Community Preservation Corporation

Local Law 97 Compliance:

Guidance for Regulated Buildings and Low-Lift Big Impact Measures to Reduce GHG Emissions

February 14th, 2024

AUDIENCE BEST PRACTICES

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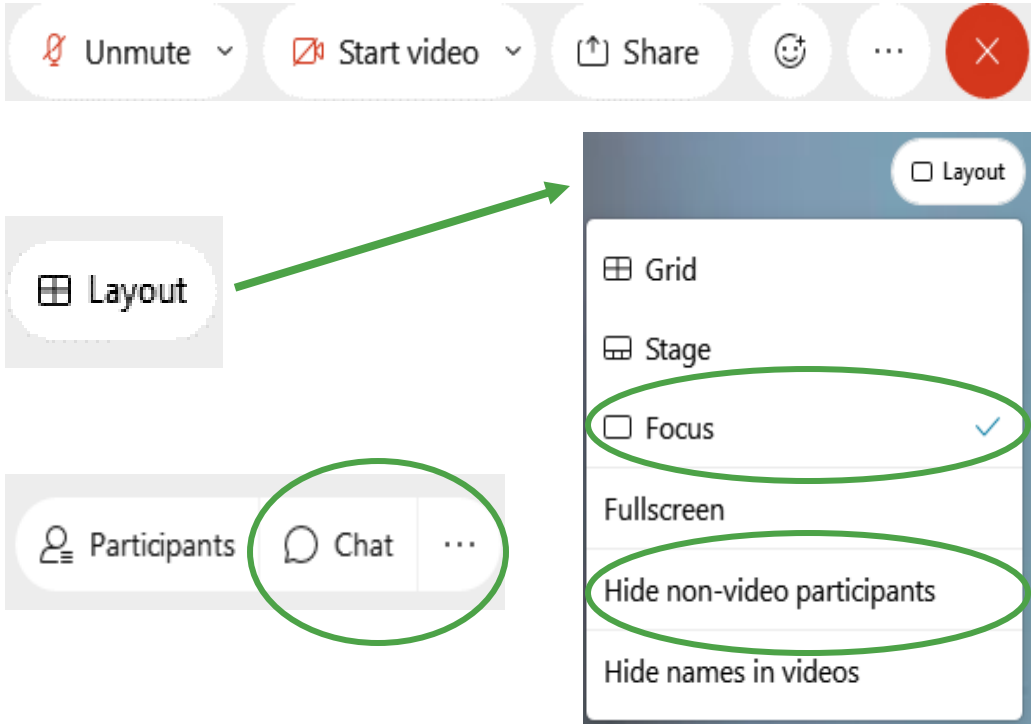
- **Questions** should be submitted through the Q&A box OR the chat function **to the event Hosts**. The chat icon is located at the bottom right corner of your screen.
- Presentation slides and contact information will be shared with all attendees following the event.



TODAY'S AGENDA

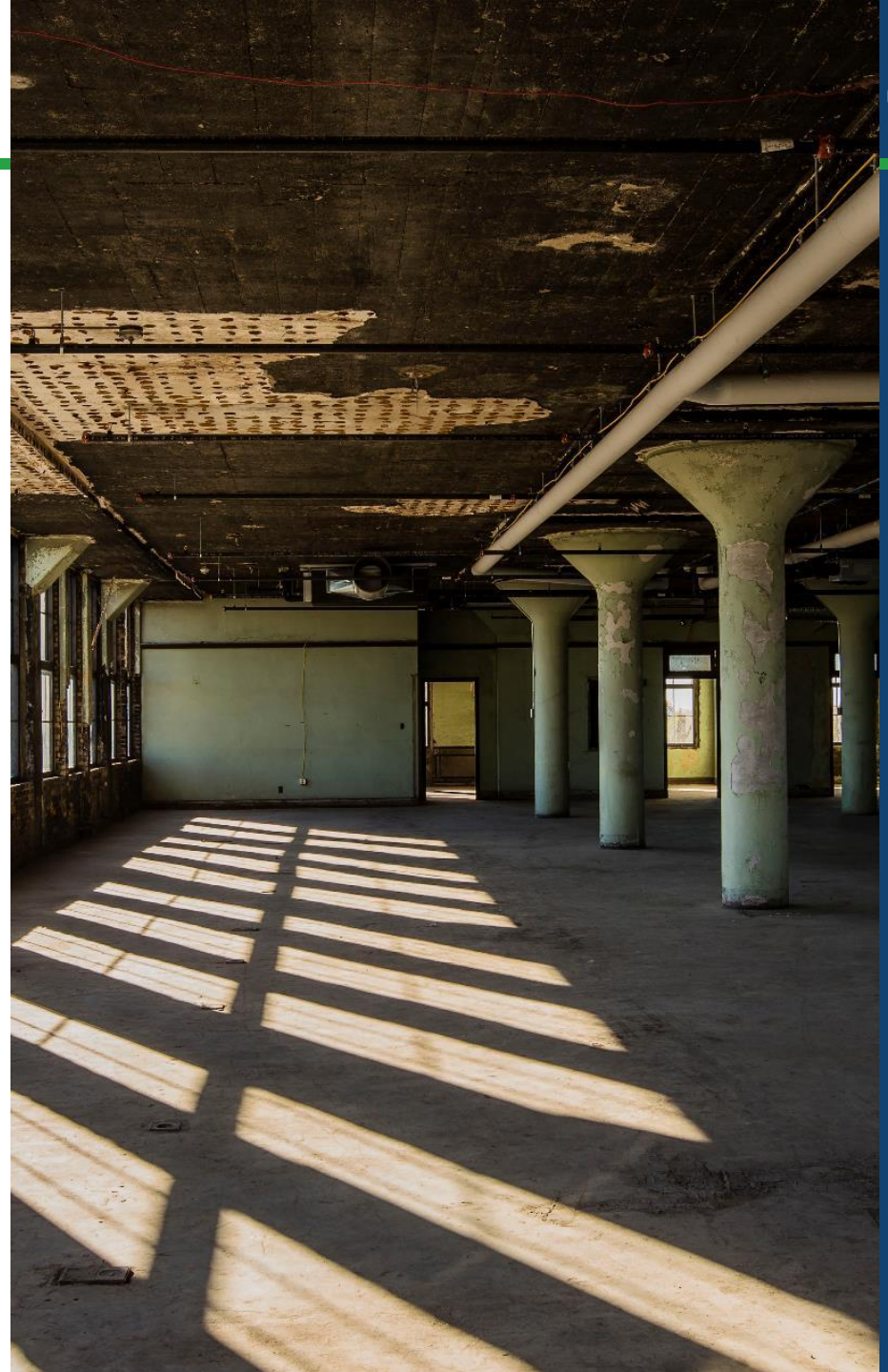
Introduction	**Danielle Donnelly**, Assistant Vice President of Sustainability Programs, Community Preservation Corporation
LL97 Compliance and Prescriptive Pathways	**Beth Golub**, Director of Policy and Legal Affairs, NYC Department of Buildings
Low-lift Big Impact Energy Conservation Measures	**Jonathan Hitt,** Multifamily National Sales, and **April Frakes**, Director, Commercial Business Development, Aeroseal **Sam Pardue**, CEO and Founder, Indow **Evan Carberry**, Senior Account Executive, Kelvin
Open Q&A	

