NEW YORK STATE OF OPPORTUNITY. | NY-Sun

NY-Sun PV Trainers Network

Introduction to Community Solar

NY-Sun PV Trainers Network

Sasha Shyduroff

Meister Consultants Group,

A Cadmus Company

MEISTER CONSULTANTS GROUP
Independent Contractor to NYSERDA

LAND USE LAW CENTER
PACE LAW SCHOOL

CUNY

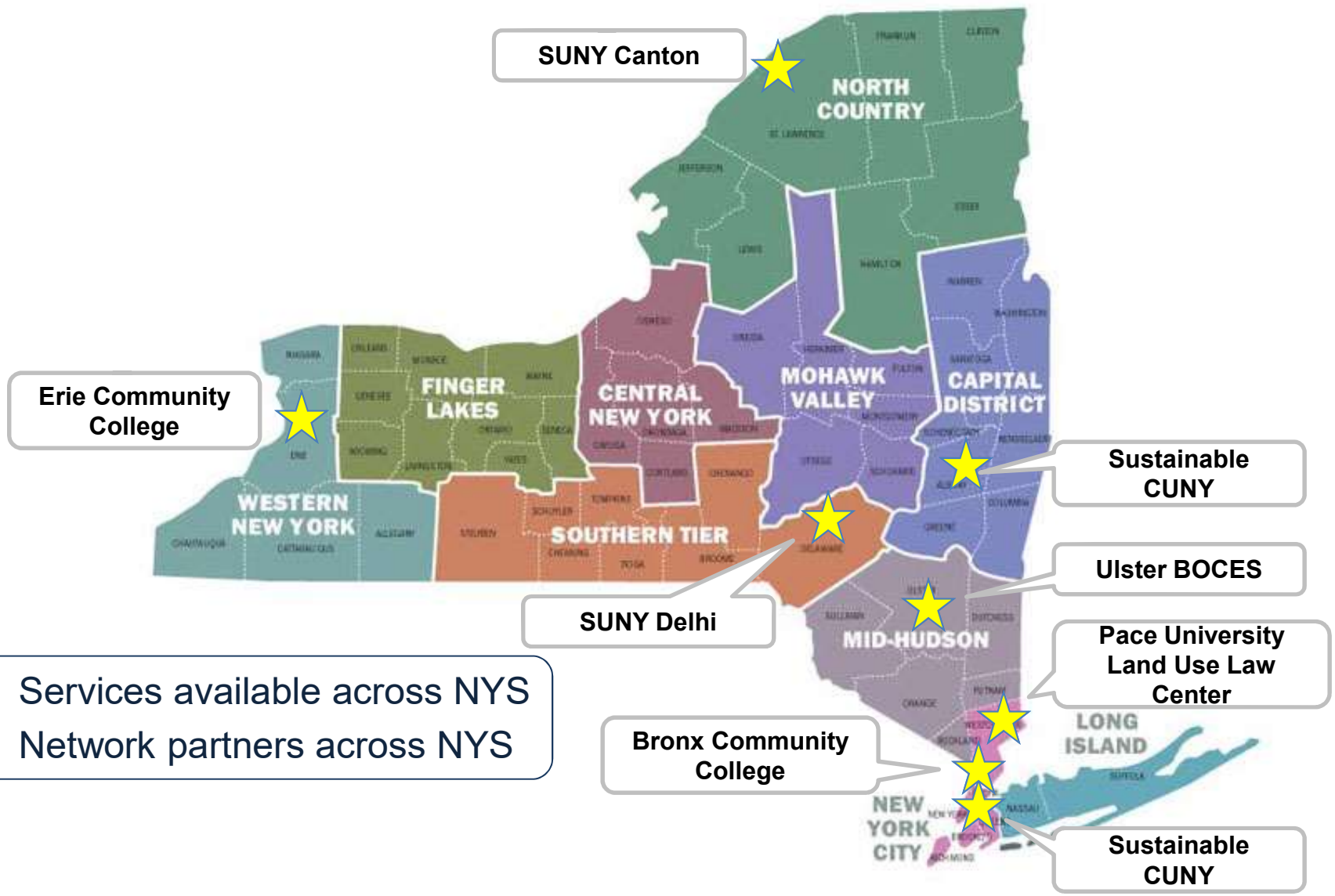
ENTECH Engineering INCORPORATED

NEW YORK STATE OF OPPORTUNITY. | NYSERDA

About the PV Trainers Network

The NY-Sun PV Trainers Network aims to lower the installation cost and expand adoption of solar PV systems throughout the state.

Program Covers Entire State



- Services available across NYS
- Network partners across NYS

About the PV Trainers Network

Lead Organizations

MEISTER CONSULTANTS GROUP

CUNY

ENTECH Engineering INCORPORATED

Supporting Organizations

LAND USE LAW CENTER
PACE LAW SCHOOL

BRONX COMMUNITY COLLEGE

Delhi
STATE UNIVERSITY of NEW YORK

SUNY CANTON

Shared Vision
Shared Commitment
Shared Success
ULSTER BOCES
Board of Cooperative Educational Services

SUNY ECC Workforce DEVELOPMENT

NY-Sun Initiative

- Significantly expand installed solar capacity
- Attract private investment
- Enable sustainable development of a robust industry
- Create well-paying skilled jobs
- Improve the reliability of the electric grid
- Reduce air pollution
- Make solar available to all New Yorkers that want it

Statewide Goal of 3 GW

$961 Million Total Budget

Stimulate the Market Place

Reduce Soft Costs

Who's in the room?

A. Land Use Board member
B. Municipal Planning/Building Department staff
C. Elected officials
D. County government
E. State Agency
F. Solar industry
G. Developer
H. Planners, Attorneys or other professional
I. Community member
J. Other

Solar Technology Background

System Components

The Grid Tied Solar Electric System

Solar Panels

Sunlight creates DC Electricity

Inverter

Changes DC Power to AC
(AC Power used in Home)

Net Metering

Excess (Unused) power turns your meter backward and travels back into the grid. Utility issues credits for power produced.

