

Community-Led Solar in Boston: Lessons Learned from a Pilot Project

August 13, 2024

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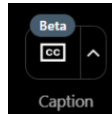
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Speaker bios available in the “Materials” section



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Celebrating 20 Years of State Leadership



The Clean Energy States Alliance (CESA) is a national, nonprofit coalition of public agencies and organizations working together to advance clean energy.

CESA members—mostly state agencies—include many of the most innovative, successful, and influential public funders of clean energy initiatives in the country.

CleanEnergy States Alliance

www.cesa.org



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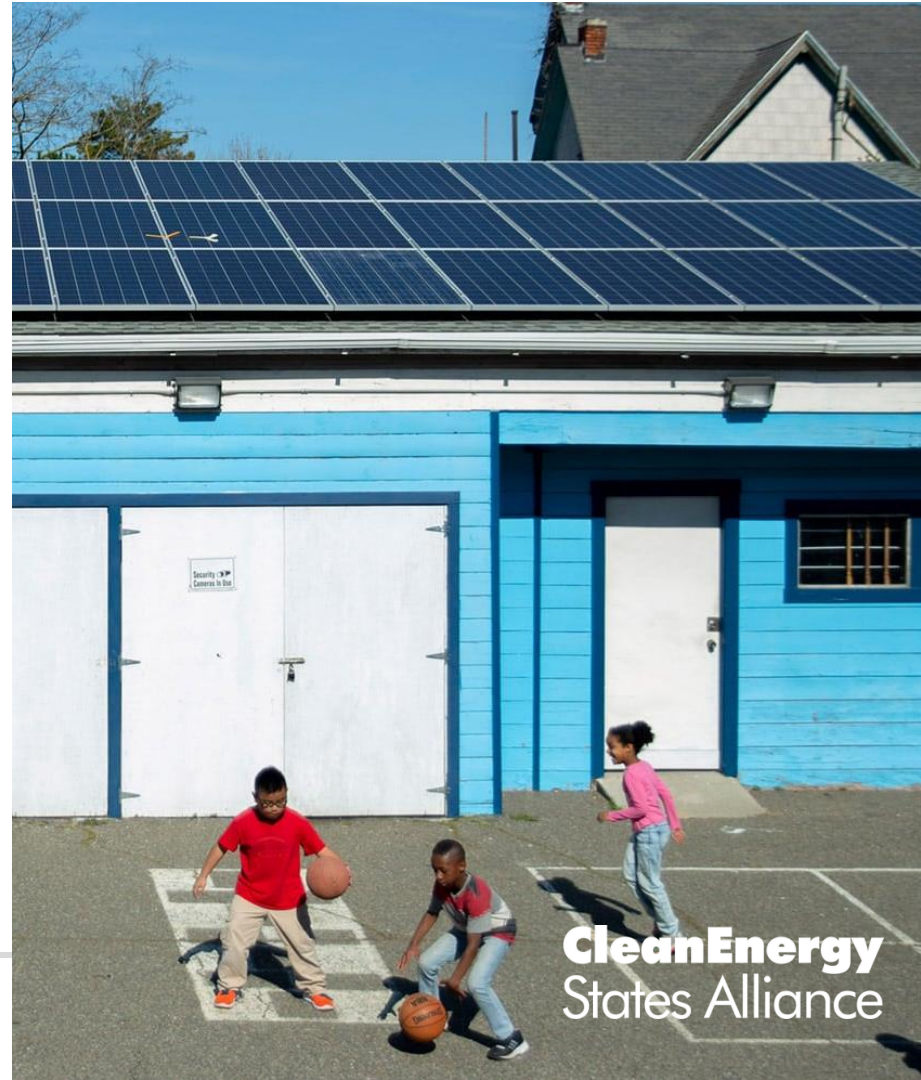


Solar with Justice: Connecting States and Communities

Identifying models for how state energy agencies and community-based organizations can collaborate more effectively to expand access to solar.



www.cesa.org/projects/solar-with-justice



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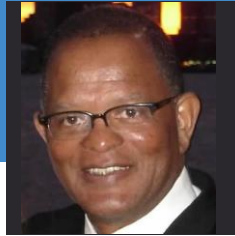
Webinar Speakers



Diana Eddowes
Energy Allies



Yesenia Rivera
Energy Allies



Greg King
Boston
Community
Solar Co-op



Kate Raisz
Boston
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Solar Co-op



Beth Griffith
Boston
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Sam Koduat
Boston
Community
Solar Co-op



Matt Ohloff
Clean Energy
States Alliance



Community-led solar in Boston

Lessons Learned from a pilot project

The mission and vision

Mission

We revolutionize energy by ensuring the communities most impacted by climate change lead local clean energy solutions

Vision

We believe climate-impacted communities have the power and knowledge to lead our equitable clean energy transition.



