



New York Solar Summit

Jeff Irvine, Lead NYC Solar Ombudsman

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Sustainable CUNY



Sustainable CUNY Conserves



NYSolar Smart



Smart DG Hub



**Modeling a
CUNY
transformation**

**Removing the
barriers to wide-
scale solar
adoption in NY**

**Developing a
strategic pathway
for resilient
Distributed
Generation**

NYSolar Smart Focus Areas



Solar Infrastructure

- Permitting
- Zoning
- Grid Analysis
- Policy Support
- Installer Roundtable



Mapping the Way

- One stop Portal
- Solar Maps
- Data Analytics
- Roadmaps



Accessing Solar

- Group Purchasing
- Community Shared Solar
- Education
- NY Solar Summit



Resiliency

- Smart DG Hub
- Solar-plus-storage
- Critical Facility Support

NYSolar Smart Board Members & RSC II Partners



The City University of New York
NYSERDA

New York Power Authority

ACE NY

Aeon Solar

Alliance for Clean Energy NY

Assoc. of Towns of the State of NY

Central Hudson

Central NY Regional Planning

Consolidated Edison

CUNY Ventures, Inc.

DCAS

Empire State Development

Fire Department NY

GE Global Research

Hatch Engineering

IBEW

IBM

Long Island Power Authority

Meister Consulting

Mercury Solar

Monolith Solar

National Grid

Natural Resources Defense Council

NY Conference of Mayors

NY Green Bank

NYC Department of Buildings

NYC Dept. of Citywide Planning

NYC EDC

NYC Mayor's Office

NYC OEM

NYS Business Council

NYS Education Department

NYSEG

NYSEIA

OnForce Solar

Pace University

Pratt

Solar Energy Systems

Solar One

State University of NY

Sun Edison

SWEAC

The Solar Energy Consortium

Vote Solar

Westchester County

City of Albany

City of Ithaca

City of Poughkeepsie

City of Rochester

City of Schenectady

City of Syracuse

City of White Plains

City of Yonkers

New York City

Town of Clifton Park

Town of Hempstead

Town of Huntington

Town of Red Hook

Town of Southampton

Town of Warwick

Village of Warwick

\$ Solar Energy = \$ Traditional Energy

Strategy

Reduce soft costs

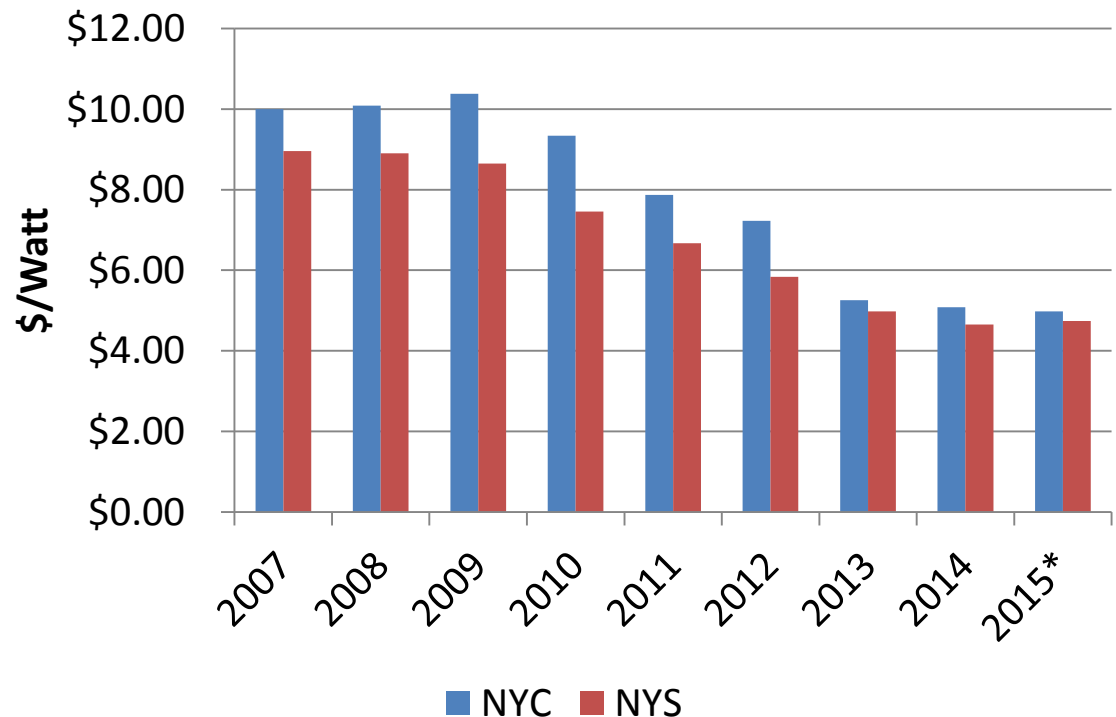
64 %
of the total
residential
installed
system price