Scale

Capacity

Residence
5-10 kW

Office
50 – 500 kW

Factory
1 MW+

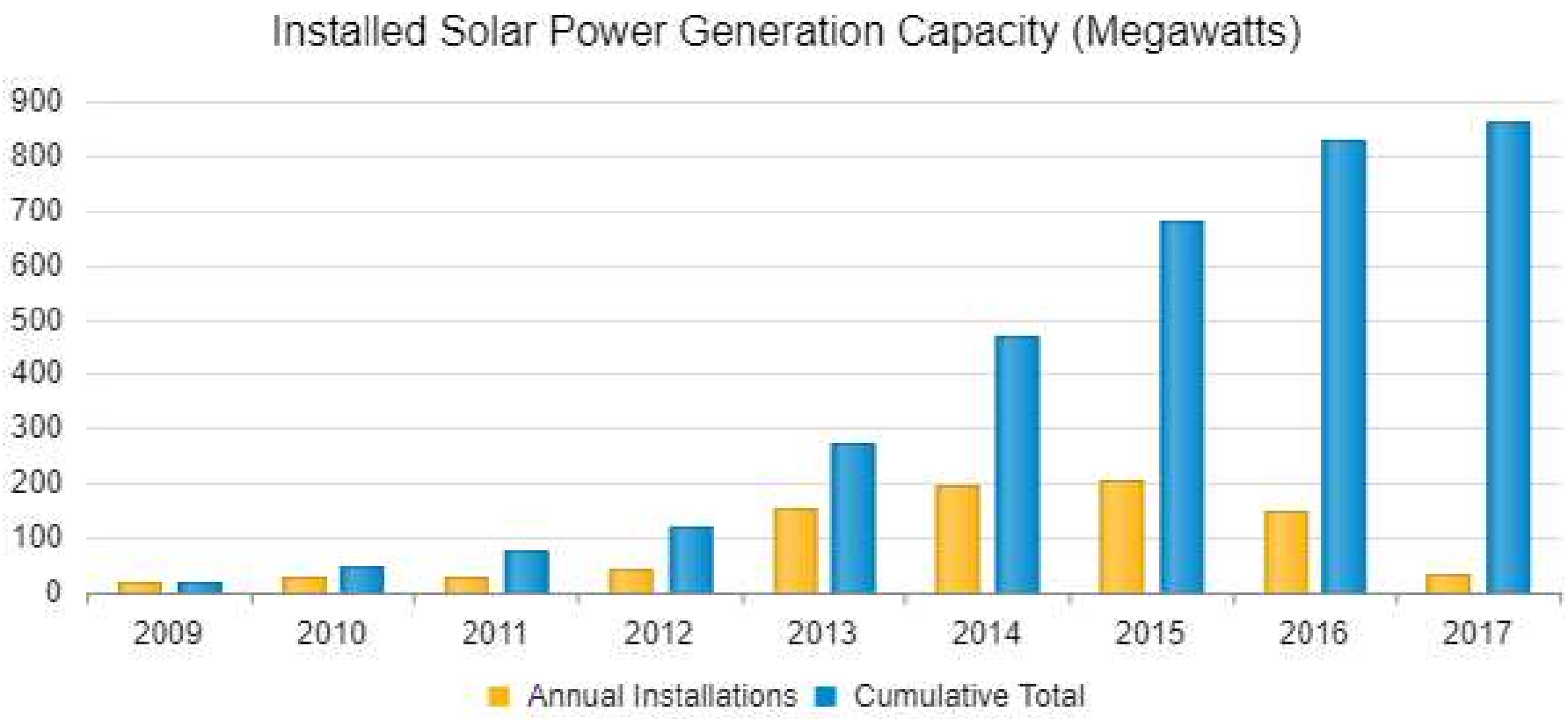
Utility
2 MW+

Rooftop/Land Area

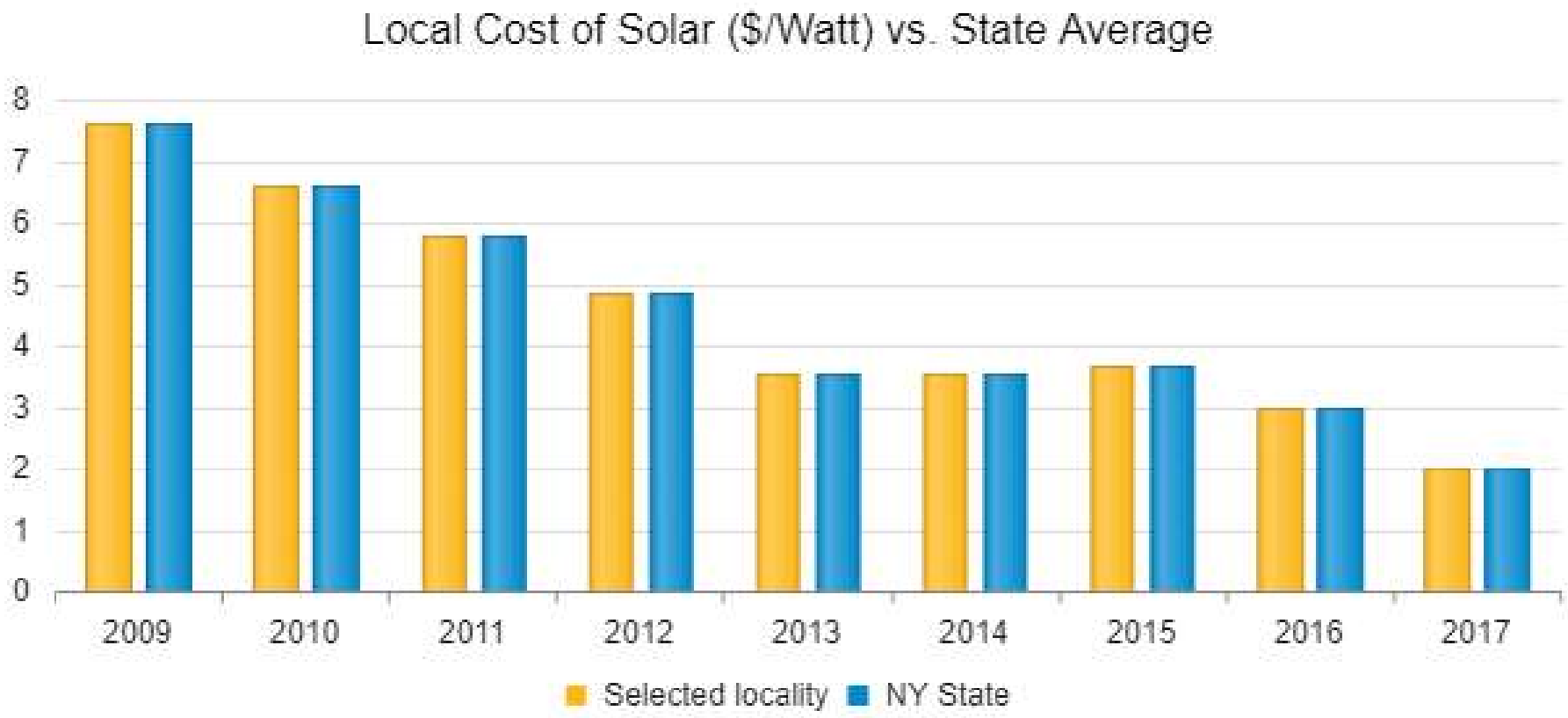
1 kW ≈ 100 SqFt

1 MW ≈ 6 acres

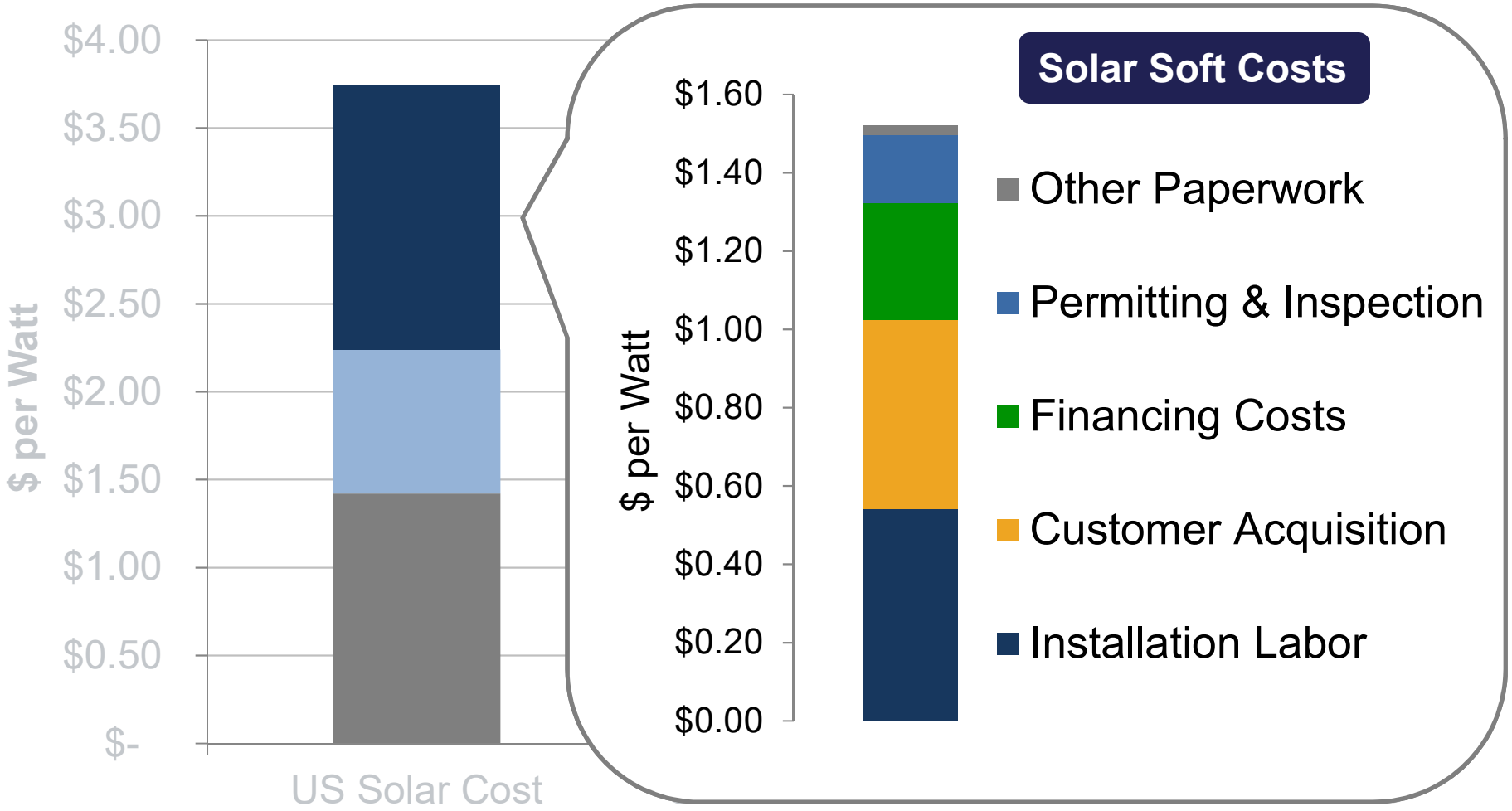
NY State Solar Market



NY State Solar Market



US Solar Costs



*2014 costs

Community Solar in New York

What Are the Benefits of Solar?

