NEW YORK STATE OF OPPORTUNITY. | NY-Sun

NY-Sun PV Trainers Network

Planning and Zoning for Solar

Presented by the

NY-Sun PV Trainers Network

MEISTER CONSULTANTS GROUP
Independent Contractor to NYSERDA

LAND USE LAW CENTER
PACE LAW SCHOOL

CUNY

NEW YORK STATE OF OPPORTUNITY. | NYSERDA

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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.

training.ny-sun.ny.gov

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

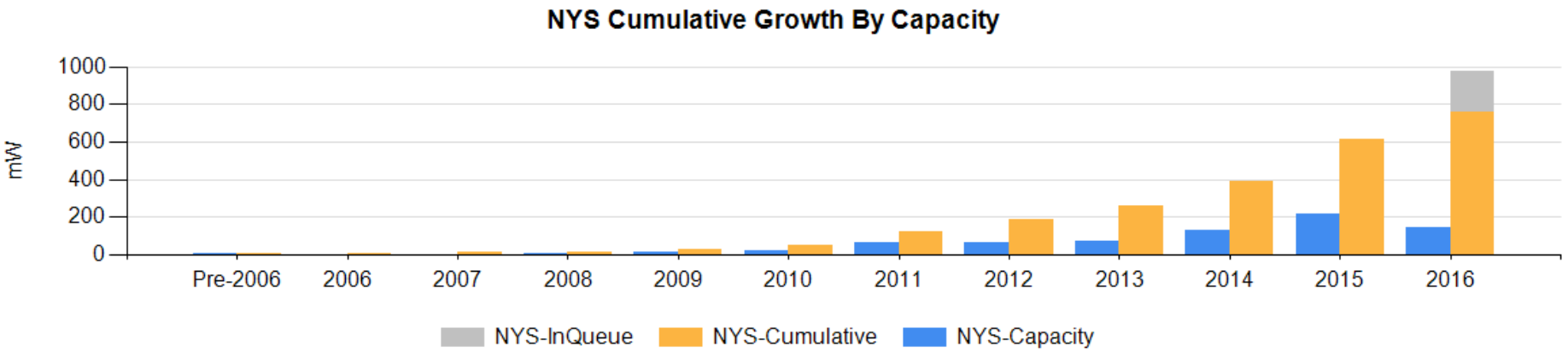
$961 Million Total Budget

Stimulate the Market Place

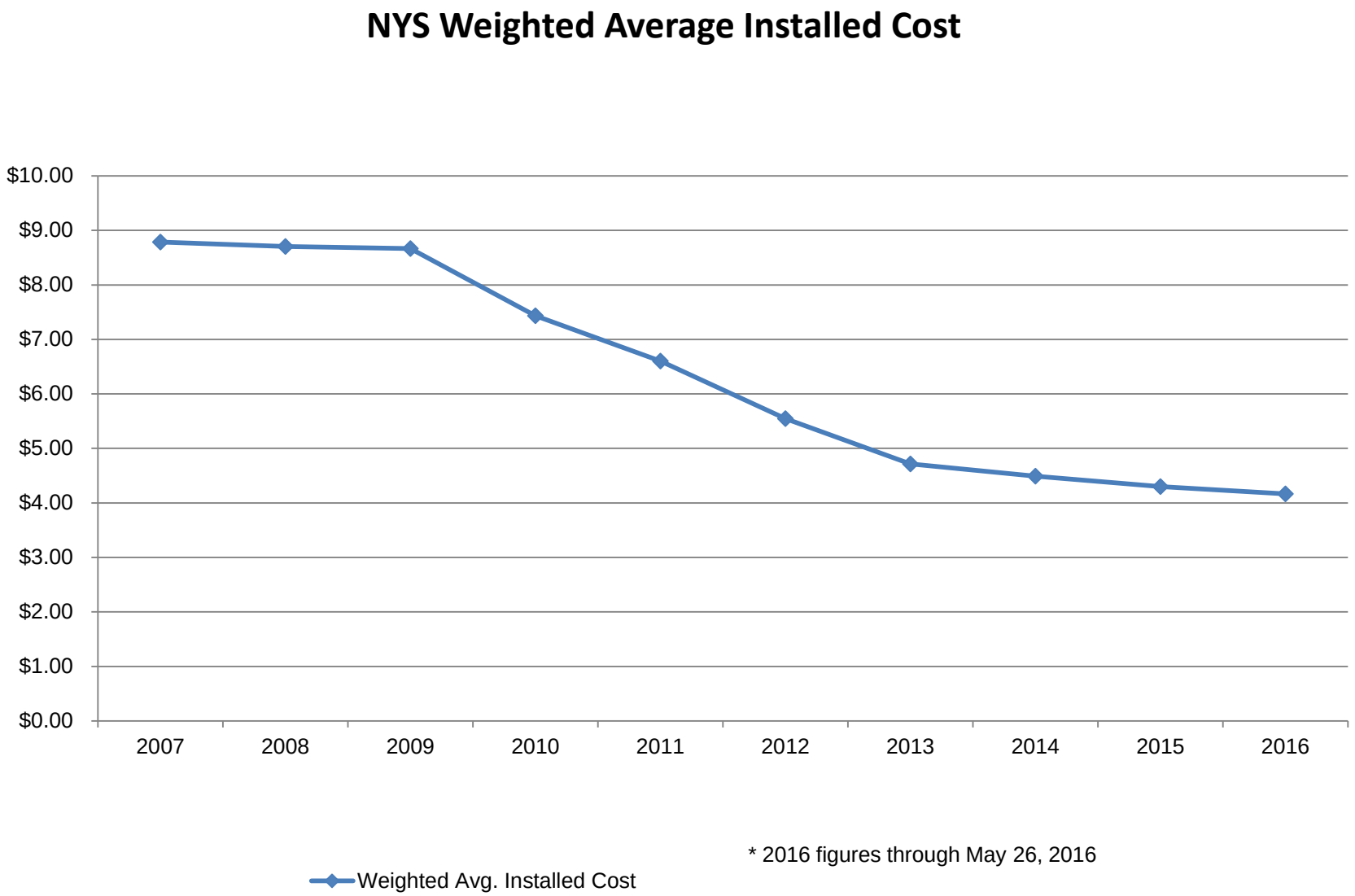
Reduce Soft Costs

Intro to NY Solar

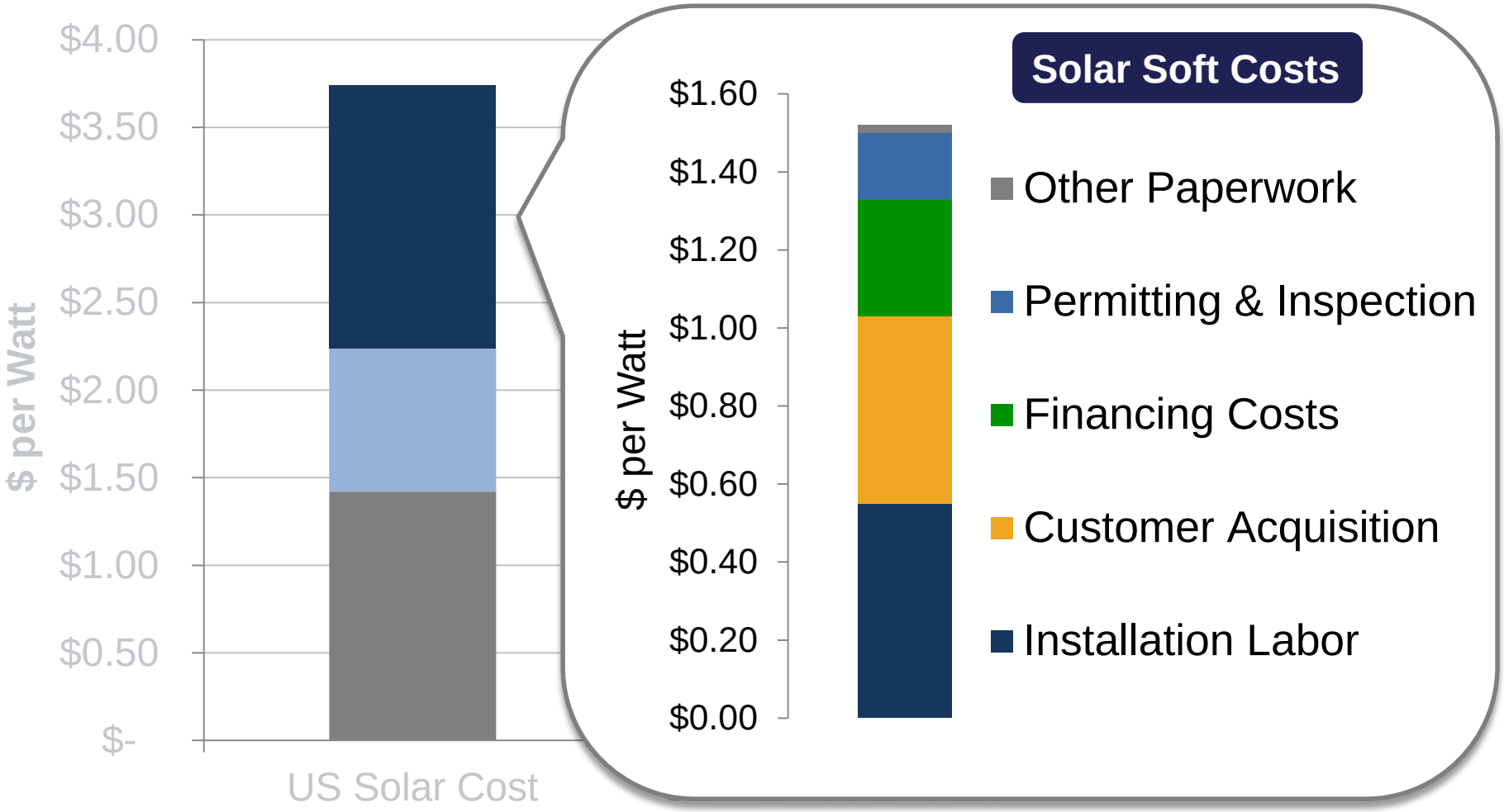
NY State Solar Market



NY State Solar Market



US Solar Costs



Scale

Capacity

Residence
5-10 kW

Office
50 – 500 kW

Factory
1 MW+

Utility
2 MW+

