



GOODHUE COUNTY MINNESOTA

TO EFFECTIVELY PROMOTE THE SAFETY, HEALTH, AND WELL-BEING OF OUR RESIDENTS

Committee of the Whole Agenda

County Board Room
Government Center
Red Wing, MN

April 17, 2018
10:00 a.m.

1. Community Solar Garden Presentation.

Documents:

[Community Solar Garden.pdf](#)

GOODHUE COUNTY DEPARTMENT OF PUBLIC WORKS



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HIGHWAYS ♦ PARKS ♦ SOLID WASTE

TO: Honorable County Commissioners
Scott Arneson, County Administrator

FROM: Greg Isakson, Public Works Director

RE: 17 Apr 18 Committee of the Whole Meeting
Community Solar Garden

Date: 11 Apr 18

The Board last considered subscribing to a Community Solar Garden in 2016. There was a big push by developers to sign up subscribers and get their solar gardens approved before Xcel's solar garden program changed at the end of 2016 (or early 2017). At that time many details of Xcel's future programs were unknown.

Nokomis Partners is a firm that is developing community solar gardens under Xcel's new Community Solar Garden program and they have been invited to give a presentation to the Board concerning their Community Solar Garden proposal.



Nokomis Partners

ENERGY | TECHNOLOGY | DEVELOPMENT | CONSULTING

Community Solar Gardens

Goodhue County

April 3rd, 2018

Nokomis Partners exists to accelerate local energy adoption.

We believe equitable partnerships are the key to unlocking clean energy



Spread access to stable, low-cost energy



Create sustainable energy resources



Improve community infrastructure



Contribute to the local economy



Headquarters in
Minneapolis, MN



Nokomis Partners

Our Approach

Development

- Focus on Community, C&I and small Utility scale (<20MW) in the Upper Midwest

+25 yrs

Solar Industry Experience

- We have capabilities to originate, develop, construct and operate projects

Consulting

- Focus on the US market broadly and apply to both project and product development

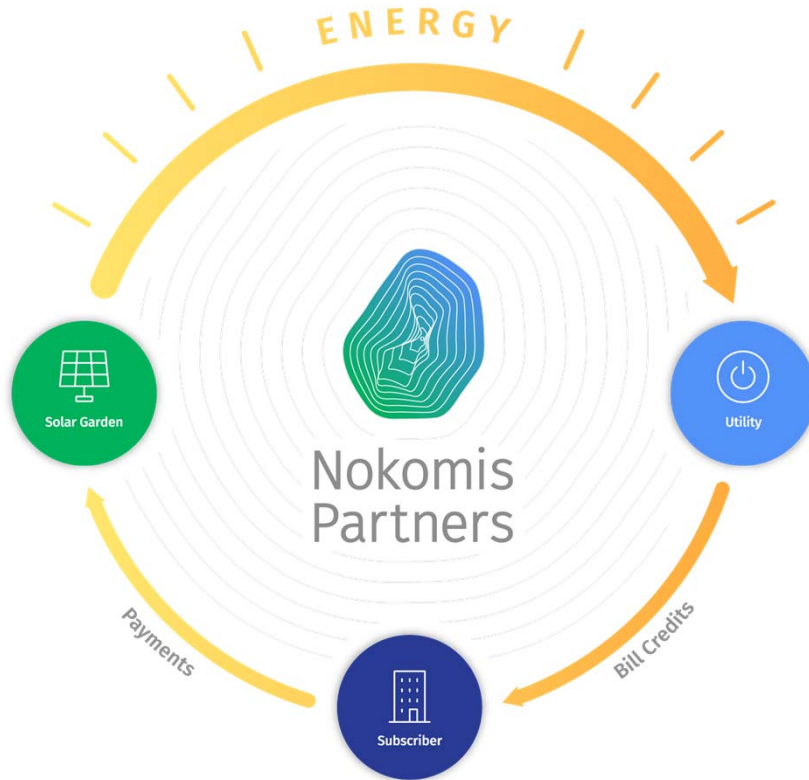


**Project &
Product
Development**

- National coverage of flexible, high-quality development resources and move new ideas to market



