the size of the proposed generation system.<sup>4</sup> Although the Commission determined that Xcel’s existing CSG plan “meets the statutory requirements” for interconnection, the Commission also noted that it “can revisit this issue at a future time if the parties’ initial experience with the solar-garden program demonstrates the need to do so.”<sup>5</sup>

The National Groups appreciate the Commission’s close attention to the interconnection process and willingness to “revisit this issue” if necessary. Although Xcel’s existing interconnection process may be adequate at low application rates and PV penetrations, the roll-out of the CSG program will create an immediate surge of interconnection applications, which could overwhelm Xcel’s existing process and lead to lengthy delays, uncertainty for CSG program participants, and a chilling effect on the market overall. The “Made in Minnesota” solar

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<sup>4</sup> Docket No. E-002/M-13-867, Order Rejecting Xcel’s Solar-Garden Tariff Filing and Requiring the Company to File a Revised Solar-Garden Plan, p. 11 (April 7, 2014).

<sup>5</sup> *Id.*

incentives for 2015 will open on January 1, which will result in additional solar PV interconnection applications at approximately the same time as the CSG program launch.<sup>6</sup> Therefore, we urge the Commission to closely monitor Xcel's interconnection process, particularly during the critical first few months of the CSG program launch. The National Groups provide a number of recommendations below to assist the Commission in its continuing oversight of this important issue.

**A. The Commission Should Require Detailed Information Tracking and Reporting of the Interconnection Process for CSG Program Participants.**

Minnesota law requires public utilities to track and annually report certain information regarding all interconnections.<sup>7</sup> We suggest, however, that the Commission may wish to require this information sooner or at more frequent intervals for CSG projects to understand better how interconnection is working during this time of heightened market development. For example, it will be particularly important for Xcel to identify the percentage of interconnection applications that have been successfully processed within the initial 40-day deadline after the launch of the CSG program, as specified in the Commission's April 7, 2014 Order.<sup>8</sup> The Commission should also require Xcel to publicly report the number, location, size, and status of projects in its existing interconnection queue on a frequent basis in order to provide a clear picture of the status of the CSG program and any bottlenecks that may arise. Xcel and CSG program participants should be encouraged to work together to identify any substantial challenges, inefficiencies, and roadblocks in the current process so that corrections and modifications can be made if necessary. We agree with Xcel that "the market response in the early years of Solar\*Rewards Community

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<sup>6</sup> See <http://mn.gov/commerce/energy/topics/resources/Newsletters/Renewable-Energy/2013-Renewable-Energy-News/December-2013/made-in-minnesota-solar-incentive.jsp>.

<sup>7</sup> See Minn. Stat. § 216B. 1611, subd. 4 (requiring utilities to maintain records of all interconnection applications, including date received, documents generated in the course of processing the application, and final disposition, and to file an annual report regarding each year's applications).

<sup>8</sup> Docket No. E-002/M-13-867, Order Rejecting Xcel's Solar-Garden Tariff Filing and Requiring the Company to File a Revised Solar-Garden Plan, p. 11 (April 7, 2014).

will provide the best source of data on the key uncertainties all parties face . . . .”<sup>9</sup> We believe these key uncertainties include the ability of the interconnection process to accommodate the volume of CSG interconnection applications and that interconnection-related data can help to inform modifications to Minnesota’s interconnection procedures.

**B. The Commission Should Consider Updating Minnesota’s Interconnection Procedures to be Consistent with Current Best Practices.**

Minnesota is not alone in dealing with issues associated with interconnecting growing numbers of distributed generation facilities. A number of states with much higher penetrations of distributed solar, including California, Massachusetts and Hawaii, have recently revised their interconnection procedures in an effort to improve their efficiency.<sup>10</sup> Several other states with less advanced solar markets recently updated their interconnection procedures (Ohio) or are currently evaluating modifications to their procedures (Illinois and North Carolina) in anticipation of upcoming market growth.<sup>11</sup> Likewise the Federal Energy Regulatory Commission (FERC) updated its Small Generator Interconnection Procedures (SGIP), which now reflects best practices that have emerged from higher penetration states.<sup>12</sup> Ohio adopted nearly all of the modifications contained in the FERC SGIP, and Illinois and North Carolina are currently considering them.

