Share the Sun
Harness your power. Demand solar access for all.

Shared Solar Toolkit

Resources for Connecticut communities and groups to make renewable energy available to all

For Starters ...

Shared (or Community) Solar allows any electricity customer to get their power from large solar projects located away from their homes, with savings automatically credited to their monthly bills.

Shared solar has the potential to exponentially grow green power: 4 out of 5 residents cannot install solar at their homes because they rent, live in multi-family homes, or don't have the right roof or too much shade.

In 2018, Save the Sound and many others won approval by Connecticut legislators for a shared solar program. The law (Section 7 of Public Act 18-50) allows up to 25 megawatts (MW) per year of shared solar for six years, starting in January 2020. Details about the program are being finalized, with input from the public and groups like Save the Sound. Future legislation may expand the program further.

But there's no reason to wait – **there's lots we can do today** to get shared solar rolling in Connecticut.

This toolkit is for groups and communities that want to start shared solar projects. It has five sections; the first two are the most important.

1. **Get Informed, Build Support, Get Involved**
2. **Identify and Educate Subscribers**
3. **Identify Sites**
4. **Connect with Developers**
5. **Prepare Proposals**

Contact us with any questions you have about this toolkit, requests for in-person presentations, or suggestions for making it more useful: email mschlag@savethesound.org.

1. GET INFORMED, BUILD SUPPORT, GET INVOLVED

Get Informed

CFE's shared solar page has the basics and periodic updates.

CFE's one-page **factsheet** explains shared solar in Connecticut.

CFE's **Powerpoint presentation** has more details about shared solar in Connecticut, the challenges it faces, and ways members of the public can weigh in on decisions state agencies are making on program details.

EnergySage, a trusted, neutral non-profit, explains shared solar and provides resources.

Scroll down for more resources, and the additional list at the end of the toolkit.

Build Support

Shared solar is a powerful strategy for expanding renewables, and it's easy to understand. But most people still don't know about it. Here are two great ways to increase support for shared solar.

Lift your voice by informing public officials and the general public. Here is an example of a **letter** you can send your legislators and the editor of your local paper that provides information and asks for their support.

Resolutions. One way to spread the word and ask your town or group to show support for shared solar is a resolution that can be approved by town governments and local groups. Here's a sample **resolution** you can adapt for your community.

More Resources

Public Act 18-50 (shared solar is mostly in Section 7)
https://www.cga.ct.gov/2018/ACT/pa/2018PA-00050-R00SB-00009-PA.htm

Community Solar Basics, six-page factsheet by the Interstate Renewable Energy Council (IREC), 2017
https://irecusa.org/publications/community-solar-basics/

Shared Renewable Energy for Low- to Moderate-Income Consumers, IREC, 2016
https://irecusa.org/publications/shared-renewable-energy-for-low-to-moderate-income-consumers-policy-guidelines-and-model-provisions/

Expanding Solar Access: Pathways for Multifamily Housing, IREC, 2018
https://irecusa.org/expanding-solar-access-pathways-for-multifamily-housing

Solar Market Pathways, a USDOE effort with Partners IREC, NREL, RAP.
Series of toolkits starting here: http://solarmarketpathways.org/innovation/community-solar/#layoutsection_fundamentals-of-community-solar

2. IDENTIFY AND EDUCATE SUBSCRIBERS

Most people want renewable electricity, both to take action on the climate crisis and to control costs. CT residential, business, and government customers pay some of the highest rates in the nation; green power like solar and wind are affordable, predictable, and stable for decades. Large shared solar arrays produce power more cheaply than individual rooftop systems, and shared solar allows subscribers to lock in savings over utilities' standard rates for decades. As an indication of the cost savings, the pilot projects going online are expected to save their customers 10% on their electric bills.

