

# **Predevelopment Funding for LMI Solar and Storage Projects: A Case Study from New York**

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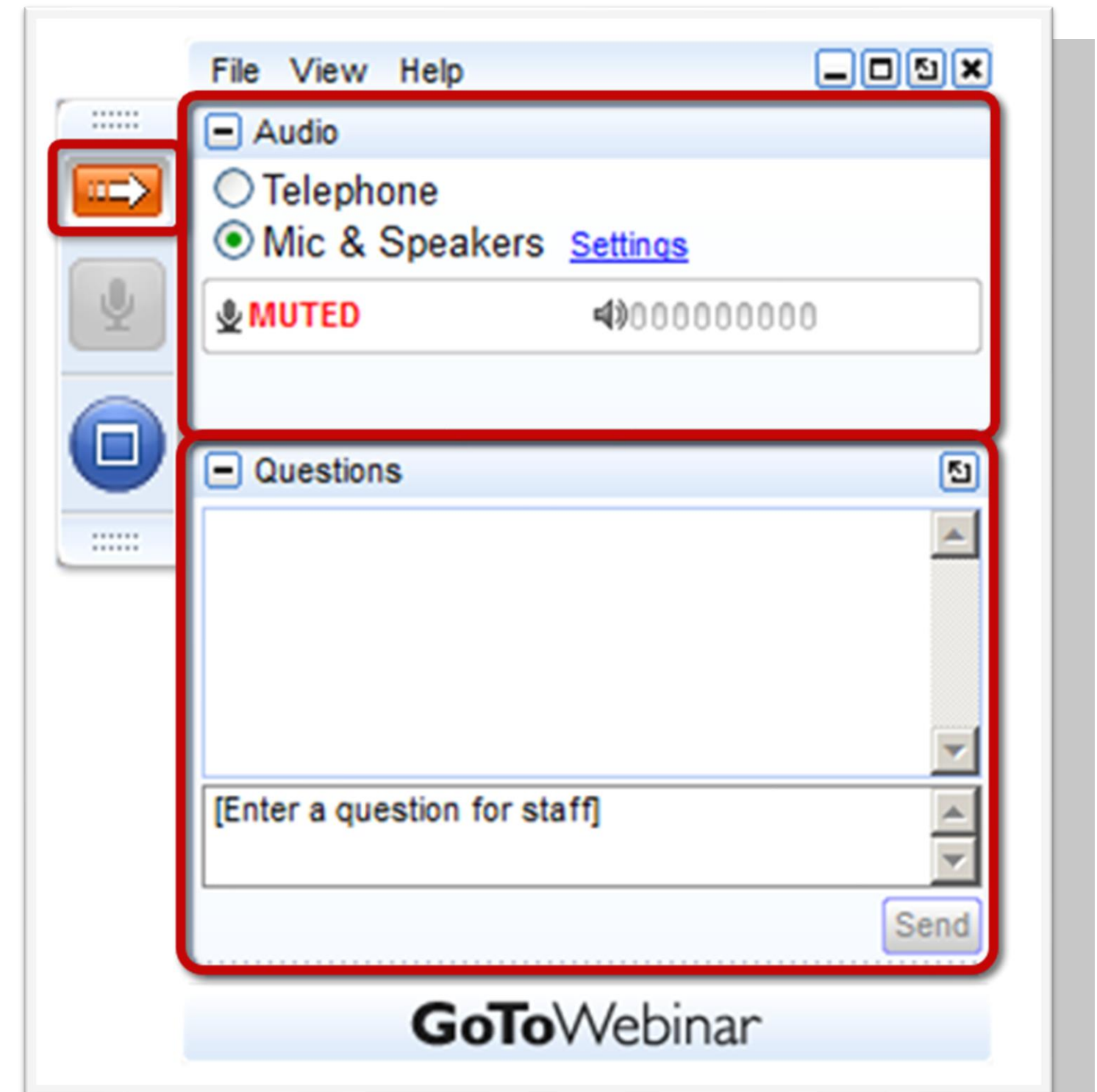
**September 19, 2023**

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Celebrating 20 Years of State Leadership



The Clean Energy States Alliance (CESA) is a national, nonprofit coalition of public agencies and organizations working together to advance clean energy.

CESA members—mostly state agencies—include many of the most innovative, successful, and influential public funders of clean energy initiatives in the country.

# CleanEnergy States Alliance

[www.cesa.org](http://www.cesa.org)



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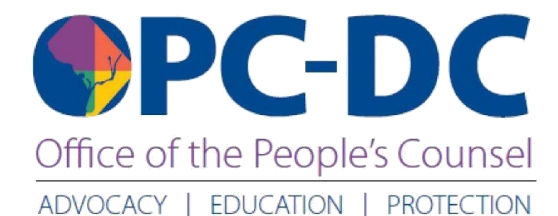
OREGON  
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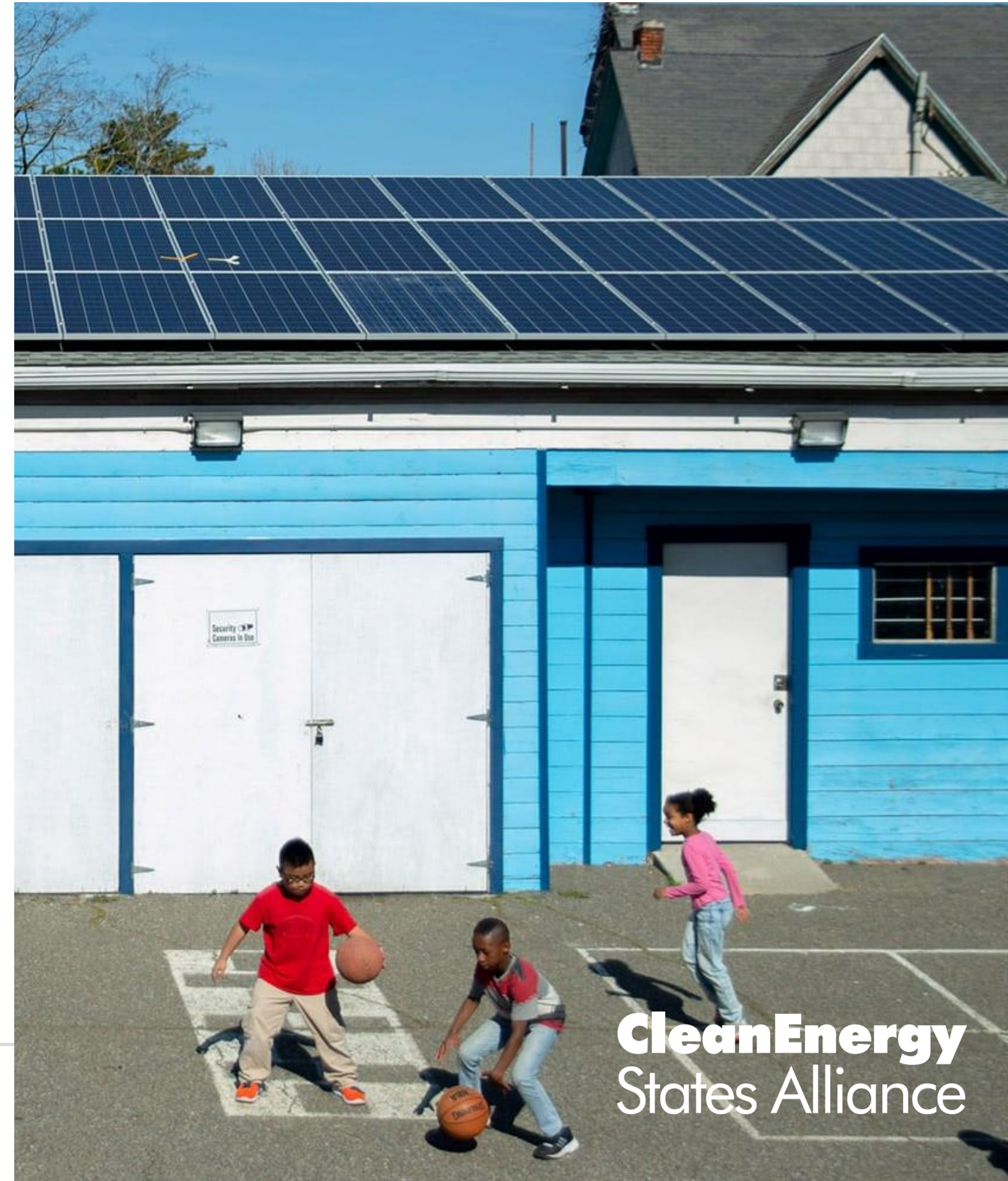
Office of the People's Counsel  
ADVOCACY | EDUCATION | PROTECTION

# Solar with Justice: Connecting States and Communities

Identifying models for how state energy agencies and community-based organizations can collaborate more effectively to expand access to solar.