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<sup>9</sup> Xcel Initial Comments at 7.

<sup>10</sup> Cal. Pub. Util. Comm’n, D.12-09-018, Decision Adopting Settlement Agreement Revising Distribution Level Interconnection Rules and Regulations—Electric Tariff Rule 21 and Granting Motions to Adopt the Utilities’ Rule 21 Transition Plans, R.11-09-011 (Sept. 20, 2012), *available at* <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M028/K168/28168335.pdf>; Mass. Dept. Pub. Util., DPU 11-75-E, Order on the Distributed Generation Working Group’s Redlined Tariff and Non-Tariff Recommendations (March 13, 2013), *available at* <http://web1.env.state.ma.us/DPU/FileRoomAPI/api/Attachments/Get/?path=11-75%2f11-75-Filing-1809.pdf>; Haw. Pub. Util. Comm’n, Order No. 32053, Ruling on RSWG Work Product (April 28, 2014), *available at* <http://puc.hawaii.gov/wp-content/uploads/2014/04/Order-No.-32053.pdf>.

<sup>11</sup> Ohio Pub. Util. Comm’n, Finding and Order, Case No. 12-2051-EL-ORD (In the Matter of the Commission’s Review of Chapter 4901:1-22, Ohio Administrative Code, Regarding Interconnection Services (Dec. 4, 2013), *available at* <http://dis.puc.state.oh.us/TiffToPDF/A1001001A13L04B42903E62593.pdf>; Ill. Commerce Comm’n Docket No. 14-0135; N.C. Pub. Serv. Comm’n Docket E-100 Sub 101.

<sup>12</sup> 145 FERC ¶ 61,159, Order No. 792 (Nov. 22, 2013), *available at* [www.ferc.gov/whats-new/comm-meet/2013/112113/E-1.pdf](http://www.ferc.gov/whats-new/comm-meet/2013/112113/E-1.pdf).

Minnesota can draw on the experience in these other states and FERC to improve its interconnection procedures for CSGs and other distributed generation as the State's renewable energy market grows. In prior comments in this proceeding, IREC noted that Minnesota receives a 'C' for its interconnection procedures in *Freeing the Grid*, which continues to be the case in the 2014 edition.<sup>13</sup> The major shortcomings in the existing Minnesota rules identified by *Freeing the Grid* include the need to further delineate tiers to accommodate different levels of complexity among system types and sizes, as well as the inclusion of requirements for a redundant external disconnect switch and additional insurance. The FERC SGIP and IREC's *Model Interconnection Procedures* offer good starting points for the Commission to improve the existing state rules.<sup>14</sup> Best practices from these procedures for Minnesota to consider include: a "pre-application report" intended to decrease the number of speculative applications; multiple levels of review, including structured and transparent expedited review procedures for eligible systems, which would likely include at least some CSGs; and electronic application submittal and the provision of interconnection-related materials online.

**C. The Commission Should Require Xcel to Work Collaboratively With Stakeholders to Develop Online Grid Mapping and Interconnection Application Tools.**

There are several additional steps that Xcel could take, independent of changes to Minnesota's interconnection procedures, to improve the interconnection process for their customers. For example, several utilities have recently developed electronic web-based platforms for interconnection application processing and data tracking to replace their old, paper-based

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<sup>13</sup> *Freeing the Grid 2014, State Grades: Minnesota*, <http://freeingthegrid.org/#state-grades/minnesota>; Initial Comments of the Interstate Renewable Energy Council, Inc. Regarding the Petition Of Northern States Power Company for Approval of Its Proposed Community Solar Gardens Program, Docket No. E0002/M-13-867, at 3-5 (Nov. 6, 2013).

<sup>14</sup> FERC, *Small Generator Interconnection Agreements & Procedures*, 78 Fed. Reg. 73,240 (Dec. 5, 2013), available at <http://www.gpo.gov/fdsys/pkg/FR-2013-12-05/pdf/2013-28515.pdf>; IREC *Model Interconnection Procedures* (2013), available at [www.irecusa.org/wp-content/uploads/2013-IREC-Interconnection-Model-Procedures.pdf](http://www.irecusa.org/wp-content/uploads/2013-IREC-Interconnection-Model-Procedures.pdf).

interconnection application process. We understand that Xcel has recently moved its application process for its Solar\*Rewards program to an online format, which is a good start.<sup>15</sup> Other utilities, like Commonwealth Edison in Illinois, have added additional features that streamline the process and enable more accurate and organized tracking of project status and milestones.<sup>16</sup> ComEd’s online “dashboard” for interconnection projects enables one-stop management and crosschecks timelines and key milestones in the interconnection process for different projects.

