

Memorandum

TO: Mayor and City Council
 City Manager
FROM: Amir Nadav, Solar Consultant
DATE: May 24, 2016
RE: Community Solar Garden Subscription

Recommendation:

Authorize resolution to approve community solar garden subscription agreements with United States Solar Corporation and SolarStone Community LLC.

Summary:

Community solar gardens represent a way for the city of St. Anthony Village to participate in the development of solar energy technology in Minnesota without the direct responsibility of owning and maintaining an on-site solar array. Under this arrangement, the city would “subscribe” to a portion of the energy produced by a solar array that is owned and maintained by a third party. The city would receive credit on its electricity bill from Xcel Energy for the production of solar energy and in turn make subscription payments to the community solar garden developer. The city would not make an upfront payment to fund the construction of a community solar garden.

The city received proposals from three developers that participated in the “Community Solar Subscriber Collaborative” coordinated by the Metropolitan Council. Following direction from City Council on its May 2 workshop and discussions with the community solar garden developers, staff recommends proceeding with subscriptions for a total of 647,940 kilowatt-hours (kWh) representing 352 kilowatts (kW) of solar garden capacity. These subscriptions amount to approximately one-quarter of the annual electricity use from city government facilities.

Due to state law and the location of the proposed community solar gardens, only facilities in Hennepin County could be considered for these subscription agreements. Facilities were matched with developers in order to maximize potential cost savings to the city. The size of the subscriptions is based on the annual average electricity use of the selected facilities. A summary of the proposed subscriptions appears below.

Developer	Proposed Facilities Subscribed	Total Subscription Size (kWh)
SolarStone Community LLC	<ul style="list-style-type: none"> Silver Point Park Shelter Silver Point Park Trillium Park Central Park 	63,700
United States Solar Corporation	<ul style="list-style-type: none"> City Hall Fire Department 	584,420

Staff estimate that the two proposed subscriptions could result in a total net present value of electricity cost savings to the city of approximately \$330,000 over the 25-year life of the subscription agreements. Further details on potential savings appear in Appendix I.

Community Solar Garden Subscriber Collaborative Background:

In July 2015, the city of St. Anthony Village submitted a letter of intent to the Metropolitan Council to participate in the “Community Solar Subscriber Collaborative.” This allowed the city to consider opportunities to subscribe to community solar gardens that emerge from the Metropolitan Council’s Request for Proposals for Community Solar Garden Subscription Agreements. The Metropolitan Council negotiated subscription agreements with five solar garden developers, and a lottery was conducted to allocate subscription capacity to participating local governments. The subscriber collaborative offered the city administrative efficiencies as well as the benefits of joining other participants to form a larger demand pool. Additional information about the “Community Solar Subscriber Collaborative” is available in the fact sheet attached.

Community Solar Gardens operate under Minnesota Statute 216B.1641 and regulatory oversight provided by the Minnesota Public Utilities Commission. Eligible gardens have no less than five subscribers, and no subscriber may account for more than 40% of the garden’s capacity. Eligible subscribers must be retail electric customers of the utility served by the garden, and located in the same or adjacent county as the garden. Additional information and requirements are described in the attached “Frequently Asked Questions” document provided by Xcel Energy.

Round 1 lottery results were announced on January 28, 2016 and local governments were asked to signal their intent to consider subscription opportunities by February 29, 2016. Unclaimed lottery tickets were re-allocated in a second lottery, and results were announced on April 5, 2016. The city of St. Anthony participated in both lottery rounds and offered to consider subscription opportunities that do not exceed 1.5 million kilowatt-hours (“kWh”) of annual electricity production, equivalent to approximately 880 kilowatts (“kW”) of solar garden capacity. The city of St. Anthony was offered subscription agreements for a total of 920 kW of capacity distributed across the following community solar gardens:

- 120 kW in a community solar garden to be developed by SolarStone in Wright County
- 200 kW in a community solar garden to be developed by US Solar in Carver County
- 200 kW in a community solar garden to be developed by US Solar in Wright County
- 400 kW in two community solar gardens to be developed by TruNorth Solar in Carver County

City staff evaluated the potential cost savings from the proposals of all three developers and communicated with all of the developers about potential subscriptions. The proposed subscription agreements were formulated based on the largest potential savings to the city, given the city facilities eligible for a subscription, and the responses from developers.

