



**NYSERDA**

# **NY-Sun Annual Performance Report through December 31, 2015**

**Final Report**

**March 2016**

## **NYSERDA's Promise to New Yorkers:**

NYSERDA provides resources, expertise, and objective information so New Yorkers can make confident, informed energy decisions.

### **Mission Statement:**

Advance innovative energy solutions in ways that improve New York's economy and environment.

### **Vision Statement:**

Serve as a catalyst – advancing energy innovation, technology, and investment; transforming New York's economy; and empowering people to choose clean and efficient energy as part of their everyday lives.

# **NY-Sun Annual Performance Report through December 31, 2015**

*Final Report*

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**New York State Energy Research and Development Authority**

Albany, NY

March 2016

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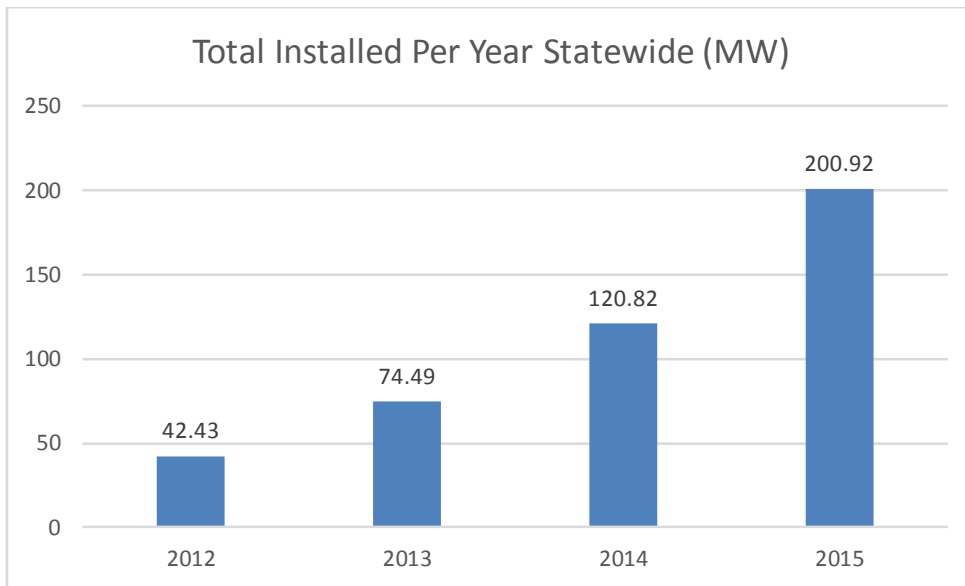
# Summary

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NY-Sun is a \$1 billion initiative to expand solar capacity throughout New York State that uses public funds in a strategic manner to build a self-sustaining solar market. NY-Sun provides financial support for solar electric systems installed by solar installation contractors that have qualified to receive NY-Sun incentives, as well as a comprehensive approach to reducing solar costs and barriers. NY-Sun’s goal is to install 3 gigawatts (GW) of solar electric capacity by 2023 while building a self-sustaining solar industry.

Through the end of 2015, 457 MW of solar have been installed statewide with NYSERDA funding, and an additional 493 MW is in the pipeline. Of the total solar capacity installed in New York State, 138 MW have been installed across residential, commercial and industrial sectors through the NY-Sun initiative in 2014 and 2015, counting toward the 3 GW goal, with an additional 384 MW in the pipeline. The NYSERDA-funded solar capacity installed statewide as of the end of 2015 generates approximately 526,445 MWh of electricity each year, reducing annual carbon dioxide emissions by 149,287 metric tons.