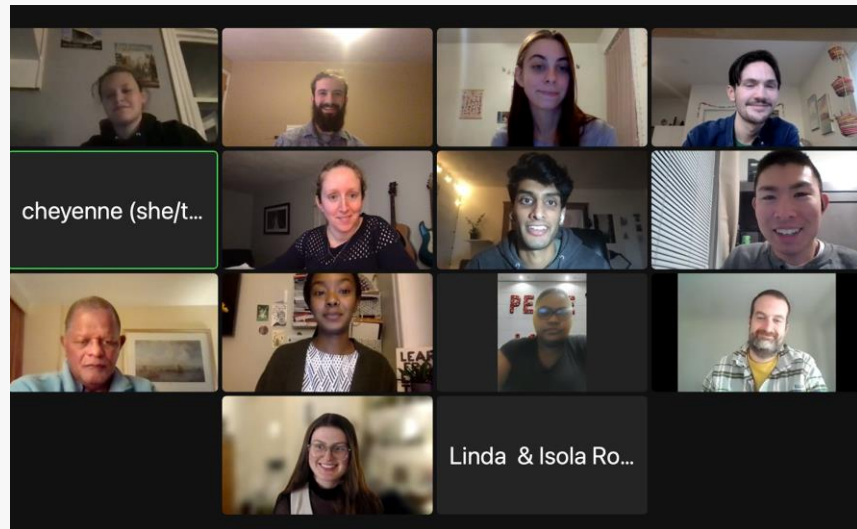
Background



- Community solar has potential to be more equitable and inclusive than rooftop
- But as of November 2023, **less than 4%** of community solar projects in MA serve low-income residents
- Projects are often imposed on communities after they've already been built and put profit first

Community-led solar

- Community Led Solar is a form of community solar that prioritizes the needs of community over profit
- Decisions on the projects are made through a paid Community Advisory Board (CAB) from the beginning

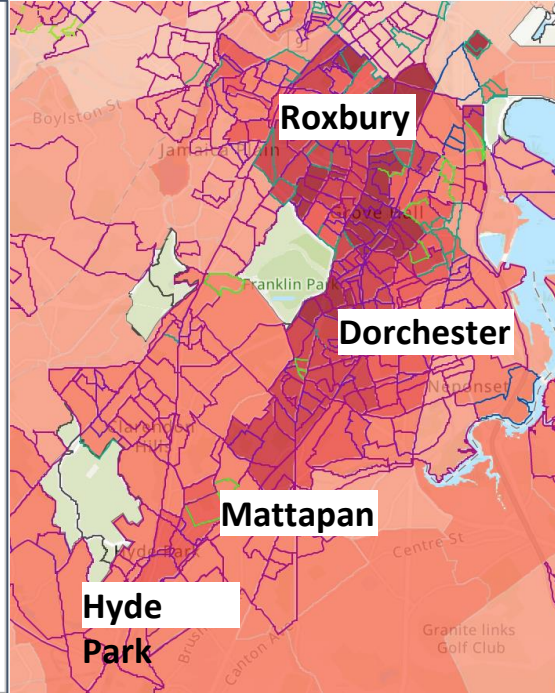
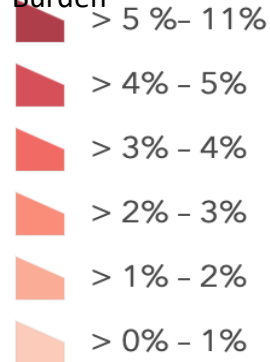


A Boston pilot project

Energy Burden:
The percentage of income that a household spends on its energy needs

MA Energy Burden Data

Average Energy Burden



Energy Burden

Low-income households spend three times as much on energy expenses than non-low-income households, despite consuming less energy

Community needs assessment and outreach

- Identified organizations in the area to gather their feedback, assess their interest in the project and connect us with community groups
- Met with over 30 organizations
- Developed a survey to understand energy knowledge
- Did in person outreach - flyers at community centers, tabling at community events



Building the Community Advisory Board



CO Everything



TSK Energy Solutions LLC
Energy Innovations



CAB Meeting Topics



Objectives for the CAB

- **To gather** a diverse group of stakeholders to document local priorities and advance solar equity in traditionally excluded populations
- **To empower** community members with the tools and knowledge they need to make informed decisions about the development of a community solar project and become clean energy ambassadors for their communities
- **To create** a Community Benefits Plan that captures the priorities of the CAB for developing a community solar project that provides maximum value to traditionally excluded residents of Dorchester, Roxbury, Mattapan, and Hyde Park

Imagining a Better Energy System

sick of energy groups exploiting people

People should do what they say they're going to do

From where everyone has access to clean quality energy

to where clean energy is a right

From a system where CS projects are not owned locally

To a future where projects can be owned by community based organizations

From: Very few community solar projects are cited in EJ communities

A system where CS projects are sited not only in rural areas (driven by incentives)

From: a system in which outreach efforts do not reach communities that can get solar that will get solar