Subscription Structure and Considerations:

Community Solar Garden subscription agreements represent 25 year contracts. The city may subscribe up to 120% of the annual electricity consumption of one or more facilities. Once a community solar garden is operational, the city will make monthly payments to the garden operator for its portion of the energy produced. The city will also receive credits on its electricity bill from Xcel Energy for the city's portion of the solar energy produced. The utility bill credit may also include a payment for the "renewable energy credits," which would represent Xcel Energy's acquisition of, and legal claim to, the solar energy attributes.

The developer determines the subscription rate over the life of the project, and it is locked into the subscription agreement. Both developers offer a "pay-as-you-go" subscription with no upfront payments required from subscribers for the construction costs of the solar garden. Depending on the terms of the developer, subscription rates may vary based on the Xcel Energy rate plan of the facility subscribed and in some cases may include an annual escalation in the rate.

Bill credit rates are determined by the Xcel Energy rate plan that applies to each facility the city subscribes and may change annually following review by the Minnesota Public Utilities Commission. Bill credit rates for 2015 varied by customer type as follows:

- Residential: \$0.12743 per kWh
- Small General Service: \$0.12431 per kWh
- General Service: \$0.09914 per kWh

Additional Renewable Energy Credit payments are set at \$0.03 per kWh for gardens smaller than, or equal to, 250 kW and \$0.02 per kWh for gardens larger than 250 kW.

The city has several facilities that qualify for the "Small General Service" bill credit rate, however the majority of the city's facilities and electricity use qualify for the "General Service" bill credit rate. While electric demand from the city's accounts exceeds the 920 kW of solar garden capacity offered to the city through the lottery, the city's "Small General Service" accounts represent approximately 86 kW of solar garden capacity.

The city may transfer or terminate its community solar garden subscription under certain conditions and termination fees may apply. Both subscription agreements provide guarantees for a percentage of the solar garden's estimated future production under certain circumstances.

Estimated Savings and Risk:

Under business as usual conditions, the proposed subscriptions are expected to generate a net savings to the city over the life of the agreements. The Metropolitan Council and the Clean Energy Resource Teams ("CERTs") provided calculators to estimate the potential financial impact of subscribing to a community solar garden. Details of the two proposed subscription agreements before the City Council were entered into the calculators, and the results from three scenarios appear in Appendix I. The calculators are

sensitive to a number of variables such as the future increase in bill credit rates, discount rates, and solar panel degradation factor, among others. For this reason, the figures cited in the appendix should be considered as estimates and not guarantees of future savings.

The future change in the utility bill credit rate to the city for solar energy produced by the garden represents perhaps the most significant source of uncertainty. This differs from the subscription rate per kilowatt hour of solar energy that the city pays the developer over the life of the project, which is set by the provisions of the subscription agreement. Solar bill credits from Xcel to the city are based on the "Applicable Retail Rate." A review of Xcel Energy's electricity rates since 1992 shows an average increase of 2.6 to 2.9 percent per year across all customer classes.¹ As indicated in the appendix, the financial model projects a net savings to the city if the bill credit rate continues to increase at the same pace as the historical average. If the bill credit rate were to remain unchanged over the 25 year life of the subscription agreement, the city's cumulative subscription expenses will likely equal its cumulative bill credit savings. Factors that could theoretically lead to no change, or a decrease, in bill credits include significant legislative or regulatory changes to the rules of the community solar garden program or changing market conditions such as long term declines in the cost of fossil fuels and other electrical generation and distribution technologies. City staff believe that the potential for a net decrease in solar energy bill credits over the 25-year subscription period is unlikely.

Attachments:

- Community Solar Subscriber Collaborative Description
- Minnesota Subscribers Frequently Asked Questions, Xcel Energy

¹ Clean Energy Resource Teams, "Community Solar Garden Subscriber Questions." Web: http://www.cleanenergyresourceteams.org/sites/default/files/CommunitySolarGarden_SubscriberQuestions_04-27-15.pdf

Appendix I: Community Solar Garden Subscription Cost Comparison & Estimated Cumulative Savings Scenarios

Costs:

A subscription to a community solar garden offers the city several potential cost and administrative efficiencies. Developing a solar array equivalent to the size of the city's proposed community solar garden subscriptions would require a significant upfront capital investment. According to data compiled by the National Renewable Energy Laboratory (NREL), the median cost to construct solar electricity arrays between 250 kilowatts (kW) and 500 kW in size is \$3.44 per watt.² If the city chose to build its own solar array, the city would be responsible for the upfront capital costs in addition to the occasional operations and maintenance costs throughout the life of the project. The city would also bear some risk for equipment repairs that may fall outside of the scope of the product warranties.