MISSION-DRIVEN SINCE 1974

CPC believes housing is central to transforming underserved neighborhoods into thriving and vibrant communities.

CPC is a nonprofit affordable housing and community revitalization finance company providing flexible capital solutions, fresh thinking and a collaborative approach to the complex issues facing communities.

Our goal is to be more than just a lender. At CPC, we work as a partner to provide technical expertise and hands-on support to help meet the capital needs and broader community revitalization goals of our customers, local stakeholders and the communities we serve.



Adaptive Reuse
500 Seneca Street
Buffalo, NY

INVESTING IN OUR MISSION

CPC believes housing is central to transforming underserved neighborhoods into thriving communities. Today, CPC uses its unique expertise in housing finance and public policy to:

Expand housing access and seek new ways to lower the cost of producing affordable housing

Invest in closing the racial wealth gap, and increase diversity and equity in the development industry

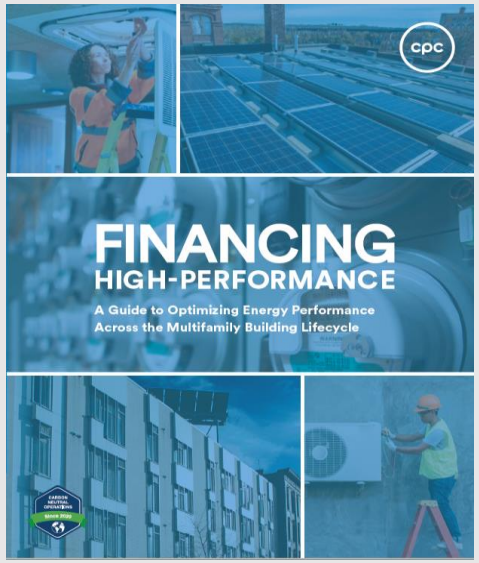
Commit to and expand investment in the green economy and lessen the impact of climate change

CPC SUSTAINABILITY

EDUCATION

Through its sustainability initiative, CPC has engaged partners, clients, and peers to provide important information about local and state policy, underwriting strategies, and financing opportunities for buildings incorporating energy efficiency.

CPC has conducted trainings and webinars to bring "underwriting savings" to a broader lending audience, published a white paper on Passive House performance, and convened a summit to address New York's shift to a carbon neutral economy.



1 **Financing High-Performance Guide, 2020**

CREATING CAPITAL SOLUTIONS

CPC pioneered the "underwriting savings" approach and cemented the methodology with the release of Underwriting Efficiency guide.

Following the creation of its sustainability initiative, CPC has continued to explore creative ways to finance energy efficiency and high-performance building measures and bring these practices to the forefront of affordable housing development.

2 **Capital Solutions for High-Performance Construction,** Troy, NY

DATA & TRACKING

The backbone of CPC's sustainability initiative is the impressive portfolio of loans that employ one or more Sustainability Criteria.

Tracking these loans, tagging the completed criteria, and benchmarking performance allow us to analyze long term performance and improve our lending practices.

Information from CPC's sustainability portfolio has helped our private and public partners to innovate and inform policy decisions and state funded programs.