[www.cesa.org/projects/solar-with-justice](http://www.cesa.org/projects/solar-with-justice)

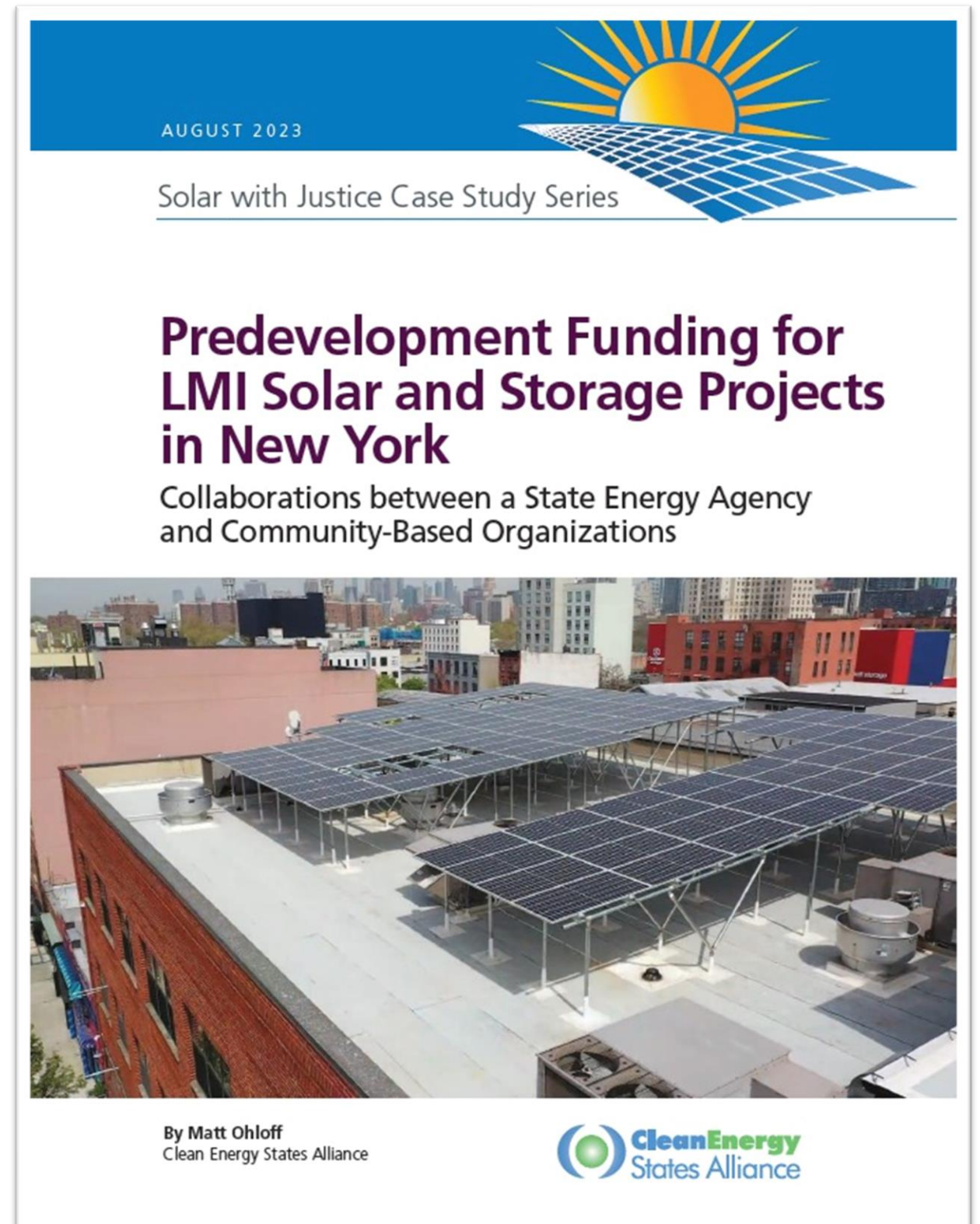


**CleanEnergy**  
States Alliance

# Predevelopment Funding for LMI Solar and Storage Projects: A Case Study from New York

By Matt Ohloff, Clean Energy States Alliance  
August 2023

This case study is based upon work supported by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) under the Solar Energy Technologies Office Award Number DE-EE0009360. Learn more at [energy.gov/eere/solar](https://energy.gov/eere/solar).



# Webinar Speakers



**Christopher Rogers**  
New York State Energy  
Research and Development  
Authority (NYSERDA)



**Lucia Santacruz**  
Urban Homesteading  
Assistance Board (UHAB)



**Emily Ng**  
Urban Homesteading  
Assistance Board (UHAB)



**Matt Ohloff**  
Clean Energy States  
Alliance





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# Upcoming Webinars

Battery Decommissioning, Recycling, and Reuse (9/20)

Energy Storage for Peak Demand Reduction: A New Incentive Program by Efficiency Maine (9/28)

NYSERDA's State Energy Financing Fund and DOE's Loan Programs Office: Financing Clean Energy at the State Level (10/3)

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[www.cesa.org/webinars](http://www.cesa.org/webinars)





# PON 3414: Affordable Solar and Storage Predevelopment Technical Assistance Program



**NYSERDA**

# Program Overview

# What is NY-Sun?

- > NY-Sun is a NYSERDA initiative that administers programs to drive growth in the solar industry and to ensure a coordinated, well-supported solar energy expansion plan and a transition to a sustainable, self-sufficient solar industry.
- > In April 2022, NY-Sun was expanded to support Governor Hochul's goal for New York to reach 10 GW of installed distributed solar PV by 2030.
- > As part of the Solar Energy Equity Framework (SEEF) NY-Sun is committing funding to solar benefitting low-to-moderate income (LMI) households, affordable housing, environmental justice communities, and disadvantaged communities. This includes the Predevelopment Program as well as additional incentive funds for solar installations serving these groups.

# Predevelopment Program Overview

- > PON 3414: Affordable Solar and Storage Predevelopment and Technical Assistance (Predevelopment Program): [www.nyserda.ny.gov/aspta](http://www.nyserda.ny.gov/aspta)
- > Provides grants up to **\$200,000** for the implementation and operation of solar and/or energy storage installations benefitting **affordable housing** and/or **community-led** solar installations that will offer benefits to LMI households
- > Grant applicants may include multifamily affordable housing providers, community organizations or agencies, and technical service providers (such as in energy, legal, or finance) working in partnership with any of these entities
- > Eligible projects may be located anywhere in New York, including the PSEG-Long Island service territory

# Business Models Supported

- > Community solar projects with benefits distributed to LMI households
- > Onsite solar and/or storage installations built upon regulated affordable housing
- > Early-stage project planning, project team organization, and site identification
- > Organizing a project business model and securing financing
- > Preliminary site assessments
- > LMI customer outreach and enrollment
- > Development of community ownership models for solar and storage

# Key Program Changes

# First Round PON 3414 Project Trends

## > **December 20, 2016 – August 31, 2018**

- Projects mostly located in the Con Edison Region (NYC and Westchester County)
- Large reliance on tax equity investor model to monetize federal investment tax credit
- Aggregated procurement of solar installations a key focus
- Over 12MW of solar projects installed through 20 separate grants

# Changes to the Program

- > New quarterly review process
- > New webinar series to share updates and promote program
- > New online application submission/tracking process
- > Addition of energy storage as an approved technology
- > Expanded eligibility for earlier stage projects with a shorter timeframe
- > Increased integration with the Inclusive Community Solar Adder



# Second Round PON 3414 Project Trends

## > Jun 30, 2020 – Present

- Larger geographic spread across the State
- More project applications submitted over a shorter period
- Shift away from tax equity investor model
- Aggregated procurement remains a key focus
- More projects exploring the inclusion of storage in projects
- More focus on additional benefits beyond bill savings (e.g., customer education)

# **NYSERDA Support Role**

# Support to Grantees

- > Guidance on initial project goals
- > Sharing of information based on experiences from other grantees
- > Facilitation of connections with potential key partners (including solar contractors and lenders)
- > Promotion of solicitations to NY-Sun solar contractors
- > Flexibility for the completion of project goals

An aerial photograph of a dense urban neighborhood, likely in New York City, showing a mix of brick and concrete buildings. In the foreground, a building with a flat roof has several rows of dark solar panels installed. The background shows a dense skyline of skyscrapers under a clear blue sky. A large orange rounded rectangle is overlaid on the top half of the image, containing white text.

# Co-ops Go Solar: Solar Access for Affordable Housing

CO-OPS GO  
 SOLAR

Uhab

UHAB **empowers** low-  
to moderate-income  
residents to take  
control of their  
housing and  
enhance  
**communities** by  
creating strong  
**tenant** associations  
and lasting **affordable**  
**co-ops.**





453 WEST 54 ST



152 FORSYTH ST



948 COLUMBUS AVE



225 SOUTH 3 ST



280 DEAN ST

Since 1973, UHAB has developed over 1,600 affordable housing co-ops and 30,000 apartments of housing across New York City.

# Central Brooklyn

A multi-story brick building in Harlem, featuring a prominent fire escape on its side. The building is surrounded by lush green trees, and the scene is captured in bright daylight. The word "Harlem" is overlaid in a white box on the left side of the image.

Harlem

The logo for Uhab, featuring the word "Uhab" in a stylized, orange font with a house icon integrated into the letter 'h'.

Uhab



# South Bronx





NINA DUNN APARTMENTS  
TENANTS' LEAGUE  
BRONX, N.Y.  
SWEAT Equity Housing Program

UHAB was formed in 1973 to support New Yorkers, mostly people of color, in creating decent, affordable, community-controlled housing.

