





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

Your Presenters Today

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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

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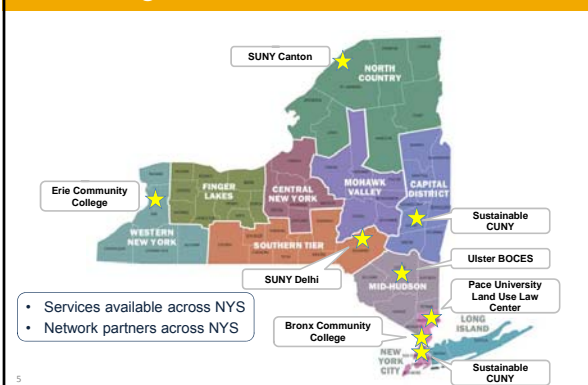
About the PV Trainers Network

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

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Program Covers Entire State



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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

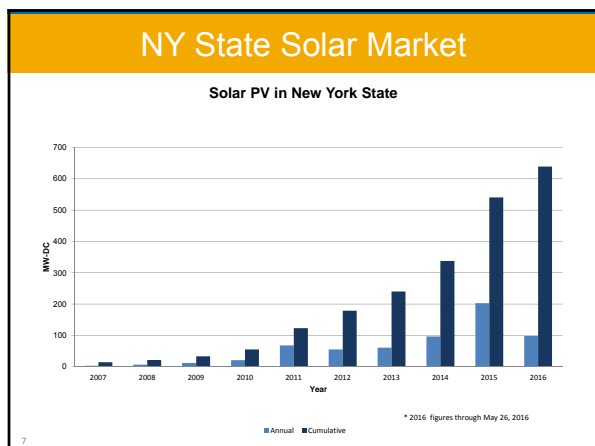
Statewide Goal of 3 GW

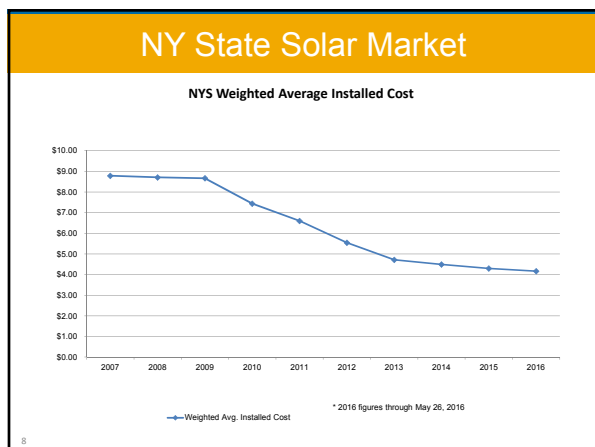
\$961 Million Total Budget

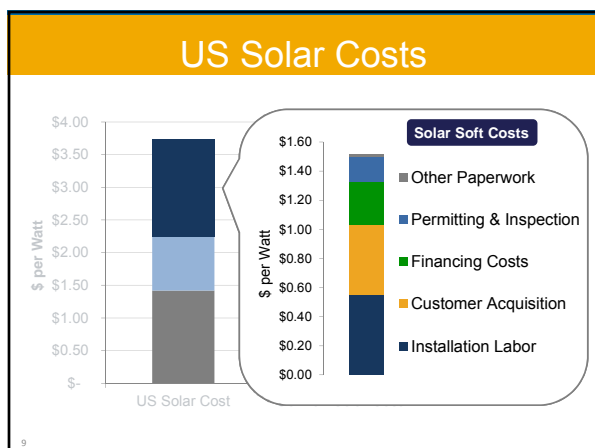
↓
Stimulate the Market Place

↓
Reduce Soft Costs

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Solar Technology Background

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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.

