

# Westchester County Clean Energy Summit: *Implications of NY's Climate Law & Scalable Solutions*

Thursday, March 5th, 2020  
Pace Energy & Climate Center  
White Plains, NY

#WCCleanEnergySummit



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## FCWC

Federated Conservationists  
of Westchester County



## GROUNDWORK

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WESTCHESTER



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## #WCCleanEnergySummit

# New York League of Conservation Voters Education Fund

## Our mission:

- Educate
- Engage
- Empower

## Our programs:

- Nonpartisan candidate forums
- Policy forums
- Civic engagement campaigns



[nylcvef.org](http://nylcvef.org)

[#WCCleanEnergySummit](https://twitter.com/WCCleanEnergySummit)

# Westchester County Clean Energy Summit: *Implications of NY's Climate Law & Scalable Solutions*

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# Panel One:

## *New York's Climate Law: Goals and Implications for Westchester County*

**Moderator: Julie Tighe, President, NYLCV**

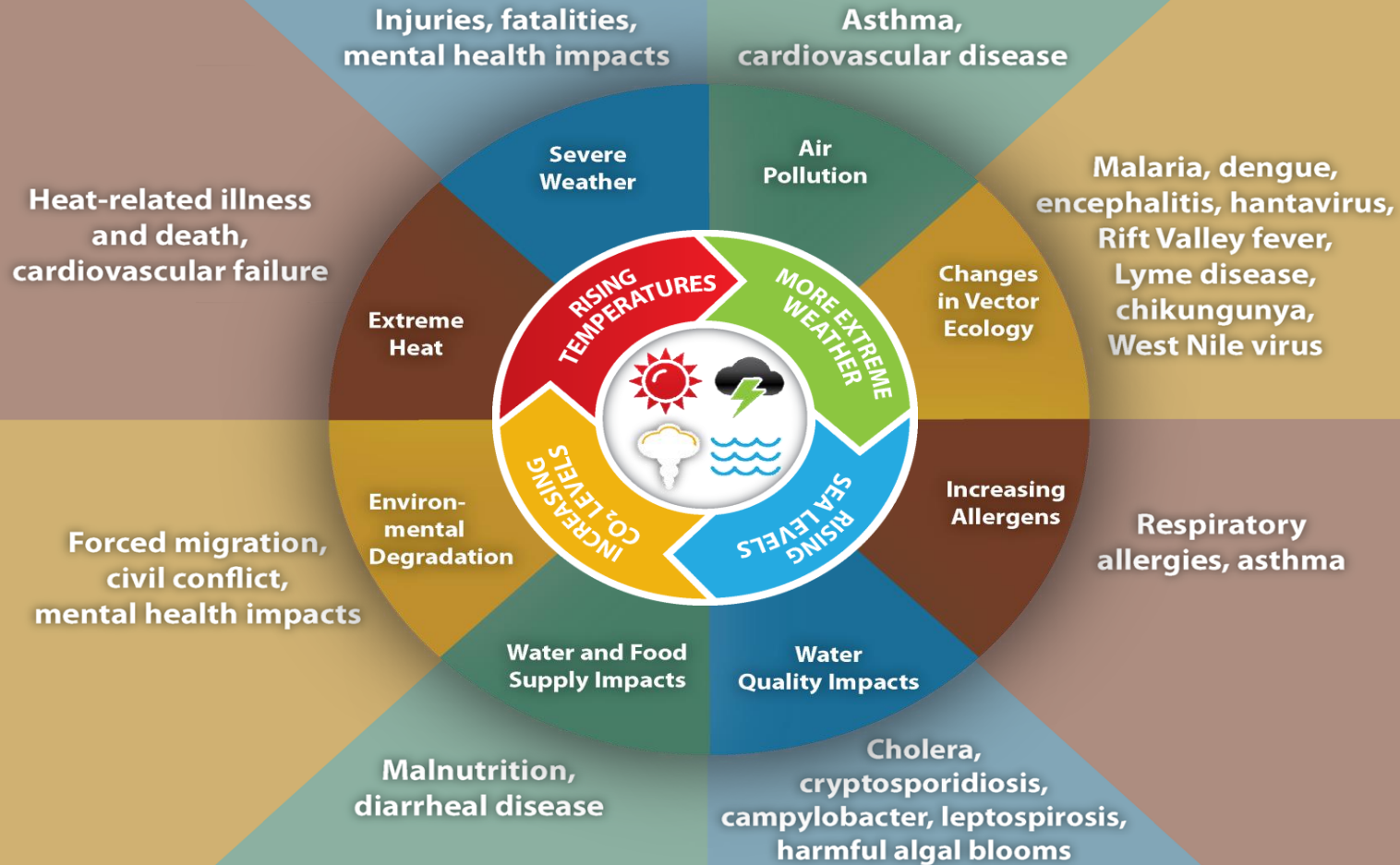
### **Panelists:**

- Kara Allen, Senior Advisor, Policy and Regulatory Affairs, NYSERDA
- Peter McCartt, Director of Energy Conservation & Sustainability, Westchester County
- Nancy Seligson, Town Supervisor, Town of Mamaroneck
- Radina Valova, Senior Staff Attorney, Pace Energy & Climate Center
- Anjali Sauthoff, PhD, Independent Environmental Health Consultant

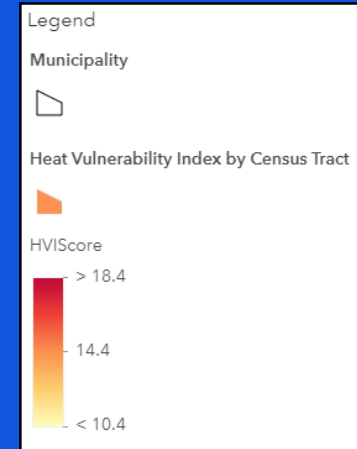
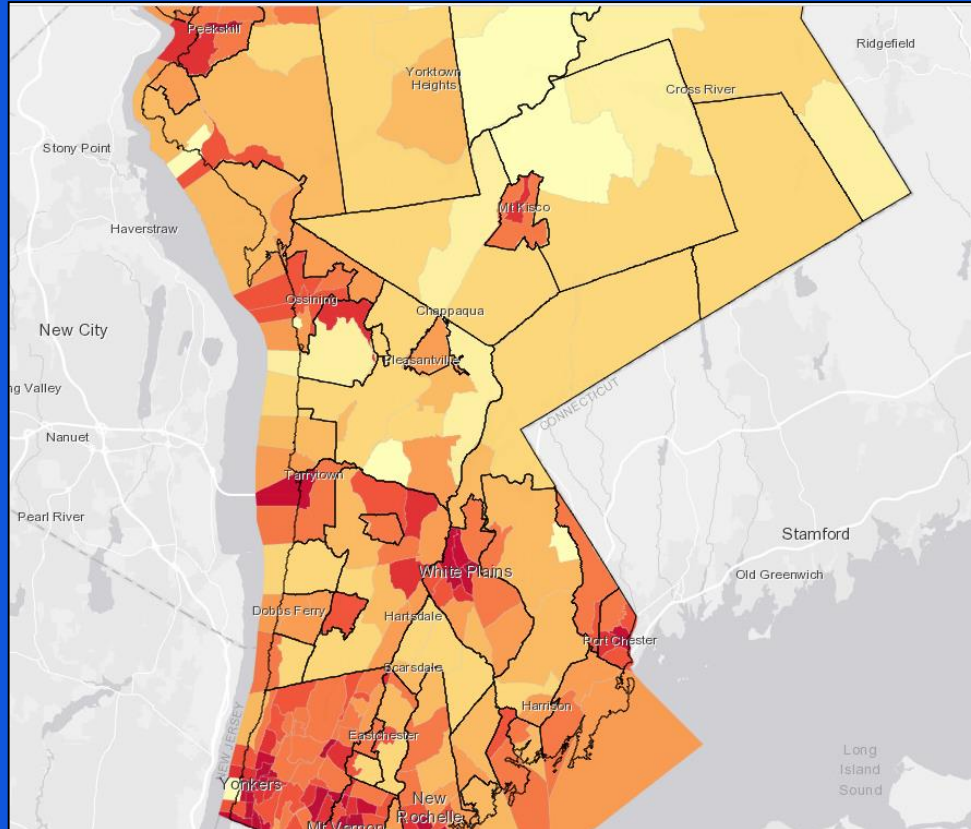
# Connections between environmental hazards, public health and climate change



