

**STATE OF MINNESOTA  
PUBLIC UTILITIES COMMISSION**

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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

**INITIAL COMMENTS OF THE  
INTERSTATE RENEWABLE ENERGY COUNCIL, INC.**

The Interstate Renewable Energy Council, Inc. (IREC) submits these initial comments in response to the Commission's February 13, 2015 Notice in the instant docket.

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 (or 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*, in collaboration with Vote Solar, and tracks shared renewables program and project activity nationally in our Shared Solar Program Catalog.<sup>1</sup> In addition to the instant proceeding, IREC participated or is currently participating in the

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<sup>1</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).

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, Iowa, North Carolina, Ohio, Massachusetts, New York, 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>2</sup>

IREC has participated and coordinated with other groups, including the Environmental Law and Policy Center (ELPC), Fresh Energy, and Vote Solar, both leading up to and following the launch of Xcel's Community Solar Gardens (CSG) program. Most recently, on December 1, 2014, IREC filed reply comments, jointly with ELPC and Vote Solar (National Groups), addressing interconnection concerns and appropriate CSG bill credits.

As in the National Groups' reply comments, we continue to believe that the launch of the CSG program is an exciting opportunity for Minnesota 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. Likewise, we continue to believe that the long-term success of this program hinges on the Commission's responses to issues arising as the program is implemented, including specifically challenges associated with interconnection. IREC appreciates the opportunity to provide further input to the Commission on this foundational policy issue.

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<sup>2</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).

In sum, we believe that the “operational considerations” raised by Xcel do not implicate the need to modify the CSG program but rather to reform Minnesota’s interconnection procedures to comport with best practices. In the near term, however, we suggest that the Commission clarify that CSGs should remain within the current Section 10 review process, and that Xcel must coordinate with the Midcontinent Independent System Operator (MISO) to conduct any necessary review of transmission-level impacts that arise, as indicated by MISO’s policies regarding distribution-level interconnections. Going forward, we urge the Commission to undertake a separate, more comprehensive reevaluation of the State’s interconnection procedures and we offer some suggestions on how to proceed on that front.

**I. Robust Interconnection Procedures Are Critical to Fostering Successful Solar Market Growth Through CSG and Other Solar Development.**

In its February 10, 2015 letter to the Commission, Xcel raised various concerns regarding its CSG program, including “operational considerations” associated with “interconnecting large, ‘utility-scale’ solar projects to the distribution system.”<sup>3</sup> IREC appreciates that the influx of CSG applications has put a strain on Xcel’s current interconnection process. We encourage the Commission to recognize, however, that the concerns associated with interconnection are not inherently tied to the CSG program and its design. While the Commission may make policy decisions with respect to CSG size and co-location for individual 1-MW CSGs, changes on this front will not necessarily alleviate interconnection-related concerns. For example, CSGs could be prohibited from co-locating and Xcel could still experience many megawatts (MW) of CSG applications on the same feeder or in the same area, with each 1-MW CSG owned by a separate developer. Indeed it is likely that multiple developers would be attracted to the same locations, such as flat, open areas where land prices are low. Facility ownership—as well as facility

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<sup>3</sup> Xcel Letter at 3 (Feb. 10, 2015).

financing or program participation—are irrelevant to determining the impact of higher penetrations of renewable energy on the grid and any necessary system upgrades. IREC further notes that, under the current interconnection standards, project developers are responsible for upgrade costs, so Xcel and its ratepayers do not incur additional costs when projects require upgrades to interconnect.

IREC encourages the Commission to view these interconnection problems as solvable challenges on the road to a robust solar market rather than problems with the CSG program. Minnesota’s policies, including in particular the CSG program, are successfully promoting solar development in the State. As growth in distributed solar continues, however, the Commission, Xcel, and other stakeholders will need to make sure the State has policies and procedures that allow distributed solar facilities to interconnect as efficiently and cost-effectively as possible. Ultimately IREC agrees with Xcel that these interconnection-related questions are arising because the existing policies are not designed to handle the type of solar development that Minnesota has decided to encourage.<sup>4</sup> We do not believe, however, that these interconnection issues should drive the Commission to make changes to the CSG program. Rather they should be addressed separately and comprehensively, in an effort to support the solar policy and program goals identified by the Commission and Legislature.