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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

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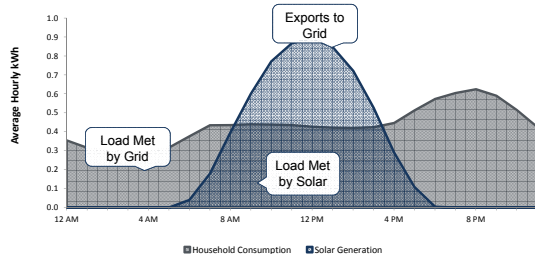
Net Metering

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



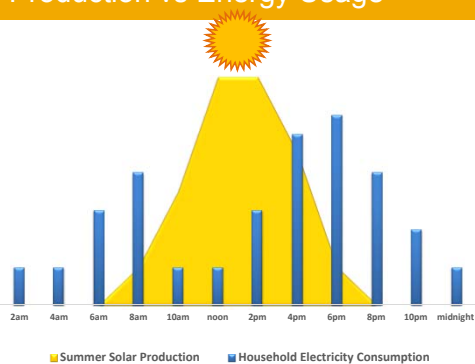
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Net Metering

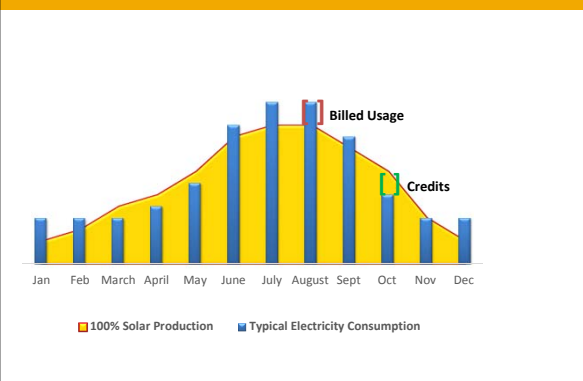


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PV Production vs Energy Usage



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 Prices vary 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

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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
- Enables multiple customers to receive net metering credits from a single clean energy project
- Allows transferring of excess net metering credits to another customer
- Intended to allow residents and businesses to buy shares in larger community solar projects



How does shared solar work in New York?



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Size, Location & Cost of Shared Solar

How large is a shared solar project?

- Limited to 2 MW*
 - 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)



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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 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.

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Real Property Tax Exemption

Jurisdictions that opt out of RPTL § 487 will likely not collect substantial tax revenue

- Opting out makes investing in solar economically unfeasible for residential, commercial and larger-scale solar.
- Solar developers avoid jurisdictions that have opted out of the exemption.
- A list of municipalities, counties and school districts that opted out of RPTL § 487 can be found on the NYS Department of Taxation and Finance's website*
<https://www.tax.ny.gov/research/property/legal/localop/487opt.htm>

*Note: The list provided by NYS Dept of Taxation and Finance should not be viewed as definitive. Individuals should contact the relevant municipality to determine whether the municipality has opted-out of the 487 exemption.

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Real Property Tax Exemption

Solar impacts the local economy

Jobs

- 8,250 solar jobs in NYS (3rd most in US)
- 631 solar companies (4th most in US)

Value of the solar industry

- \$877 million in NYS in 2015

Local indirect impacts of solar project spending

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Process & calculation of the exemption for solar energy systems (or component thereof) that also serves as part of the building structure

Property owners must file an application for exemption from county, city, town and school district taxes with the municipality's assessor who prepares the property assessment used in levying county, city or town and school district taxes.

Calculation of Exemption*

a.	Total cost of solar energy system:	\$10,000
b.	Incremental cost of system:	\$4,000
c.	Ratio of incremental cost to total cost [(b) divided by (a)]:	40%
d.	Increase in assessed value of property attributable to addition of solar energy system:	\$6,000
e.	Assessed value exempt due to addition of system [(d) times (c)]:	\$2,400

*Methodology for calculating the exemption is further explained in the NYS Department of Taxation and Finance's website

Source: Application for Tax Exemption for Solar or Wind Energy Systems or Farm Waste Energy Systems:
https://www.tax.ny.gov/pdf/current_forms/property/pd87_fill_in.pdf
Assessor's Manual, Volume 4, Exemption Administration:
https://www.tax.ny.gov/research/property/taxess/manuals/cp44xt/need_01/sec487.htm

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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).