Where to look for subscribers

Shared solar developers and their partners seek out, educate, and sign up subscribers, which can be a lot of work. You can help bring costs down and increase savings by starting the process yourself with groups you belong to or that may be interested. Here are some examples:

- faith groups
- community groups
- housing associations
- block clubs
- energy, environment, climate groups
- business groups and Chambers
- town governments
- public housing authorities
- school boards

Save the Sound can help groups become more informed by attending gatherings, making presentations and providing materials – email us at mschlag@savethesound.org.

Legislative History and Updates

In 2015, legislators approved a very small (6MW) pilot program. After two rounds of Requests for Proposals, DEEP chose three developers in June 2017. The projects are expected to be up and running in 2019.

In 2018, after several years, Save the Sound and allies helped pass a shared solar law at the General Assembly. It was part of the omnibus energy bill, Public Act 18-50. Here are the major provisions of the newest shared solar law, mostly contained in Section 7 of the act:

- 25 MW per year for 6 years (150 MW total). Capacity not developed in one year cannot be carried over to the next.
- Set-asides for low-income and low/moderate income customers:
    - At least 10%+ of every project must go to low-income customers.
    - At least an additional 10% must go to low- or moderate-income customers, or low-income service organizations.
- To be eligible, other residential customers must demonstrate they are unable to install solar at their homes.
- Businesses, the state, and towns, are all eligible to participate.
- Starts in January 2020.

Changes were made in 2019 during administrative proceedings, including:

- The subscription process was streamlined and administrative burden reduced on shared solar project developers by transferring responsibility for identifying and enrolling subscribers to the electric utilities.
- The program was revised to authorize previously allocated, but unbuilt, megawatt capacity to be added to the cap for future solicitation years.
- Utilities are now in charge of subscribing the 20% voluntary enrollment portion of a project's capacity. Save the Sound is concerned that under the Modified Program Requirements, there is no incentive for the electric companies to subscribe this reserved 20% capacity, although they are required to advertise the availability of subscription capacity.

How subscriptions work

Signing up for shared solar is a commitment, though not as big a commitment as installing panels on your roof. The main reason for this is financing—developers borrow money to build solar projects, and lenders need to see solid commitments of sufficient revenue to repay the loans.

Here is a summary of some standard subscriber agreement provisions:

- Agreements are for 20 years.
- Subscribers agree to purchase discounted "bill credits" that cover specific amounts of electricity produced by the array or specific portions of the array's production.
- Bill credits are valued at a specific fixed price, in cents per kilowatt-hour that is lower than the utility's standard offer; this decreases subscribers' monthly electric bills.
- Subscribers can end the agreement before the 20 years with no penalty if:
  - they move outside the utility service area and give 90 days' notice; or
  - they move to a location that does not have an individual meter and give 90 days' notice; or
  - they die; or
  - the facility cannot operate as planned.
- Subscribers who break the agreement or terminate without one of these reasons may be required to pay an early termination fee that could equal 3 months' bill credits.

Connecticut's law and regulations include significant protections for consumers, which will be finalized before the program starts up in January 2020. A 14-page description of the protections developed for the pilot program is available **here**.

3. IDENTIFY SITES

Solar panels take a lot of space – 20x20 feet to power a typical Connecticut home, 3 to 5 acres for 100 homes or more. Poorly planned solar siting in recent years has resulted in unnecessary loss of farmland and forests and triggered understandable community opposition. There's no need to use top-quality farmland or prime forests for solar.

Roofs. There are thousands of large roofs across the state suitable for shared solar arrays: big box stores, malls, warehouses, parking garages, carports, barns, industrial buildings, town offices, schools and houses of worship, to name a few. Experts say about HALF the electricity our state uses can be generated just from rooftop locations.

Land. Our state's precious farming communities can benefit from carefully siting solar on less productive land, offsetting the high cost of running a farm in Connecticut and supporting weak spots in the grid. Solar arrays can allow for continued agricultural use such as grazing and pollination. Solar acreage can be returned to farmland more readily than other developments like housing, retail, or industrial uses.

Solar developers may already be looking at sites in your community, and they might not be the best sites in town. You know your community: look around, ask around, check your town's Plan of Conservation and Development and other planning documents, and talk to town land use staff. Make a list of possible sites, both roofs and land.