**II. If a CSG or Group of CSGs Requires Additional Review from MISO to Determine Transmission Impacts, Xcel Should Coordinate with MISO to Undertake Such Review, However the CSGs Should Remain Within the Section 10 Interconnection Process.**

The relationship between MISO and Xcel with respect to interconnection, highlighted by the Commission in its February 13 Notice, raises some immediate legal, factual and practical questions for the Commission to address. It also involves issues that the Commission may wish

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<sup>4</sup> See *id.* at 4.

to cover as part of a more comprehensive look at the process for interconnecting distributed generation, as discussed in more detail below and in Section III. In its February 10 letter, Xcel states that it will refer a project to MISO if it is larger than 10 MW, if its capacity exceeds the expected substation minimum load, or if it affects the transmission system.<sup>5</sup> According to Xcel, “[i]f the MISO process applies, the generation system is not eligible for review under Section 10.”<sup>6</sup> Based on our review of the tariffs and related documents, and experience with this issue in other states, IREC urges the Commission to take a close look at this aspect of the process to ensure that procedures are being followed appropriately and projects are treated fairly. Importantly, IREC does not believe that a project (or group of projects being studied together) should exit the distribution-level Section 10 review process if they require additional review for transmission system impacts nor do we believe that review for transmission system impacts or the determination that such impacts exist should affect a project’s (or group of projects’) eligibility for the CSG program.

First, while CSGs may be co-located, IREC’s understanding is that CSG developers must submit a separate interconnection application for each Generation System up to 1 MW. Xcel allows applicants to request that it study multiple projects jointly for purposes of efficiency and cost-effectiveness, and thus it may study a group of 1-MW Generation Systems together.<sup>7</sup> While IREC’s understanding is that Xcel is still studying each 1-MW application in a group serially, this type of process represents a step towards distribution-level “group study” processes being adopted in other states, in particular California and Massachusetts, to accommodate increasingly high penetrations of distributed generation, as discussed below in Section IV. Group study has

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<sup>5</sup> *Id.* at 3.

<sup>6</sup> *Id.*

<sup>7</sup> *See id.* at 7.

the potential to be a positive process innovation in Minnesota that could increase the efficiency of the study process, and allow projects to share study and upgrade costs equitably. Deciding to allow such interconnection treatment is distinct from the policy decision of whether or not to allow CSG projects to co-locate. For example, even if CSGs were prohibited from co-locating, Xcel could still see interconnection requests from multiple, electrically interrelated projects, from the same or different developers, and choose to allow them to request group study within the interconnection process. Similarly, the treatment of projects for tax purposes is distinct from their treatment within the interconnection process. Like the definition of a CSG within the program, each project is defined by its Point of Common Coupling within the interconnection process.<sup>8</sup>

Although no individual CSG interconnection application may exceed 1 MW, it is possible that a CSG or group of CSGs could be considered as “affecting” the transmission system and require further review for transmission-level impacts. Although IREC questions Section 10’s definition of “affecting” the transmission system, as discussed further below, MISO provides a description of the process that should be followed in this instance: “MISO should become involved if in the course of the distribution company’s evaluation it becomes apparent that there is a NERC [North American Electric Reliability Corporation] Planning Criteria violation on the Transmission system that is created or aggravated by the new interconnection. After receiving such a notice, MISO will consult with the affected Transmission Owner to review the assumptions used by the distribution company. If MISO and the affected Transmission Owner agree that there is a reliability problem that needs to be resolved, they will engage the interconnection customer in either a System Impact Study or a Facilities Study, as the