- Customer Acquisition
- Financing & Contracting
- Permitting & Inspection
- Interconnection
- Installation & Performance
- Operations & Maintenance

Sustainable CUNY Focus →

Declining Incentives to
Stimulate the Market

Weighted Avg. Installed Cost



NYSolar Smart Working Groups

NYS Permitting and Interconnection

- NYSERDA
- NYPA
- PSEG-LI
- NYSED
- Hatch Engineering
- Hempstead
- Red Hook
- Town of Warwick
- Rochester
- Yonkers
- Sustainable CUNY

NYS Net-metering and Interconnection Standards

- Con Edison
- Central Hudson
- National Grid
- PSEG-Long Island
- NYPA
- NYSEG
- Sustainable CUNY

NYS Financing Options

- NY Green Bank
- NYSERDA
- NYPA
- Empire State Development
- NYC Energy Effcy Corp
- Energize NY
- Westchester Solar
- Huntington
- Smart Power
- Sustainable CUNY

NYS Planning and Zoning

- Albany
- Clifton Park
- Hempstead
- Ithaca
- City of Poughkeepsie
- Rochester
- Schenectady
- Southampton
- Syracuse
- Village of Warwick
- White Plains
- PACE Land Use Law Cntr
- Sustainable CUNY

NYC Permitting and Interconnection

- NYC Department of Buildings
- Con Edison
- Fire Department of NY
- NYSERDA
- Sustainable CUNY

NYC Financing Options

- NYC Mayor's Office
- NYC EDC
- GRID Alternatives
- NYSERDA
- Solar One
- Sustainable CUNY

NYS Permitting & Interconnection Working Group



Accomplishments:

1. NYS Unified Solar Permit

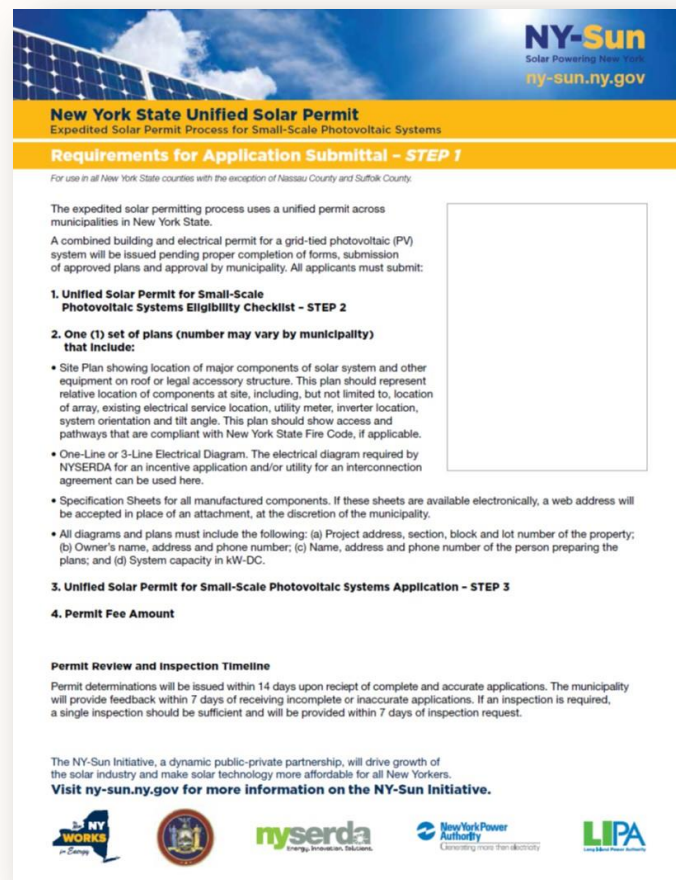
- Adoptees: 80 jurisdictions
 - Population: more than 3.2 million
- In process: 30+ jurisdictions