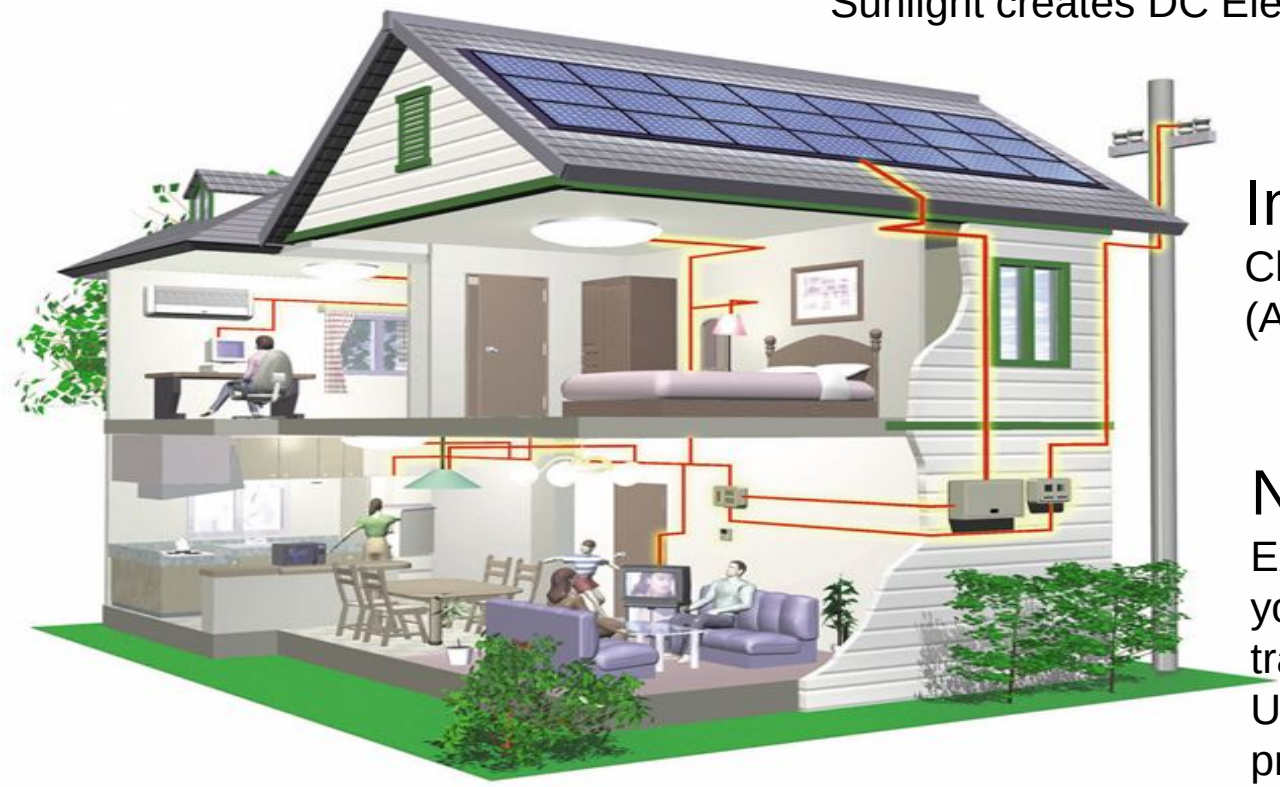
Rooftop/Land Area

1 kW ≈ 100 SqFt

1 MW ≈ 6 acres

System Components

The Grid Tied Solar Electric System



Solar Panels

Sunlight creates DC Electricity

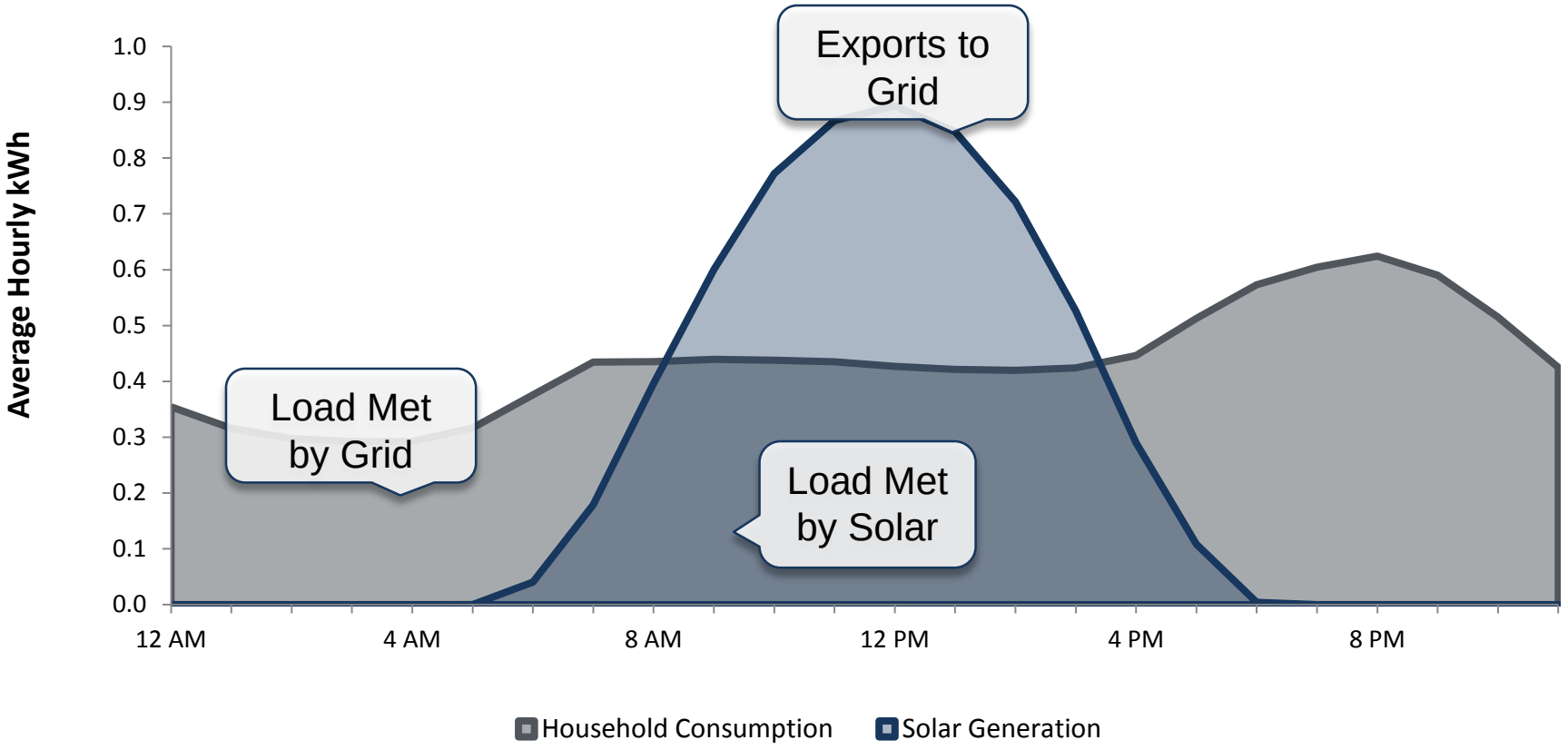
Inverter

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.

Net Metering

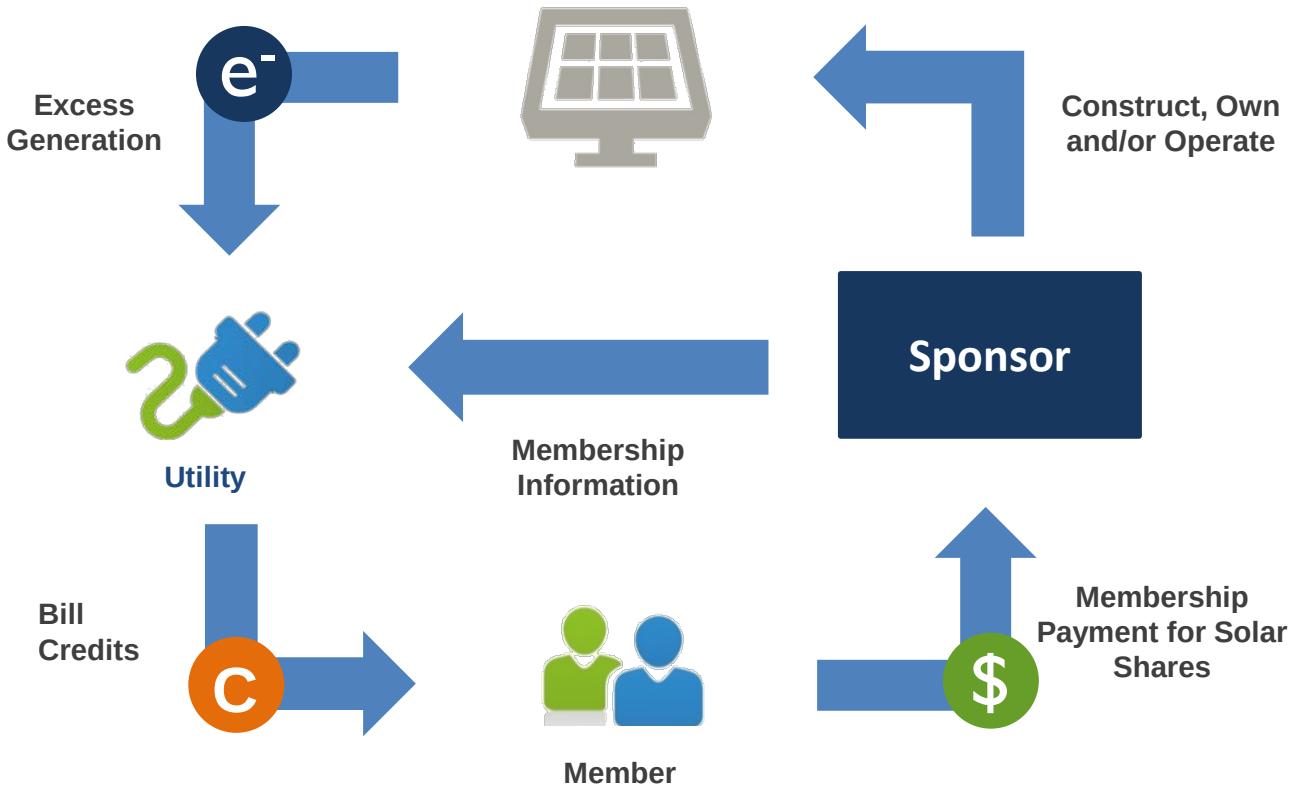


Community Distributed Generation (Shared Solar)

What is Shared Solar?

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

How does shared solar work in New York?



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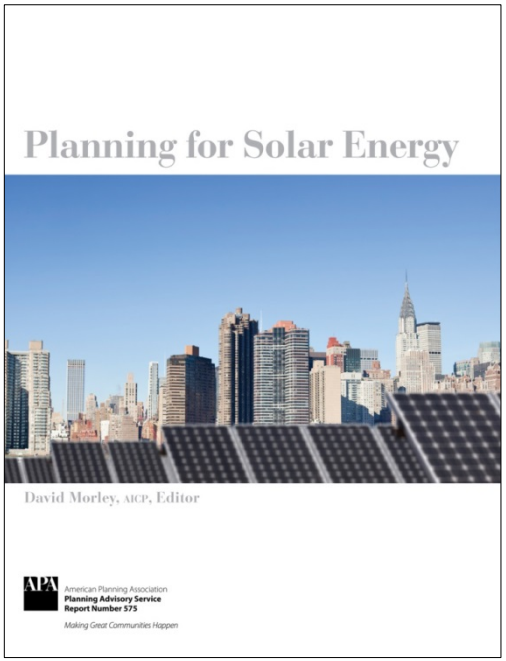
Planning for Solar

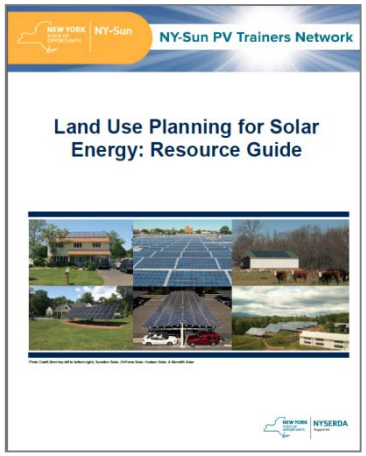
Land Use Planning for Solar Energy

- Plan Making
- Policy Development
- Community Engagement



Resources: NY-Sun PV Trainers Network

Land Use Planning for Solar Energy



https://training.ny-sun.ny.gov/images/PDFs/Land_Use_Planning_for_Solar_Energy.pdf

Policy Development Framework

Adopt a Resolution or Mayoral Proclamation that:

- Lists solar benefits and findings
- States intention to plan and regulate for solar
- Adopts a task force
- Authorizes research and studies
- Establishes a training program
- Authorizes an inter-municipal partnership
- Seeks state and federal funding and assistance
- Develop a community engagement process

Example: Statement of Purpose

New York State Model Solar Zoning Ordinance

- Taking advantage of a safe, abundant, renewable, and non-polluting energy resource;
- Decreasing the cost of energy to the owners of commercial and residential properties, including single-family houses; and
- Increasing employment and business development in the region by furthering the installation of Solar Energy Systems.

