

# **HFA IRA Bootcamp Session:** Integrating IRA Funding with HFA Programs

NATIONAL HOUSING TRUST | NOVEMBER 29, 2023

# AGENDA

- **Welcome & Announcements**
- **Maryland Multifamily Energy Efficiency and Housing Affordability Program**
  - *Scott Falvey, Maryland Department of Housing and Community Development*
- **NYC HPD & NYSERDA Electrification Retrofit Pilot Projects**
  - *Daphna Ezrachi, NYC Department of Housing Preservation & Development*
  - *James Mannarino, New York State Energy Research and Development Authority*
- **NY State's Clean Energy Initiative**
  - *Becky Koepnick, New York State Homes and Community Renewal*
- **Title 17 Clean Energy Financing**
  - *Hans Riemer and Elizabeth Bellis Wolfe, DOE's Loan Program Office*
- **Preview of Upcoming Session**



# IRA PROGRAM UPDATES- NEW MULTIFAMILY ZERH STANDARD

- DOE released Final Requirements for Multifamily Version 2 Zero Energy Ready Home (ZERH) certification
- Applies to multifamily buildings of any size- previous versions only applied to buildings up to five stories in height
- Key updates include increased energy efficiency and performance levels and added electric readiness

<https://www.energy.gov/eere/buildings/doe-zero-energy-ready-home-zerh-program-requirements>

## Sect. 45L- New Energy Efficient Home Credit Extension and Increase with no LIHTC Basis Reduction

ENERGY STANDARD	MEETS PREVAILING WAGE?	
	Yes	No
ENERGY STAR New Construction	\$2,500 per unit	\$500 per unit
DOE's Zero Energy Ready Homes	\$5,000 per unit	\$1,000 per unit

# NEW QAP RESOURCES

## Electrification

### Creating More Efficient and Sustainable Housing Credit Properties

As states seek to reduce carbon emissions to achieve their climate goals, transitioning buildings from fossil fuel energy sources to electricity— known as electrification— is emerging as a critical part of the solution. Given that affordable housing is in high demand, it is increasingly important to ensure that existing units provide safe and resilient homes for low-income residents. Electrification is a key part of this effort. Replacing gas systems and appliances with highly efficient electric-powered units, ideally powered by renewable energy – greatly improves the sustainability, safety, and affordability of housing.

In addition to reducing emissions that cause climate change, eliminating gas stoves can deliver improved indoor air quality for residents: children living in a home with a gas stove are 42% more likely to develop asthma symptoms and 24% more likely to receive an asthma diagnosis by a doctor.<sup>1</sup> Additionally, when coupled with renewable energy, electrification can relieve the utility cost burden for low-income households, making housing more affordable overall.

The following analysis, which examined 53<sup>2</sup> [Qualified Allocation Plans \(QAPs\)](#) released before March 2023, provides insight into how state and local housing finance agencies are furthering electrification and creating climate-friendly, healthy homes for residents in [Low Income Housing Tax Credit](#) properties.

#### Electrification Trends Across States

## Renewable Energy

### Improving Sustainability in Housing Credit Properties

Renewable energy – energy from naturally replenished sources, like the sun, wind, and water – is growing across the country. Historically, installing renewable energy systems was not financially feasible for many Americans, keeping the benefits of clean energy – such as access to resilient and clean energy sources, lower utility bills, and less environmental impact – out of reach. These benefits can be especially important for low-income households. The national average energy burden for these households is three times higher than the national average for low-income households. Nonetheless, [DOE's Solar Futures Study](#) found that only 10% of households are among households that earn less than the area median income (AMI).

Over the past few years, there has been a push to make renewable energy more equitable and accessible. Targeted [tax credits](#) and [funding for deploying solar](#) in low-income communities through the Inflation Reduction Act (IRA). This is especially important for low-income residents who are disproportionately affected by climate change but bear the brunt of its impact. Including renewable energy as an energy source in affordable housing helps ensure that housing units provide safe, healthy, and resilient homes for low-income residents.

The following analysis, which examined 53<sup>1</sup> [Qualified Allocation Plans \(QAPs\)](#) released before March 2023, provides insight into how state and local housing finance agencies (HFAs) ensure low-income households have access to renewable energy sources and create climate-friendly, healthy homes for residents.

## Third Party Green Building Standards

### Improving Sustainability in Housing Credit Properties

Maximizing the sustainability of [Low Income Housing Tax Credit \(Housing Credit\)](#) properties reduces energy and water consumption, cuts carbon emissions, improves the financial performance of properties, and creates healthier and more resilient homes for residents most vulnerable to the effects of climate change. One mechanism used by state and local Housing Finance Agencies (HFAs) to add a broad range of sustainability criteria into the [Qualified Allocation Plan \(QAP\)](#) is through third-party green building standards (green building standards).

Green building standards are certification systems established by independent third parties – like Enterprise Communities or Phius– that provide clarity for developers on how to incorporate sustainability in project design and construction. For an HFA, green building standards represent a streamlined process through which the HFA can help advance a range of valuable energy and water efficiency standards through their Housing Credit awards to improve the performance of subsidized affordable housing. A developer who commits to obtaining a green building certification agrees to prioritize sustainable building design elements and systems, such as high-efficiency equipment, renewable energy, and environmentally-friendly building materials, in their project.

The following analysis, which examined 53<sup>2</sup> [Qualified Allocation Plans \(QAPs\)](#) released before March 2023, reveals how HFAs incorporate green building standards. Our findings confirm that green building standards continue to be the most widely adopted method to improve the sustainability of Housing Credit properties.

#### Use of Green Building Standards is on the Rise

<https://nationalhousingtrust.org/strengthening-low-income-housing-tax-credit-allocations>

# **MARYLAND DHCD MULTIFAMILY ENERGY EFFICIENCY AND HOUSING AFFORDABILITY (MEEHA) PROGRAM**

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**Scott Falvey**

*Senior Energy Program  
Manager*

Maryland Dept of Housing &  
Community Development



# NYC HPD & NYSERDA RETROFIT PILOT PROJECTS

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**Daphna Ezrachi**

*Manager of Sustainability*

*Programs*

NYC HPD



**James Mannarino**

*Senior Project Manager,*

*Multifamily Programs*

NYSERDA

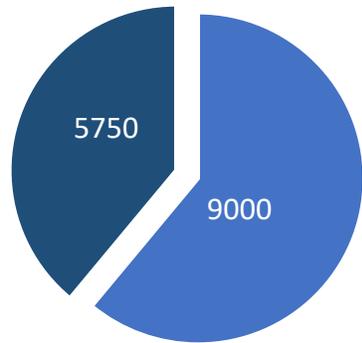
# **NYSERDA-HPD JOINT PILOTS**

Presented by James Mannarino &  
Daphna Ezrachi  
Nov. 29th, 2023

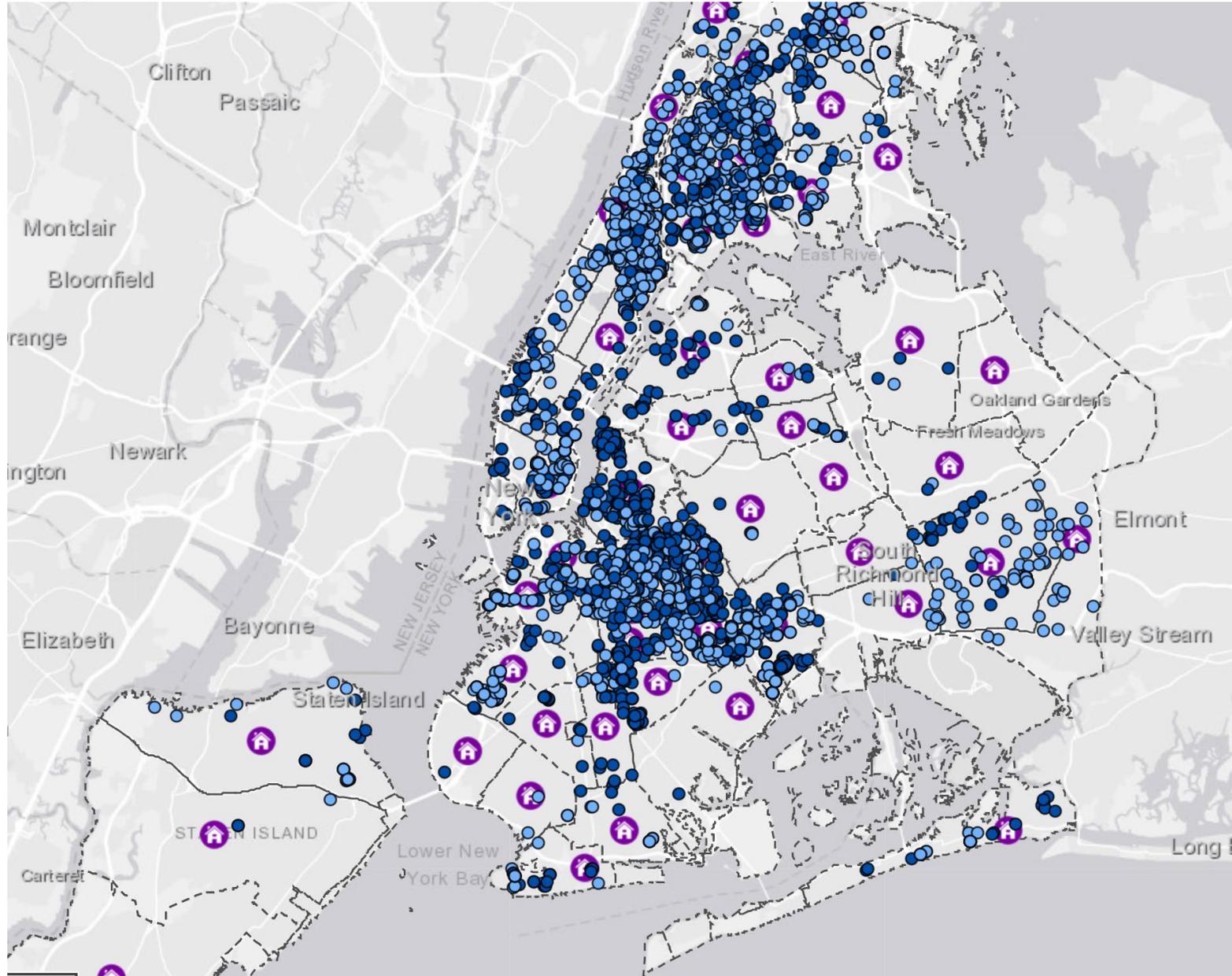
# NYC Department of Housing Preservation & Development

**HPD is the largest municipal developer of affordable housing in the nation.**

In addition to setting housing policy, HPD finances the construction and preservation of **over 16,000 units of affordable housing in hundreds of buildings each year**



- Preservation (units)
- New Construction (units)





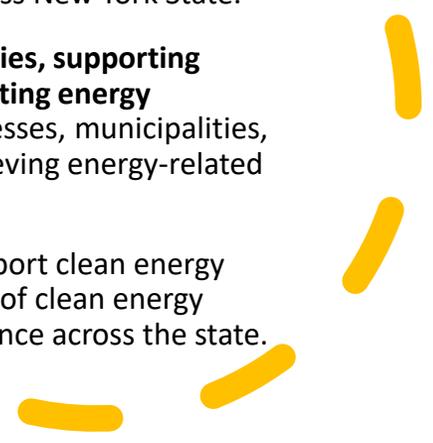
**NYSERDA**

# New York State Energy Research & Development Authority

NYSERDA is a public benefit corporation established in 1975. NYSERDA's primary focus is on advancing energy solutions and promoting sustainable energy practices across New York State.