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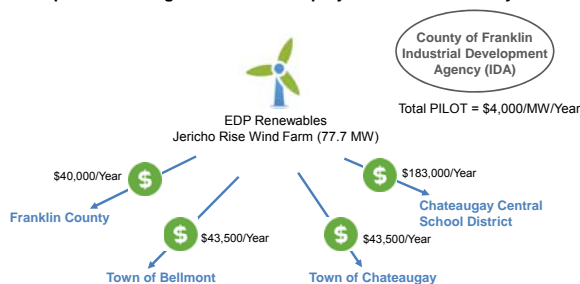
PILOT Development for Wind Projects

- Each taxing jurisdiction (county, city, town, village and school district) does not have to enter into its own PILOT with the wind project developer.
- **Multiple jurisdictions can be parties on the same PILOT agreement**, which outlines the amount the property owner pays to each taxing jurisdiction.
- Typically, the **county Industrial Development Agency (IDA) has negotiated the PILOT on behalf of the taxing jurisdictions**, but the agreement may be drafted by the county or local taxing jurisdiction's tax counsel.
- There is currently **no specific guideline for determining the appropriate amount under a PILOT agreement**.
- Most experience with PILOTS in New York is related to wind development.

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PILOT Development for Wind Projects

Example of PILOT agreement for wind project in Franklin County



Source: Franklin County IDA set to finalize Jericho Rise PILOT: <http://www.waterforddailytimes.com/news/05/franklin-county-ida-set-to-finalize-jericho-rise-pilot-20160718>
 Supplemental Environmental Impact Statement: Jericho Rise Wind Farm: <https://3.amazonaws.com/Citations/jerichorise/Section1.pdf>

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PILOT Development

- PILOTs add to the costs of solar projects
- Jurisdictions should **outline their stance on PTE and PILOTs** as any uncertainty can jeopardize a project.
- **Developers should contact the taxing jurisdictions** about the project in advance to find out the various stances on PILOTs.
- If developer or property owner **formally contacts a jurisdiction through written notice** that they intend to construct a solar energy system within the municipality, **the municipality has 60 days** from receiving the notice of intent **to notify the developer or owner that it intends to require a PILOT.**
- The **owner or developer is not required to use a specific form or language** when giving a municipality notice of its intent to construct a solar project.
- The value of the PILOT is usually based on the **developers project costs, expected cash-flows and the developer's financing/investor requirements.**
- If a jurisdiction requires a PILOT higher than a developer can pay, the jurisdiction will most likely lose the project.
- Jurisdictions may want to **understand the taxable value of the project after year 15**, so they can plan their future expected revenues accordingly.

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Assessing Property Value of Solar

Taxing jurisdictions that opt out of the exemption need to assess any increase in the value of the property due to the solar PV system in order to calculate the appropriate tax amount

Methodologies for assessing value of solar:

- **Comparable sales/market approach:** assessor compares the market value or sale price of similar properties located within the same jurisdiction to measure the property value added due to a solar PV system
- **Cost approach:** the value of a solar PV is measured based on the systems cost or the cost to replace it
- **Income approach:** value of solar based on current and projected revenue from power generation

Resources for a detailed explanation of methods of assessing the value of solar:
 Property Taxes and Solar PV Systems: Policies, Practices, and Issues: <http://nccleantech.ncsu.edu/wp-content/uploads/Property-Taxes-and-Solar-PV-Systems-2013.pdf>
 New York State Assessor's Association - Training: Valuation of Solar Panels:
[http://www.nyassessor.com/membersonly/training/attendee/9866/2016/01/viewdetail.html?mid/7046/Itemid/1232/d/20161014/Solar-Panel-Valuation-\(Central-Region\).aspx](http://www.nyassessor.com/membersonly/training/attendee/9866/2016/01/viewdetail.html?mid/7046/Itemid/1232/d/20161014/Solar-Panel-Valuation-(Central-Region).aspx)