Appoint a Task Force

- Charge an existing sustainability task force or conservation advisory council
- Work with the Regional Planning Board or County
- Create a Solar/Renewable Energy Task Force

Community Engagement

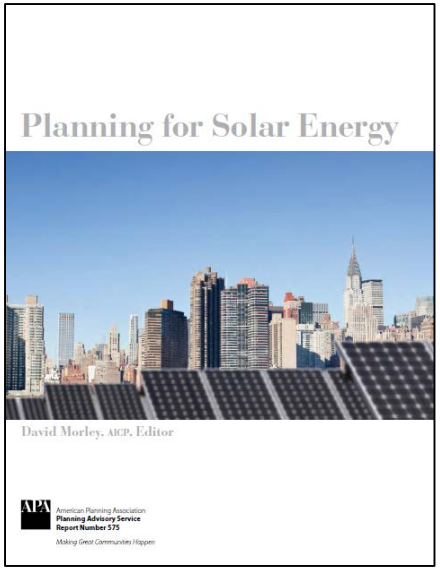
Designing the Process

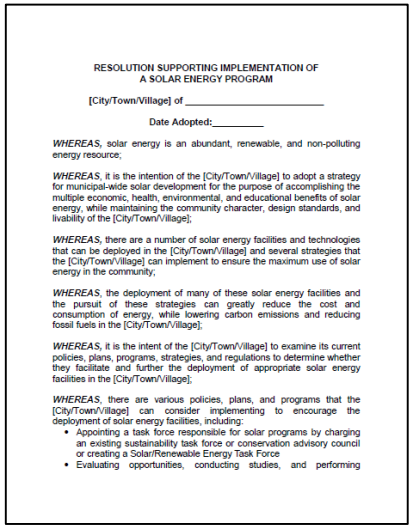
Community Engagement

Potential Competing Interests & Priorities

Planning to Accommodate Solar

- Add Solar Energy Component to Comp Plan
- Adopt Solar Energy Policy or Plan





RESOLUTION SUPPORTING IMPLEMENTATION OF
A SOLAR ENERGY PROGRAM

[City/Town/Village] of _____

Date Adopted:_____

WHEREAS, solar energy is an abundant, renewable, and non-polluting energy resource;

WHEREAS, it is the intention of the [City/Town/Village] to adopt a strategy for municipal-wide solar development for the purpose of accomplishing the multiple economic, health, environmental, and educational benefits of solar energy, while maintaining the community character, design standards, and livability of the [City/Town/Village];

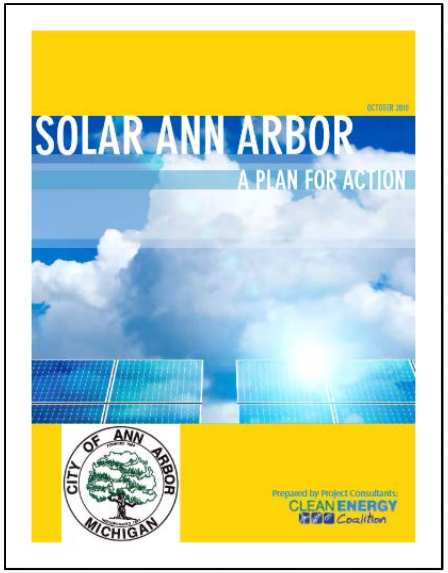
WHEREAS, there are a number of solar energy facilities and technologies that can be deployed in the [City/Town/Village] and several strategies that the [City/Town/Village] can implement to ensure the maximum use of solar energy in the community;

WHEREAS, the deployment of many of these solar energy facilities and the pursuit of these strategies can greatly reduce the cost and consumption of energy, while lowering carbon emissions and reducing fossil fuels in the [City/Town/Village];

WHEREAS, it is the intent of the [City/Town/Village] to examine its current policies, plans, programs, strategies, and regulations to determine whether they facilitate and further the deployment of appropriate solar energy facilities in the [City/Town/Village];

WHEREAS, there are various policies, plans, and programs that the [City/Town/Village] can consider implementing to encourage the deployment of solar energy facilities, including:

- Appointing a task force responsible for solar programs by charging an existing sustainability task force or conservation advisory council or creating a Solar/Renewable Energy Task Force
- Evaluating opportunities, conducting studies, and performing



Plan Making

Communitywide Comprehensive Plan

Neighborhood Plans	Corridor Plans	Special District Plans
Green Infrastructure Plans	Energy Plan	Climate Action Plan

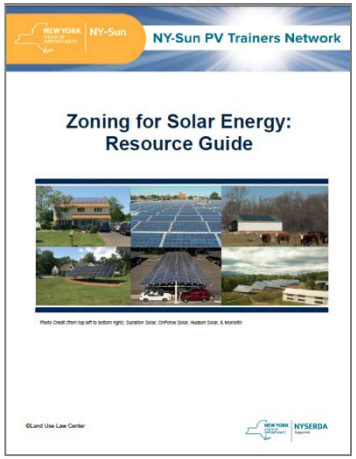
Zoning for Solar

Zoning for Solar Energy

Zoning Must Be in Accordance with Comprehensive Plan

Photo Credit (from top left to bottom right): Sunation Solar, OnForce Solar, Hudson Solar, & Monolith Solar

New York Zoning Resources



Zoning for Solar Energy: Resource Guide

https://training.ny-sun.ny.gov/images/PDFs/Zoning_for_Solar_Energy_Resource_Guide.pdf

Zoning for Solar: Webinar

https://training.ny-sun.ny.gov/zoning-for-solar-webinar

New York State Model Solar Zoning Ordinance

New York Model Solar Energy Law

http://www.cuny.edu/about/resources/sustainability/reports/NYS_Model_Solar_Energy_LawToolkit_FINAL_final.pdf

Types of Solar Energy Systems

Building Integrated

Small-Scale Roof

Large-Scale Roof

Small-Scale Ground

Large-Scale Ground

Example: Model Solar Zoning Law

Section 1: Authority
Section 2: Statement of Purpose
Section 3: Definitions
Section 4: Applicability
Section 5: Solar as an Accessory Use/Structure
Section 6: Approval Standards for Large-Scale Solar Systems as a Special Use
Section 7: Abandonment and Decommissioning
Section 8: Enforcement
Section 9: Severability

http://www.cuny.edu/about/resources/sustainability/reports/NYS_Model_Solar_Energy_LawToolkit_FINAL_final.pdf

Defining Solar: Four Factors To Consider

- Energy System Type
- Location Where System-Produced Energy is Used
- Bulk & Area of System Dimensions
- System Energy Capacity

Defining Solar: System Type

- Roof- or Building-Mounted
- Ground-Mounted or Freestanding
- Building-Integrated

Defining Solar: Energy Usage

Energy is Used:

- Entirely Onsite with Some Net Metering
- Entirely Offsite
- Onsite & Offsite

Defining Solar: Bulk & Area

Define according to physical size of system:

- Min. or Max. Footprint or Disturbance Zone
- Measured in:

  acres, square feet, % lot coverage, or
  % of primary structure's foot print

Defining Solar: Energy Capacity

Minimum or Maximum kW:

- Generating Capacity
- Rated Capacity
- Rated Storage Volume

System Type and Energy Capacity

For Small-Scale Solar Electric Systems:

- Rated capacity of 25 kW or less
- Roof-mounted, ground-mounted, or pole-mounted