Community solar gardens may benefit from several financial advantages. Private developers of solar projects may utilize a federal tax credit in the amount of 30% of the project costs as well as accelerated depreciation, which further enhances the financial value of the project. By bundling multiple subscriptions, community solar garden developers can build larger projects, which benefit from economies of scale that may reduce the overall project costs per kilowatt. According to NREL's data, the national median price per kW of a solar array between 500 – 1,000 kW in size is \$2.93, compared to a median price per kW of \$3.44 for arrays between 250 – 500 kW in size.³

Under the proposed community solar garden subscriptions, the city only makes on-going monthly payments. The garden operator is responsible for the upfront development costs and on-going maintenance and administrative costs of the garden. In most years, the city's annual savings from the community solar garden bill credits are expected to equal or exceed the city's subscription payments to the solar garden developer.

Estimated Savings from Proposed Community Solar Subscription Agreements:

City staff reviewed the estimated financial implications of all of the solar gardens subscription opportunities received in the lottery. The scenarios below estimate the cumulative cost savings from the staff recommendation of a subscription agreement in the amount of 584,240 kWh with US Solar and 63,700 kWh with SolarStone. The size of both subscriptions are based on average annual electricity use of

² Feldman, David, Galen Barbose, *et al.* 2015. "[Photovoltaic System Pricing Trends](#)." Golden, CO: National Renewable Energy Laboratory.

³ *Ibid.*

the city facilities selected. As discussed in the memorandum, the estimates below are subject to a number of variables and do not represent guaranteed savings.

Estimated Net Present Value of Cumulative Savings from Proposed Subscription Agreement

Subscription Size	Scenario 1 Standard assumptions*	Scenario 2 No increase in solar bill credit	Scenario 3 Solar bill credit increases by 3% / yr
352 kW (approximately 25% city's annual electricity use)	\$338,827	\$20,616	\$390,522

*Standard assumptions provided by the Clean Energy Resource Teams calculator include:

- Annual increase in solar energy bill credits: 2.65% (reflecting the historical rate of increase)
- Year 1 bill credit: \$0.11914/kWh for General Service; \$0.14431/kWh for Small General Service (inclusive of \$0.02/kWh renewable energy credit payment)
- Discount rate: 4%
- Annual decrease in solar panel performance: 0.5%



Community Solar Subscriber Collaborative: An Opportunity for Metro Area Local Governments

Description: Community Solar Gardens create a new opportunity for local government entities to support clean energy, save on energy bills for public buildings and plants, and hedge against the future price volatility of electricity.

The Community Solar Subscriber Collaborative is a joint effort for Metro area local governments to procure solar garden subscriptions from a single RFP process. By working together, government entities gain an economy of scale in the solicitation process (reducing the administrative burden to vet developers) and in attractiveness to developers, resulting in better pricing and subscription terms.

The process below describes how the RFP will be issued and how local governments are able to procure solar garden subscriptions through this initiative.

Process:

1. **Letter of Intent:** Interested local governments sign a non-binding letter of intent declaring their intent to subscribe, and attach to the letter a list of the premises and loads they are interested in subscribing. Interested entities must be willing to subscribe to at least 100kW of solar production (equivalent to 120,000 kWh annual consumption).
2. **Joint Powers Agreement (Optional):** Local governments requiring a Joint Powers Agreement (JPA) to be signed according to their procurement policies may sign a community solar garden subscription-specific JPA.
3. **Request for Proposals:** The Metropolitan Council will publish an RFP for developers to provide community solar garden subscriptions to the local governments that signed a Letter of Intent. Developers' proposals will include a list of the counties they can provide subscriptions to and how much capacity they have available for each county.
4. **Developer Selection:** A team of governmental participants from the core steering group and major subscribers, selected by the Council, will evaluate proposals received, ranking them according to qualifications, experience, and price.
5. **Lottery Process:** Local governments that signed a Letter of Intent will be entered into a lottery for available garden subscriptions. Local governments drawn in the lottery will have the first right of refusal to subscribe to the garden(s) for which they are drawn.

6. **Execute Subscription Agreement(s):** In order to secure its subscription(s), each local government entity will need to execute its own Subscription Agreement(s) with the developer it is purchasing a subscription from.
7. **Garden Approval Process:** There is currently a long queue for community solar gardens to be approved by Xcel energy before they can be built. This process is expected to take 18-21 weeks after the initial application is submitted and may be longer as this is a new program in Minnesota and the number of garden applications has been much higher than expected.
8. **Garden Construction:** Construction of each garden can take from 1 to 6 months or longer depending on the permitting and process at the host site.
9. **Energy Produced; Bill Credits Assigned:** Once the garden is approved and built, it will begin producing solar energy, delivered to Xcel and credited to subscribing entities in the form of \$/kWh bill credits.

