

# New York



**NYSolar Smart Final  
Report**

**U.S. Department of  
Energy  
SunShot Initiative**

**Rooftop Solar  
Challenge II**

*Sustainable CUNY*

*City University of New York*

*December 2016*

### Rooftop Solar Challenge II NYSolar Smart Lead

In 2006 Sustainable CUNY of the City University of New York established a collaborative platform aimed at implementing solutions to lower the soft costs of installing solar in New York. Through NYSolar Smart, Sustainable CUNY led the implementation of Rooftop Solar Challenge II (RSC II), serving as an objective and trusted third party, in partnership with over 90 collaborators representing NYS jurisdictions, utility companies and industry stakeholders.

#### RSC II Jurisdictional Partners



**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**

**Population Engaged:  
10.2 Million**

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## New York Solar Snapshot


### New York City 2013 to 2016

<b>Solar Capacity</b> grew from 23.2 MW to 87.8 MW	+ <b>378%</b>
<b>Economic Development</b> grew from \$150 million to \$450 million	+ <b>300%</b>
<b>Solar Installations</b> grew from 1,040 to 6,557	+ <b>630%</b>
<b>Solar Jobs</b> grew from approximately 1,376 to 2,724	+ <b>158%</b>

 **Key Red Tape Reduction:** Decreased permitting review time from 8 weeks to 1 day

### New York State 2013-2016

<b>Solar Capacity</b> grew from 263 MW to 814 MW	+ <b>310%</b>
<b>Economic Development</b> grew from \$1.5 billion to \$3.9 billion	+ <b>261%</b>
<b>Solar Installations</b> grew from 17,214 to 62,626	+ <b>364%</b>
<b>Solar Jobs</b> grew from 5,210 to 8,250	+ <b>158%</b>

 **Key Red Tape Reduction:** 134 Jurisdictions adopted a Unified Solar Permit and an interactive Permitting Guide was created for NYC and 6 other jurisdictions. 11,907,455 New Yorkers now have access to a streamlined permit or permitting process.

The U.S. Department of Energy SunShot Initiative Rooftop Solar Challenge II supported Sustainable CUNY's NYSolar Smart program from 2013 through 2016 to implement measures designed to address the soft costs of installing solar in New York State. The NYSolar Smart program initiated in NYC with the support of Rooftop Solar Challenge I from 2011-2013, and was additionally funded by the State of New York.



## Solar Challenges Pre-RSC II

One of the biggest challenges America has faced in advancing solar is the vast diversity of installation processes across the nation's 18,000 local jurisdictions that have authority over installations. New York is no exception with 1550 jurisdictions, and while reducing stratification is key, flexibility is also an important component in a home rule state like New York. At the end of the day, it's about establishing relationships with a broad demographic of people: from the businesswoman on Wall Street to the building inspector in a small town in Upstate New York to the utility companies charged with keeping the lights on.

## NYSolar Smart RSC II Objective

Create a toolkit of policies, programs, and resources that NY jurisdictions can implement to meet their specific needs. NYSolar Smart met these objectives through collaboration with end-users in a Working Group (WG) format and the creation and implementation of information technology (IT) tools. The intended result is to increase transparency and uniformity in NYS solar markets leading to a reduction of stratification and soft costs, triggering the growth of solar.

## Methodology

### Reduce Red Tape

Upon the project inception in October of 2013, Sustainable CUNY assembled a team of NY Solar Ombudsmen and IT professionals, and formed six influential Working Groups consisting of over 90 [active members](#) that represented more than half the population of New York. Sustainable CUNY developed a "Project-Based Change Management" platform that enabled the end users in this large scale infrastructure project to take ownership of the outcomes by identifying and aligning themselves with the changes needed in order to develop the model processes that can encourage the growth of solar and its accompanying jobs.