# What is an HDFC Housing Cooperative?

UHAB works with co-ops that are incorporated as **Housing Development Fund Corporations**



Housing Development Fund Corporations (HDFCs) are New York State designated corporations that provide affordable housing to low-income families.

Legal entity that owns the property, i.e. 'Hamilton Heights Community Housing Development Fund Corporation'

# Who **owns** this legal entity?

The resident **shareholders**  
a.k.a. members or cooperators

The resale price of shares is limited,  
keeping the housing **affordable** for the  
next generation.

In addition to keeping the purchase price  
lower than market, limited-equity housing  
co-ops typically have **income guidelines**  
to ensure the co-op is serving its intended  
population.



# HDFCs' Biggest Challenges

Rising cost of building operations

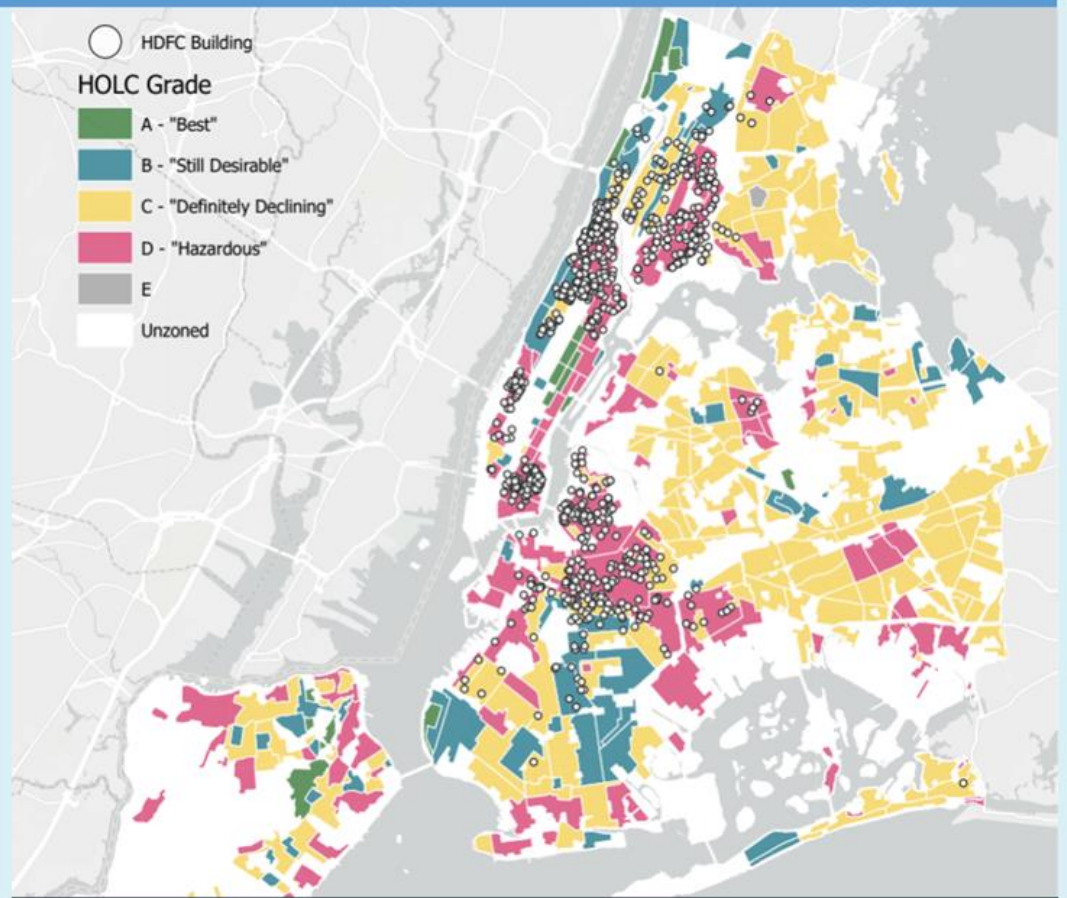
Older, inefficient housing stock

Leader burnout & generational turnover

Displacement & gentrification

## HDFCs: energy burdens faced by the low-income community of HDFCs provide ample opportunity for wide-scale adoption of ECM programs

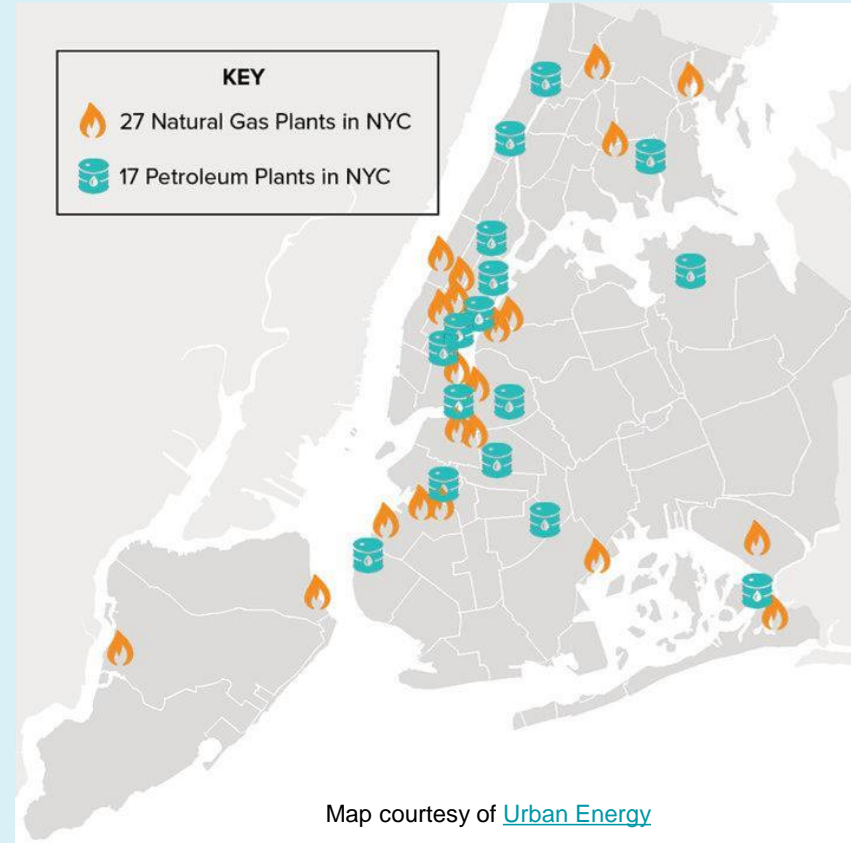
This is a map of the Home Owners' Loan Corporation (HOLC) color-coded assessment of credit-worthiness where mortgage security risk was determined by skin color. UHAB has overlaid this map with the locations of HDFC cooperatives.



HDFCs are largely concentrated in neighborhoods that historically had been redlined and seen disinvestment of services; these are factors contributing to physical building needs in this community— and present an opportunity to improve building efficiency.

# Environmental Hazards

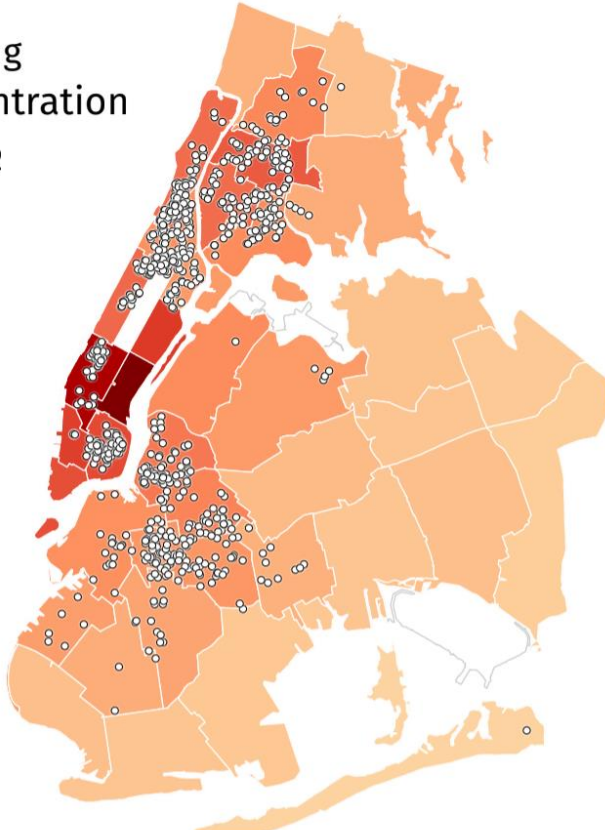
- Climate change **disproportionately impacts** low-and-moderate income (LMI) and Black, Indigenous, and People of Color (BIPOC) communities
- Low-income neighborhoods often times have the **worst air quality and the most building maintenance issues**<sup>1</sup>