2. Jurisdictional Guide to Permit Adoption

3. Recommendations for Standard Small Commercial Permit

Next Steps:

1. NYS Unified Small Commercial Permit
2. Permitting Best Practices Guide
3. Interactive Permitting Guide for Partner Jurisdictions



NYC Permitting & Interconnection Working Group






Accomplishments:

1. NYC Unified Solar Filing Checklist
2. Survey of NYC Solar Installers
3. Streamlined permitting framework
4. Assistance with increasing permit application volume
5. Con Ed net metering educational video
6. Fire Code 512.2: Allowance of hinge mechanism & authorized obstructions

Next Steps:

1. Interactive solar permitting guide
2. Implementation of permit streamlining
3. Example forms and plans



New York City Solar PV Standardized Checklist of Filing Materials

NYSolar Smart is a strategic effort led by Sustainable CUNY, of the City University of New York (CUNY), which is supported by the U.S. Department of Energy SunShot Initiative Rooftop Solar Challenge as well as the NY-Sun Initiative. Under these initiatives, Sustainable CUNY worked with the Department of Buildings (DOB), Fire Department (FDNY), Con Edison, and New York State Energy Research and Development Authority (NYSERDA) to provide this comprehensive list of forms and materials that solar PV installers will need to submit in order to navigate the permitting and interconnection processes in NYC.

Each item on the checklist is listed according to the agency that requires it. The left column of each table provides the item required for filing, while the middle "Helpful Tips" column provides additional details. The "Signed By" column lists who must sign each form. Not all forms are required for every project, and there are likely additional forms required that are project specific. Some exceptions are noted in the header of the left column of each table. Where available, a link is provided to the agency page with an online version of the form.

NYC Department of Buildings

The DOB segment below includes checklists for four processes: (1) Construction Permit, required before beginning installation, (2) Construction Sign-off, required following the completion of the installation, (3) Electrical Permit, required before beginning installation, and (4) Licensing Requirements necessary to operate in New York City. In general, filing can be done in person at a DOB Borough Office or online through the [NYC Development Hub](#). Projects filing for the Property Tax Abatement (PTA) must be filed through the Development Hub Professional Certification of Objections process.