NYS Permitting and Interconnection	NYS Net-metering and Interconnection Standards	NYS Financing Options	NYS Planning and Zoning	NYC Permitting and Interconnection	NYC Financing Options
<ul style="list-style-type: none"><li>• NYSERDA</li><li>• NYPA</li><li>• PSEG-LI</li><li>• NYSED</li><li>• Hatch Engineering</li><li>• Hempstead</li><li>• Red Hook</li><li>• Town of Warwick</li><li>• Rochester</li><li>• Yonkers</li><li>• Sustainable CUNY</li></ul>	<ul style="list-style-type: none"><li>• Con Edison</li><li>• Central Hudson</li><li>• National Grid</li><li>• PSEG-Long Island</li><li>• NYPA</li><li>• NYSEG</li><li>• Sustainable CUNY</li></ul>	<ul style="list-style-type: none"><li>• NY Green Bank</li><li>• NYSERDA</li><li>• NYPA</li><li>• Empire State Development</li><li>• NYC Energy Effcy Corp</li><li>• Energize NY</li><li>• Westchester Solar</li><li>• Huntington</li><li>• Smart Power</li><li>• Sustainable CUNY</li></ul>	<ul style="list-style-type: none"><li>• Albany</li><li>• Clifton Park</li><li>• Hempstead</li><li>• Ithaca</li><li>• City of Poughkeepsie</li><li>• Rochester</li><li>• Schenectady</li><li>• Southampton</li><li>• Syracuse</li><li>• Village of Warwick</li><li>• White Plains</li><li>• PACE Land Use Law Cntr</li><li>• Sustainable CUNY</li></ul>	<ul style="list-style-type: none"><li>• NYC Department of Buildings</li><li>• Con Edison</li><li>• Fire Department of NY</li><li>• NYSERDA</li><li>• Sustainable CUNY</li></ul>	<ul style="list-style-type: none"><li>• NYC Mayor's Office</li><li>• NYC EDC</li><li>• GRID Alternatives</li><li>• NYSERDA</li><li>• Solar One</li><li>• Sustainable CUNY</li></ul>



## Key Resources Developed

Supported by NY Solar Ombudsmen Across All Sectors			
Permitting and Interconnection	Net Metering	Financing Options	Outreach and Training
<ul style="list-style-type: none"> <li>-NYC Solar Ombudsmen at DOB</li> <li>-Streamlined Interagency Processes</li> <li>-NYC Solar filing checklist</li> <li>-NYC Permitting Guide</li> <li>-NYC Interactive Guide (NY Solar Map)</li> <li>-NYC DOB Professional Certification</li> <li>-Establishment of NYC DOB Solar Advocate</li> <li>-NYS Unified Solar Permit</li> <li>-NYS Permit Adoption Guidance</li> </ul>	<ul style="list-style-type: none"> <li>- NYS Net Metering Analysis &amp; Capacity Tracker</li> <li>-NYS Net Metering FAQ</li> <li>-Net Metering 101 video for Commercial and Residential</li> </ul>	<ul style="list-style-type: none"> <li>-NYC Multifamily Solar Guide</li> <li>-NYC Employee Solarize Pilot-SunShares CUNY/Pepsico</li> <li>-NYC Solarize Pilot Brooklyn Community Board 6</li> </ul>	<ul style="list-style-type: none"> <li>- NYC Solar Installer Roundtable (7 Trainings/Webinars)</li> <li>-NYC Interagency Training (2 trainings)</li> <li>-NYS Solar Installer Roundtable (10 Trainings/Webinars)</li> <li>-RSC II Program leveraged for NYS PVTN (55 trainings/podcasts/webinars, 40 TA requests)</li> <li>-Monthly NYSolar Smart Newsletter (19K)</li> <li>-Annual NY Solar Summit</li> <li>-Presented at over 35 conferences, summits, events.</li> </ul>
	<b>Planning and Zoning</b>	<ul style="list-style-type: none"> <li>-NYS Multifamily Solar Guide</li> <li>-NYS Financing Options Guide</li> <li>-NYS RFP Guidance for Solarize</li> <li>-NYS Employee Solarize Pilot-SunShares Capital District</li> <li>-NYS Solarize Pilot Huntington</li> </ul>	
	<ul style="list-style-type: none"> <li>NYS Model Solar Energy Law (Zoning) and toolkit</li> </ul>		

The above documents are available on the NY Solar Map and Portal under [Solar Resources](#) and resources for contractors and installers are under [Going Solar for Contractors](#).