# Disproportionate Effects of Climate Change

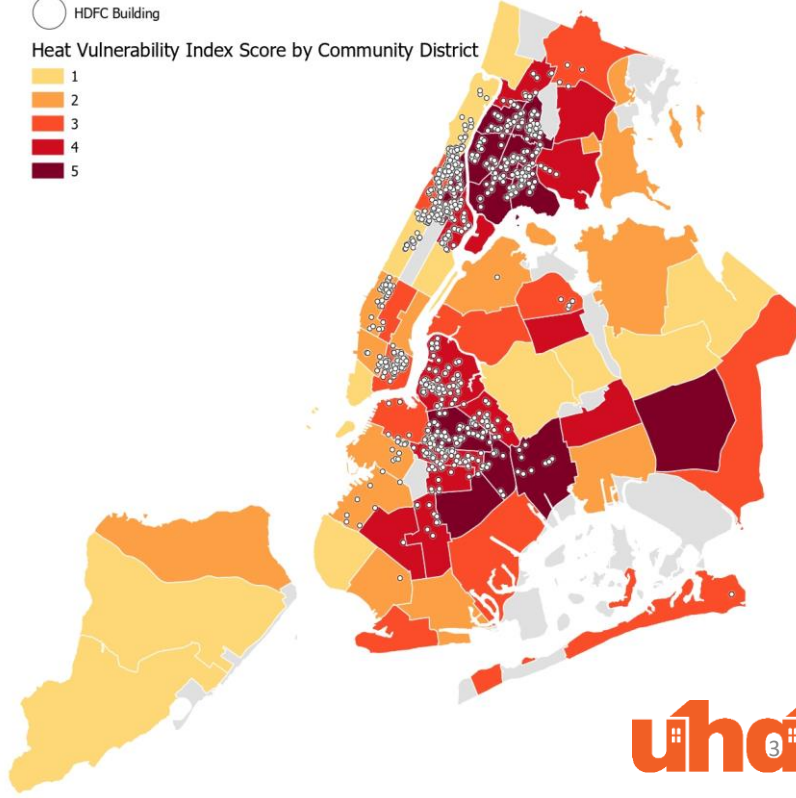
## HDFCs and Air Pollution

○ HDFC building  
Average concentration  
of PM2.5



## Heat Vulnerability in NYC

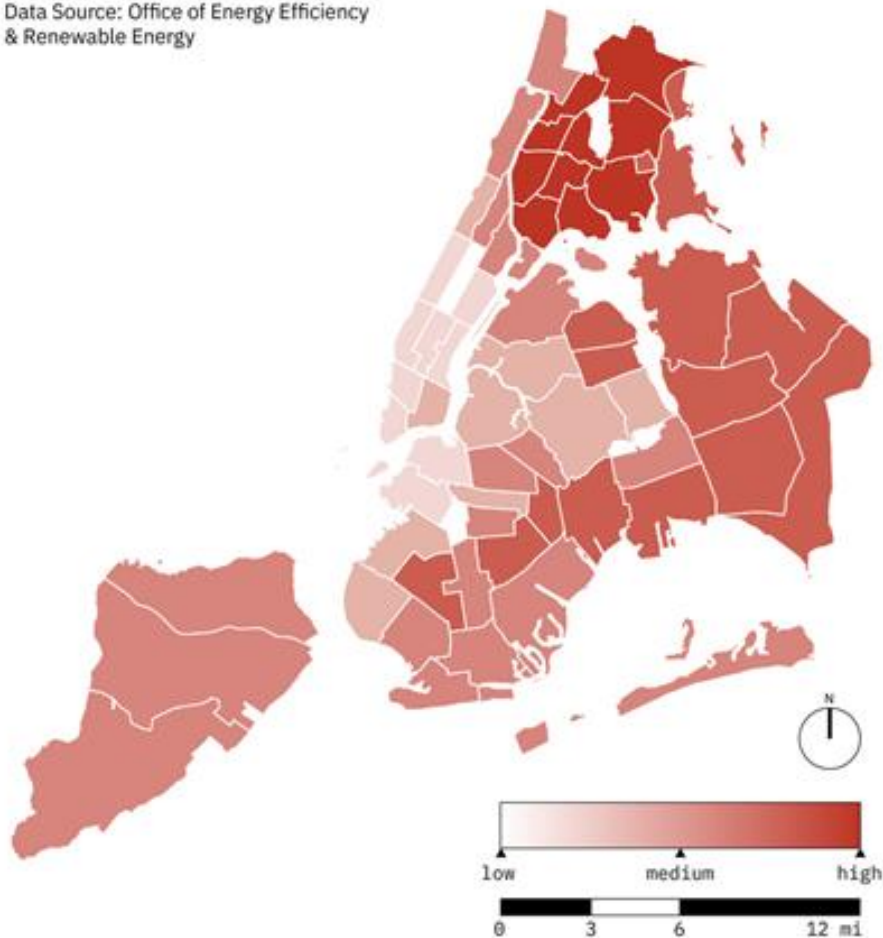
○ HDFC Building  
Heat Vulnerability Index Score by Community District





## ENERGY BURDEN

Data Source: Office of Energy Efficiency  
& Renewable Energy

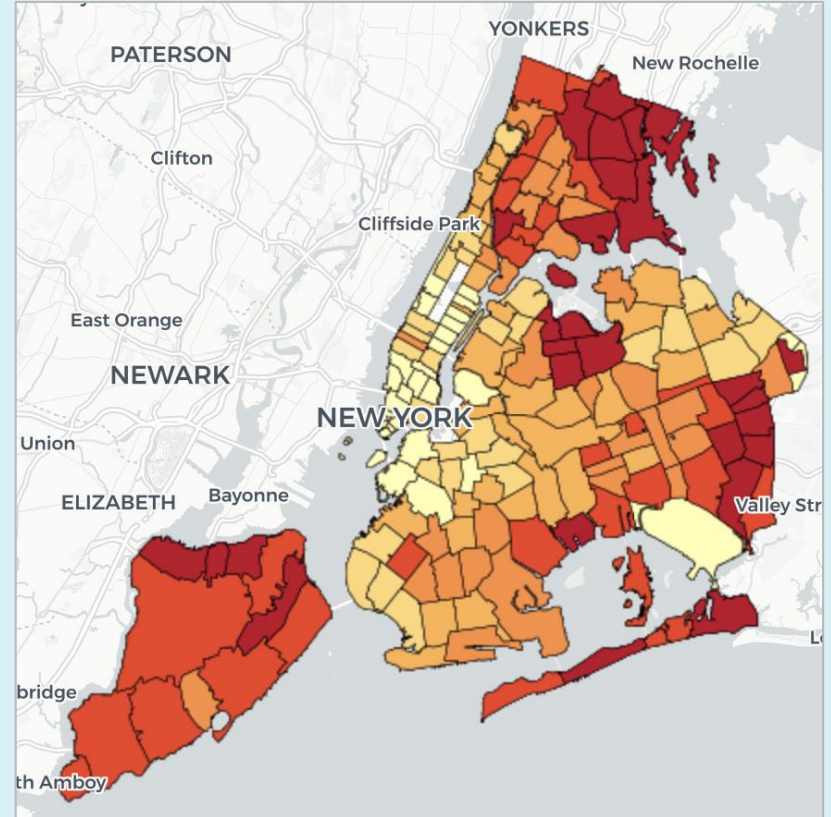


# Energy Burden and Deferred Maintenance

- Households that spend over 6% of their income on energy costs are considered **energy burdened**
- A 2020 nationwide study at UC Berkeley Energy Institute found that *“Black households face a higher energy burden than white households at almost every position in the income distribution.”*

# COVID and Air Pollution

- A Harvard University study has concluded “ A small increase in long-term exposure to [air pollution] leads to a large increase in the COVID-19 death rate.”
- Low-income neighborhoods often times have the worst air quality.
- Reducing carbon emissions is standing up for the most vulnerable New Yorkers, including the elderly, children, and the immunocompromised.



Hotline: 212-479-3313

COVID-19 Resources: [uhab.coop/coronavirus](https://uhab.coop/coronavirus)

# Solar Panels and Renewable technologies



- Solar panels can indirectly contribute to better air quality
- Solar reduces reliance on “peaker plants”: the dirtiest-polluting power plants in the city, which turn on during peak hours.
- Better air quality reduces respiratory illnesses like asthma

# Climate and Resiliency Programs



UHAB's Climate and Resiliency team connects co-op residents with resources so they can lead the way to a carbon free future.

We increase access to energy efficiency measures to fight climate change and keep housing safe, healthy and affordable.

# Co-ops Go Solar



# UHAB Campaign – Co-ops Go Solar



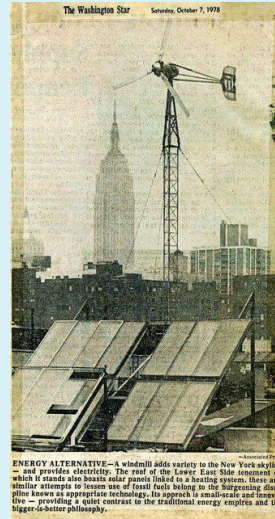
**1st Solar campaign to focus exclusively on HDFCs**

## Goals

- Heighten awareness of renewable energy in the HDFC community AND make it accessible
- Increase energy efficiency in HDFCs
- Sustain affordable HDFCs into the future!

# Innovation in the HDFC Community

Windmill and Solar Heating systems on Heartstone HDFC at 519 East 11 Street



# Co-ops Go Solar

UHAB & Solar One have partnered to help HDFCs access solar energy. Solar can offset common area bills or residential bills.