1. Economic development and job creation
2. Environmental and public health benefits
3. Reduced and stabilized energy costs
4. Energy independence and resilience
5. Value to utility
6. Community pride

Taking Advantage of Solar

Not everyone has the ability to take advantage of solar on their own property:

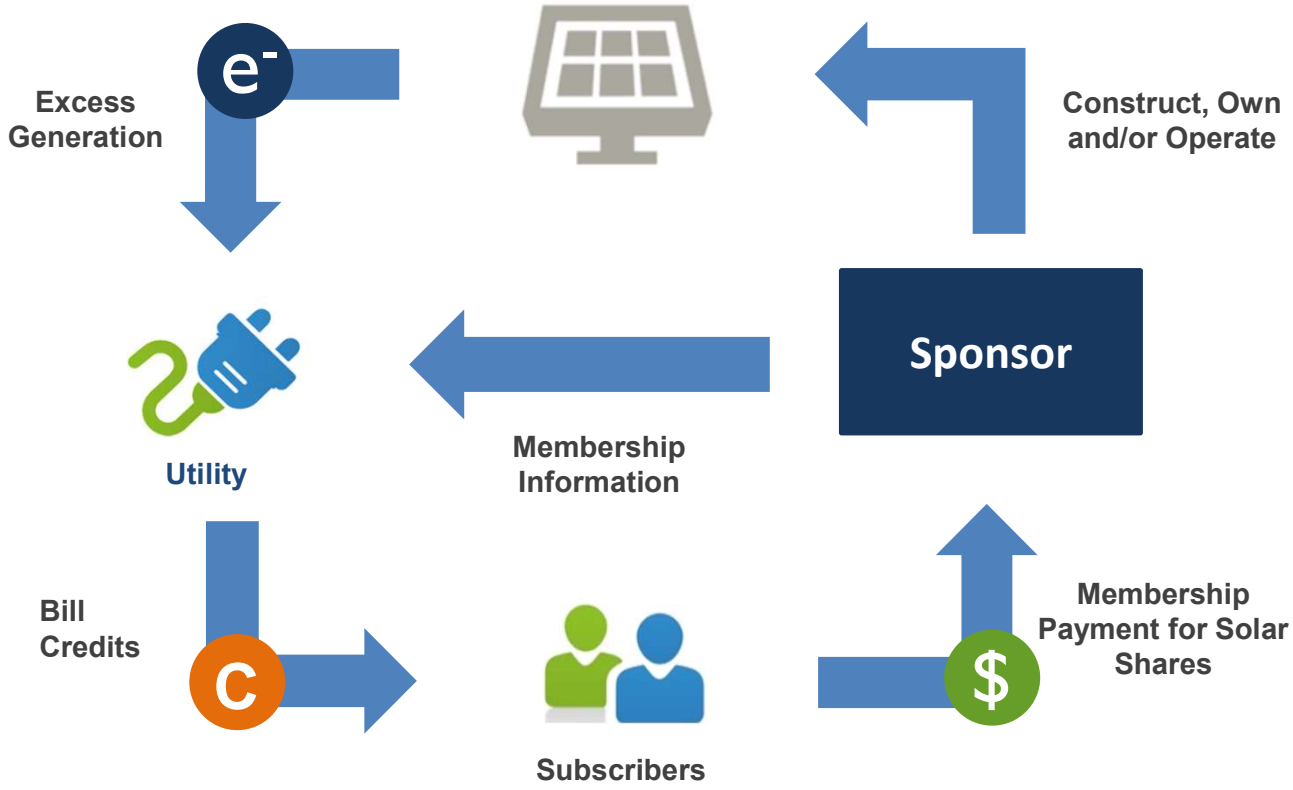
- Roof structure
- Shading issues and location
- Interconnection issues
- Renters
- Unable to access financing options

Community Solar

What is Community Solar?

- Expands access to solar (and other clean energy) generation to utility customers who cannot site distributed generation directly
- Enables multiple customers to receive net metering credits from a single clean energy project
- Intended to allow residents and businesses to buy shares in larger community solar projects

How does community solar work in New York?



17

Project Sponsor

Who can be a project sponsor?

- Any type of organization can sponsor a project or partner with a solar developer to sponsor a project.
- Examples include:
  - A solar developer that serves as the project developer and project sponsor
  - A private organization that organizes a Community DG Project on a for-profit basis
  - A municipality or another government organization
  - A community based non-profit

Project Sponsor

What is a project sponsor's responsibility?

Over the 20-30 year lifetime of the project:

- Arrange for the development of the project
- Sell shares in order to fully subscribe the project
- Manage customer turnover and attract new customers when necessary
- Interface with the utility to provide customer information and allocate customer credits
- Operate and maintain the power project

Subscribers

Who can be a subscriber?

- Any utility customer including homeowners, renters, condo dwellers, businesses, municipalities, and institutions.
- Same utility jurisdiction as project
- Same NYISO load zone as project

Why be a subscriber?

- Access to clean energy
- Savings on electricity bill

Subscribers

Low-Income Subscribers

- Opportunity to expand access to solar by encouraging low-income participation
- Barriers to participation that sponsors will need to overcome
  - Upfront payment
  - Credit check

Subscribers

How many subscribers?

- At least 10 subscribers

How much power can a subscriber take?

- At least 1,000 kWh per year (roughly 15% of annual electricity consumption of a NY household)
- Can't exceed historic average annual electricity consumption
- Large electricity users with avg. monthly peak demand of 25 kW or more may not take more than 40% of the project's output

Role of a subscriber?

- Select project, community-solar "package," and sign contract with the sponsor
- Provide utility information to the sponsor
- Gain access to clean energy and receive credits on your utility bill

How is the power credited?

Sponsors

- Provide percentage of capacity reserved for each customer
- Utility allocates credits monthly to customer's utility bill
- Credits not allocated can be distributed at the next distribution period
- Sponsor has 2-years to allocated any unused credits

Subscriber

- Allocated to subscribers on a monthly basis
- Member credits may be rolled over indefinitely
- If a subscriber leaves a project excess credits on account are forfeited

Size, Location & Cost of Community Solar

How large is a community solar project?

- Projects generally in the MW range
  - 1 kW ≈ 100 SqFt
  - 1 MW ≈ 6 acres
- 2 MW project serves 200-400 households

Where can a project be located?

- Private land
- Public land
- Rooftops

What is estimated cost?

- 2 MW project: $6-8 million for project development (before incentives)

