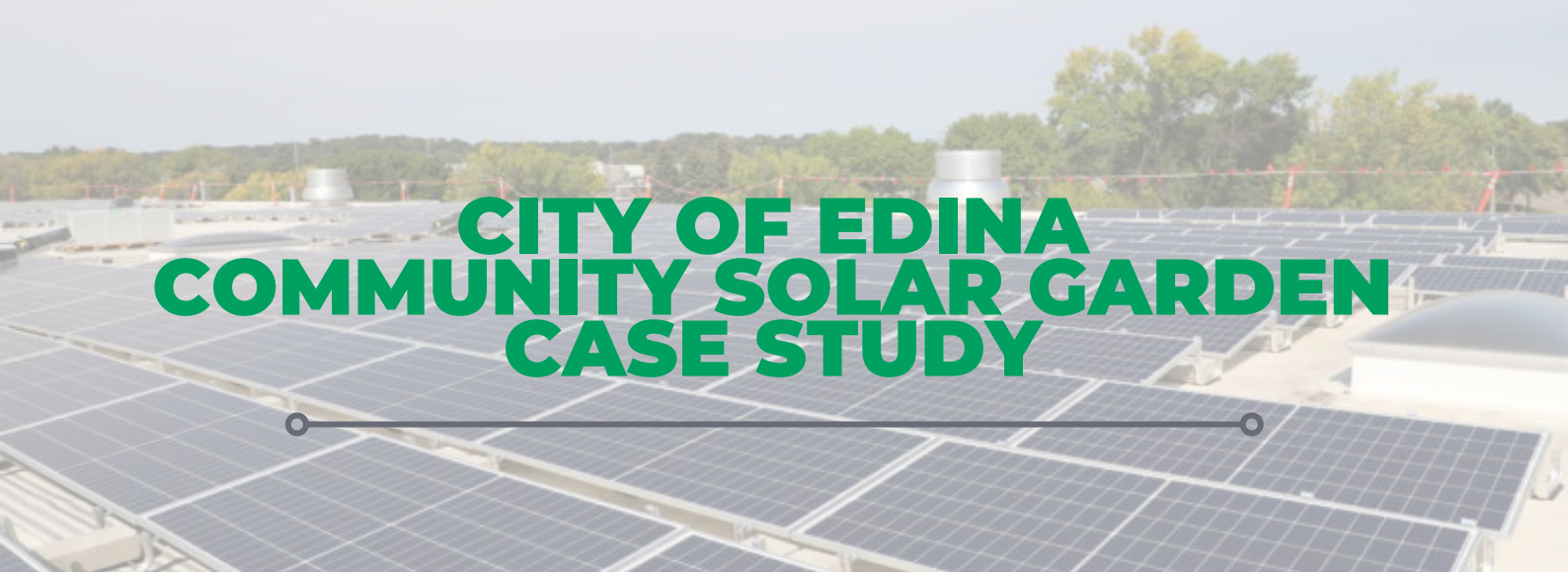


CITY OF EDINA COMMUNITY SOLAR GARDEN CASE STUDY

2015: Background

Edina began exploring solar energy in 2015 when the Energy and Environment Commission encouraged the City to invest in renewable energy that would also benefit residents. This prompted a city-wide effort that resulted in a Community Solar Garden (CSG) on the Public Works (PW) building in Edina. The EEC defined the benefits as: demonstrated leadership in renewable energy, reduce greenhouse gases, educate residents on sustainability, help residents save money, put the Public Works roof to productive use, and engage solar supporters.

What is a Community Solar Garden?

Community Solar Gardens are generally large solar PV (photo-voltaic) arrays that community members can subscribe to. Subscribers receive energy credits to their utility bill without any solar installations on their property. This electricity is generated through the array from sunlight and is delivered to the utility grid with zero greenhouse gas emissions.

Who Subscribed?

The CSG went live in 2018 with 68 subscribers that signed on within a six-month period to help procure project funding. Edina residents were given preference if they subscribed within a limited timeframe and then the Garden would be opened broadly. The array filled up almost immediately with a waiting list full of other interested residents. The City is a back-up subscriber in case of a large number of subscription cancellations.

2016: Planning Phase

To kickstart the project, request for proposals were sent out in Summer 2015, and a lease was signed in December 2015 with Cooperative Energy Futures (CEF) in partnership with Impact Power Solutions (IPS). The lease allowed CEF to build a privately owned 630.18kW solar system on the PW roof. CEF pays the City of Edina an annual rental fee to lease the roof space. CEF also managed communications and obtaining subscriptions from Edina residents in partnership with Minnesota Interfaith Power and Light.

Learnings during Planning Phase:

(Led by Energy and Environment Commission and Staff Liaison)

- The array was built to have 80-100 subscribers. Initially there were 68 subscriptions due to Edina homes being larger and having higher energy needs. This demonstrates the importance of stakeholder identification.

- Packaging financing times and terms together for the solar company is beneficial to speed up the process and provide clarity.