**Figure S-1. Total Solar Electric Capacity Installed in New York State**



# 1 NY-Sun Solar Electric Incentive Program

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NY-Sun uses a declining megawatt block (MW Block) structure to incentivize solar projects. The MW Block design reduces the available incentive by set increments as the solar market reaches predetermined capacity targets. The program design also divides up New York State by region and by market sector, so different parts of the market can accelerate over time as interest increases. This structure allows solar customers to clearly see available incentives, and gives the solar industry the transparency and certainty needed to forecast project economics and attract investment. There are currently 437 solar installation contractors eligible to receive NY-Sun incentives to offset project costs for their customers. The structure is divided into three sectors: residential, small commercial, and commercial/industrial. Visit [ny-sun.ny.gov/For-Installers/Megawatt-Block-Incentive-Dashboard](http://ny-sun.ny.gov/For-Installers/Megawatt-Block-Incentive-Dashboard) for real-time information about incentive levels and block capacity.

## 1.1 Residential and Small Commercial

In 2015, the residential and small commercial (system sizes less than 200 kW) sectors experienced a record number of applications and completed installations. In 2015, a total of 24,700 applications were received by the program. Of these, 10,137 were in the PSEG Long Island service territory, 3,874 were in the Consolidated Edison service territory; 10,667 in the areas served by the State's other investor-owned utilities (IOUs); and 22 were from customers served by the New York Power Authority (NYPA). During the same period, 18,285 projects were installed and interconnected, including projects that submitted applications in prior years. Of these, 7,174 projects were in the PSEG Long Island service territory; 2,448 were in the Consolidated Edison service territory; 8,657 were in areas served by the State's other IOUs; and 6 were for NYPA customers. Approximately 97% of the applications and completed projects were residential, with the rest consisting of small commercial and other nonresidential customers.

Project incentives were allocated according to the MW Block structure. As unbuilt projects were cancelled, previously committed incentive funds were reallocated to the remaining blocks in accordance with the NY-Sun Operating Plan.

Despite the dramatically increased volume, NY-Sun decreased the average processing time for new applications to NY-Sun and implemented several other measures to improve program service. These measures included a consolidated participation agreement for solar contractors, additional resources on the NY-Sun website to assist contractors with common issues and questions, and a streamlined Green Jobs - Green NY Loan process.



In 2016, the Long Island residential market is expected to transition out of the incentive program. At that time, Long Island residential customers will still be able access Green Jobs - Green NY financing and the Affordable Solar incentives for low- and moderate-income (LMI) customers. Interest rates for Green Jobs - Green NY Loans are expected to rise for non-LMI customers statewide in 2016.

## 1.2 Commercial and Industrial

In 2011, New York State began incentivizing large scale customer-sited solar electric systems through a Competitive Bid Program. The competitive bid program had a total of eight funding opportunities with the last competitive solicitation closing in July 2014. In September 2014, the program began the transition from a competitive bid program into an open enrollment incentive program utilizing a MW Block structure.

The design of the Commercial/Industrial MW Block platform was based on a combination of Competitive Program history, such as installation and incentives cost trends, program staff recommendations, consultant models and forecasts, and an active stakeholder process. The design effort also included discussion and review with regulators, utilities, and NYSERDA staff in various programs. On May 4, 2015, the program officially opened and began accepting applications.

Regional MW Blocks are established as follows:

- The region served by Consolidated Edison (Con Ed).
- The rest of New York State (ROS) except the area served by PSEG-Long Island.

Regional incentive levels are established as follows:

- The region served by Consolidated Edison (Con Ed).
- Remote net metered projects in the ROS that receive monetary crediting from a non-demand host meter (Monetary).
- All other projects in the ROS (Volumetric).<sup>1</sup>

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<sup>1</sup> The Monetary and volumetric incentive levels are designed to align with the Public Service Commission's order to address a tariff design that advantaged remote net metered projects with a non-demand host meter over on-site net metering customers. (See April 17, 2015 PSC Order Granting Rehearing in Part, Establishing Transition Plan, and Making Other Findings Cases 14-E-0422 & 14-E-0151). Monetary crediting converts kWh generation into monetary credits at the host meter rate, whereas volumetric crediting directly offsets electricity usage in kWh over the course of the year. metering

The Commercial/Industrial Solar Program is performance-based, meaning that the amount of incentive payment is directly related to the ability of the solar electric system to produce electricity. Additional incentives are available for project installations in utility-designated strategic locations as well as projects that integrate energy storage or comprehensive energy efficiency. These additional incentives are intended to be supplanted by price signals embedded in electric rates offered by the utility companies as they implement the Public Service Commission (PSC)-approved Reforming the Energy Vision (REV) tariffs. As of December 31, 2015, the competitive program committed over \$182 million to fund 288 projects representing 290.1 MW of capacity. The average system size in 2011 was 308 kW, and the average system size in 2014 was 1,500 kW. Through 2015, the program had completed 145 installations totaling 85 MW of installed capacity.

