

SOLAR

MAP

Municipal Assistance Program

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Agenda

- ❖ What is the CT Green Bank
- ❖ Solar MAP program
- ❖ Green Bank Solar PPA
- ❖ Next Steps
- ❖ Q&A



Connecticut Green Bank



Help ensure Connecticut's energy security and community prosperity by realizing its environmental and economic opportunities through clean energy finance and investments.



Support the Governor's and legislature's energy strategy to achieve cleaner, cheaper and more reliable sources of energy while creating jobs and supporting local economic development



A quasi-public state agency and trusted partner to municipalities, is using solar to put towns and cities in charge of their energy costs. With the Green Bank's 'Green Bank Solar PPA,' municipalities can go solar, enjoying peace of mind and other benefits.



CSW Energy is experienced in working with municipalities to develop solar PV projects. Green Bank is working with CSW Energy to help municipalities to analyze their portfolio of buildings and identify opportunities for solar, get connected with a contractor.



**Less work. More benefits.
Now even easier for towns and cities.**

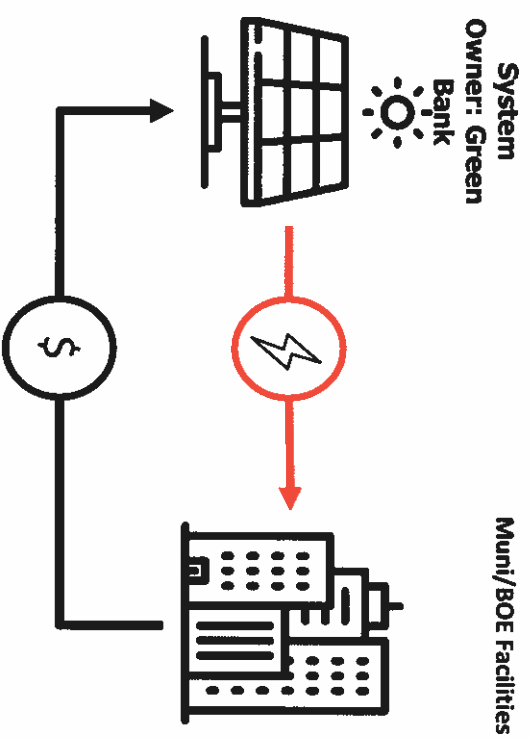
- Makes it even easier for municipalities to access renewable energy and achieve energy savings using the Green Bank Solar PPA
- Provides technical assistance support that simplifies every step of the process





- 1 Engage.** The SolarMAP team will meet with you to understand your municipality's goals, gather information and identify key participants, and explain the SolarMAP process in more detail.
- 2 Design.** Using the information you provide, the SolarMAP team will perform analysis of municipal sites, review energy demand, and develop system designs.
- 3 Review.** After you review the system designs, the SolarMAP team will secure the utility incentives (ZRECs) needed for each project and solicit proposals from qualified solar contractors and select the best proposal.
- 4 Execute.** Once a proposal has been selected and incentives secured, the SolarMAP team will work with you to execute the PPA and begin construction of the solar project(s).

What is a Power Purchase Agreement (“PPA”)?



Contract between Seller
(generates electricity)
and Buyer (purchases
electricity)