- Community ownership of the project should be a priority. The EEC was involved in the initiation of the project and stayed up to date as it progressed. This was sustained throughout the process and demonstrated the commitment and interest from Edina residents in a solar garden that was focused on community needs.

- CEF is a co-op that follows certain cooperative values and principles that promote community ownership which makes them a great local partner.

- Talk to your utility partners early to see where they want to put solar. Permitting and planning processes will progress smoother if the utilities are involved from the start.

Challenges during Planning Phase:

- Determine the importance of owning credits and if the host site will be a subscriber to the array or a backup subscriber.
- Communications and education about the solar project should be widespread and inclusive.
- Understand the financial situation of your solar partners to avoid delays and unexpected difficulties.

2017: Implementation Phase:

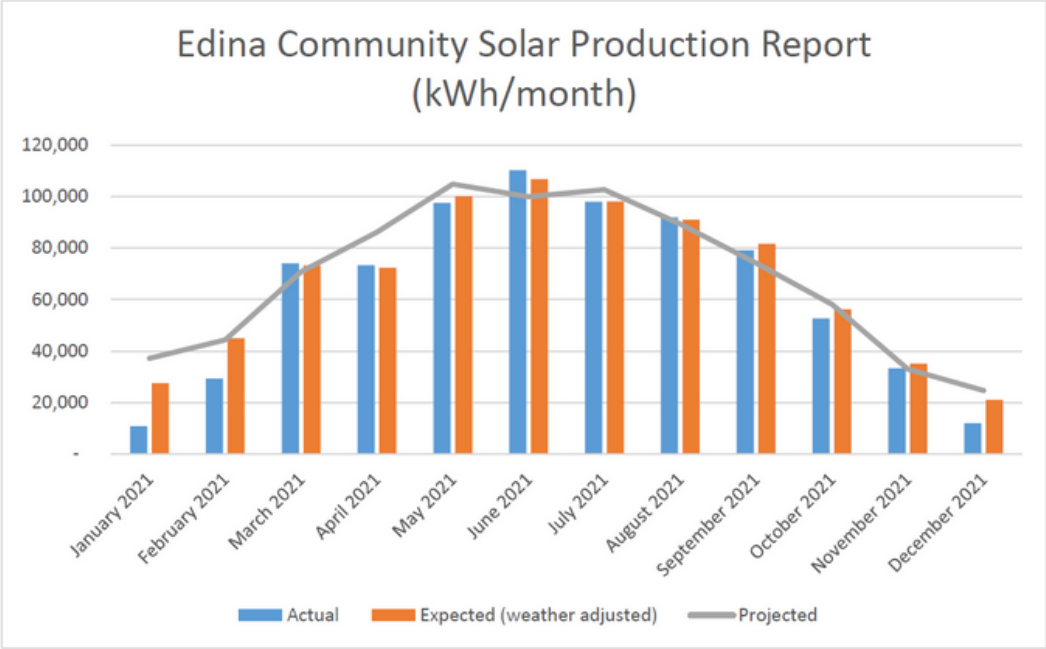
During the implementation process, IPS needed roof access which was available through the Public Works garage. They worked with the City Electrician who supervised the installation and provided roof access. There are no panels on the roof section that is above office space, so they did not need to go through the front desk area to access the roof. One of the biggest concerns during installation was maneuvering and protecting the HVAC equipment that is on the roof. To do that the City required that aisles be created between the various sections of panels and ramps built over some the pipes. There was also some roof damage that occurred during construction. The City Electrician monitored this and reported any damage to the contractor who would send someone out to do repairs. The damage included water leaks which leaked into the garage space underneath the array. Depending on the space use underneath the roof prepare for any possible water leaks or roof damage that may occur.

2018: Operating Phase:

CEF handles the operation and management of the solar array and subscriptions. CEF also provides an annual report to the City of metrics and updates on the CSG. The only additional responsibility for the City is to allow access to the roof when needed, usually annually. The lease and agreements for the array will be reviewed as the roof replacement scheduled for 2033 approaches.

Conclusion

In 2021, the CSG had a total of 76 subscribers and produced over 761,461 kWh of energy (see Figure below). This is equal to taking 71 gasoline-powered cars off the road. Subscribers also receive a bill credit which totaled $120,168 in 2021. The array continues to be fully operational with a waiting list of subscribers. Snow cover, shade, and weather are all factors in how much energy the array will generate. In 2021, some factors that decreased production included snow and it was a less sunny year partly due to wildfire smoke from northern Minnesota and other areas across the country. Overall, since the solar array's installation, both bill credits and energy produced have been increasing each year.



(Data from Cooperative Energy Futures 2021 Updates)

Key Partners

- Cooperative Energy Futures
- Impact Power Solutions
- MN Interfaith Power and Light
- Xcel Energy

HAVE QUESTIONS?

Contact Grace Hancock, Sustainability Manager at ghancock@edinamn.gov

Thank you!