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<sup>8</sup> Xcel Tariff, Section 10, Sheet 84 (defining “Generation System”); Xcel Standard Contract for Solar\*Rewards Community (Definitions) (defining “Community Solar Garden Site”).

circumstances may dictate, to determine the resolution of the constraints. MISO expects that if upgrades are required on the Transmission system, then the distribution company will condition the interconnection on the construction of those upgrades.”<sup>9</sup>

In other words, as both the distribution company and the transmission owner, if Xcel determines that a project may affect the transmission system, it should coordinate with MISO to determine whether there are any problems or impacts, and whether upgrades are needed. The project remains within Xcel’s Section 10 process, however. Indeed MISO explicitly declares that its interconnection tariff “only covers requests for interconnection to the Transmission System” or instances where “functional control” was transferred to MISO.<sup>10</sup> The process described by MISO comports with IREC’s experience in other states.<sup>11</sup>

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<sup>9</sup> MISO Instructions for Interconnection Requests to the Distribution System, [www.misoenergy.org/Library/Repository/Study/Generator%20Interconnection/Distribution%20System%20Interconnection%20Request%20Instructions.pdf](http://www.misoenergy.org/Library/Repository/Study/Generator%20Interconnection/Distribution%20System%20Interconnection%20Request%20Instructions.pdf); *see also* Generator Interconnection Study & Agreement Jurisdiction in MISO Footprint, [www.misoenergy.org/Library/Repository/Study/Generator%20Interconnection/GI-Jurisdiction\\_Flowchart.pdf](http://www.misoenergy.org/Library/Repository/Study/Generator%20Interconnection/GI-Jurisdiction_Flowchart.pdf) (flowchart indicating that MISO does not review distribution-level interconnection requests, although if there are impacts on the MISO transmission system the process is for the distribution company to notify MISO for coordination and conduct transmission analyses, and for MISO to coordinate with the distribution company and contract for upgrades if needed).

<sup>10</sup> MISO Instructions for Interconnection Requests to the Distribution System; *see also* MISO FERC Electric Tariff, Att. X (Generator Interconnection Procedures (GIP)), § 1 (Definitions) (defining “Interconnection Customer” as “any entity, including Transmission Provider, Transmission Owner or any of the Affiliates or subsidiaries of either, that proposes to interconnect its Generating Facility with the Transmission System.”) (emphasis added); Generator Interconnection Study & Agreement Jurisdiction in MISO Footprint (first step in MISO jurisdictional flowchart indicates that if the point of interconnection is not on the MISO transmission system, the interconnection request is not in MISO’s jurisdiction and it cannot administer the interconnection request).

<sup>11</sup> *See, e.g.*, 83 Ill. Adm. Code Part 467 (Illinois distribution-level interconnection standards for large generators (over 10 MW) that remain under state jurisdiction but require input from the relevant regional transmission organization (RTO) where necessary); Cal. Rule 21 § F.3.b.ii (stating that “if the System Impact Study indicates a need for Network Upgrades, Distribution Provider will share applicable study results with the CAISO for review and comment and will incorporate comments into the final Interconnection System Impact Study report.”), F.3.d (describing the distribution-level interconnection detailed study process, and input and review by the California ISO, with the distribution utility retaining jurisdiction); Mass. Standards for Interconnection of Distributed Generation, DPU 11-75, Table 3, Note 1 (noting that additional review time may be required under

IREC notes that Xcel’s Section 10 tariff appears to indicate the same result, although it is not as clear on this point. It cites to the MISO Open Access Transmission Tariff (OATT), which states that “[w]here facilities under the control of [MISO] are affected by such interconnection, such interconnections may be subject to the planning and operating protocols of [MISO]. . . .”<sup>12</sup> MISO’s “planning and operating protocols,” described above, state that Xcel must coordinate with MISO and conduct additional review for transmission impacts as appropriate. Section 10 later states that “[i]f the rules of [MISO] require that this interconnection request be processed through the MISO process, the Generation Interconnection Coordinator will notify the Applicant that the generation system is not eligible for review through the State of Minnesota process.”<sup>13</sup> As noted above, MISO clearly indicates that the only applicants that must proceed through the MISO interconnection process are generators interconnecting to the MISO system. CSGs interconnecting to Xcel’s distribution system proceed through the Section 10 process, although MISO input or review may be required if there may be transmission impacts. If the review process determines that there are transmission impacts, upgrades may not be required, however if they are, the developer chooses whether to proceed with them and pays any costs associated with them prior to interconnection.