Here are some statewide lists and maps that may be useful for identifying sites as well.

Landfills

Landfills are great locations for solar because they often are:

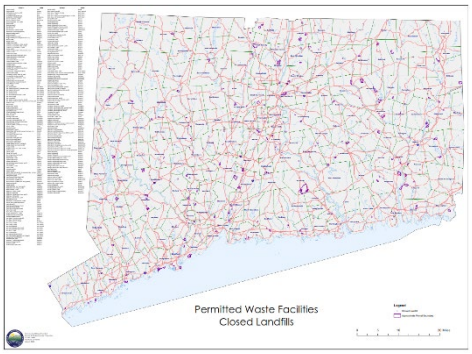
- near transmission lines
- close to population centers or industrial areas that use a lot of energy
- flat or slightly graded
- less expensive than other sites

For more detail, **here** is a detailed 2016 Environmental Protection Agency report on siting shared solar on landfills.

There are over 250 closed landfills in Connecticut. Click on the **list** below to download a 7-page list of closed landfills sorted by town; click on the **map** to download a state map.

CLOSED LANDFILLS

LOCATION	ADDRESS	ACTIVITY	CLOSEDATE	WASTETYPE
Andover	Shoddy Mill Road	Andover Landfill	1993	MSW
Ansonia	North Division Street	Ansonia Landfill		BW
Ashford	Waterfall Road	Ashford Charles Woytik Landfill	1982	MSW
Avon	281 Huckleberry Hill Road	Avon MSW Landfill		MSW
Avon	Arch Road	Avon MSW Landfill (Arch Road)	1973	MSW
Barkhamsted	Route 44	Barkhamsted RRDDIF1 Landfill	1993	MSW
Beacon Falls	Lopus Road	Beacon Falls Posick Landfill	1986	MSW
Beacon Falls	Beacon Heights, Inc. PO Box 7	Beacon Falls Murtha Landfill	1984	MSW
Berlin	Deming Road	New Britain Industrial Landfill	1980	IND
Berlin	642 Christian Lane	New Britain Incinerator Ash landfill	1980	INCIN ASH



DEEP maintains a list of sites that towns have said they want to use for renewables. Here is 2016 list: **17 town sites seeking renewable energy developers – January 2016**

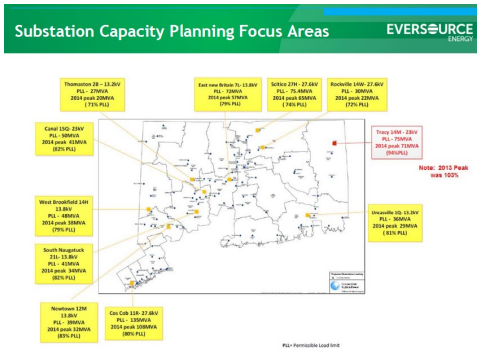
Contaminated sites

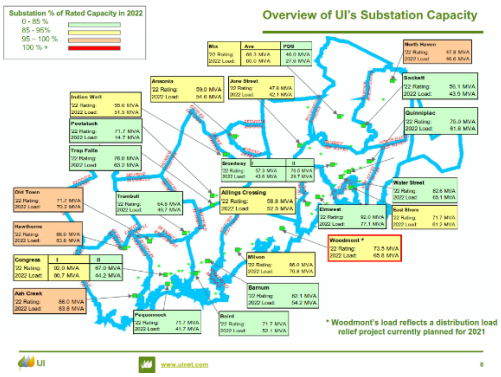
There are hundreds of sites across the state that DEEP says are "contaminated or potentially contaminated" that may be suitable for shared solar projects. Follow **this link** and download the file that includes your town.

Weak spots in the grid

While there are great locations for large solar arrays everywhere in the state, some offer the added benefit of being located where the distribution system is particularly weak. Transmission and distribution costs have increased far more than the cost of actually generating power in the last two decades. Distributed generation like solar can support the grid and offset additional distribution costs that would otherwise be passed on to all customers.