# Impact of Climate Change on Human Health

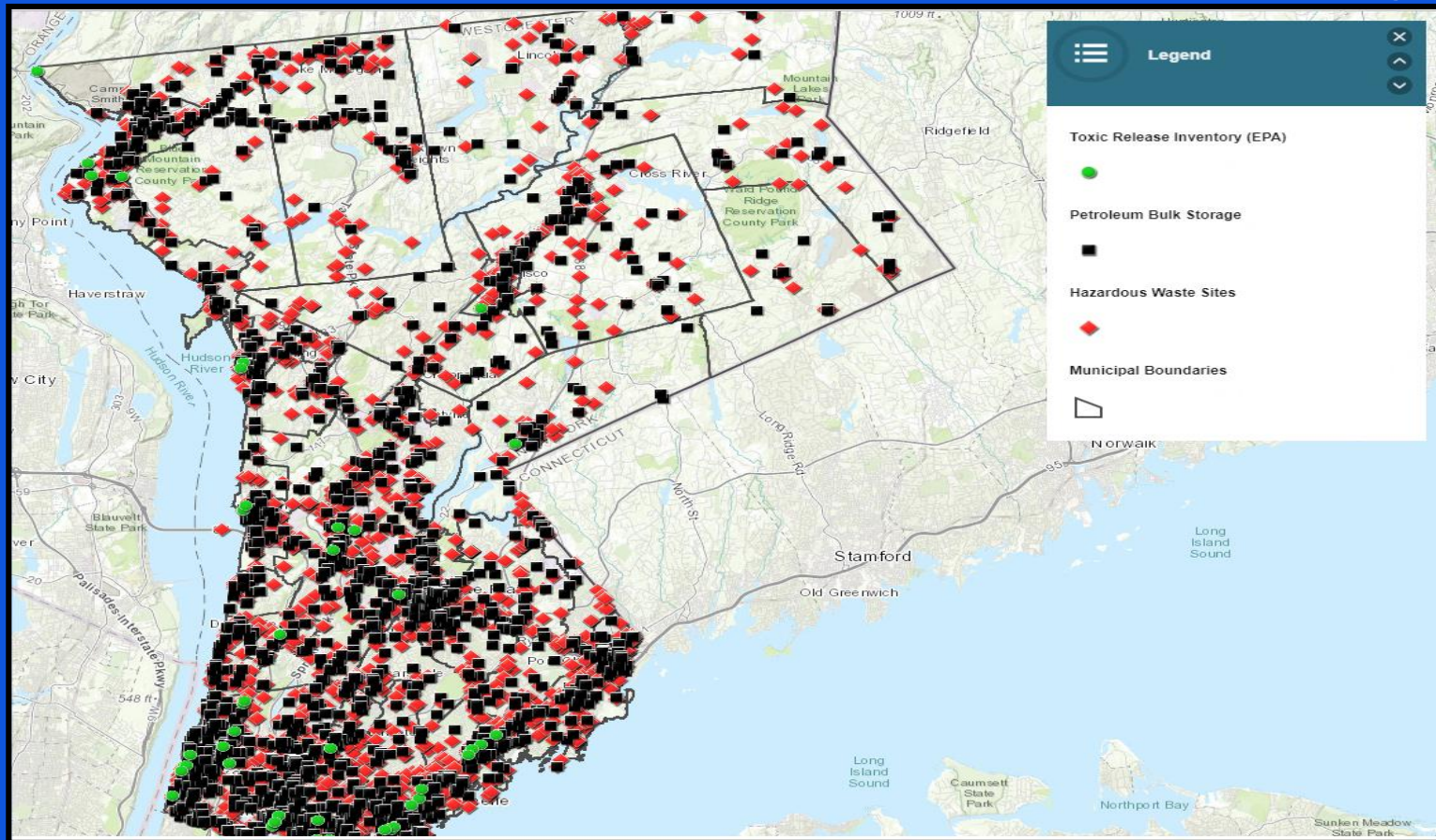


# Heat Vulnerability in Westchester County



# Disparity of Environmental Hazards in Westchester County

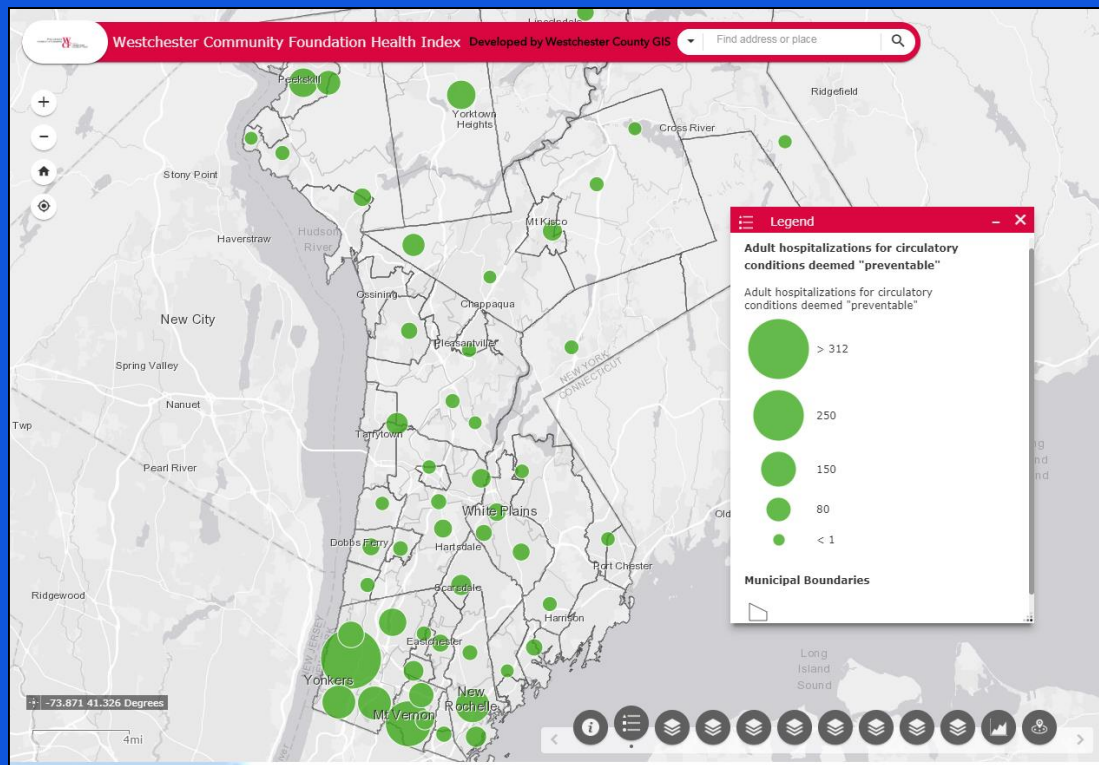
# Environmental Hazards in Westchester County







# Adult Hospitalizations for Circulatory Conditions Deemed “Preventable” in Westchester County (2015)



- Health outcomes are strongly influenced by SDH, including environmental exposures
- Direct and indirect influences must be considered
- SDH framework can help assess vulnerability and develop systemic resilience

# Panel One:

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# Panel Two:

## *Westchester Specific Solutions*

**Moderator: Craig Hart, Executive Director, Pace Energy & Climate Center**

**Panelists:**

- Mark Brescia, Manager, Con Edison
- Vennela Yadhati, P.E. Business Development Engineer, NYPA
- Nina Orville, Director of Solar Programs, Sustainable Westchester
- Marilyn Dare, Senior Project Manager, NYSERDA
- Ryan Boniello, Operation & Sales, Boniello Development
- Thomas Bourgeois, Director, U.S. Dept of Energy's NY/NJ CHP Center
- Michel Delafontaine, DER & Business Development Director, Sustainable Westchester
- Brad Tito, Program Manager for Communities and Local Governments, NYSERDA



# COMMUNITY SOLAR:

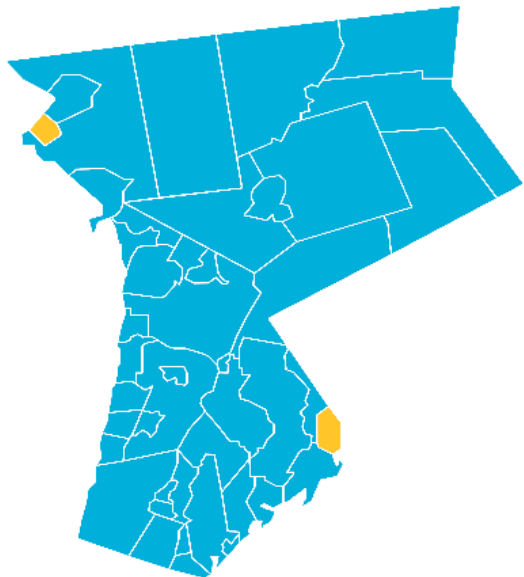
Expanding Access to Solar Benefits in Westchester

Nina Orville, Director of Solar Programs  
Sustainable Westchester  
February 26, 2020



# SUSTAINABLE WESTCHESTER

Sustainable Westchester is a nonprofit, consortium of Westchester County local governments that facilitates effective collaboration on sustainability initiatives.



## SUSTAINABLE WESTCHESTER MUNICIPAL MEMBERS

Ardsley	Hastings-on-Hudson	North Castle	Rye City
Bedford	Irvington	North Salem	Rye Town
Briarcliff Manor	Larchmont	Ossining Village	Scarsdale
Bronxville	Lewisboro	Ossining Town	Sleepy Hollow
Cortlandt	Mamaroneck Village	Peekskill	Somers
Croton-on-Hudson	Mamaroneck Town	Pelham Manor	Tarrytown
Dobbs Ferry	Mount Kisco	Pelham Village	Tuckahoe
Eastchester	Mount Pleasant	Town of Pelham	White Plains
Elmsford	Mount Vernon	Pleasantville	Yonkers
Greenburgh	New Castle	Pound Ridge	Yorktown
Harrison	New Rochelle	Rye Brook	

# PROGRAMS

**Westchester Power** (Community Choice Aggregation) – 115,000+ households in 27 municipalities. 24 opted for green/renewable power.

**HeatSmart** – displace fossil fuels for heating homes and commercial properties through use of heat pumps and energy efficiency (similar to Energize).

**Community Solar** – green the local grid and offer solar savings to more Westchester residents.

**Zero Waste** – support for municipalities to improve recycling and provide composting resources including Recycle Right App.

**Clean Transportation** – discounts on EVs, assistance securing charging infrastructure.

# What if we could **expand access to solar benefits to everyone**, including renters?



What if we could make it **possible** for more **organizations, including local governments,** to **install solar** on their property?