## Rooftop Solar

- 4 to 8 year payback period
- Generates electricity for 25+ years

Contact us for a FREE cost estimate

## Community Solar

- Free to sign up
- 12 month term
- No cancellation fee
- Average 10% savings



**28 HDFC Co-ops**  
signed up for solar



**11,000 tons of CO<sup>2</sup>**  
avoided over the panels' lifetime



**522 kW-DC**  
of clean energy over  
the panels' lifetime



**\$5,000,000**  
in savings over the  
panels' lifetime



**970 families**  
benefitting from solar



# Environmental Justice perspective on Solar + Affordable Housing

*In framing our work through an EJ lens, we view access to clean energy as another dimension of the struggle for social justice. We focus our efforts on:*

- Bringing affordable solar and its economic benefits to both low-income communities AND communities of color
- Building partnerships with community-based organizations in frontline neighborhoods affected by environmental racism in order to ensure a just transition to clean energy
- Creating opportunities for underrepresented groups to become inspired about being part of the “green economy”

# Solar Uptown Now

- Collaboration with WE ACT for Environmental Justice, Solar One's Here Comes Solar, Sustainable CUNY, UHAB
- Neighborhood-based group purchasing campaign in Harlem, NYC
- Community input to evaluate and select installer
- 11 buildings, 45-kW-DC, including 9 affordable HDFC cooperatives
- 30% lower pricing than average
- Job training and hiring commitment

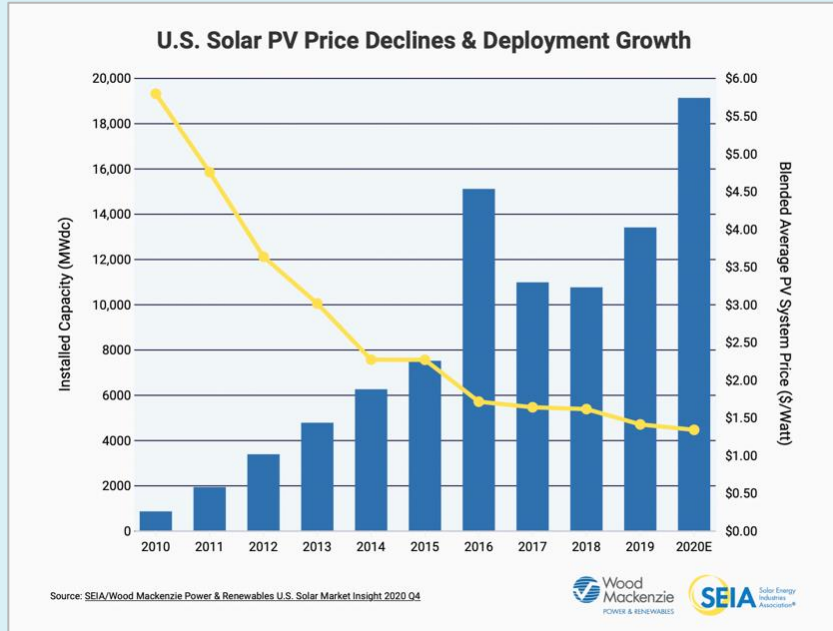


# The Status of Solar in NYC

Solar costs have declined dramatically in recent decades

But New Yorkers still face barriers..

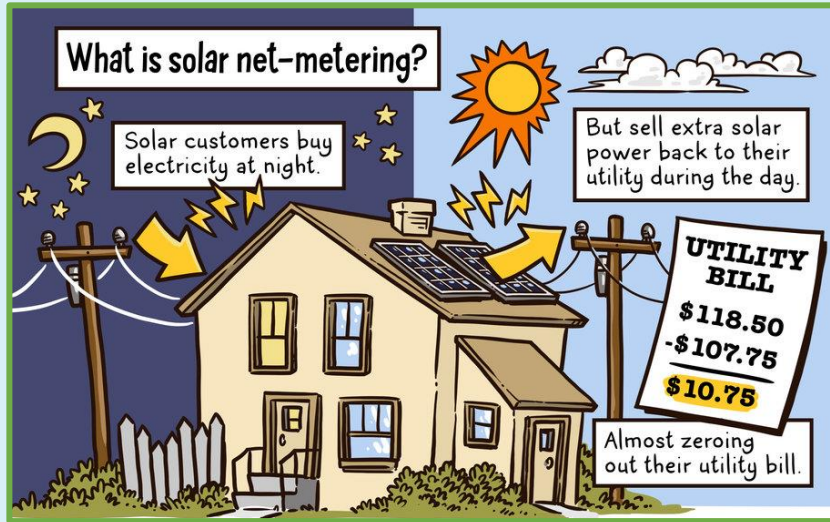
- Construction red tape
- System complexity for multi-family buildings
- Dense urban environment
- Additional complexity of affordable housing



A photograph of a rooftop solar installation. In the foreground, several rows of dark blue solar panels with white grid lines are visible. In the background, a building has a colorful mural of a sunset with a yellow sun, blue sky, and pink horizon. Other buildings and a utility pole are also visible in the distance.

## Saving Money With Solar

# Utility Bill Savings



- Every kilowatt hour you produce is one that you don't have to purchase from utility.
- If you produce more than you need in a month, you can use the credits the following month.
- As the cost of electricity goes up, you realize more savings by generating your own electricity.

## Monthly Utility Bill Savings Example

Electricity Consumption	500 kWh * \$0.22	\$110.00
Solar Energy Production	450 kWh * \$0.22	- \$99.00
<b>Total Bill</b>		<b>\$11.00</b>

# Saving Money with Solar

## Shareholders

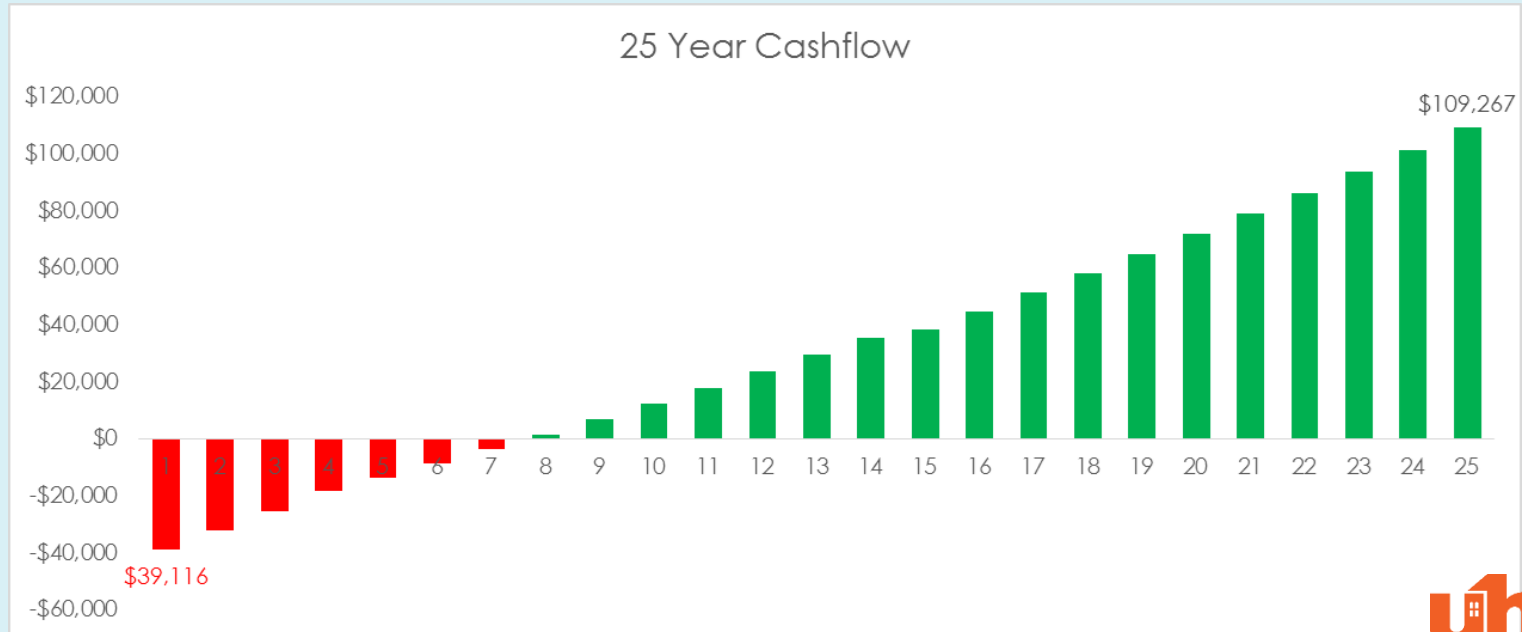
- Federal Tax Credit (30%)
- State Tax Credit (25%)