3 **Electric Metering from Financing High-Performance, 2020**

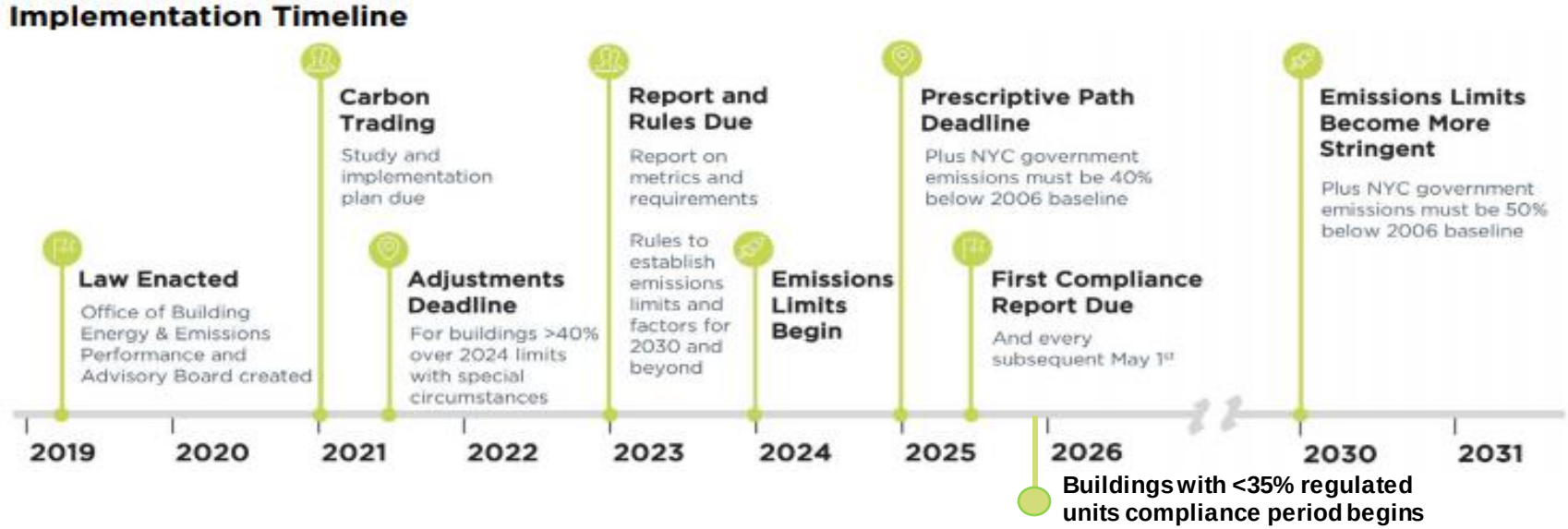
CARBON NEUTRAL OPERATIONS Since 2020

SPECIAL INITIATIVES

- **Climate Friendly Homes Fund (CFHF)**
  - The CFHF, administered by CPC following a competitive Notice of Funding Availability (NOFA), provides financing for existing, 5-50 unit buildings in New York State (NYS) with a focus on replacing older and less energy-efficient systems with **all-electric, high-performance heating, cooling, and hot water heating systems**.
  - With **$250 million** in funding, CPC and NYS Homes and Community Renewal (HCR) aim to finance electrification retrofits in at least **10,000 units of multifamily housing that serve economically disadvantaged communities**.
  - Funds must be committed by **March 2027.**
- **Climate United's Application to the Greenhouse Gas Reduction Fund (GGRF)**
  - Climate United is a coalition formed by CPC, Calvert Impact, and Self-Help, joining forces to compete to manage an award from the $14 billion National Clean Investment Fund. This is encompassed within the EPA's GGRF, a **first-of-its-kind $27 billion investment to mobilize financing and private capital to confront the climate crisis.**
  - Climate United's strategy focuses on demonstrating the benefits of the clean energy transition through investments in the program's three priority areas: **distributed power generation and storage, building decarbonization, and electric transportation.**

CLIMATE POLICY: NEW YORK CITY

- Through our educational initiatives, CPC provides important information about local and state policy, underwriting strategies, and financing opportunities for buildings incorporating energy efficiency
- As we enter the first compliance year for **Local Law 97**, we want building owners to be equipped with all the information that they need to know
  - Covered Buildings: Buildings 25,000+ sqft. or two buildings on the same tax lot totaling 50,000 sqft. – this is nearly 60% of the city's building area
  - With the addition of Intro 1947, passed in October 2020, **buildings with 35% or fewer rent regulated or income restricted units will be required to comply with GHG emissions caps.**
  - All other rent regulated or income restricted housing stock exempt from penalties but will be required to complete prescriptive commissioning measures.