Community Solar



- Solar Gardens are built in the community and generate electricity for 25+ years
- Xcel energy buys the electricity from the Solar Garden at the Value of Solar Rate (VOS)
- Energy users Subscribe to the Solar Garden and receive a monthly bill savings

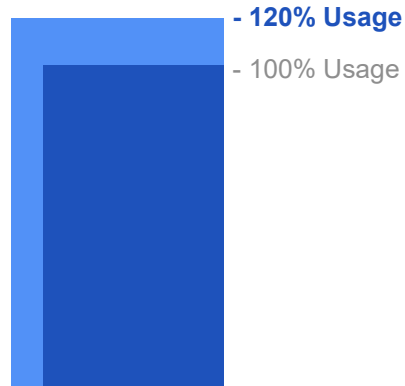


Xcel Subscriber Rules



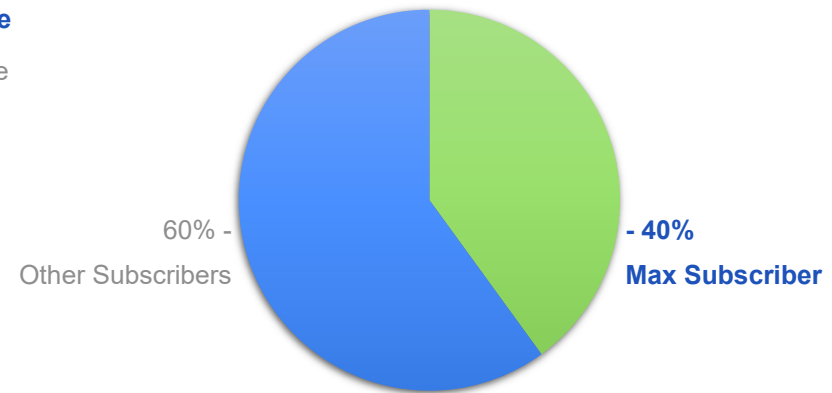
1.

A Subscriber must be an Electric Retail Customer



2.

Subscriptions must not exceed 120% of average annual usage

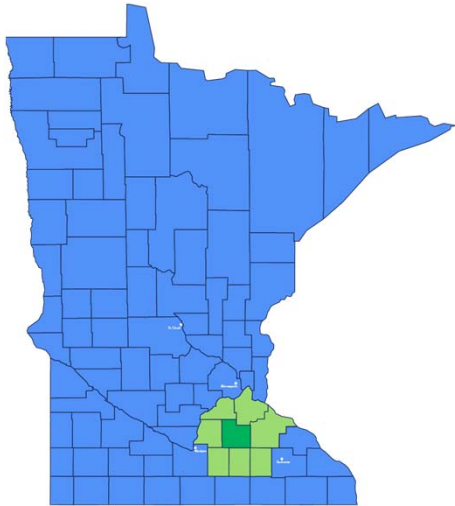


3.

Subscriptions must not exceed 40% of a single garden



Xcel Subscriber Rules



4.

A Subscriber must in the same or an adjacent county of the solar garden



5.

Subscribers are provided a monthly credit on their bill.



