

RESILIENTPOWER

A project of CleanEnergyGroup



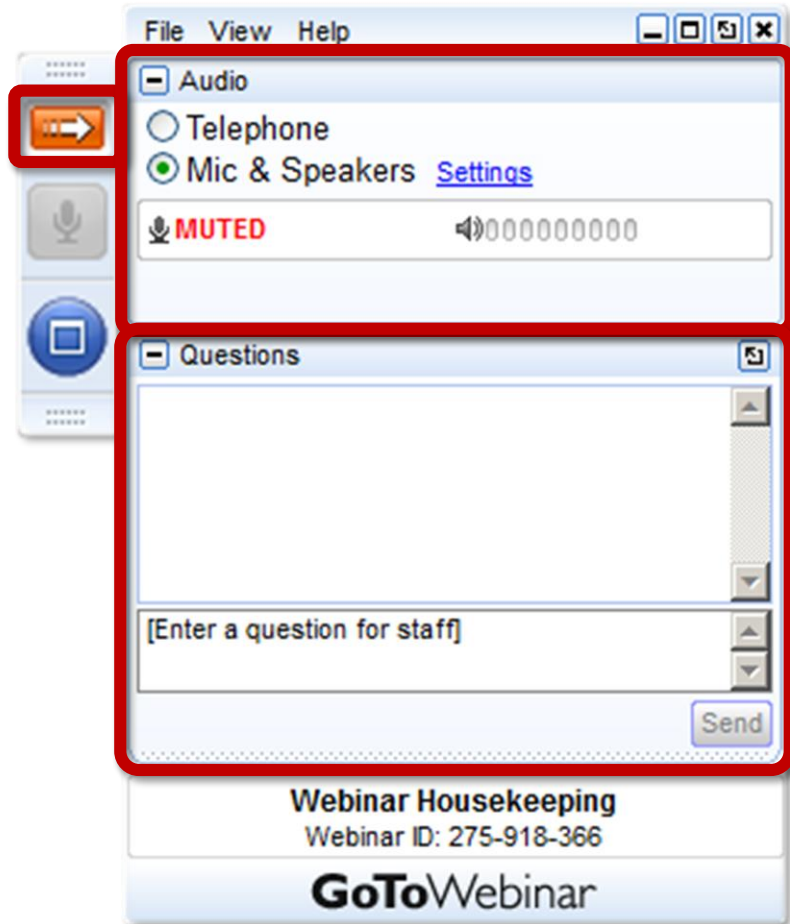
Financing Resilient Power in Under-Resourced Communities

January 28, 2020

Hosted by Rob Sanders and Seth Mullendore, Clean Energy Group



HOUSEKEEPING



To Join Audio:

- Choose Mic & Speakers to use VoIP or
- Choose Telephone and dial using the information provided

Use the white arrow in the **orange tab** to open and close the webinar console panel

Submit questions and comments via the **Questions** box and hit “send”

This webinar is being recorded. We will send an email, within 48 hours, with a link to the webinar recording and presentation slides. CEG’s webinars are archived at www.cleanegroup.org/webinars





