



Clean Energy Cooperative Inc.

Developing Community through

Clean Energy in Northeast PA

Learn More at www.CleanEnergy.Coop

PA Community Solar Struggles without Community Solar Legislation

Jack Barnett, Co-founder & President

Clean Energy Co-op Inc.

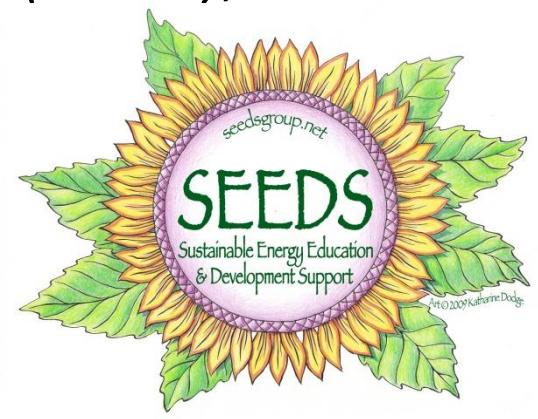
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How Our Cooperative Started

Started in July 2013 as a 'circle' within non-profit *Sustainable Energy Education and Development Support (SEEDS)*, to:

- Demonstrate a renewable energy project at the community level
 - Invest in our community to generate a positive 'return' for everyone
 - Stretch beyond what SEEDS could do (as a non-profit)
- 
- In May 2014, we spun-off as an independent for-profit legal entity
 - Currently 80 individuals and local organizations have paid a \$100 one-time membership fee to become a Co-op member-owner
 - Have invested over \$235,000 in 3 solar PV systems so far
 - Fundraising now for our 4th + 5th 'Community Solar' systems



Clean Energy Cooperative Inc.

Mission Statement

To sustainably develop renewable energy resources for a healthy and just energy future for our community, using local investment and providing positive returns to its members.

Why a Cooperative?

- It's about Community, Ownership and Governance
- One member = one vote (not: \$\$\$ = votes)
- Community benefit takes priority over profits
- But, IT IS A BUSINESS, and has to make money to justify continuing investments (donations ≠ sustainable)
- “Slow Money” Business Model:
Long-term and modest returns are acceptable because more of the money stays local, is managed by trusted individuals, and it provides other non-financial benefits to the investors within their local community



More about Co-ops

The Co-op Advantage:

- Allow aggregation of smaller amounts of capital from many people
- Together a group of individuals can do what no single person can do
- The cooperative can be organized as a legal entity, so liability is mostly tied to the corporate entity

Familiar Names/Brands:

- Associated Press
- Sunkist
- Land O' Lakes
- Stoneyfield Farms
- Organic Valley
- Welch's (National Grape)
- REI (Recreational Equipment Inc.)
- Most Food Co-ops
- Any Rural Electric Co-op
- Any Credit Union