The authority plays a crucial role in **developing innovative energy technologies, supporting renewable energy sources, reducing greenhouse gas emissions, and promoting energy efficiency**. NYSERDA collaborates with various stakeholders, including businesses, municipalities, utilities, and residents, to implement programs and initiatives aimed at achieving energy-related goals.

NYSERDA offers **financial incentives, grants, and technical assistance** to support clean energy projects, energy-efficient upgrades for buildings, research and development of clean energy technologies, as well as initiatives to improve energy affordability and resilience across the state.



# NYC CONTEXT

# Climate Change in NYC



Why NYC Was So Unprepared For Hu...  
gothamist.com



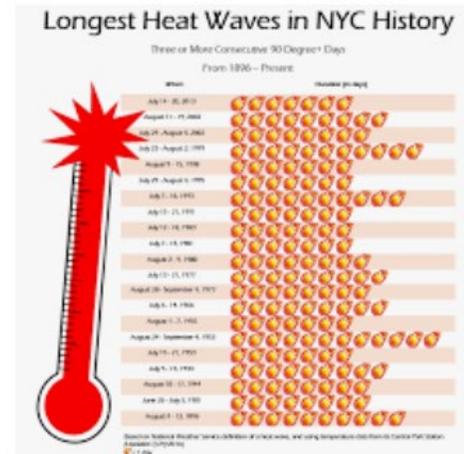
13 dead from Ida flooding in New York ...  
abc7ny.com



Hurricane Ida 2021: 60 dead in 8 states ...  
abc7news.com



strikes NYC with historic flooding ...  
nydailynews.com



Heat Waves ...  
adaptny.org



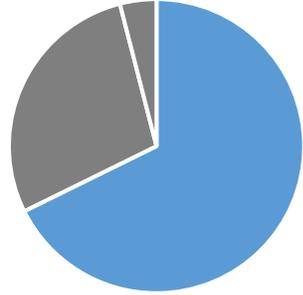
NEW YORK CITY'S  
ROADMAP TO

80x50



Getting to 80% is about buildings. All buildings.

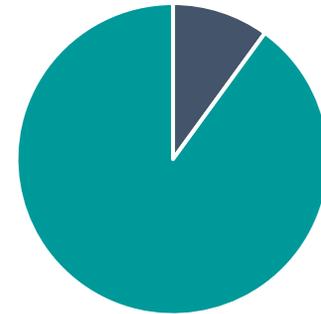
**68%**



GHG EMISSIONS IN NYC

**of NYC's emissions  
come from buildings**

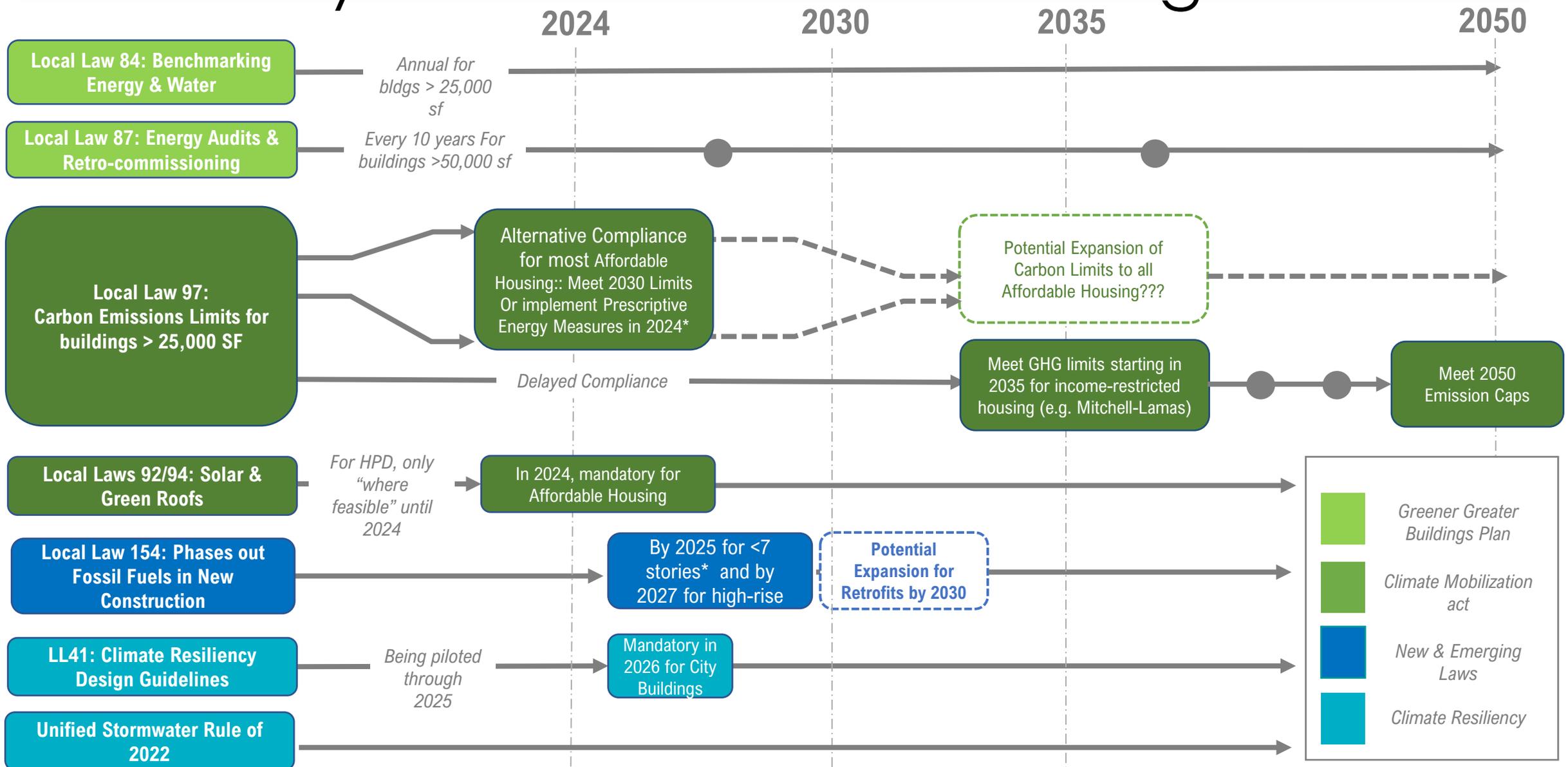
**90%**



BUILDING AREA IN NYC

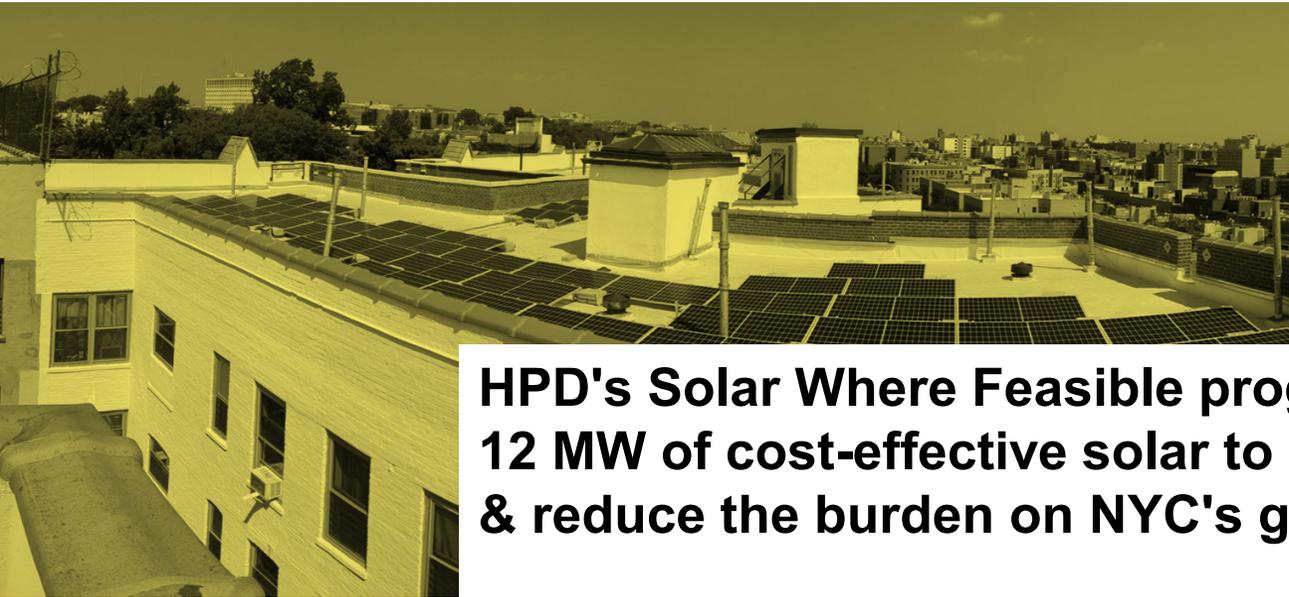
**of NYC's built area in 2050  
already exists today**

# NYC's Key Climate Laws for Buildings



# HPD-NYSERDA PILOTS

# HPD-NYSERDA Solar Where Feasible



**HPD's Solar Where Feasible program has supported over 12 MW of cost-effective solar to lower energy cost & reduce the burden on NYC's grid**

- *Solar Feasibility Analysis required - and projects with a 10-year payback must include solar*
- *Technical assistance to optimize design and leverage incentives*

*Solar is now “business as usual” for HPD projects*



# HPD-NYSERDA Retrofit Electrification Pilot



**The \$24 million Retrofit Electrification Pilot will fund strategic electrification of heating and/or hot water ... to electrify where it makes the most sense**

- *Focused on buildings using oil or in flood zones*
- *Up to \$26,400 per dwelling unit paid out during construction*
- *Free Technical Support to design teams*

*\$11 million in 21 buildings has been allocated to date*



HPD and NYSEERDA Electrification Pilot - FAQ Series

**HPD/ NYSEERDA Retrofit Electrification Pilot**

**Best Practices + Case Studies**



# Retrofit Electrification Pilot



## CHOICE OF 2 SCOPES:

Electrify Hot Water heating (up to \$2,300/unit) or Electrify Space Heating (up to \$24,000/unit)