Utilities track weak spots to plan capital improvements. Click on the maps below to download full-size versions for your utility area (Eversource or United Illuminating). Solar can be particularly useful in areas that have problems with load growth or peak load (for example, the Woodmont substation in red in the UI picture below).





4. CONNECT WITH DEVELOPERS

A healthy solar industry has developed in Connecticut over the past decade of steady growth in residential and commercial solar. Of the approximately 90 installers (that focus on smaller rooftop solar systems),

some are interested in larger shared solar projects. Many of the dozens of developers (that focus on larger commercial or municipal projects) are interested in shared solar as well. Entities that have a lot of experience in developing shared solar in other states (such as Clean Energy Collective and US Solar) or in financing shared solar systems are now bringing that expertise and funding to Connecticut.

Who should you approach first? If you have a relationship with an installer, personally or your town through a Solarize campaign or municipal installation, you could start by contacting them. Here are some additional suggestions for developers likely to be interested in shared solar.

Shared solar pilot

In 2015, rather than passing a shared solar law, legislators approved a small pilot program totaling 6 MW. After much delay, DEEP chose 3 projects in June 2017, totaling 5.22 MW. The 3 projects are currently under construction, for expected operation in 2019. They may be looking for subscribers, from anywhere in the state as long as they are in the same utility service area as the array. Here's a summary of the three pilot projects.

	C-TEC and CEC	Capital for Change / MSL	USSolar
Utility service area	Eversource	Eversource	United Illuminating
Location	Bloomfield – vacant municipal property	Thompson – industrial site that housed a former mill	Shelton – former landfill
Size	1.62 MW	2 MW	1.6 MW
Subscribers	Up to 60% of the power can go to commercial/industrial customers; at least 20% of the residential portion must go to low-income residential customers		
Price	Less than 17 cents/kwh		
More info	https://cleanenergyco.com/rooflesssolar/ct/faqs	https://capitalforchange.org/	https://www.us-solar.com/solar-gardens.html

Additional developers

CFE has assembled a **list of companies** that have expressed interest in doing shared solar. Some submitted proposals during the first round of the pilot in September 2016, or the second round in April 2017, while others indicated interest by attending DEEP meetings on shared solar or providing comments on DEEP program plans. We'll update this list periodically; if you know of a developer who should be in the list and isn't, let us know at sharedsolar@ctenvironment.org.

5. PREPARE PROPOSALS

This section will be updated as we learn more about proposal formats and requirements after the DEEP and PURA proceedings conclude during 2019. In general, developers will take the lead in putting proposals together, with community input as needed or appropriate.

Resources on Solar, Shared Solar, and Energy

A note on how we define shared or community solar. There are two main kinds of shared solar in the U.S.: utility-sponsored, and community-sponsored. Connecticut is a "deregulated" state: we changed how our utilities are structured about 20 years ago. Now, utilities like Eversource and Avangrid/United Illuminating only distribute power; the actual power is generated by private producers selected through auctions held by

the regional grid (ISO). Because Connecticut utilities don't generate their own power, **community-sponsored** is right for our state.

Coalition for Community Solar Access – national shared solar coalition
http://www.communitysolaraccess.org/

Vote Solar – national advocacy group with a focus on shared solar
https://votesolar.org/policy/policy-guides/shared-renewables-policy/

Northeast Energy News, free newsletter with focus on our region
https://energynews.us/category/digest/northeast-energy-news/

Utility Dive, free newsletter; choose focus on Storage, Solar etc.
https://www.utilitydive.com/

National Renewable Energy Laboratory, US Dept of Energy – research and data on solar potential
https://www.nrel.gov/

Interstate Renewable Energy Council – data on state strategies and standards
https://irecusa.org/

Local Energy Rules, twice-monthly podcast, by the Institute of Local Self-Reliance (ILSR)
https://ilsr.org/local-energy-rules-podcast-homepage/

Community Power Map, data on renewables and green policies across the nation, by ILSR
https://ilsr.org/community-power-map/