Major Program Changes

	Previous Phase	Current Phase
Maximum Garden Size	5MW, ~25 acres	1MW, ~5 acres
Compensation Rate from Xcel	Applicable Retail Rate (ARR) + Renewable Energy Credit (REC)	Value of Solar (VOS)

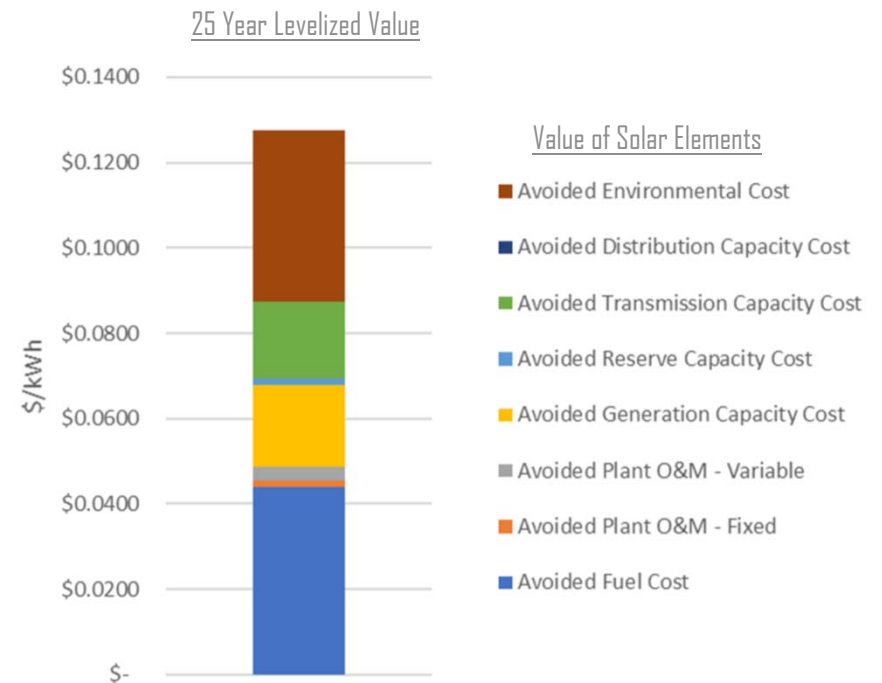


Value of Solar (VOS)

- Rate tariff that defines the Xcel Community Solar Bill Credit value
- Contracted 25 year rate schedule between Xcel and Garden Operator
- Developed by MN Department of Commerce, Xcel and Community Stakeholders and approved by the Public Utilities Commission
- Unsubsidized approach to valuing solar

[Learn More from Fresh Energy](#)

[Read the Methodology](#)



Program Evolution

	Phase 1			Phase 2
	Variable w/Fixed Rate	Variable w/Escalating Rate	Variable w/Indexed Rate	Nokomis Partners Fixed Savings Rate
Bill Credit	1yr Variable Rate	1yr Variable Rate	1yr Variable Rate	Defined, 25yr Schedule
Subscription Rate	Fixed	Escalating	Indexed to Bill Credit	Indexed to Bill Credit
Certainty of Savings	No	No	Yes	Yes
Ratepayer Subsidized	Yes	Yes	Yes	No

- Fixed Savings Rate with certainty of savings and no ratepayer subsidy enabled by 25 year, contracted rate between Nokomis and Xcel via Value of Solar (VOS) tariff
- Other offers based on variable contracted rate with Xcel, further supported by ratepayer renewable energy credit subsidy



Subscription Proposal

1 ¢ per kWh

Savings Rate

\$21,700

Estimated Annual Savings

25 years
Term Length

\$497,000
Estimated Lifetime
Savings

- **Your Subscription**
 - Delivers \$0.01 for every kWh generated by your share of the solar garden
- **Savings Only Contract**
 - You only pay for credits that are delivered
 - Payments made monthly to Nokomis and discounts applied on your Xcel Energy bill
- **Subscription Sized to Your Usage**
 - Based on previous 12 months electricity usage
 - Usage matched to available gardens



