Community Solar by Municipalities

Sustainable Jersey Webinar
January 23, 2019
Webinar Speakers

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  Program Administrator
  New Jersey Board of Public Utilities
- Ron Reisman
  Solar Ombudsman
  Sustainable CUNY
# Municipal Program Energy Actions

## Municipal Operations

<table>
<thead>
<tr>
<th>Climate Planning and Energy Efficiency</th>
<th>Renewable Energy</th>
<th>Alternative Fuel Vehicles</th>
</tr>
</thead>
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<tr>
<td>• Municipal Carbon Footprint</td>
<td>• On-Site Solar Energy</td>
<td>• Fleet Inventory</td>
</tr>
<tr>
<td>• Energy Tracking and Management</td>
<td>• On-Site Geothermal</td>
<td>• Purchase Alternative Fuel Vehicles (AFV)</td>
</tr>
<tr>
<td>• Energy Efficiency for Municipal Facilities</td>
<td>• On-Site Wind Energy</td>
<td>• Make Your Town EV Friendly</td>
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<tr>
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<td>• Purchase Renewable Energy</td>
<td>• Public EV Chargers</td>
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</tbody>
</table>

## Community Energy Use

|----------------------------|---------------------|----------------------------------------|-------------------------------------|----------------|--------------|-------------------------------|--------------------------------|------------------------|-------------------|
Gold Star Standard in Energy

- Municipal Operations
  - Municipal buildings
  - Fleet management
  - Operations (landscaping, energy/water conservation, etc.)
  - Route optimization
  - Green building training

- Community Wide
  - Make Your Town EV Friendly
  - Public Electric Vehicle Chargers
  - Make Your Town Solar Friendly
  - Community Led Solar Initiatives
  - Residential Energy Efficiency
  - Commercial Energy Efficiency
New Jersey’s Community Solar Energy Pilot Program

Wednesday, January 23, 2019
The information and views in this presentation does not necessarily represent the views of the New Jersey Board of Public Utilities, its Commissioners, or the State of New Jersey. This presentation is provided for informational purposes only and does not provide a legal interpretation of any New Jersey Statutes regulations or policies.

Furthermore, this presentation is based on the Community Solar Energy Pilot Program Proposed Rules as published in the New Jersey Register on October 1, 2018.
NJCEP BACKGROUND

- Administered by the New Jersey Board of Public Utilities
- Funded from “Societal Benefits Charge” on utility bill
- Program Goals:
  - Promote increased energy efficiency and the use of clean, renewable sources of energy
  - Protect the environment and lower emissions
  - Change the business mindset
Clean Energy Act of 2018

• Signed into law on May 23, 2018

• Directs the BPU to adopt rules and regulations establishing a Community Solar Energy Pilot Program within 210 days

➢ January 17, 2019 Board Agenda Meeting

• Directs the BPU to adopt rules and regulations establishing a Community Solar Energy Program within 36 months of the enactment of the Pilot Program
What is Community Solar?

- A larger, remotely located solar array or facility that is virtually divided among multiple participants ("subscribers") by means of a credit on their utility bill.

- Participation can be in the form of:
  - **Ownership**: buying a direct share or portion of the community solar project or panels
  - **Subscription**: buying a portion or share of the electric output produced by the community solar project
What is Community Solar?

1. Buy Solar Subscription
2. Community Solar Project
3. Portion of Solar Sale Back on Bill Credit
4. Solar Delivered to Grid
## Pilot Program Characteristics

| Structure                                      | • 3-year Pilot Program  
|                                               | • Anticipated Pilot Program start: early 2019  
|                                               | • Projects selected via an application and competitive scoring |
| Size                                           | • Individual community solar project capacity limit: 5MW  
|                                               | • Annual capacity limit: 75MW for PY1, at least 75MW PY2&3  
|                                               | • Min. 10 subscribers, max. 250 subscribers per 1MW capacity |
| Siting                                         | • Prohibition of community solar on preserved farmland  
|                                               | • Siting on Green Acres open space subject to DEP approval |
| Credit Value                                   | • Bill credit set at retail rate net metering, minus non-bypassable charges |
| Low & Moderate Income (LMI) Access             | • At least 40% of program capacity reserved for LMI projects  
|                                               | • Option for further 10% reserved for LI projects |
Pilot Program