To: more appropriate outreach and engagement

a world where people have to use their fridge for cooling or stove for heating.

from a society where energy is privatized

Where energy is free

energy system that produces waste that isn't just carbon emissions, toxic byproducts locally

From a reality in which low income CS is underperforming

A system in which there is equal access to renewables

a fossil fuel free affordable equitable energy system. resources are out there from the government that would help but info is hard to find

From where clean energy is a privilege

to one where it can be shared among the community and created by and for the community

an energy system that doesn't result in toxic byproducts that are placed where people live

Visioning your ideal community solar project

financial savings
project being the norm - lots of solar
ownership
resource for education
decreasing heat deserts/asthma
catalyst for other green options
community garden
information table/plaques/education
trees /water nearby
opportunity/jobs/livable wages
nature
Dorchester Ave
centralized free energy
saving the planet
connecting with community entity
integrating into existing spaces
orb of renewable equity
group learning
Ribbon cutting ceremony w/ community
neighborhood around - housing/businesses
sustainability
communication
open project - not hidden or private
transformational instead of transactional
BIPOC community
large green space / garden
reflecting values off of a building

Construction Priorities

If groups aren't women or BIPOC owned, the workforce of these groups should be BIPOC or women

folks could shadow informally and get experience on job site

People that have been incarcerated are historically those who have been excluded from technical jobs. should be a priority for this project.

Mining for the materials for panels can be really destructive in South America. Sure there are options for more ethical sourcing that should be explored.

City of Boston woefully under-contract POC-owned construction groups. Could be a priority to contract groups owned by excluded communities

should be education component within construction. as people are walking by and have questions, make sure they can get answers and get connected.

CAB members should be very involved in picking the contracted group.

disposal of panels should be done sustainably and responsibly.

Prioritizing unions (not necessarily IBEW)

CAB members should have option to approve of the group. maybe 3 candidates are selected and CAB should be able to select final one.

could be requirements around significant experience hosting apprentices on the job site or doing WFD work

CAB members could help share request for proposals so they can spread more effectively to more parts of the community.

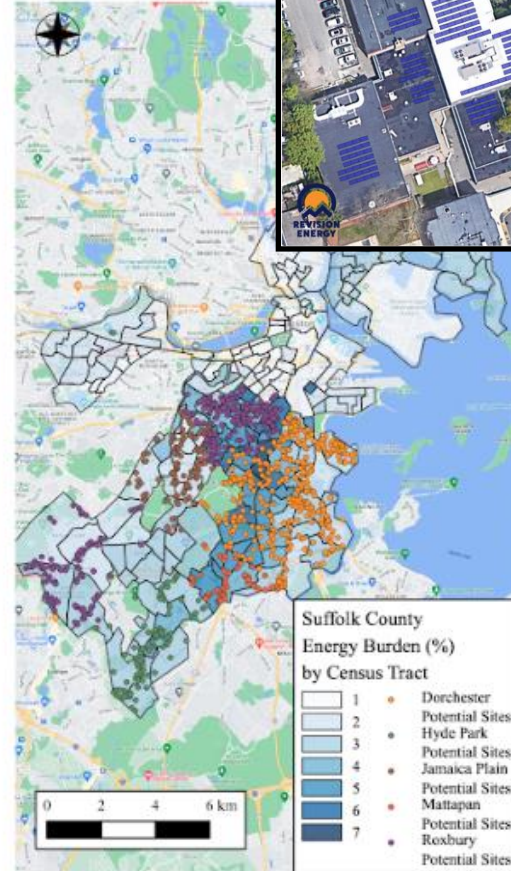
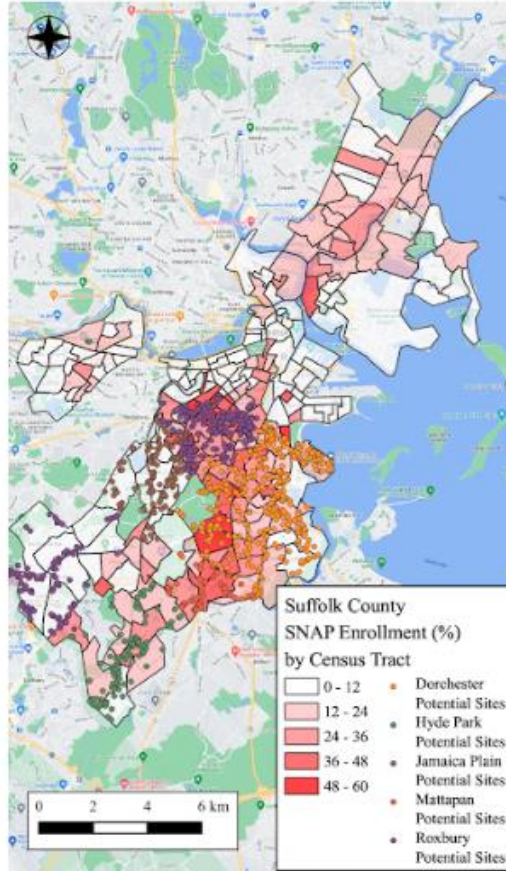
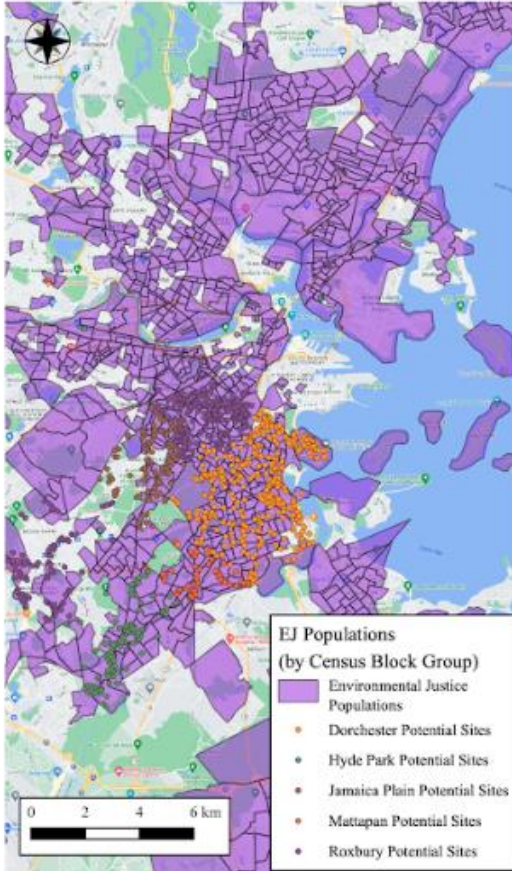
What qualities should we seek out in a construction partner?