DOB Construction Permit Checklist		
Required For Most Projects	Helpful Tips	Signed By
PW1 – Plan/Work Approval	Specific project zoning information, block, and lot numbers needed to complete this form can be found on Zola (Zoning and Land Use Map) or BIS. If e-filing, it is automatically generated and the AOS1 is signed instead of the PW1. PW1 User Guide .	Owner & PE/RA (NA if e-filing, use AOS1)
PW2 – Work Permit Application	Can submit with the PW1 with all other plan application documents or after PW1 is approved and you want the work permit issued. Usually, the contractor signs the PW2 and it is notarized. If the PE/RA signs, they do not need notarization but they do need insurances.	Contractor & Notary or PE/RA
PW3 – Cost Estimate	Application fees are based on construction and system cost. Item 7 does not need to be notarized until the Final PW3 during construction-sign off.	Owner & PE/RA
TR1 – Technical Report: Statement of Responsibility	Complete sections: "Structural Stability", "Fire Stop/Resistant", "Energy Progress Inspections", and "Final." Use 3B column. Must complete Special Inspection Agency Number field, which is a certification the PE/RA may have.	PE/RA, may need Owner
TR8 – Technical Report: Statement of Responsibility	Typically "Air Sealing and Insulation – Visual" section needs to be completed for solar. Use 3B column.	PE/RA
EF1 – E-filing Job Application Cover Sheet	Generated through e-filing system	None
Asbestos Abatement Form	Asbestos documents must be submitted to DEP (Dept. of Environmental Protection) through ARTS by Certified Asbestos Investigators. Once approval is received, the document with a DEP seal must be submitted to DOB. • ACP7/ACP21 - There is asbestos containing material (ACM) where construction work will occur. "An asbestos project is defined as any form of work that will disturb more than 25 linear feet or more than 10 square feet of asbestos containing material." A licensed Asbestos Abatement Handler must be hired to remediate it. The ACP7 is submitted to DEP through ARTS. After removal, DEP will issue an ACP21 completion letter which will be submitted to DOB. • ACPS - Minor Project-asbestos could be on the property but work does not disturb more than 25 linear feet or 10 sq. feet (most common)	Certified Asbestos Investigator

Updated November 2014

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NYS Permitting & Interconnection Working Group



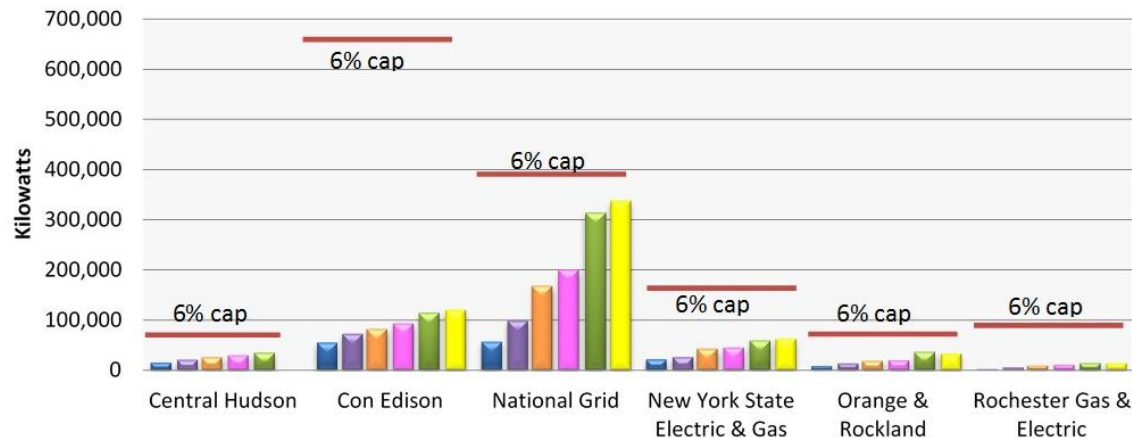
Accomplishments:

1. **Net Metering Analysis and Capacity Tracker**
 - Net metering caps raised from 3% to 6% in December 2014
2. Residential Net Metering FAQ
3. Commercial Net Metering FAQ
4. NY Grid Operators Meeting

Next Steps:

1. Residential Net Metering Videocast
2. Commercial Net Metering Videocast
3. Exploration of statewide “Grid Ready”

Figure 4: Historical Growth Trend



NYS Planning & Zoning Working Group

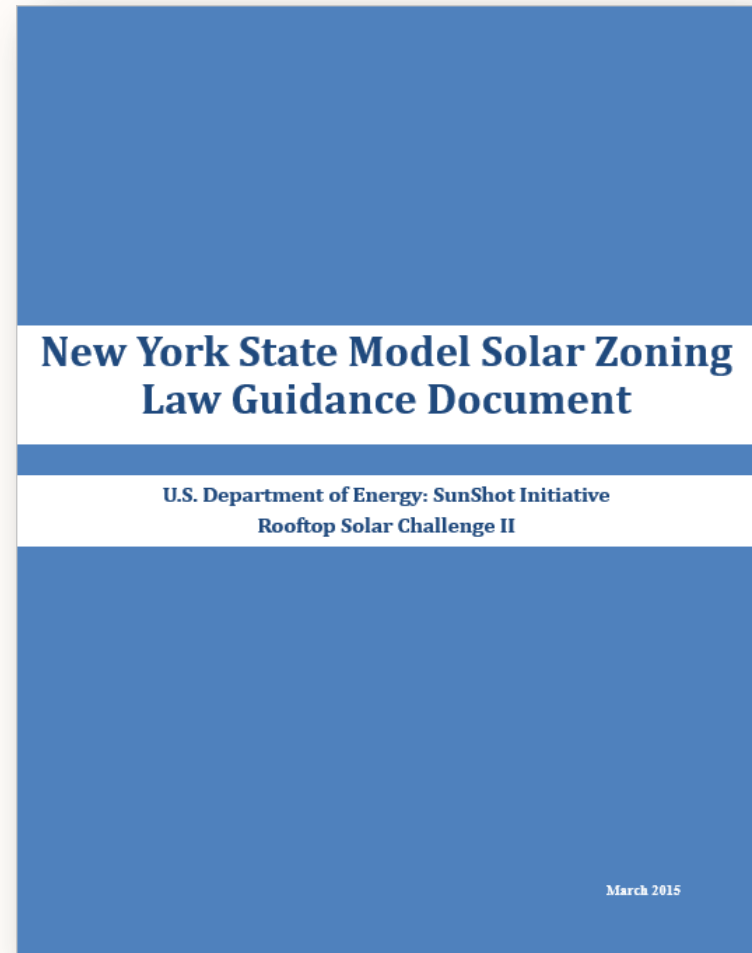


Accomplishments:

1. Development of NYS Model Solar Zoning Law
 - Model Law Undergoing Final Reviews
2. **NYS Model Solar Zoning Law Guidance Document**

Next Steps:

1. Finalize and distribute NYS Model Solar Zoning Law
2. Assist adoption of NYS Model Solar Zoning Law
3. Develop Historic District guidance



NYS Financing Options Working Group



Accomplishments:

1. **Solarize Huntington**
 - 100+ sign ups
 - Sign up through Sept. 10
2. Guide of NYS Solar Financing Options and Services

Next Steps:

1. Additional solarize program
2. NYS Multifamily Solar Guide

Connect with Us:

www.solarizehuntington.com

www.facebook.com/solarizehuntington



NYC Financing Options Working Group



Accomplishments:

1. **Solarize Brooklyn CB6**
 - 45+ sign ups
 - Sign up through Sept. 30
2. NYC Multifamily Solar Guide
3. NYC Solar PTA increased and extended through 2017

Next Steps:

1. Additional solarize program
2. NYS Multifamily Solar Guide

Connect with Us:

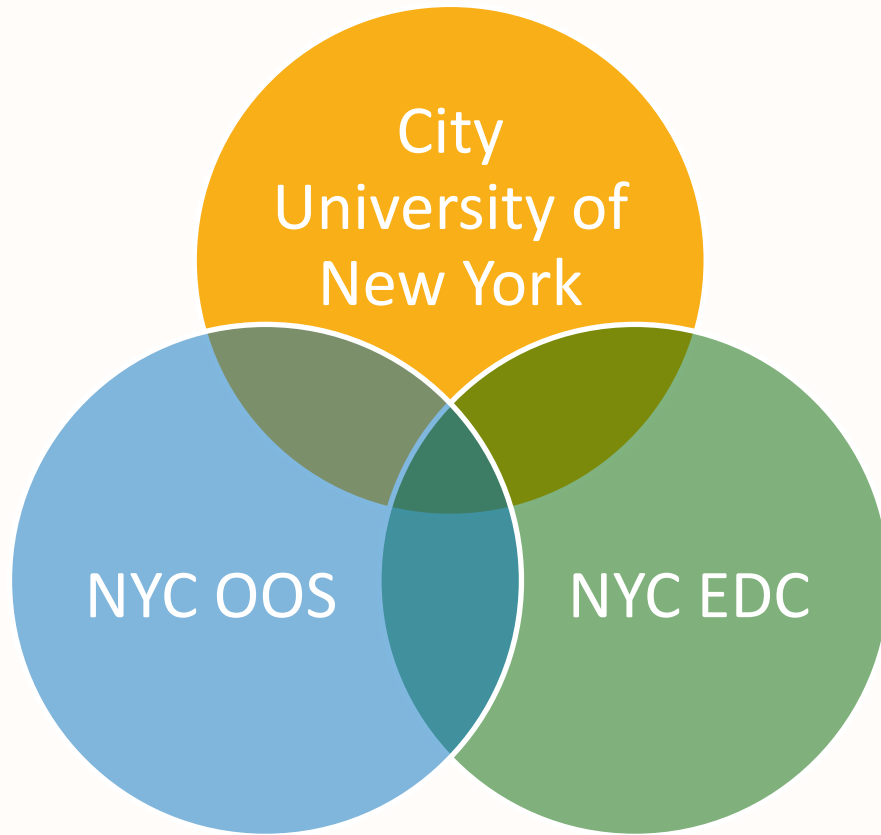
www.solarizebrooklyncb6.com

www.facebook.com/solarizebrooklyncb6

www.twitter.com/solarizecb6



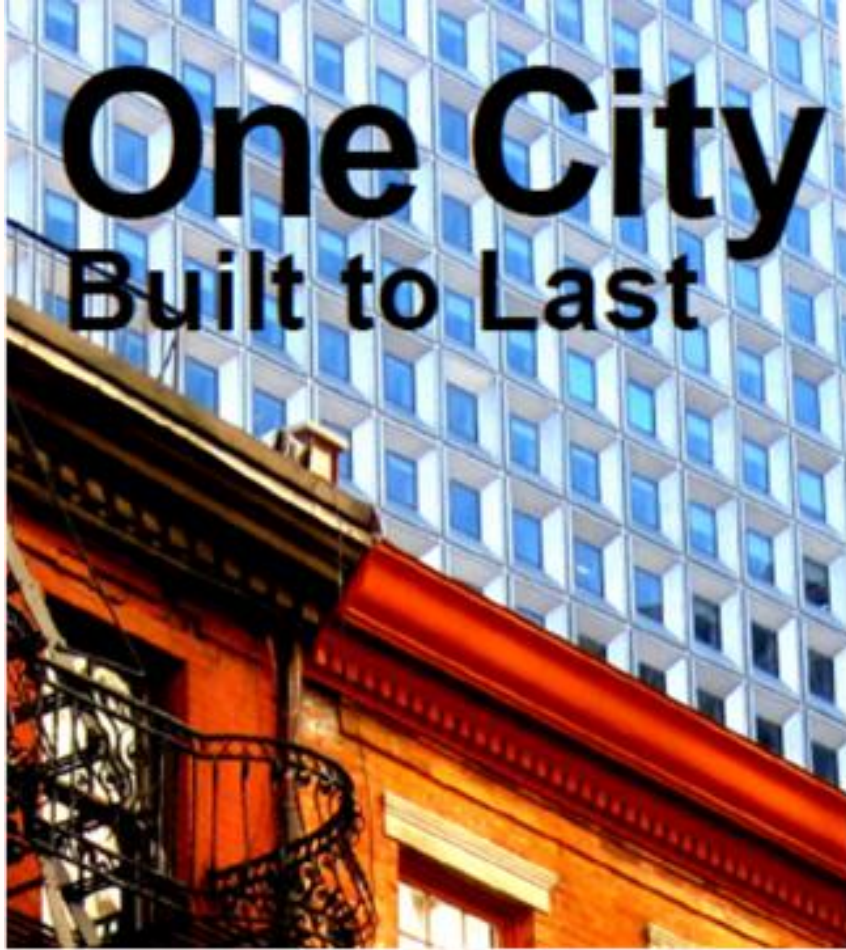
One City NYC Solar Partnership



2015 Expansion & Goals

- Providing assistance to streamline permitting requirements for solar installations
- Coordinate solar projects between City-owned properties and other entities
- Connect installers and their customers to financing and incentive opportunities
- Providing installers, businesses, and residents with educational resources to help accelerate investments in solar.

One City Solar Programs



Through the expansion of the
NYC Solar Partnership:

1. Continue to Reduce Costs of Installing Solar in NYC
2. Promote Resilient Community Shared Solar
3. Promote Group Purchasing of Solar Power (Solarize)



A group purchasing program that has teamed up with **designated employers**.

NYSolar Smart SunShares RFP Posted May 11

Downstate SunShares

PepsiCo of White
Plains

City University of
New York

Capital District SunShares

City of Albany

County of Albany

NYS Department of
Environmental
Conservation

Partners:



VOTE SOLAR

Installer Training Workshops and Webinars



7 Training Sessions Held:

1. **NYC** - April 2014
2. **Lower Hudson Valley** - July 2014
3. **Long Island** - October 2014
4. **Capital Region** - November 2014
5. **Central Hudson** - March 2015
6. **NYC** - March, 2015
7. **Long Island** - March 2015



More than 475 total attendees

5 Additional Trainings in Next 9 Months

Email: nysolar@cuny.edu for more info
or join NY/NYC Installer Roundtable