**ComEd interconnection dashboard screenshots:**

Queue #	Status of Application	Date of Initial Application Submission	Feeder Number	Nameplate Capacity	Interconnection Request Level	Net Metering?	Time Remaining for Completeness Review	Time Remaining for Technical Review	View Interconnection Status	Email Interconnection Application
Q642	Denied	02/13/2013 01:56 PM	F123	0.21	1	Yes			<a href="#">View/Print/Update Application</a>	
	In Technical Review	02/13/2013 10:59 AM		3.2	1	No		14 business days, 5 hours	<a href="#">View/Print/Update Application</a>	
	Submitted And In Completeness Review	02/13/2013 10:59 AM			3	No	9 business days, 5 hours	Not Started	<a href="#">View/Print/Update Application</a>	
312	Approved	02/13/2013 09:18 AM	F468	6.5	1	Yes			<a href="#">View/Print/Update Application</a>	
456	In Technical Review	02/13/2013 08:28 AM	F314	8	1	Yes		14 business days, 7 hours	<a href="#">View/Print/Update Application</a>	
	Submitted And In Completeness Review	02/13/2013 07:33 AM		0.21	1	Yes		6 business days, 8 hours	<a href="#">View/Print/Update Application</a>	
	Submitted And In Completeness Review	02/12/2013 12:00 AM			1	Yes	5 business days, 15 hours	Not Started	<a href="#">View/Print/Update Application</a>	
	Submitted And In Completeness Review	02/12/2013 12:00 AM			1	Yes	5 business days, 15 hours	Not Started	<a href="#">View/Print/Update Application</a>	
	Submitted And In Completeness Review	02/13/2013 10:49 AM		3.56	1	No	6 business days, 5 hours	Not Started	<a href="#">View/Print/Update Application</a>	

Several utilities have also developed electronic maps of their distribution system that help identify good and bad places for DG interconnection on the grid.<sup>17</sup> This helps to address important informational barriers and inefficiencies that arise when the level of DG penetration increases in a utility’s service territory. At low levels of DG penetration, most new applications

<sup>15</sup> See [https://xcelenergy.force.com/SolarRewards/SR\\_CommunitiesLogin?startURL=null](https://xcelenergy.force.com/SolarRewards/SR_CommunitiesLogin?startURL=null)

<sup>16</sup> See <https://interconnect.comed.com/ComEd/Home/?ReturnUrl=%2f>.

<sup>17</sup> Grid map examples:

ComEd: <https://www.comed.com/customer-service/rates-pricing/interconnection/Pages/distribution-under-10000kva.aspx> (download of Google Earth required)

PG&E: <http://www.pge.com/b2b/energysupply/wholesaleelectricssuppliersolicitation/PVRFO/pvmap/> (user account creation required)

SDG&E: <http://sdge.com/builderservices/dgmap/> (registration required)

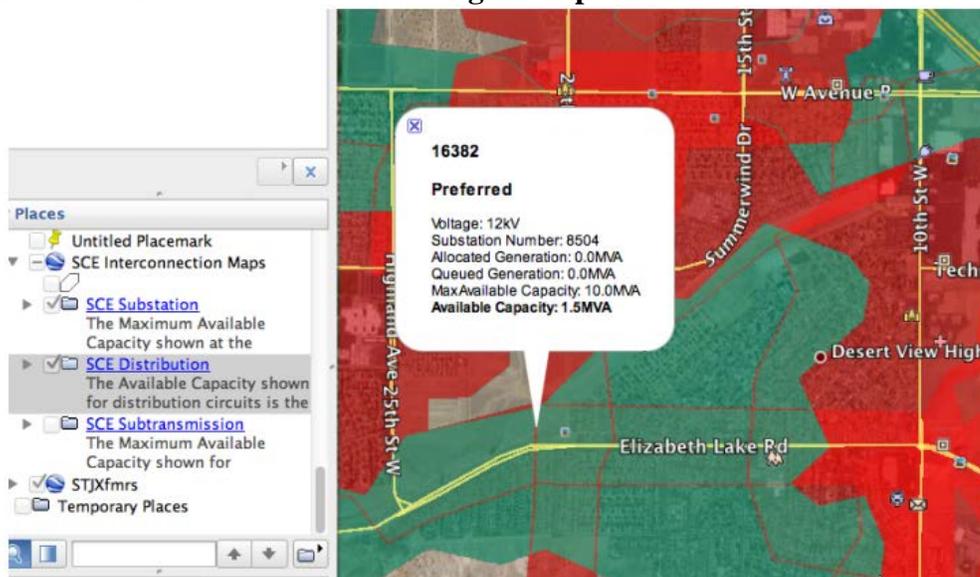
SCE: <http://www.sce.com/EnergyProcurement/renewables/renewable-auctionmechanism.htm> (download of Google Earth required)

