

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

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

ISSUE DATE: December 15, 2015

DOCKET NO. E-002/M-13-867

ORDER APPROVING TARIFFS AS
MODIFIED AND REQUIRING FILING

PROCEDURAL HISTORY

On August 6, 2015, the Commission issued its *Order Adopting Partial Settlement as Modified* in this docket. The order directed Xcel Energy (Xcel or the Company) to make several changes to its community-solar-garden program as proposed in a settlement agreement between Xcel and certain solar-garden developers.

On August 26, Sunrise Energy Ventures, LLC (Sunrise) and the Minnesota Department of Commerce (the Department) filed petitions for, respectively, reconsideration and clarification of the August 6 order.

On October 15, the Commission made one clarification on its own motion but otherwise denied the petitions for reconsideration and clarification. The Commission ordered Xcel to file, within five days, revised tariffs reflecting the Commission's decisions in the August 6 and October 15 orders.

On October 20, Xcel filed revised solar-garden tariffs reflecting the program changes ordered by the Commission.¹ The Company stated that the revised tariffs reflected the Commission's orders as well as several modifications sought by developers participating in a program-implementation workgroup.

On October 27, the following parties filed objections to Xcel's tariff filing:

- The Department
- SunShare, LLC; GreenMark Solar, LLC; and Sunrise, filing jointly
- Sunrise, filing separately

The Department and the jointly filing developers proposed changes to Xcel's tariff relating to garden co-location, distribution-system upgrades, and interconnection disputes, among other

¹ Compliance Filing – Revised Tariffs, Attachment B (hereinafter “Revised Tariff”).

topics. In its separate objections, Sunrise repeated arguments made in its earlier petition for reconsideration.

On November 3, the following parties filed reply comments:

- Xcel
- Fresh Energy
- GreenMark
- SunShare
- MN Solar Community²

The Commission also received a number of comments from members of the public expressing strong support for solar gardens and urging their rapid deployment.

On November 19, 2015, the Commission met to consider the matter.

FINDINGS AND CONCLUSIONS

I. Summary of Commission Action

The Commission has reviewed the parties' objections to Xcel's tariff filing and concludes that those discussed below warrant revisions to the tariffs. The Commission will approve Xcel's tariffs with the changes set forth herein and will order the Company to file revised tariffs within three days of the date of this order. These revised tariffs will become effective upon filing.

II. Co-location

A. The Issue

The Commission's August 6 order limited developers' ability to co-locate solar gardens in large groups resembling utility-scale projects. The order provided that solar gardens would be considered co-located if they "exhibit characteristics of a single development," including but not limited to "common ownership structure, an umbrella sale arrangement, shared interconnection, revenue-sharing arrangements, and common debt and equity financing."

Echoing the August 6 order, Xcel's October 20 revised tariff states that solar gardens are co-located if they exhibit characteristics of a single development. But the tariff also expands on the order language, providing that projects with common ownership located within a one-mile radius of each other are considered a single development and excluding "common debt or equity financing" as a basis for finding common ownership:

"Co-Location" or being "Co-Located" means two or more Community Solar Gardens that exhibit characteristics of a single development, including but not limited to:

² The following developers filed jointly as MN Solar Community: Innovative Power Systems, Inc.; Minnesota Community Solar, LLC; Novel Energy Solutions, LLC; SolarStone Partners, LLC; and TruNorth Solar, LLC.

- i. Are located within a 1 mile radius of one another as measured from nearest points of the Community Solar Gardens; and,
- ii. Share common ownership (including through legal affiliates or partnerships, but excluding common debt or equity financing).³

Xcel stated that this definition reflects a compromise in which the Company accommodated developers' requests to exclude "common debt or equity financing" from the definition of co-location in exchange for adding the one-mile proximity test.

Developers, while open to a bright-line proximity test, objected to the one-mile limit in the revised tariff, arguing that it would have a chilling effect on solar-garden development. SunShare, GreenMark, and Sunrise supported a half-mile cutoff with an exclusion for rooftop and carport gardens.

B. Commission Action

The Commission will require Xcel to define co-location according to the definition approved by the Commission in its August 6 order, with one modification discussed below.

A geographical cutoff goes beyond the multi-factor test established in the August 6 order. That test allows consideration of geographical proximity, but neither proximity nor any other factor is dispositive of whether gardens are part of a single development. And while most parties were open to adopting a bright-line proximity test, there was no agreement on what the cutoff should be. Absent such agreement, and seeing no compelling reason to revisit its August 6 order on this point, the Commission will require Xcel to use that order's multi-factor definition of co-location.