Somewhat confusingly, Section 10 also states that the interconnection applicant, not Xcel, should contact MISO if its project would be “affecting” the transmission system and “follow their [MISO’s] procedures.” As indicated above, however, MISO’s procedures largely require coordination and communication between Xcel and MISO, at least at first, rather than

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the distribution-level interconnection tariff if ISO-New England (ISO-NE) determines that it must study the impact of the generator on the transmission system).

<sup>12</sup> Xcel Tariff, Section 10, Sheet 83 (MISO is sometimes referred to under its former name, “Midwest Independent System Operator” or “Midwest ISO,” throughout the tariff).

<sup>13</sup> *Id.* at Sheet 94.

MISO and the applicant. Section 10 generally does not address to what extent Xcel should coordinate with MISO to resolve any transmission-related issues. The Commission recognized this confusion in its last question in the February 13 Notice, asking about Xcel’s obligation to assist CSG applicants whose projects are referred to MISO. IREC recommends that the Commission clarify that Xcel’s actions here should comport with MISO’s procedures for reviewing transmission impacts, including in particular with respect to the coordination required between MISO and Xcel.

Ultimately CSGs are not connecting to the transmission system and thus are not subject to the MISO interconnection process.<sup>14</sup> If Xcel determines that a CSG or group of CSGs may impact the transmission system, MISO provides procedures for Xcel to follow as it conducts its interconnection review under Section 10. In addition to providing immediate clarity regarding the process in this respect, through an order or possibly through modifications to the tariff language, IREC suggests that the questions raise larger issues that should be addressed in a more comprehensive reevaluation of Minnesota’s interconnection procedures. In particular, the tariff essentially defines “affecting” the transmission system as when a Generation System’s total capacity is greater than the expected distribution substation minimum load.<sup>15</sup> IREC believes further discussion is warranted related to this issue and concerns associated with back-feeding past the substation. As penetration of distributed generation increases on a circuit, there is an increased potential for certain undesirable system conditions to arise, however recent studies have shown that penetrations up to and even exceeding 100% of minimum load can be safely

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<sup>14</sup> MISO FERC Electric Tariff, Att. X (Generator Interconnection Procedures (GIP)), § 1 (Definitions); MISO Instructions for Interconnection Requests to the Distribution System; Generator Interconnection Study & Agreement Jurisdiction in MISO Footprint.

<sup>15</sup> Xcel Tariff, Section 10, Sheet 83.

accommodated.<sup>16</sup> Indeed, recent analyses in Hawaii led the utility there to voluntarily propose a limit of 250% of minimum load where certain additional inverter functions are adopted.<sup>17</sup> As discussed in the following section, IREC encourages the Commission to consider this and other issues in a dedicated effort to reform Minnesota's interconnection process.

### **III. Current Best Practices for Interconnection Can Guide the Commission in Modifying Minnesota's Process to Accommodate Anticipated Solar Growth.**

Minnesota is fortunate in that several other states have faced similar solar market expansion and have developed policies, including specifically interconnection procedures, to address issues associated with the growth in distributed generation. In the National Groups' December 1 reply comments, drawing on experience in other states and at FERC, we identified a number of steps that the Commission could take with respect to interconnection to help to improve the process in Minnesota.<sup>18</sup>