Sacramento Municipal Utility District (SMUD): <http://www.smud.org/en/communityenvironment/solar-renewables/Documents/InterconnectionMap.pdf>

for small systems can be processed quickly without expensive, individualized interconnection studies. However, as the penetration of DG grows, some distribution circuits become congested, requiring further study before additional DG can be interconnected safely and reliably.

Electronic grid maps enhance grid transparency and enable project developers to target DG project applications in locations where they will be most likely to proceed without expensive and time-consuming studies. This helps preserve resources and time for the developer and for the utility and results in more strategically located DG throughout the utilities' system. A screenshot from Southern California Edison's online grid map showing "preferred" (green) and "nonpreferred" (red) locations for DG is included below.

#### Southern California Edison online grid map:



In response to earlier rounds of comments, the Commission declined to require Xcel to make more grid information available to project developers, based largely on Xcel's concerns that additional grid transparency "could pose a security risk."<sup>18</sup> However, the Commission also indicated that it would be willing to "revisit" interconnection issues at a future time if the parties'

<sup>18</sup> Docket No. E-002/M-13-867, Order Rejecting Xcel's Solar-Garden Tariff Filing, p. 12 (April 7, 2014).

experience with the solar-garden program demonstrates the need to do so.<sup>19</sup> As the number of CSG and other solar PV projects grows, it will become increasingly important for the Commission and Xcel to revisit these issues to ensure that Xcel develops appropriate tools to organize and manage the increased volume of CSG project applications and provide transparency about their status to the Commission, project developers, and the public. Should the Commission choose to revisit this issue, it could look to the methods that other commissions and utilities have used to increase grid transparency without compromising grid security. In the meantime, the Commission should encourage Xcel to work with stakeholders in an ongoing dialogue to address remaining concerns and to develop ideas to enhance grid transparency and access as the penetration of CSG and other solar PV projects in Minnesota increases dramatically in 2015.

In its April 7, 2014 Order in this docket, the Commission encouraged Xcel to engage in “continued collaboration” with solar-garden developers, the Department, the OAG, and other interested parties to “ensure the smooth implementation of Xcel’s solar-garden program” and to “clarify and streamline the application process, interconnection, and bill crediting” process for the CSG program, among other topics.<sup>20</sup> The Commission directed Xcel to make compliance filings six months and twelve months following the date of the order to “report[] on the progress of the discussions between the parties and any resolutions for each issue raised.”<sup>21</sup> The interconnection topics raised by the National Groups in these Reply Comments and by other stakeholders in previous rounds of comments are appropriate issues for these ongoing discussions and stakeholder collaboration. The National Groups will participate in these conversations and will contribute insights gained through their experiences in other jurisdictions

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<sup>19</sup> *Id.* at 11.

<sup>20</sup> *Id.* at 25.