## Building

- Property Tax Abatement (20%)
- Solar Savings

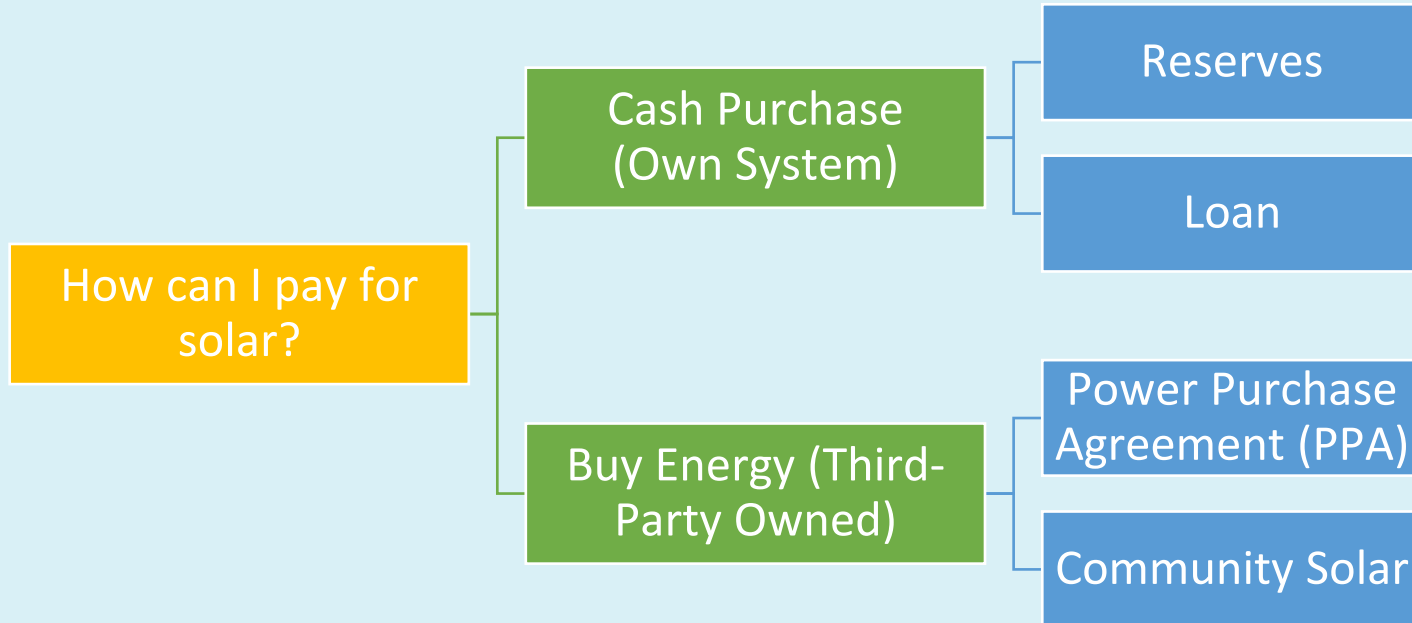
# Solar Savings

Even without tax incentives, solar systems generally pay for themselves in 4-8 years, and continue to save money for decades!



# Financing & 3rd Party Ownership

**With savings, solar loans, Power Purchase Agreements (PPA's), and offsite community solar, solar energy is a possible option for your building.**





Direct sunlight and minimal shading

Large available roof area

New Roof with a long life ahead

Mechanicals clustered in North

**What makes a building roof viable for solar?**

Fire paths along perimeters

# 838 Park Place HDFC



# 838 Park Place HDFC

- 8 unit HDFC
- Solar energy system is utilizing “community shared solar” to distribute solar energy credits to the individual apartments in the building.
- Using canopy design to maximize solar production on a relatively small roof.
- Installed green roof in 2023
- Signed our Climate Action Pledge in April 2022



# 838 Park Place

<b>Building Type</b>	Small HDFC co-op
<b>Solar Installer</b>	Brooklyn SolarWorks
<b>Payment Method</b>	Cash
<b>Solar System Size</b>	33.5 kW-DC
<b>Upfront Cost</b>	\$135,006
<b>Payback Period</b>	2 years
<b>Annual savings</b>	\$8,300
<b>Est. Lifetime Net Savings</b>	\$224,824
<b>Installation Method</b>	Planar & Canopy
	<ul style="list-style-type: none"><li>• First HDFC to install solar</li><li>• Common Area and Community Shared Solar</li><li>• Historic Tax Credit</li></ul>



# Maple Court HDFC



# 1901 Madison Avenue

<b>Building Type</b>	Large HDFC co-op
<b>Solar Installer</b>	Sunkeeper Solar
<b>Payment Method</b>	Cash
<b>Solar System Size</b>	218.74 kW
<b>Net Cost</b>	\$231,603
<b>Payback Period</b>	7 years
<b>Annual savings</b>	\$32,644
<b>Est. Lifetime Net Savings</b>	\$816,112
<b>Installation Method</b>	Ballasted
	<ul style="list-style-type: none"><li>• Biggest solar array in an HDFC</li><li>• Using incentive programs for energy projects</li><li>• LL97 compliance</li></ul>



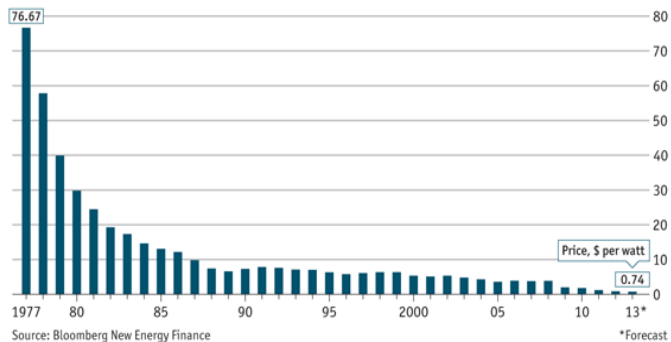
A wide-angle photograph of a rooftop solar farm in an urban environment. The foreground shows a brick building with a grey pipe and yellow caution tape. The middle ground is dominated by rows of solar panels on a flat roof. In the background, a dense city skyline is visible under a cloudy sky. A white seagull is perched on the grey pipe on the left side of the image.

# Community Solar

# Not Everyone Can Access Solar

## The Swanson effect

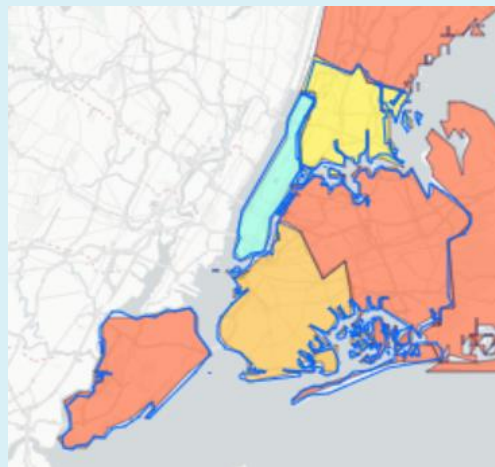
Price of crystalline silicon photovoltaic cells, \$ per watt



**Solar costs** have declined dramatically in recent decades, and the number of installs are increasing...

## ...but New Yorkers still face barriers

- Complex permitting systems
- Most solar installs are on single family homes
- Lack of accessibility for renters



## Installed Capacity

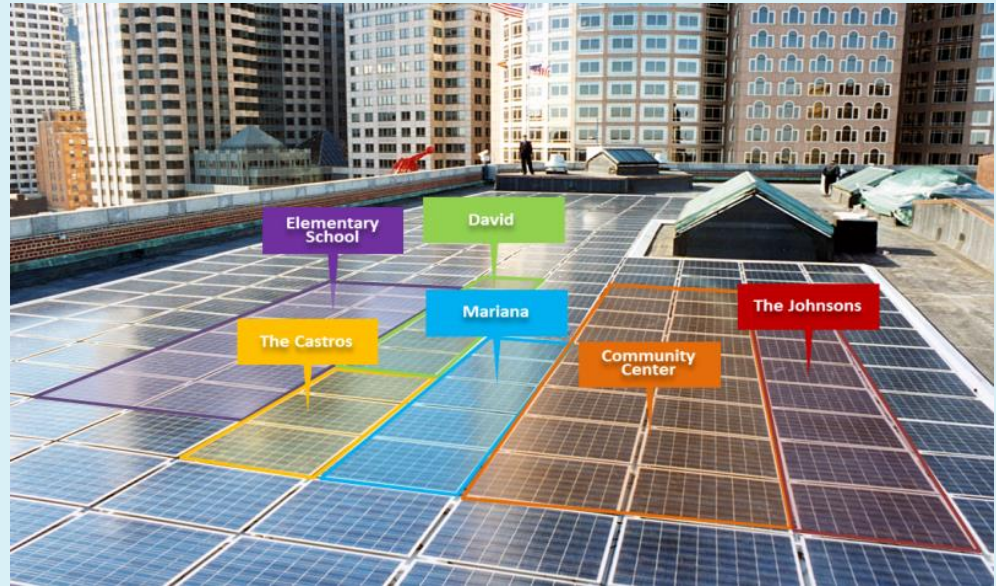
261 kW
4,134 kW
8,135 kW
12,563 kW
23,921 kW
37,664 kW
65,599 kW