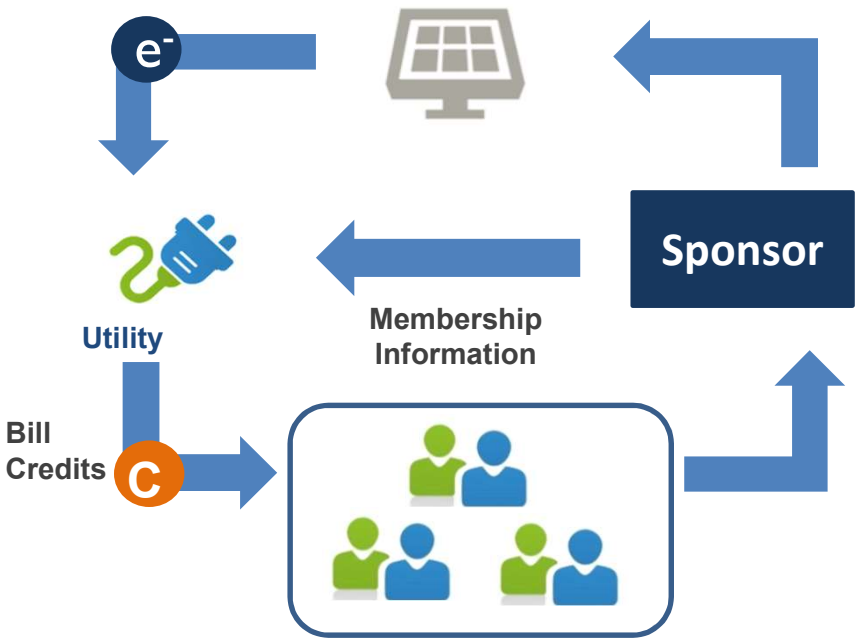
Community Solar Ownership

Direct Ownership

Third-Party Ownership

Direct Ownership

Community Members Own Their Shares

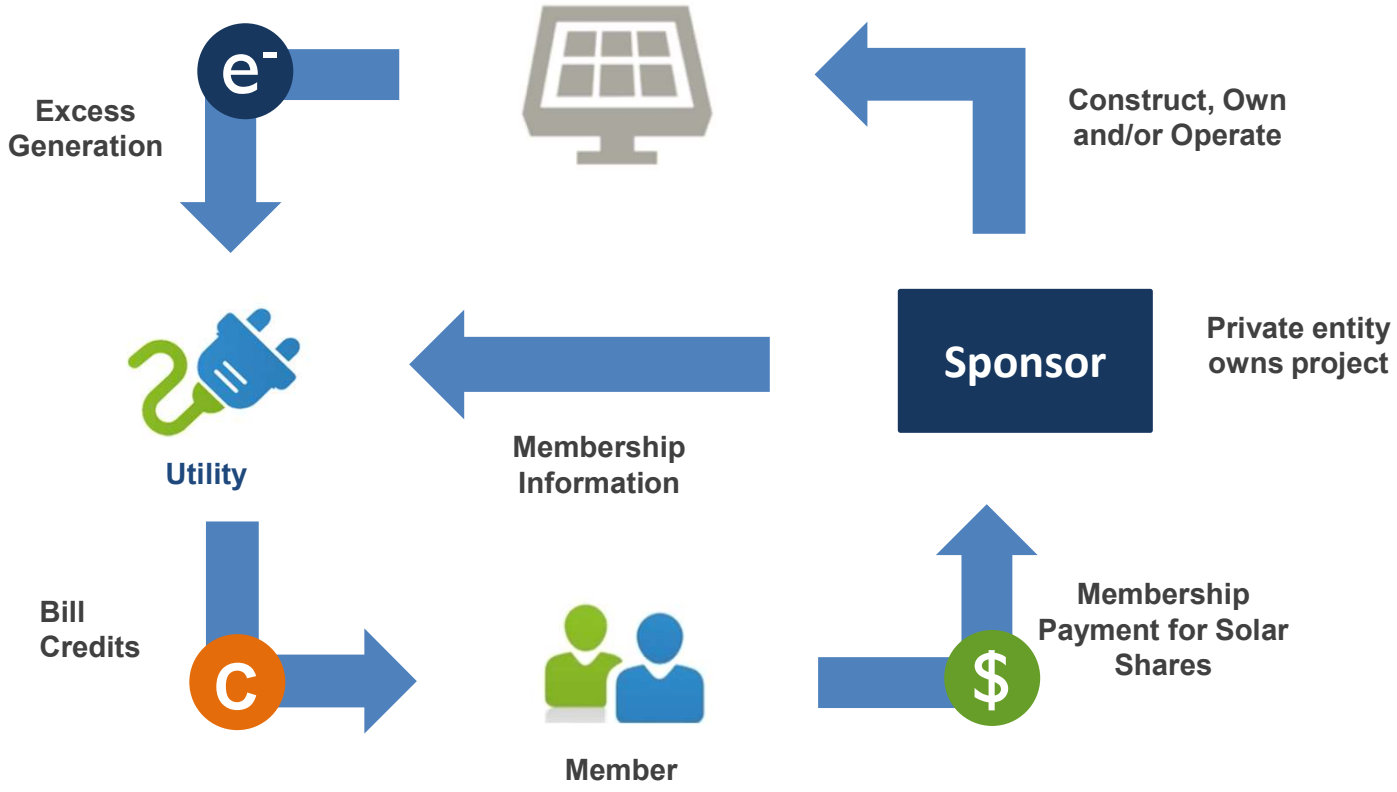


- Partial or full upfront payment for a portion of the systems capacity and equivalent output ($/watt)
- Some companies offer a financing package or can use traditional lending option (e.g. bank loan)
- Real savings deferred until investment is recouped

*Non-profits, public entities and other non-taxable organizations may not select this option because they can't take advantage of the federal investment tax credit

Third Party Ownership

Community Members Enter into a Lease or Power Purchase Agreement for Their Shares



27

Membership Types

Subscription Plans

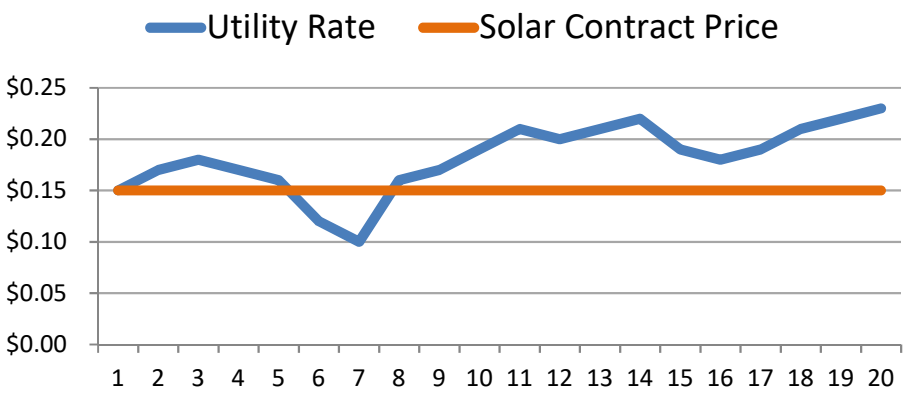
- Little to no up-front cash layout
- “Pay-as-you-go” subscription
- Different term options

Purchase Plans

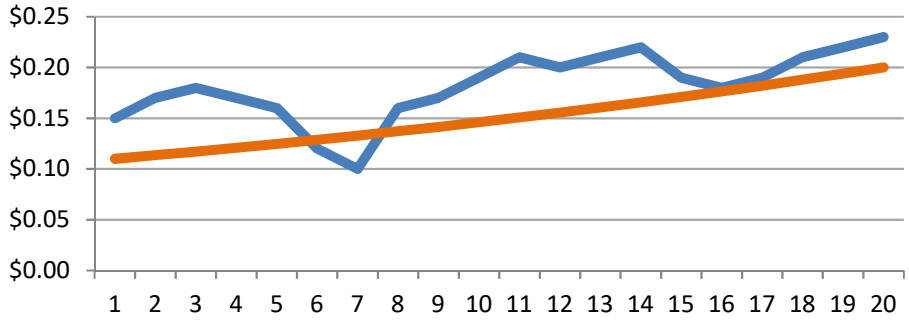
- You own the panels located in the Community Solar project
- Financing options are usually available
- Potentially greater savings over time
- You may also be eligible for tax credits

Ongoing Pricing Structures

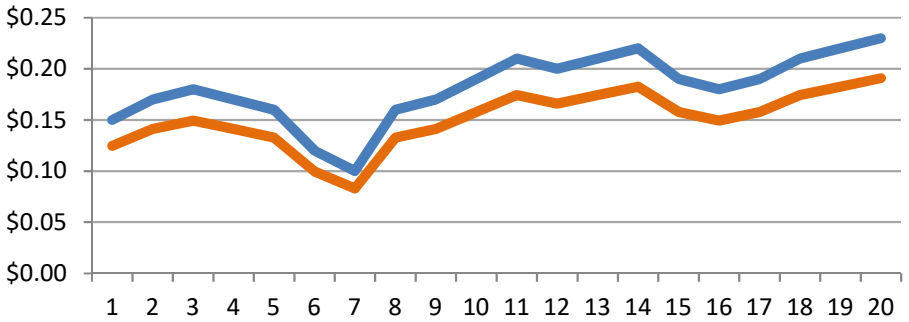
Flat rate



Escalating rate



Discount to retail



Membership Terms

Understanding Your Membership Terms

- ❑ Will the program now or eventually save you money?
- ❑ What is the length of an agreement?
- ❑ Are there nonrecurring and recurring costs/fees?
- ❑ What are the membership fees?
- ❑ What happens if you move or sell your house?
- ❑ Are there early termination fees?
- ❑ Do charges/fees increase over the course of contract?
- ❑ What is the operations and maintenance plan?
- ❑ What happens if the system under performs?
- ❑ What happens if the company goes out of business?