## DIRECT GRANTS TO OWNERS:

Incentives are paid out to owners during construction requisition Process



## FREE TECHNICAL SUPPORT:

To design team during design/ construction + Staff & Resident training



LOWER CARBON BUILDINGS



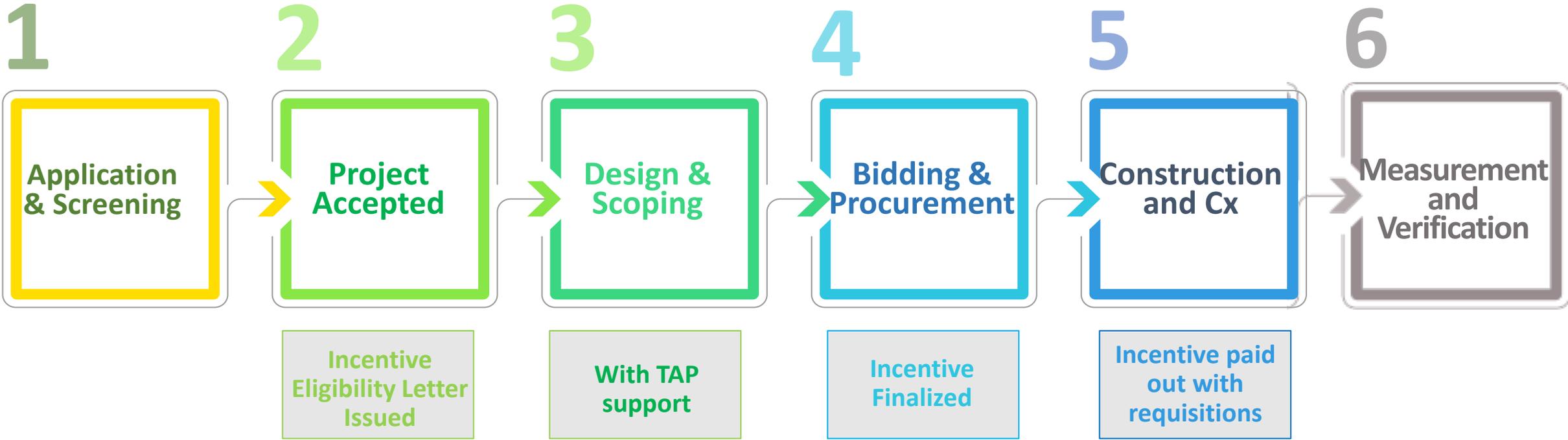
MORE CAPACITY



LESSONS LEARNED

# PILOT: PROCESS OVERVIEW

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# HPD-NYSERDA Future Housing Initiative

## The \$15 Future Housing Initiative will fund All-Electric Passive House New Construction Projects

- *Up to \$10,000 per dwelling unit*
- *Two competitive rounds of awards*
- *Free technical support to help minimize costly errors*

*Launched in Summer 2023*



# HPD-NYSERDA Future Housing Initiative



## **SUPER HIGH PERFORMANCE**

Electric Hot  
Water &  
Heating &  
Cooking

+

Passive House  
Certification



## **DIRECT GRANTS TO OWNERS:**

3 “tiers”  
\$5,500 to  
\$10,000/ DU  
distributed to  
owners during  
construction @ 4  
key milestones



## **FREE TECHNICAL SUPPORT:**

Includes a  
“framework”  
that  
integrates “less  
ons learned” in  
NYC to reduce  
costs & other  
issues



**NEAR-ZERO CARBON BUILDINGS**

**MORE CAPACITY**

**LESSONS LEARNED**

Thank you! Questions?

# NY STATE CLEAN ENERGY INITIATIVE

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**Becky Koepnick**

*Chief Strategy Office for  
Portfolio Preservation*

NY State Homes and  
Community Renewal



**Homes and  
Community Renewal**

# **New York State Clean Energy Initiative**

**November 29, 2023**

Becky Koepnick  
Chief Strategy Officer for Portfolio Preservation

Office of Housing Preservation  
NYS Homes and Community Renewal

# NYS Climate Leadership and Community Protection Act

## New York's Nation-Leading Climate Targets

85% Reduction in GHG Emissions by 2050

100% Zero-emission Electricity by 2040

70% Renewable Energy by 2030

9,000 MW of Offshore Wind by 2035

3,000 MW of Energy Storage by 2030

6,000 MW of Solar by 2025

22 Million Tons of Carbon Reduction through Energy Efficiency and Electrification

## NEW YORK'S CLIMATE LEADERSHIP and COMMUNITY PROTECTION ACT



New York's landmark new law, the Climate Leadership and Community Protection Act (Climate Act), is demonstrating to the nation how to confront the greatest threat facing life as we know it — a rapidly changing climate. Signed into law in July 2019, the Climate Act will empower every New Yorker to fight climate change and provide the opportunity to improve all our daily lives.

**This is our planet. This is our time to fight for it.**

**By 2040: achieve 100% zero-emission electricity | By 2050: reduce emissions at least 85% below 1990 levels**

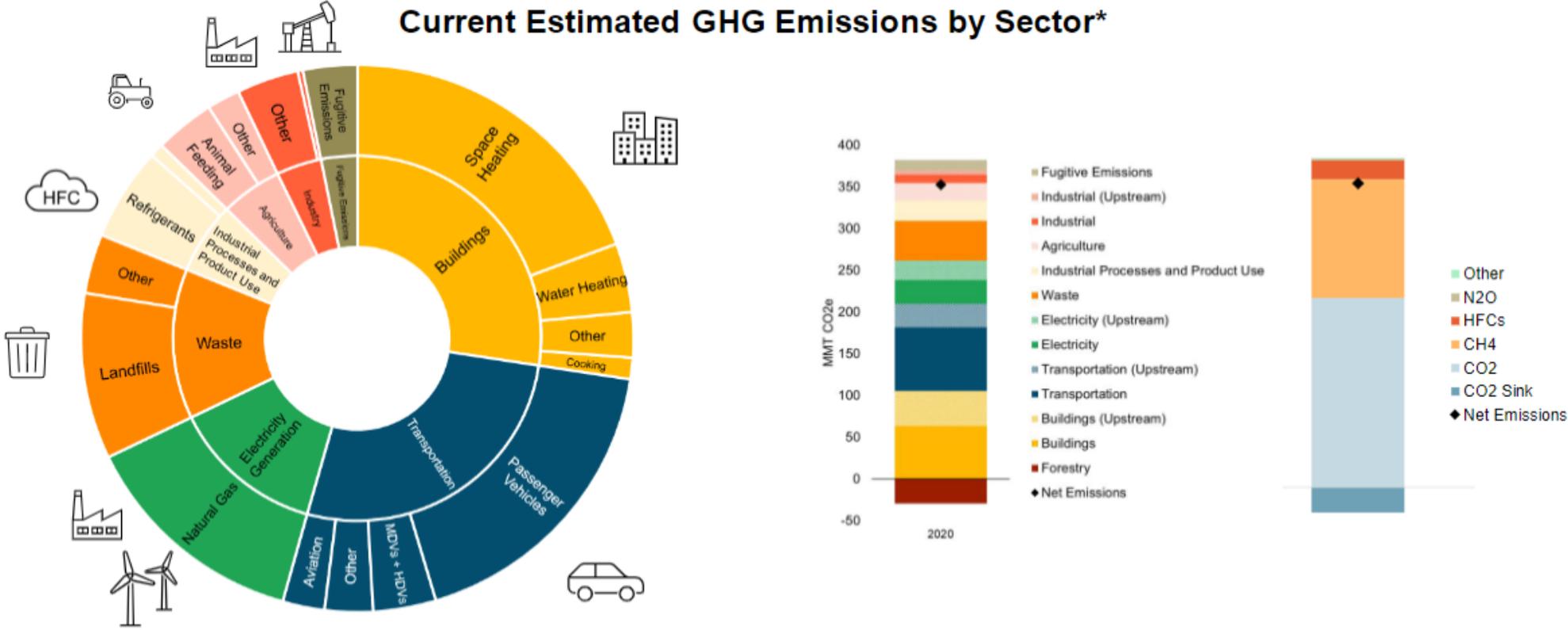
Achieving the ambitious goals of this law will mean transforming the way we generate and use electricity, the way we heat our homes, and the way we get to school and work. New Yorkers will tackle climate change and create new opportunities for our children and grandchildren. Through thoughtful planning, this effort will breathe life into our economy with well-paying clean energy jobs, new industries and business opportunities, and improved health and quality of life for New York families and communities. New York's course on climate action also means spending less on fossil fuels and keeping our energy dollars in the local economy, and in the pockets of hardworking New Yorkers.

For more information visit:

<https://Climate.NY.Gov>

# New York State by the Numbers

In January 2022, Governor Hochul announced a '2 Million Climate Friendly Home' goal by 2030, as a pathway to help the states building sector reach the 40% Carbon reduction target.



\*Draft 2020 results in line with DEC CLCPA accounting including upstream emission factors, 20-year GWP, and estimates from NY PATHWAYS

# HCR Sustainability Strategy



## NEW YORK'S CLIMATE LEADERSHIP and COMMUNITY PROTECTION ACT

**NEW YORK'S** landmark new law, the Climate Leadership and Community Protection Act (Climate Act), is demonstrating to the nation how to confront the greatest threat facing life as we know it — a rapidly changing climate. Signed by Governor Andrew M. Cuomo in July 2019, this law will empower every New Yorker to fight climate change and provide the opportunity to improve all of our daily lives.

**It's a new dawn. It's a new time to fight for it.**

**By 2025** address 100% our electricity | **By 2030** reduce emissions at least 85% below 2005 levels

Addressing the real climate goals of the law will mean transforming the way we generate and use electricity, the way we heat our homes, and the way we get to school and work. New Yorkers will battle climate change and create new opportunities for our children and grandchildren. Through thoughtful planning, we will not sacrifice the jobs or economy that will bring us new energy, new industries and business opportunities, and improved health care and quality of life for the future. Our families and communities have taken a stand to combat climate change, and we are proud to stand with them in the fight to create a better future for all of our children and grandchildren.

**As we experience more frequent and intense storms, the Climate Act requires us to take action.** This law will establish a strong regulatory framework to address our climate change and our communities' most vulnerable and people in a changing climate. The State's use of modern science will help us to create the opportunity for climate and communities to partner with businesses, schools, and governments to create a better economy and a better world for all.

**What the Climate Act means for New York State**

**CLEAN ELECTRIC GRID OF TOMORROW** Solar, wind and other renewable, combined with a smart grid with smart appliances and smart electricity usage for heat, cooling and transport.

**COMFORTABLE, AFFORDABLE, AND SAFE ENERGY SUPPLY** **WORKS AND BOUNDARIES** New York's history and leading technologies, such as nuclear, fuel cells and smart thermostats, combined with energy efficiency, will reduce New York's energy bill costs.

**TRANSFORMED ENERGY INFRASTRUCTURE** New energy infrastructure for electric cars, for clean energy and for smart appliances, smart heat pumps and smart thermostats, smart grid and smart buildings for heat, air and water systems.

**A CLEAN ENERGY ECONOMY FOR EVERYONE** Every community, every family, and every region will find ways to share energy resources and the economic opportunities that the transition to a clean energy economy offers.

**Benefits of New York State's climate leadership**

**CLEAN** Creating thousands of green jobs in communities across the State — from rooftop solar and batteries to engineering and financing — to help you live more of clean energy-powered growth.

**A HEALTHIER NY** Reducing greenhouse gases will help protect our children's health by reducing respiratory diseases and promoting healthy, green communities that attract new companies and business.

**AFFORDABLE ENERGY** Reducing energy costs will help you and your family live more affordably and sustainably.

**IMPROVED ENERGY SECURITY** Investing in clean energy will help you and your family live more sustainably and affordably.