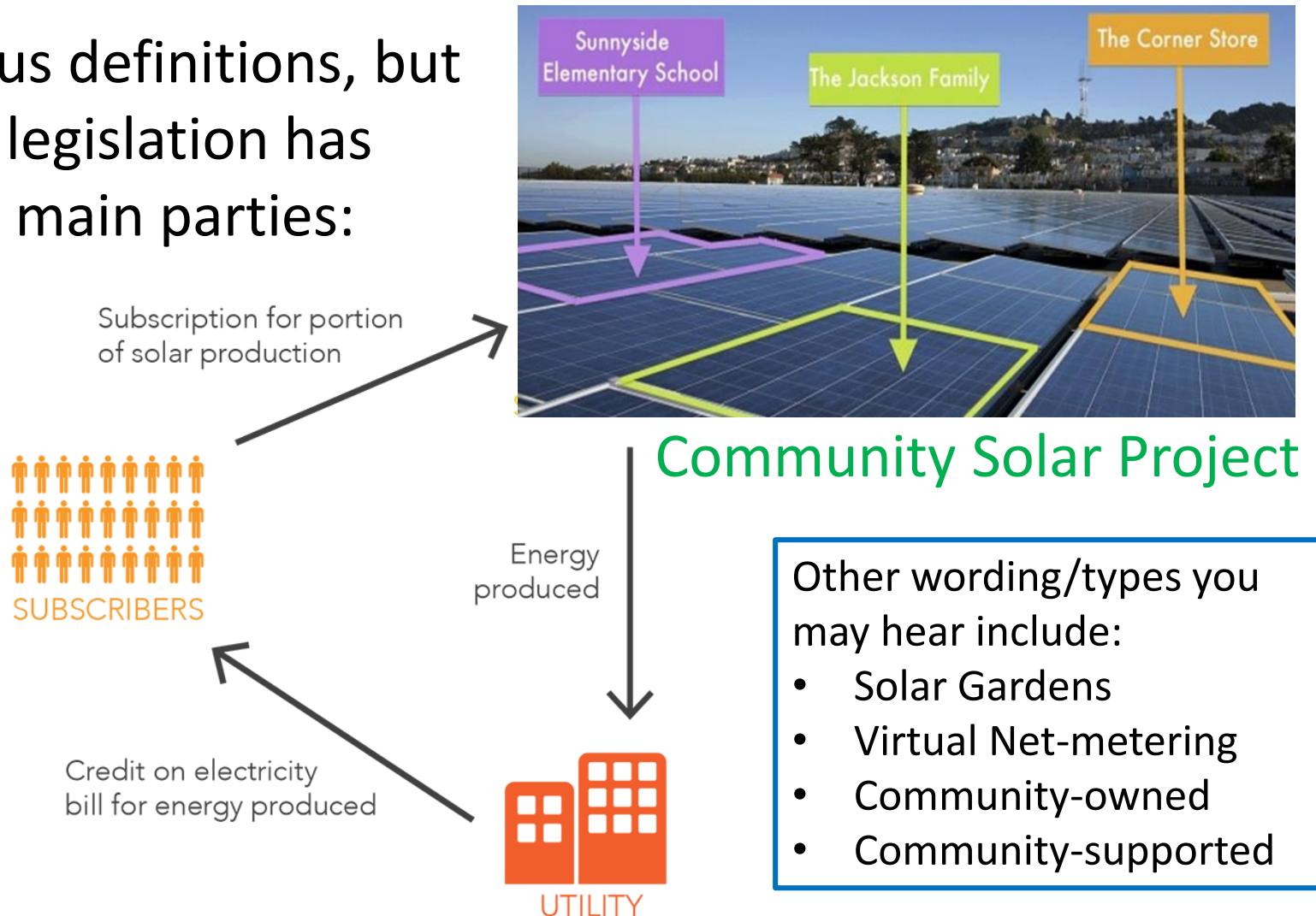
Why Sustainable Clean Energy?

- The US and our regional economy needs to transition away from fossil fuels. We want to show how this happens locally.
- Renewable energy requires significant up-front capital, yet has many positive and long-term impacts, both financially and other benefits.
- In 2010 our RURAL area was 3rd per capita in PA for installed solar PV. We've had little progress since, while financing has advanced other places.
- Conservation first! – The cleanest energy is the kWhr that is never used!



What is Community Solar?