As before, we continue to suggest that the Commission comprehensively review Minnesota's interconnection procedures and revise them according to best practices.<sup>19</sup> Both the FERC SGIP and IREC's *Model Interconnection Procedures* offer good starting points for the

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<sup>16</sup> See K. Burman, J. Keller, and B. Kroposki (National Renewable Energy Laboratory); P. Lilienthal, R. Slaughter, and J. Glassmire (Homer Energy, LLC), *Renewable Power Options for Electrical Generation on Kaua'i: Economics and Performance*, NREL/TP-7A40-52076, p. 34 (November 2011), available at [www1.eere.energy.gov/office\\_eere/pdfs/52076.pdf](http://www1.eere.energy.gov/office_eere/pdfs/52076.pdf); J. Bank, B. Mather, J. Keller, M. Coddington, National Renewable Energy Laboratory, *High Penetration Photovoltaic Case Study Report*, January 2013. <http://www.nrel.gov/docs/fy13osti/54742.pdf>; see also these studies at <https://solarhighpen.energy.gov/resources/?type%5B%5D=73>.

<sup>17</sup> The Hawaiian Electric Company (HECO) has proposed moving to 250% of minimum load after conducting an analysis with the National Renewable Energy Laboratories (NREL), Electric Power Research Institute (EPRI) and SolarCity that found that transient overvoltage can reasonably be addressed through inverter settings. Hawaiian Electric Companies' Motion for Approval of NEM Program Modification and Establishment of Transitional Distributed Generation Program Tariff, Docket No. 2014-0192, at 10 and 16-20, Jan. 20, 2015; A. Nelson, et. al., *Inverter Load Rejection Over-Voltage Testing: SolarCity CRADA Task 1a Final Report*, NREL available at <http://www.nrel.gov/docs/fy15osti/63510.pdf>.

<sup>18</sup> National Groups Reply Comments at 6-13.

<sup>19</sup> *Id.* at 8-9.

Commission to improve the existing state rules.<sup>20</sup> As indicated in the National Groups' reply comments, other states have already begun to consider and adopt SGIP. Most recently, Iowa utilities indicated in comments in that State's interconnection docket that they support the adoption of several important elements of the FERC SGIP.<sup>21</sup> In addition, IREC notes that MISO has implemented FERC-approved interconnection tariffs, as it is required to do, including the SGIP. Thus considering the FERC SGIP for implementation at the distribution level would also promote consistent treatment of small generators, regardless of which procedures they must use. IREC suggests that a dedicated docket and/or collaborative working group may be appropriate for such a comprehensive evaluation of Minnesota's interconnection procedures. We emphasize that we do not believe such interconnection reform should slow or stall the implementation of the CSG program, which could continue to rely on existing procedures in the meantime.

In addition, in the National Groups' reply comments, we suggested improvements related to interconnection that the Commission could take, potentially in advance of a more holistic interconnection review. These include:

- Require Xcel to report required information sooner or at more frequent intervals for CSG projects to understand better how interconnection is working during this time of heightened market development.<sup>22</sup>

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<sup>20</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).

<sup>21</sup> *See* Response of MidAmerican Energy Company and Proposed Rule Changes of Interstate Power and Light Company, Docket No. NOI-2014-0001 (both filed Feb. 16, 2015), *available at* <https://efs.iowa.gov/cs/groups/external/documents/docket/mdaw/mjk0/~edisp/294626.pdf>, <https://efs.iowa.gov/cs/groups/external/documents/docket/mdaw/mjk0/~edisp/294665.pdf>, and <https://efs.iowa.gov/cs/groups/external/documents/docket/mdaw/mjk0/~edisp/294669.pdf>.