Additional Resources: Energysage, https://www.energysage.com/solar/community-solar/what-to-look-for
Minnesota Clean Energy Resources Team, http://www.cleanenergyresourceteams.org/solargardens#subscribers

Community Solar and Communities

Community Solar for Municipality

Opportunity for Municipalities to…

- Expand access to solar in the community
- Obtain energy savings for municipality and residents alike
- Provide a service to the community

Municipalities can participate by…

- Sponsoring a community Solar Project
- Hosting a project on municipal land
- Becoming a member of a project
- Facilitating the zoning of a privately-driven project

Community Solar for Private Landowners

Opportunity for landowners to…

- Increase income from leasing land
- Diversify income streams
- Boost local economy
- Lower energy bills

Landowners can participate by…

- Hosting a project on privately owned land

Resource: New York's Solar Guidebook Available at: nyserda.ny.gov/solarguidebook

Community Solar Development Process

Community Solar Development Process

Role	Public Entity	Private Entity
Host	Follow existing procedures for leasing public land for private purposes	Not required to competitively procure, but suggested to ensure best offer
Sponsor	Required to competitively procure contracts through an RFP	Not required to competitively procure, but suggested to ensure best offer
Member	Required to competitively procure contracts through an RFP	Suggest comparing several offers

Solar Developer Information

1. Qualifications

- Company experience
- Five references
- Team member qualifications

2. Project Details

- Price proposal
- Project timeline
- Equipment to use
- System size and expected generation

3. Detailed Plans for:

- Construction
- Financing
- Measurement and verification
- Operations and maintenance
- Decommissioning
- Environmental Permitting

Processes of Concern

Process	Action
Stakeholder Engagement	Engage with community members & local government officials early on
Interconnection	Engage utility early in development process
Zoning	Review zoning ordinance for solar-related concerns
Property Tax	Review jurisdiction's status under RPTL - 487 Review property's tax status (e.g. ag assessment)
Environmental Review	Engage local SEQRA authority

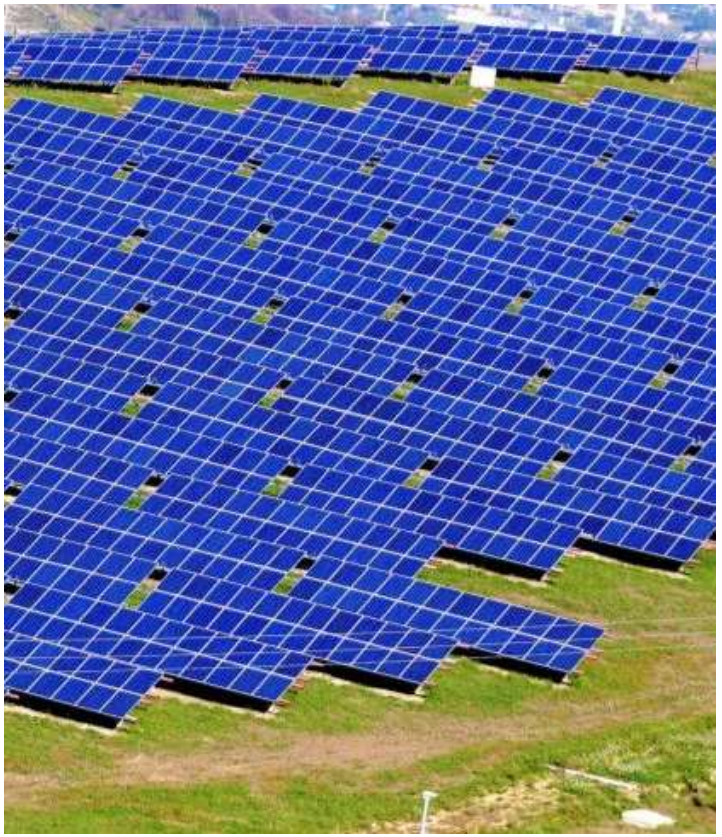
Real Property Tax Exemption

"Real Property which includes a solar energy system… shall be exempt from taxation to the extent of any increase in the value thereof by reason of the inclusion of such solar energy system for a period of 15 years…" - RPTL Section 487

- Special ad valorem and special assessments are not exempt (sewer, water, fire, library, etc.)
- After 15 year period, the value is fully taxable
- All municipalities and school districts are automatically included in PTE unless they opt out through local law or resolution
- More than 92% of all jurisdictions continue to offer this exemption.

Real Property Tax Exemption

- Jurisdictions use Payment In Lieu of Taxes (PILOT) for specific projects rather than opting out of PTE
- Jurisdictions have done PILOTS for projects above a certain size.
- PILOTs have been annual payments related to the system capacity ($/MW).
- PILOT may not exceed the amount which would have been payable without the exemption.
- Jurisdictions remain opted in have collected equal or better PILOTS than those who had opted out.



Source: NY Solar Energy Industry Associations. (2014). "Webinar: Understanding the Property Tax Exemption for Solar in New York." Recording Available at: https://www.youtube.com/watch?v=A3Urll1-T0k
NY Department of Taxation and Finance. Assessor's Manual , Volume 4, Exemption Administration. Available at: https://www.tax.ny.gov/research/property/assess/manuals/vol4/pt1/sec4_01/sec487.htm

Decommissioning & Local Government Authority

Main form of protection against an abandoned project is the decommissioning clauses and requirements in the land lease agreement. Should stipulate what duties developers will have when the agreement comes to an end.

Not Authorized

- According to the NYS DOS Counsel's office, **municipalities may not require a removal bond as part of a land use approval**.

Authorized

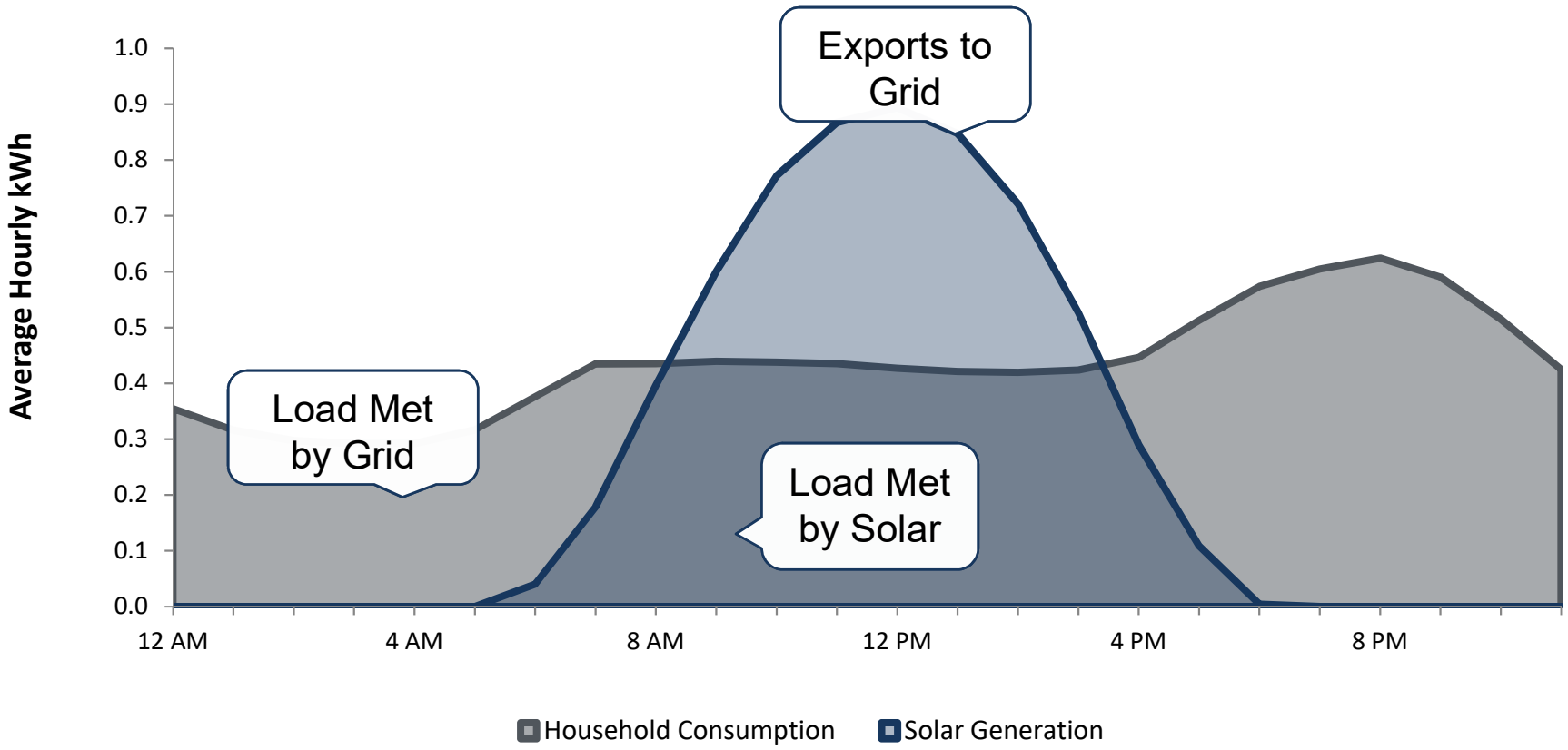
- Require the submission of a decommissioning plan.
- Local permitting authorities can establish decommissioning requirements including establishing decommissioning escrow accounts, post a letter of credit, or bond to pay for decommissioning.
- Include a removal clause for non-operation for a specified time in a local zoning law. Non-removal would then become a zoning enforcement matter.