Link to Permit: https://www.nyserda.ny.gov/solarguidebook

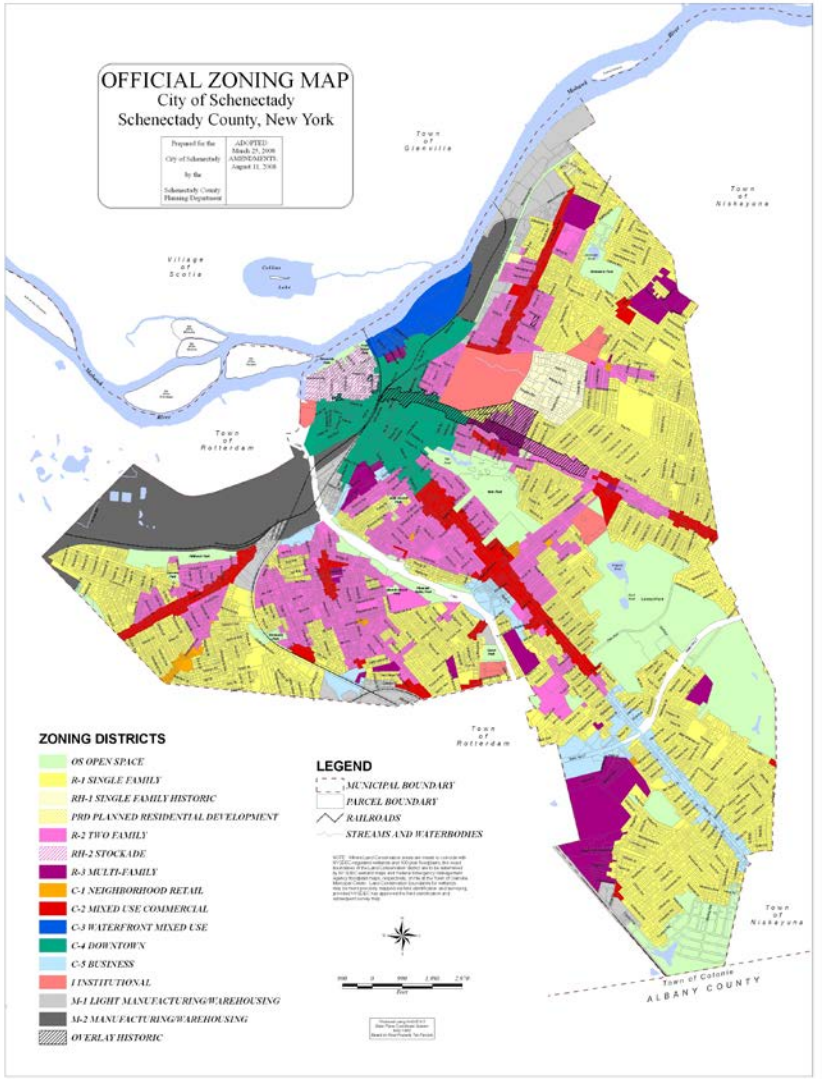
Example: System Type & Energy Usage

New York State Model Solar Zoning Ordinance

- Building-Integrated Photovoltaic
- Roof-Mounted – on or off site use
- Ground-Mounted – primarily used on-site
- Large-Scale System→ ground mounted & offsite energy consumption

Update Zoning Code

Siting: Determine which zoning districts to permit each defined system



Example: Model Solar Zoning Law

- Roof-mounted systems are permitted as an accessory use in **all zoning districts** when attached to lawfully permitted principal and accessory structures, subject to requirements.

- Ground-mounted solar energy systems that use electricity on site are permitted as an accessory structure **in [*Insert district(s)*],** subject to the requirements.

- Large-scale solar energy systems are permitted through the issuance of a special-use permit **within [*Insert district(s)*]** subject to requirements.

Amending District Use Regulations to Allow Solar

Land Uses Allowed in Districts As:

1. Principal Use
2. Accessory Use
3. Secondary Use
4. Special Use

Example: Model Solar Zoning Law

- Roof-mounted systems are permitted as an **accessory use** in all zoning districts when attached to lawfully permitted principal and accessory structures, subject to the requirements.

- Ground-mounted solar energy systems are permitted as an **accessory structure** in [*Insert district(s)*], subject to the requirements.

- Large-scale solar energy systems are permitted through the issuance of a **special-use permit** within **[***Insert district(s*)**]** subject to requirements.

Solar as Accessory Use

Solar as Accessory Structure

Solar as Special Use

Review and Approval Process

Project review and approval requirements generally intensify as impacts associated with permitted solar energy systems increase.

Land Use Review Options

For Small-Scale, Accessory Systems:

- Review by Zoning Enforcement Officer

PERMIT APPLICATION

NY State Unified Solar Permit

Land Use Review Options

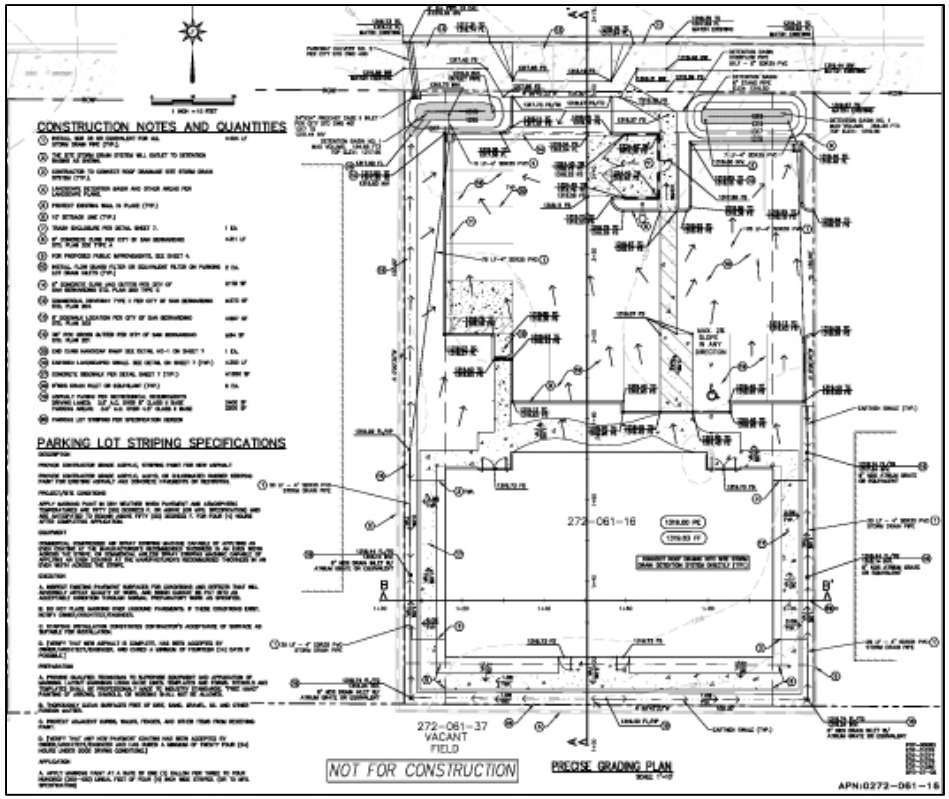
For Larger Systems with Greater Impacts:

- Major & Minor Site Plan Review
- Special Use Permit Review

Amending Site Plan Requirements

Major Site Plan Review

Minor Site Plan Review



Example

Minor Site Plan Review for:

- Ground-mounted
- Between 2,000 sq.ft. & 10 acres in size

Preliminary & Final Site Plan Review for:

- > 10 acres in size
- Site plan must include: transmission line/equipment location, changes to existing substations, how facility will connect to grid, landscape maintenance plan, decommissioning plan, etc.

Example: Model Solar Energy Law

- Roof-mounted systems are permitted as an **accessory use** in all zoning districts when attached to lawfully permitted principal and accessory structures, subject to the requirements.

- Ground-mounted solar energy systems are permitted as an **accessory structure** in [*Insert district(s)*], subject to the requirements.

- *Large-scale solar energy systems are permitted through the issuance of a **special-use permit** within **[**Insert district(s)**]** subject to requirements.*
  - ***Site plan** approval is required. WAIVERS permitted.*

Reviewing Bulk & Area Requirements

Sec.	District	Maximum Height		Minimum Requirements			Minimum Yards (7)			
		Ft.	Sty.	Lot Area Sq. Ft.	Lot Width	Lot Depth	Front Depth	Each Side Yard	Total Both Sides	Rear Depth
1	R-1 Single Family Residential	35	2.5	20,000	100'	100'	30'	10'	30'	30'
2	R-2 Two-Family Residential	35	2.5	7,000	50'	100'	20'	6'	16'	20'
3	R-3 Multi-Family Residential	40	4	1 Family: 7,000	50'	100'	20'	1,2,2.5 story: 6'	16'	20'
				2 Family: 3,000@DU(1)	40'					
7	C-3 Commercial			3+Family: 1,500@DU	40'			3 or 4 story: 15'	30'	20'
				Town House: 2,000(2)	18'					
4	B-1 Neighborhood Business	35(3)	2.5(3)	For Dwls: same as R-3 Other Bldgs: -- --- ---			50'	Note (4)		
5	C-1 General Commercial	40(3)	3(3)				50'	Note (4)		
6	C-2 Central Commercial	45(3)	3					Note (4)		
8	M-1 Light Industrial	45(3)	3	(11) 1500 @DU	None	None	50'	20'	50'	None(5)
9	M-2 Heavy Industrial	125(6)	--	(11) 1500 @DU	None	None	50'	20'	50'	None(5)
10	FW Flodway	No Building Permitted		None	None	None	No Building Execpt Utility			
10	FF Flod-Fringe	Development shall be undertaken in strict compliance with flood-proofing and related provisions contained in all other applicable codes and ordinances.								