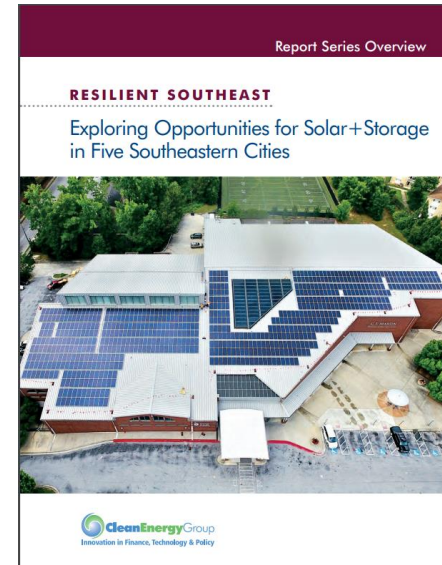
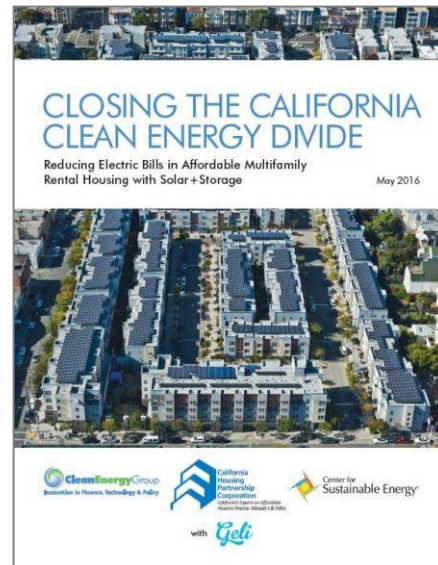
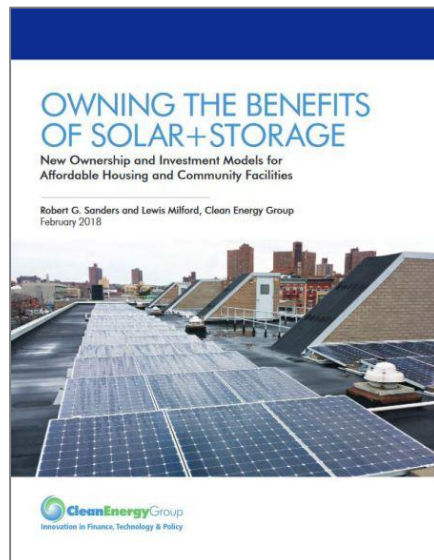
Bringing Low and Moderate Income Households (LMI) Solar Financing Models to Scale

- Accelerate scaled-up adaptation of effective programs to increase PV and solar+storage for LMI households



THE RESILIENT POWER PROJECT

- Increase public/private investment in clean, resilient power systems (solar+ battery storage)
- Protect low-income and vulnerable communities, with a focus on affordable housing and critical public facilities
- Engage city, state and federal policy makers to develop supportive policies and programs
- Visit www.resilient-power.org for more information and resources



SUPPORTING 150+ PROJECTS ACROSS THE COUNTRY



Financing Resilient Power in Under-Resourced Communities

Webinar Panelists



THE
KRESGE
FOUNDATION

Jessica Boehland

Senior Program Officer with The Kresge Foundation's Environment Program



Curtis Probst

Co-CEO of New York City Energy Efficiency Corporation (NYCEEC)



Seth Mullendore

Vice President & Project Director, Clean Energy Group



Robert Sanders

Senior Finance Director, Clean Energy Group (moderator)

Kresge's *Financing Resilient Power* Initiative

- \$3.3 million comprehensive financing strategy
 - \$3 million innovative **payment guarantee** to help keep loans current
 - **Capacity-building grant** to accelerate lender's ability to finance solar+storage projects, build project pipelines
 - **Technical-assistance grants** to enable eligible project owners and developers to assess the technical and financial feasibility of new solar+storage projects
- Multifamily affordable & supportive housing, commercial & mixed-use projects, community facilities
- Can be used for construction, bridge, permanent financing
- Direct ownership, 3rd-party ownership, special purpose entities, for-profit & nonprofit ownership, co-operative/community ownership
- 14-year term (10-year loan term, 4-year origination period)
- Designated lender: NYCEEC; initiative managed by Clean Energy Group

CONTACT:

Rob Sanders

Senior Finance Director

Clean Energy Group

RSanders@cleanegroup.org

Find us online:

www.resilient-power.org

www.cleanegroup.org

www.facebook.com/clean.energy.group

@cleanenergygrp on Twitter

@Resilient_Power on Twitter





Financing Resilient Power in Under-Resourced Communities

Kresge's Comprehensive
Financing Initiative for
Solar+Storage Projects

January 28, 2020



- What is The Kresge Foundation?
- Why Resilient Power?
- What is the Financing Resilient Power Initiative?



- National private foundation
- Goal: Expanding opportunities in America's cities
- Invests more than \$160 million annually to foster economic and social change
- Seven program areas and a Social Investment Practice



**AMERICAN CITIES
PROGRAM**



**ARTS & CULTURE
PROGRAM**



**DETROIT
PROGRAM**



**EDUCATION
PROGRAM**



**ENVIRONMENT
PROGRAM**



**HEALTH
PROGRAM**



**HUMAN SERVICES
PROGRAM**



**SOCIAL INVESTMENT
PRACTICE**



ENVIRONMENT

We help cities implement comprehensive climate-resilient approaches grounded in equity.