Proforma

Yr	Xcel Bill Credit (\$/kWh)	Nokomis Subscription Rate (\$/kWh)	Fixed Savings Rate (\$/kWh)	Estimated Solar Energy Generated (kWh)	Estimated Savings Generated (\$)
1	0.1033	0.0933	0.01	2,170,829	\$21,708
2	0.1057	0.0957	0.01	2,105,704	\$21,057
3	0.1081	0.0981	0.01	2,094,850	\$20,948
4	0.1107	0.1007	0.01	2,083,996	\$20,840
5	0.1132	0.1032	0.01	2,073,141	\$20,731
6	0.1159	0.1059	0.01	2,062,287	\$20,623
7	0.1185	0.1085	0.01	2,051,433	\$20,514
8	0.1213	0.1113	0.01	2,040,579	\$20,406
9	0.1241	0.1141	0.01	2,029,725	\$20,297
10	0.1270	0.1170	0.01	2,018,871	\$20,189
11	0.1299	0.1199	0.01	2,008,017	\$20,080
12	0.1329	0.1229	0.01	1,997,162	\$19,972
13	0.1360	0.1260	0.01	1,986,308	\$19,863
14	0.1392	0.1292	0.01	1,975,454	\$19,755
15	0.1424	0.1324	0.01	1,964,600	\$19,646
16	0.1457	0.1357	0.01	1,953,746	\$19,537
17	0.1491	0.1391	0.01	1,942,892	\$19,429
18	0.1526	0.1426	0.01	1,932,038	\$19,320
19	0.1561	0.1461	0.01	1,921,183	\$19,212
20	0.1597	0.1497	0.01	1,910,329	\$19,103
21	0.1634	0.1534	0.01	1,899,475	\$18,995
22	0.1672	0.1572	0.01	1,888,621	\$18,886
23	0.1711	0.1611	0.01	1,877,767	\$18,778
24	0.1751	0.1651	0.01	1,866,913	\$18,669
25	0.1791	0.1691	0.01	1,856,059	\$18,561
			0.01	49,711,979	\$497,120

- Subscription based on
 - Subscribing 1,879,446 kWh of your annual load
 - 105% of Law Enforcement Center
- Savings based on
 - 25 year, Xcel Contracted, Value of Solar Bill Credit Rate
 - Garden performance modeled using PVSYSY and local weather file
 - Performance degradation of 0.5% annually starting in year 2



The Simple Economics

INVEST

- Use your buying power with Xcel to “invest” in solar assets

RETURN

- Realize your “return” through your Xcel energy bill



How Your Savings are Realized

You get the financial benefits on your Xcel bill

Then you make a payment to Nokomis



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MAILING ADDRESS	ACCOUNT NUMBER	DUE DATE
Customer A 1234 MAIN ST MINNEAPOLIS, MN 55555-5555	51-5555555-5	06/11/2014
STATEMENT NUMBER	STATEMENT DATE	CREDIT AMOUNT
444444444	05/27/2014	-\$588.47 CR

SERVICE ADDRESS: TANKS
1234 MAIN ST MINNEAPOLIS MN 55555-5555
NEXT READ DATE: 05/13/14

ELECTRICITY SERVICE DETAILS

PREMISES NUMBER: 333333333
INVOICE NUMBER: 454545454

METER READING INFORMATION				
METER	11111111	Multiplier x 40	Read Dates: 03/12/14 - 04/12/14 (31 Days)	
DESCRIPTION	CURRENT READING	PREVIOUS READING	MEASURED USAGE	BILLED USAGE
Total Energy	1560 Actual	1509 Actual	61	2440 kWh
On-Pk Energy	69 Actual	67 Actual	2	480 kWh
Off-Pk Energy	1491 Actual	1492 Actual	59	2360 kWh

ELECTRICITY CHARGES			
DESCRIPTION	USAGE UNITS	RATE: Limited Off-Pk Svc	CHARGE
Basic Service Chg			\$13.60
Off-Peak Energy Chg	2360 kWh	\$0.023700	\$55.93
On-Peak Energy Chg	80 kWh	\$0.260000	\$20.80
Fuel Cost Charge	2440 kWh	\$0.033918	\$82.76
Resource Adjustment			\$10.79
Interim Rate Adj			\$5.97
Subtotal			\$189.85
City Fees			\$3.00
Total			\$192.85