In 2015, the Commercial/Industrial PV (Program committed over \$23 million to fund 46 projects representing 62.6 MW of capacity, with an average project size of 1,360 kW. In 2015, three projects were installed and interconnected totaling 1.7 MW.



## 2 Reducing Solar Costs and Barriers

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The NY-Sun initiative includes a comprehensive set of strategies to reduce solar costs and barriers. In particular, NY-Sun seeks to reduce nonhardware, balance-of-system (BOS) costs in key areas such as interconnection, community solar, customer education, local permitting and policies and BOS research. These strategies are being designed and implemented alongside the Megawatt Block incentives.

### 2.1 Interconnection

The past two years have seen a significant increase in the scale, complexity, and rate of increase in utility interconnection applications in New York. To address these challenges, NY-Sun will provide a cohesive statewide resource as a means to coordinate, inform, and enable developers, regulators, utilities, and stakeholders straightforward access to essential interconnection documents and tools. As a baseline, NYSERDA commissioned research in 2015 by the Electric Power Research Institute (EPRI) to explore utility opportunities to further streamline current New York standard interconnection processes.

### 2.2 Community Solar

Community Solar NY is a part of the NY-Sun initiative that was established by Governor Cuomo in 2014. Community solar efforts have focused on four areas: Community Distributed Generation, K-Solar, Solarize and Affordable Solar.

#### 2.2.1 Community Distributed Generation

Community Distributed Generation (Community DG) provides customers an opportunity to participate in solar and other forms of distributed generation that would not otherwise be directly available to them. In July 2015<sup>2</sup>, the Public Service Commission issued an order establishing Community DG centering on a net metering framework in New York, with utility tariffs for Community DG placed into effect on October 26 2015. These “Shared Solar” projects are expected to make solar more widely available and affordable to customers who would otherwise not be able to benefit, including low-to-moderate income (LMI) customers.

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<sup>2</sup> Proceeding on Motion of the Commission Regarding a Retail Renewable Portfolio Standard, “Establishing a Community Distributed Generation Program;” issued and effective July 17, 2015

### **2.2.2 K-Solar**

K-Solar is a partnership with the New York Power Authority in coordination with the New York State Education Department to provide school districts with the tools and expertise necessary to bring solar energy to their facilities and reduce their energy costs. In 2015, NYPA registered 300 school districts to explore solar through the program, and 24 power purchase agreements have been signed to date.

### **2.2.3 Solarize**

Solarize campaigns are locally organized community outreach efforts aimed at getting a critical mass of area homes and businesses to go solar and achieve significant cost savings. In 2015, NYSERDA supported more than 30 local campaigns, with 900 installations completed or under contract with pricing significantly below market averages. In 2016, NYSERDA is supporting another 31 Solarize campaigns with a focus on underserved customer segments and community DG.

### **2.2.4 Affordable Solar**

Affordable Solar expands access to solar energy to LMI households. The first component, launched in October 2015, doubles incentives provided by the NY-Sun program for solar electric systems installed on owner-occupied residences of LMI households. Additional NY-Sun support for LMI customers of community DG projects will be introduced in 2016.

## **2.3 Customer Education**

NY-Sun seeks to increase the knowledge of solar customers across all sectors as part of competitive, self-sustaining solar market. In 2015, NY-Sun expanded the range of informational materials available to solar customers and partnered with local communities on Solarize campaigns and other customer-focused initiatives. In 2016, the NY-Sun website will be relaunched with further education and information for solar customers on key topics, including financing options and installer selection.