<sup>21</sup> *Id.* at 26.

that could help assist Xcel in developing appropriate interconnection tools for Minnesota. Members of Minnesota’s “Grow Solar” team, supported by the U.S. Department of Energy’s SunShot Initiative, can likely contribute further expertise and technical resources to help address emerging solar market challenges in Minnesota.<sup>22</sup>

**II. The Commission Should Closely Monitor Market Data and Consider Future Steps to Adjust CSG Bill Credits to Avoid a “Boom and Bust” Cycle and Ensure a Long-Term Sustainable CSG Market.**

The Commission has requested substantial information from stakeholders to help determine the proper level of CSG bill credits to meet the statutory requirement that the program “reasonably allow for the creation, financing, and accessibility of community solar gardens.” Minn. Stat. 216B.1641(e)(1). The Commission’s April 7, 2014 Order cited project developers’ statements that \$0.15 per kWh may be the “conservative minimum needed to secure financing and make solar gardens attractive to subscribers.”<sup>23</sup> In response, Xcel Energy suggested that experience from other states suggests that rates “lower than the VOS or a lower applicable retail rate (with reduced or no REC payments) may well provide the necessary incentive to support solar development in Minnesota.”<sup>24</sup>

The National Groups acknowledge the difficulty of identifying an appropriate bill credit for the CSG program on an *ex ante* basis. The right “price” for a solar incentive is highly project and location specific and depends on underlying solar market fundamentals and costs that are changing rapidly. Thus, we agree with MnSEIA that the best evidence of the rate needed to reasonably allow for project creation and financing will come from actual market experience

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<sup>22</sup> Members of Minnesota’s SunShot team include the Minnesota Clean Energy Resource Teams (CERTs), CR Planning, ELPC, the Midwest Renewable Energy Association, and West Monroe Partners. ELPC and West Monroe Partners have particular expertise in helping to develop interconnection solutions through their prior work with Commonwealth Edison and other Midwest utilities.

<sup>23</sup> Docket No. E-002/M-13-867, Order Rejecting Xcel’s Solar-Garden Tariff Filing, p. 12 (April 7, 2014).

<sup>24</sup> Docket No. E-002/M-13-867, Xcel Energy Motion to Show Cause, p. 2 (May 1, 2014).

when the CSG program opens in the next month or two.<sup>25</sup> Moreover, experience in other jurisdictions suggests that the *initial* price offered for a solar incentive program is not as important to the long-term success of the program as the framework used to make *adjustments* to this price over time as the market changes and matures. Programs that provide a high level of transparency and certainty about future price adjustments are more successful in creating long-term sustainable markets and a stable investment environment than programs that change prices suddenly and unpredictably in a reactive fashion to market conditions or political dynamics.

In recognition of the importance of market transparency and the difficulty in setting *ex ante* prices, many jurisdictions are moving to solar incentive programs that adjust prices on a transparent, pre-determined schedule based on the market response to the program. Under this type of “capacity block” program, the initial incentive price bumps down through a series of step-wise blocks of capacity. The faster the market response to the program, the faster the capacity blocks are subscribed, and the faster the incentive price bumps down. In some cases, capacity block programs have been designed to bump prices back up if a block of capacity is not fully subscribed after a predetermined amount of time.

The California Solar Initiative (“CSI”) offers a useful example for reference, as the CSI was one of the first and most successful versions of this kind of “capacity block” program.<sup>26</sup> The CSI established a goal to install approximately 1,940 MW of new distributed solar generation capacity in California between 2007 and 2016. The California Public Utilities Commission divided the overall megawatt goal for the incentive program into 10 programmatic incentive level steps, and assigned a target amount of capacity in each step to receive an incentive based on

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<sup>25</sup> See MnSEIA Request for Extension of Time to File Community Solar Garden Adder Reply Comments, p. 1 (Nov. 24, 2014) (noting that “project-specific, real-world information” about CSG project costs “may only be two months away”).

<sup>26</sup> See <http://www.cpuc.ca.gov/PUC/energy/Solar/aboutsolar.htm>.

dollars per-watt or cents per-kilowatt-hour. As the MW targets in a particular incentive step level are subscribed, the incentive level offered by the CSI Program automatically reduces to the next lower incentive step level. This creates a demand-driven incentive program that adjusts solar incentive levels based on local solar market conditions. In recognition of the success of the CSI program, many other jurisdictions are now exploring or implementing similar “capacity-block” programs. For example, the NY-Sun Program, which is expected to increase installed solar capacity in New York by 3 gigawatts by 2023, is largely based on a capacity block-style program.<sup>27</sup> This type of step-down incentive program was also adopted by the Colorado PUC for Xcel Energy in its 2010 Renewable Energy Standard Plan submittal, leading to decreasing costs and steady market growth.<sup>28</sup>