Structure

- 3-year Pilot Program

- Project selection via competitive application process


- Selected projects are expected to begin construction within 6 months of their approval by the Board, and be fully operational within 12 months of their approval by the Board
<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Max. Points</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Siting</strong></td>
<td>20</td>
</tr>
<tr>
<td>Higher preference: landfills, brownfields, areas of historic fill, rooftops, parking lots, parking decks</td>
<td></td>
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<tr>
<td>Medium preference: rights-of-way, canopies over impervious surfaces (e.g. walkway), areas designated in need of redevelopment</td>
<td></td>
</tr>
<tr>
<td>Not preferred: preserved land, wetlands, forested area, farmland</td>
<td></td>
</tr>
<tr>
<td>Bonus points for: landscaping, land enhancement, pollination support, storm water management, decommissioning plan</td>
<td></td>
</tr>
<tr>
<td><strong>Subscribers and Environmental Justice</strong></td>
<td>20</td>
</tr>
<tr>
<td>Higher preference: LMI project, with real benefits to the LMI subscribers, more than 50% kWh assigned to residential subscribers, in environmentally disadvantaged community (as defined by DEP)</td>
<td></td>
</tr>
<tr>
<td><strong>Product Offering</strong></td>
<td>20</td>
</tr>
<tr>
<td>Higher preference: guaranteed savings &gt;10%, flexible terms</td>
<td></td>
</tr>
<tr>
<td>Medium preference: guaranteed savings &gt;5%</td>
<td></td>
</tr>
<tr>
<td>Not preferred: no Guaranteed savings</td>
<td></td>
</tr>
<tr>
<td><strong>Cost in $/kW installed</strong></td>
<td>10</td>
</tr>
<tr>
<td>Higher preference: lowest cost</td>
<td></td>
</tr>
<tr>
<td><strong>Community and Environmental Justice Engagement</strong></td>
<td>10</td>
</tr>
<tr>
<td>Higher preference: partnership with municipality, partnership with local community organization(s), partnership with partnership with affordable housing provider, provides local jobs/job training</td>
<td></td>
</tr>
<tr>
<td>Medium preference: letter of support from municipality, project owner is a government and/or public and/or quasi-public entity, project owner is an affordable housing developer</td>
<td></td>
</tr>
<tr>
<td><strong>Other Benefits</strong></td>
<td>10</td>
</tr>
<tr>
<td>Paired with storage, micro-grid project, energy audit, EE measures</td>
<td></td>
</tr>
<tr>
<td><strong>Geographic Limit</strong></td>
<td>5</td>
</tr>
<tr>
<td>Higher preference: municipality/adjacent municipality</td>
<td></td>
</tr>
<tr>
<td>Medium preference: county/adjacent county</td>
<td></td>
</tr>
<tr>
<td>No preference: any geographic location within the EDC service territory</td>
<td></td>
</tr>
<tr>
<td><strong>Project Maturity</strong></td>
<td>5</td>
</tr>
<tr>
<td>Higher preference: EDC feasibility study received, permits received, site control received</td>
<td></td>
</tr>
<tr>
<td>Medium preference: EDC feasibility study applied for, permits applied for, conditional site control</td>
<td></td>
</tr>
</tbody>
</table>
Pilot Program

Size

- Annual capacity limit: 75 MW for Program Year 1, at least 75 MW Program Years 2 and 3
- Maximum size of individual community solar projects: 5 MW. No minimum size
- Minimum 10 subscribers (possible exemption for multi-family buildings with a community solar project located on their property)
- Maximum 250 subscribers per 1MW capacity
Subscriptions

All rate classes are eligible to participate in a community solar project; account holders of a master meter are allowed to subscribe to community solar on behalf of their tenants (specific rules apply).

- Subscriptions cannot exceed 100% of the subscriber’s 12-month historic annual usage.
- Subscriptions cannot exceed 40% of the project’s annual net energy.
- Subscriptions are portable and transferable.
Siting

- Projects may have subscribers anywhere in the EDC service territory in which they are located, unless they have indicated otherwise in the Application to the Board.