How can we incorporate our project values (equity, education, integration, transformation) into these criteria?

What workforce development/training/apprenticeship programs must be a part of the contract?

What involvement should CAB members have in picking a construction partner?

Site analysis



Decision Making and Working Groups

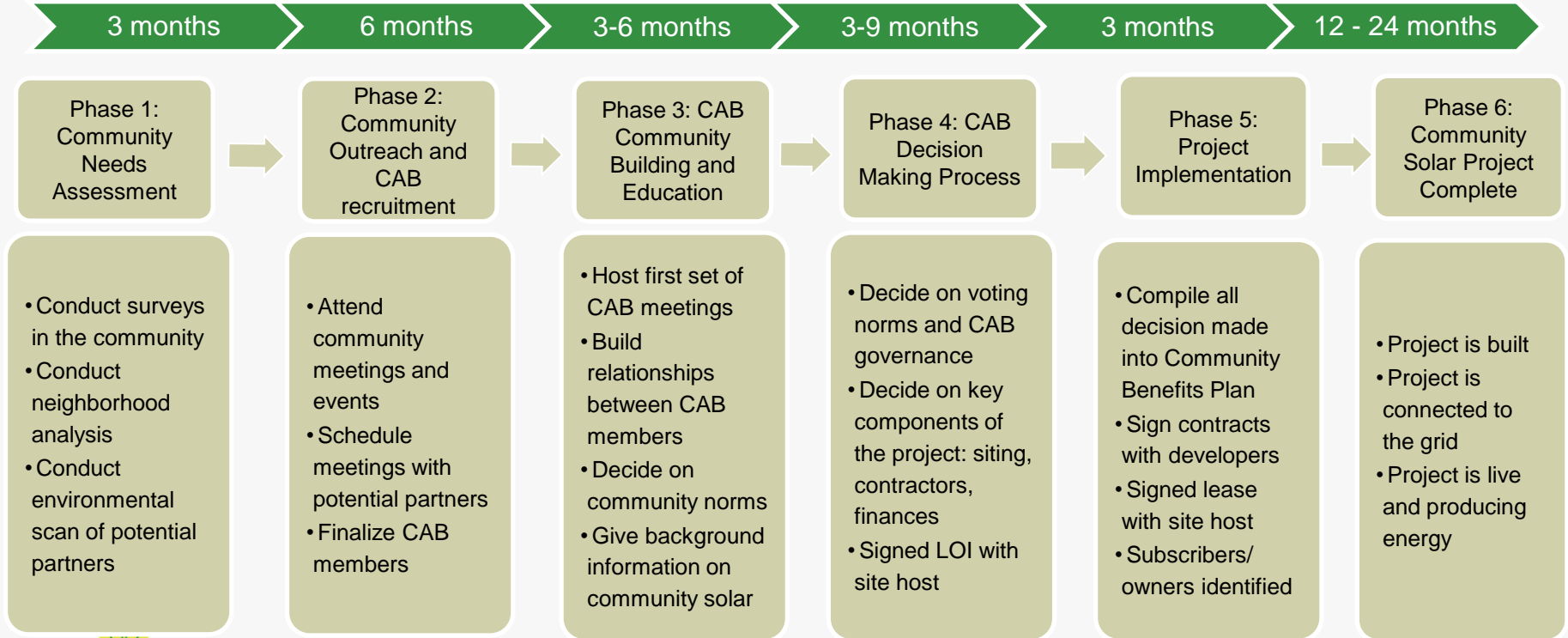
- Circular Agendas
- Ranked choice voting