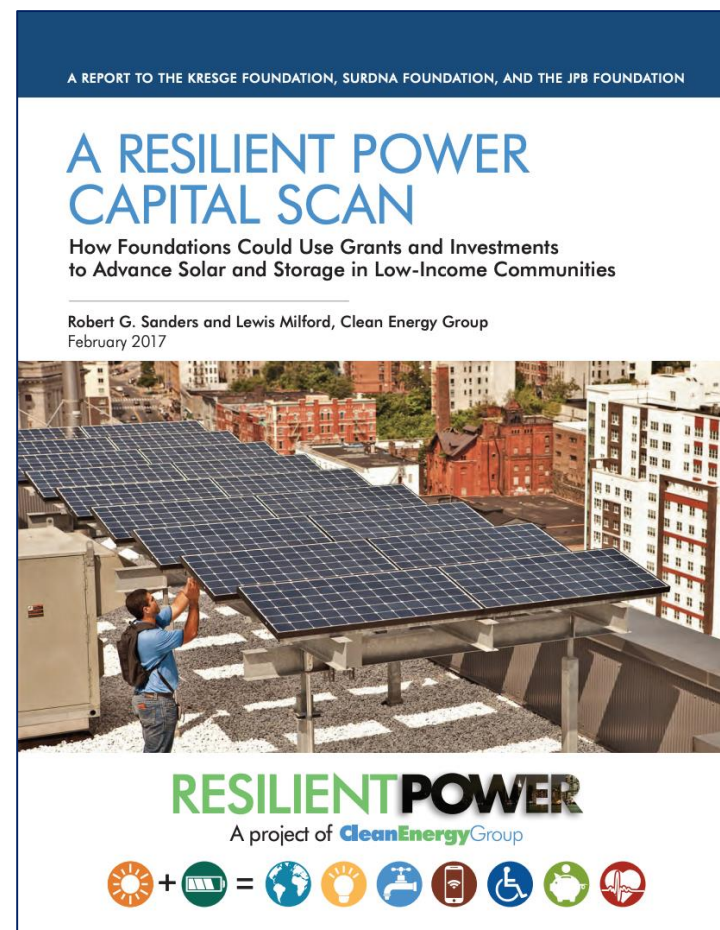
SOCIAL INVESTMENT PRACTICE

We work to expand opportunity, strengthen neighborhoods and improve quality of life in America's cities by providing access to capital.

Why Resilient Power?

Kresge Rationale

- 1) Protecting the health and safety of people in historically underserved communities
- 2) Advancing climate change mitigation and adaptation
- 3) Working at the intersection of Kresge's Environment Program and Social Investment Practice
- 4) Fixing market failures



Kresge's Financing Resilient Power Commitment

Components

- 1) Loan Guarantee: \$3,000,000
- 2) Capacity-Building Grant:
\$170,000
- 3) Technical-Assistance Grants:
\$120,000

Partners

- 1) Clean Energy Group
Innovation in Finance, Technology & Policy

- 2) NYCEEC
BUILDING FINANCIAL SOLUTIONS

- 3) You?

Questions?

THE
KRESGE
FOUNDATION

Jessica Boehland

Senior Program Officer

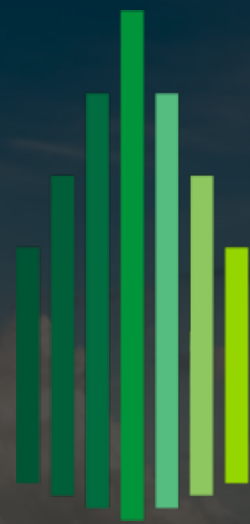
Environment Program

jeboehland@kresge.org

kresge.org



[@kresgenviro](https://twitter.com/kresgenviro)



NYCEEC

BUILDING FINANCIAL SOLUTIONS

Financing Resilient Power in Under-Resourced Communities

A Foundation's Comprehensive Financing
Initiative for Solar+Storage Projects

JANUARY 28, 2020

Who we are



- NYCEEC is a 501(c)3 mission-driven green lender, launched in 2010 by the NYC Mayor's Office of Sustainability
- We lend to green building projects that reduce energy consumption or produce clean energy – saving money, improving the environment and building sustainable communities
- We prioritize projects serving low- and moderate- income communities to the greatest extent possible
- Our mission: to deliver financing solutions and advance markets for energy efficiency and clean energy in buildings
- Our vision: energy efficiency and clean energy financing for buildings to achieve scale and be accessible to all

