

Overview of Community Solar

Mark Burger

**Seven Generations
Ahead**

In the “good
old days”
(before
December,
2016)

3 Ways to get solar power

- **Install it on your building or property, connecting to your meter only**
- **Sign a power purchase agreement (PPA), requiring buying a LOT of electricity**
- **Purchase “Green Tags”**



**FEJA Changed
That For Illinois
December 7,
2016**

Future Energy Jobs Act (FEJA) enacted

- **Added Community Solar**
 - **Buy or sell solar power offsite/multiple accounts**
- **More incentives**
 - **Low and Moderate Income Households**
 - **Non Profit organizations**
 - **Public Sector**
- **Improved incentives**
 - **Solar Renewable Energy Credits (SRECs) only for new projects and only in Illinois and adjacent states**



What is Community Solar?

- Community solar refers to local solar facilities shared by individual community members, who receive credits on their electricity bills for their portion of the power produced. Can also be called a Solar Garden or Solar Farm
- Can be sited on:
 - Rooftops of community centers, churches, schools, or other community buildings
 - Mall, apartment building, or other multi-tenant building
 - Remote, offsite locations where land may allow a larger facility and better cost-efficiency

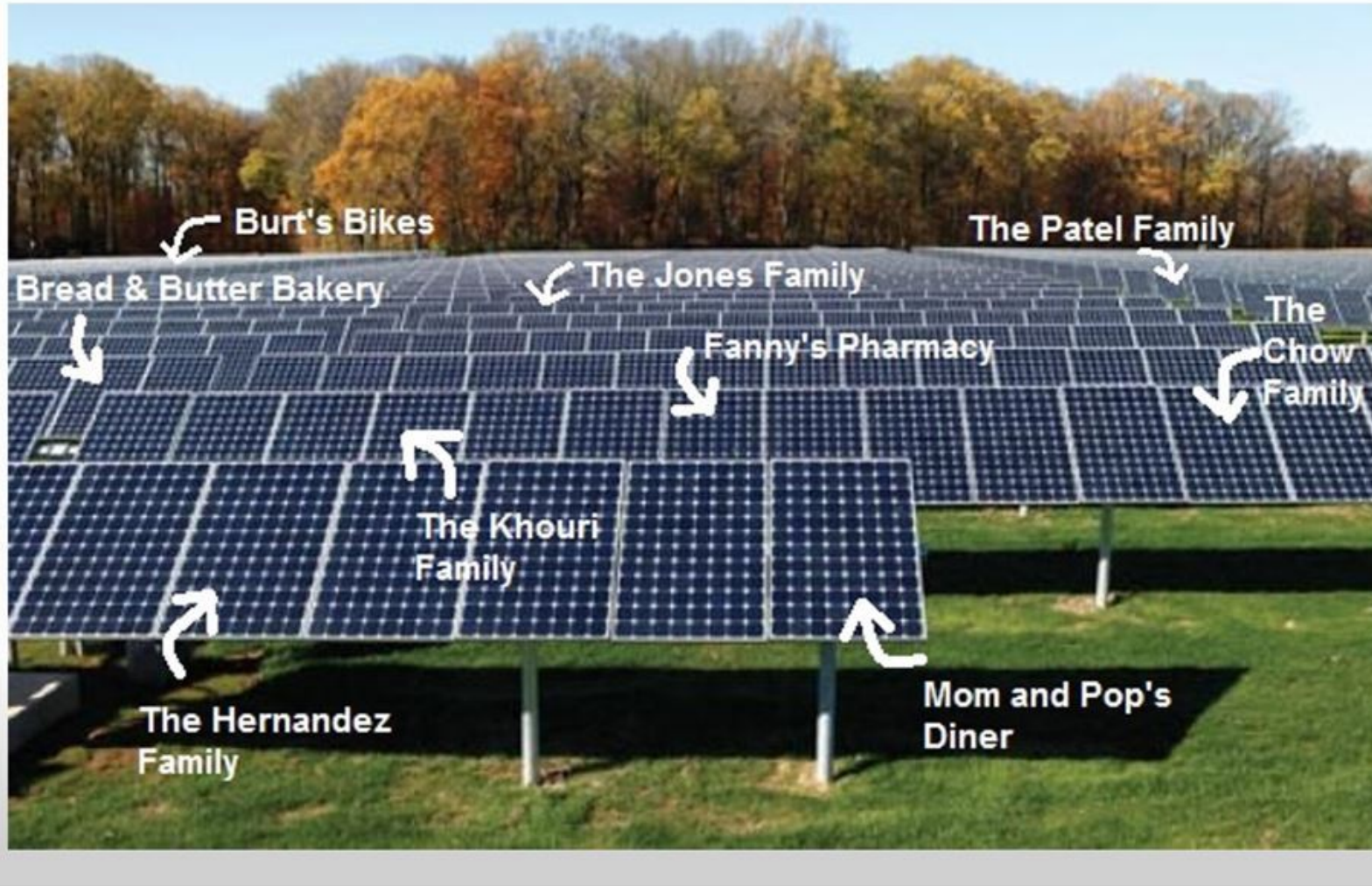
How Community Solar Works



1. Sunlight hits the solar panels in the community solar field, generating electricity
2. The electricity generated flows through an on-site meter to the electrical utility grid
3. The utility company measures the electricity generated, calculates a dollar value for the power, and distributes this dollar value proportionately to the members of the community solar program (residents, businesses, municipalities, and institutions)
4. The value of the solar electricity produced from the array is applied as a monetary credit to each member's electric bill