Find out more and learn what you can do: [climate.ny.gov](http://climate.ny.gov)  
 Test all of your questions, and feedback to: [climate@climate.ny.gov](mailto:climate@climate.ny.gov)

# Sustainability Guidelines



## HCR SUSTAINABILITY GUIDELINES: NEW CONSTRUCTION

HCR NY GOV  
SPRING 2022

**SECTION 1**  
**CORE SUSTAINABILITY REQUIREMENTS**

Section 1 of the New Construction Sustainability Guidelines outlines core project requirements and eligible third-party certification programs that must be met by all projects.

At a minimum, projects must meet the all-electric standard and comply with one of the **Baseline Requirement** third-party certifications. Projects are encouraged to select a third-party certification from the **Stretch Goal** section, while still meeting the all-electric standard. Projects that commit to compliance with criteria listed in the **Stretch Goals** in Section 1 of these Guidelines shall be considered automatically in compliance with Section 2 and can skip directly to Section 3 of these Guidelines.

**GENERAL CONSIDERATIONS**  
Code compliance takes precedence for all building systems and design. If a conflict exists between building/energy codes or HCR sustainability requirements, a design waiver should be requested from HCR.

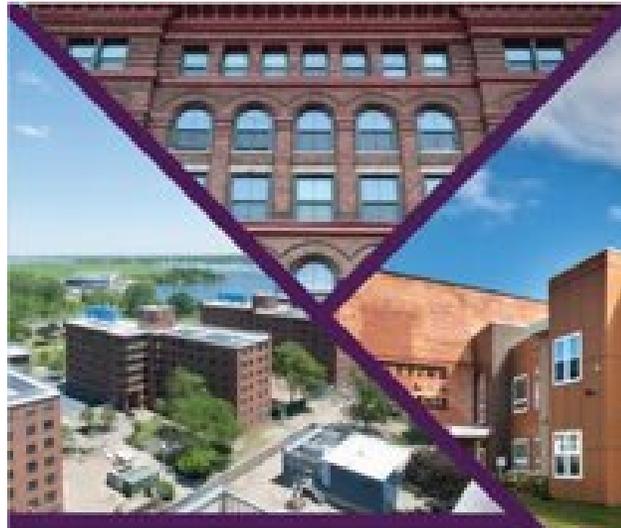
Please be advised that energy code requirements and the corresponding energy efficiency strategy must be considered when planning a Project's development schedule. Projects will be responsible, without any additional cost to HCR programs, to comply with the applicable energy efficiency standard and all energy code requirements.

Nonresidential projects, or nonresidential spaces in a mixed-use project, shall incorporate comparable energy efficiency strategies as those required for residential projects to achieve similar energy savings.

**Baseline Requirements:**  
**A. All Electric:** All projects must utilize high-performance all-electric heating/cooling and domestic hot water equipment and other in-unit or shared appliances such as dryers and cooktops, ovens or ranges, and:



Ulivo Crescent Brooklyn, NY



## HCR SUSTAINABILITY GUIDELINES: EXISTING BUILDING

HCR NY GOV  
SPRING 2022

Adaptive Reuse	Substantial Rehab	Moderate Rehab Level II	Moderate Rehab Level I
No IPNA Required	No IPNA Required	IPNA Required	IPNA Required
<b>Baseline:</b>	<b>Baseline:</b>	<b>Baseline:</b>	<b>Baseline:</b>
<ul style="list-style-type: none"> <li>All-electric</li> <li>Choose from NYSERDA NC-H, 2020 EGC, LEED v4.1, Well or National Green Building Standard</li> </ul>	<ul style="list-style-type: none"> <li>20% energy reduction in project</li> <li>Choose from 2020 EGC or LEED v4.1</li> </ul>	<ul style="list-style-type: none"> <li>IPNA</li> <li>20% energy reduction in project</li> </ul>	<ul style="list-style-type: none"> <li>IPNA</li> <li>Retro-commission central plant systems</li> <li>Mandatory water and lighting efficiency (Section 2)</li> <li>Insulate existing DHW and HVAC</li> </ul>
<b>Stretch:</b>	<b>Stretch:</b>	<b>Stretch:</b>	<b>Stretch:</b>
<ul style="list-style-type: none"> <li>LEED v4.1 BD&amp;C Zero</li> <li>2020 EGS Plus</li> <li>Passive House</li> </ul>	<ul style="list-style-type: none"> <li>Passive House envelope</li> <li>Electrification</li> <li>2020 EGC Plus or <b>EnerPHit</b></li> </ul>	<ul style="list-style-type: none"> <li>Passive House envelope</li> <li>Electrification</li> <li>2020 EGC Plus or <b>EnerPHit</b></li> </ul>	<ul style="list-style-type: none"> <li>20% energy reduction</li> <li>Path to electrification</li> <li>Electric ready</li> </ul>

## STRUCTURE SUSTAINABILITY GUIDELINE REQUIREMENTS

This booklet is divided into three sections:



# NYS Clean Energy Initiative (CEI)



On August 2021, NYS Homes and Community Renewal (HCR) and the NYS Energy Research and Development Authority (NYSERDA) announced the availability of **\$100 Million** for a new Clean Energy Initiative, designed to create energy-efficient, all-electric affordable housing units. Goals:

1. Promote ease of access to affordable housing owners/developers through one application and source
2. Minimize issues with incentive-based payments
3. Inject clean energy funding within the capital stack

	Projects	Units	Funding
<b>Awarded</b>	28	2,744	\$25,649,000
<b>In pipeline</b>	52	4,921	TBD

# Role of Technical Assistance Providers (TAP)

We heard from the market, navigating the technical space of heat pump type selection, certification process with green energy performance programs, and the integrated design process can be confusing, especially for first time decarbonization teams.

- Provide direct technical support for Clean Energy work scope items
- TAP provide expertise in Passive House and high-performance building standards – to add additional support to the existing development team (not to replace)
- Compliance with the CEI Program



# Overview NYS CEI



## HCR SUSTAINABILITY GUIDELINES: NEW CONSTRUCTION

HCR.NY.GOV  
SPRING 2022



### CEI Program

### New Construction

#### Funding

\$5,500/unit

Max awards: \$1.375M

NC Boost: \$7,500/Unit,

Max awards: \$1.5M

#### Eligible Projects

Meets ONE of the Stretch goals in Section 1 of the Sustainability Guidelines  
(LEED BD+C Gold AND LEED Zero, PHI/PHIUS Certification, OR EGC+)

#### Notes

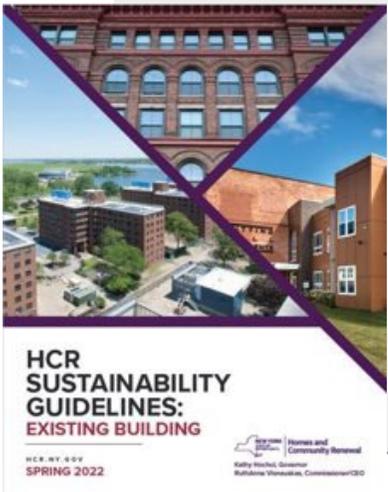
Boost Eligibility:

1. <60 units AND >4 stories
2. Project team has not certified a passive at time of application
3. >20 stories above grade
4. Total energy cost is less than \$1,000/unit (modeled)

Must pay into the SBC and cannot combine funding with other NYSEDA rate payer programs

# HCR Existing Buildings Refinance

CEI	Goal 1: Electrification of Heating System	Goal 2: Electrification of DHW system	Goal 3: Building Envelope Improvement & Ventilation
Funding	\$8,500/unit max	\$4,000/unit max	\$12,500/unit max
Scope of Work	Replace existing fossil-fuel (e.g., gas, oil, propane fired) based heating equipment or electric resistance baseboard systems with high-efficiency, all-electric heat pumps	Replace existing domestic hot water systems with high performance all-electric heat pump system	Envelope: Pursue Envelope Stretch Goals listed in Section 2 of the Existing Building Sustainability Guidelines (p23-24) Ventilation: Pursue Ventilation Stretch Goals listed in Section 2 of the Existing Building Sustainability Guidelines (p31)
Requirements	<p>Required Building Envelope Conditions</p> <ul style="list-style-type: none"> <li>A high-performance envelope is required when electrification of heating is being pursued.</li> </ul>	<p>Equipment must comply with the Adaptive Reuse Baseline Requirements for Domestic Hot Water equipment listed in Section 2 of the Existing Building Sustainability Guidelines (p 30)</p>	<ul style="list-style-type: none"> <li>Envelope improvements that contribute to an overall building envelope that is at least 15% more energy efficient than 2020 ECC</li> <li>Implementation of an engineered natural ventilation system in compliance with ASHRAE 62.1 Section 6.4 Natural Ventilation Procedure</li> <li>Existing buildings with natural ventilation systems installing through-wall exhaust fans in kitchen and bathrooms</li> <li>Installation of energy recovery ventilator (ERV) or heat recovery ventilator (HRV) equipment</li> </ul>



# CEI Example: Tailor Square—Adaptive Reuse of Hickey Freeman

- **Green Building and Energy Incentives and Funding:**

- CEI—\$1.675 million
- RGE—\$695,800
- Solar Credits/Geothermal/NYSERDA—\$230,000
- LIHTC—30% of Cost
- Federal Historic Tax Credits —15% of Cost
- State Historic Tax Credit — 5% of Cost

- **Economic Development Goals:**

- \$84 Million Total Investment
- 77,000 sq ft Manufacturing
- 250 Jobs Preserved



