

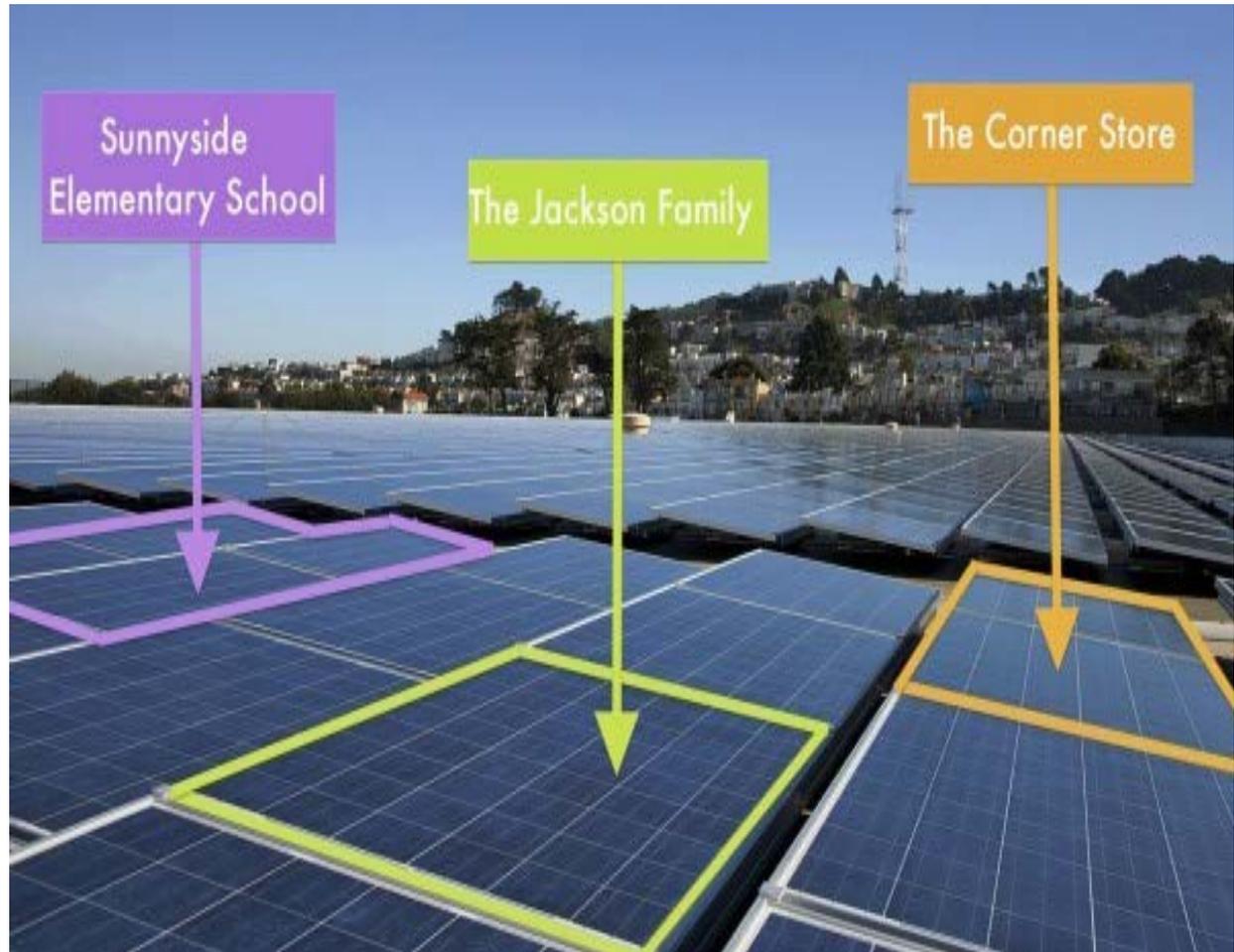
Low Income Community Shared Solar

A Critical Step Toward Energy Democracy in New York

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Owned Shared
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Overview

- Southern Tier Regional and NYS Community Shared Solar (CSS) Players
 - BRSC/STSW
 - EDA/CoShare
- Reforming the Energy Vision (REV) Energy Democracy & CSS
- CSS opportunities and challenges
- CoShare support for CSS in NYS
- How to make CSS happen in your area