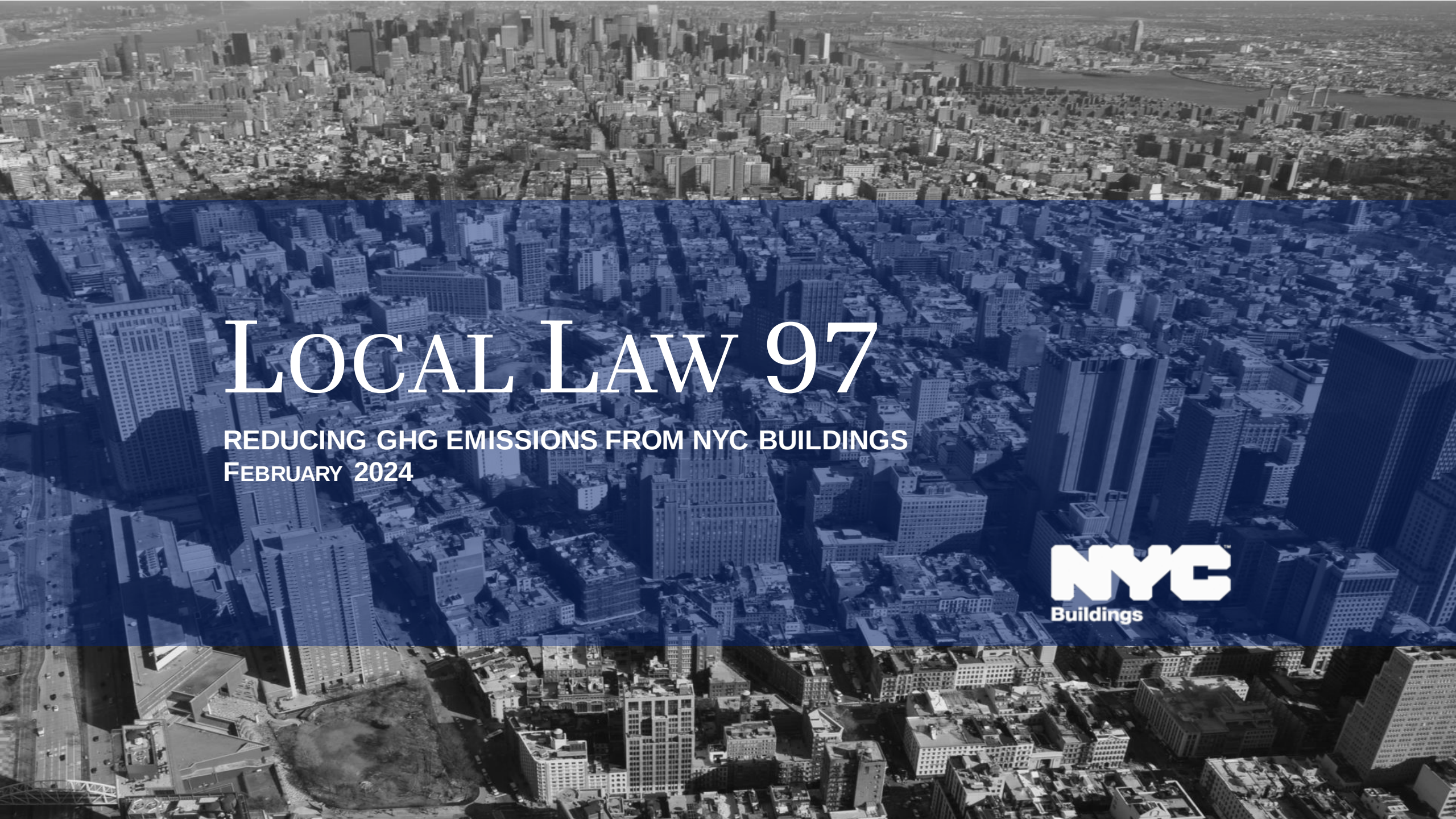


WELCOME AND INTRODUCTION

BETH GOLUB

Director of Policy and Legal Affairs

The Department of Buildings



Local Law 97

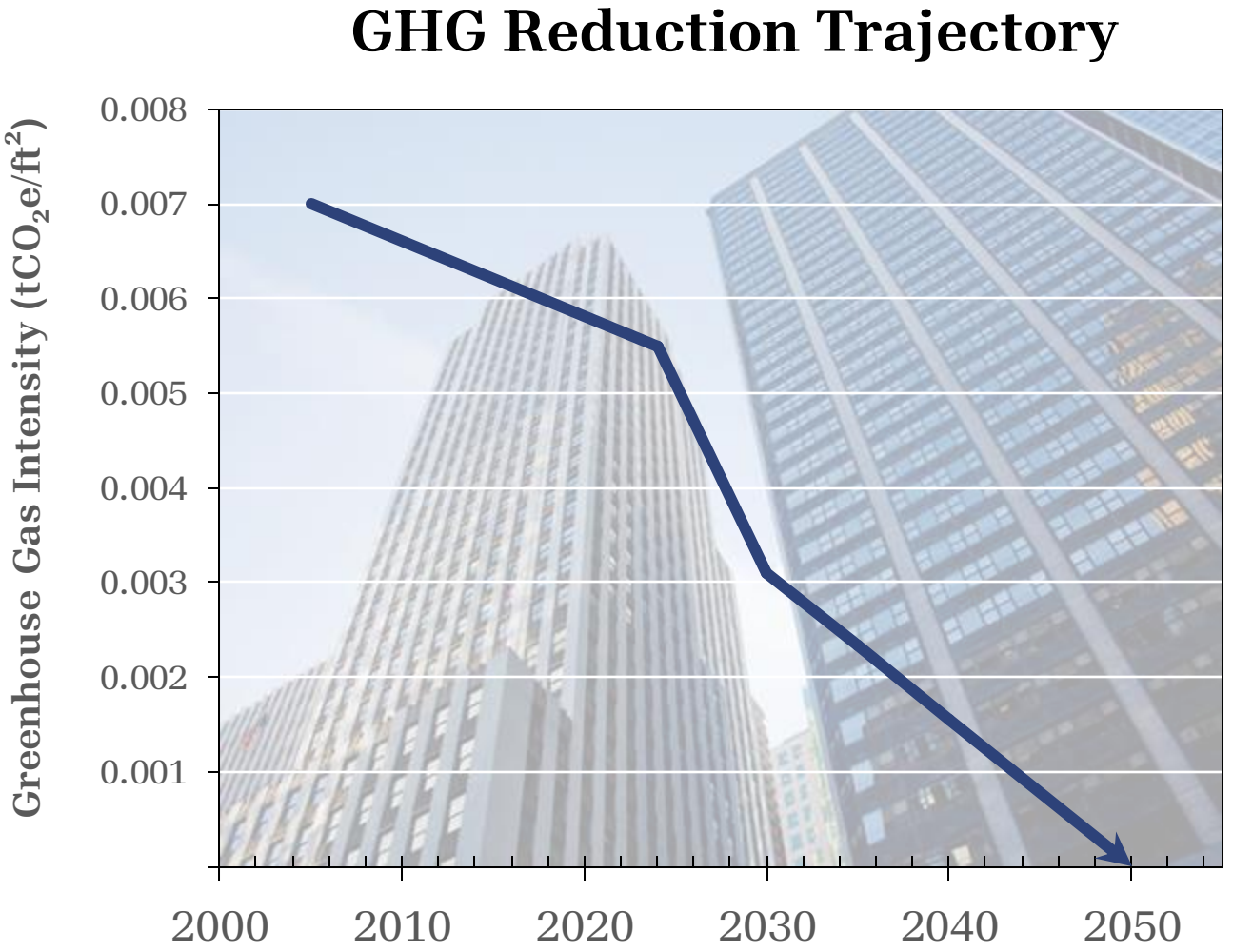
REDUCING GHG EMISSIONS FROM NYC BUILDINGS

FEBRUARY 2024

NYC Buildings

LOCAL LAW 97 CONTEXT

- **Buildings** account for about **two-thirds** of **GHG** emissions in **NYC**.
- NYC's **Climate Mobilization Act**, including Local Law 97, passed in 2019 to dramatically reduce emissions in NYC.
- Aligns with the NY State **Climate Leadership and Community Protection Act (CLCPA)**, and federal and international climate agendas.



LL97 COMPLIANCE PATHWAYS

Article 320 **Annual Emissions Limits** **34,000 buildings**	**Article 321** **Lower Cost One-Time Compliance** **8,500 buildings**	**§ 24-803** **Portfolio-Wide Reduction** **5,500 buildings**
• Private sector, non-rent regulated buildings	• Rent-regulated buildings • Houses of worship	• City buildings • NYCHA
Buildings must reduce emissions by retrofitting to improve energy waste and demand.	• Install Prescriptive Energy Conservation Measures (PECMs), or • Comply with the 2030 annual emissions limit	DCAS buildings must reduce emissions by 40% by 2025 and 50% by 2030. NYCHA buildings must reduce emissions by 40% by 2030 and 80% by 2050.
Compliance begins in **2024.** Penalties begin in **2025.** Limits become more stringent in **2030**, and so on.	Comply by **2024** and submit one-time report by **2025.**	DCAS to meet portfolio-wide caps starting in **2025**, NYCHA starting in **2030**.

AFFORDABLE HOUSING COMPLIANCE PATHWAYS

Article 321