# DOE LPO'S TITLE 17 CLEAN ENERGY FINANCING

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**Hans Riemer**

*Senior Consultant*

Loan Programs Office, U.S.  
Department of Energy



**Elizabeth Bellis Wolfe**

*Senior Advisor*

Loan Programs Office, U.S.  
Department of Energy



**LPO**  
Loan Programs Office

## Program Overview

# Title 17 Clean Energy Financing

National Housing Trust webinar

November 29, 2023

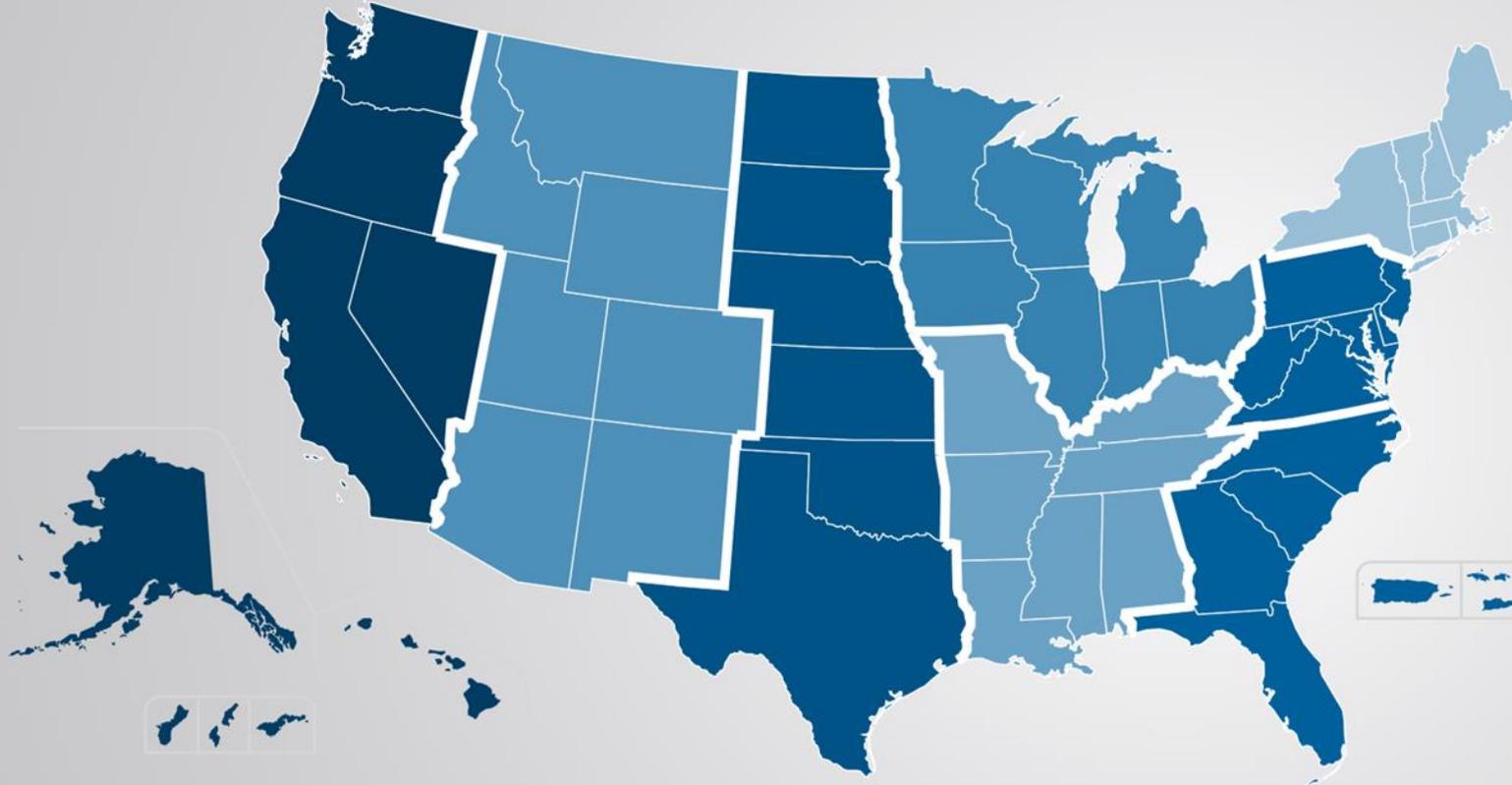
Elizabeth Bellis Wolfe, Senior Advisor, VPPs and SEFI  
Transactions

Hans Riemer, Senior Consultant, State and Local  
Engagement



**LPO**  
Loan Programs Office

Updated 31 July 2023



**177** ACTIVE APPLICATIONS<sup>1</sup> WITH  
**216** PROPOSED PROJECT LOCATIONS  
 ACROSS ALL REGIONS OF THE U.S.<sup>2</sup>

<b>WEST</b>	AK, CA, HI, NV, OR, WA (AS, GU, MP)	<b>54</b>
<b>PLAINS</b>	KS, ND, NE, OK, SD, TX	<b>31</b>
<b>MID-ATLANTIC</b>	DE, MD, NJ, PA, VA, WV (DC)	<b>24</b>
<b>SOUTHEAST</b>	FL, GA, NC, SC (PR, VI)	<b>24</b>
<b>MIDWEST</b>	IA, IL, IN, MI, MN, OH, WI	<b>23</b>
<b>MOUNTAIN</b>	AZ, CO, ID, MT, NM, UT, WY	<b>22</b>
<b>SOUTH</b>	AL, AR, KY, LA, MO, MS, TN	<b>20</b>
<b>NORTHEAST</b>	CT, MA, ME, NH, NY, RI, VT	<b>18</b>

**Notes**

All data updated through September 30, 2023. For more details and a list of technology areas of interest within each LPO tech sector, see: [Energy.gov/LPO/MAAR](https://www.energy.gov/lpo/maar)

- Active applications include applications that have been submitted by the project sponsor(s) through LPO's online application portal and are in different stages of active review and engagement by LPO and the applicant.
- Regions depicted are for representation purposes only and are not meant to denote LPO consideration of regional variation in project evaluation.

# What LPO Offers Borrowers

**LPO loans and loan guarantees** are differentiated in the clean energy debt capital marketplace in **three primary ways:**



## Access to Patient Capital

that private lenders cannot or will not provide.



## Flexible Financing

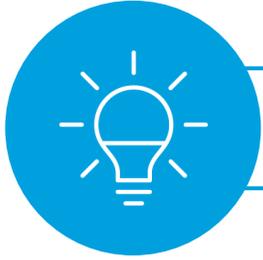
customized for the specific needs of individual borrowers.



## Committed DOE Partnership

offering specialized expertise to borrowers for the lifetime of the project.

# LPO Financing Programs



## Title 17 Clean Energy (Title 17)

### Financing for:

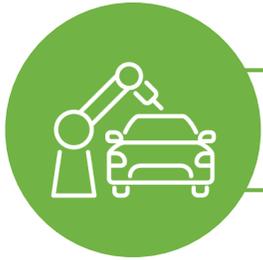
- Innovative Energy & Innovative Supply Chain (1703)
- **State Energy Financing Institution (SEFI)-Supported (1703)**
- Energy Infrastructure Reinvestment (EIR, 1706)



## Tribal Energy (TELGP)

### Financing for:

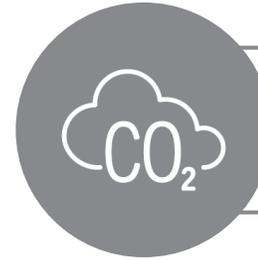
- Tribal energy development projects



## Advanced Transportation (ATVM)

### Financing for:

- Manufacturing of advanced technology vehicles, several modes of ATVs, components, and EV charging infrastructure



## CO<sub>2</sub> Transportation Infrastructure (CIFIA)

### Financing for:

- Large-capacity, common carrier CO<sub>2</sub> transportation projects



## TITLE 17

### State Energy Financing Institution (SEFI)-Supported Projects (1703)

# State Energy Financing Institution (SEFI) Projects (1703)

**SEFI projects** support deployment of a qualifying clean energy technology and receive meaningful financial support or credit enhancements from an entity within a state agency or financing authority.

SEFI projects are not required to employ innovative technology.

# SEFI Opportunity – What is a SEFI?

“State Energy Financing Institution,” or “SEFI,” is an LPO designation for a state entity that provides financial support to energy projects.

*Potentially: Energy Offices, Green Banks, Clean Energy Funds/Lending Centers, Housing Finance Agencies, Economic Development Authorities, and other state agencies that finance energy projects.*

Note: A local government or independent non-profit (non-quasi government) is generally not a SEFI.

For a partial list of SEFIs approved to date, see [State Energy Financing Institution \(SEFI\) Toolkit | Department of Energy\\*](https://energy.gov/lpo/state-energy-financing-sefi-tool-kit) at <https://energy.gov/lpo/state-energy-financing-sefi-tool-kit>

## **Examples:**

Washington State Housing Finance Agency;

Maryland Department of Housing and Community Development

*What state agencies or quasi-public entities fund energy projects in your state?*



# SEFI Opportunity – SEFI Project Category

The Inflation Reduction Act authorized LPO to finance projects that receive “meaningful financial support or credit enhancements” from SEFIs.

E.g., a grant, equity in kind, a loan-loss reserve, subordinate debt, or a loan that is pari passu with LPO. *LPO evaluates meaningfulness on a case-by-case basis.*

With this authority, LPO can finance certain projects that align with state energy priorities, including some projects that might not be eligible for other LPO financing.

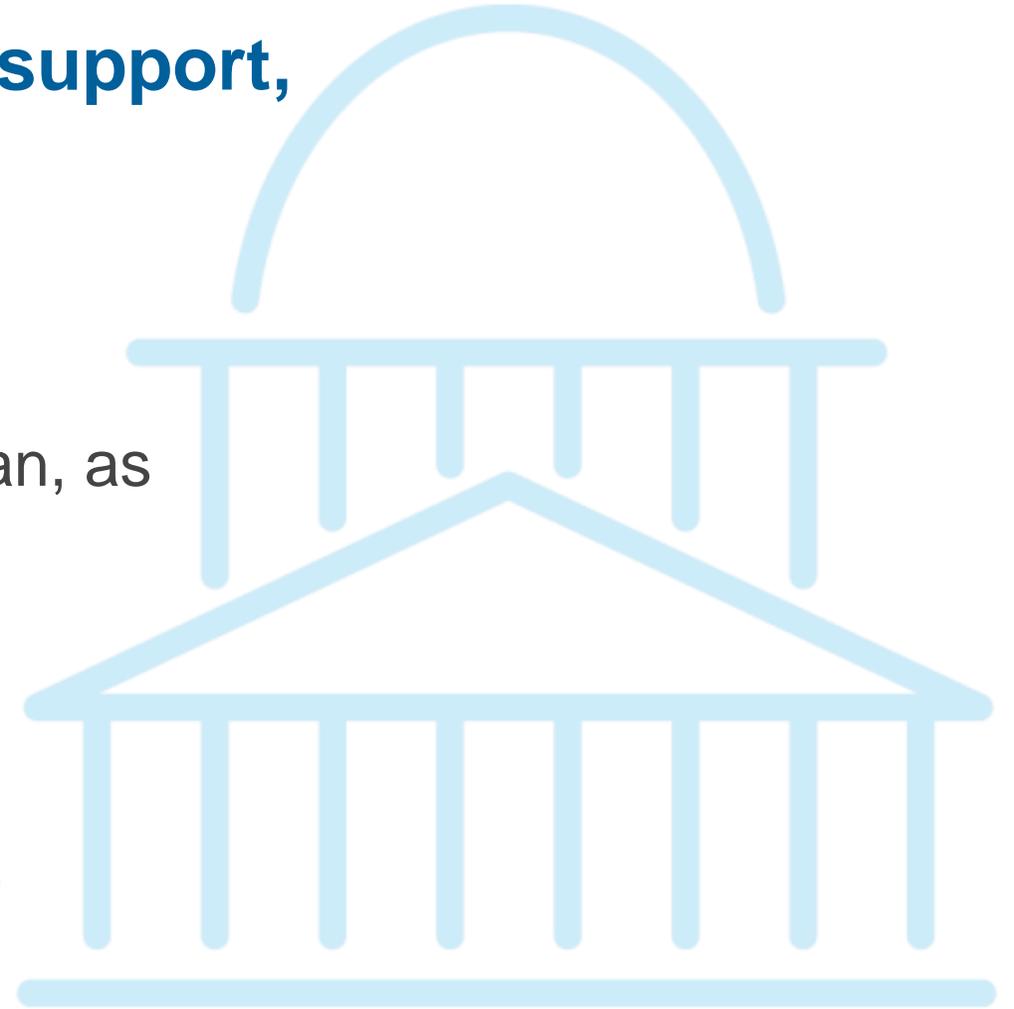


# SEFI Opportunity – Project Requirements

In addition to receiving qualifying SEFI support, projects must:

- ✓ Reduce greenhouse gas emissions.
- ✓ Have a reasonable prospect of repaying the loan, as assessed during LPO's rigorous due diligence.
- ✓ Employ at least one of 13 eligible technologies.

