

BEST PRACTICES

- Renewable Energy Credits (RECs)
- State and Federal Grants or Funding



Project Name:

RAMP A COMMUNITY SOLAR

Solar canopy provides parking protections plus LMI energy savings

Size:

1.372 MW_{DC}

Location:

101 N 9th Street, Minneapolis, MN 55403

of LMI customers:

90

Project Website:

<https://www.cooperativeenergyfutures.com/community-solar-1>

Overview

The Ramp A Community Solar is aptly named after a [Minnesota Department of Transportation](#) (MnDOT) [parking garage in downtown Minneapolis](#). The array, which resides atop a steel canopy built on a custom truss system over the top deck level of the Ramp A parking garage, provides weather-sheltered vehicle parking as well as solar power. The 1.3 MW installation was created in partnership with MnDOT and the City of Minneapolis, and was energized in September of 2019. MnDOT uses approximately 20% of the electricity, and the remainder is allocated to residential households, including low- and moderate income (LMI) residents and those living in affordable housing.

Several local organizations were involved in the project:

- [Apadana Solar Technologies](#) served as the project general contractor, and led design, procurement, and project management.
- Elan Energy Partners and [Sheehy Construction](#) installed the array.
- MnDOT was the project host and is the anchor subscriber.
- The City of Minneapolis operates the Ramp A parking garage.
- [Poly-Tex Solar](#) is the design and manufacturing partner for the project's solar canopy system.
- [Cooperative Energy Futures](#) (CEF) owns and operates the project.





CEF is an LMI-focused, community solar energy cooperative based in Minneapolis. Founded in 2009, CEF aims to empower communities across Minnesota to build energy democracy through solutions that are “clean, local, and ours.” As a cooperative, CEF’s costs, revenues, business models, and decision-making processes are transparent to subscribers. Subscribers are member-owners and share in any excess profits. CEF manages the facilities and subscriptions.

CEF develops community solar installations under [Xcel Energy’s](#) (Xcel) community solar gardens program ([Solar*Rewards Community](#)), and locates their projects in Xcel’s service area. Xcel is mandated by the state to provide a community solar program, whereas other utilities in Minnesota do not have this mandate.

CEF uses a grassroots subscriber eligibility process. CEF partners with community organizations to promote community solar projects, and to assist subscribers with the execution of the subscriber contract. For Ramp A, 60% of the project’s capacity was reserved for a few months to enable community-based organizations to sign people up before enrollments are open to the general public. [Beacon Interfaith Housing Collaborative](#) signed up residents of some of their affordable housing properties directly. [Community Power](#) and [Minnesota Interfaith Power and Light](#) also collaborated with CEF to inform their networks about CEF’s projects.

Ramp A is implemented under Xcel’s Solar*Rewards Community program and Xcel requires that subscribers be an Xcel Energy customer that resides in Hennepin, Anoka, Carver, Dakota, Ramsey, Sherburne, Scott, or Wright counties. This program is limited by Xcel’s so that the subscription cannot exceed 120% of the subscriber’s average annual electric usage over the last 24 months.

Subscribers contract with CEF to purchase an allocation of the solar energy produced by the installation. Two types of subscriptions are offered: upfront, and pay-as-you go. In the former, the subscriber pays a lump sum for the allocation of solar energy produced over the next 25 years. The pay-as-you-go model spreads out the subscription cost over the contract term, and is available to any subscriber. Pay-as-you-go subscribers are projected to save

approximately 8% on energy costs, but by the end of the subscription term, cost savings are roughly 45%, because the amount paid for energy production is set to increase over time. Subscribers' average savings over the course of their subscription is 25%. The contract for the subscription is attached to a person, not the home, and exits from the contract are available.

The subscriber receives the below bill from Xcel (which includes the bill credits), and a separate bill from CEF, which charges for the service.