Solar Ombudsman Program



Sustainable CUNY Ombudsmen Team:

New York City:

1. Jeff Irvine
2. Lauren Fernandez

New York State:

1. Adam Schnell
2. Justin Strachan
3. Erica Helson
4. Alison Silverman

Services:

1. Technical Assistance for municipalities and code officials
2. Resolve project-specific issues for installers in permitting & interconnection process
3. Inform installers and industry professionals of policy changes and opportunities via the NYC & NYS Installer Roundtables
4. Education for installers on permitting, interconnection, and other processes
5. Answer questions from public about solar and connect to resources
6. Coordination between agencies and industry

Solar Ombudsman Program



Resolving issues affecting the NYC solar market:

Challenge: NYC Zoning Codes require specific space for backyards. If a roof extended into the required backyard area, solar panels were not allowed on that portion of the roof.

Solution:

- Solar Ombudsman Lauren Fernandez gathered a list of projects impacted by the rule via the NYC Installer Roundtable
- Coordinated with NYC Department of Buildings Development Hub and Department of City Planning
- Development Hub now accepts solar applications with panels in required yard space, so long as panels do not extend over the existing roof line

Solar Ombudsman Program



Resolving issues affecting the NYS solar market:

Challenge: The EPA asked CUNY's Solar Ombudsmen to develop a workshop covering solar plus battery storage for the annual Indian Nation Leaders Meeting held on Shinnecock Indian Nation Territory on Long Island.

