



# Fostering Access to Shared Solar in Affordable Housing

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# Agenda

- **Opening Questions**
- **Community Shared Solar at NYCHA (with Sustainable CUNY)**
- **Challenges and Solutions for Solar on Affordable Housing (with Solar One)**
- **Q&A**

# Introduction to NYCHA

## NextGeneration NYCHA and Sustainability Agenda



A 10-year strategic roadmap to deliver **safe, healthy, connected homes and communities** for NYCHA residents and to preserve and protect public housing for current and future generations of New Yorkers



NYCHA's **commitment** as a landlord to create healthy and comfortable homes that will withstand the challenge of climate change

An **invitation** to residents and surrounding communities to work with NYCHA to realize a shared long-term vision of equity, sustainability, and resiliency

# NYCHA's 25 MW Solar Program

## Goals

- Host **25 MW** of solar PV capacity by 2025
- Generate **revenues** for NYCHA
- Provide job training and **green jobs** for NYCHA residents
- **Reduce energy costs** for NYCHA residents who pay their own utility bills, Section 8 tenants, and other low-income renters



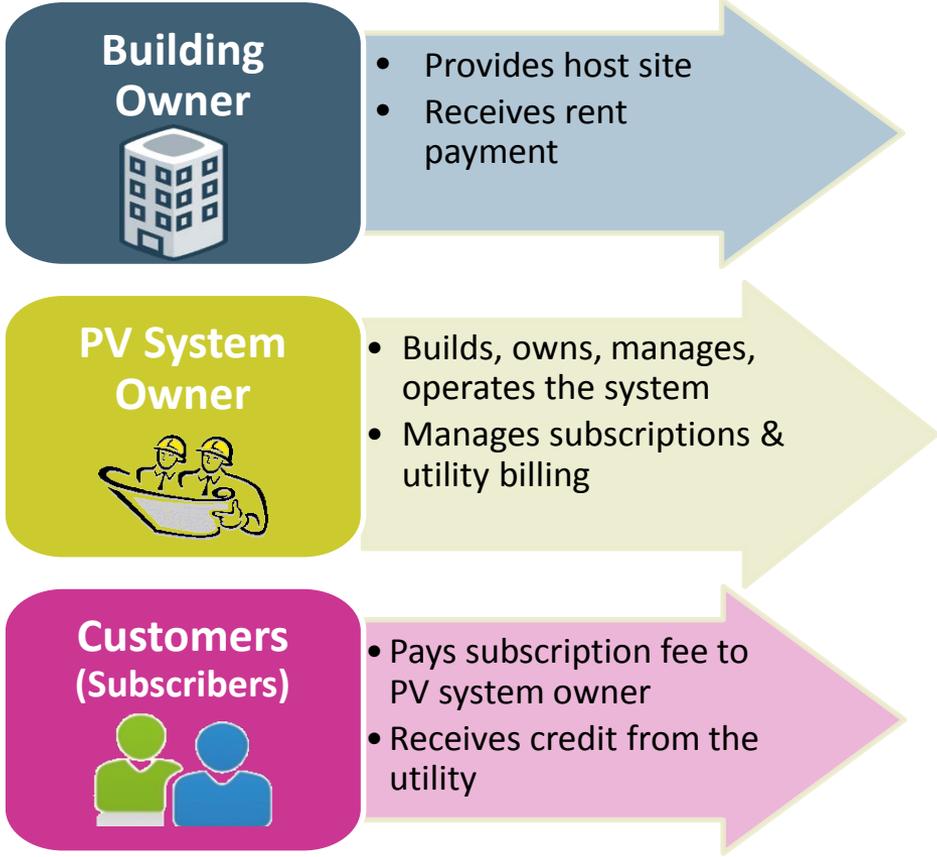
# NYCHA's 25 MW Solar Program

## Community Shared Solar (CSS)

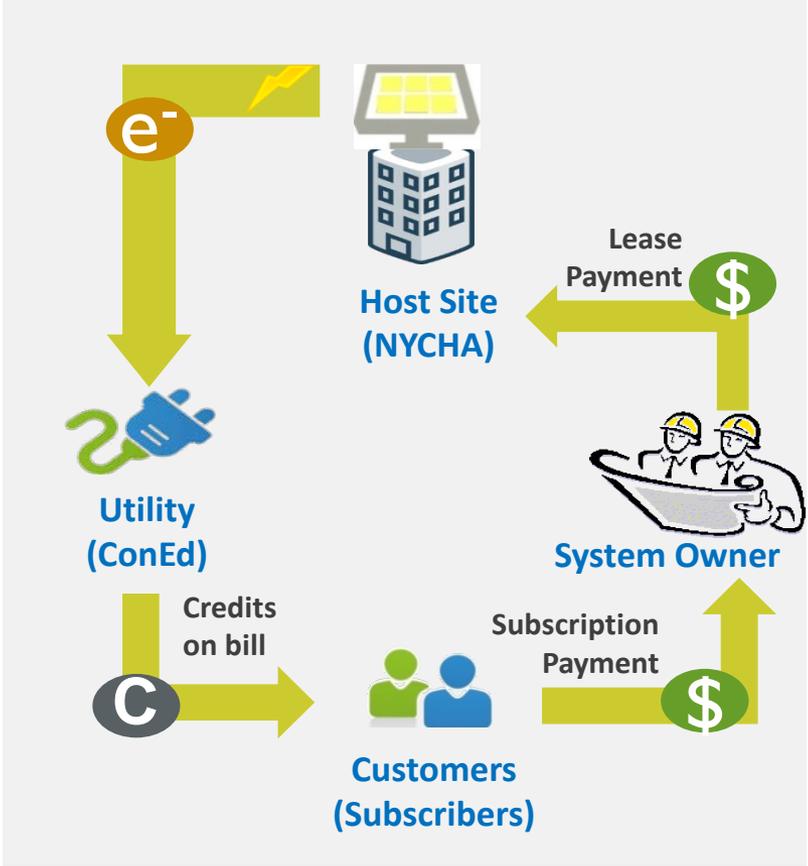
- NYCHA cannot host net-metered or remote net-metered installations
  - All systems will be **Community Shared Solar (CSS)**
- NYCHA cannot be a CSS subscriber, due to NYPA restrictions
- Priorities for CSS off-takers:
  - NYCHA residents paying their own utility bill
  - Section 8 voucher recipients
  - Other LMI communities

# Community Shared Solar

## How does it work?

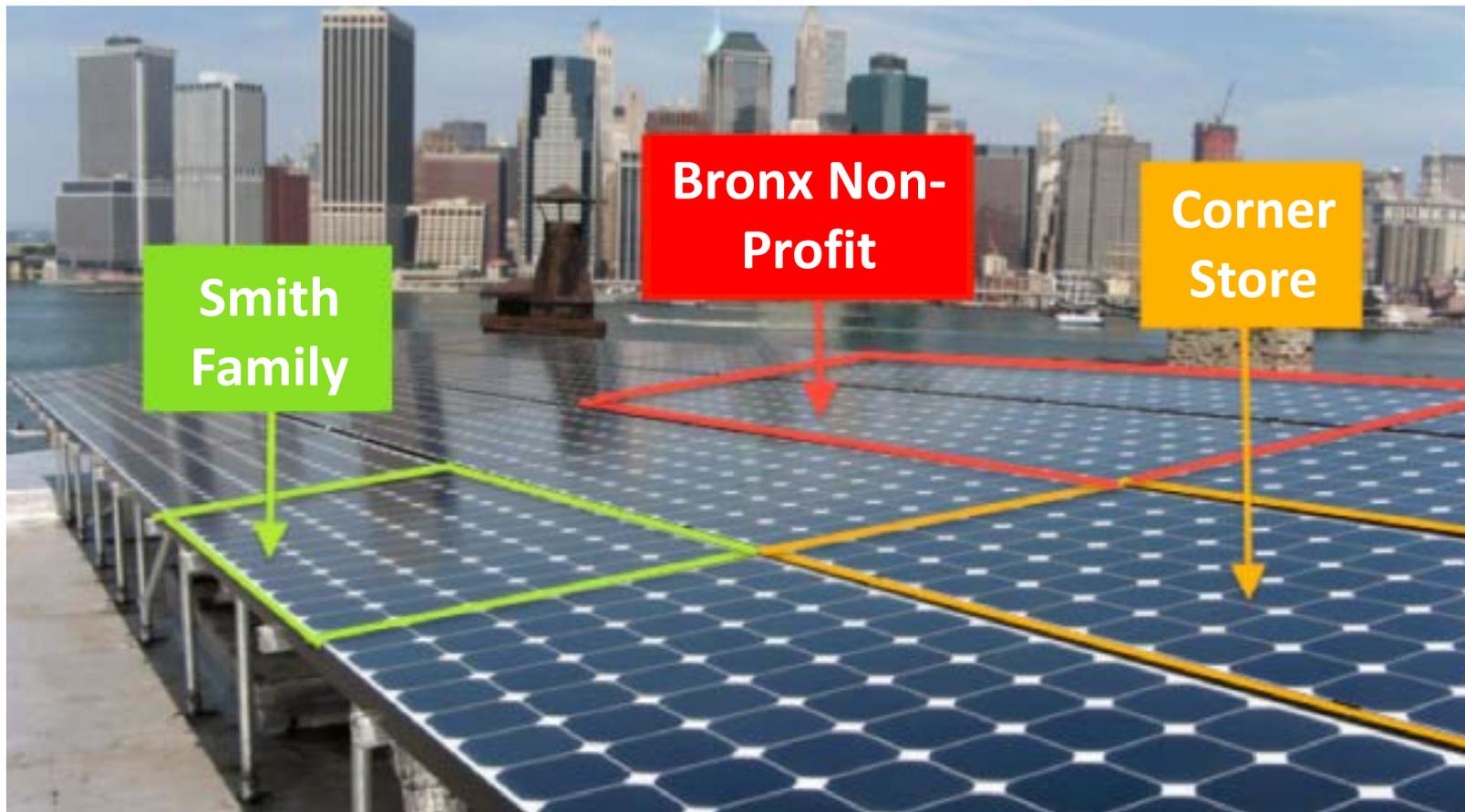


### Community Shared Solar in Action



# Community Shared Solar

Enables many customers to buy solar power



# Sustainable CUNY

## Sustainable CUNY 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

U.S. Department of Energy | State of New York | New York City | CUNY | Private Foundations