<sup>22</sup> National Groups Reply Comments at 7-8; *see also* Minn. Stat. § 216B. 1611, subd. 4 (requiring utilities to maintain records of all interconnection applications, including date received, documents

- Require Xcel to develop an electronic, web-based platform for interconnection application processing and data tracking.<sup>23</sup>
- Require Xcel to provide information necessary to direct solar development to optimal locations on the grid, potentially via electronic maps.<sup>24</sup>

These changes could help to improve the interconnection experience for CSGs and other distributed generation applicants as well as Xcel, and they could be implemented in the near term, without modifications to the interconnection procedures. Nonetheless IREC believes that a more thorough review and update of the interconnection procedures remains critical to Minnesota's achievement of its solar goals.

#### **IV. Emerging Policies in High Penetration States Can Inform the Commission's Approach to Encouraging Continued and Sustainable Solar Market Growth.**

Given Minnesota's ambitious policies promoting solar and other renewable energy, IREC further suggests that the Commission and stakeholders begin to look at other policy innovations that can support the intended growth in the State's solar market. Two particular policies to consider are:

- Distribution group studies. As noted above, certain states with higher penetrations of distributed generation, namely California and Massachusetts, have adopted group-study processes to allow the utility to study two or more projects interconnecting to the distribution grid simultaneously and then allocate any upgrade costs.<sup>25</sup> These are

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generated in the course of processing the application, and final disposition, and to file an annual report regarding each year's applications).

<sup>23</sup> National Groups Reply Comments at 9-10.

<sup>24</sup> *Id.* at 10-12.

<sup>25</sup> D.14-04-003, Decision Adopting Revisions to Electric Tariff Rule 21 to Include a Distribution Group Study Process and Additional Tariff Forms, R.11-09-011 (April 16, 2014), *available at* <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M090/K001/90001430.PDF>; Mass. Standard for Interconnection of Distributed Generation § 3.4.1, Docket No. DPU 11-75.

- similar in concept to the group study process MISO offers.<sup>26</sup> While distribution group study processes have potential pitfalls, such as dealing with restudy and cost reallocation when one project in the group drops out, they offer a promising way to further streamline the interconnection process while also addressing cost allocation.
- Integrated Distribution Planning (IDP). In addition, Hawaii developed a more forward-looking approach to distribution system upgrades, called the Proactive Approach.<sup>27</sup> Together with Sandia National Laboratories, IREC incorporated the Proactive Approach into a more generalized framework for Integrated Distribution Planning.<sup>28</sup> Under this framework, the utility determines the likely distributed generation growth on its distribution system over one year, based on its interconnection queue and other data. By studying the aggregate capacity of existing facilities and the hosting capacity of existing equipment, it also determines its available hosting capacity for additional distributed generation. Using this information, the utility assesses whether its existing equipment can accommodate anticipated distributed generation installations and then plans for upgrades in areas where growth outpaces hosting capacity. The utility can also direct interconnection applicants to areas of the system that can accommodate them at no or low cost. IDP opens the door to modifications to the cost allocation process for these upgrades. For example, a utility could build upgrades in advance to meet an anticipated need. It

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<sup>26</sup> MISO FERC Electric Tariff, Att. X (Generator Interconnection Procedures (GIP)), § 4.2.

<sup>27</sup> See Haw. Pub. Utils. Comm'n, Order No. 32053, Ruling on RSWG Work Product, Docket No. 2011-0206, at 33, 49-57 (April 28, 2014) (requiring HECO to implement a DG Interconnection Plan (DGIP) consistent with the Proactive Approach and describing the details of that approach), available at <http://dms.puc.hawaii.gov/dms/DocumentKeySearch.jsp>.

<sup>28</sup> IREC & Sandia Natl. Labs., *Integrated Distribution Planning (IDP) Concept Paper, A Proactive Approach for Accommodating High Penetrations of Distributed Generation* (May 2013), available at [www.irecusa.org/wp-content/uploads/2013/05/Integrated-Distribution-Planning-May-2013.pdf](http://www.irecusa.org/wp-content/uploads/2013/05/Integrated-Distribution-Planning-May-2013.pdf).

could then rate base part of this cost, accounting for the value that the upgrades and associated distributed generation provides to the grid, and charge distributed generation customers portions of the remaining cost as they apply to interconnect to that area of the grid. Like group studies, this approach could allow for expensive upgrade costs to be shared across several distributed generation customers, as well as non-distributed generation customers as appropriate.