OTHER RECURRING CHARGES DETAILS			
DESCRIPTION			CHARGE
Solar *Rewards Community Solar Production Credit			
Solar Production Period		February 2014	
SFC700040 Production Credit	1559.9 kWh x \$0.117830		-\$183.80 CR
Total			-\$183.80 CR

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Mailing Address	Account Number	Amount Due
Customer A 1234 Main St Minneapolis, MN 55555	10001	\$157.00
Statement Number	Due Date	
101	6/11/2014	
	Statement Date	
	5/27/2014	

Subscribed Garden	Total Energy Generated this Month
Garden 1	145604 kWh
Garden 2	123495 kWh
Garden 3	123495 kWh
Garden 4	145678 kWh

Xcel Subscription Account	Garden Subscribed	% of Garden	Total Bill Credits	Billing Rate	Amount
51-55555555-5	Garden 1	1%	1456.04	\$0.107830	\$157.00
51-55555555-5	Garden 2	0%	0.00	\$0.107830	\$0.00
51-55555555-5	Garden 3	0%	0.00	\$0.107830	\$0.00
51-55555555-5	Garden 4	0%	0.00	\$0.107830	\$0.00

Sub-Total	\$157.00
Previous Balance	\$0.00
Total Due	\$157.00

Customer saved \$26.80 this month with Community Solar
\$183.80 bill credit - \$157.00 solar bill = \$26.80



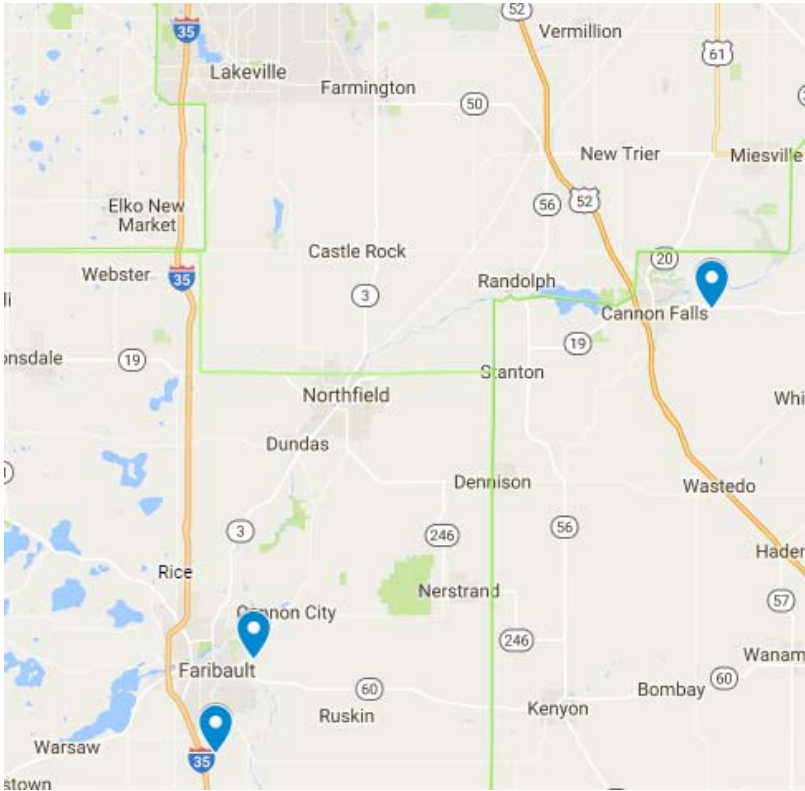
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Garden Locations

Byllesby Garden
Cannon Falls Area Goodhue County
Project Footprint: 5 Acres, Pollinator Friendly
Garden Size: 1 MW
Xcel SRC# 063641
Township Permit Date – 4/5 County Submittal Date – 4/15
Expected Operating Date: December 2018