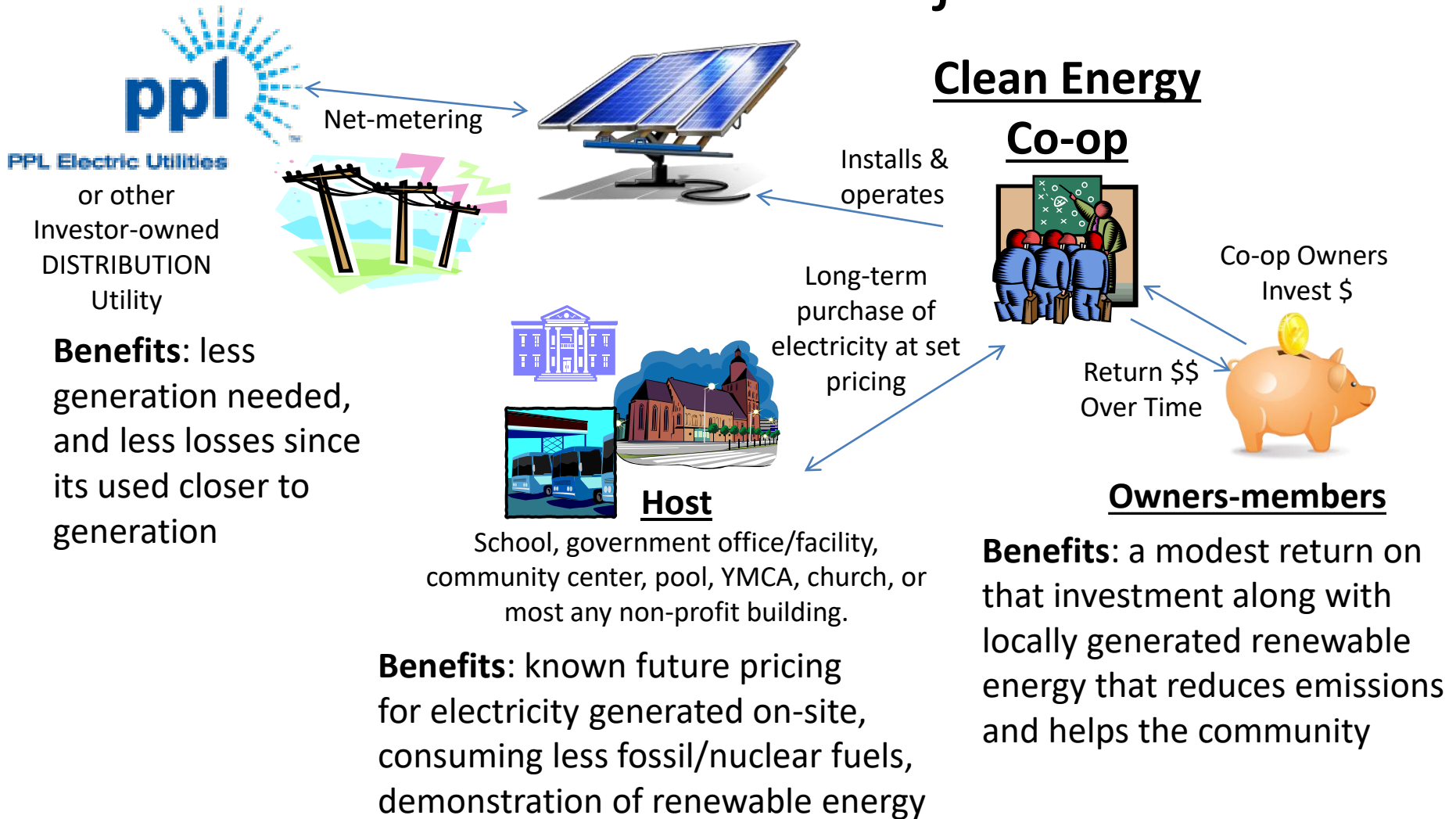
Various definitions, but most legislation has three main parties:



Other wording/types you may hear include:

- Solar Gardens
- Virtual Net-metering
- Community-owned
- Community-supported

Clean Energy Co-op's First Solar PV Project



Our Co-op's First Project:

Install Solar PV on **the cooperage.**



A non-profit community center on Main Street in Honesdale PA, originally built in 1861 as a cooperage

- Letter of Intent signed in September 2014
 - 100% of the building's annual electricity from PV → 27kW
 - Financed via 25-year Power Purchase Agreement
- PPA signed with the building owner in June 2015
- USDA REAP grant for 25% awarded in October 2015
- Installation completed December 15th!