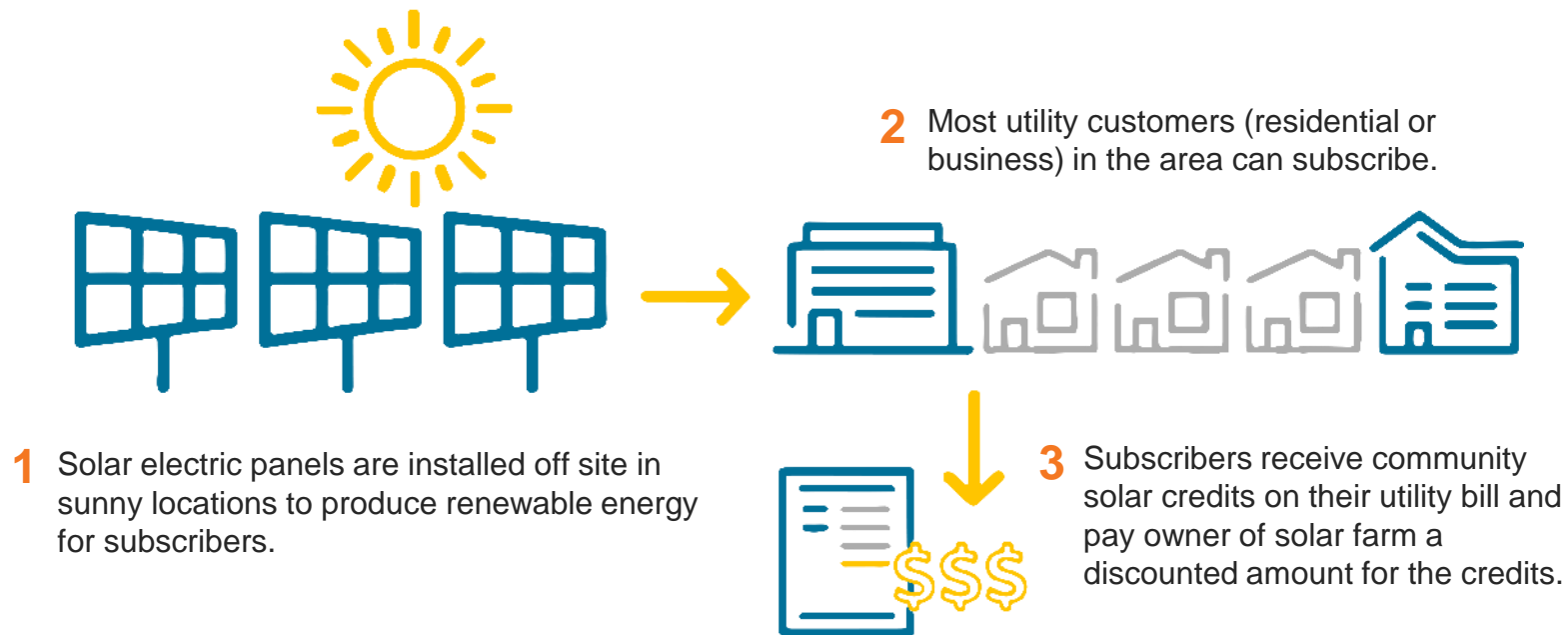


What if we could integrate an element of **guaranteed savings** into **other clean energy** programs?



# COMMUNITY SOLAR:

## ADDRESSES EQUITY/ACCESS AND CREATES OPPORTUNITY



# SUBSCRIBER BENEFITS:

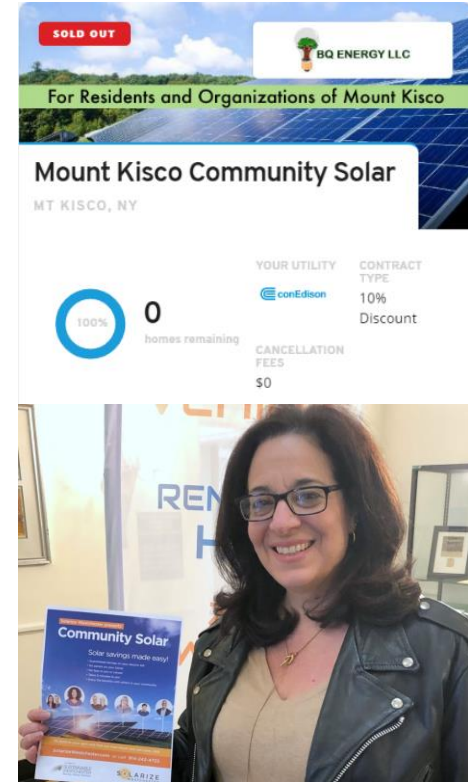
- Guaranteed savings (approximately **10%**)
- No upfront cost
- No solar installation
- Support new solar development
- Available to almost all residents (including renters), houses of worship and some small businesses.
- NYSEG municipalities can now enroll. Soon, ConEd munis can too.





# HOST BENEFITS:

- No upfront cost
- Receive lease revenue
- Support new local solar development
- Create subscription opportunities for local community
- Anchor subscription opportunity (save 10%)



# SUSTAINABLE WESTCHESTER COMMUNITY SOLAR

- Enrolling subscribers across Westchester in community solar farms/projects.
- Community solar campaigns (e.g. Mount Kisco, Bedford, New Rochelle, Lewisboro, North Salem, Pound Ridge, FCWC).
- Opportunity to integrate into Westchester Power program.



# WWW.SOLARIZEWESTCHESTER.COM

A graphic for the Community Solar Launch. At the top, a dark blue banner contains the text "SUSTAINABLE WESTCHESTER INTRODUCES" in white, followed by "COMMUNITY SOLAR" in large yellow letters, and "Save Money, Go Green with Solar - Now Accessible To Everyone!" in smaller white text. Below the banner, a row of six circular portraits of diverse people is shown, each with a thin white line extending down to a solar panel in a field. The background is a bright blue sky with clouds and a sunburst effect over the solar panels. At the bottom, a white box contains two columns: "For ConEd Customers" and "For NYSEG Customers", each with a blue button that says "✓ GET STARTED!". Below this, a grey banner reads "COMMUNITY SOLAR LAUNCH!". At the very bottom, a small screenshot of a mobile app interface is visible, showing the text "Community Solar - Solarize Westchester" and "Watch a Video" with a play button icon.

SUSTAINABLE WESTCHESTER INTRODUCES  
**COMMUNITY SOLAR**  
Save Money, Go Green with Solar - Now Accessible To Everyone!

For ConEd Customers  
✓ GET STARTED!

For NYSEG Customers  
✓ GET STARTED!

**COMMUNITY SOLAR LAUNCH!**

Community Solar - Solarize Westchester  
Watch a Video

# MARKETPLACE & ONLINE ENROLLMENT

# Marketplace

Choose where your community solar will be sourced from.

SUBSCRIBING

**Greenridge Plaza Community Solar**

STATEN ISLAND, NY

92%

Bushes remaining

CANCELLATION FEES

No Fees

YOUR UTILITY

con Edison

CONTRACT TYPE

10% Discount

SOLD OUT

**Mount Kisco Community Solar**

MT KISCO, NY

100%

Bushes remaining

CANCELLATION FEES

\$0

YOUR UTILITY

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MT KISCO, NY

100%

Bushes remaining

CANCELLATION FEES

\$0

YOUR UTILITY

con Edison

CONTRACT TYPE

10% Discount

Utility

Consolidated Edison ▾

FIND MY PROJECT

Thanks for your interest in clean energy! Fill out some basic details and we'll get you signed up.

First Name	Last Name
<input type="text"/>	<input type="text"/>
Email	Phone
<input type="text"/>	<input type="text"/>
Password	Confirm Password
<input type="password"/>	<input type="password"/>
Zip	Electric Utility Account Number (Optional)
<input type="text"/>	<input type="text"/>
Promo Code (Optional)	Referral Code (Optional)
<input type="text"/>	<input type="text"/>

\*By clicking submit, I authorize PowerMarket to request and receive my historical annual energy consumption. This information will be used to evaluate my application to participate in shared renewable energy services provided by PowerMarket.



PAYMENT PROFILE

Welcome

Address

Utility

Payment

Contact

SIGNUP PROGRESS

Community solar requires that you pay for the kilowatt hours credited to your monthly debit payment profile and we'll debit your account accordingly each month after the utility account.



### Add a direct debit account

Insert ACH payment details for direct deposits from your bank.

Name On Account

☒ Checking Account
 ☐ Savings Account

Account Number

Routing Number

[Skip this step](#)

**Enter Your Service Address**

WELCOME

11/20/21

WELCOME ADDRESS UTILITY PAYMENT CONTRACT COMPLETE

**My City Solar**

My Account Documents Billing Support Logout

**ENTER YOUR SERVICE ADDRESS**

This is the address where you receive your electricity bill.

Address City

My City Solar Address Utility Address

State Zip

NY 11201

**SUBMIT**

[illegible]



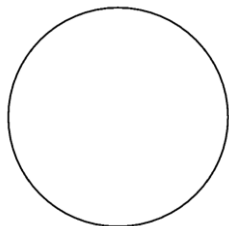
**NY Power  
Authority**

# **Westchester Clean Energy Summit**

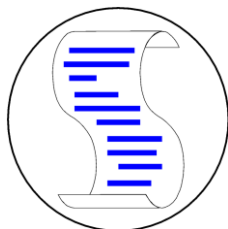
**Community Solar Partnership**

**March 3, 2020**

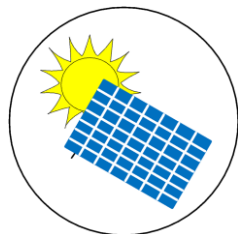
# NYPA Clean Energy Advisory Services



Finance



Policy



Technical



Contracts



Legal

## Turnkey Advisory Services

- Streamlined program structure
- Policy and regulatory oversight
- Standardized contracts and pre-approved solar vendors
- Feasibility assessments (technical & economic)
- RFP development & proposal evaluation
- Specialized procurement administration process