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Southern Tier Solar Works

Binghamton Regional Sustainability Coalition

Southern Tier Solar Works (STSW)

- Program of BRSC, founded in 2014
- Funded by NYSERDA Partner of Renewable NY led by Catskill Mountainkeeper
- **Vision – Permanent Clean Energy One-Stop**
- Clean energy education & workforce development
- Solarize, Commercial PACE
- **Community Shared Solar**

Binghamton Regional Sustainability Coalition (BRSC)

- 501(c)3 not for profit organization, founded in 2008
- build a sustainable community through education and collaboration
- generate partnerships and civic participation to achieve enduring social, environmental, and economic well-being



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NY Energy Democracy Alliance (EDA)

- A statewide consortium of 22 diverse community organizations working to advance a just and participatory transition to a resilient, localized and democratically controlled clean energy economy in NY.
- We shape NYS energy policy and programs and implement them on the ground (e.g. CoShare)
- Make REV **R.E.A.L**
 - Renewable
 - Equitable
 - Accountable
 - Local



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What is Reforming the Energy Vision (REV)?

- New York State is the midst of a clean **energy revolution**, which seeks to transform the oldest modern energy system on the planet while **creating thousands of jobs and billions in investment**.
- **Flip utility model**
 - From: profits by distributed more energy of any kind
 - To: Reliable, safe, clean, resilient, and affordable
- **50% renewable electricity by 2030**
- State policies that **provide incentives, regulations and programs to animate the markets** in Solar, wind, Biomass, Heat pumps (geo & air source), and most importantly, **energy efficiency**.



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Reforming REV

- Ambitious goals but results on the ground show policies and programs are inadequate to meet them.
- Undue influence corporate utilities and energy companies
- Narrow market based approach – **equity**, public **accountability**, **local economic development** and **employment** are not prioritized
- Institutional biases of energy policy makers whose views were shaped by long careers at the worlds largest banks. **Their vision?**
 - From: Centralized, vulnerable, dangerous, expensive fossil & nuclear **corporate owned**
 - To: distributed, resilient, safe, affordable **corporate owned**
- Only 2-5 community solar projects on line since Summer 2015, NONE serving LMI New Yorkers
- 800 solar installer jobs lost last year in NYC and flat growth v. 20% growth nationally



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What is energy democracy and why does it matter?

- Energy democracy means centering **community ownership**, **decision-making** and **equity** at the heart of a **renewable energy economy**.
- A democratic clean energy economy can scale and become a major employment and economic driver
 - Slow 'leak's of capital out of the area through locally owned energy generation
 - Reduces the energy cost burden, particularly on LMI New Yorkers
 - Pragmatic solution to solar & wind siting fights in a home rule state
 - Best defense against fracking, pipelines & bomb trains
 - reduces economic desperation motivation
 - Revenue for landowners and municipalities + local jobs
 - provides for our energy needs



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Why is Community Shared Solar(CSS) a game changer?

- Only 1 in 5 can go solar.
- Barriers include poor sites, rentals, low income, bad credit, transience.
- CSS can give members energy system ownership & control, lower rates and energy security.
- CSS is the most practical way to democratize access to renewables



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Shared Solar is Solar for most of us

- All kinds of ‘off-takers’ can ‘virtually net meter’ their electricity from a remote solar system.

-‘off-takers’ can include residential, small business, schools, governmental, and more

-‘virtual’ or remote net metering means you are off-setting your electricity consumption with the cheaper solar electricity generated by the remote array off site.