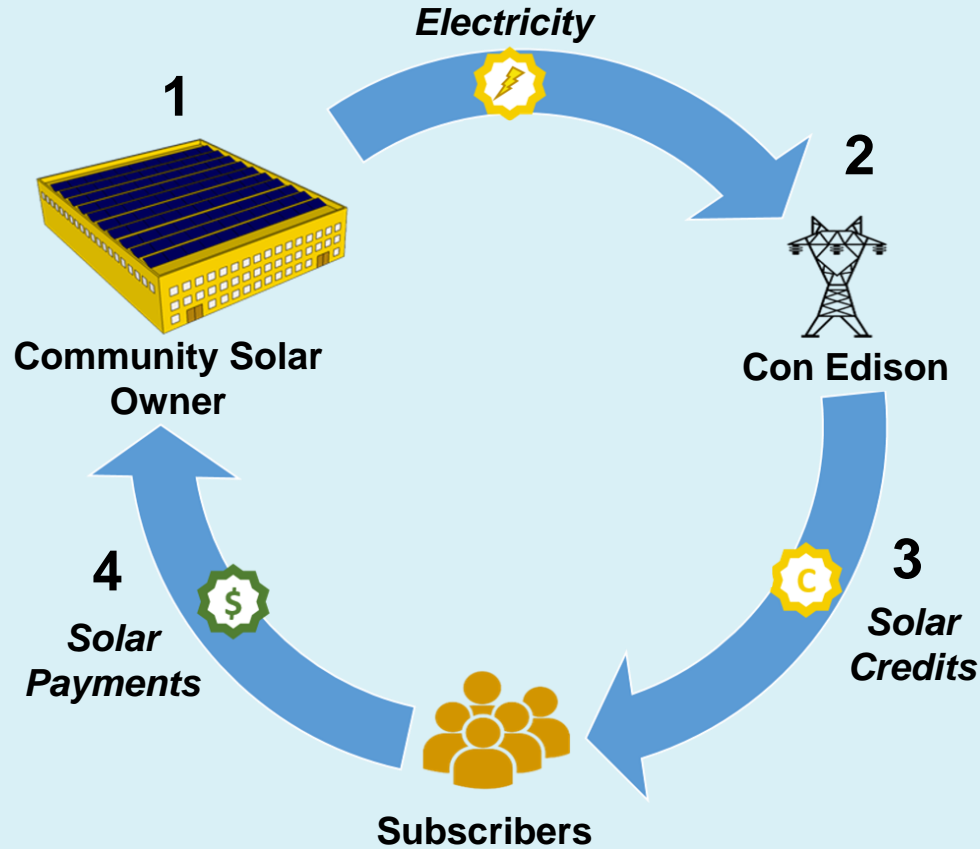
# Community Solar allows solar energy to be accessible to everyone

## Estimated \$100 savings in a year

- ✓ Free to sign up
- ✓ Cancel anytime, no fees
- ✓ 12 month term
- ✓ Auto-renewal
- ✓ Moves with you if you move within NYC
- ★ Helps fight climate change
- ★ Supports local jobs and clean energy production



# How Community Solar Works



# 1. The Solar Panels Produce Energy

Each month, the solar panels located on a large flat roof space will produce solar energy.

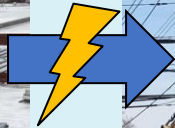


## 2. You Get Credits on your ConEd Bill

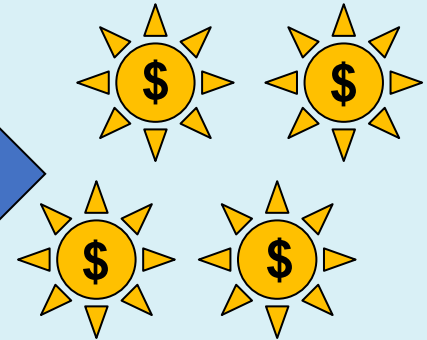
The energy produced from the solar panels is sent to the Con Edison Grid. In return, Con Edison places a value to the solar energy created and converts it to Solar Credits.



**Community Solar System**



**ConEd Grid**



**Solar Credits**

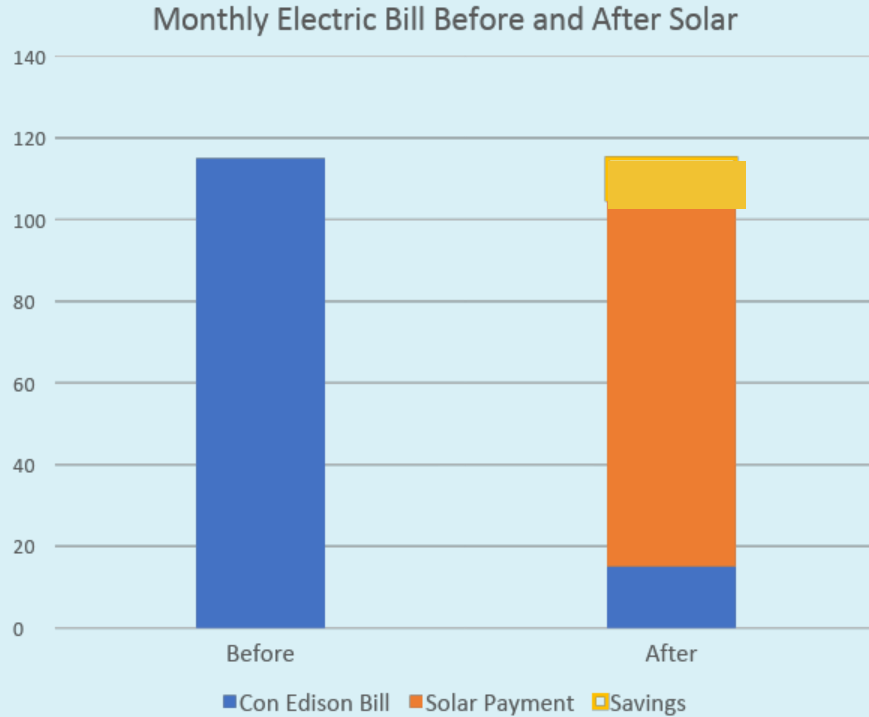
# 3. You Get Credits on your ConEd Bill

Every month, you will receive a solar credit on your bill shown as an 'adjustment'.

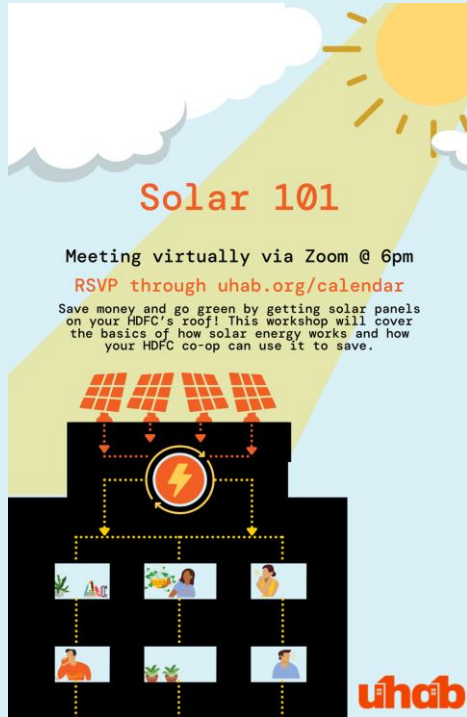
<b>Your billing summary</b> as of Jun 26, 2018	
<b>Your previous charges and payments</b>	
Total charges from your last bill	\$52.92
Payments through Jun 22, thank you	-\$52.92
<b>Remaining balance</b>	<b>None</b>
<b>Your new charges</b> - details start on page 2	
Billing period: May 24, 2018 to Jun 25, 2018	
Electricity charges - for 32 days	\$110.00
<b>Adjustments</b>	<b>-\$60.00</b>
<b>Total new charges</b>	<b>\$50.00</b>
<b>Total amount due</b>	<b>\$50.00</b>
<b>Direct Payment Plan</b> - The amount of \$40,73 will be automatically deducted from your bank on Jul 9, 2018.	

# 4. Monthly Savings

Save on average \$5-10 every month



# Education and Training

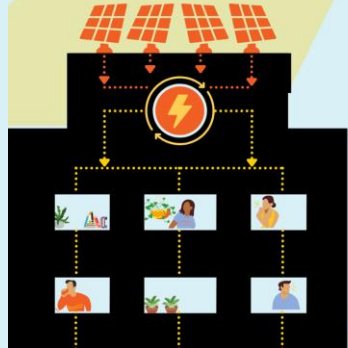


**Solar 101**

Meeting virtually via Zoom @ 6pm

RSVP through [uhab.org/calendar](https://uhab.org/calendar)

Save money and go green by getting solar panels on your HDFC's roof! This workshop will cover the basics of how solar energy works and how your HDFC co-op can use it to save.