## **2.4 Local Permitting and Policies**

### **2.4.1 Unified Solar Permit**

NY-Sun has developed a revised process for the Unified Solar Permit and the accompanying Technical Guidelines, which will be released in 2016. These resources are being refocused to tie together the design, permitting, code review, quality assurance, interconnection, and inspection processes in a way that is useful to contractors and developers, local code officials, third-party inspectors, financiers, and utilities.

### **2.4.2 PV Trainers Network**

The PV Trainers Network provides technical training, general education, and tools to local officials across the State involved in policymaking, purchasing decisions and negotiations, permitting, system inspections, and emergency response. The materials are primarily designed to improve the skills of municipal officials with responsibility for various transactions related to solar electric system design, permitting, installation, inspection and operation. In 2014, which was its first year, PV Trainers Network completed 100 trainings, reaching over 3,000 local officials.

## **2.5 Balance-of-System Research**

NYSERDA is continuing to invest in innovative projects that reduce solar electric development costs and represent “stepping stones to REV.” These projects will prove the viability and effectiveness of new approaches to integrating larger and more numerous distributed energy resources (DER) with the utility grid as well as guiding and informing new approaches for DER to provide value to the grid.

## **2.6 Summary of Funding**

Table 1 and Table 2 provide detailed information about solar capacity and expected solar production as related to NYSERDA funding.

**Table 1. All Solar: Statewide Capacity Funded by NYSERDA (MW)<sup>3</sup>**

Program	Applications Approved but Not Yet Contracted	Projects Contracted but Not Yet Completed	Projects Completed (installed units)	Projects Completed During 2014 (installed units)	Projects Completed During 2015 (installed units)
Solar PV - Residential/Small Commercial	2.36	167.69	272.89	62.25	108.18
Solar PV - Commercial/Industrial	5.43	49.69	1.70		1.70
Competitive PV	5.67	192.28	84.97	27.61	30.05
NYPAs Customers	0.03	13.07	0.04	0.01	0.03
LIPA Service Territory	5.49	51.32	97.39	22.85	60.96
<b>Grand Total</b>	<b>18.98</b>	<b>474.04</b>	<b>456.99</b>	<b>112.72</b>	<b>200.92</b>

**Table 2. All Solar Statewide: Expected Annual Production Funded by NYSERDA (MWh)<sup>4</sup>**

Program	Applications Approved but Not Yet Contracted	Projects Contracted but Not Yet Completed	Projects Completed (installed units)	Projects Completed During 2014 (installed units)	Projects Completed During 2015 (installed units)
Solar PV - Residential/Small Commercial	2,770.26	196,841.23	320,329.20	73,071.54	126,986.01
Solar PV - Commercial/Industrial	6,373.95	58,328.11	1,995.53		1,995.53
Competitive PV	6,655.67	225,705.96	99,729.45	32,409.72	35,273.89
NYPAs Customers	35.22	15,342.09	46.95	11.74	35.22
LIPA Service Territory	6,444.38	60,241.47	114,343.75	26,822.24	71,557.29
<b>Grand Total</b>	<b>22,279.48</b>	<b>556,458.85</b>	<b>536,444.88</b>	<b>132,315.24</b>	<b>235,847.93</b>

<sup>3</sup> NYPAs Customers and LIPA Service Territory represents incentive funding supported with proceeds under the Regional Greenhouse Gas Initiative (RGGI).

<sup>4</sup> NYPAs Customers and LIPA Service Territory represents incentive funding supported with proceeds under the Regional Greenhouse Gas Initiative (RGGI).

NYSERDA, a public benefit corporation, offers objective information and analysis, innovative programs, technical expertise, and support to help New Yorkers increase energy efficiency, save money, use renewable energy, and reduce reliance on fossil fuels. NYSERDA professionals work to protect the environment and create clean-energy jobs. NYSERDA has been developing partnerships to advance innovative energy solutions in New York State since 1975.

To learn more about NYSERDA's programs and funding opportunities, visit [nyserderda.ny.gov](http://nyserderda.ny.gov) or follow us on Twitter, Facebook, YouTube, or Instagram.

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