If building includes any of the following:

- > 35% of units subject to rent regulation (regardless of any income restrictions), OR
- Is an HDFC co-op (not a rental), OR
- Has 1+ units that participate in a federal project-based housing program (e.g., Section 8, Section 202, Section 811, or CoC), OR
- Participates in NYCHA PACT

Building must follow the Prescriptive Pathway (Article 321):

By 2024,
- Demonstrate that emissions are below the applicable 2030 limits, OR
- Show that applicable Prescriptive Energy Conservation Measures have been fully implemented

File a one-time report by May 2025*

*Further information is available here: §28-321

Article 320

If building does not fit into the column at left AND:

- Has 1+ rent regulated units and no more than 35% of units subject to rent regulation (regardless of any income restrictions)

Building must follow the 2026 Compliance Pathway:

- Meet emission limits starting in 2026, and face penalties for exceeding the limits

File Annual reports starting May 2027*

*Further information is available here: §28-320.3.10.1

Article 320

If building does not fit into any of the columns at left AND:

- Is a Mitchell-Lama with no units that participate in a federal project-based housing program, OR
- Has no rent regulated units and has 1+ units that are income restricted through certain* loans, grants, real property tax benefits (e.g., 420-c, Article XI, UDAAP), or property disposition programs

Note that units with an income restriction imposed solely through the Zoning Resolution (e.g., Inclusionary Housing programs) do not count as "income restricted" for the purposes of this path.