Working groups

- Workforce development
- Siting
- Community Outreach and Engagement
- Ownership/Governance

Participatory community-led solar process



Forming the Boston Community Solar Cooperative



Forming the Boston Community Solar Coop

- Joined forces with another group working on community-ownership in Dorchester
- Partnership spearheaded by CAB members



First solar project

- Dorchester Food Coop Array
- 85 kW (DC) PV system
- Electricity generated by rooftop solar array sold to DFC at a discount via Purchase Power Agreement (PPA)



Forming the Boston Community Solar Coop

- Obtained legal support and fiscal sponsorship
- Worked to form the BCSC for about 18 months
- Officially incorporated in December 2023
- Launched on March 2, 2024 with Senator Ed Markey as Keynote Speaker and over 75 community members.



Project Financing Opportunity

The Inflation Reduction Act (IRA) of 2022 was a game changer that enables community ownership of solar systems. It:

- Created Base and Bonus Investment tax credits that can be transferred or receive direct payments from the US Treasury.
- A ten year effective period.
- Eliminated the requirement that a tax equity investor have a minimum 5 year ownership position in a renewable energy project.



Project Financing Tools

Of the 4.5 Gigawatts of Solar deployed in Massachusetts over the last 15 years less than 2% are providing clean, renewable energy to low income communities.

Hopefully that is about to change in Massachusetts due to:

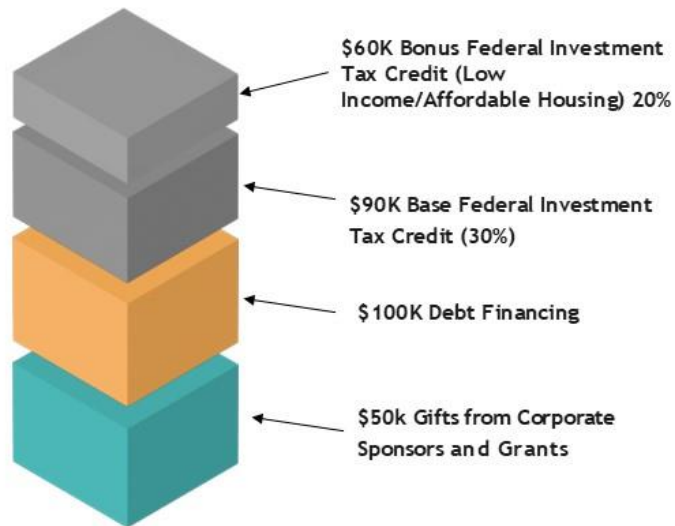
- The \$156 million in grant funding from the EPA Solar for All which is targeting low income communities.
- The proposed reforms from the Commission on Energy Infrastructure Siting and Permitting
- The proposed changes to the SMART solar incentive program that encourages development in the built environment.



Project Financing Strategy

Capital Stack – Hypothetical Solar Project

\$300K Solar Project



Prioritizing minority owned businesses

As a community owned solar project developer, the members of the Boston Community Solar Cooperative have a voice on who provides Engineering, Procurement and Construction (EPC) services.

- Contracted with OneWay Development on Construction.
- Selected Nordee for Engineering Services (Interconnection).
- Hired local Community Organizer as event planner for launch event.
- Giving preferences to local business for other services (catering, etc.)