Finally, the Commission understands that there is a very small number of financial institutions extending tax-equity financing to solar gardens.⁴ Thus, many otherwise unrelated solar gardens are likely to be financed by the same entity. To help ensure that the definition of co-location does not become an obstacle to the financing of solar gardens, the Commission will modify the definition to clarify that gardens will not be considered co-located solely because the same entity provided tax-equity financing for the gardens.

For the foregoing reasons, the Commission adopts the following definition of "co-located" community solar gardens:

Community Solar Gardens shall be considered "Co-Located" if they exhibit characteristics of a single development, such as:

- i. common ownership structure,
- ii. an umbrella sale arrangement,
- iii. shared interconnection,
- iv. revenue-sharing arrangements, and
- v. common debt and equity financing.

³ Revised Tariff, Sheet. No. 68, section 1.a.

⁴ These investors are likely to be large institutions that are able to take advantage of the federal Investment Tax Credit available to developers of solar generation.

Community Solar Gardens will not be considered co-located solely because the same person or entity provided tax-equity financing for the garden or garden project.

III. Material Upgrades

A. Introduction

The August 6 order provided that Xcel is not required to undertake any material upgrades in its distribution system to accommodate interconnection of co-located solar gardens. The order defined “material upgrades” as including “the addition of substation transformers, the upgrading of existing substation transformers, the installation of new feeder bays, new overhead feeders, or new underground feeders, and re-conductor and pole line work, where the cost of such upgrades exceeds one million dollars.”

Xcel’s revised tariff implements this definition by establishing two categories of material upgrades: (a) upgrades that are per-se material and (b) upgrades that are material only if their cost exceeds \$1 million.⁵

There are five categories of upgrades that are per-se material and will never be performed:

- new substation transformer,
- upgrade substation transformer,
- install new feeder bay,
- install new overhead or underground feeder, and
- changes that require a substation outage.

The following upgrades are considered material only if their aggregate cost exceeds \$1 million:

- three-phase line extension on existing feeders and
- reconductor/build line.

B. Changes Requiring a Substation Outage

1. The Issue

SunShare took issue with the last category of per-se material upgrades—changes that require a substation outage. Specifically, SunShare expressed concern that treating all substation outages as

material would sweep too broadly, excluding solar gardens that require even a partial or transitory substation outage to interconnect.

SunShare asserted that Xcel can take a substation offline without any impact on customer service—for example, by routing power through a different substation. To address its concern, SunShare suggested that only an “unavoidable customer-service outage” be considered material.

⁵ Revised Tariff, Sheet Nos. 68.4–.5, section 5.h.

At hearing, Xcel acknowledged that it is possible to have a partial substation outage that does not affect service to customers. Even if circumstances allowed a partial outage, however, Xcel stated that it would avoid one if it required a switching configuration that created significant operational risk.

2. Commission Action

The Commission will require Xcel to modify its revised tariff to provide that only a substation outage that (1) materially affects service to customers or (2) creates an unreasonable operational risk will be considered material:

Material Upgrades that will not be performed are limited to the following:

- New substation transformer
- Upgrade substation transformer
- Install new feeder bay
- Install new overhead or underground feeder
- Changes that require a substation outage that materially affects service to customers or creates an unreasonable operational risk⁶

The Commission is charged by statute with ensuring that Xcel's solar-garden program allows for the creation of solar gardens in a manner consistent with the public interest.⁷ This tariff change will remove an unnecessary obstacle to solar-garden development while protecting Xcel and its customers from unreasonable construction risks and material service interruptions.

C. Transparency of Cost Determination

1. The Issue

Xcel's revised tariff lists two categories of upgrades that are considered material only if their combined cost exceeds \$1 million: (1) three-phase line extension on existing feeders and (2) reconductor/build line. Responsibility for determining whether the cost of these upgrades exceeds \$1 million lies with Xcel. If a developer disagrees with Xcel's cost determination, however, it may submit the dispute to an independent engineer.⁸

GreenMark, MN Solar Community, and Fresh Energy all supported a tariff modification that would require Xcel to disclose the basis for its determination that the cost of necessary upgrades exceeds \$1 million. They argued that this change would make it easier for developers and the Company to resolve disputes over the accuracy of cost estimates and would facilitate review by an independent engineer if the parties cannot resolve a dispute themselves.