Example Page 2 of Xcel Bill - use the blue fields on your bill Page 2 of 4



Customer of Record

SERVICE ADDRESS	ACCOUNT NUMBER	DUE DATE
Joe Schmoe 123 Main Street Minneapolis, MN 554XX	51-1234567-8	06/08/2021
	STATEMENT NUMBER	STATEMENT DATE
	731394142	05/11/2021
		CREDIT AMOUNT
		-\$123.78 CR

SERVICE ADDRESS: 123 Main Street, Minneapolis, MN 554XX
 NEXT READ DATE: 06/14/21

ELECTRICITY SERVICE DETAILS

PREMISES NUMBER: 303123456
 INVOICE NUMBER: 0900753186

METER READING INFORMATION			
METER 155202657	Read Dates: 04/12/21 - 05/11/21 (29 Days)		
DESCRIPTION	CURRENT READING	PREVIOUS READING	USAGE
Total Energy	7743 Actual	7338 Actual	405 kWh

ELECTRICITY CHARGES				RATE: Residential Service	
DESCRIPTION	USAGE UNITS	RATE	CHARGE		
Basic Service Chg			\$8.00		
Energy Charge - Winter	405 kWh	\$0.088030	\$35.65		
Fuel Cost Charge	405 kWh	\$0.029975	\$12.14		
Sales True Up	405 kWh	-\$0.005150	-\$2.09	CR	
Res Savers Switch WH			-\$0.95	CR	
Affordability Chrg			\$0.98		
Resource Adjustment			\$2.90		
Subtotal			\$56.63		
City Fees		5.00%	\$2.83		
Transit Improvement Tax		0.50%	\$0.30		
City Tax		0.50%	\$0.30		
County Tax		0.15%	\$0.09		
State Tax		6.875%	\$4.09		
Total			\$64.24		

Once your community solar project is live, your bill credits will show up here.

OTHER RECURRING CHARGES DETAILS			
DESCRIPTION			CHARGE
Solar* Rewards Community Solar			
Production Credit			
Solar Production Period		April 2021	
SRC052798 REC credit >250kW	812.16 kWh x -0.158600		-\$128.81 CR
Total			-\$128.81 CR

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The total project cost was roughly \$4 million. A portion of the project was financed using a tax equity partner that could leverage federal tax incentives and depreciation. A limited liability corporation (LLC) was formed including the tax equity investor and CEF, where CEF served as the managing member. As the managing member, CEF owns 1% of the LLC for the first five years, while the investor owns the rest and is able to use the associated tax credits. In year six, CEF gains ownership of 95% of the project, and CEF can buy out the investor in year ten. Remaining portions of the project were financed with project debt, equity, and funds received from upfront subscriptions. CEF makes lease payments to the MnDOT for use of the parking structure.

Project RECs are owned by the utility, which compensates subscribers at the Applicable Retail Rate, which adjusts annually based on customer retail rates. Xcel Energy compensates CEF for any unsubscribed energy at an avoided cost rate.

Innovative Approaches

- **Subscriber acquisition.** Signing up subscribers can be the most difficult part of launching community solar. By partnering with community organizations who leverage their existing relationships to conduct outreach, CEF was able to increase community trust and build LMI subscriber participation.
- **Solar cooperative model.** CEF's mantra of "Clean, local and ours" means that clean energy is provided locally, and owned by the cooperative members. In addition, CEF makes LMI participation a priority by carving out time and solar allocation to the community organizations for subscription recruitment.

Lessons Learned

- The Ramp A Community Solar project required complex permitting and approval, as well as custom design. The Ramp A parking garage is operated by the City of Minneapolis, owned by MnDOT, managed by a private parking company and classified as a Federal Highway bridge by the Federal Highway Administration, which had to provide approval. Community solar installations with this level of complexity are not advised for developers that are new to community solar.



This case study is a part of the LIFT Toolkit initiative. To explore more case studies and best practices visit LIFT.Groundswell.org
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