Timeline:

Action	Date
RFP Published by Met Council	July 10 th , 2015
Letters of Intent due to Met Council	Due July 24 th , 2015
Joint Powers Agreements signed (if deemed necessary by participating entities)	Due July 24 th , 2015
Proposals Due	August 21st, 2015
Selection and Ranking of Proposals	August-November 2015
Lottery Process	Dec. 2015-Jan. 2016
Execute Subscription Agreements	January 2016

Contact for Questions:

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Download documents, read frequent questions, and find more information online at
mncerts.org/solargardens/collaborative



Solar*Rewards® Community® Minnesota Subscriber FAQs

How can I subscribe to a community solar garden?

In order to be a subscriber to the Minnesota Solar*Rewards Community (S*RC) program, you must be an Xcel Energy electric retail customer in Minnesota. The location of the customer premise associated with the account receiving the bill credit must be in the county where the solar garden is located, or in an adjacent county. You can decide which garden you are interested in and contact one of the many Garden Operators developing solar gardens in Minnesota.

Requirements are largely defined in [Minn. Statute §216B.1641](#).

Subscriber Requirements

The following rules apply to all Solar*Rewards Community subscribers:

A subscriber must be an electric retail customer of Xcel Energy

Subscriptions must not exceed 120% of your average annual electric energy usage

Subscriptions must not exceed 40% of a single garden

Subscribers will be provided a monthly credit on their bill. The credit will be determined on a dollars per kilowatt-hours produced (\$/kWh) basis by Xcel Energy.

Am I eligible to receive a bill credit? What type of credit is available?

Xcel Energy customers subscribing to a solar garden are eligible for a solar energy bill credit.

Bill credit rates can be found in our [Section 9 Tariff](#).

The “Standard Bill Credit” is the applicable retail rate in effect at the time of energy generation. The “Enhanced Bill Credit” is the sum of the applicable Standard Bill Credit and the Commission-approved Renewable Energy Credit (REC) pricing. A Solar*Rewards Community garden electing to sell its RECs (via the Enhanced Bill Credit) to the Company for subscribed energy, shall be at the Commission-approved REC price in place on the date the garden’s application is considered by the Company to be complete.

How is the credit amount determined?

Each month, the solar production from a community solar garden is recorded in kilowatt-hours (kWh). The production amount is then allocated, based on each customer’s subscription size. The customer’s bill credit is calculated by multiplying the number of kWh by the bill credit rate (\$/kWh). Detailed information on the calculation of the bill credit can be found in the published Tariff on our website.

Bill credits are applied to the final billed amount, after all electric charges, adjustments, riders, taxes and fees are added in. Therefore the credits will have no impact on the taxable amount owed by the subscriber.

When are credits posted?

On the ninth of every month, each subscriber's share of energy production from the community solar garden is posted to his/her account as a bill credit. Because customers are on different billing cycles, the timing for when each subscriber will see their credit depends on the day their meter is read.

If a subscriber's billing cycle (three-day, meter-reading window):

Is before the ninth of the month: the bill will reflect Solar*Rewards Community credits with a one-month lag time/delay. (For example, a September bill will show credits from July.)

Is after the ninth of the month: the bill will reflect Solar*Rewards Community credits for the previous month. (For example, the September bill will show credits from August.)

Contains the ninth of the month: the Solar*Rewards Community bill credit reflected may be from the previous month, or may have a one-month lag. For this small subset of subscribers, bill credits will not be reflected on their bills each and every month; some bills may include two months' worth of bill credits, while some bills may not show any credits.

Xcel Energy is not able change customers' billing cycles. However, if a customer is on a meter-reading cycle that results in a bill generating on or near the ninth of the month, we have the ability to delay the creation of that bill, in order to ensure that the customer will only see one credit applied to each bill cycle. If you would like to discuss this option, please send us an email at srcmn@xcelenergy.com. While the credits are reflected differently based on the timing for each customer's bill, please remember that the Solar*Rewards Community bill credits will be posted regularly to customer accounts on the ninth of each month.

How does the 120% rule apply to customers?

Subscriptions must not exceed 120% of your average annual electric energy usage.

If there is less than four months of consumption history, the new home calculator can be used to generate an estimate.