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Property Tax Resources

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

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

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

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Land Use Planning for Solar Energy

- Plan Making
- Policy Development
- Community Engagement




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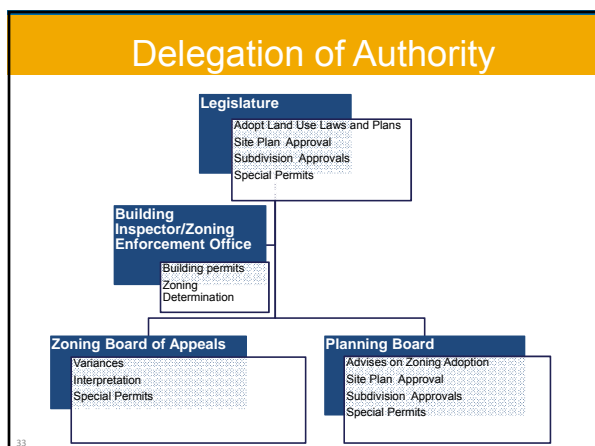
Resources: NY-Sun PV Trainers Network

Land Use Planning for Solar Energy



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

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Role of Local Gov't & Planning

1,550+ local jurisdictions in NY
With land use authority

Source: [NREL](#)

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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

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Policy Development

Adopt a Resolution or Mayoral Proclamation



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What Are the Benefits of Solar?

- A. Econ. Development & job creation
- B. Environ. & public health benefits
- C. Reduced & stabilized energy costs
- D. Energy independence & resilience
- E. Value to utility
- F. Community pride
- G. Other

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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.

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Additional Benefits

- Decreasing the use of fossil fuels, thereby reducing the carbon footprint of [Insert Name of Municipality];
- Investing in a locally-generated source of energy and increasing local economic value, rather than importing non-local fossil fuels;
- Aligning the laws and regulation of the community with several policies of the State of New York, particularly those that encourage distributed energy systems;
- Becoming more competitive for a number of state and federal grants and tax benefits;
- Making the community more resilient during storm events;
- Aiding the energy independence of the country;
- Diversifying energy resources to decrease dependence on the grid;
- Improving public health;
- Encouraging a sense of pride in the community;
- Encouraging investment in public infrastructure supportive of solar, such as generation facilities, grid-scale transmission infrastructure, and energy storage sites;
- Creating synergy between solar actions of the community and the sustainability provisions of the Comprehensive Plan; and/or
- Creating synergy between solar and [other stated goals of the community pursuant to its Comprehensive Plan], [such as urban/downtown revitalization, vacant land management, creating a walkable, healthy community, etc.].

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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

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Who sits on the Task Force?

- Municipal Officials
- Solar industry
- Chamber of Commerce
- HOAs
- Environmental/Non-profit Community
- Historic Preservation Representative
- Developers
- Landowners & Farmers
- Planning Board Member (required for Comp. Plan)

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What is the Task Force's Role?

- Conducting studies & performing research
- Establishing a training program
- Partnering with adjacent communities
- Leveraging state and federal technical assistance grants
- Developing a community engagement process
- Amending the comprehensive plan
- Considering regulatory changes

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Best Practices



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Task Force

- Who has a Task Force?
- Who sits on your Task Force?
- What is the role of your Task Force?

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Community Engagement

Designing the Process



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POSITIONS vs. INTERESTS

What are
POSITIONS?

Parties' assertions,
wants, demands,
offers, and solutions

What are
INTERESTS?

A person's needs
and concerns

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Community Engagement

Potential Competing Interests & Priorities






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Planning to Accommodate Solar

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



ANN ARBOR SOLAR ENERGY POLICY

1. PURPOSE AND SCOPE

The purpose of this policy is to establish a framework for the city of Ann Arbor to encourage the use of solar energy while protecting the public health, safety, and general welfare. This policy applies to all city-owned and city-controlled property, and to all city-licensed and city-regulated activities.