Building must follow the 2035 Compliance Pathway:

- Meet emission limits starting in 2035, and face penalties for exceeding the limits

File annual reports starting May 2036*

*Further information is available here: §28-320.3.9

More Info: Article 321 Filing Guide

LL97 RULES

- RCNY § 103-14 - Informs Article 320 compliance
  - Guidance on how to report and calculate emissions
  - Penalty Framework (Definition of Good Faith Effort)
  - Credit for Beneficial Electrification

- RCNY § 103-17- Informs Article 321 compliance
  - Guidance for Inspection and Documentation of Prescriptive Energy Conservation Measures
  - Penalties for Non-compliance

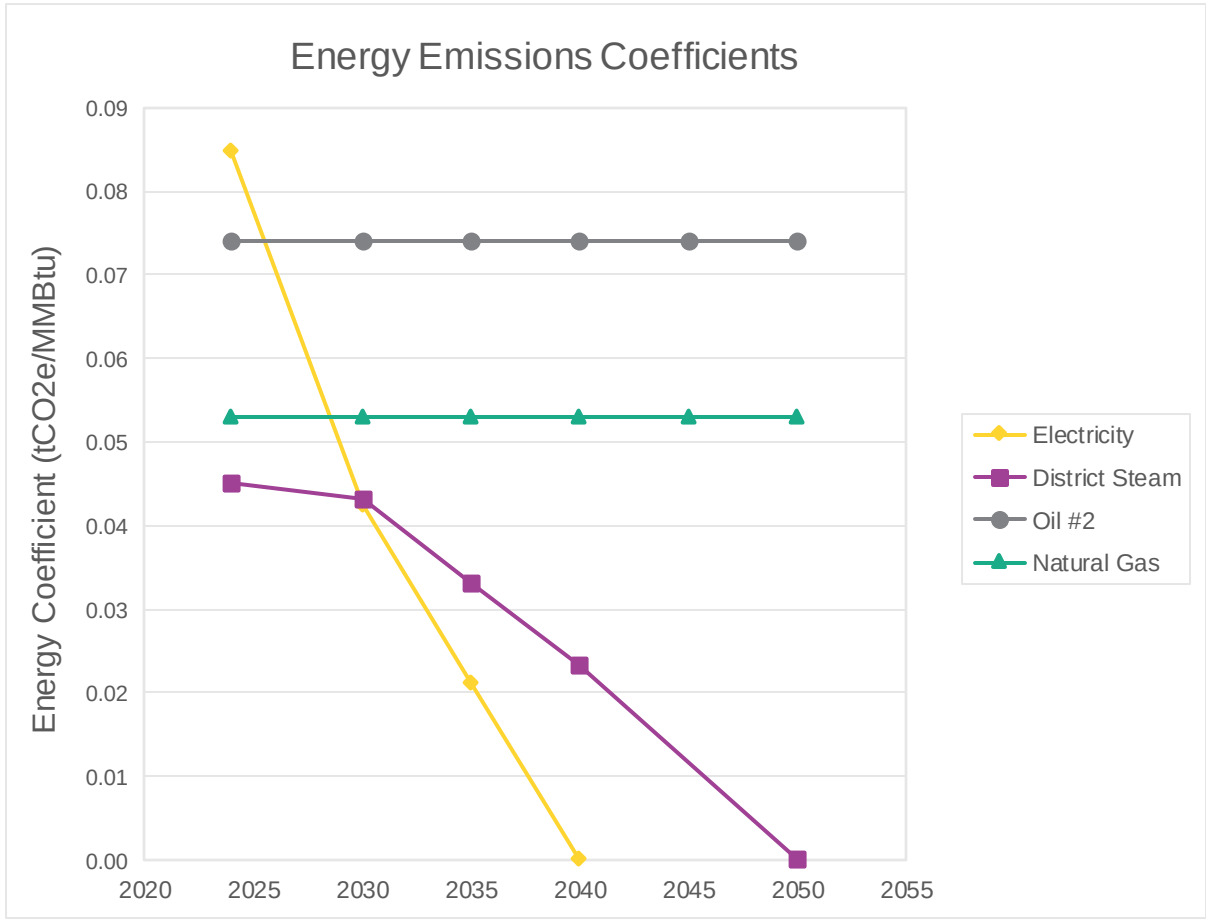
ARTICLE 320 COMPLIANCE

Annual GHG emissions are calculated using:

- ESPM Property Type
- Gross Floor Area
- Energy Emissions Coefficients, quantifying the tCO2e/kBTU from combustion:
  - Electricity
  - Steam
  - Oil
  - Natural Gas

Examples of Good Faith Efforts:

- Alterations are underway
- Working with a utility to expand electricity service
- Decarbonization plan for 2024 buildings



BENEFICIAL ELECTRIFICATION

- Owners that replace fossil fuel equipment early with high-efficiency space conditioning or water heating equipment receive a credit to deduct actual building emissions for the first or second compliance period.