Example: Model Solar Zoning Law

Roof-mounted

- Height and setback requirements from underlying zoning
  - Height exemptions granted to building-mounted mechanical devices or equipment apply

Ground-mounted

- Size: Systems are limited to [Insert Lot Coverage Percentage].
  - Panel surface area shall be included in total lot coverage
- Setback & Height: Requirements of the zoning district.
- Location: Installed in rear or side yards (residential districts only)

Example: Model Solar Zoning Law

Large-scale solar energy systems

- Height and Setback:
  - requirements of the underlying zoning district.
  - Additional restrictions may be imposed during the special-use permit process.

- *Minimum lot size of [Insert Size Requirement] square feet.*

- Size: Systems are limited to [Insert Lot Coverage Percentage].
  - Panel surface area shall be included in total lot coverage

Development Standards

Some municipalities impose specific development standards to mitigate land use impacts associated with solar energy system

Development Standards for Accessory SESs

Roof-mounted

- Max height
- Min tilt, angle
- Color & location restrictions

Ground-mounted

- Setback, yard requirements
- Max height
- Blending or screening

Example: Model Solar Zoning Law

Municipalities particularly concerned with aesthetics may also consider adding the following provisions:

- *Solar Panels affixed to a flat roof shall be placed below the line of sight from a public right of way.*
- *Solar Energy Equipment shall be installed inside walls and attic spaces to reduce their visual impact.*
- *If Solar Energy Equipment is visible from a public right of way, it shall be compatible with the color scheme of the underlying structure.*

Development Standards for Principal-Use SESs

Requirements To Mitigate Impacts

- Siting
- Height Limits
- Setbacks
- Screening
- Safety (fencing, signage)
- Utility Interconnection
- Required Studies (environmental, economic)
- Decommissioning/Site Restoration

Decommissioning

Decommissioning Plan

- How the removal of all infrastructure and the remediation of soil and vegetation shall be conducted to return the parcel to its original state
- Expected timeline for execution
- Cost estimate detailing the projected cost
- If not decommissioned, the municipality may remove the system and restore the property and impose a lien

Source: Decommissioning Solar PV Systems: https://www.nyserda.ny.gov/SolarGuidebook

Abandonment

Abandonment

- Considered abandoned after [Insert Time Period] without electrical energy generation and must be removed from the property. Applications for extensions.

Example: Model Solar Zoning Law

Large Scale System

- Enclosed by fencing to prevent unauthorized access.
- Warning signs with the owner's contact information
- Other requirements:
  - Copies of easements and other agreements,
  - Blueprints showing the layout of the solar installation signed by a Professional Engineer or Registered Architect, equipment specification sheets,
  - Property Operation and Maintenance Plan, and Decommissioning Plan.

Other Considerations When Planning and Zoning for Solar

Real Property Tax & Solar PV

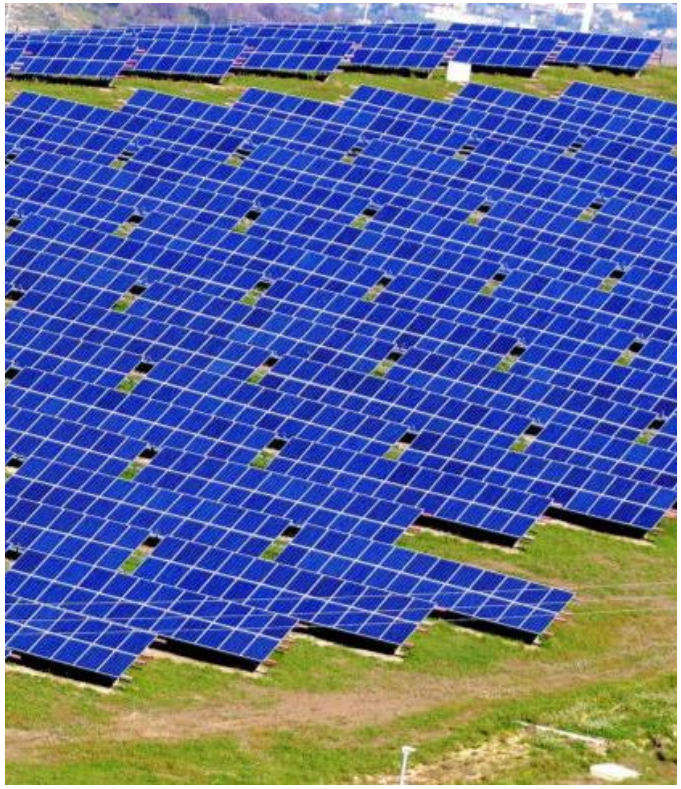
Real Property Tax Law Section 487

"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 a 15-year period, the solar energy system is fully taxable at the assessed value at that point in time
- All municipalities, counties and school districts are automatically included in PTE unless they opt out through local law or resolution. This law is applicable until 2024.
- More than 92% of all taxing jurisdictions continue to offer this exemption.

Payment in Lieu of Taxes (PILOT)

- Jurisdictions that **have not opted** out of the PTE may use Payment In Lieu of Taxes (PILOT) with specific projects.
- PILOTS can capture revenue for large projects without harming the residential market.
- PILOTs have typically been annual payments related to the system capacity ($/MW).
- PILOTS may not exceed a 15 year term and the value of taxes that would be paid without the exemption provided by the PTE.
- After a period of 15 years, the solar project is fully taxable at the assessed value at that point in time (e.g. the assessed value at year 16).



Real Property Tax Resources

NYSERDA. “Factsheet: Understanding the Real Property Tax Law Section 487.”
https://training.ny-sun.ny.gov/images/PDFs/SUN-GEN-taxlaw487-fs-1-v1_FINAL.PDF

NYS Department of Taxation and Finance. “Recent Questions on the Real Property Tax Law and Solar Energy Systems.”
www.tax.ny.gov/pdf/publications/orpts/legal/raq2.pdf?_ga=1.225179802.1031257166.1423842465

NYS Department of Taxation and Finance. “Assessors Manual, Volume 4, Exemption Administration.”
https://www.tax.ny.gov/research/property/assess/manuals/vol4/pt1/sec4_01/sec487.htm