These two polices address issues of cost allocation, identification of optimal grid locations and encouraging facility siting at those locations, and the integration of distributed generation and other distributed energy resources into distribution system planning. These issues are becoming increasingly prevalent in other states with strong solar markets and they are likely to become more important in Minnesota, as well.

## **V. Conclusion**

IREC commends the Commission for its continued efforts to ensure that Minnesota's CSG program is as successful as possible. As discussed above and in the National Groups' December 1 reply comments, we recommend that the Commission take steps to review Minnesota's interconnection procedures comprehensively and revise them based on best practices in the FERC SGIP, IREC's *Model Interconnection Procedures*, and other states' standards. In addition, IREC also recommends the following, more immediate actions:

- Most importantly, clarify that Xcel should comport with MISO's procedures for reviewing transmission impacts, including in particular with respect to the coordination required between MISO and Xcel within the Section 10 review process.

- Require Xcel to report required information sooner or at more frequent intervals for CSG projects to understand better how interconnection is working during this time of heightened market development.
- Require Xcel to develop an electronic, web-based platform for interconnection application processing and data tracking.
- Require Xcel to provide information necessary to direct solar development to optimal locations on the grid, potentially via electronic maps.

We appreciate the opportunity provide these comments, and look forward to participating in this docket and potentially other future dockets to address these issues.

Respectfully submitted this 24th day of February, 2015,

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## CERTIFICATE OF SERVICE

I, Kimberly Kooles, hereby certify that I have this day served copies of the foregoing document on the attached list of persons by electronic filing, e-mail, or by depositing a true and correct copy thereof properly enveloped with postage paid in the United States Mail at Cary, North Carolina.

**DOCKET NO. E002/M-13-867**

Dated this 24th day of February 2015.

/s/ Kimberly Kooles

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Ian	Dobson	ian.dobson@ag.state.mn.us	Office of the Attorney General-RUD	Antitrust and Utilities Division 445 Minnesota Street, BRM Tower St. Paul, MN 55101	Electronic Service 1400	Yes	SPL_SL_13-867_Community Solar Garden - Xcel
Bill	Droessler	bdroessler@wla.org	Izaak Walton League of America-MWO	1619 Dayton Ave Ste 202 Saint Paul, MN 55104	Electronic Service	No	SPL_SL_13-867_Community Solar Garden - Xcel
Betsy	Engelking	betsy@geronimoenergy.com	Geronimo Energy	7650 Edinborough Way Suite 725 Edina, MN 55435	Electronic Service	No	SPL_SL_13-867_Community Solar Garden - Xcel
John	Farrell	jfarrell@ilsr.org	Institute for Local Self-Reliance	1313 5th St SE #303 Minneapolis, MN 55414	Electronic Service	No	SPL_SL_13-867_Community Solar Garden - Xcel
Sharon	Ferguson	sharon.ferguson@state.mn.us	Department of Commerce	85 7th Place E Ste 500 Saint Paul, MN 551012198	Electronic Service	No	SPL_SL_13-867_Community Solar Garden - Xcel
Nathan	Franzen	nathan@geronimoenergy.com	Geronimo Energy	7650 Edinborough Way Suite 725 Edina, MN 55435	Electronic Service	No	SPL_SL_13-867_Community Solar Garden - Xcel
Hal	Galvin	halgalvin@comcast.net	Provectus Energy Development llc	1936 Kenwood Parkway Minneapolis, MN 55405	Electronic Service	No	SPL_SL_13-867_Community Solar Garden - Xcel
Timothy	Gulden	info@winonarenewableenergy.com	Winona Renewable Energy, LLC	1449 Ridgewood Dr Winona, MN 55987	Electronic Service	No	SPL_SL_13-867_Community Solar Garden - Xcel