- Prohibition of community solar on preserved farmland

- Siting on Green Acres open space subject to DEP approval
Mars Chocolate Headquarters 18-acre Solar Garden
Hackettstown, NJ
Solar Carport Rendition
Amazon Solar Warehouse

ACE Hosting Capacity

http://pepco.maps.arcgis.com/apps/webappviewer/index.html?id=75725977c664459f84ef31e305490fd4
Bill Credit

- Bill credit set at retail rate net metering, minus non-bypassable charges (Societal Benefits Charge)
- Bill credits can be carried over from month-to-month for one year
- At the end of the year, excess credits are compensated at avoided cost of wholesale power
- Subscribers must agree to a remote read smart meter upon EDC request, purchased and installed at EDC cost
- Green Button Connect My Data
Low- and Moderate-Income

- At least 40% of program capacity reserved for LMI projects
- An LMI project is defined as having at least 51% project capacity subscribed to LMI subscribers
- Affordable housing providers may, subject to specific rules, qualify as an LMI subscriber
- Individual qualifying criteria described in Pilot Program Rule
FOR MORE INFORMATION

Visit: NJCleanEnergy.com

Contact: communitysolar@njcleanenergy.com

Stay Informed: Sign up for community solar updates by emailing webmaster@njcleanenergy.com

@NJCleanEnergy
Sustainable CUNY
Community Shared Solar in New York City
Ron Reisman, Solar Ombudsman
Sustainable CUNY

CUNY Sustainability

Modeling a CUNY transformation

Solar

Removing the barriers to wide-scale solar adoption in New York

Energy Resiliency

Developing a pathway for resilient distributed generation
Formed in 2006 and led by Sustainable CUNY

- Objective third party that brings stakeholders to the table
- Market and data analysis
- Solar Ombudsmen as subject matter experts across solar and storage sectors
- Deep IT resources, i.e., NYC, NYS Solar Map and Portal

Mayor’s Office and NYC EDC

- Strategic focus on policies and programs that support solar and economic development
- Actively engaged
- Vast network of resources

NYC GOAL: 1,000 MW by 2030
**NYC SOLAR PARTNERSHIP**

**Solarize NYC | Shared Solar NYC**

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**Solarize NYC**
- Community-based group purchasing program
- Competitive installer selection
- Tiered pricing structure (i.e., the more who join, the lower the price for all)
- Community-led outreach and education
- Limited-time program (generally 6-9 months)

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**Shared Solar NYC**
- Large-scale systems serving multiple customers
- Matching site hosts, developers and customers
- Expanding access to underserved communities

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**Current Solarize NYC Campaigns**
- SOLARIZE NEHEMIAH
- SOLAR UPTOWN NOW
Benefits of Community Shared Solar

• Provides solar access to customers who previously had none

• Offers households, including LMI, the chance to reduce their energy costs

• Develops clean, community-based energy resources

• Creates good-paying green jobs for local residents
Community Shared Solar in New York State

- Authorized by Order of NY PSC in 2015 with effective date of 2016

- Allows multiple customers to be served by a single off-site solar system

- Minimum of 10 customers per system (exception for on-site systems)

- No individual customer can subscribe to more than 40% of system’s output

- All customers must be in the same load zone as the system
Community Shared Solar
How does it work?

Building Owner
- Provides host site
- Receives rent payment

PV System Owner
- Builds, owns, manages, operates the system
- Manages subscriptions & utility billing

Customers (Subscribers)
- Pays subscription fee to PV system owner
- Receives credit from the utility

Utility (ConEd)
-Credits on bill

Host Site

System Owner

System Owner

Customers (Subscribers)

Lease Payment

Subscription Payment

How does it work?
Community Shared Solar
Enables multiple off-site customers to buy solar power from a single installation
Shared Solar NYC Gateway
https://sharedsolarnyc.org/

- Developed by Sustainable CUNY to promote shared solar in NYC
- Match hosts, developers, subscribers
- Dedicated ACCESSolar section to connect developers and CBOs
Shared Solar NYC Gateway
ACCESSolar Landing Page
Introduction to NYCHA
What is NYCHA?

- 328 developments
- Made up of 2,550 buildings
- That consist of 178,000 apartments
- Containing over 175 million square feet of space

60% of NYCHA’s building are 50+ years old

The largest development: a 26-building apartment complex with 7,000 residents
The smallest development: a single-story senior building with 13 residents
Introduction to NYCHA
Who is NYCHA?