# Sustainable CUNY- New York Solar Map

**NY SOLAR MAP**   Going Solar-   Permitting and Zoning-   Interconnection-   Financing-   Resources-   NYC Solar-   About-   Help

**Find Your Solar Potential**

→ Enter your address

or jump to  
New York State

Which best describes you?

Residential    Commercial  
 Installer    Municipal / Non-profit

Available map layers  
Installed Capacity

→ Add your system to the map

**Solar Statistics**   Calculator   In Your Area   Advanced Tools

**Installed Capacity**

- 127 kW
- 874 kW
- 1,287 kW
- 2,276 kW
- 3,449 kW
- 7,856 kW
- 17,590 kW

**Solar Statistics for New York State**

**Installed Solar Power Generation Capacity (Megawatts)**

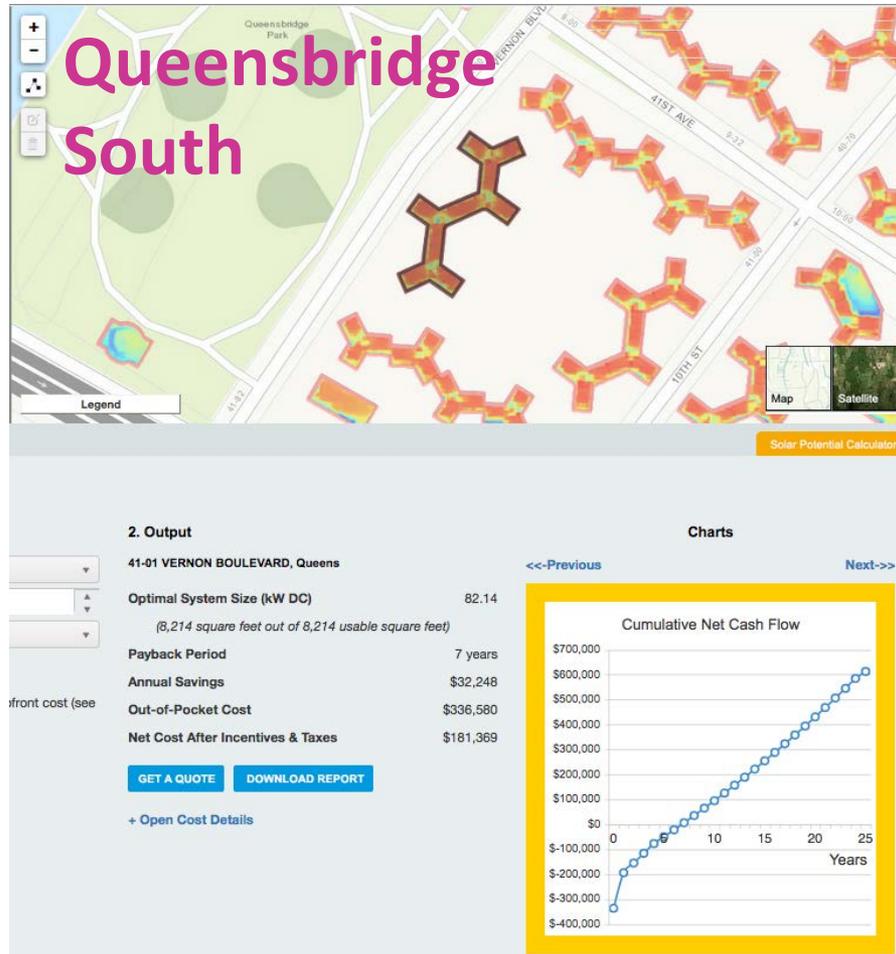
Year	Annual Installations (MW)	Cumulative Total (MW)
2008	~5	~5
2009	~10	~15
2010	~20	~35
2011	~30	~65
2012	~40	~105
2013	~50	~155
2014	~80	~235
2015	~150	~385
2016	~60	~445
2017	~0	~445