## IT Resources

### NY Solar Map and Portal

Sustainable CUNY, with support from the SunShot Initiative and the NYSun Initiative built the NY Solar Map and Portal. The Map allows New Yorkers across the state to realize their solar potential with detailed technical and economic calculations and the ability to connect with accredited solar

installers. Distinguished from other solar maps, the NY Solar Map and Portal provides consumers with localized information, market statistics and flexible analytics. Consumers, installers and municipal leaders can also access information on resources and programs available in their local community through the 'In Your Area' feature. This tool connects consumers to local 'solarize' group purchasing campaigns and community shared solar opportunities, which are open to renters, investors and those with non-viable roofs.



### Key Map Features Include:

- ✓ NY Solar Calculator with numerous customizable inputs; and the ability for integration of future advanced tools, such as the Grid Ready Project and the Smart DG Hub Resilient Solar Project
- ✓ Interactive Permitting Guides for Yonkers, NYC, Ithaca, Village of Warwick, Town of Warwick, Red Hook, Clifton Park and Huntington
- ✓ Solar Connect- connecting installers and consumers
- ✓ Map Layers, including county and city statistics for installed capacity, cost per watt, number of systems installed, and installation queue; utility service areas; solarize group purchasing campaigns; NYC City-owned installations; NYC energy storage projects; utility strategic zones, incentive levels, unified solar permit adopting jurisdictions, statewide solar installations, and radiation



## Key Portal Features Include:



✓ One stop information for consumers, contractors, municipalities and not-for-profits on Going Solar, Installing Solar, Financing Solar, Solar+Storage

✓ Extensive Resources section that includes all material developed under RSC II plus video instructions, FAQ's and news.

## Objective Data Analysis

- Solar Snapshots for Jurisdictional Partners
- Analysis for NYC Property Tax Abatement and extension
- Analysis for Net Metering transparency and eventually cap expansion

## Programs Developed and Expanded as a Direct Result of RSC II

**Smart DG HUB:** Leveraged work to successfully develop and now implement the NYSolar Smart DG Hub-Resilient Solar Project supported by the U.S. Department of Energy SunShot Initiative.

**One City Built to Last Solar Program:** In 2014, NYC Mayor Bill de Blasio expanded and officially codified the NYC Solar Partnership that CUNY developed under RSC II and other U.S. DOE programs. *One City: Built to Last* permanently funded two NYC Solar Ombudsmen and a Solar Partnership manager to coordinate and implement initiatives with the Mayor's Office of Sustainability and NYC Economic Development Corporation. The Partnership, led by CUNY, is now tasked with running up to 8 Solarize NYC campaigns per year, developing a robust Shared Solar NYC program to expand solar access, and continuing to work with NYC agencies to reduce soft costs in pursuit of the country's largest mayoral solar goal.