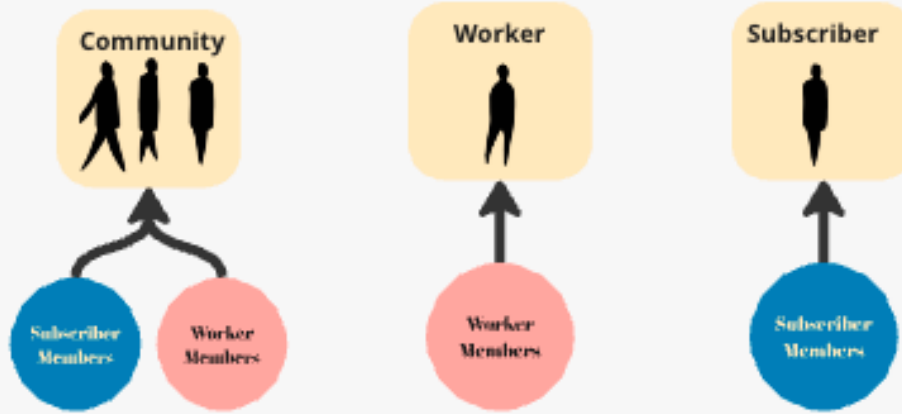


Governance and Membership

7 Elected Directors

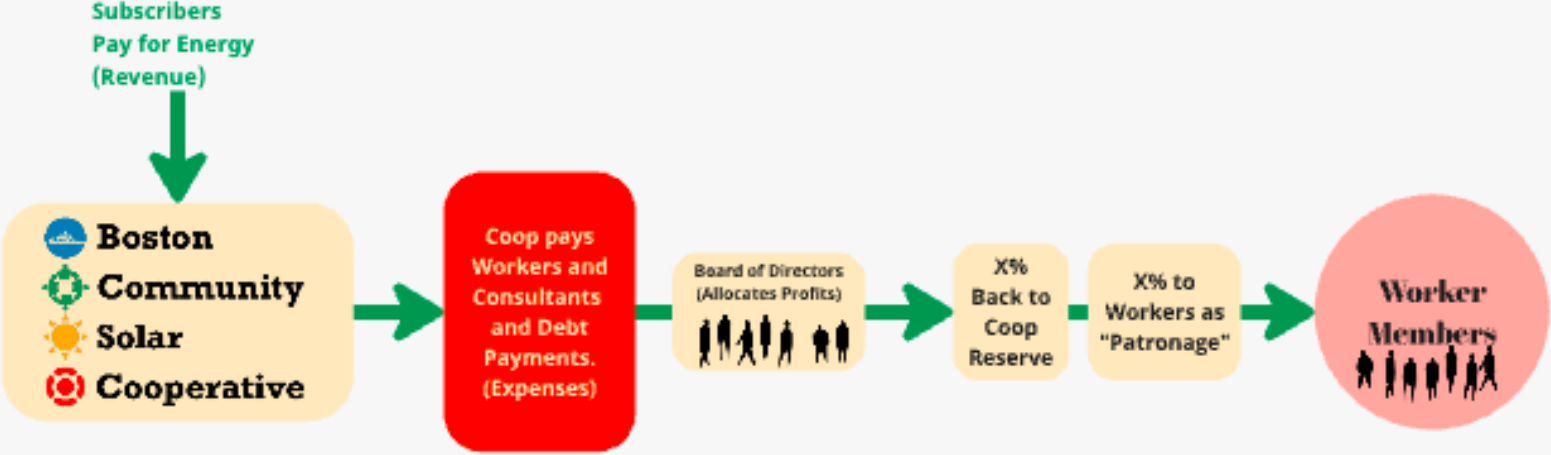
Director:

Elected by:



1. **Community (3):** Elected by and represents interests of Worker and Subscriber Members.
2. **Worker:** Elected by and representing the interests of Worker Members.
3. **Subscriber:** Elected by and represents interests of Subscriber Members.

Governance and Membership



-  **Boston**
-  **Community**
-  **Solar**
-  **Cooperative**

Membership recruitment and expansion



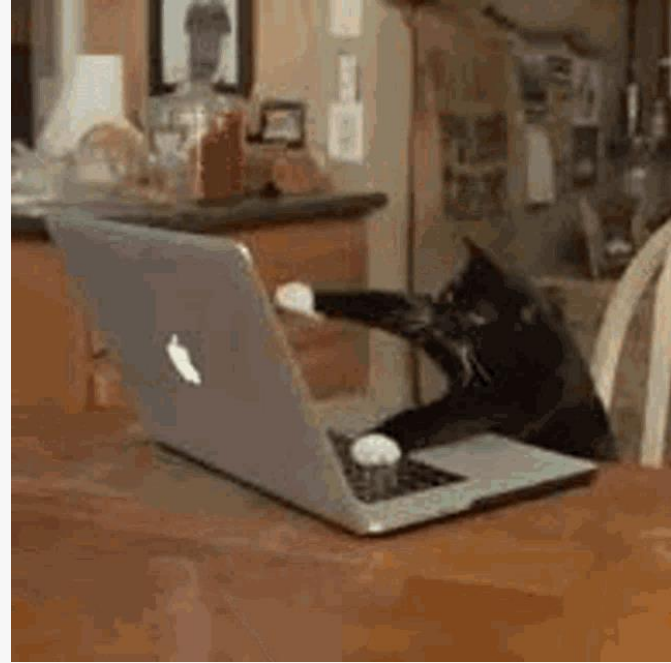
- Community Engagement:
 - Social Media
 - Email efforts
 - Events, Tabling
 - Boston Open Streets
 - Climate Tech
 - Solidarity Economy Event