# Streamlined Approach

*Balancing Risk, Cost, & Effort*

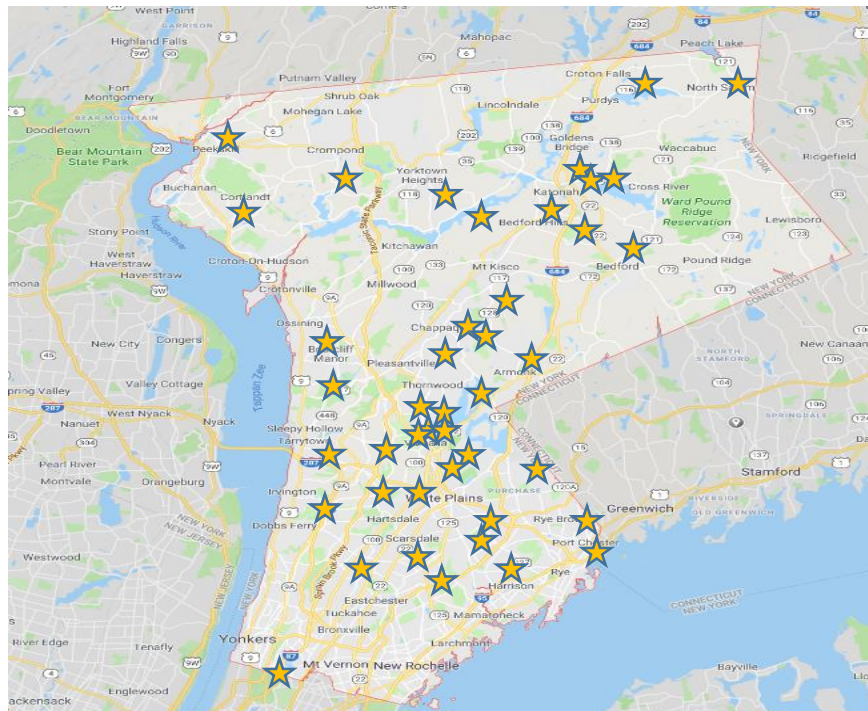
- **Timing vs. Pricing**
- **Streamlining Contracts**
- **Control vs. Risk**

<u>Advantages</u>	<u>Advisory Services</u>
Removes major financing hurdles	✓
Allows for faster implementation	✓
Significant cost savings vs. Market	✓
Helps Customers reach energy goals	✓
NYPA oversight throughout	✓





# Case Study – Westchester County (Phase I)



- Over 200 properties assessed
- Shortlisted to 7 sites based on ease of implementation & schedule
- Approx. ~3MW of community solar
- Significant savings to the County



> 3,438  
Tons/Year



> 650 Cars Off the Road



# Case Study – City of White Plains

- Eight (8) different sites in the City
  - Parking garages
  - Rooftops
  - Landfill
- Significant savings to the City
- Focus on LMI subscribers receiving greater discounts
- Innovative carport technology that alleviates snowmelt runoff concerns



~**500** Passenger Cars



>250 Homes' Energy Use for One Year



~**2500**Tons of Carbon Dioxide Reduction

# Community Solar Partnership Benefits

- Partner with other entities with similar goals
- Utilize NYPA's streamlined processes as the trusted advisor
- Benefit from economies of scale
- Share access to clean energy with a wider community
- Enable job creation and development of local economy



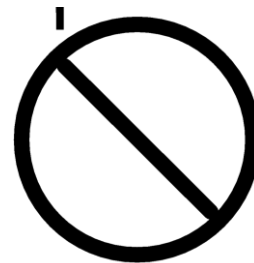
# Eligible Entities



Local Governments



Public & Non-Public  
K-12 Schools



Qualified Non-Profit  
Organizations



Higher Education  
Institutions



NYPA Economic  
Development Customers

# Program Structure

## CUSTOMER



- ☐ Provides list of sites
- ☐ Authorizes NYPA to develop & issue RFP
- ☐ Participates in site walkthroughs and bid evaluations
- ☐ Negotiates & enters into lease agreement with developer

## NYPA



- ☐ Performs sites assessment
- ☐ Develops & issues RFP
- ☐ Procures developer
- ☐ Provides oversight and project management support

## SPONSOR



- ☐ Responds to solicited RFP
- ☐ Negotiates & enters into lease agreement with customer
- ☐ Develops, designs, constructs, owns, and operates project
- ☐ Responsible for subscription management

# Streamlined Process & Timeline



- Flexibility in RFP scope of work & requested pricing
  - Tiered pricing
  - Option for energy storage
- Evaluation of proposals
  - Flexibility to select more than one developer
- Standardized contract structure (lease agreement)
- Construction commencement target – Q3'21



Customer Task



NYPA Task



Joint Efforts

**NY Power  
Authority**

# Participate in the Program



## Community Solar Partnership Symposium

### Interested in partnering?

Are you interested in partnering in the community solar portfolio aggregation?

☐ Yes ☐ Maybe ☐ No

Provide a list of your facilities where solar may be implemented:

Site Name

Address

Owner

Site Name	Address	Owner	Type (See Reverse)
			Ground Mount <input type="checkbox"/> Parking Lot <input type="checkbox"/> Roof-top <input type="checkbox"/>
			Ground Mount <input type="checkbox"/> Parking Lot <input type="checkbox"/> Roof-top <input type="checkbox"/>
			Ground Mount <input type="checkbox"/> Parking Lot <input type="checkbox"/> Roof-top <input type="checkbox"/>
			Ground Mount <input type="checkbox"/> Parking Lot <input type="checkbox"/> Roof-top <input type="checkbox"/>

Type (See Reverse)
Ground Mount <input type="checkbox"/> Parking Lot <input type="checkbox"/> Roof-top <input type="checkbox"/>
Ground Mount <input type="checkbox"/> Parking Lot <input type="checkbox"/> Roof-top <input type="checkbox"/>
Ground Mount <input type="checkbox"/> Parking Lot <input type="checkbox"/> Roof-top <input type="checkbox"/>
Ground Mount <input type="checkbox"/> Parking Lot <input type="checkbox"/> Roof-top <input type="checkbox"/>

*The above is only a template. We will follow up to obtain a full list of potential sites to implement solar projects.*

We have more potential sites: #               

### Who should we follow up with?

Name

Organization

Email

Phone

Name	Organization	Email	Phone

The New York Power Authority will follow up with a registration link to confirm your interest in this partnership. If you have any comments or questions, please reach out to Vennela Yadhati at [solar@nypa.gov](mailto:solar@nypa.gov).

Presented by:



NY Power Authority

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NY Power Authority



# Westchester Clean Energy Summit

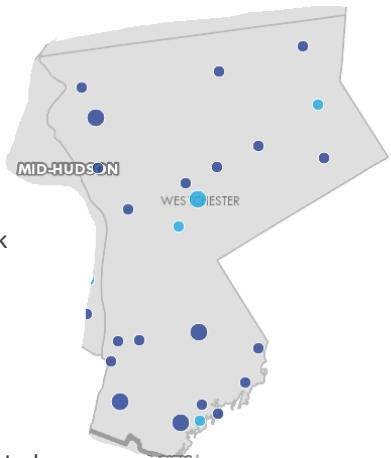
Brad Tito – Program Manager, Communities and Local Government

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

# Westchester County Snapshot

## Clean Energy Communities in Westchester

City of New Rochelle  
 City of Peekskill  
 City of Rye  
 City of White Plains  
 City of Yonkers  
 Town of Bedford  
 Town of Cortlandt  
 Town of Mamaroneck  
 Town of New Castle  
 Town of North Salem  
 Town of Ossining  
 Town of Pound Ridge  
 Town of Somers  
 Village of Ardsley  
 Village of Croton-on-Hudson  
 Village of Dobbs Ferry  
 Village of Hastings-on-Hudson  
 Village of Mamaroneck  
 Village of Mount Kisco  
 Village of Port Chester



- **Electricity** – 398,000 accounts and 6.3 million MWH/year
- **Natural Gas** – 243,000 accounts and 330 million therms/year
- **Fuel Oil** – 130,000 households and ~44.2 million gallons/year
- **Transportation** – 665,000 registered vehicles and ~294 million gallons of gasoline/year
- **NYSERDA Clean Energy Communities** - 24 local governments have completed 96 high-impact actions
- **Climate Smart Communities Certified** – Town of Mamaroneck, Town of Bedford, & Village of Pleasantville



# Community Choice Aggregation (CCA)

- CCA allows local elected officials to choose where the energy comes from for their community.
- Enter into a bulk purchasing arrangement and competitively procure energy supplies with the help of a CCA Administrator.
- The purpose is to build market clout and negotiate better prices and terms on energy supply and other clean energy products and services.

# Current Status of CCA in NYS

## Operating CCAs

- 61 cities, towns, and villages in NYS with an active CCA
- ~170,000 residential and small commercial electricity accounts
- 38 municipalities are currently receiving 100% renewable energy as default supply
- Total Estimated load
  - 1.4 million MWH/yr
  - 850,000 MWH/yr of renewable energy

## Approved CCA Administrators

- Sustainable Westchester
- Municipal Electric and Gas Alliance (MEGA)
- Good Energy
- Joule Assets



# Thank You!

*Brad Tito*

*Program Manager, Communities & Local Governments*

*NYSERDA*

*P: 212-971-5342 x3545 | E: [bradford.tito@nyserda.ny.gov](mailto:bradford.tito@nyserda.ny.gov)*