Square Feet Range (sq. ft.)	120% Rule Equivalent (kWh)	Allow PV System Size (kW)
500 – 1,000	5,311	4.13
1,001 – 1,500	7,318	5.69
1,501 – 2,000	10,215	7.94
2,001 – 2,500	11,018	8.57
2,501 – 3,000	12,978	10.09
3,001 – 3,500	15,618	12.14
3,501 – 4,000	14,830	11.53
4,001 – 4,500	17,887	13.91

For properties that are over 4,500 square feet, without consumption history, please submit an energy audit (HERS Rating or similar) or load calculations for the property. Please submit all system sizing paperwork to srcmn@xcelenergy.com .

We use the National Renewable Energy Laboratory's (NREL) PVWatts® calculator to convert a subscriber's allocation in kW to annual output in kWh. That number is then checked against the customer's historic usage or the home usage estimator for compliance with the 120% rule. NREL's PVWatts calculator can be found on their [website](#).

How does the 40% allocation requirement work?

Minn. Statute §216B.1641 defines a subscriber as “***a retail customer of a utility who owns one or more subscriptions of a solar garden facility interconnected with that utility.***” A retail customer is a separate person or corporation and is the ***legal name of the party*** as defined by state law and existing Xcel Energy tariffs.

Further, ***affiliates of a legal entity*** will be treated as the same person or entity for the purposes of subscription with the exception of government entities. Political subdivisions of a government entity or public agency can be considered separate retail customers of the utility as defined by Minn. Stat. §216B.02, Subd. 2. If a governmental agency composed of sufficient political subdivisions or agencies has a different account, each political subdivision or agency may have a 40% interest in a single garden.

To provide some context as to whether or not you may be at risk for allocating more than the legislated 40% threshold, we've provided the below questions to help identify possible cases. If you answer “yes” to one or more of the below questions and intend to subscribe to 40% or more of any solar garden, we suggest you contact the S*RC team at srcmn@xcelenergy.com. We'll contact you within seven calendar days to help resolve your questions.

Do you have more than one physical location to which subscriptions can be attributed?

Do you have more than one account?

Does the premise address on your bill differ from the billing address?

Are you one of many accounts for the same type of business?

Do you have political subdivisions and do you have separate financials per subdivision?

For further clarity, we've put together the following questions and answers about this topic:

How do I know whether or not I have multiple accounts under one legal entity?

There are a couple of ways you can determine whether or not you have multiple accounts that would be combined for the purposes of the 40% requirement. First, if your bill is sent to an alternative address (versus your location) and you receive multiple bills, it is likely that you have several accounts associated with one legal entity.

What is meant by “affiliates are considered the same entity”?

State statute provides guidance with the definitions of “person” and “corporation”, which are as follows:

“Person” means a natural person, a partnership, or two or more persons having a joint or common interest, and a corporation as hereinbefore defined.

(As noted in Minn. Stat. §216B.02, Subd.3)

“Corporation” means a private corporation, a public corporation, a municipality, an association, a cooperative whether incorporated or not, a joint stock association, a business trust, or any political subdivision or agency. (As noted in Minn. Stat. §216B.02, Subd. 2.)

Therefore, as defined by statute for our S*RC Community Program, a “person” includes corporations associations or partnerships having a “joint or common interest”. Xcel Energy does not have insight into specific customer legal structures, but if your company and another company are affiliated businesses, then together these two businesses can only own up to a 40% interest in one garden.

As a government agency, I have different political subdivisions. Can I have a 40% interest in one garden per political subdivision?

The likely answer is yes. Government entities have specific statutes that define them differently than regular “corporations”. Some cities have different political subdivisions and have legal entities such as City X Fire Department and City X Libraries. Each subdivision can have a 40% interest. In order to determine if you are a political subdivision or agency, we provide guidance in the linked document.

How can I determine if there is a “joint or common” interest between two legal entities?

- If you can accurately state “yes” to all of the following, then there is no “joint or common” interest and each legal entity would be its own subscriber. You can confirm:
 - There is no partnership or joint venture between them?
 - They have not united together for the same purpose?
 - There is no common owner between them?
 - They are not part of the same corporate family – not affiliates, corporate subunits, nor otherwise related companies?
 - They are independent companies?

Do different legal names and Federal Tax ID number constitute a different subscriber?

Not necessarily. Having a different legal name and/or a different Federal Tax ID does not by itself show that these are not the same subscriber.

As an elementary school, our bills are paid by the district. Who is the “retail customer”?

Generally speaking, elementary schools and high schools in the same district are considered one legal entity and therefore together could not have more than a 40% interest in one garden.

What should I do if I still have questions?

Most customers should have very little difficulty determining their eligibility. But if you are unsure of your legal structure, we recommend you discuss this option with your legal representative and then contact srcmn@xcelenergy.com to help determine your eligibility for Solar*Rewards Community.