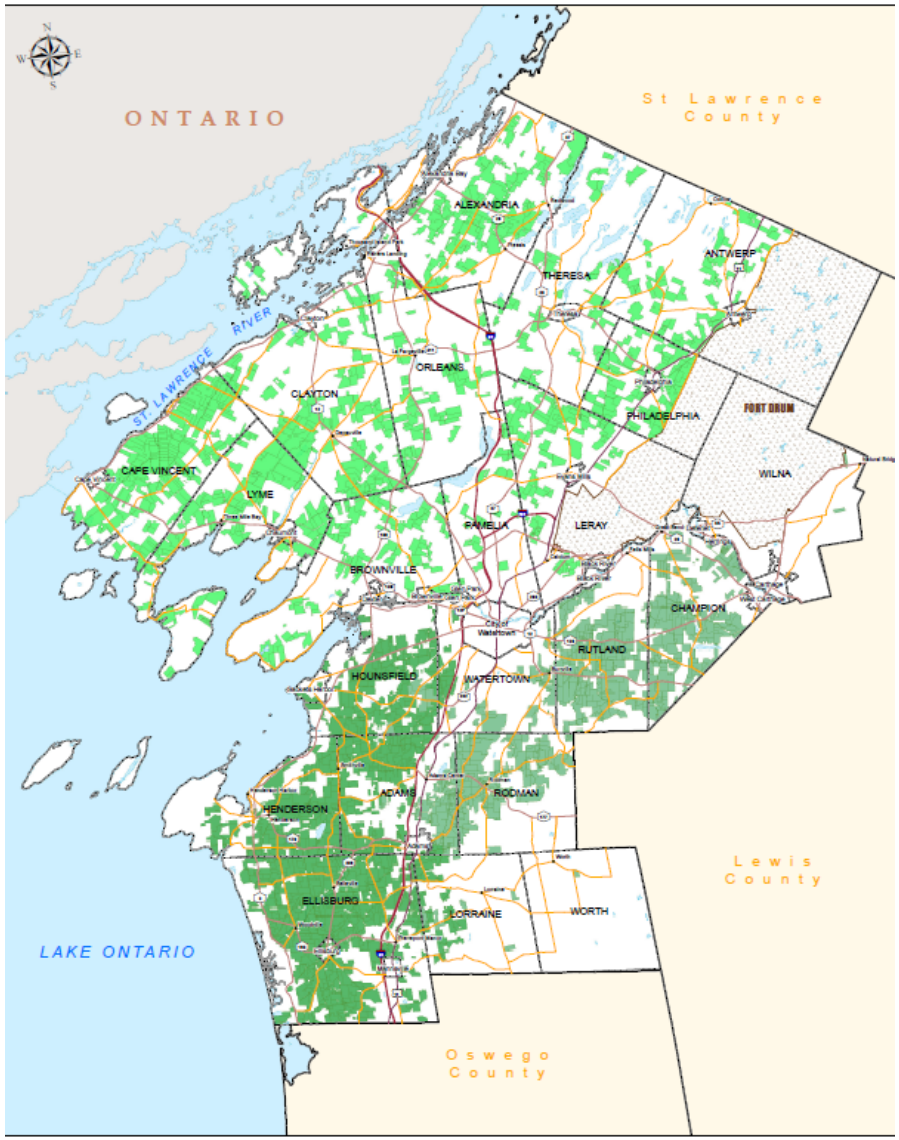
Barnes et al. “Property Taxes and Solar PV Systems: Policies, Practices, and Issues.”
nccleantech.ncsu.edu/wp-content/uploads/Property-Taxes-and-Solar-PV-Systems-2013.pdf

NYSERDA Wind Energy Toolkit: “Section 7.2,page 30. Property Tax: Exemptions and PILOTS”
nyserda.ny.gov/-/media/Files/EERP/Renewables/wind-energy-toolkit.pdf

Special Districts

Agricultural Districts

- **AUTHORITY:** Article 25-AA of the Agriculture and Markets Law
- **PROCESS:** Landowner initiates, preliminary county review, state certification, & county adoption
- **COVERAGE:**
  - 224 agricultural districts
  - 24,130 farms
  - 8.8 million acres
  - about 30 percent of the State's total land area



Farmer Benefits & Protections

- Preferential real property tax treatment
- Protections against
  - overly restrictive local laws
  - government funded acquisition or construction projects
  - private nuisance suits involving agricultural practices

Benefits & Protections for Solar

- Solar devices that do not exceed 110% of the farm's anticipated electrical needs are on-farm equipment.
  - If considered structure or building by local government, then it is an on-farm building.
  - On farm buildings are exempt from some local land use requirements, such as site plan review.

Agricultural District Resources

Agricultural Districts Website

http://www.agriculture.ny.gov/ap/agservices/agdistricts.html

Guideline for Review of Local Zoning and Planning Laws

http://www.agriculture.ny.gov/ap/agservices/guidancedocuments/305-aZoningGuidelines.pdf

Guideline for Review of Local Laws Affecting Small Wind Energy Production Facilities and Solar Devices

http://www.agriculture.ny.gov/ap/agservices/guidancedocuments/Guidelines_for_Solar_and_Small_Wind_Energy_Facilities.pdf

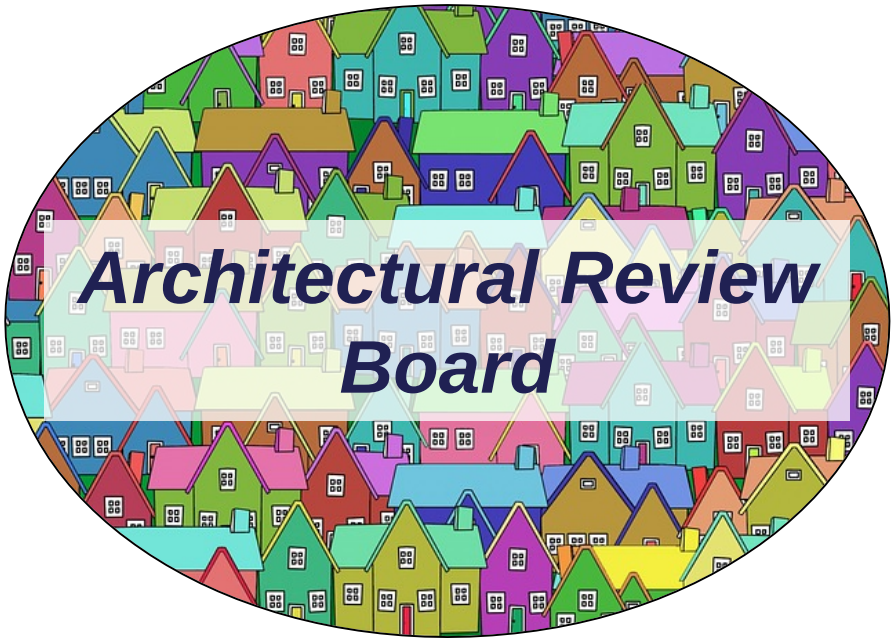
Landowner Considerations for Solar Land Leases

http://www.agriculture.ny.gov/FactSheet/Solar_Land_Leases.pdf

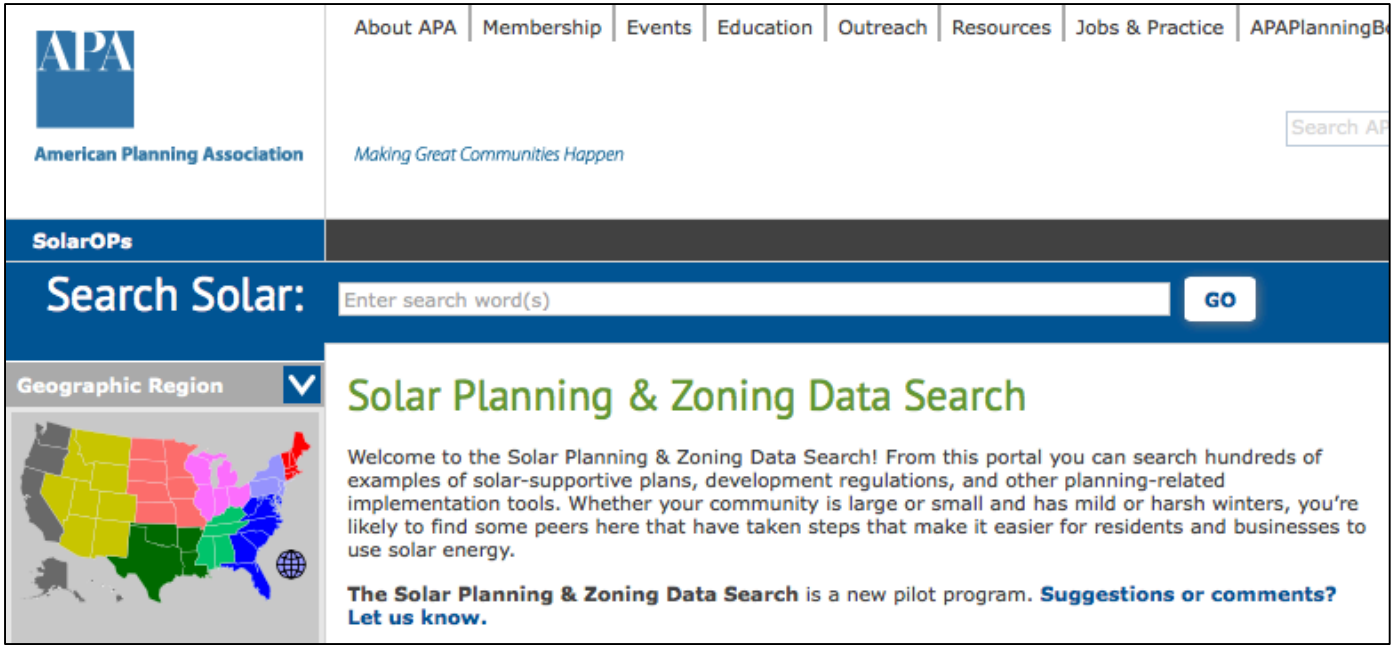
Homenick, E. Sullivan County Real Property Tax Services, “Solar Array’s and Taxation”

https://s3.amazonaws.com/assets.cce.cornell.edu/attachments/12866/SOLAR_ARRAY%E2%80%99S.pdf?1452808160https://s3.amazonaws.com/assets.cce.cornell.edu/attachments/12866/SOLAR_ARRAY%E2%80%99S.pdf?1452808160