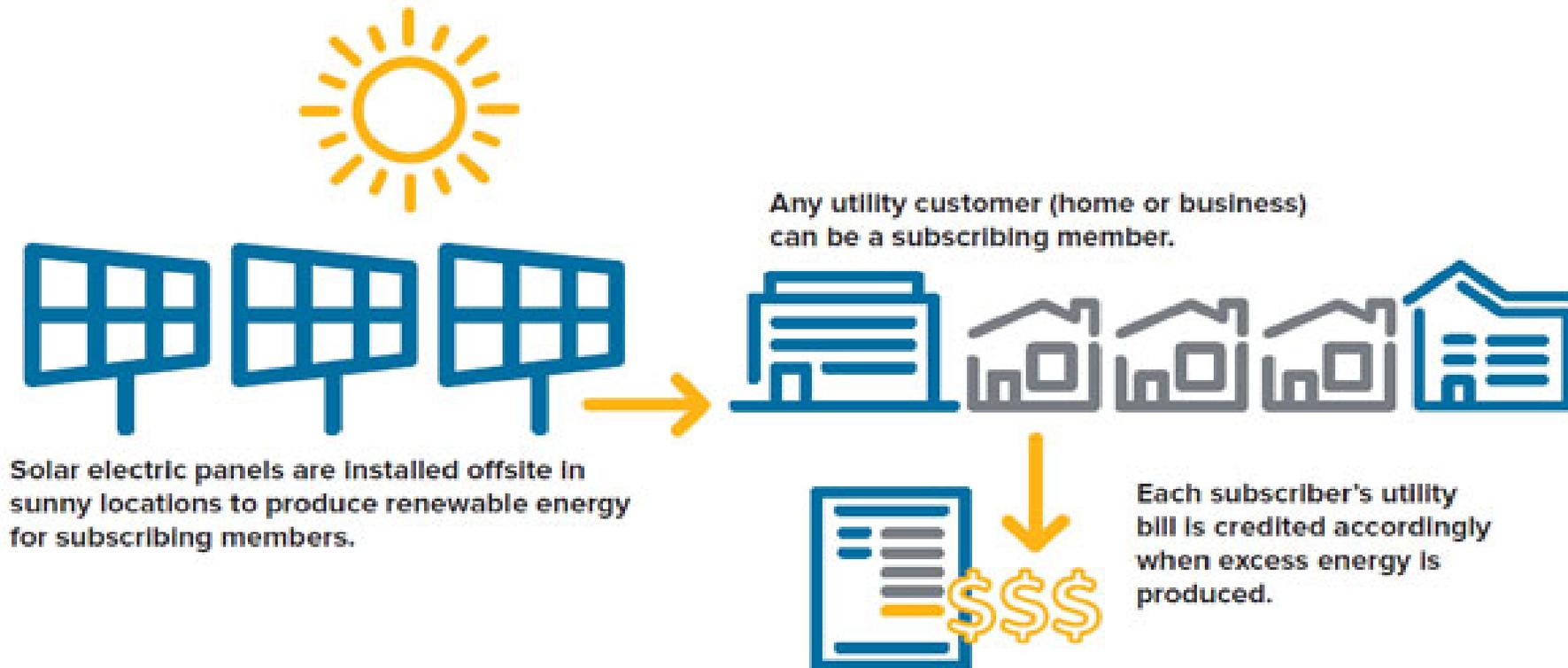


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How Does Community Shared Solar (CSS) work?



Solar electric panels are installed offsite in sunny locations to produce renewable energy for subscribing members.

Any utility customer (home or business) can be a subscribing member.

Each subscriber's utility bill is credited accordingly when excess energy is produced.



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NYS CSS Challenges

- Statewide
 - Good sites are challenging to secure, largely because of inadequate utility infrastructure and lack of grid transparency
 - Recent ‘value of solar’ regulation has created confusion and uncertainty in the market
- Upstate
 - Low electric rates ($\sim .10/\text{kwh}$) make cost savings difficult
 - Existing NYSERDA C/I incentives make 200kw+ systems uneconomical for public or private sector customers who may be paying (.05-.07 / kwh)



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What is CoShare?

- **Coshare**, the Community Owned Shared Renewables Group is an initiative of the New York Energy Democracy Alliance (EDA).
- A member-based network of community organizations and local energy practitioners
- Working to advance locally controlled, community-based shared renewable energy projects across New York State. Could be a CSS support model for other states.
- Currently focused on supporting CSS development.



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Why Community owned?

- Our existing energy system is corporate controlled, with most benefits going to shareholders.
- New York's emerging clean energy transformation could easily go the same way. Neither equity nor economic development & employment are top line goals for the REV or the NYS energy plan.
- Community owned energy projects create more local jobs, economic benefit, and can be a cornerstone of a just transition to an affordable and climate friendly energy system.