**Status of Solar Projects**

Status	Count
Completed	41,550
In Progress	14,328

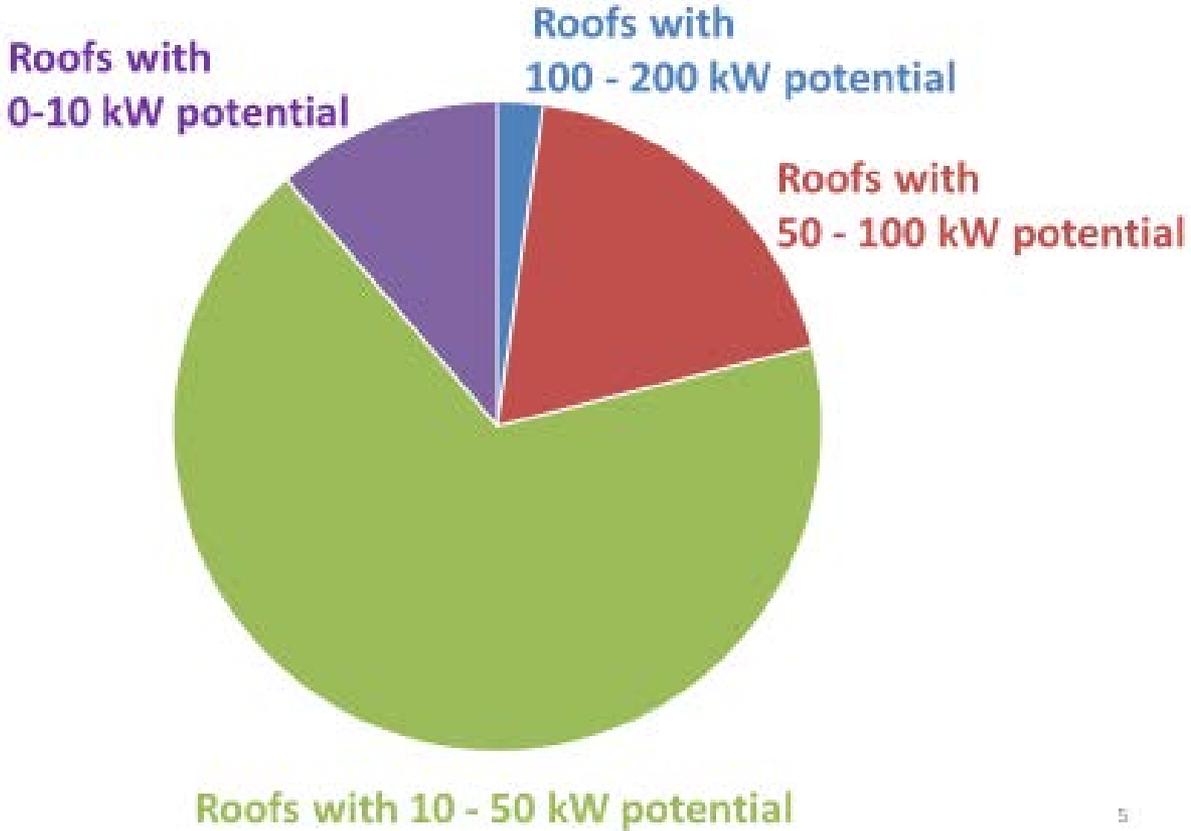
# Sustainable CUNY Solar Analysis

## NYC LiDAR



# Sustainable CUNY Solar Analysis

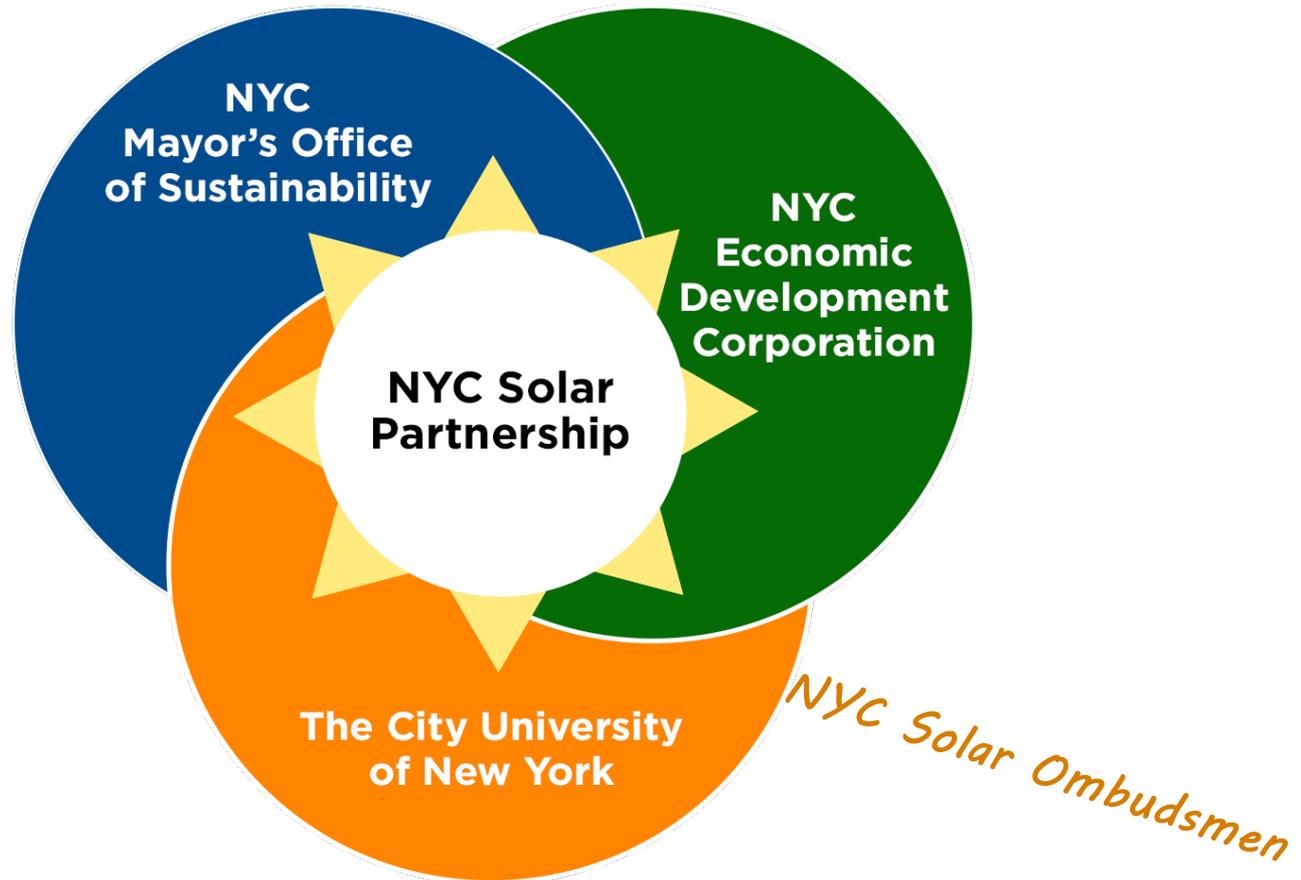
## Solar Potential of NYCHA's 2,500 Roofs