- A negative coefficient may be applied against a building's emissions reducing penalties for buildings that convert to heat pumps:
  - Double the emissions reduction for owners taking action between 2021-2026
  - 1x the emissions reduction for owners taking action between 2027-2029

ARTICLE 321 COMPLIANCE

- Meet the Article 320 emissions limits for 2030 in 2024; OR
- Prescriptive Energy Conservation Measures
  - 9 PECMs require attestation
  - 4 PECMs require detailed documentation of inspection

- Adjusting temperature set points for heat and hot water
- Repairing all heating system leaks
- Maintaining heating systems
- Installing individual temperature controls or insulated radiator enclosures with temperature controls
- Insulating all pipes for heating and/or hot water
- Insulating steam system condensate tank or water tank
- Installing indoor and outdoor heating system sensors and boiler controls
- Replacing or repairing all steam traps
- Installing or upgrading steam system master venting
- Upgrading lighting
- Weatherizing and air sealing
- Installing timers on exhaust fans
- Installing radiant barriers behind all radiators.

More Info: Article 321 Filing Guide

ARTICLE 321 Prescriptive Energy Conservation Measures ("PECMs")

Type of heating system	*Article 321 Prescriptive Energy Conservation Measures ("PECMs")*												
	1	2	3	4	5	6	7	8	9	10	11	12	13
	Temp. set points	*Repair leaks*	*Heating system function*	*Radiator temperature controls**	*Piping insulation*	*Water tank insulation*	*Indoor / outdoor temp. sensors**	*Steam traps**	*Master steam system venting**	*Lighting*	*Building envelope*	*Exhaust fan timers*	*Radiant barriers*
One-pipe steam	●	●	●	▼	●	●	●		●	●	●	●	●
Two-pipe steam	●	●	●	●	●	○	●	●	○	●	●	●	●
Hydronic	●	●	●	●	●	●	●			●	●	●	●
Forced air	●		●				●			●	●	●	
Heat pump	●	●	●		●					●	●	●	
Electric resistance	●		●	●						●	●	●	●