2. POLICY STATEMENT

The city of Ann Arbor supports the use of solar energy as a clean, renewable, and sustainable source of energy. The city will encourage the use of solar energy through the adoption of this policy and the implementation of the following measures:

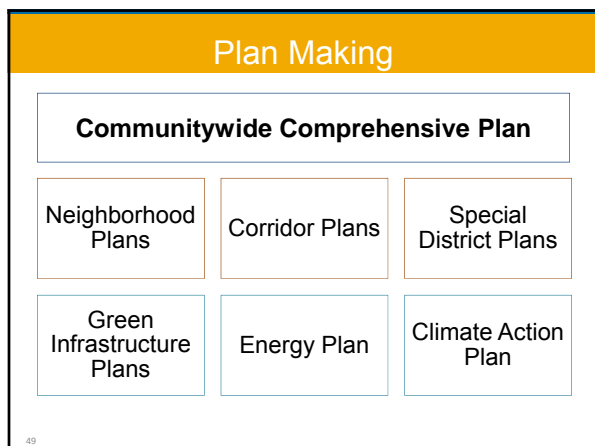
a. The city will encourage the use of solar energy through the adoption of this policy and the implementation of the following measures:

b. The city will encourage the use of solar energy through the adoption of this policy and the implementation of the following measures:

c. The city will encourage the use of solar energy through the adoption of this policy and the implementation of the following measures:



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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 Model Solar Zoning Law
http://www.cuny.edu/about/resources/sustainability/reports/NYS_Model_Solar_Energy_LawToolkit_FINAL_final.pdf

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Types of Solar Energy Systems



Building Integrated



Small-Scale Roof



Large-Scale Roof



Small-Scale Ground



Large-Scale Ground

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Example Zoning Chapter

- Purpose
- Definitions
- Establishment of Districts & Zoning Map
- District Use, Lot and Bulk Regulations
- Special Permit Regulations
- Supplemental Regulations
- Off-street Parking, Driveways and Loading Areas
- Nonconforming Uses, Buildings and Structures
- Site Plan and Special Permit Review & Approval

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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

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Authority

"This Zoning for Solar Energy Law is adopted pursuant to [sections 261-263 of the Town Law, sections 7-700 through 7-704 of the Village Law, or sections 19 and 20 of the City Law] of the State of New York, which authorize the [Insert Town, Village, or City Here] to adopt zoning provisions that advance and protect the health, safety, and welfare of the community, and "to make provision for, so far as conditions may permit, the accommodation of solar energy systems and equipment and access to sunlight necessary therefor."

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What Are the Benefits of Solar?

- A. Econ. Development & job creation
- B. Environ. & public health benefits
- C. Reduced & stabilized energy costs
- D. Energy independence & resilience
- E. Value to utility
- F. Community pride

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Statement of Purpose

- 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.

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Additional Benefits

- Decreasing the use of fossil fuels, thereby reducing the carbon footprint of [Insert Name of Municipality];
- Investing in a locally-generated source of energy and increasing local economic value, rather than importing non-local fossil fuels;
- Aligning the laws and regulation of the community with several policies of the State of New York, particularly those that encourage distributed energy systems;
- Becoming more competitive for a number of state and federal grants and tax benefits;
- Making the community more resilient during storm events;
- Aiding the energy independence of the country;
- Diversifying energy resources to decrease dependence on the grid;
- Improving public health;
- Encouraging a sense of pride in the community;
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- Creating synergy between solar actions of the community and the sustainability provisions of the Comprehensive Plan; and/or
- Creating synergy between solar and [other stated goals of the community pursuant to its Comprehensive Plan], [such as urban/downtown revitalization, vacant land management, creating a walkable, healthy community, etc.].

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Defining Solar Energy Systems

Zoning Definitions Section

§ 300-4 Definitions and word usage.

A. Word usage. Except where specifically defined herein, all words used in this chapter shall carry their customary meanings. Words used in the present tense include the future, and the plural the singular. The word "lot" includes the word "plot"; the word "building" includes the word "structure"; the word "shall" is intended to be mandatory; and "occupied" or "used" shall be considered as though followed by the words "or intended, arranged or designed to be used or occupied."