5

# NYC SOLAR PARTNERSHIP

Solarize NYC | Shared Solar NYC



# Shared Solar NYC Gateway



# Shared Solar NYC Gateway



# NYCHA's 25 MW Solar Program

## Two halves: Commercial and ACCESSolar

### Commercial Solar Program

- Large sites (campuses with individual roofs over 40 kW)
- Commercial-scale developers
- Lease payment to NYCHA required
- Includes parking lot canopies

### Accelerating Community Empowered Shared Solar (ACCESSolar)

- Smaller and more scattered sites
- Focus on local developers working with CBOs/non-profits
- Lease payments a secondary concern

# NYCHA's 25 MW Solar Program

## Commercial and ACCESSolar common goals

- Both will help reach NYCHA's 25 MW goal
- Both programs focus on roofs that are new/not planned to be replaced in near future
- Requirement to hire and train NYCHA residents
- Requirement to enroll low- and moderate-income residents, including those NYCHA households that pay their own electric bills

# NYCHA's Commercial Solar Program

## Overview

- Run through standard procurement processes (RFPs)
- First RFP published October 6, 2017
- 14 developments made available in three bundles
- Two selected proposers- Bright Power and Tangent
- Up to 6 MW of power on 90 roofs and 13 parking lots across 8 developments

# NYCHA's Commercial Solar Program

## Energy and Jobs for All

- Up to 28 jobs for NYCHA residents
- Expect to subscribe 550-750 LMI households, with 10-20% savings off ConEd rate
- Bright Power also will sell power to Northeast Brooklyn Housing Development Corp.



# NYCHA's Commercial Solar Program

## Timeline

### October 2017

- First Solar RFP released

### January 2018

- RFP responses due
- Evaluation

### March-April 2018

- Vendors selected and announced

### Q2-Q4 2018

- Sign Lease Agreement
- Design
- Permitting
- **Release second RFP**

### 2019

- Install community solar on NYCHA roofs

# NYCHA's ACCESSolar Program

## Application and Evaluation

- 325 rooftops available in 65 developments
- Simple online application platform- first round of applications open April 19- July 2, 2018 at [on.nyc.gov/accessolar](https://on.nyc.gov/accessolar)
- Up to 5 teams will be selected- each team will take a separate area
- A **License Agreement** will provide access for the team to develop their design and full proposal.

# NYCHA's ACCESSolar Program

## Implementation

- Applicants will have up to one year to develop their solar designs and full proposal
- Proposal will include commitments on NYCHA hiring, LMI subscribers, consumer protections, *maybe* lease payment
- **Lease Agreement** will be negotiated and signed once the full Proposal is accepted
- Teams will participate in workshops led by **Sustainable CUNY** and share knowledge

# NYCHA's ACCESSolar Program

## Timeline

**April 19, 2018**

- ACCESSolar Application Platform opens

**July 2, 2018**

- Application Period ends

**July-August 2018**

- Up to five teams selected
- Sign License Agreement enabling site visits

**Q3 2018 - Q2 2019**

- Develop solar designs and full Proposal
- Build capacity via workshops
- Negotiate and sign Lease Agreement

**Late 2019**

- Install community solar on NYCHA roofs



Community Shared Solar Array in Brooklyn

# Challenges and Solutions for Solar on Affordable Housing

Anika Wistar-Jones, Solar One



# HERE COMES SOLAR

A PROJECT OF SOLAR ONE

- HISTORY. Here Comes Solar is a project of the non-profit Solar One, launched in 2014.
- OBJECTIVE. Facilitate solar adoption in high impact and high barrier market segments in NYC across geographies, property types and socioeconomic groups.
- APPROACH. Provide technical assistance to building owners and community groups to overcome barriers to solar adoption.