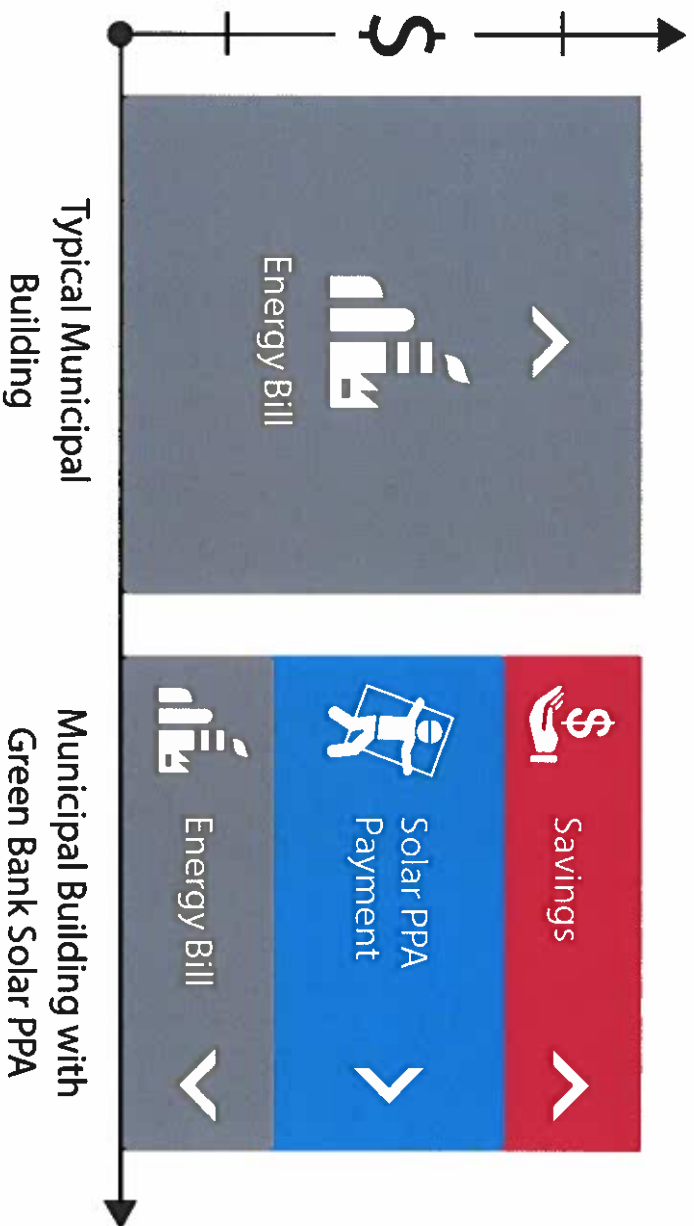
Green Bank is Seller:
Oversees development,
construction, & asset
management

Municipality is Buyer:
Purchases electricity
from solar installed on
property

What are the Benefits of a PPA?



The value of solar PV comes from electricity cost savings!



*Representative project for illustrative purposes only

What are the Benefits of a PPA?



No upfront costs

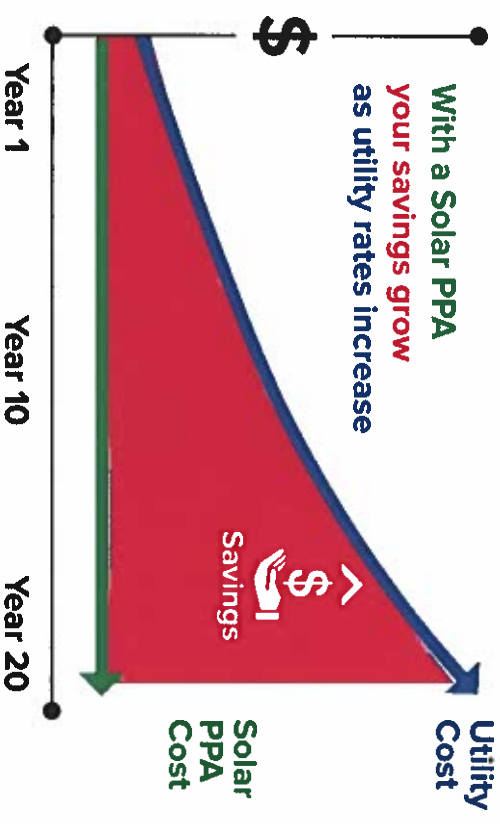
Lock in low electricity rate

Positive cash flow

No operations & maintenance costs

Preserve capital & credit lines

Managed by a third-party solar system owner



Town of Coventry: Green Bank Solar PPA Case Study

- 8 solar PV systems (over 580 kW) financed with the Green Bank Solar PPA
- Includes Town Hall, Police Headquarters, Radio Tower Annex, and five Board of Education buildings including schools and warehouse space
- Six roof mounted solar PV systems and two carport solar PV systems