Our impact



JANUARY 2020



\$ **168** MILLION
OF CAPITAL
MOBILIZED

12 LENDING
PARTNERSHIPS



11.3 MILLION
SQUARE FEET
IMPACTED

226
BUILDINGS
UPGRADED



762,000
MTONS OF

CO₂
ELIMINATED

21.5 million
MMBtus OF ENERGY SAVED



6,973
AFFORDABLE
HOUSING UNITS

1,829
JOBS
created



Eligible technologies



ENERGY EFFICIENCY



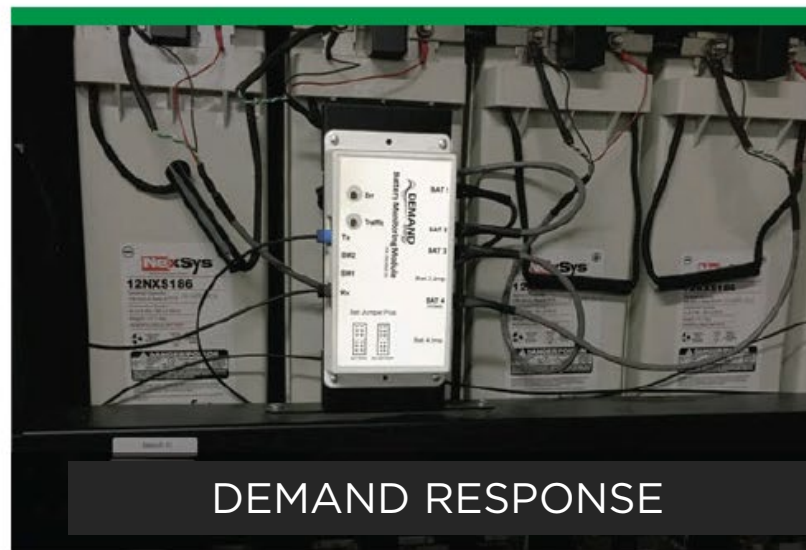
SOLAR + STORAGE



CHP



HIGH PERFORMANCE RETROFITS

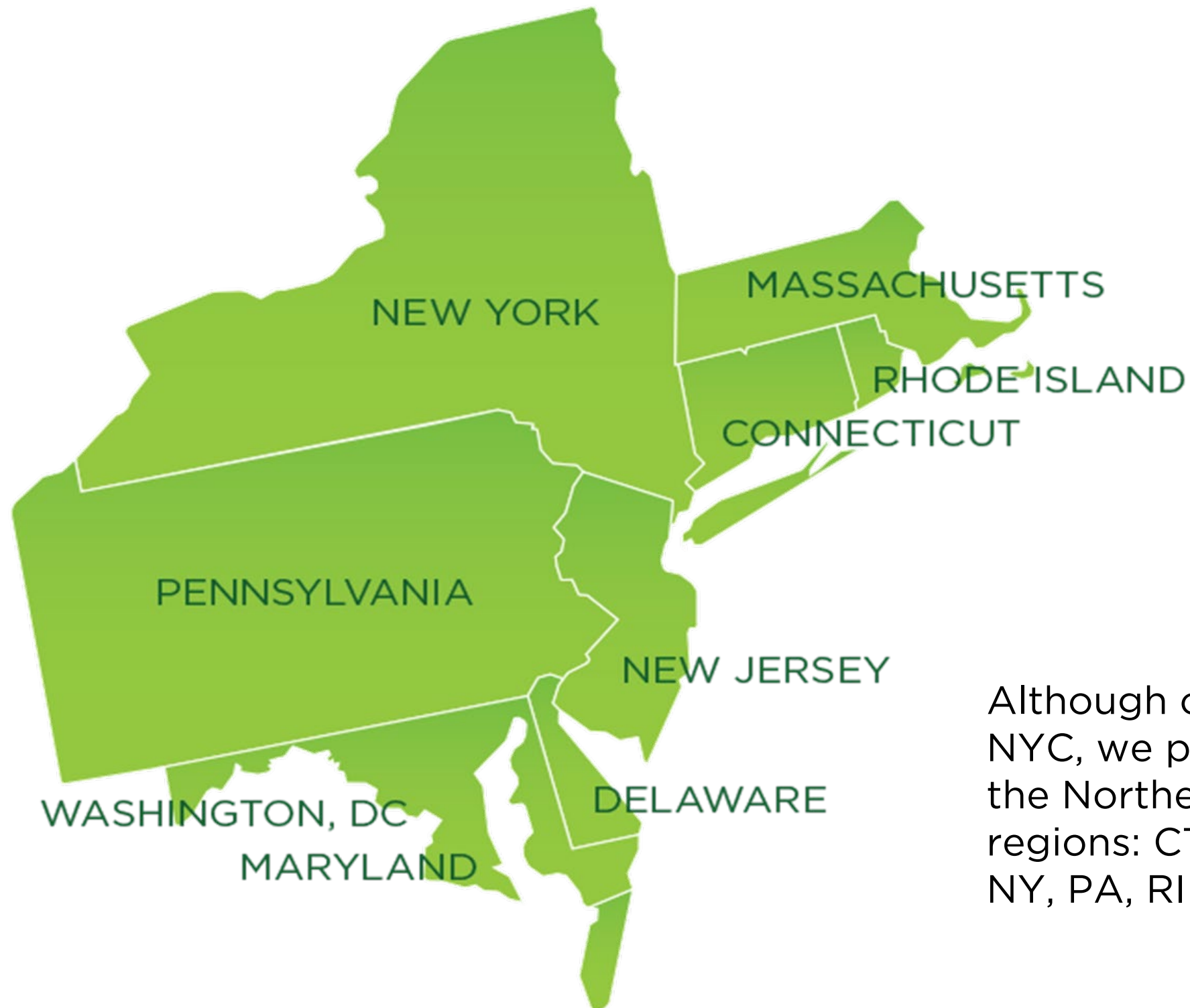


DEMAND RESPONSE



CLEAN FUEL CONVERSIONS

Geographic eligibility



Although our home market is NYC, we provide loans across the Northeast and Mid-Atlantic regions: CT, DE, MA, MD, NJ, NY, PA, RI and Washington, DC