Community Solar Ownership!



Or buying the electricity instead of owning a share of the system

Financing Community (and other) Solar in Illinois

- **3 Primary Sources of funding**



Federal tax credit and depreciation

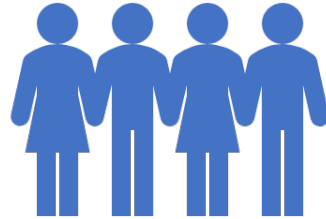


Solar Renewable Energy Credits (SRECs) paid thru Illinois Power Agency



Revenue from selling or self generating solar electricity

Community Solar for buyers



- Sign up to for some or all your electricity generated by designated offsite installation
- Great for-
 - Households who don't own a roof, like renters and multi-family condominium or cooperative owners
 - Home owners who may have a roof that's shaded or unsuited to have a solar installation
 - Homeowners who can't or don't want to lay out costs of installing their own solar energy system

Community solar sites in Illinois

1

Can be up to 2 Megawatts of capacity

- ~2 football fields in size
- Supplies enough electricity ~400 Illinois houses/750 apts-yr using gas heat, hot water, cooking.
- Households that sign up are called "subscribers"

2

Minimum of three subscribers for Community Solar installation

- Maximum can be up to hundreds or more

3

Can sign up for some or all of electricity used

4

Electricity energy only savings, not transmission or related costs

Community Solar Installations

- **Community solar systems are designed, financed, installed and operated under an “Approved Vendor”**
 - **Approved Vendors are compensated by:**
 - **Federal tax credits and depreciation**
 - **Solar Renewable Energy Credits (SRECs)**
 - **Income from electricity payments by subscribers through utilities**
- **Community solar systems can be on vacant land or on a building**
 - **Building or land owners that have Community Solar Systems may be called “hosts”**