Green Bank Solar PPA

BOEs and Municipal

- Ashford
- Bethany
- Bloomfield
- Bridgeport
- Chaplin
- Coventry
- Darien
- Deep River (regional)
- Eastford
- Easton
- Ellington
- Essex
- Fairfield
- Falls Village
- Hampton
- Harwinton (regional)
- Lebanon
- New Fairfield
- New Haven
- Newtown
- Orange
- Ridgefield
- Salisbury
- Union
- Voluntown
- Woodbridge

Round 1 Results



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Municipalities

17

Projects in Total

3.5

Megawatts (dc) of Solar

22% -
59%

**Year 1 Discount from
Current Utility Rate**

\$4.1

Million in Term Savings



Sample Deliverables





Desktop Review (first look)



Town of Example Desktop Review

Facility Information		CSW Desktop Review				Result
Site Name	Site Address	Roof Size?	Roof Obstruction	Shading?	Ground?	
Ball Field	222 Reader Street	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Fail
Memorial Park	55 Walnut Street	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Fail
Pump Station	144 High Street	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fail
Dog Pound	55 Husky Lane	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fail
Water and Sewer	44 Turner Circle	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Pass
Town Hall	123 Main Street	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Pass
Community Center	445 Main Street	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pass
Fire Department	112 Sunny Drive	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pass
Police Station	911 Turner Lane	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Pass
Senior Center	123 Acorn Lane	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Pass
Elementary School	677 Front Street	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Pass
Middle School	3211 Pencil Drive	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pass
High School	644 Elm Street	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Pass

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Passed / Total Sites

- Next Steps:**
- CSW Desktop Review
 - Utility Bills
 - Third-Party Supply
 - Introductions for Site Visits

Proposed Sites: *Example Town School*



Project Details	
Project size (KW DC)	160
Estimated Annual Production (kWh)	200,000
Effective Utility Rate	\$0.11
Preliminary Pricing	
Preliminary 10% Discount Met	Yes
% Solar Offset to Utility	85%



Example Town School

Preliminary Savings

Preliminary Savings	
Term Savings	\$ 128,314
Average Annual Savings	\$ 6,416
First Year Savings	\$ 2,200
<i>Operations & Maintenance Cost Included</i>	

Model and Finance Assumptions	
System Size	kW 160 kW
Solar Energy Generated	200,000 kWh
Annual Solar System Degradation	0.64%
Solar Energy PPA Price	\$0.099 /kWh
Solar Energy Escalator	0.00%
Utility Energy Price	\$0.110 /kWh
Utility Energy Escalator	2.00%



Program Benefits

- Trusted partner in the CT Green Bank, a quasi-state agency
- Take advantage of the final year of the utility incentive program
- Group your town's projects with other participating towns to receive competitive pricing
- Support from start to finish developing any projects you choose to move forward with

Next Steps and Timeline



- One-on-one meeting with SolarMAP team
- Submit list of municipal addresses for initial review

Initial meetings	January 2021
Project Development & Project list finalized	Q1 2021
Sign Letter of Intent and incentive paperwork	April 2021
Submit projects for Utility incentives (ZRECs)	June/July 2021
RFP for Contractors	Fall 2021
Execute PPA	Q4 2021
Construction Start	Q1 2022



Questions?



Thank you!

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<https://www.ctgreenbank.com/solarmap-townsandcities>



Appendix

Solar MAP Program Notes



- Geared towards municipalities who lack the resources for solar procurement internally and would require technical assistance to put solar on municipal sites.
- Behind-the-Meter Solar PV projects only for Solar MAP
- Municipalities must have a 1-on-1 meeting with municipal representatives by February 1st 2021 to participate in this year's solar procurement.



Green Bank Power Purchase Agreement (“PPA”)?