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Lynn	Hinkle	lhinkle@mnseia.org	Minnesota Solar Energy Industries Association	2512 33rd Ave South #2 Minneapolis, MN 55406	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel
Jan	Hubbard	jan.hubbard@comcast.net		7730 Mississippi Lane Brooklyn Park, MN 55444	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel
Tiffany	Hughes	Regulatory_Records@xcelenergy.com	Xcel Energy	414 Nicollet Mall FL 7 Minneapolis, MN 554011993	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel
John S.	Jaffray	jjaffray@jrpower.com	JJR Power	350 Highway 7 Suite 236 Excelsior, MN 55331	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel
Eric	Jensen	ejensen@iwla.org	Izaak Walton League of America	Suite 202 1619 Dayton Avenue St. Paul, MN 55104	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel
Michael	Kampmeyer	mkampmeyer@a-e-group.com	AEG Group, LLC	260 Salem Church Road Sunfish Lake, Minnesota 55118	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel
Brad	Klein	bklein@elpc.org	Environmental Law & Policy Center	35 E. Wacker Drive, Suite 1600 Suite 1600 Chicago, IL 60601	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel
John	Kluempke	jkluempke@winlectric.com	Elk River Winlectric	12777 Meadowvale Rd Elk River, MN 55330	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel
Jon	Kramer	jk2surf@aol.com	Sundial Solar	4708 york ave. S Minneapolis, MN 55410	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel
Rebecca	Lundberg	rebecca.lundberg@powerfullygreen.com	Powerfully Green	11451 Oregon Ave N Champlin, MN 55316	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel

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Erica	McConnell	emcconnell@kfwlaw.com	Keyes, Fox & Wiedman LLP	436 14th Street, Suite 1305  Oakland, California 94612	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel
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Andrew	Moratzka	apmoratzka@stoel.com	Stoel Rives LLP	33 South Sixth Street Suite 4200 Minneapolis, MN 55402	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel
Martin	Morud	mmorud@trunorthsolar.com	Tru North Solar	5115 45th Ave S  Minneapolis, MN 55417	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel
Rolf	Nordstrom	rnordstrom@gpisd.net	Great Plains Institute	2801 21ST AVE S STE 220  Minneapolis, MN 55407-1229	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel
Jeffrey C	Paulson	jeff.jcplaw@comcast.net	Paulson Law Office, Ltd.	7301 Ohms Ln Ste 325  Edina, MN 55439	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel
Donna	Pickard	dpickard@aladdinsolar.com	Aladdin Solar	1215 Lilac Lane  Excelsior, MN 55331	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel
Gayle	Prest	gayle.prest@minneapolismn.gov	City of Mpls Sustainability	350 South 5th St. #315  Minneapolis, MN 55415	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel
Dan	Rogers	drogers@sunedison.com	SunEdison	N/A	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel

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Matthew J.	Schuerger P.E.	mjsreg@earthlink.net	Energy Systems Consulting Services, LLC	PO Box 16129 St. Paul, MN 55116	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel
Doug	Shoemaker	dougs@mnRenewables.org	MRES	2928 5th Ave S  Minneapolis, MN 55408	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel
Eric	Swanson	eswanson@winthrop.com	Winthrop Weinstine	225 S 6th St Ste 3500 Capella Tower Minneapolis, MN 554024629	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel
Thomas P.	Sweeney III	tom.sweeney@easycleanenergy.com	Clean Energy Collective	P O Box 1828  Boulder, CO 80306-1828	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel
Pat	Treseler	pat.jcplaw@comcast.net	Paulson Law Office LTD	Suite 325 7301 Ohms Lane Edina, MN 55439	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel
Daniel	Williams	DanWilliams.mg@gmail.com	Powerfully Green	11451 Oregon Avenue N  Champlin, MN 55316	Electronic Service	No	SPL_SL_13- 867_Community Solar Garden - Xcel