Incentives for Solar in New York State

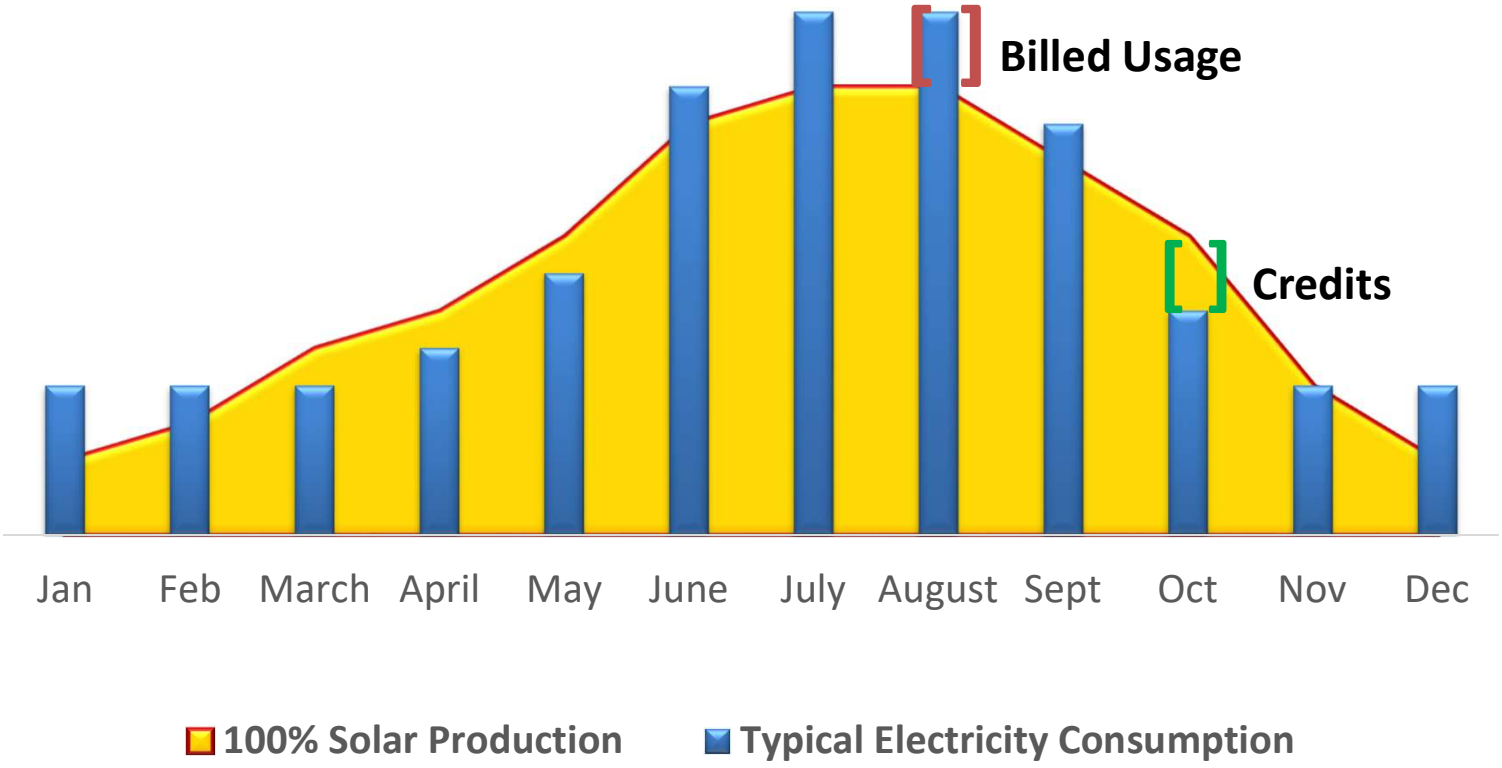
Net Metering

Net metering allows customers with PV to export power to the grid during times of excess generation, and receive credits that can be applied to later electricity usage

Net Metering



Net Metering Credits: Like Rollover Minutes



Example Net Metering Bill with Credit

July Reading (Actual)		56351	
June Reading (Actual)		-56,451	
Total Usage KWh 32 Days		-100	**Credit**
Net Metering Summary			
Prior Credit	-50		
Actual Metered Kwh	-100		
New Cumulative Credit	-150		
Billed KWH	0		
Anniversary Month	April		**Annual Reconciliation Month**
Delivery Charges			
Basic Service Charge		17.00	**Cannot be offset with solar**
First	0 KWH @ 0.XXX	0	
Energy Cost Adj	0 KWH @ 0.XXX	0	
SBC/RPS Chg	0 KWH @ 0.XXX	0	
Government surcharges		0.5	
Total Delivery Charges		17.00	
Current Electric Charges		17.50	**Amount Due**

Prices vary

Value of Distributed Energy Resources (VDER)

The compensation in NYS is changing.

The accurate value of a kWh produced is not reflected in net metering. NYS is replacing net metering with VDER, a monetary crediting system that more fully reflects the locational value, time of day, and environmental impact of the power produced. VDER provides customers with a value for each kWh exported to the grid.

Phase One VDER is being implemented from 2017-2020 to fully replace net metering in New York State.

Investment Tax Credit

Type: Tax Credit

Eligibility: For-Profit Organization, Homeowner

Value: 30% of the installation cost

Availability: **Extended through 2022**

(declines to 26% in 2020, and 22% in 2021)

NY-Sun “MW Block” Incentive

Type: Cash incentive

Structure: Incentive offer declines as program grows

Separate Incentives for:

- Residential Customers *(up to 25 kW)*
- Small Non-Residential Customers *(up to 200 kW)*
- Large Non-Residential Customers *(>200 kW to 2 MW)*

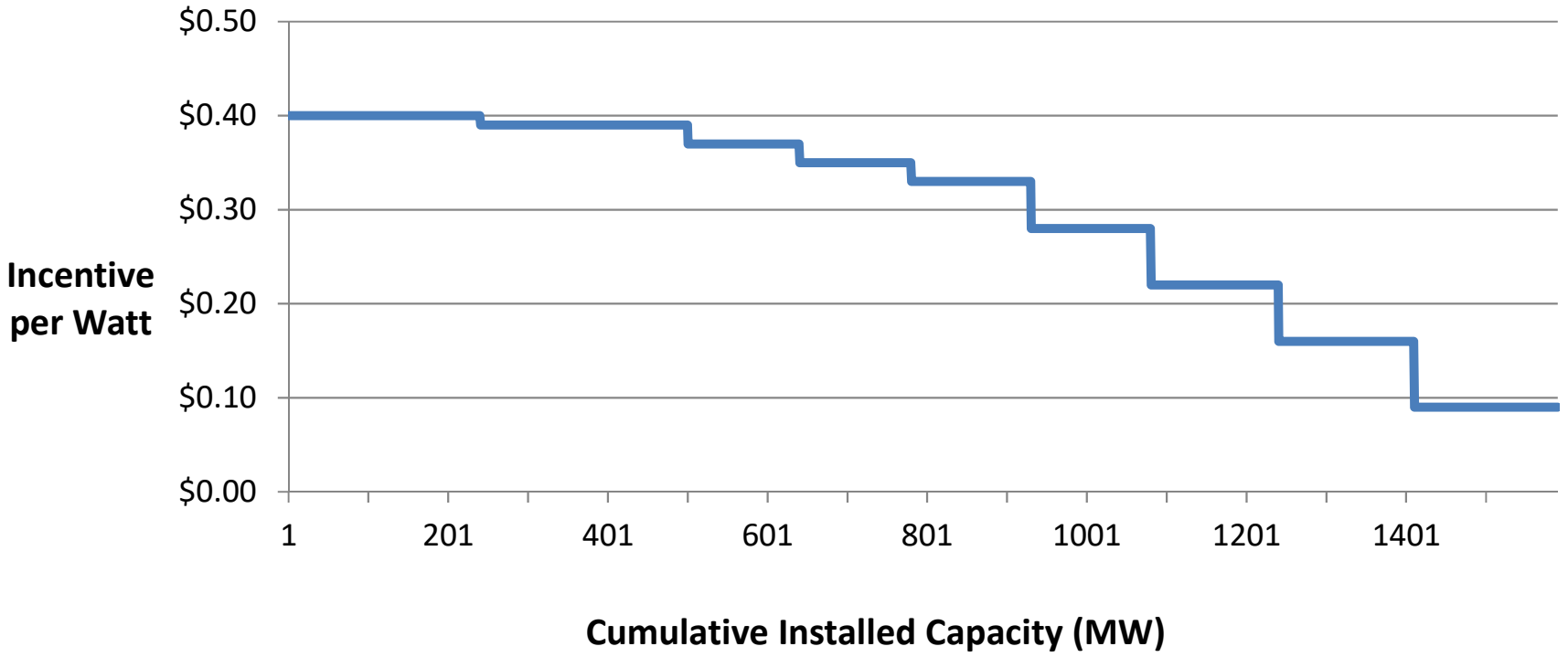
Program progress tracked separately by region