Review by Additional Local Boards



Resource: APA's Solar Planning & Zoning Data Search



www.planning.org/solar/data/

Available Training Topics

Introduction to Solar Policy Workshop

Land Use Planning for Solar Energy

Zoning for Solar Energy

Streamlining Solar Permitting

Solar Procurement for Local Governments

Creating and Implementing Your Solarize Campaign

Introduction to Shared Solar

Safety and Fire Considerations for Solar PV

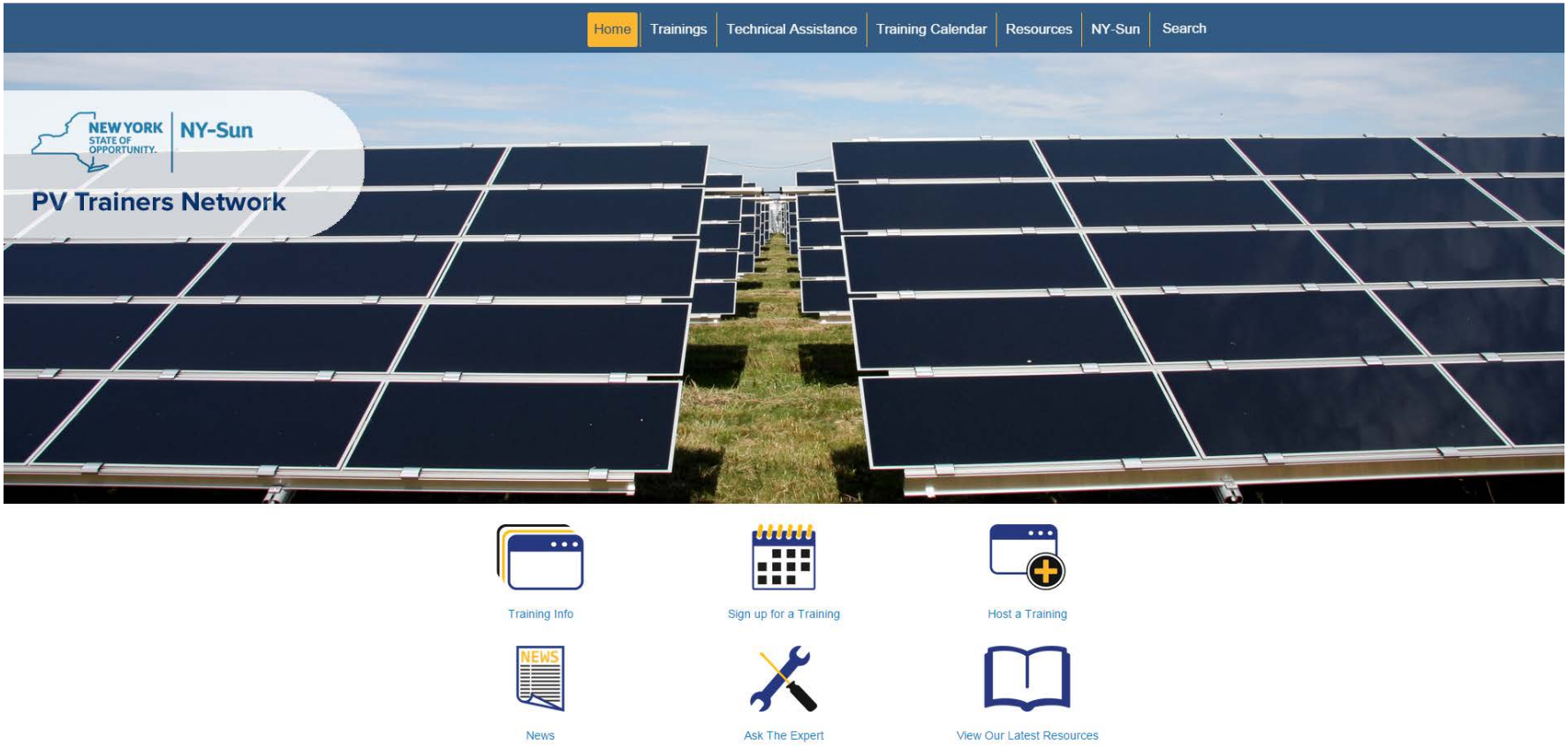
Solar PV Permitting and Inspection Methods

Solar PV for Engineers

Solar PV for Architects

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

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
- Shared Solar
- Solar Access
- Solar Design Standards
- Real Property Tax Exemption Section 487
- Large-scale Solar Development

Submit a request via the Ask-the-Expert Portal or Contact a PVTN Expert Directly

https://training.ny-sun.ny.gov/technical-assistance/ask-the-expert

NY State Solar Guidebook

Now Available!

- Understanding solar PV permitting and inspecting in NY State
- Residential Roof-top access and ventilation requirements
- Real Property Tax Law Section 487
- Land Lease Considerations for Solar
- Decommissioning Solar Factsheet
- Additional Resources

nyserda.ny.gov/solarguidebook

Clean Energy Communities Program

$16 million available for municipalities to apply for funding and technical assistance to implement energy efficiency, renewable, and sustainable development projects

Who Can Apply

- Elected officials or employees of local governments across New York State.

How it Works

- Communities that complete 4 out of the 10 High Impact Actions and meet all other eligibility requirements.
- At no cost, Clean Energy Communities Coordinators are available to help local leaders develop proposals, apply, and provide technical assistance.

How to Apply

- Local governments must submit documentation for each of the four completed High Impact Actions.
- Local governments that earn the Clean Energy Communities designation must complete the online application for additional funding.
- Read the Clean Energy Communities Guidance Document.

Deadline

- Applications for grant funding will be reviewed until 4:00 p.m. Eastern Time on September 30, 2019, or until funds are exhausted, whichever comes first.

Contact

- cec@nyserda.ny.gov for assistance navigating the program.

http://www.nyserda.ny.gov/All-Programs/Programs/Clean-Energy-Communities

Clean Energy Communities Program

10 High Impact Actions

1. Benchmarking energy use at municipal and large privately owned buildings.
2. Performing energy efficiency and renewable energy upgrades to municipal buildings.
3. Replacing street lights with energy-efficient LED lighting.
4. Streamlining local approval processes for solar projects through adoption of the NYS Unified Solar Permit.
5. Undertaking a community-based Solarize campaign to reduce solar project costs through joint purchasing.
6. Providing energy code enforcement training to code officers.
7. Earning Climate Smart Communities Certification by reducing the community's impact on the environment.
8. Passing a local law to allow aggregation of residents to gain greater choice and control over energy use as a group (called Community Choice Aggregation).
9. Installing electric vehicle charging stations and using alternative fuel vehicles, such as hybrid and electric cars, for municipal business.
10. Establishing an Energize NY Finance Program that enables long-term, affordable Property Assessed Clean Energy financing for energy efficiency and renewable energy projects at commercial buildings and not-for-profits.

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Thank You!

Contact us:

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