NYCEEC products



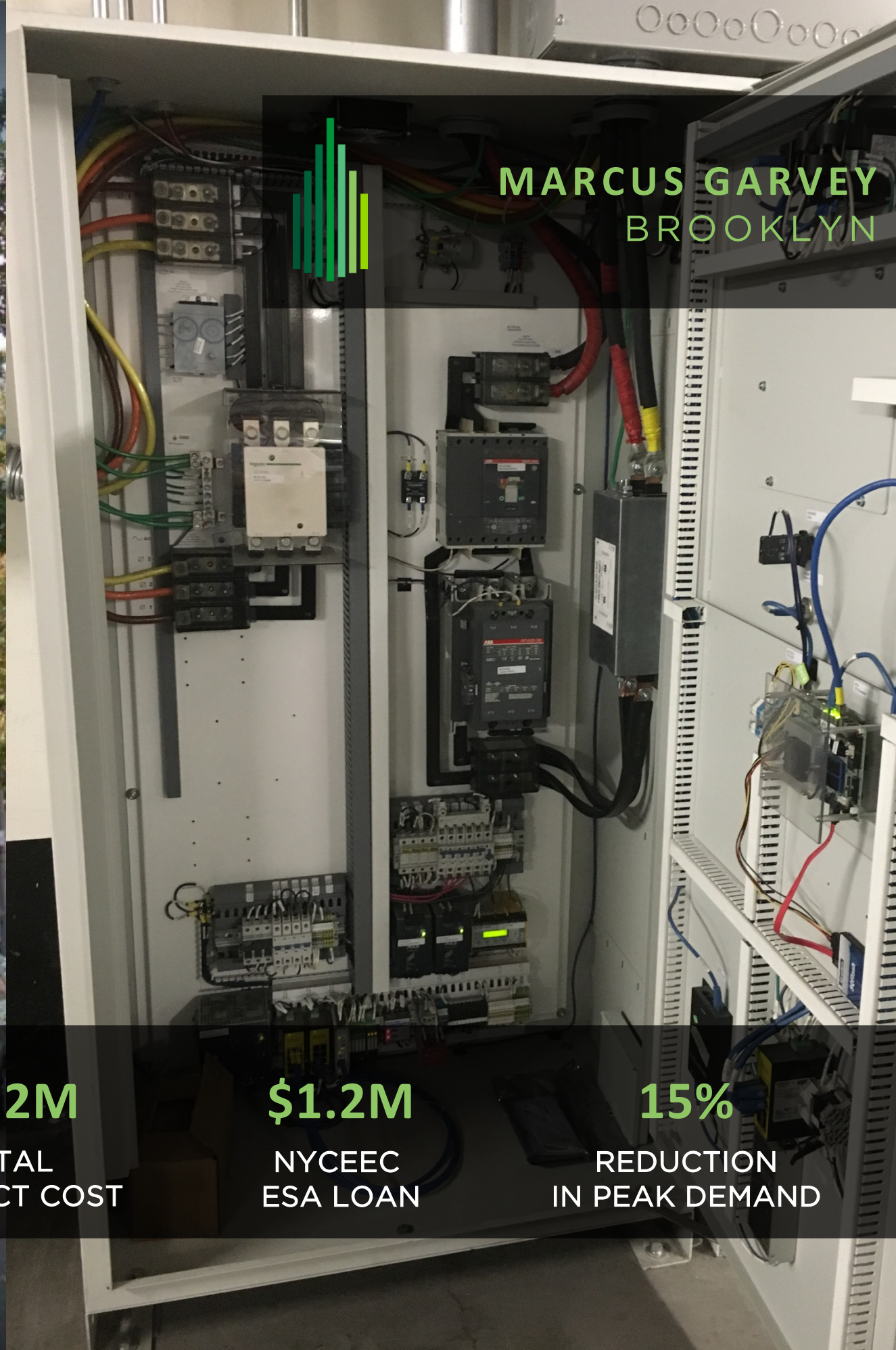
- We finance most building types: multifamily, commercial, industrial, institutional, and not-for-profit
- Our loan products include equipment loans, ESA- or PPA-backed loans, PACE loans, predevelopment loans, and credit enhancement
- Our loan sizes typically range from \$250,000 to \$2.5 million, but we have participated in larger loans through partnering with other lenders
- To provide maximum flexibility, we provide construction financing, bridge to available incentives, and offer multiple draws on our loans