Note: Projects do not have to use innovative tech.



# SEFI Opportunity – Eligible Technologies

 <p>Renewable energy systems</p>	 <p>Advanced fossil energy technology</p>	<p><b>APPLIES TO:</b></p> <ul style="list-style-type: none"><li>✓ Innovative Energy Projects</li><li>✓ Innovative Supply Chain Projects</li><li>✓ <b>State Energy Financing Institution (SEFI) Projects</b></li></ul>	 <p>Hydrogen fuel cell technology</p>	 <p>Advanced nuclear energy</p>
 <p>Carbon capture and sequestration technology</p>	 <p>Efficient electrical generation, transmission, and distribution</p>		 <p>Efficient end-use energy technologies</p>	 <p>Production facilities for the manufacture of fuel-efficient vehicles or vehicle parts</p>
 <p>Pollution control equipment</p>	 <p>Oil refineries</p>		 <p>Energy storage technologies</p>	 <p><b>UPDATED:</b> Industrial decarbonization technologies</p>

# SEFI Opportunity – Pathways to SEFI Projects

**For project developers:** Potential applicants with a nexus to a state agency should talk to state officials about providing SEFI support so the project can apply to LPO through the SEFI project category.

**For state offices:** State officials who want to leverage LPO financing for energy projects should talk to LPO about SEFI status and consider how to RFP the private sector.



# SEFI Opportunity – How SEFIs Can Support Projects

Approach 1: SEFI provides qualifying awards to LPO applicants

Option A: SEFI provides backing to one or more individual projects, enabling the projects to apply to LPO.

**Option B: SEFI establishes a funding program:**

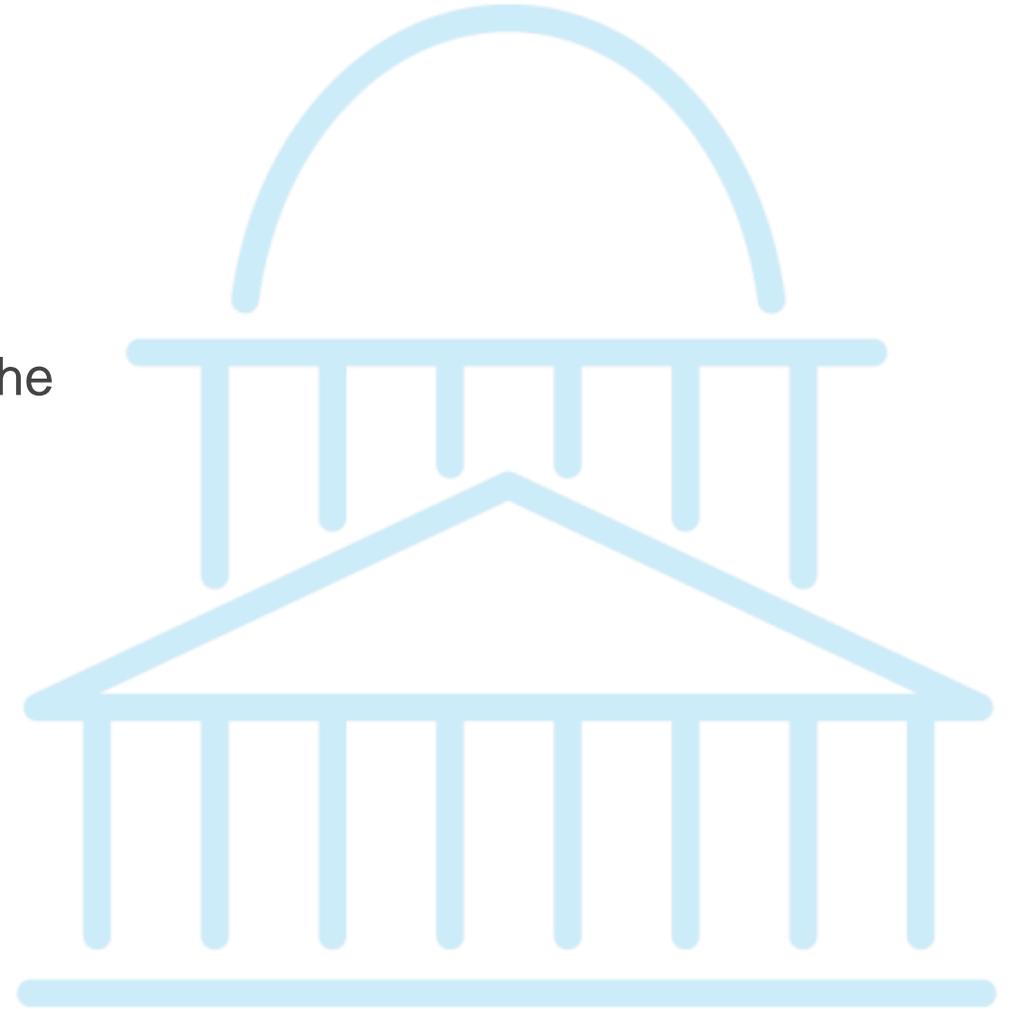
1. SEFI designs funding awards program to support projects applying for LPO loans.
2. Projects apply to both SEFI and LPO.
3. SEFI makes award calibrated to provide “meaningful support” in the capital stack.

Note: SEFI may make contingent awards with final awards based on projects receiving commitment from LPO.



# SEFI Opportunity – Benefits of a Funding Awards Program

- ✓ Allows State to RFP the private sector to identify project concepts addressing State priorities.
- ✓ Attracts national projects to the State.
  - States can set requirements for local investment (e.g., 20x the state award dollars must be spent in the state) for projects to receive SEFI support.
- ✓ LPO often is familiar with projects looking for State/SEFI partners.
- ✓ LPO can refer applicants to SEFIs that have a funding opportunity.
- ✓ LPO can publish a SEFI funding program on the LPO website.



# SEFI Opportunity – How SEFIs Can Support Projects

For SEFIs, making awards to LPO applicants is typically more straightforward than applying to LPO directly, but some SEFIs may choose the latter based on program goals.

<b>Approach 1: SEFI Provides Qualifying Awards to LPO Applicants</b>	<b>Approach 2: SEFI Bundles Projects into SPV; SPV Applies Directly to LPO</b>
Enables large projects to qualify for LPO financing under the SEFI project category but does not create capital pool for smaller projects.	Creates a capital pool for smaller projects that couldn't apply to LPO on their own. (Note: an SPV is not a requirement.)
SEFI does not need to provide information about the projects.	Requires significant detail about bundled projects, including a portfolio rating.
SEFI is only responsible for providing awarded funds.	Requires the SEFI, like any other applicant, to have 20% of the project cost as equity and may require (non-LPO) funding for more of the project costs.
SEFI exposure is limited to the amount of the award, with no additional requirements.	Means the SEFI would take on risk and have compliance requirements and liabilities, application costs, and upfront fees.



# SEFI Opportunity – Additional Project Considerations

- *Federal Support Restriction:* LPO cannot generally support projects that benefit from other federal support, subject to limited exceptions. For example, projects can take advantage of otherwise allowable federal tax benefits.
- *Terms:* LPO will only lend to 80% of project cost, at most, and must be senior (or pari passu). Projects must have equity and usually other subordinated financing. LPO can only provide partial guarantees of third party lender debt.
- *Other Requirements:* NEPA, Davis Bacon Act, Build America Buy America for some borrowers, community benefits, etc.
- *\$100M+:* Due to application-related costs such as engineering reports and drafting a term sheet, \$100M is often considered the point where an LPO loan starts to pencil out.



# Title 17 Lending Overview

## Loan Guarantee Features

- No minimum or maximum loan size (usually \$100M+).
- Total loan amount up to 80% of eligible project costs.
- Loan guarantees (up to 100%) of U.S. Treasury's Federal Finance Bank (FFB) loans, or partial guarantees (up to 90%) of commercial loans.
- Applicants **do not** apply directly to FFB; Title 17 loan applications are managed through LPO.
- Typically structured as project financing, but LPO can accommodate other structures.

## Loan Products

- Direct loan from U.S. Treasury's Federal Financing Bank (FFB) backed by 100% "full faith and credit" DOE guarantee.
- DOE partial guarantee of commercial debt from Eligible Lenders.

## Interest Rates and Fees

### Interest Rate (for FFB loans)

- Treasury + 3/8ths (0.375%) + risk-based charge (not for all projects).
- Treasury rate is fixed according to loan tenor (maximum 30 years).

### Transaction Costs

- External advisor fees.

### Fees

- Facility fee (0.6% on first \$2.0bn, 0.1% for excess; required at financial close).
- Maintenance fee (required annually post-closing).

**\*\* No Application Fees**



# SEFI Potential Projects (1 of 2)

## Virtual Power Plants

Following are just a few of the potential models for residential or commercial:

1. Energy office provides SEFI award to national VPP company as LPO applicant to implement in State.
2. Green bank provides SEFI support to program manager as applicant for low-cost loans for consumers.
3. On-bill financing by utility for solar/storage; Utility provides lower rates to consumer by using LPO. SEFI support provides additional incentive for customers.

## Affordable Housing

- Affordable housing owner retrofits buildings to create VPPs, achieve net zero.
- Housing agency makes SEFI awards to affordable housing providers who combine as applicant.
- Note: Identifying units and project designs that do not rely upon other federal funds.

## District energy systems

- Campus building decarbonization.
- District energy systems with generation potentially eligible for 1706/EIR (do not have to be campus based).
- System operator, project delivery company or campus owner applies to LPO.



# SEFI Potential Projects (2 of 2)

## Community energy projects

- Tax credits finance majority of cost for renewable portfolio with storage/ VPP serving low-income communities.
- Energy office provides SEFI grant.
- Project developer or municipality applies to LPO for loan to implement project.

## Government building decarbonization

- Portfolio of government buildings aggregated; energy projects procured.
- Project company applies to LPO.