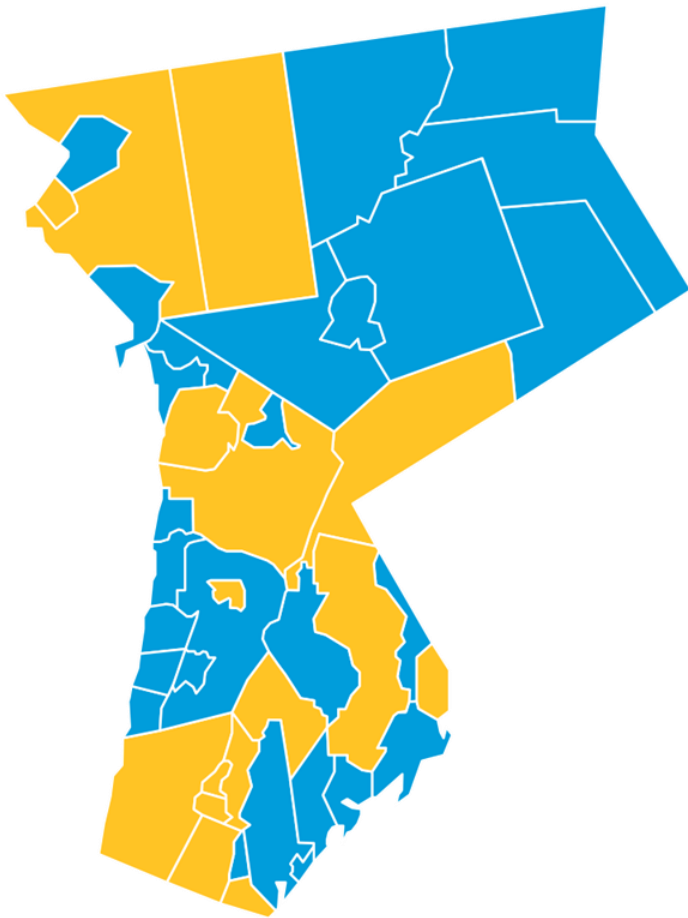
*Communities and Local Government Team*

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

[www.nyserda.ny.gov](http://www.nyserda.ny.gov)



**NYSERDA**



## WESTCHESTER POWER CCA

### MUNICIPAL PARTICIPATION

Ardsley  
Bedford  
Croton-on-Hudson  
Dobbs Ferry  
Greenburgh  
Hastings-on-Hudson  
Irvington

Larchmont  
Lewisboro  
Mamaroneck Village  
Mamaroneck Town  
Mount Kisco  
New Castle  
New Rochelle

North Salem  
Ossining Village  
Ossining Town  
Peekskill  
Pelham Village  
Pleasantville  
Pound Ridge

Rye Brook  
Rye City  
Sleepy Hollow  
Somers  
Tarrytown  
White Plains



SUSTAINABLE  
WESTCHESTER

# CREATING A DIRECT SUPPLY FOR THE CCA

- **County consumption:** 8.8 TWh thus **CLCPA 70% target:** 6.2 TWh
- **Required additional generation:** 3.7 TWh = **3.0 GW** equivalent solar capacity - These generators cannot be located in the County
- **Direct Supply:**
  - From Community Solar integration, bringing the benefits of the credits to the CCA subscribers. Possibilities of creating subsets of LMI.
  - From generators located in upstate New York: Sustainable Westchester will contribute to create new generation and contribute to the CLCPA goals
- **Congestion Costs:** Westchester County residents pay \$50 million per year
- **Sustainable Westchester exploring the benefits of the Empire State Connector:** Transmission from upstate New York to Brooklyn





# THANK YOU!

*Michel Delafontaine*

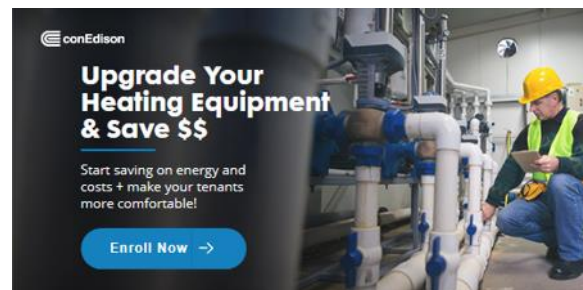
*Director, DER & Business Development*

*P: 914-242-4725 x107 | E: [Michel@SustainableWestchester.org](mailto:Michel@SustainableWestchester.org)*

# Energy Efficiency Program Review

- Current Programs
  - Gas Demand Response
  - Residential
    - GSHP Program
    - Weatherization Program
  - Multi-family
    - Gas EE program
    - New Construction ASHP, Single Site
    - Advanced Energy Management Projects
  - Commercial
    - C&I Gas EE Program
    - Small Business and Business Energy Pro

<https://www.coned.com/en/save-money/rebates-incentives-tax-credits>



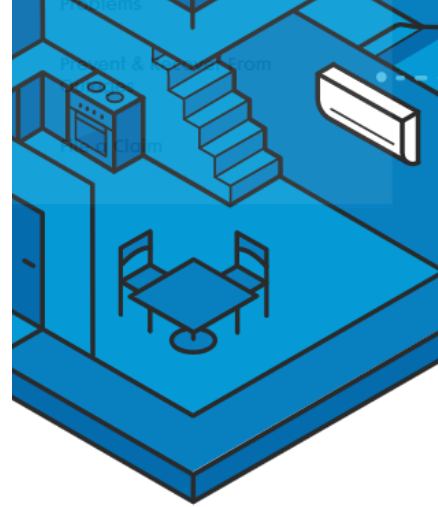
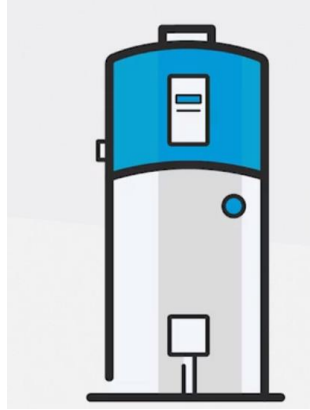
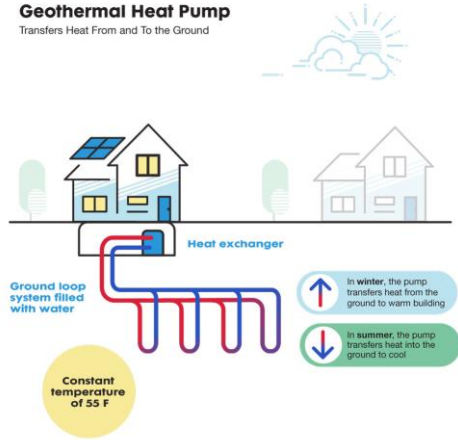
# Westchester Housing Authority Program



- Yonkers Municipal Housing Authority
- Low-income housing development covering 11 buildings and 680 apartments
- Incentivizing heating distribution improvements including steam trap repairs, radiator TRVs and orifice plates, and air vent balancing
- Eliminate steam losses, pipe hammering, uneven distribution of heat across all the apartments, improving tenant comfort as well as building efficiency



# Heat Pumps



- Con Edison administering full incentive starting 4/1/2020
- \$227 Million budget for heat pumps from 2020 through 2025

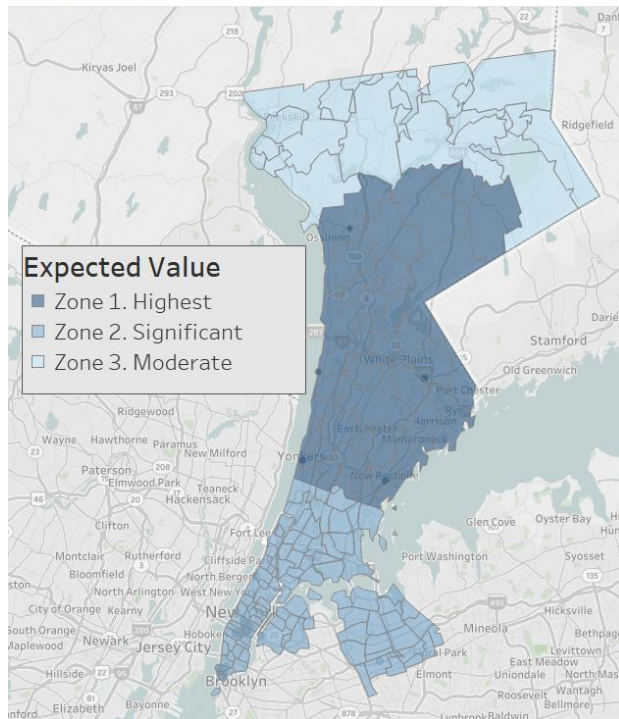
# Non-Pipeline Solutions RFI: Geography

- **Gas service territory-wide:**
  - The value of a proposed NPS to Con Edison will vary based on location
  - A specific location(s) do not need to be specified in the response, only the zone

Zone	Value	Description
1	Highest	Westchester moratorium area
2	Significant	New York City portion of Con Edison's gas service territory
3	Moderate	Westchester north of moratorium area within Con Edison's gas service territory

**Approximate Boundaries of Con Edison's Natural Gas Service Territory and the Zones Most Affected by Gas Supply Constraints**

Targeted Area



# Non-Pipeline Solutions RFI: Timeline

RFI Solicitation Milestones	Completion Date*
RFI Issued	January 31, 2020
Introductory Webinar	February 13, 2020
Deadline to submit clarification questions (1 <sup>st</sup> round)	February 14, 2020
Second Introductory Webinar	February 25, 2020
Deadline to submit <b>Supplier Enablement Template</b> and W-9 Form	March 6, 2020
Responses to clarification questions published (1 <sup>st</sup> round)	March 4, 2020
Deadline to submit clarification questions (2 <sup>nd</sup> round)	March 5, 2020
Responses to clarification questions published (2 <sup>nd</sup> round)	March 19, 2020
Responses from procurement-enabled Respondents due	April 3, 2020 3 PM EDT