Availability: Dec 29, 2023 or until funds run out

NY-Sun Incentive Program: MW Block

Non-NYC Commercial MW Block Incentive

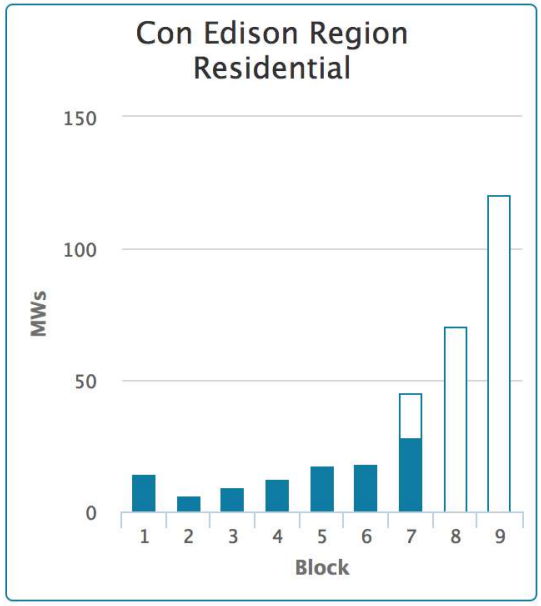
Projects larger than 200 kW, volumetric crediting

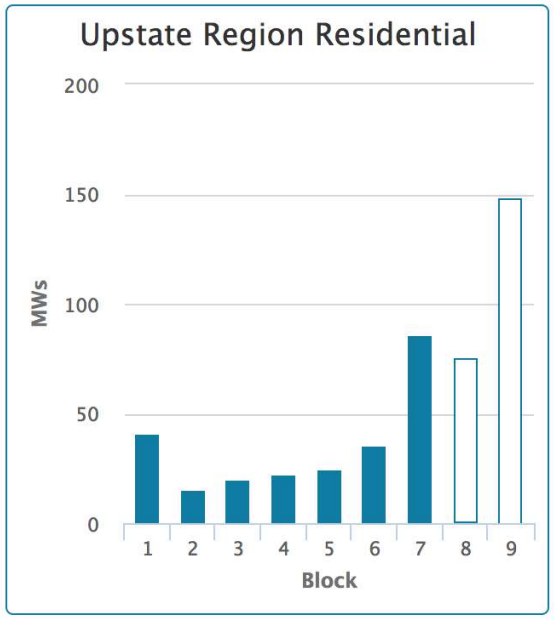


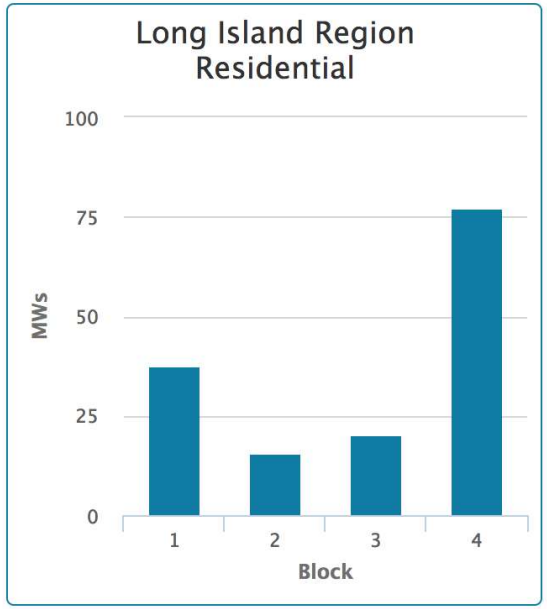
Incentives decline as program capacity fills