**AFFORDABLE
MULTIFAMILY
100 BUILDINGS**

**ENERGY
STORAGE**

\$1.2M
TOTAL
PROJECT COST



\$1.2M
NYCEEC
ESA LOAN

15%
REDUCTION
IN PEAK DEMAND



**MARCUS GARVEY
BROOKLYN**



ESA loan for energy storage at affordable housing complex, Marcus Garvey Apartments



BY THE NUMBERS

\$1.2M

TOTAL
PROJECT COST

\$1.2M

NYCEEC
ESA LOAN

207kW

AVG REDUCTION
IN PEAK DEMAND

15%

REDUCTION IN
PEAK DEMAND

THE CLIENT CHALLENGE

Demand Energy, was looking to expand into new markets. They opened conversations with L+M Development, a developer/owner of low-income housing, regarding a 300kW lithium ion battery system Marcus Garvey Apartments. Financing, however, appeared to be a major obstacle.

THE SOLUTION

Using advanced modeling, NYCEEC devised a financing approach that would allow a new business entity to own and operate the energy storage system profitably, while deriving additional cash flows from demand response.

Because the energy storage system is part of a long-term energy services contract with Demand Energy, L+M did not have to pay any upfront investment.

THE RESULTS

Marcus Garvey is the first affordable housing microgrid. Projections indicate that battery storage will lower operating costs at Marcus Garvey, along with aiding Con Edison in meeting peak energy demand (within the grid-constrained Brooklyn Queens Demand Management area) and providing emergency back-up power.

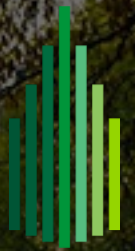
Solar-plus-storage pipeline



NYCEEC is evaluating opportunities in several areas:

- Affordable housing: S+S provides value for larger projects with lower solar costs (\$ per W) and valuable incentives
- Not-for-profit buildings: S+S offers resilience in critical care facilities, community meeting centers and other infrastructure
- Manufacturing facilities benefitting LMI communities: S+S bolsters the brand of businesses, promotes resilience, and captures the economics of larger distributed solar installations
- Market-rate housing in NYC LMI census tracts: S+S provides a cost-effective means of compliance under NYC Local Law 97 for buildings (25,000 sf+) otherwise subject to future penalties