⁶ Revised Tariff, Sheet No. 68.4, section 5.h.i.aa (footnotes omitted).

⁷ Minn. Stat. § 216B.1641(e)(1), (4).

⁸ See Revised Tariff, Sheet No. 68.11, section 9.

At hearing, Xcel confirmed that it would provide cost information in as much detail as possible. However, the Company stated that some costs, such as labor, are included in the installed costs of certain equipment, which may not be susceptible to being broken down into component costs.

2. Commission Action

The Commission appreciates Xcel's willingness to provide developers with the basis of its cost determination. Doing so will improve transparency, assure developers that they are being treated fairly, and promote efficiency by minimizing the number of disputes that have to be resolved by the independent engineer.

The Commission adopts the following language regarding material-upgrade cost transparency and will require Xcel to insert it in the appropriate location in the tariff:

For a material upgrade exceeding the \$1 million limitation applicable to (1) three-phase line extension on existing feeders and (2) reconductor/build line, the Company will provide the applicant with an itemized list of the cost inputs, including any unit costs and any underlying data and documentation related to those unit costs, that comprise the Company's determination.

D. Applicability to Non-Co-Located Gardens

The revised tariff does not specify whether the prohibition on material upgrades applies to non-co-located solar gardens. MN Solar Community argued that it should not apply to non-co-located gardens; the Commission agrees.

The parties to the partial settlement, and the Commission in its August 6 order, were focused on the problem of utility-scale projects being proposed as groups of co-located solar gardens. The prohibition on material distribution upgrades was part of the strategy to address that problem.

The language of the partial settlement, which the Commission adopted, applies only to co-located solar gardens: "*for purposes of interconnecting Co-Located Community Solar Gardens to Xcel Energy's distribution system, Section 10 of the Company's Minnesota Electric Rate Tariffs do not require the Company to undertake any material upgrades in its distribution system to accommodate interconnection of Community Solar Garden applications.*"⁹

Accordingly, the Commission will order Xcel to revise its tariff as follows:

The Company will determine whether a "Material Upgrade" to the Company network is needed to accommodate a Community Solar Garden. A Material Upgrade will not be performed. The material upgrade limitations in this section shall only apply to co-located community solar gardens.¹⁰

⁹ August 6 Order at 12, 27–28 (emphasis added).

¹⁰ Revised Tariff, Sheet No. 68.4, section 5.h.i.

IV. Standard for Reviewing Interconnection Disputes

A. The Issue

The August 6 order outlined a process for solar-garden developers to submit interconnection disputes to an independent engineer, including disputes related to Xcel's determination of application completeness, timeliness of application and study processing, and the cost and necessity of required study costs and distribution-system upgrades.

Xcel's revised tariff requires the independent engineer to "use the Company's standards for building, safety, power quality, reliability and long-term stable operations for building facilities even where such standards exceed the minimum requirements set forth in the codes, standards and rules."¹¹

The Department and several developers objected to this requirement, arguing that requiring the engineer to apply Xcel's standards in every instance would jeopardize the engineer's independent judgment. Moreover, the Department argued that the Commission's cogeneration and small-power-production rules, Minn. R. ch. 7835, prohibit solar-garden interconnection requirements that are more restrictive than industry standards or that otherwise discourage distributed generation.¹²

The Department proposed a modification of Xcel's tariff language that would require the independent engineer to use industry standards in reviewing interconnection disputes while allowing consideration of Xcel's more restrictive standards on a case-by-case basis. In addition, the Department's modification would permit Xcel to install equipment that exceeds industry standards as long as Xcel pays the extra cost and does not count that cost in determining whether a project has passed the \$1 million material-upgrade threshold.

Xcel argued that Minn. R. ch. 7835 does not govern solar-garden interconnection standards. The Company stated that, while industry standards establish the minimum safety requirements for power systems, utilities typically design their systems to meet or exceed minimum safety standards. For example, Xcel must design its power lines to withstand the specific weather conditions in its service territory.

B. Commission Action

The Commission concurs with the Department's revisions and will require Xcel to incorporate them into its tariff in the form shown below.