# Challenges & Solutions

Challenges	Solutions
High Pricing	Aggregated Bidding
Lack of Capital and Limited Incentive Eligibility	PPAs and Solar Loans
Low Value of Solar	Community Shared Solar

# Challenge:

## High Pricing



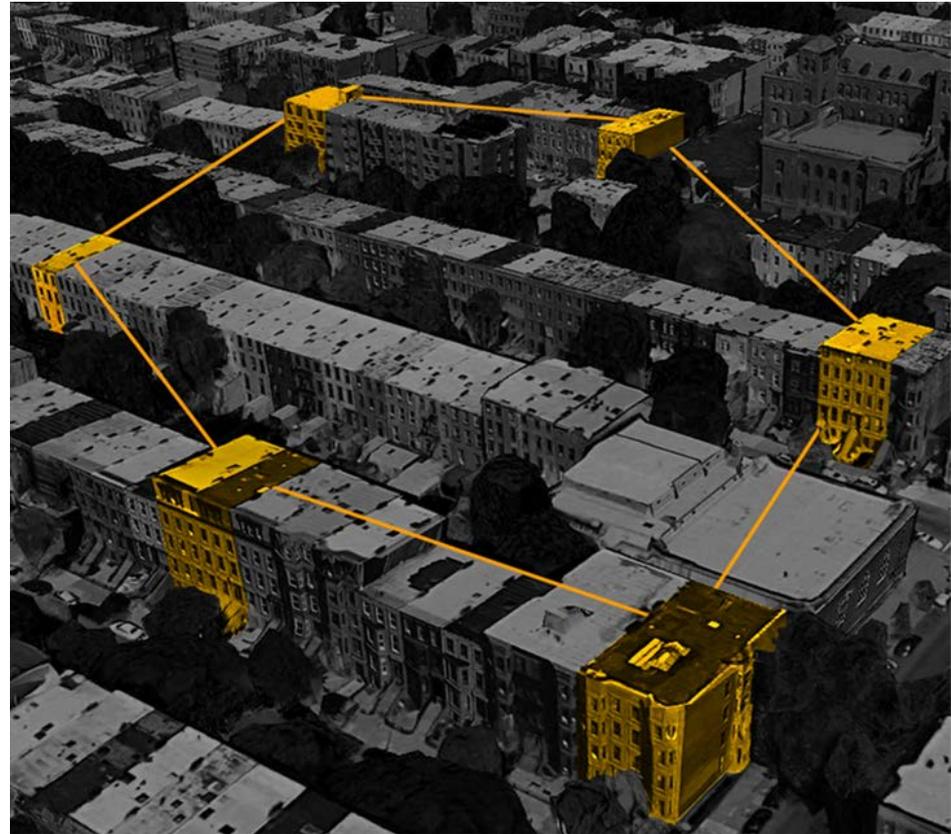
Canopy Array in Brooklyn

- Solar can be expensive in New York City because of high soft costs for installers:
  - Lengthy permitting process
  - Logistical difficulty of installation
  - Customized designs on flat roofs

# Solution:

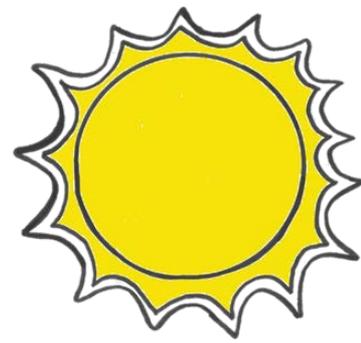
## Solar Purchasing Group

- Bringing buildings together to go solar as a community can reduce the barriers for installers and therefore the costs to buildings
- Nonprofit affordable housing providers can do achieve similar results within a portfolio

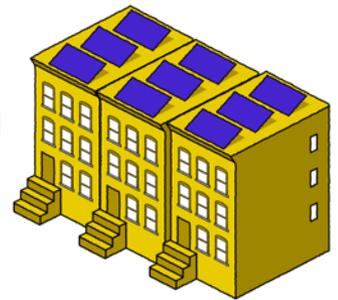


# Example

## Solar Uptown Now



- Partnering with WE ACT for Environmental Justice, UHAB, and CUNY's Solarize NYC program on a campaign focused on affordable housing in Northern Manhattan
- Campaign included community outreach, solar viability assessments and technical assistance to over 70 uptown buildings, board consultation, and installer selection
- 8 multifamily buildings and over 260 kW
- Prices for the purchasing group were 30% less than the average price for similarly sized systems