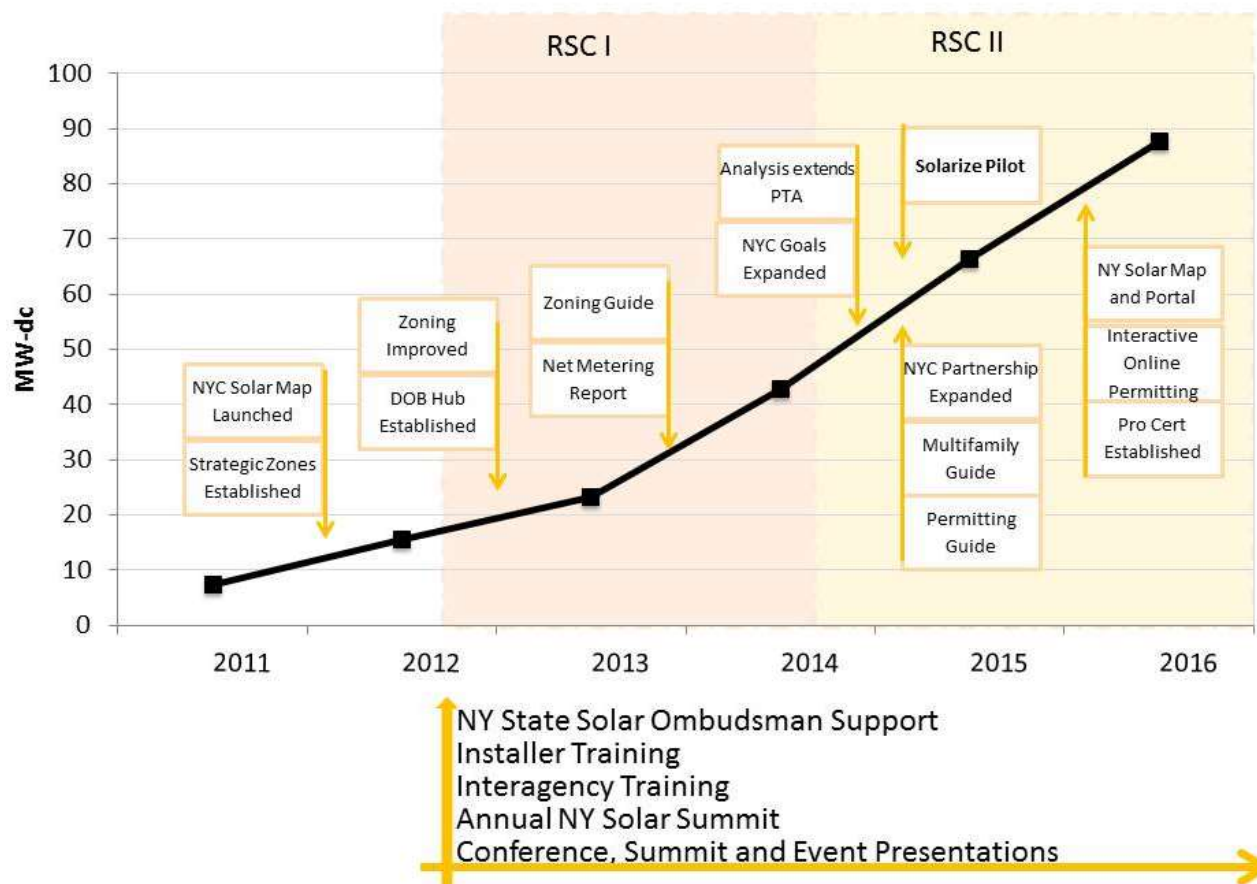
**Influenced NYC Mayoral Solar Goals:** In 2014: 100 MW of solar on City owned buildings and 250 MW of solar in the private sector over the next decade. Updated in 2016: 1,000 MW of Solar by 2030 and 100 MWh of solar+storage by 2020, the first city storage goal.

**NYC Grid Ready Project** is working to reduce technical and financial barriers for large-scale PV projects in NYC by working with NREL and Con Edison to analyze the technical risk factors for grid interconnection, and is creating public resources to allow developers to make informed decisions regarding project location and cost.



