Solar for Cities

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Clean Energy Resource Teams (CERTs)
UMN Regional Sustainable Development Partnerships & Extension
CERTs: Partnership Aimed at Supporting Communities

Mission:
Connect individuals and their communities to the resources they need to identify and implement community-based clean energy projects
Overview of today’s talk

• Solar – a few basics
• Drivers – why are we hearing more about solar?
• Your options for solar – do you own, subscribe to community solar, or purchase green pricing
• Enable for residents – solar rules, education, facilitation, promotion
• Resources – a sampling
Solar comes in three flavors

1. Electric (PV)
2. Thermal: Air Heat
3. Thermal: Hot Water
Scale of Solar Photovoltaic (PV)
Drivers: Federal Tax Credits

Federal Solar Tax Credit Phase Out

ADOPTED DEC. 2015

2016: 30%
2017: 30%
2018: 30%
2019: 30%
2020: 26%
2021: 22%
2022: 10%

Drivers: Solar Prices are Falling

Drivers: MN Solar Policy

2013 Policy

• 1.5 % Solar Energy Standard
  - Applies to Investor Owned Utilities: Xcel Energy, Minnesota Power, Otter Tail Power
  - Utility scale and utility scale “distributed generation”
• Community Solar Gardens
• Made in Minnesota
• Net Metering changes

1.5% Solar by 2020: 400 MW
Total as of 2014: 19 MW
Local Government Options

- To buy or not to buy?
- To lease or not to lease?
- To subscribe or not to subscribe?
- To ... goodness that’s a lot of questions
Install on your own facilities

Woodbury!

Soap box: start with efficiency

Source: http://e3a4u.info/
The Minnesota Solar Suitability App displays solar insolation and solar photovoltaic (PV) potential with 1 square meter resolution for the entire state of Minnesota. It was created using Lidar data and GIS technology.
Ownership options

• Made in Minnesota (both PV and thermal)
• Xcel Energy Solar*Rewards
• Standby Rider Tariff w/ solar demand credit (>100kW)
• Grant funds
• Bond funds
• Your own funding resources
Falcon Heights Example

Used 3rd party solar agreement to install 40 kW solar system on City Hall
Don’t forget! Solar thermal

Made in Minnesota
Solar Thermal
Incentive for
Commercial
installations:
Maximum rebate is
the lesser of 25% of installation cost or $25,000.
Community Solar Gardens

Definition:

Centrally-located solar PV systems that provide electricity to participating subscribers.

Solar PV panels are installed in sunny locations to produce renewable electricity.

Individual entities can subscribe to enough solar to cover up to 120% of their annual electricity usage.

Each subscriber's utility bill is credited with the electricity created by their share of the solar garden.
Xcel Energy: No Cap

- Max for a single garden = 1 MW
- Minimum 5 subscribers per garden
- No subscriber > 40% of garden output
- Up to 120% of annual elec. usage
- No cap on the number of gardens
- Garden models include upfront and pay as you go
- Tailored to deliver energy bill savings
Local Gov’t Subscriber Collaborative

“We believe the societal, financial, and environmental values of Community Solar Gardens warrant our pursuing this opportunity in conjunction with other local government entities.”
Subscribe to Community Solar

TIPS FOR SUBSCRIBING TO A COMMUNITY SOLAR GARDEN

Maybe you’ve been approached by a company or attended a local event, and now you’re thinking about subscribing to a community solar garden. This document provides guidance about how to get started and highlights key resources to help you move forward.

What does a good contract look like?

- **Subscription Price: Escalator vs. Discount Models**
  - **Escalator:** This model sets an initial subscription price and subscription rate escalator. In general, the lower the starting rate and lower the escalator, the better. The initial subscription price should be close to your monthly bill credit (mnccerts.org/csg-subscribers), and the escalator should be less than anticipated utility rate increases. Xcel Energy rates went up an average of 3.5% annually from 2000-2014, so any escalator should be less than that. Your ultimate savings will depend upon the difference between your subscription price and actual utility rate increases over time. Developers will assume different utility rate increases in estimating your potential savings. Compare the estimates and assumptions at mnccerts.org/csg-calc.
  - **Discount:** In this model subscription prices are set to be consistently lower than your utility rate by either a stated percent or dollar amount. Though it could provide smaller financial returns, this approach provides a higher level of certainty for future savings.

- **Transferability and Early Termination**
  It’s important to know what happens if you move out of the service area, die, or cancel the subscription. Many developers will have a different procedure for each of those three scenarios. For example, if you move out of the utility territory, some developers take back the subscription without penalty, while others charge a set fee. Some developers will not charge a fee if you transfer your subscription to another eligible subscriber. If you decide simply to cancel, there will be a higher fee. It is up to you what terms are acceptable, but they should be VERY clear in the agreement. You should also understand what procedures to follow, who is responsible for each step, and what the associated costs may be.

- **Subscription Rate Tied to Production**

Updated 3/23/2016
Community Solar Resources
Sign up for Green Pricing

Windsource for Businesses
- Pricing Terms and Conditions

Windsource Minnesota

Source: Xcel Energy. Search green pricing for business. MN. and www.staples.com
Enable solar with smart rules

1. Summary of statutes that guide/enable local gov’t solar development actions
2. Comprehensive Plan guidance, best practices
3. Land use regulation guidance, best practices
4. Model zoning ordinance
5. Permitting guidance & BPs
6. Model solar building permit

Enable with access to financing

Source: http://www.cleanenergyresourceteams.org/pace
Educate your community

Did you know?

1. Solar FV has never been more affordable that it is right now.
2. Federal, state, and utility incentives can bring the cost of a system down by more than half.
3. Solar systems have no moving parts and will usually continue to operate after 30+ years.
4. Solar currently powers 3,500 homes in Minnesota.
5. Solar power is not the energy of the future, it is the energy of today!

Source: City of Woodbury, http://www.ci.woodbury.mn.us/environment/sustainability/solar-power#community-solar-gardens
Facilitate for your community

Edina’s Community Solar Garden

1. Solar PV panels are installed in sunny locations to produce renewable electricity.

2. Individual entities can subscribe to enough solar to cover up to 120% of their annual electricity usage.

3. Each subscriber’s utility bill is credited with the electricity created by their share of the solar garden.
Promote to your community

Learn how to power your home with solar!

SOLAR POWER HOUR
FREE INFORMATION SESSIONS

Buy Green Power
It’s clean. It’s simple. Sign up today!

• Do something really good for the environment!
CERTs: Minnesotans Building a Clean Energy Future

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