SUSTAINABLE CONSTRUCTION

SOMERS CROSSING



# THE PROJECT

66-Units

2000-3000sqft

2-3 Bedroom

Full Basements

2 Car Garages

\$789k - \$999k



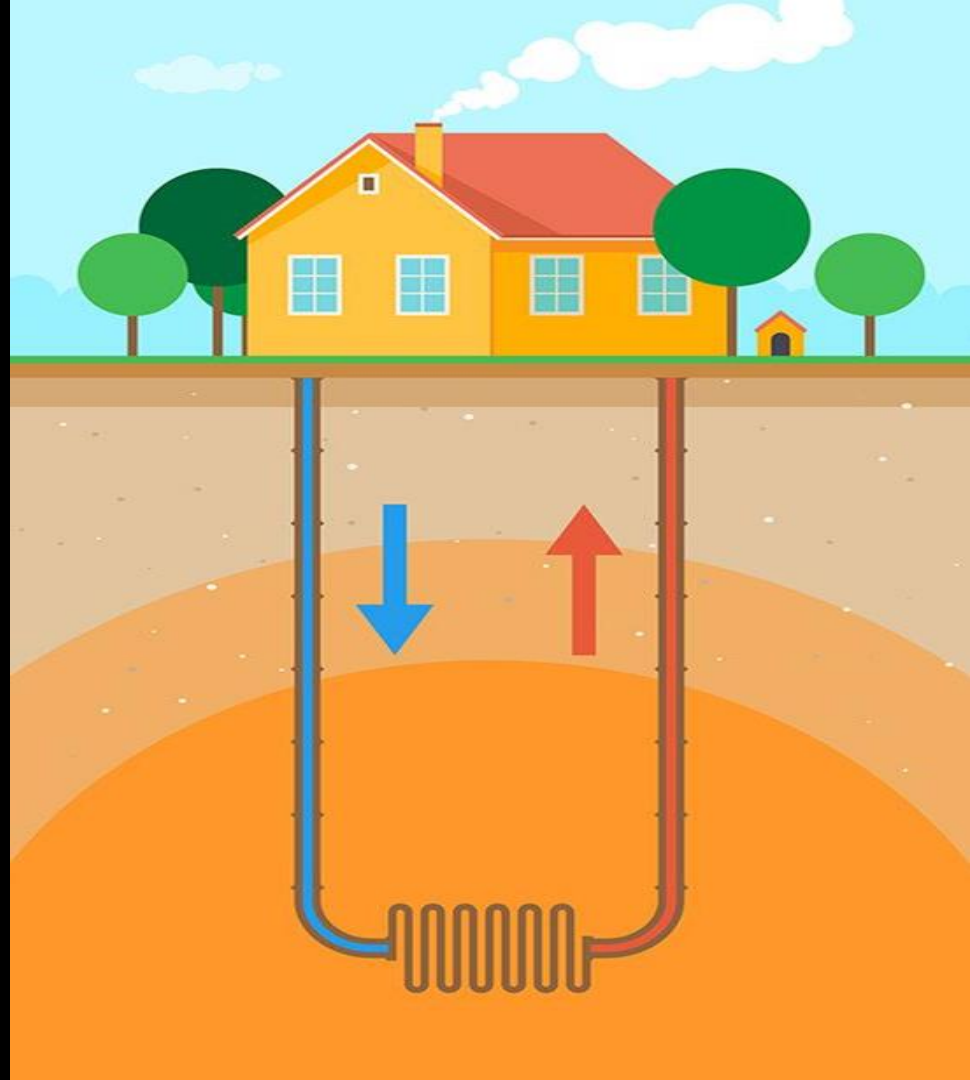
# GEOHERMAL HVAC

How it works?

Loops - Direct Exchange System  
(DX)

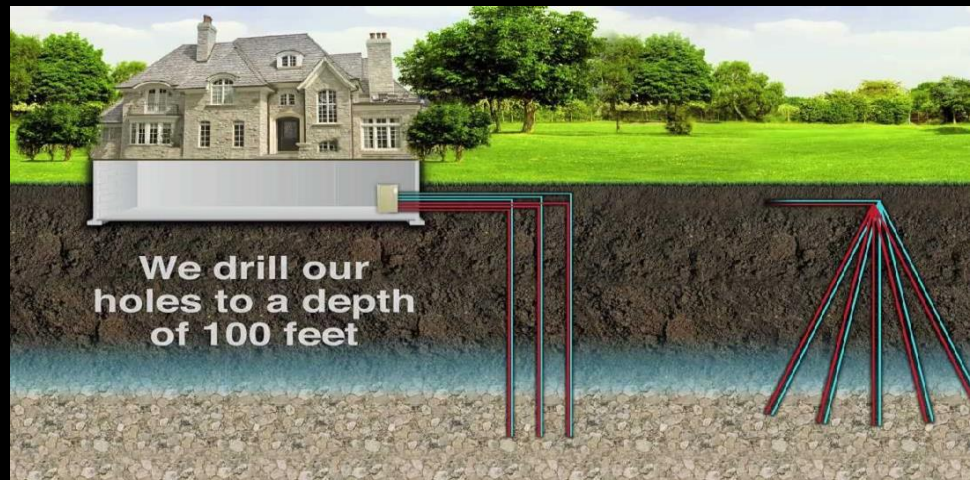
Compressor

Forced Air

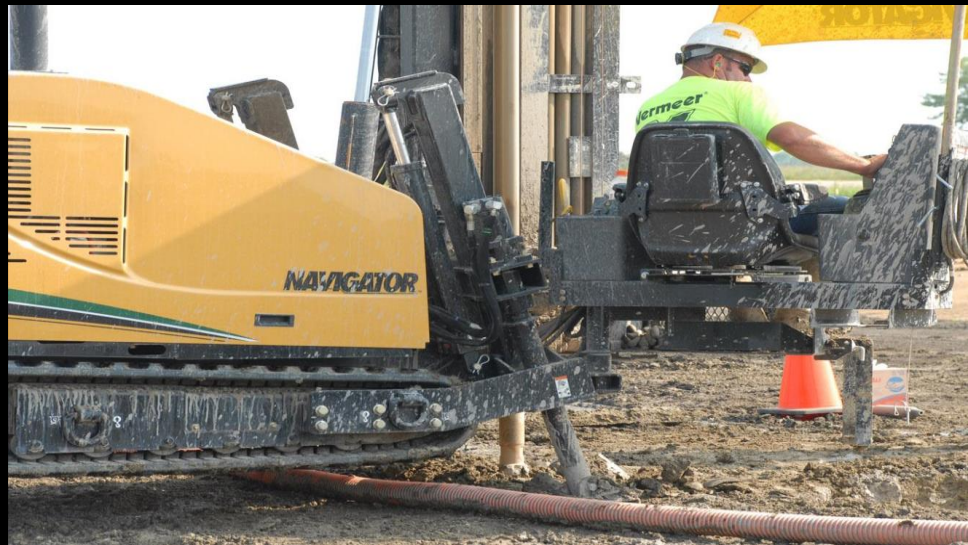


# INSTALLATION

Loops



Compressor



Forced Air

RELIABILITY /  
MAINTENANCE

Loops

Compressor

Forced Air





# ENVIRONMENTAL SAFETY

Refrigerant

Electrically Sourced

Grout



# COST

\$12k/ton

Incentives

Propane: \$7.5k / ton

Utility Bills

Breakeven Period



# REAL WORLD USE

Effective Sales Tool

Customer Satisfaction

Financially Beneficial

# RESOURCES

SOMERS CROSSING CONDOS BUILT BY:

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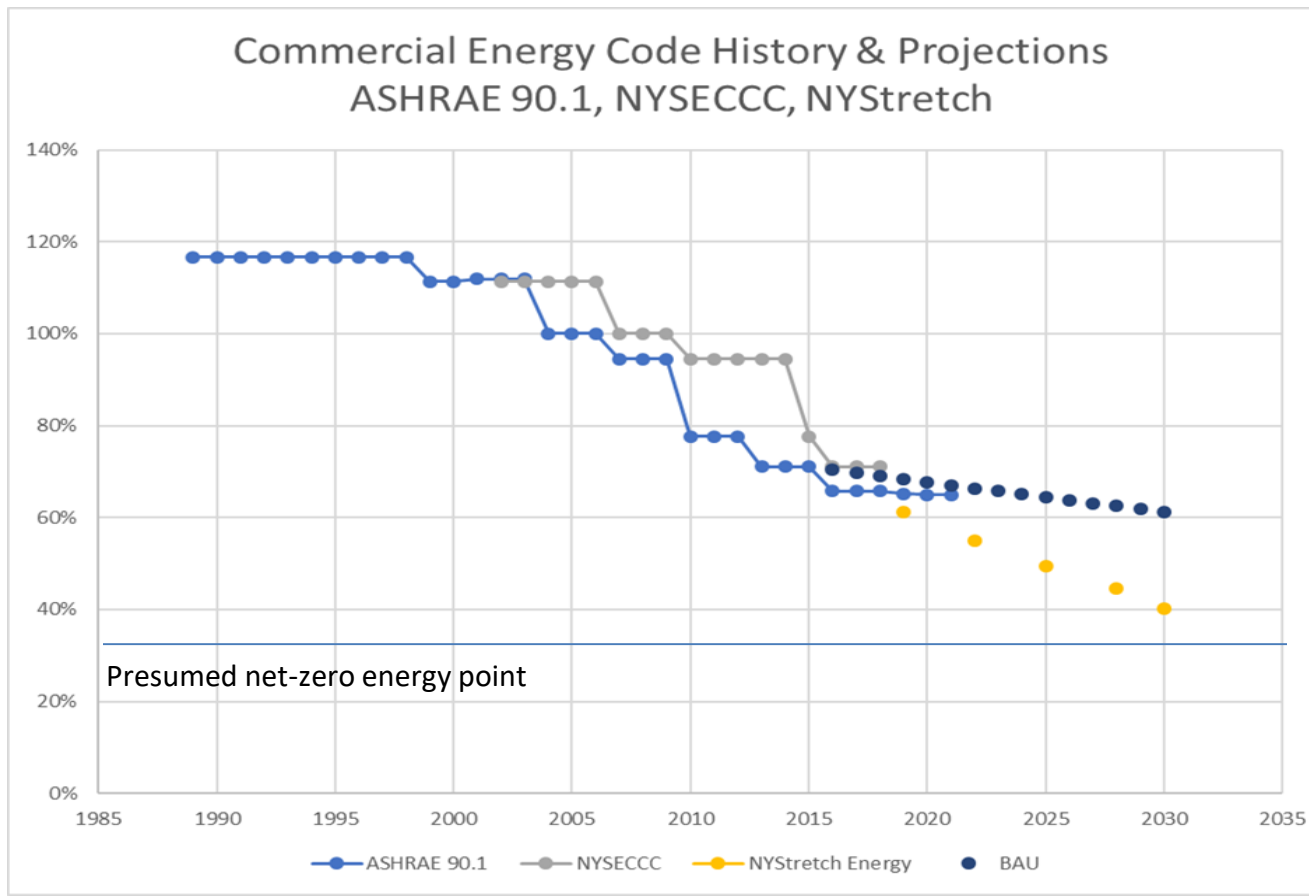
# **NYStretch Energy Code**