The National Groups agree with MnSEIA and Fresh Energy that the Commission need not try to readjust the CSG bill credit rate before Xcel opens the program to subscribers. However, it is not too early to begin thinking through program design options for deriving bill credits that will promote stability in the CSG market. The Commission should carefully monitor market responses to the initial bill credit rates based on the applicable retail rate plus compensation for renewable energy credits (RECs), and consider various program options to adjust CSG bill credits in a transparent and predictable way. Although several options likely exist, a declining capacity-block program could be a good fit for the Minnesota CSG market. For example, if the Commission were to shift to a value of solar (VOS) rate plus an incentive for the CSG program, the incentive could be adjusted downward through a series of transparent capacity blocks based on market response to ultimately reach the published VOS rate alone, without an additional incentive. This would satisfy the statutory requirements for an “uncapped” program

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<sup>27</sup> See <http://ny-sun.ny.gov/About/NY-Sun-FAQ.aspx>.

<sup>28</sup> See [http://www.xcelenergy.com/Save\\_Money\\_&\\_Energy/Rebates/Solar\\*Rewards\\_-\\_CO](http://www.xcelenergy.com/Save_Money_&_Energy/Rebates/Solar*Rewards_-_CO).

and the Legislature's apparent preference for bill credits based on the VOS rate, while still ensuring that the program "reasonably allow[s] for the creation, financing, and accessibility of community solar gardens." Minn. Stat. § 216B.1641(a), (d), and (e)(1). It would also 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.

If desired by parties, the Commission could consider adding a "safety valve" that would increase bill credit levels if market response slows and project developers do not subscribe a given block of capacity within a pre-determined amount of time. California's feed-in tariff program (which is a separate and distinct incentive from the aforementioned CSI) utilizes a mechanism, the renewable market adjusting tariff (ReMAT), that ratchets the program's price up or down depending on market response on a bi-monthly basis.<sup>29</sup> If the Commission wishes to explore incorporating a "safety valve" into the CSG program, the ReMAT mechanism could offer a good starting point.

In addition, the Commission should strongly consider modifying the CSG program to reward and incentivize projects that are located in highly desirable locations on Xcel's distribution grid or that provide additional public benefits, such as the revitalization of urban brownfield areas. For example, the NY-Sun incentives promote customer-owned DG in "strategic locations" identified by the utilities to help offset transmission and distribution infrastructure investments to help keep rates low for all ratepayers.<sup>30</sup> These "adders" for desirable projects could be layered on top of a declining capacity block program or the Commission could explore other ways to incentivize such optimal project siting. The National

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<sup>29</sup> See <http://www.cpuc.ca.gov/PUC/energy/Renewables/hot/feedintariffs.htm>

<sup>30</sup> See <http://www.conedison.com/ehs/2011annualreport/environmental-stewardship/reducing-greenhouse-gases/long-term-business-strategies-in-clean-energy/new-value-through-customer-distributed-resources.html>.

Groups would be pleased to participate in these ongoing discussions and bring further options and suggestions to the table based on our experience in other jurisdictions.

### **CONCLUSION**

The National Groups appreciate the Commission's ongoing attention to emerging interconnection, incentive design, and other challenges and opportunities associated with Minnesota's landmark community solar gardens program. The Commission's decision to extend the Reply Comments in this docket will enable the parties to closely examine data from the critical first months of the program to help inform next steps in this docket. The Commission should require Xcel to gather and share all of the data necessary to support this ongoing stakeholder conversation and should consider the interconnection improvements and "capacity block" incentive structure suggestions provided by the National Groups in these comments. The National Groups will engage with Xcel Energy and other stakeholders on these and other issues over the next two months and will follow-up with any additional information for the Commission to consider on the new February 1, 2015 Reply Comment deadline.

Respectfully submitted,

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*On behalf of the Vote Solar Initiative*

## **CERTIFICATE OF SERVICE**

I, Brad Klein, hereby certify that a true and accurate copy of the foregoing Reply Comments on behalf of the Environmental Law & Policy Center, Interstate Renewable Energy Council and the Vote Solar Initiative has been served upon all parties of record in the above-mentioned case, electronically by eService, e-mail, or by depositing the same in an envelope with postage paid in the United States mail at Chicago, Illinois, this 1st day of December, 2014.

/s/ Brad Klein

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