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What CoShare Does

- **Disseminate & Discuss CSS**
 - Best practices, case studies, development support
 - Curriculum & Knowledge base
 - Workshops & Trainings - Next in Kingston July 11
 - Participate in other CSS spaces: e.g. National Community Solar Partnership
- **Collaborate and partner** with key stakeholders, agencies, and organizations.
- **Advocate for policies and regulations** to support community ownership or control of CSS projects that broaden access to solar.
 - Fixing VDER for LMI access
 - NYSDPS – CDG-LI collaborative
 - LMI incentives & development funding



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Bainbridge-Guilford Solar Access Project

Binghamton, NY

Status: Accepted
Seed funds: none
TA voucher: \$10,000

600kW-1MW ground-mounted system to benefit 50% LMI residents

Summary:

A 600kW-1MW community solar project in upstate NY that will benefit 50% LMI subscribers. The approach expands the financing pool, and allows us to enroll low income off-takers, regardless of credit, with no up-front payments as 'pay as you go' subscribers.

Innovations:

Financing is structured as a pre-paid PPA mixed with a subscriber community solar model

Additional Considerations:

- Expect 2-7 MW of LMI/non-profit solar projects before 2020
- Use debt and tax equity financing and the majority of capital needs will be financed with or by the NY Green Bank and another tax equity prepaid PPA investor.
- Already secured the site.

Team:

Co-op Power, Southern Tier Solar Works Program (part of the Binghamton Sustainability Coalition)



Making it happen – CSS Development Steps & Roles

- **Choosing your business model** – **Project sponsor** – Non-profit, coop, house of worship, municipality, finance partner
- **Project finance** - Tax equity & Debt providers – NYGB, commercial banks, credit union, companies and high net worth individuals with large passive tax appetites.
- **Navigating Interconnection** – Utility, interconnection consultant, **Project sponsor**.
- **Member enrollment-customer acquisition** – **Project sponsor**, specialized organization or company
- **Land acquisition: Identifying, Screening, leasing, permitting.** - **Project sponsor**, specialized organization or company
- **Engineering, Procurement & Contracting (EPC) – System design & build.** Solar electric contractor.
- **Cloud customer management system / partner** – Customized software provider/service, Utility, **Sponsor**.

* CSS developers can play any or all of these roles



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Discussion & contact

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Supplementary Slides



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NYS CSS Challenges

- Statewide
 - Good sites are challenging to secure, largely because of inadequate utility infrastructure and lack of grid transparency
 - Recent 'value of solar' regulation has created confusion and uncertainty in the market
- NY Metro
 - Restrictive zoning and site related ordinances, high development costs, and physical space constraints, make finding sites difficult.
- Upstate
 - Low electric rates (~.10/kwh) make cost savings difficult
 - Existing NYSERDA C/I incentives make 200kw+ systems uneconomical for public or private sector customers who may be paying (.05-.07 / kwh)
- Policy & Process
 - Community stakeholders not resourced for participation in the process
 - Time commitments and process assumes paid full time staff, and is weighted in favor of IOUs and other corporate players



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E.g. Business Model Choice is key

- Who will be the owners of the system?
- Where will development & construction capital come from?
- What size will the project be?
- Who will the members be and on what terms?
- Who will operate and maintain the system and serve the members over 20 years?



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Cooperatively-Owned Shared Solar Basic Models

Model 1

**“Multi-Class Member
Financed (ownership)”**

Tax Credit: To Members

Project Size: Small or Large

Accessibility: > Moderate
Income. Low Income w/ peer
financing.

Electricity Discount:
Significant. 20 – 40% over 20
years.

Model 2

**“Tax Equity Flip
(subscription)”**

Tax Credit: To Investors

Project Size: Large. 500 kW+
bundled with others

Accessibility: Low and
Moderate Incomes.

Electricity Discount: Good.
10 – 20% over 20 years.