The Resilient Power Program for solar+storage



THE KRESGE FOUNDATION



- The Resilient Power Program is unlocking loan capital for solar plus storage projects in underserved communities. NYCEEC is prioritizing resources to accelerating the S+S market
- Between generous state and utility incentives and NYCEEC's low fees, expedited approvals and streamlined lending - solar plus storage projects look more attractive than ever
- Unlike conventional lenders, NYCEEC has the technical expertise to understand your project. We are experts on the incentives and cash flow structures available for solar plus storage, and we provide tailored financing solutions to optimize project success while minimizing costs

Contact us



Curtis Probst
Co-CEO
cprobst@nyceec.com
(646) 797-4629



Posie Constable
Business Development
pconstable@nyceec.com
(646) 797-4615

www.nyceec.com



TECHNICAL ASSISTANCE AND TOOLS

RESILIENTPOWER

A project of **CleanEnergyGroup**



TECHNICAL ASSISTANCE SUPPORT

- Assist building managers and project developers in understanding costs and benefits of pursuing solar+storage
- Engage engineering expertise to assess the technical and economic feasibility of solar+storage for a facility
- Provide continued support throughout the predevelopment phase of a project

MCKNIGHT LANE



SOLAR: 6 kW

STORAGE: 6 kWh

PROJECT COST: \$132,000

(storage only)