Solution:

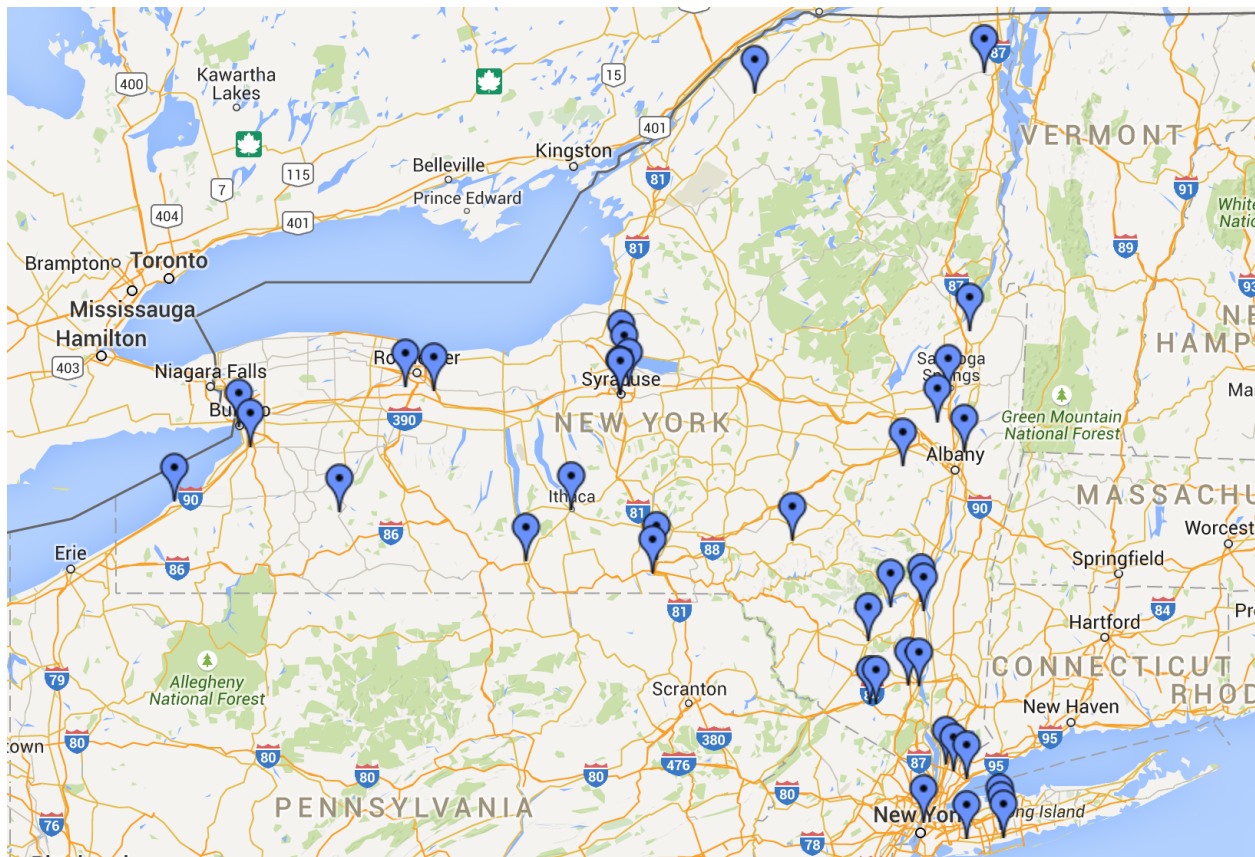
- Leveraged the NY-Sun PV Trainer's Network, and Solar Ombudsmen Justin Strachan and Erica Helson gave the training for 30 attendees from 8 Native American nations





NY-Sun

NY-Sun PV Trainers Network



- 94 Trainings Conducted
- 2,900 People Trained

PVTN

works directly with
Elected Officials
Administrators
Planners
Code Officials
Inspectors
First Responders
Village Engineers



Available Trainings:

- Developing a Solar Strategy
- Expanding Commercial Solar With a PACE Program
- Introduction to Solar Policy Workshop
- Introduction to Solarize: Stimulating Local Solar Market Growth
- 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

NYSOLAR SMART



Thank you

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