NYS Solar deployment

- 2012 42.4mw;
- 2013 74.4mw; (+32)
- 2014 120.7 mw; (+46.3)
- 2015 200mw; (+79.3)
- 2016 227mw (+27)



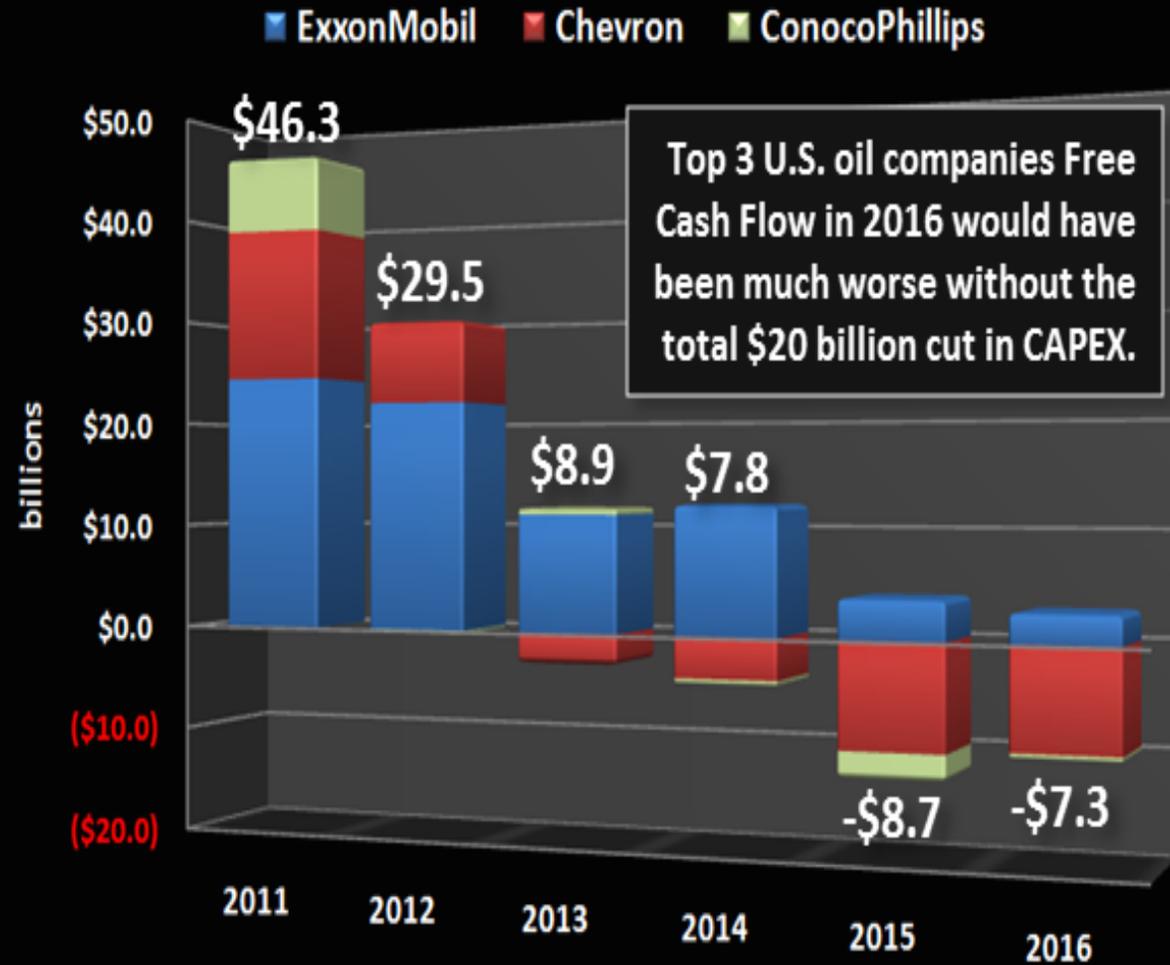
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Risky Business

Top Three U.S. Oil Companies Free Cash Flow



REV at the Crossroads

- No open warfare with utilities
- Increased solar looking back (+800% since 2011)
- Inadequate solar looking forward
 - 50/30 requires between 890-1,346 mw of solar annually
 - 2016 227mw deployed & growth slowing
- Community shared solar stalled
- Very small gains in on-site LMI solar access (102 last year)
- Not very **R.E.A.L**



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STSW: What we do

- **Solar & Energy Efficiency**
 - Solarize program includes residential, shared solar, commercial/industrial scale
 - Energize NY Commercial Property Assessed Clean Energy Financing
- **Clean Energy education & workforce development:** k-solar curriculum development, Tiger Ventures mentoring, **Energy Corps Internship**
- **Subject matter expertise for government & communities**



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