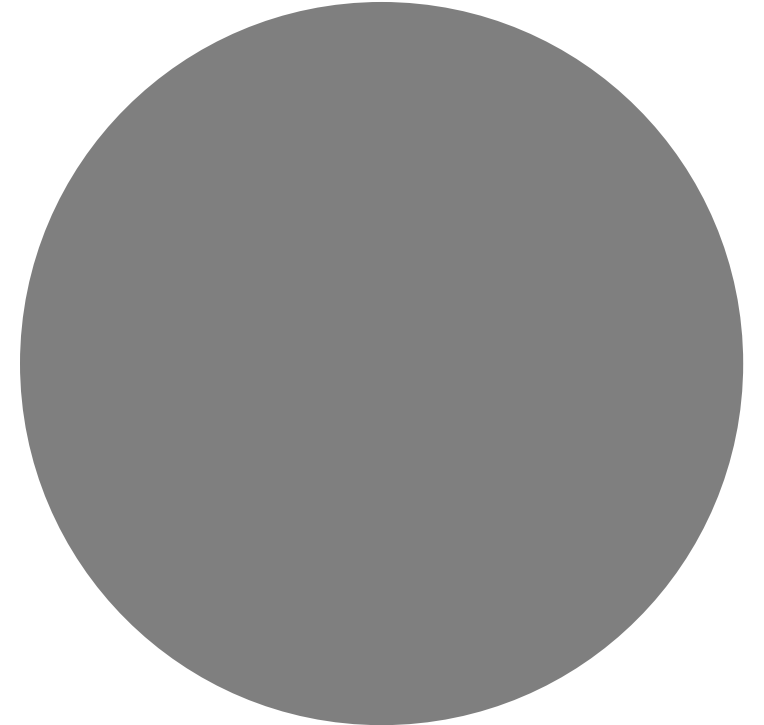
Have flat roof, have solar options

- **Building “A” – flat roof warehouse**
 - Has 50,000 square feet of usable roof
 - Can have up to a 500 kilowatt (kW) capacity solar installation
 - Solar installation can generate ~657,000 kilowatt hours per year (kWh-yr) average in Chicago climate



- **Building “A” electric consumption is over 657,000 kWh-yr**
 - **Building “A” uses 500 kW solar installation output for itself using net meter arrangement.**
 - **The net meter arrangement allows the full cost of the electricity consumption, not just the energy portion, to be deducted, resulting in better revenue projections than Community Solar.**
 - **Building “A” would engage a solar developer that is an “authorized Vendor” and either (a), finance the system, using incentives or (b) have developer be responsible for financing and enter into 3rd party agreement**

Solar option 1



Solar Option 2

Building “A” uses considerably less electricity than 657,000 kWh-yr

- **Option 2A – Building “A” has smaller system installed that meets its needs**
- **Option 2B – Building “A” goes with the larger system and becomes a subscriber in a Community Solar. It would become the largest, or “anchor” subscriber**
 - **NOTE – the most a subscriber to a Community Solar installation can get is 40% of output, so Building “A” can get at most is $657,000 \times .40 = 262,800$ kWh-yr**
 - **The remaining 394,200 kWh-yr could go to residential and non-residential subscribers.**

Solar Options

- **Solar Option 2A would be about same as Option 1**
- **Solar Option B**
 - **Under a Community Solar Option, besides the electricity use by “anchor subscriber”, ~ 50 houses or 80 apartments or a number of nonresidential accounts can subscribe.**
- **Advantage for rooftop owner to be anchor subscriber**
 - **No involvement in project, outside of providing roof, with possibility of leasing revenue**
 - **The solar electricity output to other subscribers can benefit the community**
- **Disadvantage – Anchor subscriber would have lower rate of savings than if it was their own net metered system.**

Marketing and management issues

Kickoff summer-fall 2018

Community solar vs onsite net metered
solar vs power purchase agreement

Community solar

- **Few subscribers or many? Anchor subscriber?**
- **Low-moderate income vs market rate?**
- **Public sector vs nonprofit sector vs for profit sector?**
- **Turnkey vs levels of involvement – subscriber management, project management**



Another solar strategy

- **Municipal aggregation**
 - Accounts <15,000 kWh-yr
- **13 active municipal aggregations + Kane County (as of October, 2017)**
 - 8 expired municipal aggregations
- **Use municipal aggregation for new solar or wind capacity from Illinois site through longer term agreements**
 - Much larger than community solar - more convenient?
 - Opportunity for significant price reduction
 - Legal, regulatory and marketing issues remain