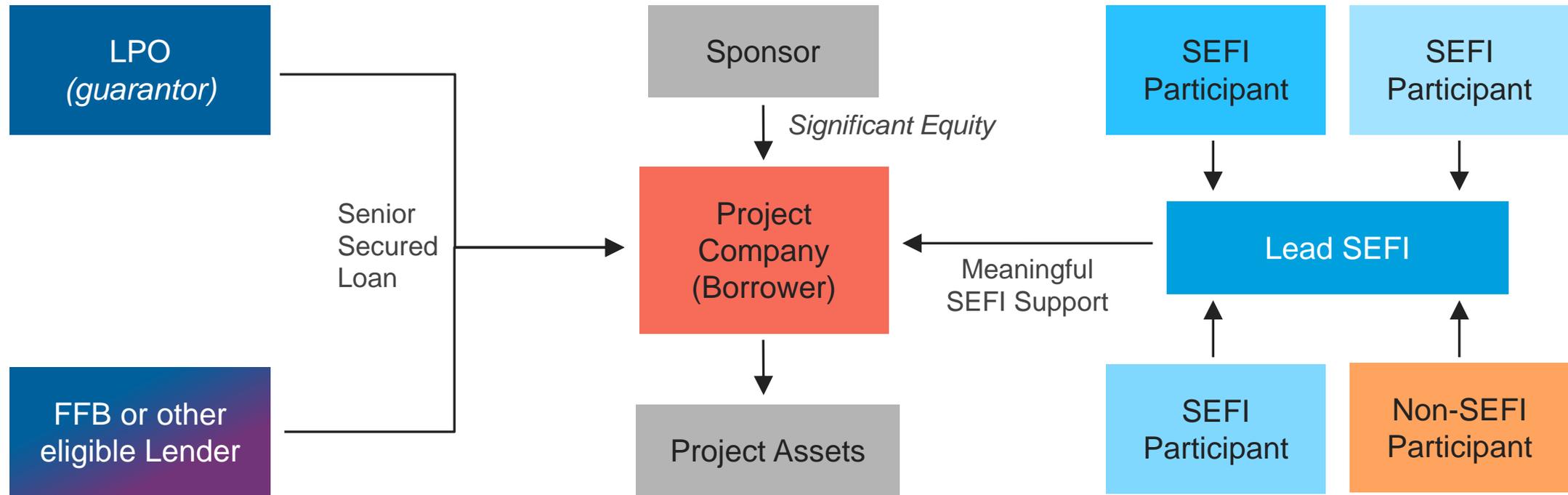
## Commercial building decarbonization

- Energy administration makes SEFI awards to commercial portfolio for project, allowing project company to borrow from LPO.
- SEFI borrows from LPO to make smaller awards from LPO backed capital pool.

*In all cases, SEFI provides grant or other meaningful support to the project.*



# Multi-SEFI support via a Lead State Energy Financing Institution (SEFI)



1 Lead SEFI enters into meaningful support agreement with Borrower on specified terms and a senior loan and guaranty agreement with LPO and the Lender.

*Meaningful SEFI Support could take the form of a grant, a debt facility, or a loss reserve.*

2 Lead SEFI enters into Participation Agreements with other interested SEFIs.

*Non-SEFIs may also participate but their portion of the investment generally will not count as SEFI support for the purposes of the meaningful support determination.*

# Let's Talk About Your Project

Contact LPO to see what financing options may be available for your project

## Questions?

We are here to provide feedback for your concepts and designs!  
Reach out to us with SEFI questions at [SEFI@hq.doe.gov](mailto:SEFI@hq.doe.gov)



Download the full Title 17 Guidance document at: [Energy.gov/LPO/Clean-Energy](https://www.energy.gov/LPO/Clean-Energy)

Learn more about LPO and all of its financing programs at: [Energy.gov/LPO](https://www.energy.gov/LPO)

# Community Benefits Plans

## A New Title 17 Project Application Requirement

- ✓ **A Community Benefits Plan (CBP) is now considered in the evaluation of Title 17 project applications.**
  - LPO can discuss and provide feedback during pre-application consultations.
  - CBPs will be preliminarily evaluated during the Part II evaluation.
  - Applications with inadequate CBPs may not be invited to proceed to due diligence.
- ✓ **LPO considers the quality of a CBP among the factors that indicate the prospect of loan repayment.**
- ✓ **LPO is leveraging commitments made for state and city incentives, and IRA Incentives.**
- ✓ **Borrowers will report on their fulfillment of goals and activities included in the CBP.**

## CBP Four Priorities

- 1) Justice 40**
- 2) Diversity, Equity, Inclusion, and Accessibility**
- 3) Quality Jobs**
- 4) Community & Labor Engagement**



# Upcoming Sessions

## December 13th, DOE Home Energy Rebates

2-3:30

- Working with State Energy Offices to advance program design priorities for affordable housing



*Please review this document ahead of our next session!*

*Be on the look out for our final Bootcamp survey.*

Affordable Housing Development	Role of Rebate Program Administrator
<i>Pre-design/predevelopment Phase (2-3 years before development completion)</i>	
Owner/Developer commissions Capital Needs Assessment (CNA) or Structural Needs Assessment following HFA requirements	<p>Informs HFA and/or Owner/Developer of program energy assessment requirements to be included in the CNA requirements</p> <p>Provides information about rebate programs/incentives to the Developer/Owner to impact project design decisions</p>
<i>Design Phase (1.5-2.5 years from development completion)</i>	
<p>Architect/Engineers design project and develop initial construction drawings (C.D.s) and specifications</p> <p>Owner/Developer submits financing application to HFA with all funding sources</p> <p>Secures funding commitment from HFA if the project meets the agency's funding criteria</p> <p>Architect/Engineer complete C.D.s for HFA review with standards/compliance</p>	<p>Reviews project design drawings/specifications to assess funding opportunities and develops a preliminary estimate of energy incentives</p> <p>Provides owner/developer with preliminary funding commitment letter to include in financing application</p> <p>Reviews final plans to confirm planned energy measures and modeled energy savings to finalize incentive amounts</p> <p>Reserves funding award for Owner/Developer</p>
<i>Construction Phase (begins 1-1.5 years from development completion)</i>	
<p>Owner/Developer implements energy efficiency measures</p> <p>Owner/Developer documents implementation/paperwork for rebate claim</p>	<p>Verifies EEM installation</p> <p>Provides progress payments in phases as measures are installed</p> <p>Upon project completion and review, releases final rebate payment</p>

Thank you!  
Questions?



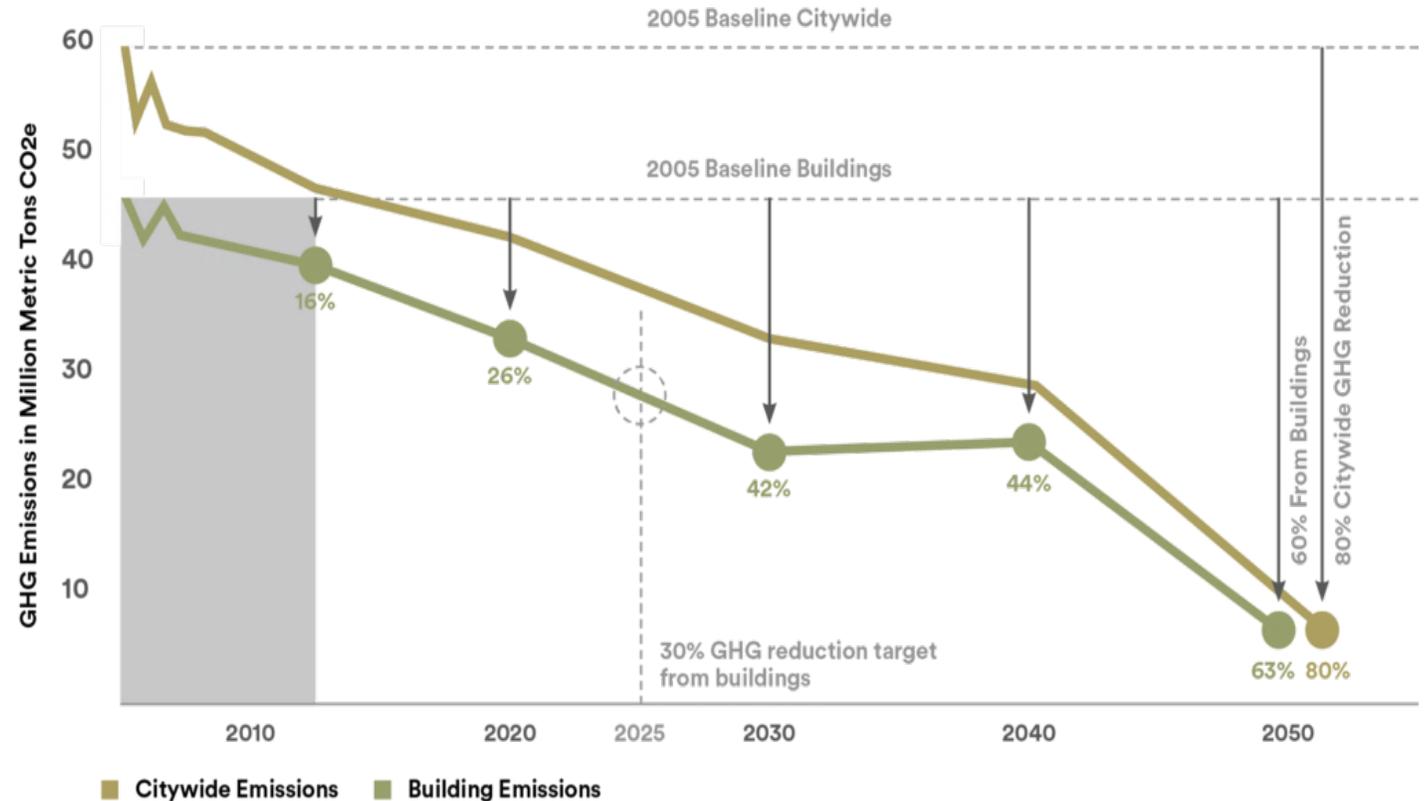
# Appendix

# The Climate Mobilization Act of 2019

One of the world's most ambitious pieces of city-level legislation aimed at **curbing GHG emissions** from buildings.

Composed of a suite of laws to reduce GHG emissions 80% by 2050:

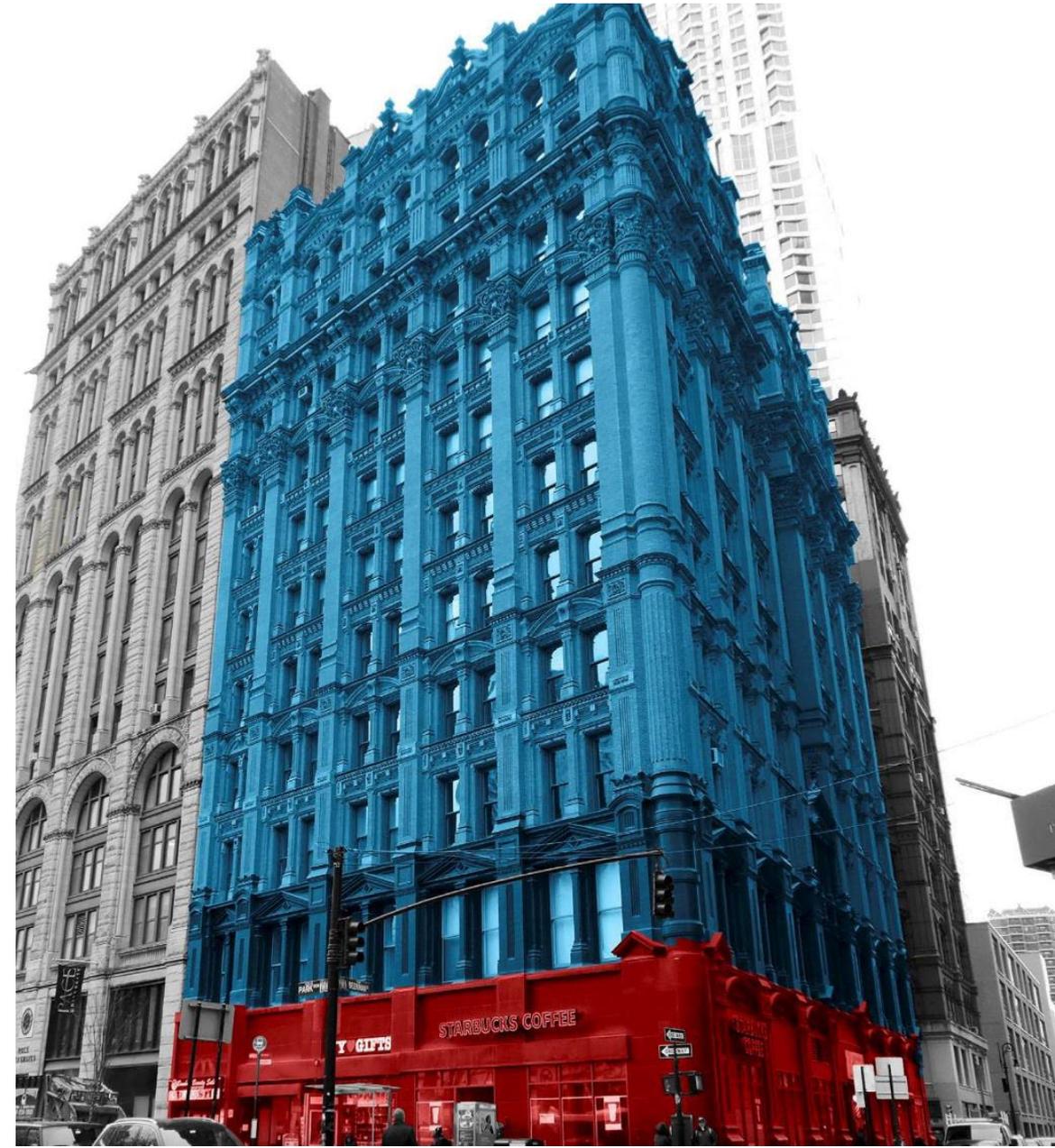
- LL92/ LL94: Requires solar or green roofs on all new buildings & roof assemblies\*
- LL95: Energy Grades
- LL96: PACE Financing
- LL97: Carbon Emissions Limits\*