**Contract between
Seller (generates
electricity) and
Buyer (purchases
electricity)**

**Green Bank is
Seller: Oversees
development,
construction, &
asset management**

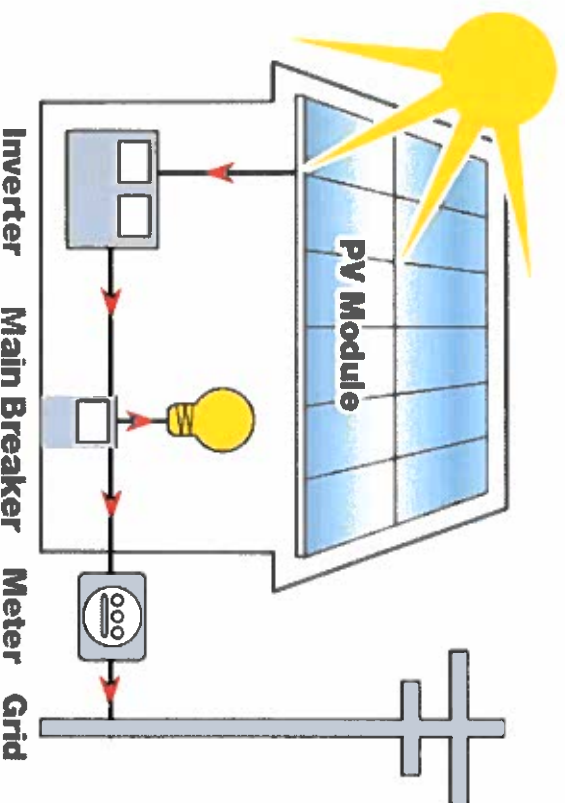
**Municipality is
Buyer: Purchases
electricity from
solar installed on
property**

Solar PV systems use net metering



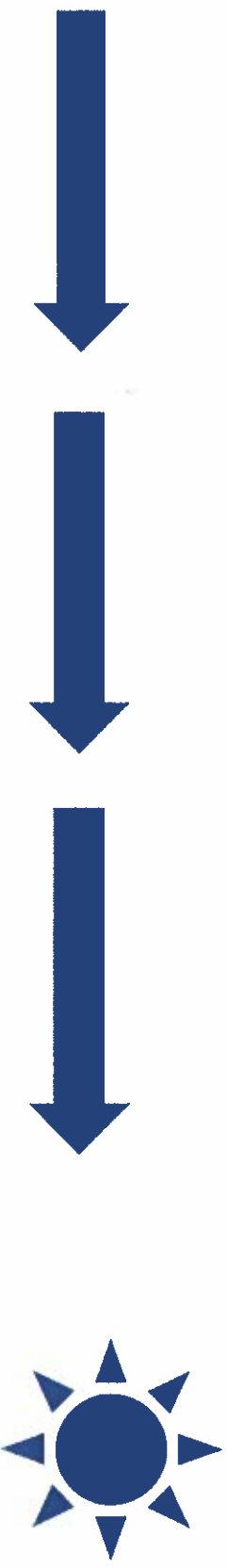
Solar PV systems are located **behind the meter**, meaning electricity is intended for onsite use

Net metering is a billing mechanism allowing electricity in excess of customer usage to be banked at the full retail rate and credited on an annual basis



- At year end, excess electricity generation for the year is reimbursed at wholesale rate
- Wholesale rate generally much lower than retail electricity tariff

Solar MAP Summary



Project Scope & Pre-development

Green Bank analyzes municipal sites & develops system designs
Green Bank solicits competitive proposals

Development & Engineering

Green Bank develops PPA with Municipality
Green Bank & Contractor develop & engineer project
Green Bank & Contractor coordinate on documentation

Construction

PPA signed between **Green Bank & Municipality**; EPC signed between **Contractor & Green Bank**
Contractor constructs project & receives construction payments from **Green Bank**

Operation & Payment

After Construction Complete, **Green Bank** operates & maintains solar system over the term of the agreement.
Municipality pays the PPA on a monthly "actuals" basis directly to the **Green Bank**

- "Actuals" = paying for exactly what is generated based off of the solar monitoring system