- 77,000 SENIORS
  62 YEARS OLD OR OLDER

- 110,000 CHILDREN
  UNDER 18 YEARS OLD

- 40% OF HEADS OF HOUSEHOLDS
  ARE 62 YEARS OLD OR OLDER

- 25% OF NYCHA EMPLOYEES
  ARE RESIDENTS OF PUBLIC HOUSING

- $23,000 AVERAGE HOUSEHOLD INCOME

- 61% ARE EMPLOYED
  (OF NON-DISABLED,
  WORKING AGE ADULTS)

- 41% ON FIXED INCOME
  (SOC. SEC., SSI, PENSION, OTHER)

- 12% RECEIVE PUBLIC ASSISTANCE
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
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
• Standard procurement process

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
• Greater emphasis on LMI subscribers and job training
ACCESSolar Overview

Goals

• Contribute to NYCHA’s 25 MW goal by making smaller roofs available
• Expand solar business opportunities for small local businesses and MWBEs
• Provide job training and green job opportunities for NYCHA residents
• Offer renewable power to low- and moderate-income subscribers in NYC
Sustainable CUNY Solar Analysis

NYC LiDAR

Queensbridge South

Charts

Cumulative Net Cash Flow

$700,000
$600,000
$500,000
$400,000
$300,000
$200,000
$100,000
$0

0 10 15 20 25

Years
Sustainable CUNY Solar Analysis
Solar Potential of NYCHA’s 2,500 Roofs
NYCHA’s 25 MW Solar Program

Key Elements

• NYCHA will not own, maintain or manage any solar installations
  • It serves only as a site host, monetizing a valuable asset (its roof space)
  • Sets conditions for achieving public purpose goals

• NYCHA will not buy the electricity from the solar installations
  • NYCHA buys its electricity from the New York Power Authority (NYPA)
  • NYPA rate of 4 to 5 cents per kWh is cheaper than solar
  • NYPA tariffs prohibit power purchases from other sources

• 95% of NYCHA buildings are master metered
  • Unlikely that solar power will be used by tenants in buildings that host systems
  • Only 10,500 NYCHA households are billed directly by Con Edison
Questions to Consider

• Can the community shared solar strategies we’ve described be replicated in New Jersey, and specifically in your community?

• Can public housing authorities in Newark, Trenton, Camden and other urban centers adopt programs similar to NYCHA’s ACCESSolar?

• What needs to be done on the state and local level in New Jersey—and by its utilities—to help bring solar to underserved communities?
Sustainable CUNY thanks you!

nysolar@cuny.edu

Ron Reisman, Solar Ombudsman
ronald.reisman@cuny.edu
(646) 664-2805
<table>
<thead>
<tr>
<th>Webinar Title</th>
<th>Date(s)</th>
<th>Time(s)</th>
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<tr>
<td><strong>Moving Up to Silver Certification</strong></td>
<td>January 30, 2019</td>
<td>1:00 pm to 2:00 pm</td>
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<tr>
<td><strong>Making a Game Plan for Getting Certified</strong></td>
<td>February 20, 2019</td>
<td>1:00 pm to 2:00 pm</td>
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<td><strong>Stay In the Game! Strategize Your Recertification</strong></td>
<td>February 13, 2019</td>
<td>1:00 pm to 2:00 pm</td>
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<td>February 13, 2019</td>
<td>7:00 pm to 8:00 pm</td>
</tr>
<tr>
<td><strong>Foundations for Using Technology Effectively in Your Town</strong></td>
<td>February 27, 2019</td>
<td>1:00 pm to 2:00 pm</td>
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<tr>
<td><strong>Green Team 2.0: Building Your Capacity &amp; Promoting Your Team</strong></td>
<td>March 6, 2019</td>
<td>1:00 pm to 2:00 pm</td>
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<tr>
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<td>March 6, 2019</td>
<td>7:00 pm to 8:00 pm</td>
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</table>
Grants Available

**PSEG Municipal Grants**
- Four (4) $20,000 grants
- Eight (8) $10,000 grants
- Twenty (20) $2,000 grants

**Application Deadline:**
Friday, February 15, 2019

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**PSEG School Grants**
- Four (4) $10,000 grants
- Thirty (30) $2,000 grants

**Application Deadline:**
Friday, March 15, 2019
FOR MORE INFORMATION

Visit: NJCleanEnergy.com

Contact: communitysolar@njcleanenergy.com

Stay Informed: Sign up for community solar updates by emailing webmaster@njcleanenergy.com

@NJCleanEnergy
Appendix
VDER Value Stack

Locational System Relief Value
Avoided Demand
Environmental Value
Capacity Value
Locational Based Marginal Price

Commercial/ Industrial

LSRV
AVOIDED D
E
CAPACITY
LBMP

Market Transition Credit

LSRV
MTC
E
CAPACITY
LBMP

Community Solar