## Challenge:

# Lack of Capital and Limited Incentive Eligibility



Many affordable housing providers don't have access to enough funds to buy solar outright

Similarly, many affordable housing providers and low-income buildings can't benefit from solar tax incentives

# Solution:

## PPAs or Solar Loan

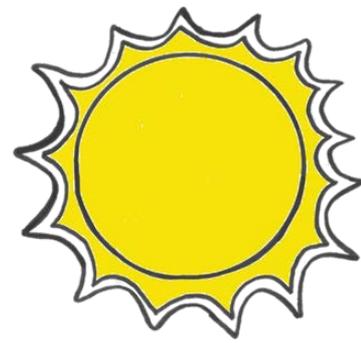
- **Power Purchase Agreement (PPA)**
  - Solar is installed and owned by a third party for no upfront cost and the building pays for the energy at a rate lower than the utility bill
- **Prepaid PPA**
  - Solar is owned by a third party and the building “prepays” for 25 years of energy by paying the system price minus half of the tax credits. This way, buildings can receive all the savings from solar and some of the value of the tax credits.
- **Solar Loan**
  - Building makes a large prepayment after receiving tax incentives, so loan payments are always less than the savings from solar



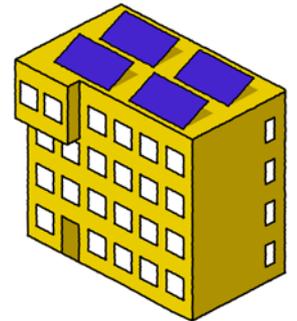
Nazareth Housing Solar Array

# Example

## Nazareth Housing

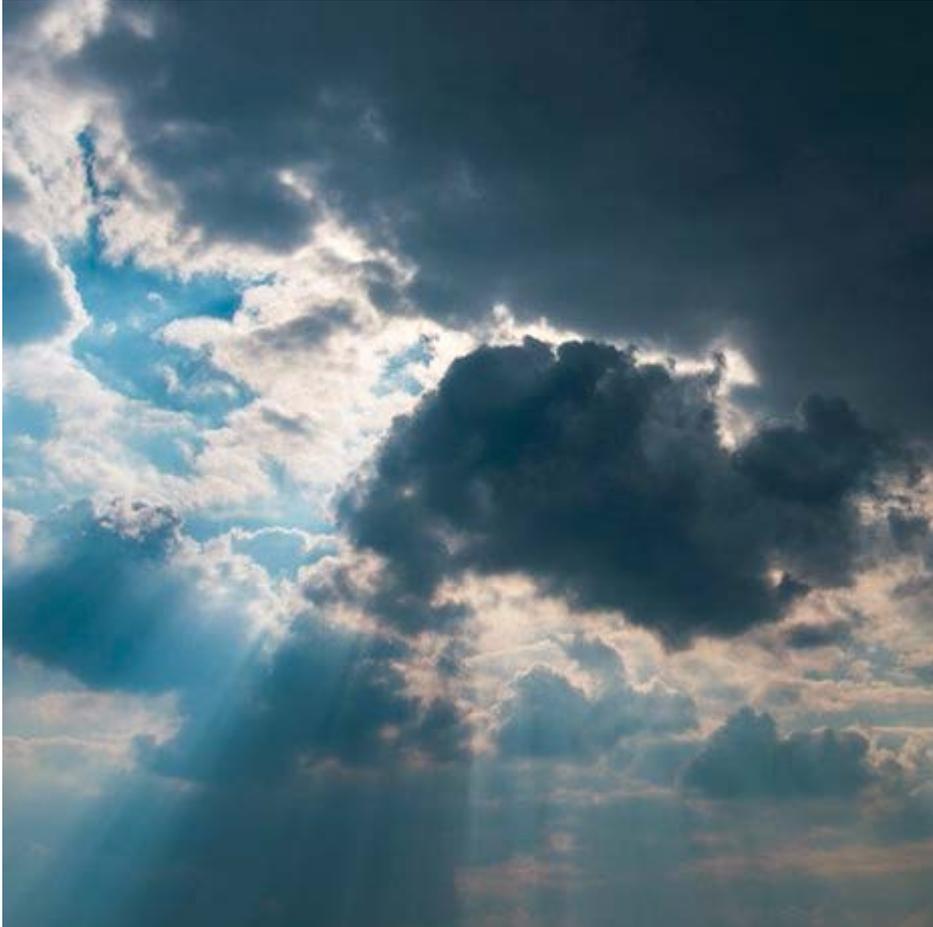


- Supportive housing in the Lower East Side
- No capital to invest in solar
- No basis for tax credits
- PPA saves them \$26,000 over the lifetime of the system and allows them to be at the forefront of sustainability in NYC
- Part of the NYC Community Energy Cooperative through the PPA with Co-op Power