RESILIENCE: Lighting, heating and cooling, ventilation, refrigeration



BOULDER HOUSING PARTNERS



SOLAR: 20.7 kW

STORAGE: 45 kWh

PROJECT COST: \$143,500

RESILIENCE: Servers, outlets, heating, phones, wi-fi, EV charging



MAYCROFT APARTMENTS

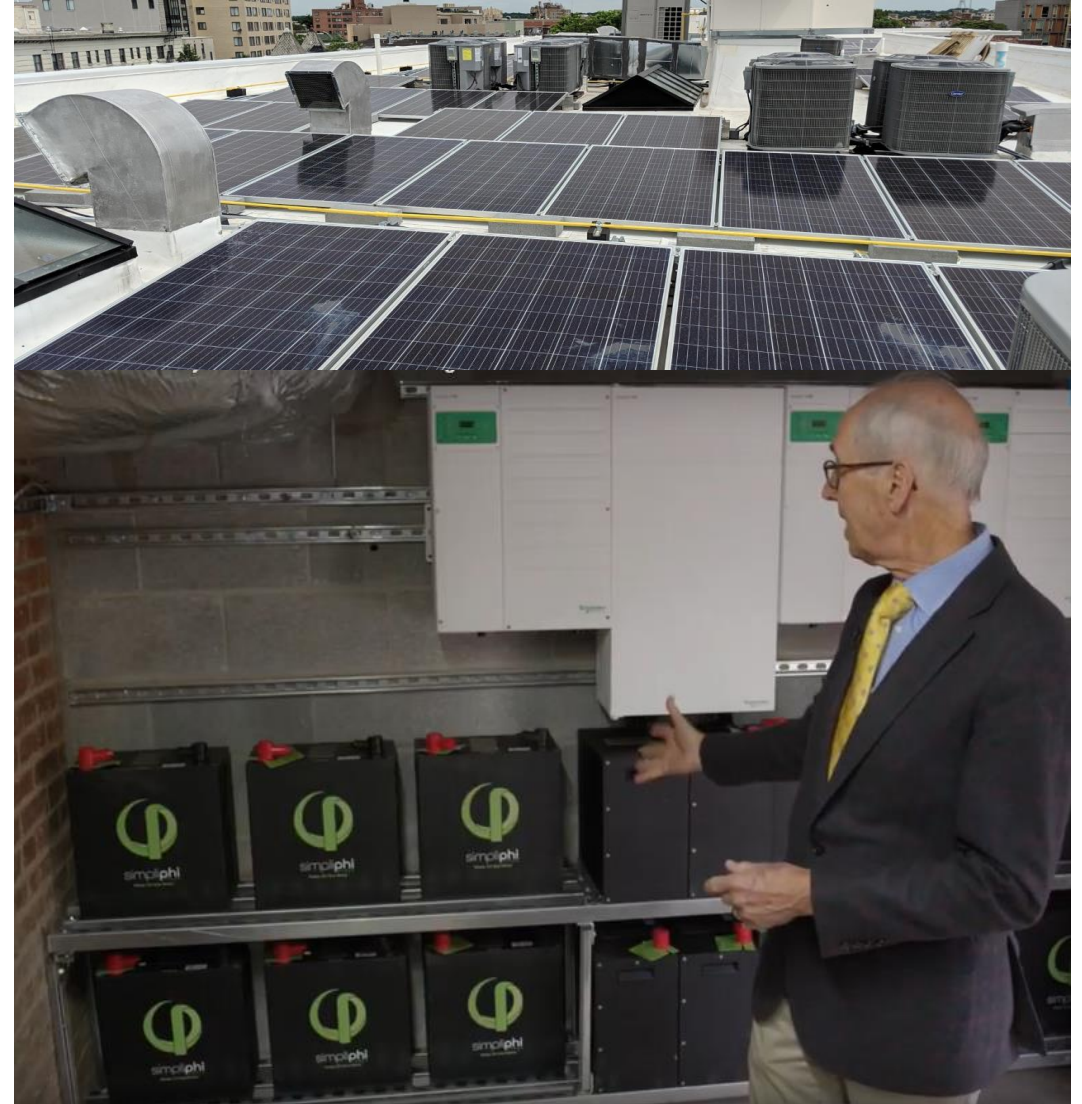


SOLAR: 62.4 kW

STORAGE: 56 kWh

PROJECT COST: \$327,000

RESILIENCE: Lighting, exhaust and floor fans, device charging, refrigerator, TV, microwave



RESILIENT POWER TOOLKIT

› Technology	
› Economics	
› Finance	
› Project Evaluation Tools	
› Project Development	DEVELOPING A RESILIENT POWER PROJECT <i>There are a number of questions and considerations that should be explored when beginning to develop a new resilient power project. The resources below can help guide you through the process of planning a resilient power installation, including basic step-by-step guidance for approaching a new project and sample Request for Proposal (RFP) templates for both large-scale and behind-the-meter resilient power installations.</i>
› Policy	Solar+Storage Project Checklist (Clean Energy Group, 2016) This checklist is intended to serve as a starting point for developers and planners who are considering implementing a solar+storage project. It focuses on basic questions and considerations that should be explored throughout the decision-making process and suggests some initial steps to consider when beginning a new project.
› Additional Resources	Behind-the-Meter Solar+Storage Permitting and Interconnection Guide for Boulder, Colorado (Clean Energy Group, 2018) This guide reviews permitting and interconnection requirements and processes for the development of residential and commercial-scale solar+storage systems in Boulder, Colorado. While these guidelines are specific to Boulder, the process and steps may be similar to those in other locations. The document may be helpful to project developers beginning to think about the permitting and interconnection processes or for municipalities considering generating guidelines of their own.
› Spanish Language Resources	Energy Storage Procurement Guidance Documents for Municipalities (Sandia National Laboratories, Clean Energy States Alliance, Clean Energy Group, 2016) This guide offers useful information for municipalities to consider as they develop solicitations for resilient energy storage projects. The materials are designed to give specific examples of the elements that should be included in a solicitation for the procurement and

Available online at <https://www.cleangroup.org/ceg-projects/resilient-power-project/toolkit/>

RE_{OPT} LITE OPTIMIZATION TOOL

Step 1: Choose Your Focus

Do you want to optimize for financial savings or energy resilience?

☒ Financial

☐ Resilience



Step 2: Enter Your Site Data


Enter information about your site and adjust the default values as needed to see your results.

 Site and Utility (required)	
 Load Profile (required)	
 Financial	

Step 3: Select Your Technologies

Which technologies do you wish to evaluate?

☒ PV 

☒ Battery 

☐ Wind 

Available online at <https://reopt.nrel.gov/tool>

QUESTIONS?

Seth Mullendore

Vice President and Project Director

Clean Energy Group

Seth@cleanegroup.org

Find us online:

www.resilient-power.org

www.cleanegroup.org

www.facebook.com/clean.energy.group

@cleanenergygrp on Twitter

@Resilient_Power on Twitter



UPCOMING WEBINARS

Solar with Justice: Recommendations for State Governments

Wednesday, January 29, 1-2pm ET

State of the U.S. Energy Storage Industry: 2019 Year in Review

Thursday, February 6, 2-3pm ET

Soleil Lofts: The Largest Solar+Storage Virtual Power Plant in the Country

Wednesday, February 12, 1-2pm ET

Read more and register at www.cleangroup.org/webinars