Regardless of whether Minn. R. ch. 7835 applies to solar gardens, the Commission concludes that industry standards should be the touchstone for solar-garden interconnection requirements. Forcing the independent engineer to accept Xcel's more restrictive standard in every instance would compromise his or her independence, would impose undue costs on developers, and would risk chilling solar-garden development, in contravention of statutory requirements.¹³

¹¹ Revised Tariff, Sheet No. 68.11, section 9.a.

¹² See Minn. R. 7835.0800.

¹³ See Minn. Stat. § 216B.1641(e)(1) (requiring that a community-solar-garden program reasonably allow for the creation and financing of solar gardens).

The Commission recognizes that, in certain circumstances, Xcel may have good reasons for installing a piece of equipment that exceeds industry standards. For this reason, the Commission will allow the Company to implement an alternative that is more restrictive than industry standards, provided that Xcel does not charge the developer for the extra cost or count that cost toward the \$1 million material-upgrade limit.

For all these reasons, the Commission will require Xcel to revise its tariff as follows:

The safety and reliability of the Company's system should be given paramount consideration in any analysis. The review of the independent engineer must ~~use~~ consider industry standards for interconnection, including the current version of the National Electric Safety Code, National Electric Code as adopted in Minnesota, FERC rules, NERC rules, Minnesota rules and Minnesota Interconnection Standards and must consider, on a case-by-case basis, the Company's standards for building, safety, power quality, reliability and long-term stable operations for building facilities even where such standards ~~exceed~~ are more restrictive than the minimum requirements set forth in the codes, standards and rules. Continuity and consistency of using Company standards is paramount for employee safety. The standards employed by the Company (and as used by the independent engineer) should not vary, where applicable, from the standards which the Company uses when constructing, maintaining, or repairing its distribution network for purposes of providing service to its own retail customers. However, if the independent engineer determines that a particular piece of equipment or engineering alternative proposed by Xcel is more restrictive than industry standards but does not discourage cogeneration or small power production, the Company may implement that alternative, if the Company pays the incremental cost in excess of the amount necessary to implement the industry standard. The additional incremental costs paid by Xcel cannot be included in the \$1 million material upgrade limit. Xcel would continue to have the burden of proof to show that it is reasonable for its ratepayers to pay for the costs of the more restrictive standards.¹⁴

V. Transferring Interconnection-Queue Positions

The August 6 order limited the aggregate capacity of co-located solar gardens to 5 MW for applications submitted before September 25, 2015, and 1 MW for applications submitted after September 25, 2015. The order contemplated that Xcel would "scale down" noncompliant applications to the applicable cap level.

¹⁴ Revised Tariff, Sheet No. 68.11, section 9.a.

Some developers expressed a desire to transfer applications that exceed a co-location cap to another developer without those applications losing their place in the queue. In its October 15 order, the Commission clarified that the August 6 order did not allow developers to transfer the queue position of a solar-garden application that exceeds a co-location cap.

Xcel's revised tariff provides that "An applicant is not allowed to transfer the Study Queue Position of any Community Solar Garden application to a different entity."¹⁵ The Department and MN Solar Community argued that this language goes further than the Commission's orders by preventing developers from transferring queue positions of cap-compliant applications.

The Commission concurs. Neither the August 6 nor the October 15 order prohibits a developer from transferring queue positions of solar-garden applications that comply with the applicable co-location cap. And by confining its clarification to noncompliant applications, the October 15 order recognized that there are situations where it is appropriate to allow developers to transfer the queue positions of cap-compliant applications—for example, where financing arrangements require transferring ownership of a project.

Accordingly, the Commission will require Xcel to revise its solar-garden tariff as follows:

An applicant is not allowed to transfer the Study Queue Position of ~~any~~ a Community Solar Garden application to a different entity for projects that exceed the applicable Co-Location Limits.

VI. Substation Telecommunications Upgrades

SunShare, GreenMark, and Sunrise proposed tariff language addressing the telecommunications upgrades that will be needed to allow the Company to monitor voltage and other conditions at substations where solar gardens are connected.

According to SunShare, Xcel has estimated that installing telecommunications upgrades will take between 12 and 15 months. SunShare stated that delaying the commissioning of solar gardens until these upgrades are completed would threaten the viability of projects that depend on tax-equity financing, since these projects must be commissioned by the end of 2016 to take advantage of the current 30-percent federal Investment Tax Credit.

These developers' proposal would allow solar gardens to be commissioned before telecommunications upgrades are completed, unless an upgrade is needed to address a "non-redundant safety or reliability concern" caused by a solar garden.