**Westchester County Clean Energy Summit**

**March 5, 2020**

**Marilyn Dare, Senior Project Manager, Energy Codes  
NYSERDA**

# What is a Stretch Energy Code; why is it important?



# What is NYStretch Energy Code 2020?

- Readily adoptable local energy code that is more efficient than NYS's base energy code.
- A pivotal tool in supporting energy/climate goals.
- Calls for higher energy efficiency standards for new and renovated construction projects.
- **Roughly 11% more efficient than 2020 ECCCCNYS.**



# NYStretch – Community interest

- New York City's 2020 Energy Code is NYStretch with NYC-centric amendments.
- Ithaca using NYStretch as part of their Green Building Code.
  - Goal: Carbon-neutral community by 2030
- Other communities expressing interest in NYStretch:
  - Austerlitz, Beacon, Croton, Marbletown, New Paltz, North Salem, Pelham, Poughkeepsie, other Lower Hudson Valley towns and cities, Towns on Long Island





# Why should a community adopt NYStretch?

- Saves energy and money:
  - Long term benefits by building smarter today
  - Use less energy, reduce operating costs, help achieve energy/GHG reduction goals
- Sets the path for future energy codes
  - Increased emphasis will be on beneficial electrification
- Boosts the local economy:
  - Develop local workforce, build expertise in newer technologies, create more green jobs



# NYStretch vs. 2020 ECCCCNYS

## Economics

- Commercial Savings and Incremental Cost

Weighted average results for **Climate Zone 4A**:

- Energy Cost Savings: 5.4%
- Incremental Cost: \$0.85 / SF
- Simple Payback: 11 years

NOTE: This does not reflect any available incentives

Based on prescriptive and mandatory provisions, 9 building prototypes. Results will vary depending on building / construction type, energy sources, location in NY State, and use of performance compliance paths.

# NYStretch vs. 2020 ECCCNYE Economics:

Single Family and Multifamily by Climate Zone (Note: Before incentives)

Climate Design Zone	Single-family			Multifamily		
	Total Annual Energy Cost Savings (\$/dwelling unit)	Total Incremental Costs (\$/dwelling unit)	Simple Payback (Years)	Total Annual Energy Cost Savings (\$/dwelling unit)	Total Incremental Costs (\$/dwelling unit)	Simple Payback (Years)
4A-NYC	\$301	\$1,910	6.3	\$176	\$1,625	9.2
4A-balance	\$301	\$2,463	8.2	\$167	\$1,488	8.9
5A	\$351	\$2,202	6.3	\$172	\$1,751	10.2
6A	\$372	\$1,506	4.1	NA	NA	NA
NY State	\$348	\$2,057	5.9	\$171	\$1,591	9.3

Aggregated Energy Cost Savings in CZ4-balance: 19.4%

Aggregated savings over 4 foundation types /3 fuel configurations: electric heat pump, gas heat w/electric A/C, Oil heat w/electric A/C

# NYStretch Costs/Benefits-Climate Zone 4A-Balance

## Single-Family Home with Gas Furnace and Electric AC

	Costs				Benefits		Net		
	Total Incremental Cost	Increase in Down Payment + Mortgage Fees	Increase in Annual Mortgage Payment	Increase in Annual Property Tax	Annual Energy Cost Savings	Non-Energy Benefits	Year 1 Cash Flow	Year 2+ Cash Flow	Simple Payback
Homeowner	\$2,463	\$544	\$88	\$45	\$231	Increased home value & thermal comfort	-\$430	\$114	11 years

## Single-Family Home with Electric Heat Pump

Homeowner	\$2,463	\$544	\$88	\$45	\$499	Increased home value & thermal comfort	-\$162	\$384	5 years
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# NYStretch vs. 2020 ECCCNY

## NYStretch requirements include:

### Building Envelope:

Improved window performance, increased insulation requirements, air leakage testing, air barrier commissioning, mandatory mechanical ventilation

### Lighting/Electrical:

Reduced interior and exterior lighting power, lighting controls, whole-building energy monitoring

### Compatibility:

Renewable and electric vehicle readiness

### Miscellaneous:

Commercial kitchen equipment efficiencies; introduces Passive House compliance path

### Options:

Communities may also adopt code appendices requiring solar installations for New Construction

# NYStretch Resources

[www.nyserda.ny.gov/stretchenergy2020](http://www.nyserda.ny.gov/stretchenergy2020)

- Template resolution/legislation
- FAQs document
- NYSERDA staff or Outreach Coordinators available for guidance/meetings
- Single volume code manual
- Training for Code Officials, Architects, Builders
- Updated REScheck and COMcheck tools
- Hotline for technical and interpretation assistance

THANK YOU [codes@nyserda.ny.gov](mailto:codes@nyserda.ny.gov)



**NYSERDA**

# CHP: Clean & Resilient Building Energy Systems

Thomas Bourgeois  
Director, NY/NJ CHP TAP



CHP Technical Assistance Partnerships

# DOE CHP Technical Assistance Partnerships (CHP TAPs)

## End User Engagement

Partner with strategic End Users to advance technical solutions using CHP as a cost effective and resilient way to ensure American competitiveness, utilize local fuels and enhance energy security. CHP TAPs offer fact-based, non-biased engineering support to manufacturing, commercial, institutional and federal facilities and campuses.

## Stakeholder Engagement

Engage with strategic Stakeholders, including regulators, utilities, and policy makers, to identify and reduce the barriers to using CHP to advance regional efficiency, promote energy independence and enhance the nation's resilient grid. CHP TAPs provide fact-based, non-biased education to advance sound CHP programs and policies.

## Technical Services

As leading experts in CHP (as well as microgrids, heat to power, and district energy) the CHP TAPs work with sites to screen for CHP opportunities as well as provide advanced services to maximize the economic impact and reduce the risk of CHP from initial CHP screening to installation.



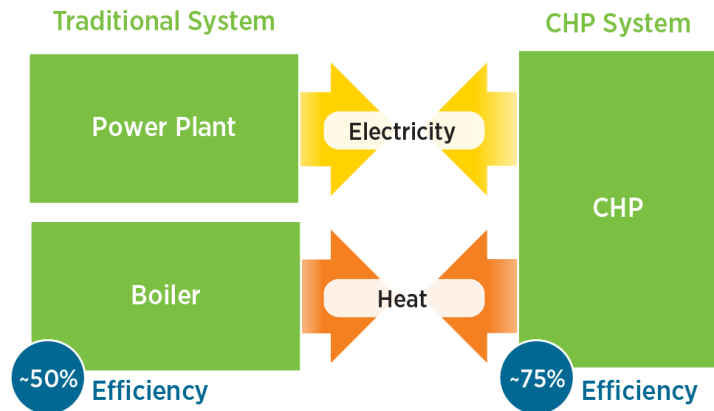
[www.energy.gov/chp](http://www.energy.gov/chp)





# CHP: A Key Part of Our Energy Future

- **Form of Distributed Generation (DG)**
- **An integrated system**
- **Located at or near a building / facility**
- **Provides at least a portion of the electrical load and**
- **Uses thermal energy for:**
  - Space Heating / Cooling
  - Process Heating / Cooling
  - Dehumidification



**CHP provides efficient, clean, reliable, affordable energy – today and for the future.**

*Source: [www.energy.gov/chp](http://www.energy.gov/chp)*



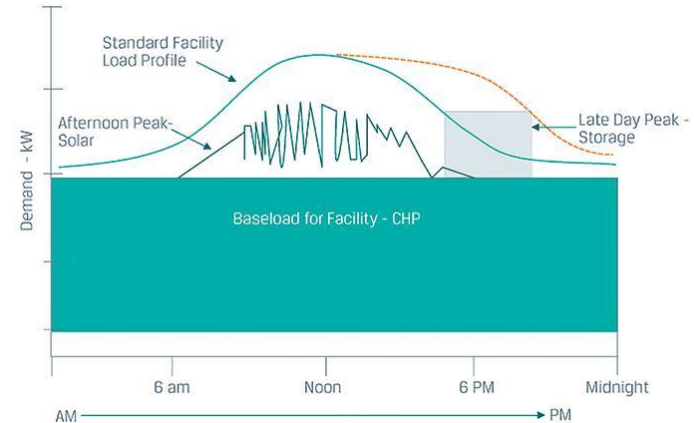
# What Are the Benefits of CHP?

- CHP is **more efficient** than separate generation of electricity and heating/cooling
- Higher efficiency translates to **lower operating costs** (but requires capital investment)
- Higher efficiency **reduces emissions** of pollutants
- CHP can also increase **energy reliability** and enhance power quality
- On-site electric generation can **reduce grid congestion** and avoid distribution costs.