Cannon Garden
Faribault Area Rice County
Project Footprint: 5 Acres, Pollinator Friendly
Garden Size: 1 MW
Xcel SRC# 063634
Permit Submittal Date – 3/2
Expected Operating Date: December 2018

Roberds Garden
Faribault Area Rice County
Project Footprint: 5 Acres, Pollinator Friendly
Garden Size: 1 MW
Xcel SRC# 063633
Permit Submittal Date – 3/2
Expected Operating Date: December 2018



Further gardens coming online in 2019

Local Approach

- Clean energy enables local energy
- Nokomis is based right here in Minnesota
- We partner with local builders including Goodhue based Knobelsdorff Electric
- Land lease rates support land owners
- Pollinator Habitat planted around garden supports increased bees, songbirds and other pollinators



Subscription FAQ

Who can subscribe to community solar?

Any individual, organization or municipality within Xcel's service territory in Minnesota.

Why would I subscribe to community solar?

There are many reasons that may be right for you. You save money on your electricity bills.

How is my subscription size calculated?

Your maximum subscription is based on 120% of your last 12 months electricity usage. If you do not have 12 months of usage a standard calculation is used. Your usage is converted from kilowatt-hours (how electricity is measured) to kilowatts (how solar panels are rated). You cannot subscribe to more than 40% of a one community solar garden, but you can subscribe to as many community solar gardens as you want up to your maximum subscription amount.

Who do I contract with?

You contract directly with the Community Solar Garden which is owned and operated by Nokomis Energy.

Who bills me?

Nokomis Energy bills you for each kWh of solar your subscription generates.

How do I know how much I save each month?

Your bill will outline how much energy your subscription generates each month.

How long is the contract for?

25 years

Can I cancel or exit the contract early?

Yes, if you are no longer an Xcel customer. You must give notification of at least 90 days. This provides time to find a new subscriber. If a new subscriber cannot be found you must pay the termination fees as detailed in your contract.

What can I tell people about my involvement?

That you are a proud subscriber to community solar! The bill credits you get on your electricity bill are generated by a community solar garden which you subscribe to. The location of the solar garden. The company that built it and the community it supports. What you cannot say is that the electricity you use in your building is solar. That's because part of the compensation from Xcel is that they pay for the environmental attributes. That's part of why you save money!

What if I move to a different location?

If you move within the same or adjacent county to the garden location you can take your subscription with you. Your subscription will be resized based on your new location. If you move out of the service territory you cannot take your subscription with you and the contract will have to be terminated.

What happens if the bill credits I get from the solar garden are worth more than my total Xcel bill?

When this happens your Xcel bill will actually be negative. You will not have to pay anything to Xcel. If at the end of the year Xcel owes you money, they will cut you a check for the amount. Xcel will only make a true up payment once a year. This situation is most likely to happen if you subscribe to more than 100% of your load.

[Learn more in Xcel's Subscriber FAQ](#)



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Next Steps

STEP 1

- You submit an Xcel Energy Bill (last 12 Months)
- Or – Complete Xcel Data Request Form

STEP 2

- Nokomis will size your subscription
- & Present a Subscription Proposal to You

STEP 3

- Nokomis assigns you a Solar Garden
- Subscriber Contract Review

STEP 4

- Final contract approved
- Congrats on subscribing!
- Solar Garden Update





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Rooftop Opportunity

Rooftop Opportunity

- Facility

- Public Works
- Xcel Premise - #302435955
- Annual Usage - 24,520 kWh

- Solar System

- Sized to 100% offset - 25kW
- 20kW or less - eligible for Xcel incentives
 - Currently proposed legislation would raise this cap to 40kW

- Recommendations

- Best time is after re-roof
- 2019 pricing appears significantly better than 2018 driven primary by solar panel and steel pricing



25kW Solar System on the Upper Roof of the Facility





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Thank You

Contact Us

connect@Nokomis.partners

612-470-3223