Current NY-Sun Incentives

Residential Installations







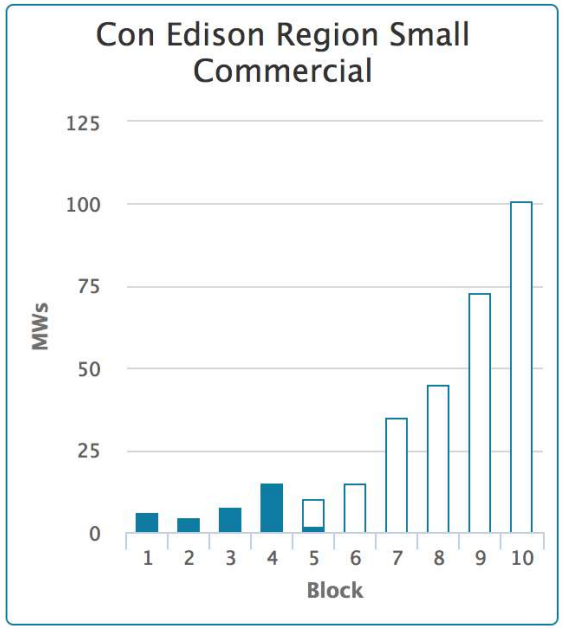
Block 7
$0.40/W

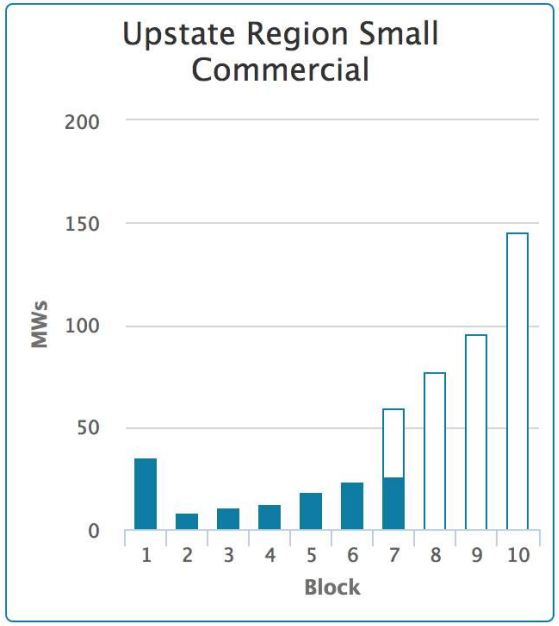
Block 8
$0.35/W

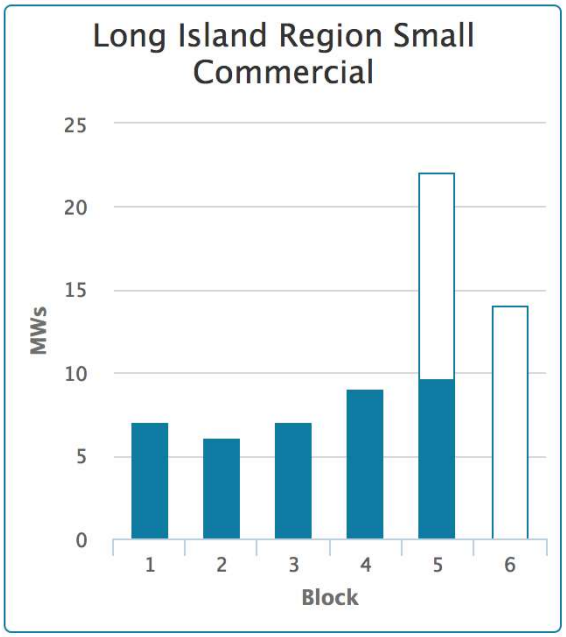
Closed

Current NY-Sun Incentives

Small Commercial Installations







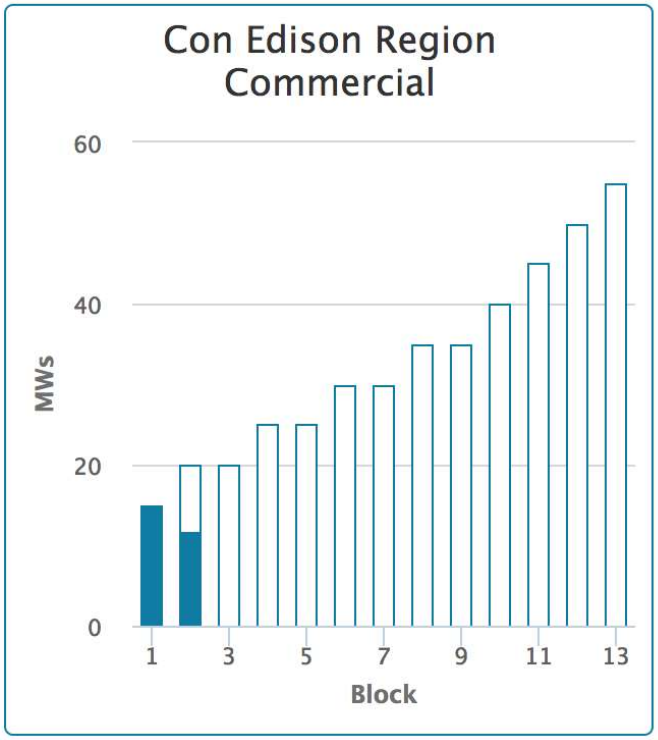
Block 5
$0.40-$0.60/W

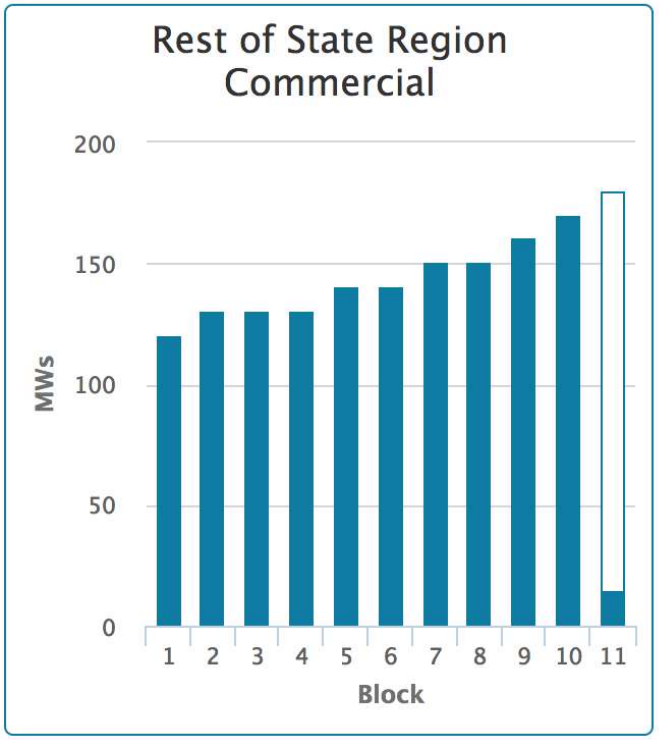
Block 7
$0.30-$0.40/W

Block 5
$0.23-$0.25/W

Current NY-Sun Incentives

Large Commercial Installations





Block 2
$0.61/W

Block 11
Monetary: $0.01/W
Volumetric: $0.09/W

Key Resources

Community Solar

NYSERDA. “Community Distributed Generation Overview for Project Developers.”

http://www.nyserda.ny.gov/-/media/NYSun/files/Contractor-Resources/Community-Distributed-Generation-Project-Developers.pdf

Energysage. “Community Solar: What to Look for.”
https://www.energysage.com/solar/community-solar/what-to-look-for

Minnesota Clean Energy Resources Team. “Community Solar Gardens.”
http://www.cleanenergyresourceteams.org/solargardens

Landowner Concerns for Solar Land Leases

NYSERDA. Factsheet: Landowner Considerations for Solar Land Leases.
https://www.nyserda.ny.gov/-/media/NYSun/files/landowner-considerations-for-solar-leases.pdf

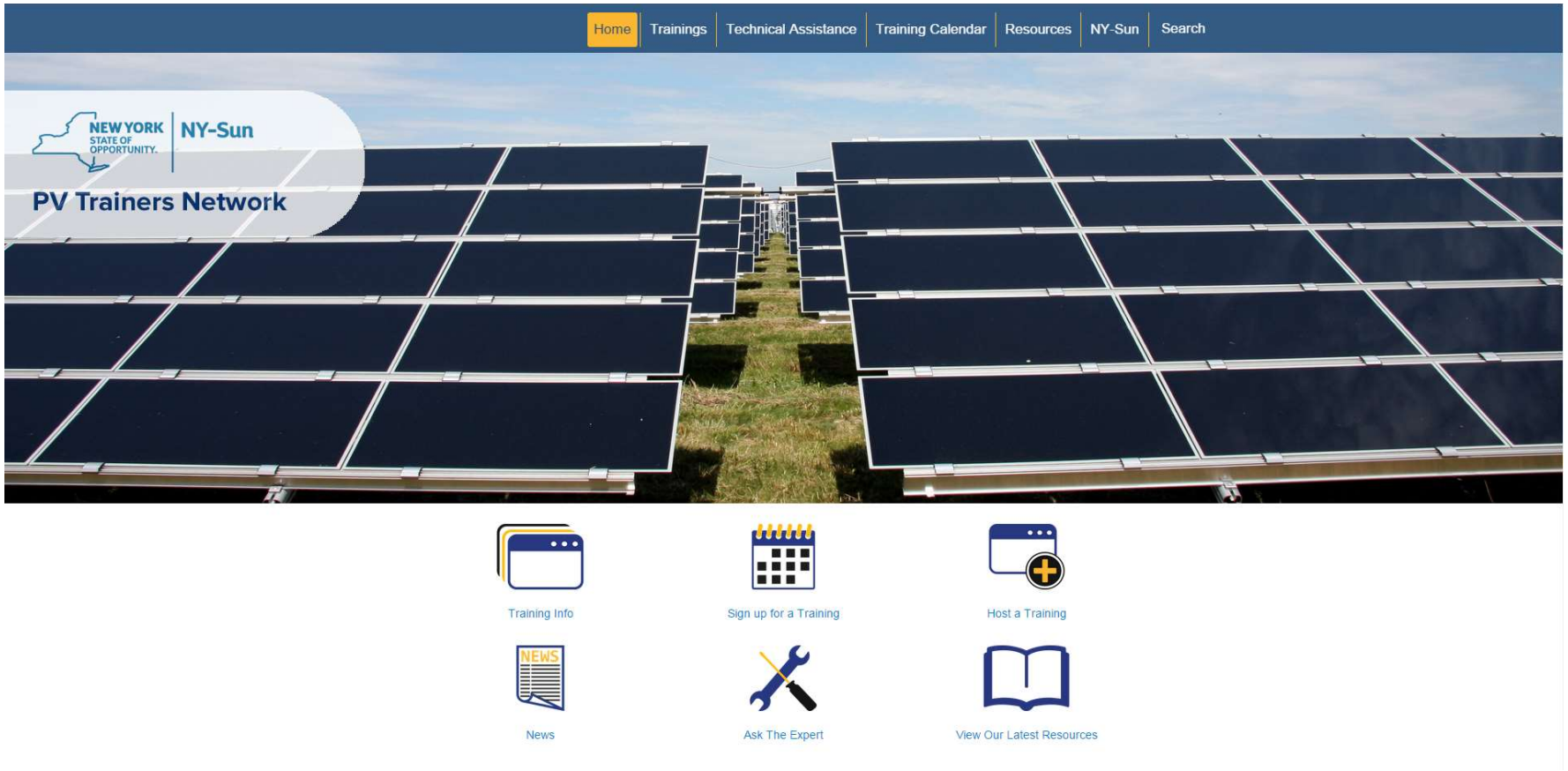
Solar Energy Industry Association. “Guide to Land Leases for Solar.”

http://www.seia.org/research-resources/seia-guide-land-leases-solar

NYSEIA. “Webinar Solar Land Leases and Municipal Best Practices.”
http://www.nyseia.org/webinars

Grow Solar. Template for Land Lease and Solar Easement: https://training.ny-sun.ny.gov/images/PDFs/Model_CSG_Land_LeaseAgreement%20(2).docx

Resources: NY-Sun PV Trainers Network



Visit: https://training.ny-sun.ny.gov/

Free Technical Assistance Support

PVTN can provide **free technical assistance to municipal officials on solar related questions/issues**. Topics include:

- Municipal Solar Procurement
- Solar Zoning Ordinance
- NYS Unified Solar Permit
- Solarize
- community Solar
- Solar Access
- Solar Design Standards
- Real Property Tax Exemption Section 487
- Large-scale Solar Development

NY State Solar Guidebook

- New York State Unified Solar Permit
- Roof Top Access and Ventilation Requirements
- State Environmental Quality Review (SEQR) for Solar
- Understanding the Real Property Tax Law Section § 487
- Payment-in-Lieu-of-Taxes (PILOT) Toolkit
- Land Use Tools for Siting Solar While Protecting Farmland
- Solar Installations in Agricultural Districts
- Landowner Considerations for Solar Land Leases
- Decommissioning of Solar
- Additional Resources

https://www.nyserda.ny.gov/SolarGuidebook

NY State Solar Guidebook

For questions, email the NY-Sun staff at solarhelp@nyserda.ny.gov

Thank You!

Sasha Shyduroff
Sasha.Shyduroff@mc-group.com

PVTN Email
info@training.ny-sun.ny.gov