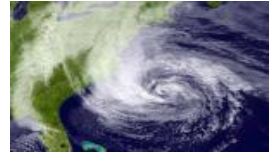
# Growth of Hybrid DER Systems

- Hybrid DER approaches offer the opportunity for technologies to complement one another
- Hybrid systems combine characteristics of individual technologies
  - CHP – provides baseload energy
  - Solar – variable renewable generation can now be “firmed”
  - Storage – adding flexibility
- Allows CHP to be a key part of the move toward a distributed/renewable grid



# CHP Increases Resilience

- For end users:
  - Provides continuous supply of electricity and thermal energy for critical loads
  - Can be configured to automatically switch to “island mode” during a utility outage, and to “black start” without grid power
  - Ability to withstand long, multiday outages
- For utilities:
  - Enhances grid stability and relieves grid congestion
  - Enables microgrid deployment for balancing renewable power and providing a diverse generation mix
- For communities:
  - Keeps critical facilities like hospitals and emergency services operating and responsive to community needs



# Project Snapshot:

## Cost Savings

### Whole Foods Brooklyn Brooklyn, NY

**Application/Industry:** Retail Space

**Capacity:** 150 kW

**Prime Mover:** Reciprocating engine

**Fuel Type:** Natural gas

**Thermal Use:** Space heating, cooling, domestic hot water

**Energy Savings:** 2,513 MWh's/year, \$369,300/year savings, 250 kW demand response; system can operate in black out /"black start" mode

**Installation Year:** 2014

**Highlights:** The 56,000-square-foot structure is 60 percent more energy efficient than the building code requires, making it one of the most energy efficient supermarkets in the nation.



Source:

<https://www.greenbiz.com/blog/2014/01/02/whole-foods-opens-energy-efficient-market-Brooklyn>



CHP Technical Assistance Partnerships

*Slide prepared 6/2017*

# Project Snapshot:

## Resiliency and Disaster Relief

### South Oaks Hospital Amityville, NY

**Application/Industry:** Healthcare

**Capacity:** 1.25 MW

**Prime Mover:** Reciprocating engines

**Fuel Type:** Natural gas

**Thermal Use:** Steam, cooling, hot water

**Installation Year:** 2007

**Highlights:** After Superstorm Sandy, South Oaks continued to provide critical health services for two weeks relying solely on its CHP system. They admitted patients displaced from other sites, refrigerated vital medicines, and welcomed staff and local community to recharge electronic devices and shower. South Oaks' previous CHP system operated continuously through the Northeast Blackout of 2003 as well. South Oaks' leadership, management team, and staff agree that CHP has served them well for more than 20 years.



Source: <http://energy.gov/eere/amo/downloads/chp-enabling-resilient-energy-infrastructure-critical-facilities-report-march>



CHP Technical Assistance Partnerships

*Slide prepared 6/2017*



# Project Snapshot:

## High-Rise Hotel

**Millenium Hilton**

**New York, NY**

**Application/Industry:** Hotel

**Capacity (kW):** 500

**Prime Mover:** 2 x 250kW reciprocating engines

**Fuel Type:** Natural gas

**Thermal Use:** Domestic hot water, space heating, absorption chiller for space cooling

**Energy Savings:** Decrease in site energy use by 34%, 32% GHG reduction (equivalent of 4,394 cars)\*

**Installation Year:** 2014

**Highlights:** The Church Street Hilton is a 55-story, 569 room hotel in lower Manhattan. The CHP system reduces its carbon footprint and energy use from the grid. This has led to a reduction in energy costs, and the owner has continued installing CHP at their other hotels.



\*Source:

[https://www.nyceec.com/work/millennium\\_hilton/](https://www.nyceec.com/work/millennium_hilton/)



CHP Technical Assistance Partnerships

# Project Snapshot:

## Medical Center

**Albany Medical Center**

**Albany, NY**

**Application/Industry:** Hospital

**Capacity (MW):** 4.5

**Prime Mover:** Gas turbine engine

**Fuel Type:** Natural gas

**Thermal Use:** Domestic hot water, space heating, absorption chiller for space cooling

**Energy Savings:** It has an average capacity factor of 85% and a total system efficiency of 66%, displacing 4,117kW of peak demand and 29M kWh of grid electricity.

**Installation Year:** 2013

**Highlights:** Albany Medical Center is a 651-bed hospital in Albany, New York. The CHP can serve 80% of winter and 50% of summer energy needs, even when islanded. It is projected to save \$70 million in energy costs by 2020.



**CHP Technical Assistance Partnerships**



# Project Snapshot:

## Residential Resiliency

### The Brevoort Manhattan, NY

**Application/Industry:** Residential

**Capacity:** 300 kW

**Prime Mover:** Microturbines

**Fuel Type:** Natural gas

**Thermal Use:** Space heating, hot water

**Installation Year:** 2010

**Highlights:** During Superstorm Sandy, the CHP system isolated from the Con Ed grid and powered the entire building, including the central boilers, domestic water pumps, all elevators and all apartments, for five days. While the Brevoort typically houses 720 occupants, nearly 1500 people took shelter there during Sandy and its aftermath.

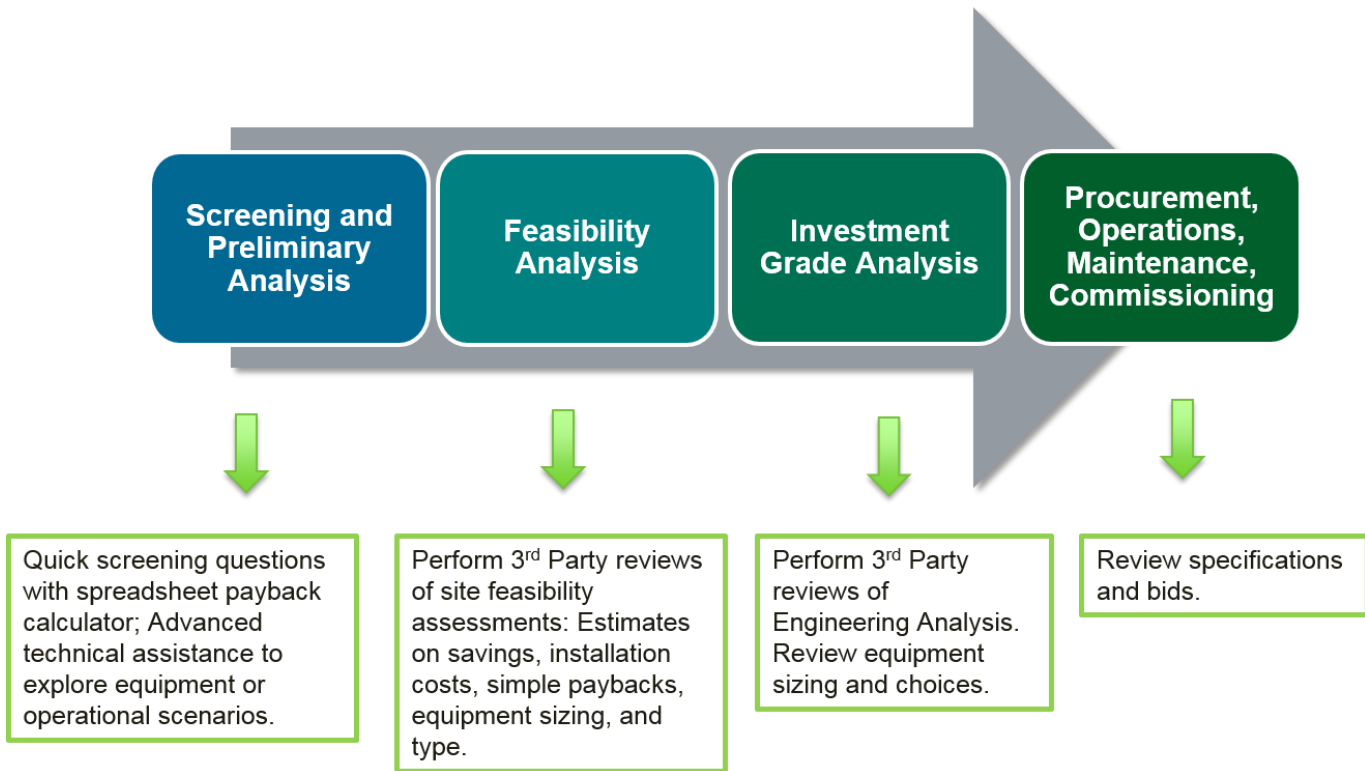


*The Brevoort three nights into the Hurricane Sandy blackout with lights shining powered by four CHP units*

Source: [https://understandingchp.com/files/2018/04/The\\_Brevoort\\_1950s\\_Greenwich\\_Village\\_Co-Op-Tecogen.pdf](https://understandingchp.com/files/2018/04/The_Brevoort_1950s_Greenwich_Village_Co-Op-Tecogen.pdf)



# CHP TAP Role: Technical Assistance



# Next Steps

**Contact New York – New Jersey CHP TAP for assistance with:**

- **Sites interested in having a Qualification Screening performed to determine if there is an opportunity for CHP**
- **Facilities with existing CHP plants that are interested in upgrading and or expanding it**
- **End users who could benefit from an unbiased 3rd Party Review of a proposal for CHP at their site**



# Thank You

## Questions?

Thomas Bourgeois

Director, NY-NJ CHP Technical Assistance Partnership

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*A program sponsored by*



[.org](http://www.energy.gov/chp)



CHP Technical Assistance Partnerships

# Panel Two:

#WCCleanEnergySummit

## *Westchester Specific Solutions*

**Moderator: Craig Hart, Executive Director, Pace Energy & Climate Center**

### **Panelists:**

- Mark Brescia, Manager, Con Edison
- Vennela Yadhati, P.E. Business Development Engineer, NYPA
- Nina Orville, Director of Solar Programs, Sustainable Westchester
- Marilyn Dare, Senior Project Manager, NYSERDA
- Ryan Boniello, Operation & Sales, Boniello Development
- Thomas Bourgeois, Director, U.S. Dept of Energy's NY/NJ CHP Center
- Michel Delafontaine, DER & Business Development Director, Sustainable Westchester
- Brad Tito, Program Manager for Communities and Local Governments, NYSERDA

# Westchester County Clean Energy Summit: *Implications of NY's Climate Law & Scalable Solutions*

Thursday, March 5th, 2020

Pace Energy & Climate Center  
White Plains, NY

#WCCleanEnergySummit