## RSC NYSolar Smart NYC Impacts

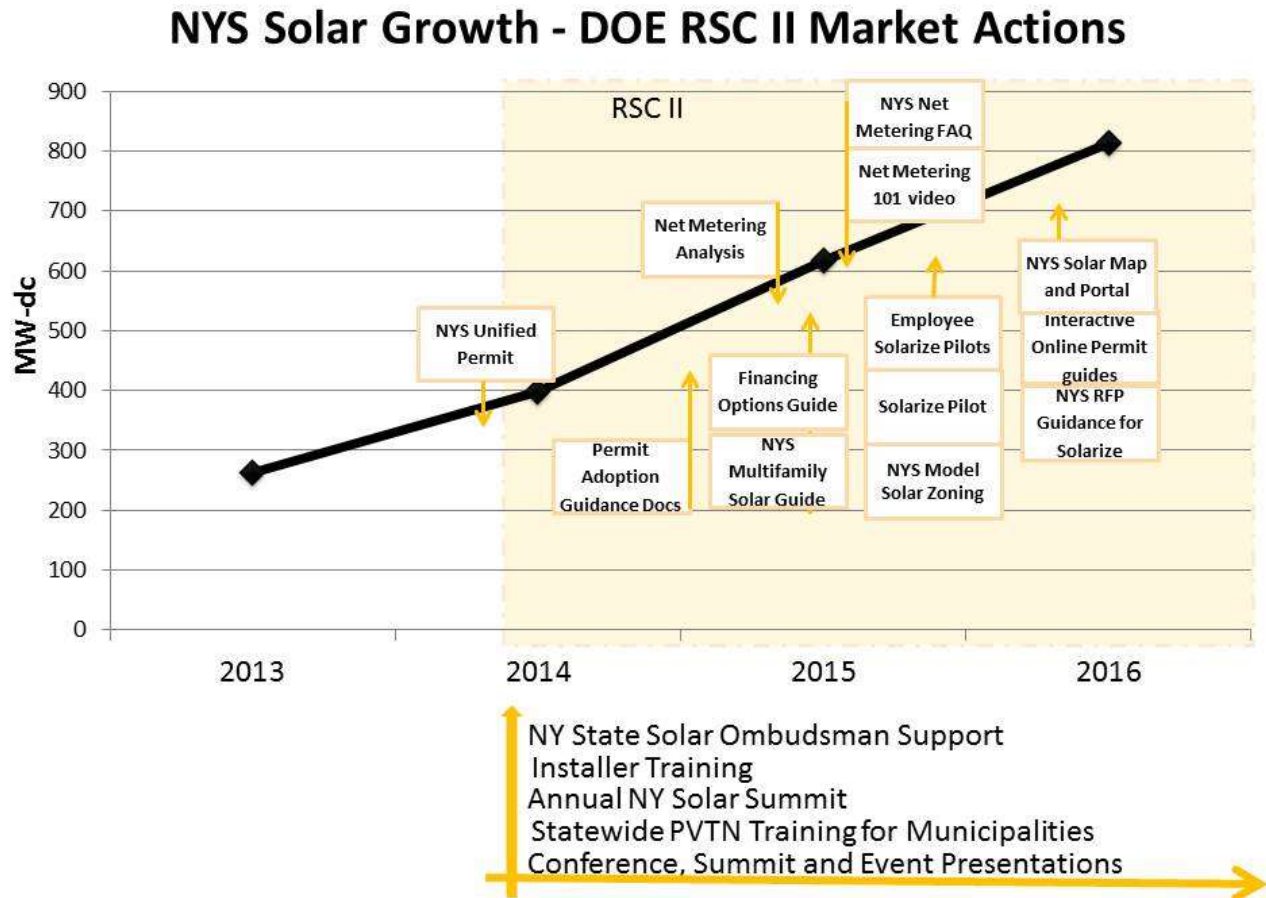
### NYC Solar Growth - DOE RSC Market Actions



**NYC Property Tax Abatement (PTA):** CUNY performed analysis that found a price premium for installing solar in NYC relative to the surrounding metro area, due to higher labor costs and more complex regulatory requirements. This analysis helped lead to the PTA in NYC that mitigated this price premium for consumers. In 2014 and 2016, under RSC II, CUNY provided updated analysis that led to an extension of the PTA through 2019, which also raised the abatement from 10% to 20% of installed costs. The PTA, and CUNY's work under RSC II to streamline regulatory requirements, is credited with keeping the NYC market competitive with the rest of the state.

**Pro Cert:** CUNY slashed NYC solar permitting times from more than 8 weeks to less than a day by working collaboratively with the Department of Buildings (DOB) to allow most small-scale PV projects (<10kw) to receive a permit immediately, without a plan review, if the Registered Architect and Professional Engineer certifies that the plans are in full compliance with all applicable regulations. This expedited "Professional Certification" process now covers 90% of the solar applications received by DOB. Pro Cert has freed up DOB reviewers to focus on applications for larger, more complex installations, leading to an expedited timeline for all applicants. This success was the culmination of years of collaborative work between CUNY and NYC through the RSC and other DOE grants, including assigning a NYC Solar Ombudsman to sit at DOB to liaise between agency staff and solar installers and providing regular training.