**uhab**



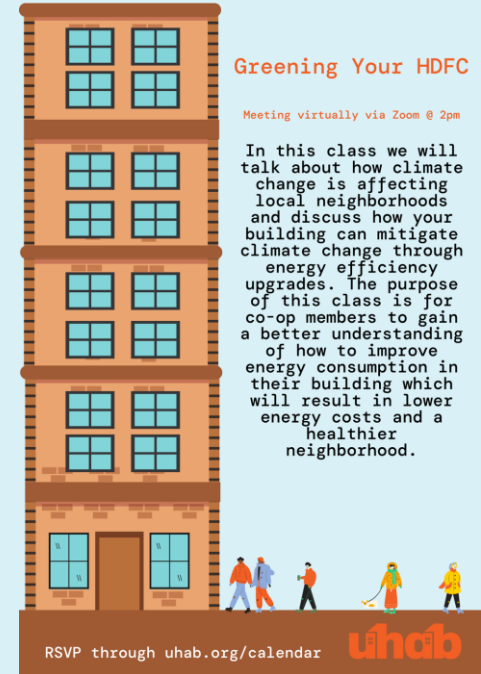
## Financial Literacy

Meeting virtually via Zoom @ 2pm

RSVP through [uhab.org/calendar](https://uhab.org/calendar)

This workshop will help you think about how to set up your co-op's finances for success, how to fund repairs and save money on energy-related upgrades.

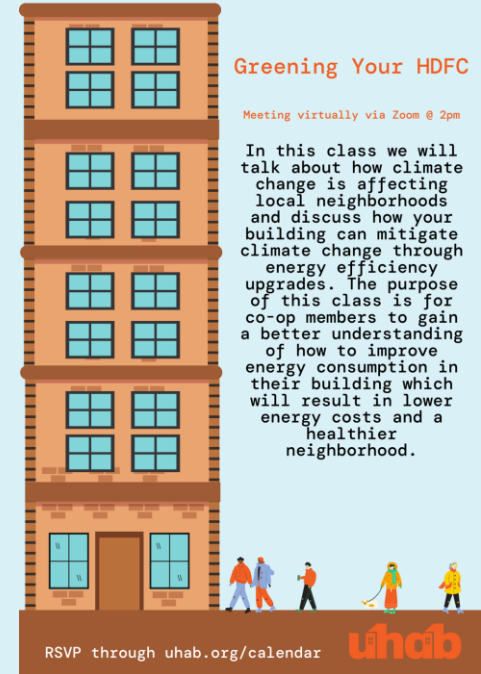
**uhab**



**Greening Your HDFC**

Meeting virtually via Zoom @ 2pm

In this class we will talk about how climate change is affecting local neighborhoods and discuss how your building can mitigate climate change through energy efficiency upgrades. The purpose of this class is for co-op members to gain a better understanding of how to improve energy consumption in their building which will result in lower energy costs and a healthier neighborhood.



RSVP through [uhab.org/calendar](https://uhab.org/calendar)

**uhab**

**uhab**

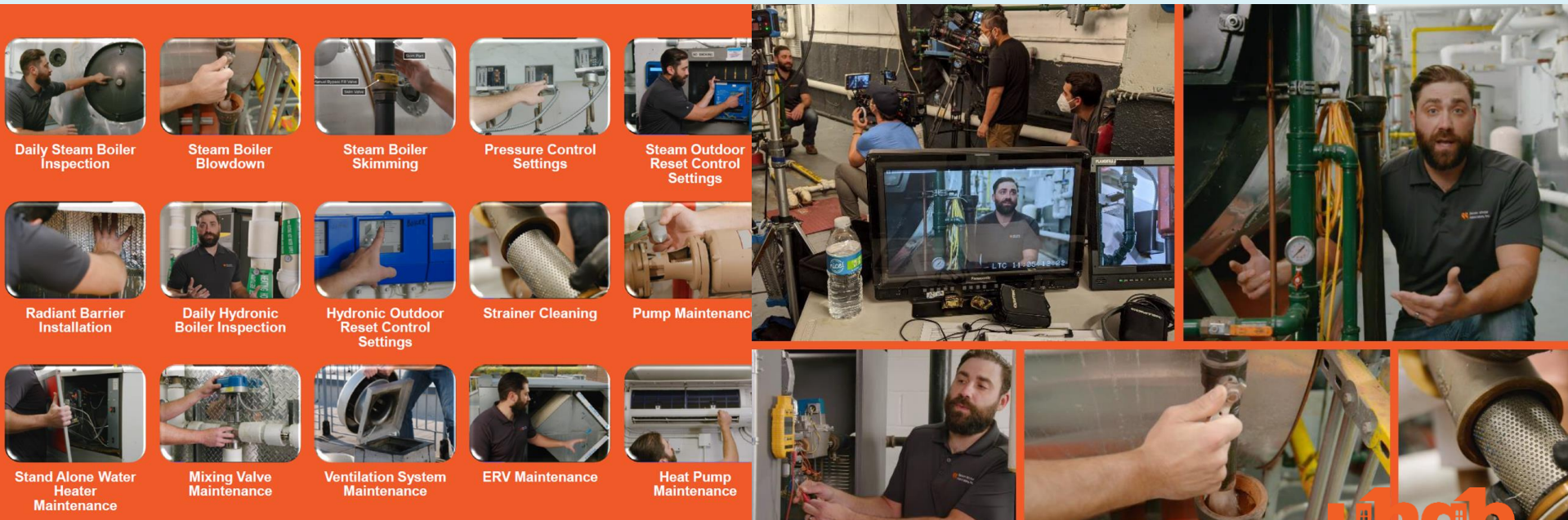
# Solar Tours



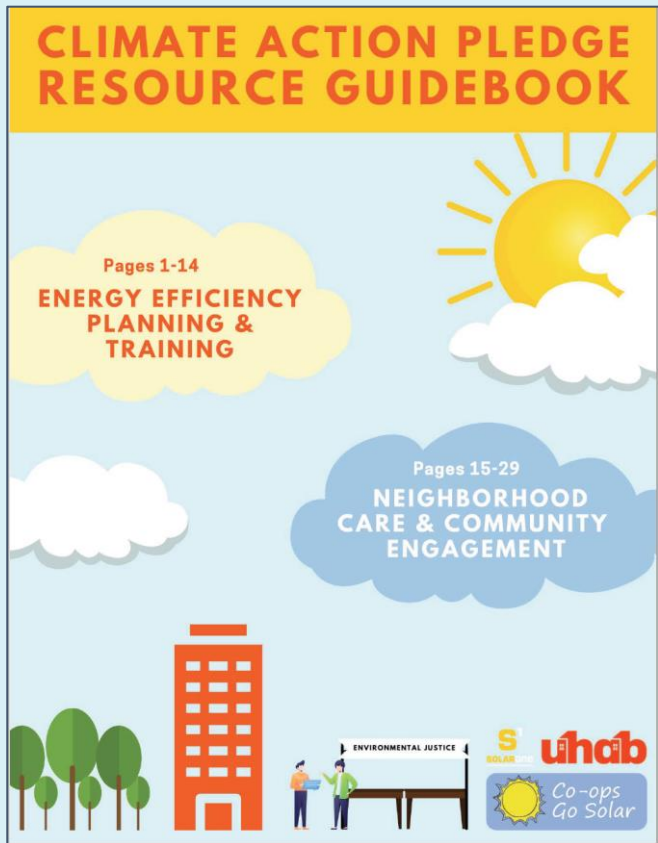


# Education & Career Development

Operation & Maintenance Training Program offers free classes for HDFC shareholders on building systems and how to run those systems more efficiently.



# Climate Action Pledge



**UHAB's Climate Action Pledge** is a resource tool designed for stakeholders of HDFCs and other NYC buildings to identify and commit to projects that support the environmental health of their residents and neighborhoods.

You can also take a look at our guidebook which provides more details about the projects in the pledge and how residents can take action in their community.

Read the Pledge [Here](#)



# Climate Action Pledge

## CO-OPS GO SOLAR (UHAB & SOLAR ONE)

Effort ●○○○○ | Cost ●●●○○ | Impact ●●●●●

### Description

The Co-ops Go Solar campaign makes solar affordable and accessible for co-ops. The program offers technical support in determining the viability of your roof, finding financing solutions, bulk purchasing to reduce costs, and training.

### Eligibility/Considerations

- Free cost estimate for affordable housing buildings
- On-site assessment to determine solar viability
- Financing options are available
- Community solar is an option to save on energy bills without installing solar panels

### Required Documents

- 12 months of Electric Bills

### Impact Summary:

If it's a good match for your building, installing solar can cover your common area electric bill and sometimes partially cover individual units as well. Solar is also a good investment; with present incentives (Go Solar Campaign, NY-Sun Incentive, State Tax Credit, Federal Tax Credit, and Property Tax Abatement), solar can pay for itself in 4-8 years. With a 25 year of warranty on the solar panels, they can deliver thousands of dollars in savings for decades.

### Contact

Link to Info:  
<https://uhab.org/our-work/coop-support/services/energy/solar/>  
Reach out to Solar One or UHAB to initiate the process

### Process Outline

- Free site assessment and site analysis
- Financing
- Select solar installer
- Solar installation

## NEIGHBORHOOD CARE AND COMMUNITY ENGAGEMENT

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<b>C</b> E-WASTE COLLECTION ..... Pg 19	ALIGN
<b>D</b> COMMUNITY GARDENS ..... Pg 20	NEW YORK CITY ENVIRONMENTAL JUSTICE ALLIANCE
<b>E</b> STREET TREE CARE ..... Pg 21	COOPERATIVE ECONOMIC ALLIANCE OF NYC
	BROOKLYN MOVEMENT CENTER
	350NYC



Q&A



# Thank You!

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