B. Definitions. As used in this chapter, the following terms shall have the meanings indicated:

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Defining Solar Energy Systems

The collage illustrates different scales and types of solar energy installations. It includes residential solar panels on a house (Small-Scale Solar), large ground-mounted arrays in an open field (Ground-Mounted Solar Facility), solar panels on a commercial building roof (Roof-Mount System), a large-scale solar farm (Large-Sized Solar Energy System), and solar panels integrated into a building's facade (Building-Integrated Photovoltaic Systems).

Defining Solar: Four Factors To Consider

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

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Defining Solar: System Type

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



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Defining Solar: Energy Usage

Energy is Used:

- Entirely Onsite
- Entirely Offsite
- Onsite & Offsite



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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



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Defining Solar: Energy Capacity

Minimum or Maximum kW:

- Generating Capacity
- Rated Capacity
- Rated Storage Volume



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Example: System Type and Energy Capacity

PERMIT APPLICATION

NY State Unified Solar Permit

Unified solar permitting is available statewide for eligible solar photovoltaic (PV) installations. Municipal authorities that adopt the unified permit streamline their process while providing consistent and thorough review of solar PV permitting applications and installations. Upon approval of this application and supporting documentation, the authority having jurisdiction (AHJ) will issue a building and/or electrical permit for the solar PV installation described herein.

For Small-Scale Solar Electric Systems:

- Rated capacity of 25 kW or less
- Roof or Ground Mounted

<http://www.cuny.edu/about/resources/sustainability/nyssolar/NYSolarSmartPermitWorkshops.html>

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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

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Example: System Type, Energy Usage, Energy Capacity

Large SES

- Ground-mounted
- Rated capacity of ≥ 200 kW
- Offsite use (sell to power grid)

Medium SES

- Ground-mounted & rated capacity of < 200 kW but > 5 kW
- Roof-mounted & rated capacity of > 5 kW & serving single or multiple lots or parcels

Small SES

- ≤ 5 kW & serving single parcel or lot



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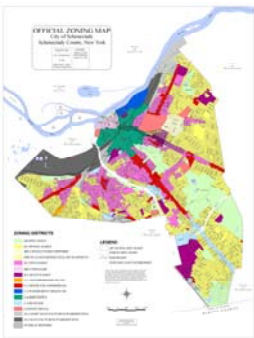
Applicability

“The requirements of this law shall apply to all Solar Energy Systems installed or modified after its effective date, excluding general maintenance and repair and Building-Integrated Photovoltaic Systems.”

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Update Zoning Code

Siting: Determine which zoning districts to permit each defined system



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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.

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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

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1. Solar as Principal Use



2. Solar as Accessory Use/Structure

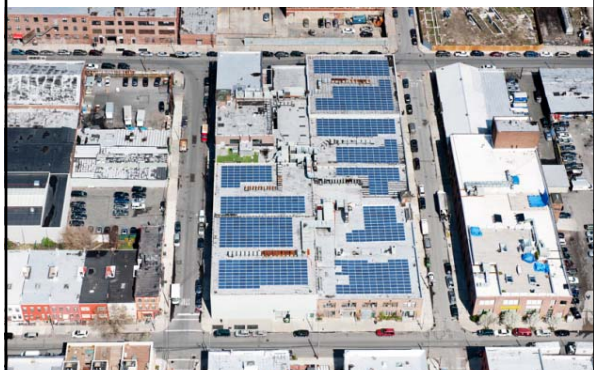


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3. Solar as Secondary Use



4. Solar as 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.

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Review and Approval Process

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

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Land Use Review Options

For Building-Integrated:

- Building parts exempt from land use review
- Subject to building code compliance



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No Site Plan Review

- 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.