Xcel responded that its Section 10 interconnection tariff requires remote monitoring to ensure safety and system reliability. However, the Company acknowledged that conditions at some substations, particularly in areas with high electricity demand, could allow some solar gardens to interconnect before telecommunications upgrades are completed. Xcel stated that it is developing a process for developers to request permission to do so.

¹⁵ Revised Tariff, Sheet No. 68.16, section 13.

The Commission finds that the exception process outlined by the developers will reasonably facilitate the financing of solar gardens, as required by statute, while preserving safety and system reliability. Accordingly, the Commission will direct Xcel to include the following language at the end of section 5 of the revised tariff:

k. Metering, monitoring, and control are governed by Section 10 of the Company's tariff. However, the Company will develop a process to aid commissioning of community solar gardens prior to installation of a telecommunications upgrade between the Company's substation and its operational network if to do so would not affect the safety or reliability of the Company's system.

ORDER

1. The Commission hereby approves Xcel's tariffs as filed on October 20, 2015, with the following changes:

a. Replace section 1.a with the following definition:

Community Solar Gardens shall be considered "Co-Located" if they exhibit characteristics of a single development, such as:

- i. common ownership structure,
- ii. an umbrella sale arrangement,
- iii. shared interconnection,
- iv. revenue-sharing arrangements, and
- v. common debt and equity financing.

Community Solar Gardens will not be considered co-located solely because the same person or entity provided tax-equity financing for the garden or garden project.

b. Revise section 5.h.i.aa as follows:

Material Upgrades that will not be performed are limited to the following:

- New substation transformer
- Upgrade substation transformer
- Install new feeder bay
- Install new overhead or underground feeder
- Changes that require a substation outage that materially affects service to customers or creates an unreasonable operational risk

- c. Insert the following language in the appropriate location in the tariff:

For a material upgrade exceeding the \$1 million limitation applicable to (1) three-phase line extension on existing feeders and (2) reconductor/build line, the Company will provide the applicant with an itemized list of the cost inputs, including any unit costs and any underlying data and documentation related to those unit costs, that comprise the Company's determination.

- d. Revise section 5.h.i as follows:

The Company will determine whether a "Material Upgrade" to the Company network is needed to accommodate a Community Solar Garden. A Material Upgrade will not be performed. The material upgrade limitations in this section shall only apply to co-located community solar gardens.

- e. Revise section 9.a as follows:

The safety and reliability of the Company's system should be given paramount consideration in any analysis. The review of the independent engineer must ~~use~~ consider industry standards for interconnection, including the current version of the National Electric Safety Code, National Electric Code as adopted in Minnesota, FERC rules, NERC rules, Minnesota rules and Minnesota Interconnection Standards and must consider, on a case-by-case basis, the Company's standards for building, safety, power quality, reliability and long-term stable operations for building facilities even where such standards exceed are more restrictive than the minimum requirements set forth in the codes, standards and rules. Continuity and consistency of using Company standards is paramount for employee safety. The standards employed by the Company (and as used by the independent engineer) should not vary, where applicable, from the standards which the Company uses when constructing, maintaining, or repairing its distribution network for purposes of providing service to its own retail customers. However, if the independent engineer determines that a particular piece of equipment or engineering alternative proposed by Xcel is more restrictive than industry standards but does not discourage cogeneration or small power production, the Company may implement that alternative, if the Company pays the incremental cost in excess of the amount necessary to implement the industry standard. The additional incremental costs paid by Xcel cannot be included in the \$1 million material upgrade limit. Xcel would continue to have the burden of proof to show that it is reasonable for its ratepayers to pay for the costs of the more restrictive standards.

- f. Revise section 13 as follows:

An applicant is not allowed to transfer the Study Queue Position of ~~any~~ a Community Solar Garden application to a different entity for projects that exceed the applicable Co-Location Limits.

- g. Insert the following language at the end of section 5:

k. Metering, monitoring, and control are governed by Section 10 of the Company's tariff. However, the Company will develop a process to aid commissioning of community solar gardens prior to installation of a telecommunications upgrade between the Company's substation and its operational network if to do so would not affect the safety or reliability of the Company's system.

2. Within three days of the date of this order, Xcel shall refile compliance tariffs reflecting the Commission's decisions herein; these tariffs shall become effective upon filing.
3. This order shall become effective immediately.

BY ORDER OF THE COMMISSION

Daniel P. Wolf
Executive Secretary



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