Some of the Challenges:

- Forming the Co-op as legal entity required lawyering!
- Building structure has interior wooden-beam tensioned truss
- Host needed to replace roof and demolish an unused brick chimney prior to PV install
- Utility electricity prices for commercial were 8-10 cents, so a positive business case for 20-year PPA was difficult
- More lawyering for Private Offering Memorandum for Preferred Shares to only PA-resident Co-op members



Unexpected Challenges:

- Roof is not flat; slopes to the west. Slope on eastern part exceeds 5 degrees; usual ballast systems refused warranty
- New mounting supplier insisted on extra roof access space, so could no longer fit 27kW except with premium SunPower PV modules
- No local SunPower dealer
- Too expensive!!
- Insurance problems:
 - Co-op's General Liability
 - Host's Commercial Property policy
- Can't easily take advantage of 30% federal tax credit



2016-18: 'Community-Financed' Solar

2016: Talked with many candidate non-profit hosts, but none signed up

2017: Issued a 15-year low-interest loan to **The Anthill Farm** for a 38kW array on their barn. Was immediately cashflow positive for the farm!

2018: Similar loan to **Willow Wisp Organic Farm** for a 50kW barn roof array. Interest paid < utility electricity costs

These are both 'sustainable' farms that grow food for local consumption, and

- As for-profit businesses, can use the tax credits and depreciation themselves
- Awarded USDA REAP grants directly
- Use 'Virtual Meter Aggregation' to share the electricity generated with other farm buildings on separate PPL meters.



Taking on 2 Projects in 2019

1. Loan for 22.7kW grnd-mount at another Wayne county farm.
Already successful REAP grant!
2. A PPA with Wayne County government for 31.5kW array on the roof of The Stourbridge Project Innovation Center & Incubator



**Free Co-Working Space
Incubator & Accelerator
Business Resources & Training**

Serious Issues with our Model

- Not serving the Low- or Moderate-Income portions of our community
- Financials work only when 25% is covered by grant funds
- Host has to buy 100% of production and at a premium
- Investing is not nearly as 'fluid' nor as easy as selecting an energy provider on PaPowerSwitch.com
- Distributing dividends is not the same as sharing the solar kWhr production
 - Dividends are modest - ~2% return, only once per year, and taxable!
 - Selling the 'green' attributes via SRECs
So is it still 'solar electricity'??



Community Solar in New York

- Since 2016 – 500kW to 5MW-scale systems, each typically having 300+ subscribers
- Highly popular with backlog for interconnection approval
- Developer financing via NYSERDA & NY Green Bank
- Multiple developers advertising for subscribers:
 - Low-income assistance can be used
 - Prices nearly always lower than utility rates
 - Little or no upfront cost
 - May transfer tax-credits (if paying upfront)
- But NY is moving to a lower than 1:1 value for kWhrs



Clean Energy Co-op Accomplishments

- IREC's 2016 Best Community Renewable Project Award
- \$174,000 investments in our Preferred Shares
- Paid 2% Preferred Share dividends 2017-2019
- Successfully written 4 of 4 USDA REAP grants, totaling nearly \$53,000
- Our Community Solar systems have produced 235+MWhrs, enough for 23 'average' PA homes





Questions?

www.CleanEnergy.Coop

The 7 Cooperative Principles

1. Voluntary and Open Membership
2. Democratic Member Control
3. Members' Economic Participation
4. Autonomy and Independence
5. Education, Training and Information
6. Cooperation among Cooperatives
7. Concern for Community

Cooperatives around the world generally operate according to the same core principles and values, adopted by the [International Co-operative Alliance](#) in 1995. Cooperatives trace the roots of these principles to the first modern cooperative founded in Rochdale, England in 1844.

Informational Resources

- Summary of renewal energy regulations & efficiency incentives: www.dsireusa.org (then select “PA” Note: PA’s Sunshine Grant Program is not currently funded)
- National Renewable Energy Labs: nrel.gov/solar
- PPL Interconnection rules, Tariff and Pricing: pplelectric.com/at-your-service/electric-rates-and-rules
- Co-op Development Institute: www.cdi.coop
- Keystone Development Center: www.kdc.coop
- National Coop Business Association: www.ncba.coop
- Solar Gardening Institute : solargardens.org (excellent training videos, but PA doesn’t have “group net-metering”, so we’re a Community Supported Energy project by their definitions)
- Books on local investing:
 - Local Dollars, Local Sense – by Michael Shuman (especially chapter 3)
 - Localvesting – by Amy Cortese
 - Power from the People – by Greg Pahl (chapters 5 & 6 are MUST READs)