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Land Use Review Options

For Small-Scale, Accessory Systems:

- Review by Zoning Enforcement Officer



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Land Use Review Options

PERMIT APPLICATION

NY State Unified Solar Permit

Unified solar permitting is available statewide for eligible solar photovoltaic (PV) installations. Municipal authorities that adopt the unified permit streamline their process while providing consistent and thorough review of solar PV permitting applications and installations. Upon approval of this application and supporting documentation, the authority having jurisdiction (AHJ) will issue a building and/or electrical permit for the solar PV installation described herein.

For Small-Scale, Accessory Systems:

- Must be 25 kW or less
- Exempt from zoning review
- Expedited review for combined building and electrical permit

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Land Use Review Options

For Larger Systems with Greater Impacts:

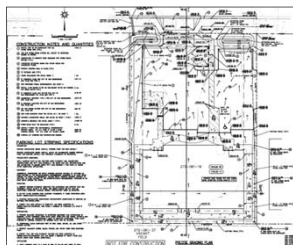
- Major & Minor Site Plan Review
- Special Use Permit Review



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Amending Site Plan Requirements

Major Site Plan Review
Minor Site Plan Review



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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.

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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.
 - **Site plan** approval is required. **WAIVERS** permitted.

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Reviewing Bulk & Area Requirements

SEC. DISTRICT	MAXIMUM HEIGHT		MINIMUM REQUIREMENTS				MINIMUM YARDS (F)		
	FT	STY	LOT AREA SQ. FT.	LOT WIDTH	LOT DEPTH	FRONT DEPTH	EACH SIDE YARD	TOTAL REAR YARD	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 2 FAMILY: 10,000 3 FAMILY: 13,000 TOWN HOUSE: 2,000	50'	100'	20'	1.2:1 R 6' OR 4 10:1 R	6'	16' 20'
7 C-3 Commercial	35	3							
4 B-1 Neighborhood Business	35	2.5				50'			NOTE (d)
5 C-1 General Commercial	40	3:1				50'			NOTE (d)
6 C-2 Central Commercial	45	3							NOTE (d)
8 M-1 Light Industrial	45	3	(1) 1500 SGL	NONE	NONE	50'	20'	50'	(NONE)
9 M-2 Heavy Industrial	125	4	(1) 1500 SGL	NONE	NONE	50'	20'	50'	(NONE)
10 FW Freeway			NO BUILDING PERMITTED	NONE	NONE	NONE			NO BUILDING EXCEPT UTILITY
10 FF Flood-Fringe			DEVELOPMENT SHALL BE UNDERTAKEN IN STRICT COMPLIANCE WITH FLOOD-PROOFING AND RELATED PROVISIONS CONTAINED IN ALL OTHER APPLICABLE CODES AND ORDINANCES.						

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Example: Model Solar Zoning Law

Roof-mounted systems:

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

Ground-mounted systems:

- 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)

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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

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Development Standards

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

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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



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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



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Example: Model Solar Zoning Law

1) *Aesthetics. Roof-Mounted Solar Energy System installations shall incorporate, when feasible, the following design requirements:*

Panels facing the front yard must be mounted at the same angle as the roof's surface with a maximum distance of 18 inches between the roof and highest edge of the system.



City University of New York On Behalf of New York City
Solar Planning and Zoning Implementation Guide, Available at
https://www.cuny.edu/about/university/sustainability/energy-america/reports/Solar_ZF_Implementation_Guide_FINAL.pdf

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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.*

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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.

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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

For more information on decommissioning see the factsheet Decommissioning Solar Systems:
<https://www.nysedda.ny.gov/-media/NYSun/files/Decommissioning-Solar-Systems.pdf>

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Abandonment

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

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Enforcement

“Any violation of this Solar Energy Law shall be subject to the same civil and criminal penalties provided for in the zoning regulations of [Insert Town, Village, or City Here].”

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Severability

“The invalidity or unenforceability of any section, subsection, paragraph, sentence, clause, provision or phrase of the aforementioned sections as declared by the valid judgment of any court of competent jurisdiction to be unconstitutional shall not affect the validity or enforceability of any other section, subsection, paragraph, sentence, clause, provision or phrase, which shall remain in full force and effect.”