As CUNY reduced barriers during RSC II, it became clear to State leaders that New York had an appetite for solar, and that solar produced good paying local jobs. State and utility leaders spoke at the annual NY Solar Summit and conferred often with CUNY and our partners and made state-level changes that continue to help grow the NY Solar Market, most notably:

**MW Block Structure** | The NY-Sun Incentive Program for Residential and Nonresidential solar based on specific regions, now including Long Island and NYPA, and targets that provide transparency for contractors and their customers was enacted in 2015.

**NY-Sun Community Distributed Generation or 'Shared Renewables' program** | NY's Public Service Commission ruled in 2015 that these programs are now allowed.

**K-Solar** | A joint project of the New York Power Authority (NYPA) and NYSEERDA provides NYS school districts, at NO COST and NO OBLIGATION, with the tools and expertise to bring solar energy to their facilities and reduce their energy costs

**NY-Sun PVTN** | CUNY helped create this state-wide program, that together with Meister Consultants and multiple partners, provides education, training and technical assistance for local governments and jurisdictions, including first responders.



## Case Studies

### PERMITTING

#### FIRE CODE CASE STUDY

*"We have the possibility of revisiting upwards of 130 projects that could not move forward that can now move forward. This change is huge." – SunRun*



#### CHALLENGE

FDNY pitched roof threshold of 20 degrees applied 6' clear paths to many buildings that did not need this to ensure fire safety and limited solar project viability

#### SOLUTION

Worked with FDNY to reduce threshold from 20 degrees to 9.5 degrees. This follows IFC best practices and allows for more solar while ensuring fire safety

#### IMPACT

Estimated 5,000 buildings now subject to less stringent Fire Code setback requirements, opening up 20MW of solar potential

### PERMITTING

#### CASE STUDY

*"...as the number of solar applications at the DOB have increased, the number of solar-related questions we receive has been climbing. CUNY ombudsmen have helped to create resources, respond to inquiries and share important updates with the solar industry." Elizabeth Skowronek, DOB's Borough Commissioner, Development Hub*



#### CHALLENGE

NYC's DOB was seeing applications for solar permits growing exponentially each year, and the agency was receiving an increasing volume of questions.

#### SOLUTION

Sustainable CUNY's Solar Ombudsmen maintain the NYC Solar Installer Roundtable and facilitate channels of communication between the solar industry and DOB. The Ombudsmen educate the industry to reduce the volume of questions received by DOB and streamline processes.

#### IMPACT

Industry has better knowledge of policy changes and updates within DOB, and DOB's plan examiners save time by not having to answer as many questions. There have been 53 discussion topics posted to the NYC Solar Installer Roundtable since 2015

### PERMITTING

#### CASE STUDY

*"Pro Cert reduced the DOB processing waiting time by an average of one and half months, sometimes more. This really helped the entire project to move forward much faster." – Chun Feng, Registered Architect*



#### CHALLENGE

Long queues had built up for solar plan reviews in Fall 2015. Solar projects applying to the Property Tax Abatement (PTA) were required to receive a full plan review from DOB's Development Hub.

#### SOLUTION

Sustainable CUNY worked with DOB to allow certain PTA projects to file with professional certification (Pro Cert) by the PE or RA using Hub Self Service, so the majority of projects do not require a plan review

#### IMPACT

The backlog of solar projects waiting for review has been resolved and projects that still require plan review are being reviewed in 1 day on average, rather than 8+ weeks. Project volume has increased by 35%

The investment from the Department of Energy SunShot Initiative in Sustainable CUNY's NYSolar Smart program was well placed and has demonstrably resulted in establishing a solid solar market in New York with all signs pointing to continued growth. As each barrier was removed or reduced along the way, as resources grew and the decision makers in towns large and small were educated on the value of solar, the market began to incrementally increase. This showed policy makers that a foundation for this energy sector had indeed been established resulting in New York State and New York City goals, targets and