Lessons Learned



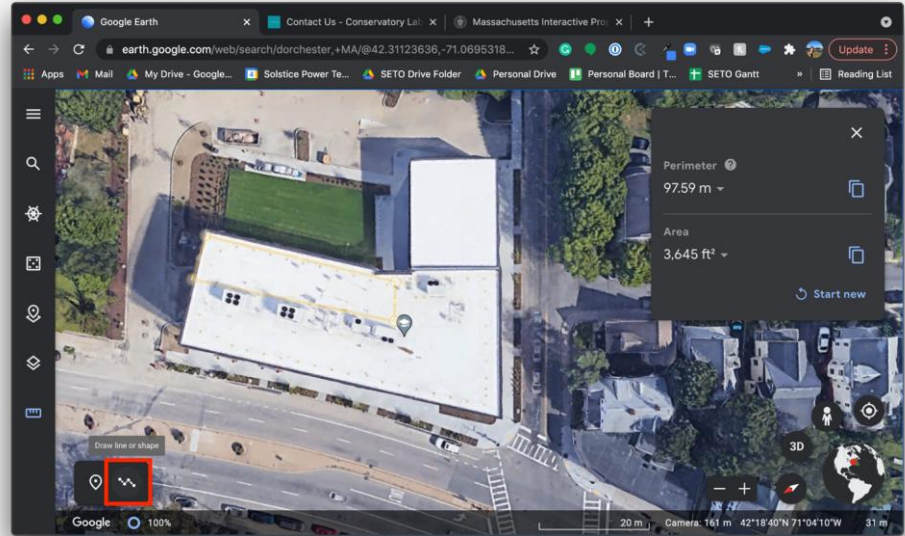
Challenges - Time

- Community Member Attrition
- Sustained Funding



Challenges – Siting

- Finding sites suitable for rooftop solar (shadows, HVAC equipment location)
- Interconnection in densely populated communities
- Local permitting requirements.



Challenges - BCSC membership

- Member Recruitment
 - Predatory residential solar practices have resulted in declined trust in new energy initiatives
 - Must be transparent in our messaging about model and governance as we do outreach
- Membership Accessibility
 - Some interested members may not have the resources (money/time/energy) available to invest
 - Exploring options to provide a need-based support mechanism for those this may apply to



Challenges - BCSC membership

- Gifting investor shares to community members who cannot afford to buy a share.
- Coop business model better suited for worker owned cooperatives.
- SEC accredited investor requirements make it challenging to easily offer investor shares without the use of an approved crowdfunding platform



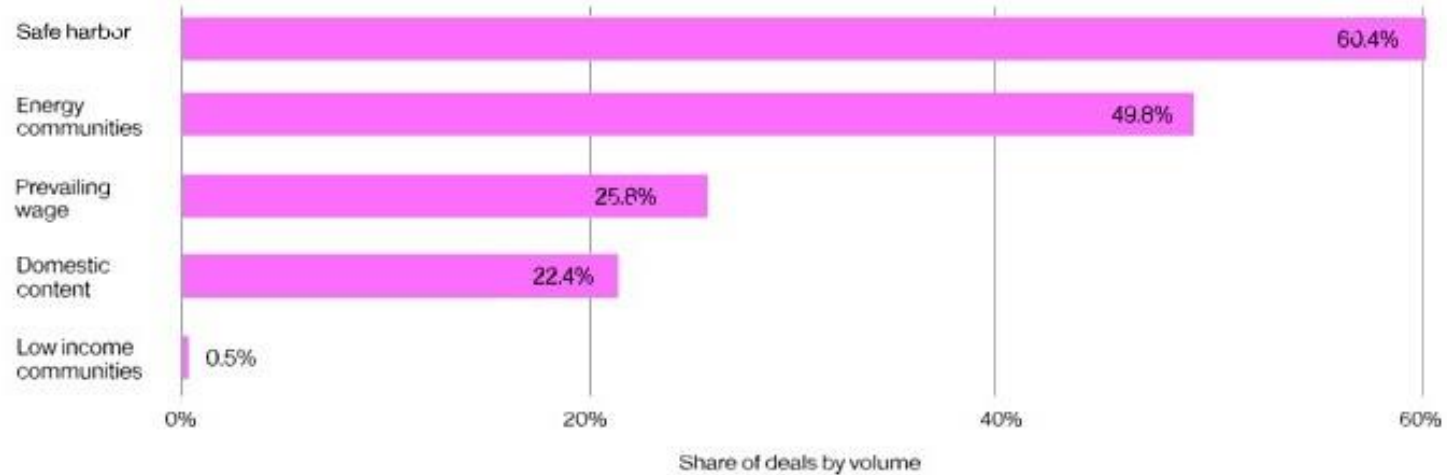
Challenges - Financing

- Qualifying for the base and bonus investment tax credits with the US Treasury.
- Selling qualified tax credits earned by smaller projects via Tax Credit Exchanges (Crux, etc.)
- Qualifying for project debt financing with the offtaker has a marginal score.
- Changing solar incentives/uncertainty in funding timing.