# Challenge:

## Low Value of Solar

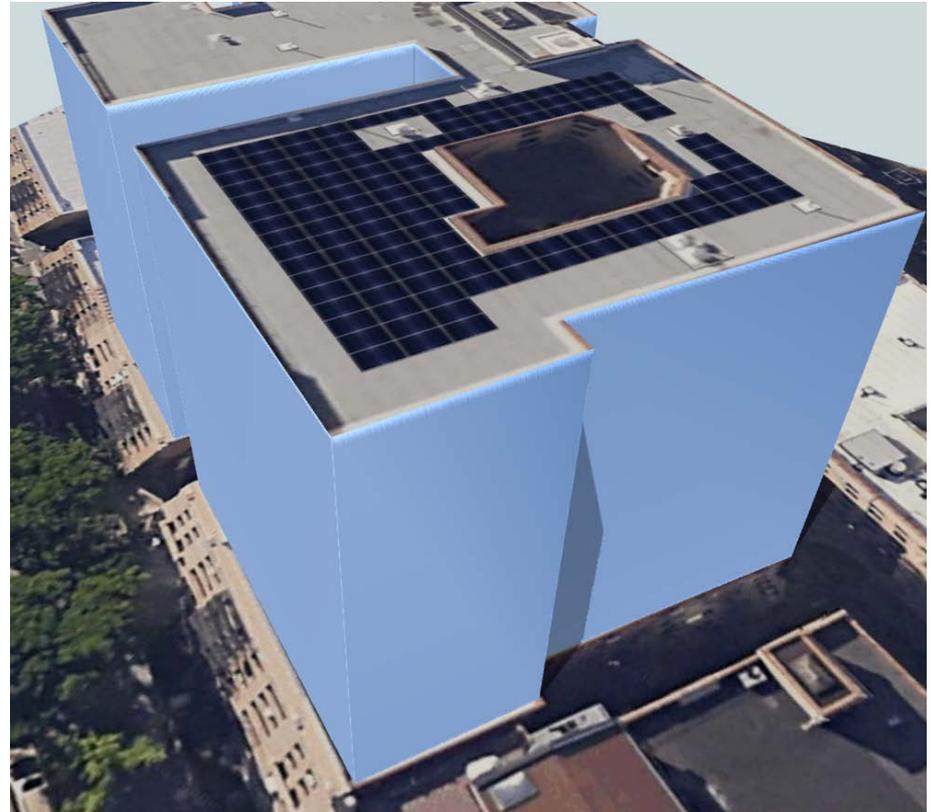


- For larger buildings or buildings with elevators, the value of solar is low, making the investment harder to justify
- In Con Edison territory, the value of solar for these buildings is about half of the value of solar for residences - \$0.10 instead of \$0.20 per kWh

## Solution:

# Community Shared Solar

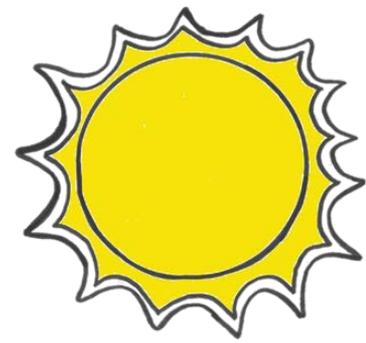
- Using Community Shared Solar to allocate solar credits among shareholders of a co-op can double the value of solar and substantially increase savings
- More administrative work, but the savings are worth it



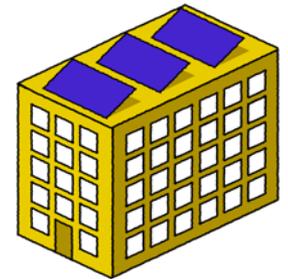
Design for Community Solar Array on a Co-op in Harlem

# Example

## Co-op in Harlem



- Income-restricted cooperative in Harlem with 47 units.
- Solar for the common area would have been worth \$0.13/kWh, saving \$162,000 for the co-op over the lifetime of the system with a payback period of 6 years.
- Solar sent to shareholders with Community Shared Solar will be worth \$0.20/kWh, saving \$219,000 for the co-op over the system's lifetime and paying for itself in 4 years.
- Increased savings allow them to use part of the roof for a roof deck for residents.



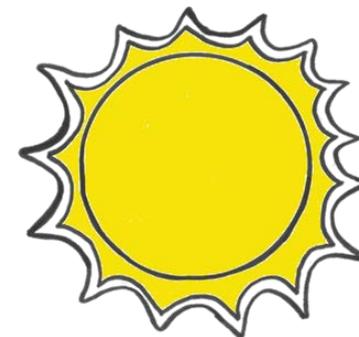
# Q&A

## Questions for Discussion

- Can the strategies we've described be replicated in your communities?
- What particular barriers are you facing in your communities for expanding solar access to residents of affordable housing?
- What do you feel that municipalities, utility companies, and/or the state should be doing to help bring solar to affordable housing?
- Are there creative strategies you've developed for solar for affordable housing that you'd like to share?
- Are there other strategies we can add on to the solutions we've discussed?

# Fostering Access to Shared Solar in Affordable Housing

## Thank you!



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