# Local Law 97: The keystone of the CMA

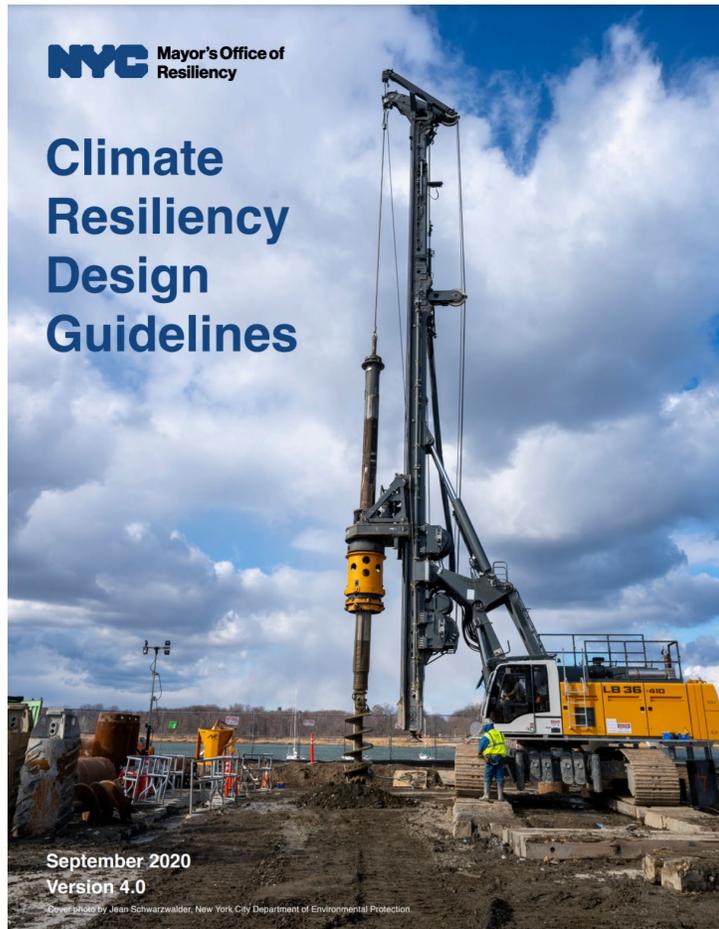
Reduces GHG emission in NYC's larger buildings

- Establishes Greenhouse Gas (GHG) emissions limits for most **buildings > 25k SF** based on occupancy type
- **Emission limits become increasingly stringent every 5 years**, starting in 2024 & nearing zero in 2050.
- Buildings are subject to strict **penalties of \$268/ton** of extra carbon emitted above emissions limits
- **Affordable Housing is treated differently under LL97**



# Local Law 41 of 2021: Climate Resiliency Design Guidelines

Requires capital projects to design projects using forward-looking climate data and design strategies



**The Guidelines address three key location-specific risks based on new NYC climate data**

1. Increasing Heat
2. Increasing Precipitation
3. Sea Level Rise

**The Guidelines reference new maps:**

1. Heat Vulnerability areas
2. Stormwater maps
3. Coastal Flooding maps with future sea-level-rise factored in

**The Guidelines include the following:**

1. A Climate Risk Exposure Screening Tool (currently required for all EGC/ LEED projects, click [here](#))
2. A Benefit-Cost Methodology
3. Design Strategies to address the three key risks

**Beginning December 31, 2026, compliance with the CRDG will be mandatory for HPD's New Construction and Substantial Rehabilitation projects.**

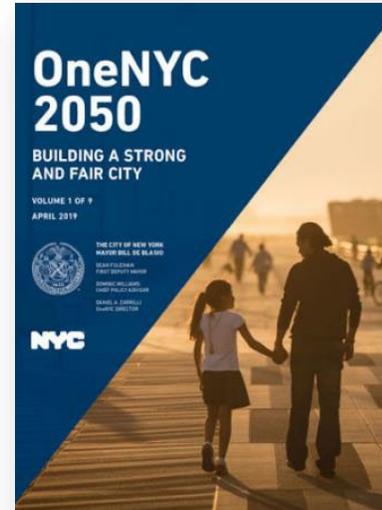
# PlaNYC/ Climate Action Plan

In 2008



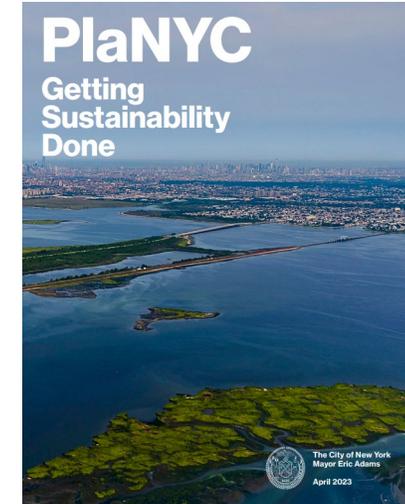
Mayor Bloomberg released **plaNYC** with a focus on growth, economy, climate change and quality of life

In 2016



Mayor DeBlasio released **OneNYC** to build on plaNYC and increase focus on equity and regional perspective

In 2023



Mayor Adams released a **Climate Action Plan** with a focus on “getting it done”

# Electrification vs. Beneficial Electrification:

Electrification will be necessary to meet 2050 GHG emissions limits & to meet NYC's climate goals

**Electrification:** Converting fossil-fueled equipment (like furnaces and boilers) to electric equipment (like heat pumps)

To be “beneficial,” electrification must meet one or more of the following conditions without adversely affecting the other two:

1. **Saves consumers money in the long run**
2. **Reduces burdens on the electric grid**
3. **Reduces negative environmental impacts (doesn't cause worse impacts somewhere else)**



***All this can be done by (1) ensuring a clean grid and (2) focusing on energy efficiency in conjunction with electrification***

# High-Performance Buildings: Passive House

- Highest standard of building performance
- 5 key principles that boil down to two categories:
  - Passive house standards include a high-performance **building envelope** to keep outside elements from entering the building
  - An “energy recovery” **ventilation system** that delivers a steady flow of fresh air while transferring heat to reduce heating & cooling loads
- Passive House buildings consume far less energy!

## passive house principles

-  airtightness
-  continuous insulation
-  thermal bridge free construction
-  high performance doors and windows
-  energy recovery ventilation



# HPD's Solar Where Feasible (SWF) Mandate

**Local Laws 92/94** require solar or green roofs on all new buildings and new roof assemblies. Through 2024, Affordable housing is only required to comply where HPD deems it is feasible.

**HPD's Solar Where Feasible Mandate requires** that all HPD-subsidized projects perform a feasibility analysis and implement solar when it is cost-effective (achieving a payback of 10-years or less). Good projects with a higher payback will be recommended but not required.

**HPD partnered with NYSERDA & non-profit [Solar One](#)** to create tools to identify and optimize solar projects across HPD's portfolio, and to provide free technical assistance to owners and HPD staff to comply with the mandate.

**NYC Department of Housing Preservation & Development** Solar Screening Tool - Results Version 1.3, Updated March 2020 **S<sup>1</sup> SOLARONE**

**Preliminary Solar Financial Analysis: 123 Main Street**

Solar electric systems provide electricity bill savings, however they are also eligible for a number of federal, state and local incentives that can significantly improve return on investment. The summary below includes estimated costs, incentives, electricity bill savings, and payback period for a solar energy system on this property.

Solar Energy System Size (kW-DC)	70.0
Year One Solar Production (kWh)	76,475
Year One Utility Bill Savings	\$ 16,048
Total Cost Estimate	\$ 306,000
NYSUN Incentive	\$ 60,000
Upfront Cost Estimate	\$ 246,000
Cost After Incentives and Taxes	\$ 182,040
Payback Period	12 years
Internal Rate of Return	7%
Federal Investment Tax Credit*	\$ 63,960
Low Income Housing Tax Credit	\$ -
NYC Property Tax Abatement	\$ -
Residential State Income Tax Credits	\$ -
Depreciation (Federal and State)*	\$ -
Federal Taxes Due on State Tax Credit	\$ -

\*If building owner is not able to benefit from tax incentives directly, third-party ownership may allow the owner to benefit from tax incentives indirectly.

**FEASIBILITY REPORT PREPARED BY:**  
 Name: Jane Smith  
 Company: Infinite Architecture  
 Email: jsmith@infinite.io  
 Phone: 212-222-2222

**VIEW 25 YEAR CASH FLOW**

**Disclaimer:** Solar One is providing this preliminary analysis regarding the accuracy of calculations and figures provided herein, incentives, energy generation, and electricity bill savings may vary.

**NYC Department of Housing Preservation & Development** Solar Screening Tool Version 1.6, Updated February 2021 **S<sup>1</sup> SOLARONE**

**Solar PV System Layout or Usable Roof Area**

All projects must provide a sketch or screenshot of a roof plan, rendering, or solar layout in the space below. Please identify any key features (e.g. canopy, roof deck) on the sketch or in the narrative section.

**NYC Department of Housing Preservation & Development** Solar Screening Tool - Results Version 1.3, Updated March 2020 **S<sup>1</sup> SOLARONE**

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 Email: jsmith@infinite.io  
 Phone: 212-222-2222

**VIEW 25 YEAR CASH FLOW**

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**NEXT STEPS**

1. Solar consultation.
2. Identify solar companies.
3. Solicit bids from solar companies.
4. Select contractor and install solar.