Challenges - Financing

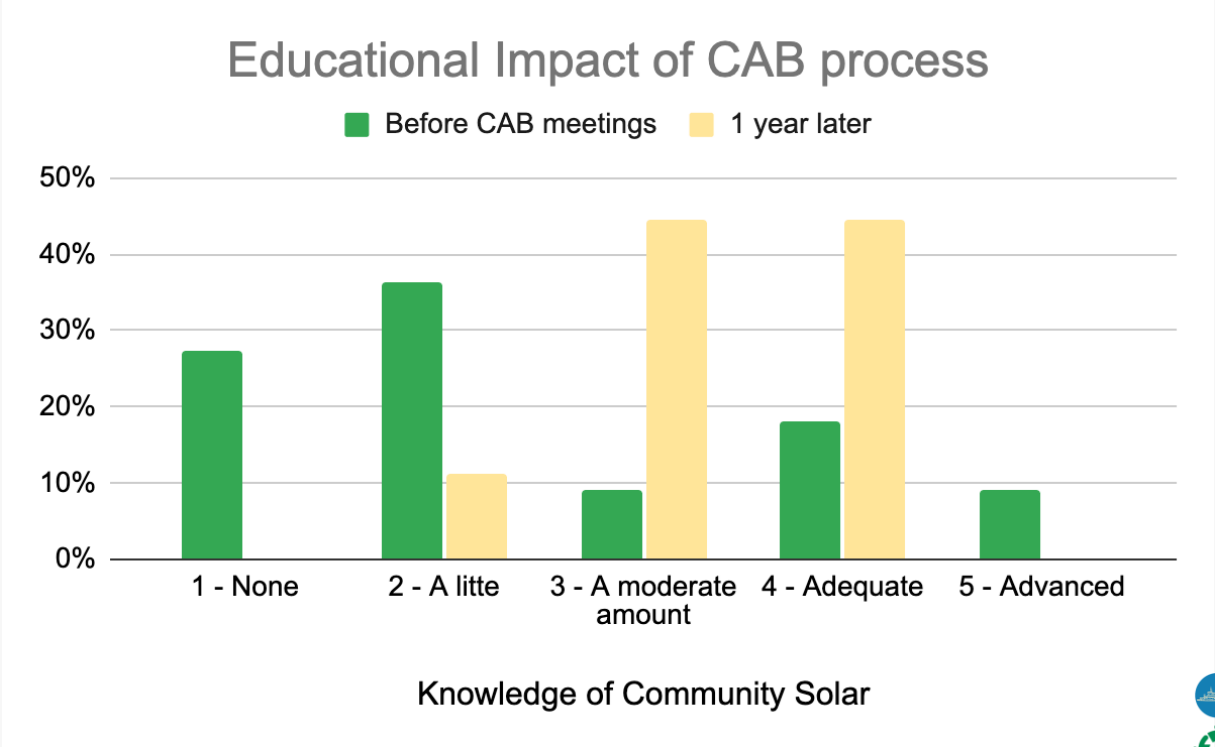
Figure 17. Distribution of deals by size, sold year to date 2024 and full year 2023



Successes – a replicable model



Successes – Energy Education



CAB Member Spotlight: Beth Griffith (She/Her)



Organization: Renewable Renegades

"Serving on the Community Advisory Board has been such a great experience. I love how members of the community and organizations are a part of the process. The beauty of collaborating with multiple people and organizations is they bring different perspectives and ideas that you wouldn't have been able to think of on your own."

BCSC Successes

- Respectful and Democratic yet diversity of viewpoints
- Supporting Allies
 - Boston Medical Center
 - RENEW Worcester



Recommendations:

Project Management

- Take time to build trust with community members
- Invest in staff training on Community Solar
- Collect project evaluation metrics to show funders your progress

"I've really appreciated the patience that Energy Allies came with for myself and other members of the CAB who didn't necessarily have the technical expertise about what community solar entails. I appreciate folks needing to take things a little slow and recognize that we're all working towards the same goal but come with different backgrounds... if you're interested and you're passionate there is space for you."

– Kendra Beaver, CAB member, BCSC Clerk

Recommendations:

Siting

- Prioritize mission-aligned property owners
- Use GIS to identify roofs
- Invest in higher quality analysis tools or use partners
- Have a dedicated person focused on site acquisition



energy-allies.org

What makes a good site?

- Large, flat roofs with few obstructions
- Greater than 10,000 sq ft in size
- South-facing pitched roofs (east or west are okay, but not ideal)
- Ideally privately owned or owned by a nonprofit
- Located near three-phase power lines

A simple line drawing of a house roof with a chimney on the left side. A sun icon is positioned to the right of the roof, and a power line symbol is shown near the roof's peak.

energyallies



Next steps for the BCSC

- Recruiting more community workers
- Identifying more sites in Boston
- Engaging with new partners

<https://bostoncommunitysolar.org/contact>



Next steps for Energy Allies

- More community-led solar projects
- Energy Allies is merging with SUN!

info@solarunitedneighbors.org



Acknowledgements

- Community members
- Staff, fellows and board members
- Partners
- Funders




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 **Boston**
 **Community
Solar**
 **Cooperative** 50



The Clean Energy Transition is inevitable, whether it's just and equitable is dependent on who is leading it.