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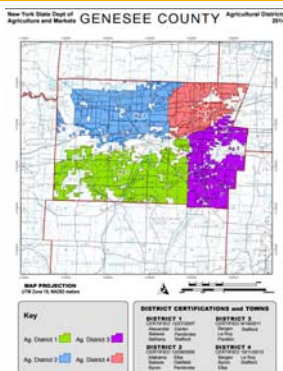
Special Districts



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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



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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

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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.

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Generally Unreasonable Local Laws

- Site plan review, special use permits or non-conforming use requirements
- Height restrictions and excessive setbacks from buildings and property lines
- Long Environmental Assessment Form (EAF)
 - Designated Type II actions & do not require preparation of EAF and are not subject SEQR
- Visual impact assessments

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Reasonable Local Laws

- Model streamlined site plan review process
 - Shorter Time Period
 - Less Submission Requirements
- Building Permit
 - Requirements for local building permits and certificates of occupancy to ensure that health and safety requirements are met are also generally not unreasonably restrictive.

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Recommended Process for Review

- Sketch of the parcel on a location map (e.g., tax map) showing boundaries and existing features
- Show the proposed location and arrangement on the site
- Copies of plans or drawings prepared by the manufacturer
- Provide a description of the project and a narrative of the intended use
- A legible electrical diagram showing all major system components

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Agricultural District Resources

Agricultural Districts Website

<http://www.agriculture.ny.gov/ap/aqservices/agdistricts.html>

Guideline for Review of Local Zoning and Planning Laws

<http://www.agriculture.ny.gov/ap/aqservices/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/aqservices/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

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Review by Additional Local Boards



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Example



SES exempt from design review if:

- On 1- or 2-family structures w/o variance
- Rated capacity ≤ 12 kW
- Mounted parallel to roof or with minimal tilt

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Review by Additional Local Boards



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Example: Historic Standards

Solar in Historic Districts or Treatment of individual historic properties

- Solar panels and BIPV systems are permitted by right on accessory structures that do not contribute to the historic significance of the site.
- Solar panels shall not alter a historic site's character defining features.
- All modifications to site must be reversible to reveal the original appearance of site.
- Exposed solar energy equipment must be compatible with the underlying structure.
 - Panels shall be placed flush to the roof's surface
 - BIPV shall complement the styles and materials of the building.
- The issuance of a Certificate of Appropriateness is required by a historic review board for ground-mounted systems, BIPV, exterior improvements to all historic structures.
 - Preference given to solar panels placed on new construction or additions.
 - Ground-mounted systems shall be screened from the public right of way by fencing or vegetation

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Resource: APA's Solar Planning & Zoning Data Search

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Available Training Topics

Creating and Implementing Your Solarize Campaign
 Expanding Commercial Solar With a PACE Program
 Introduction to Shared Solar
 Introduction to Solar Policy Workshop
 Land Use Planning for Solar Energy
 Safety and Fire Considerations for Solar PV
 Solar Procurement for Local Governments
 Solar PV for Engineers and Architects
 Solar PV Permitting and Inspection Methods
 Streamlining Solar Permitting
 Zoning for Solar Energy

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

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Resources: NY-Sun PV Trainers Network



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

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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>

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NY State Solar Guidebook

Includes resources on:

- Land Use Planning and Solar
- Land Lease Considerations for Solar
- Agricultural Areas and Solar
- Developing and Reviewing Zoning Ordinance
- Solar Permitting
- Real Property Tax Law Section 487
- Decommissioning Solar
- List of other resources including webinars and online guides

Available at: nysenrda.ny.gov/solarguidebook

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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@nysenrda.ny.gov for assistance navigating the program.

<http://www.nysenrda.ny.gov/All-Programs/Programs/Clean-Energy-Communities>

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Clean Energy Communities Program

Ten Eligible 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.

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

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NY-Sun



Thank You!

Contact us:
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