○ = not applicable to vacuum pump systems

▼ = Owner to comply with options

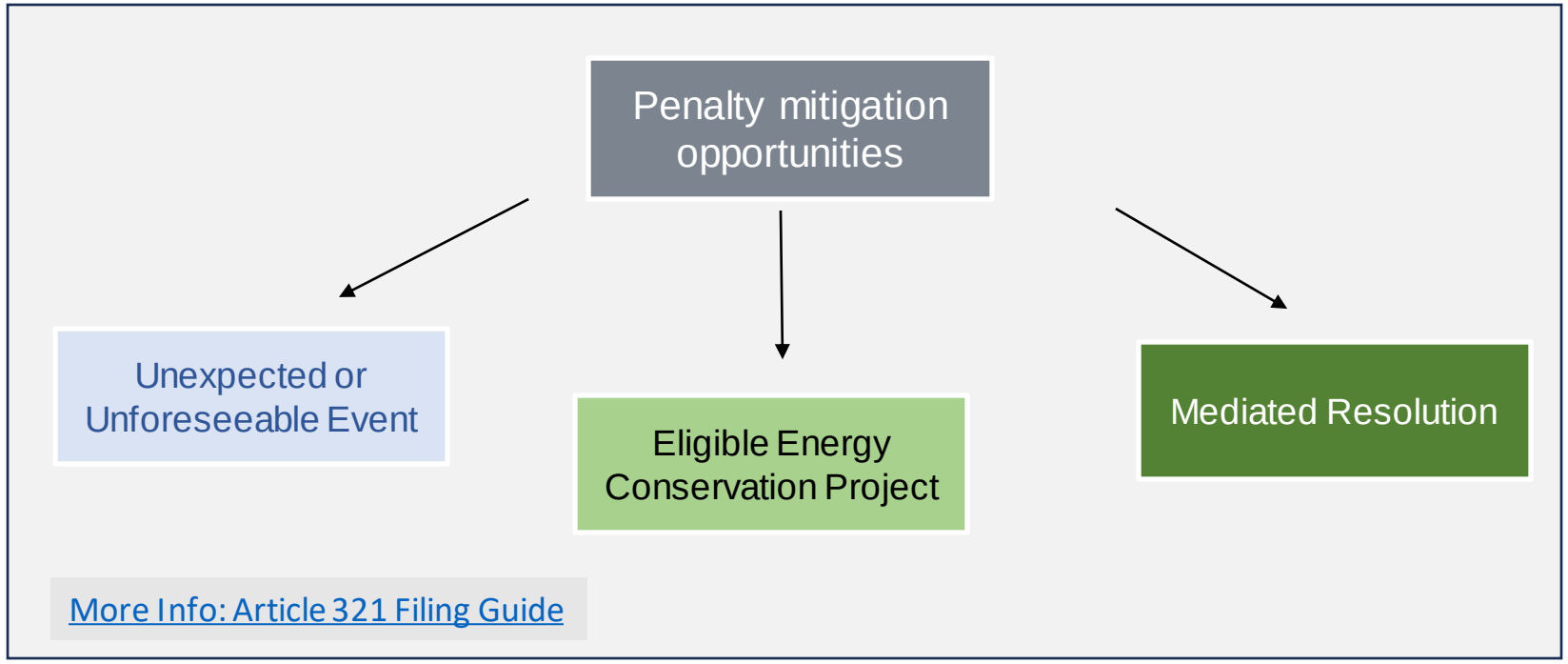
More Info: Article 321 Filing Guide

ARTICLE 321 PENALTY FRAMEWORK

Building owners have two requirements

Submit required report $Penalty = \$10{,}000$

Demonstrate compliance $Penalty = \$10{,}000$



CONTACT

NYC Accelerator

Web: accelerator.nyc/ll97

Email: info@accelerator.nyc

Phone: 212-656-9202

NYC Dept of Buildings

GHGEmissions@buildings.nyc.gov

build safe live safe

nyc.gov/buildings

WELCOME AND INTRODUCTION

JONATHAN HITT

Multifamily National Sales

Aeroseal

APRIL FRAKES

Director, Commercial Business Development

Aeroseal

SAM PARDUE

CEO and Founder

Indow

EVAN CARBERRY

Senior Account Executive

Kelvin

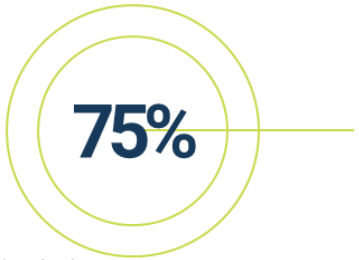
aeroseal®

Airside HVAC Solutions For Energy Savings & Local Law 97 Compliance in NYC

Where Can the Most Energy Be Saved?

Deciding what to upgrade means knowing what is causing emissions

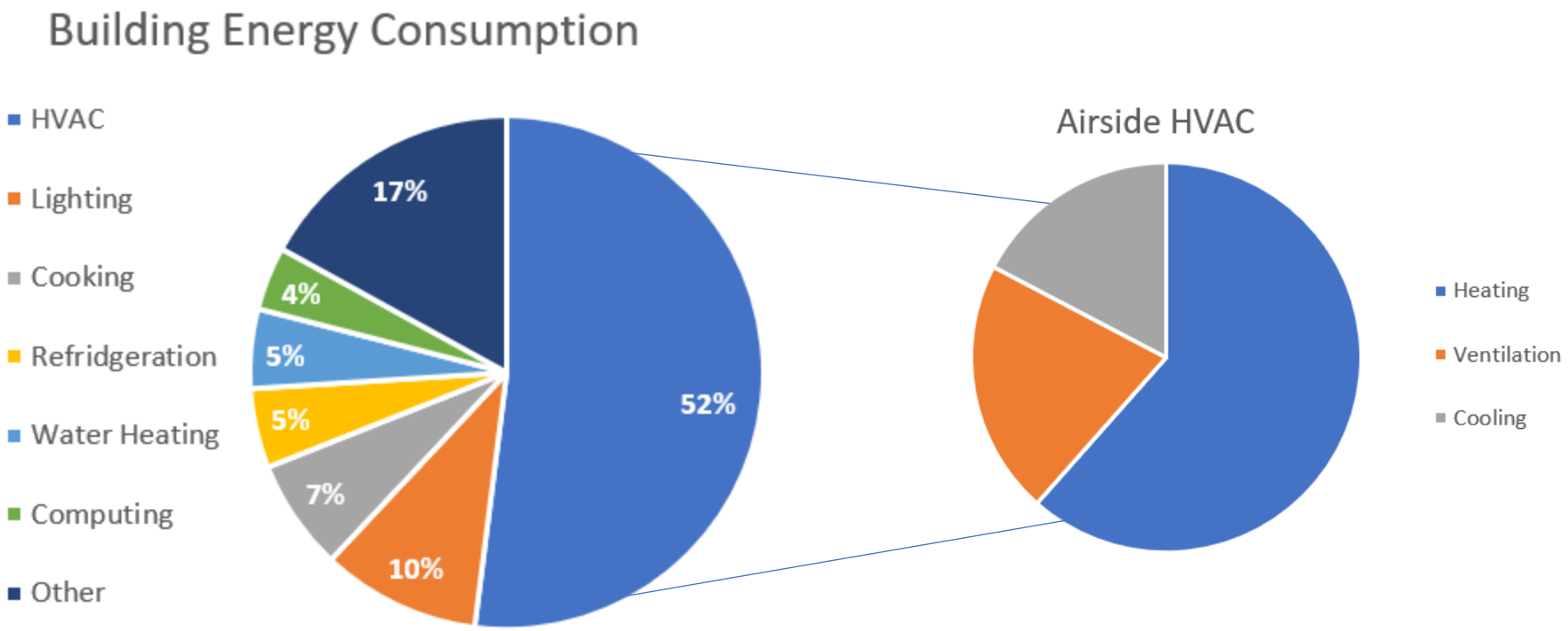
Duct leakage is a leading building fault contributing to energy waste, massive energy loss and CO_2 emissions that cost $2.9 Billion annually[1].



75% of commercial buildings have leaky ductwork, causing up to 35% of air to escape. [3]

1 Berkeley National Labs
2 U.S. Department of Energy
3 ASHRAE

Solving for Duct Leakage is the Path Forward



Airside HVAC is associated with 52% of energy consumption in commercial buildings

Energy Savings with Aeroseal Airside Solutions

- Example of associated energy savings:

		Kitchen Fans	Bath Fans	Hall Exhaust	Total Exhaust
Existing	Measured Fan Flow:	34,028	11,215	1,206	46,449
	Therms:	57,848	19,066	2,050	78,963
	Cost *:	$66,178	$21,812	$2,345	$90,334
Proposed	Measured Fan Flow:	14,796	6,579	-	21,375
	Therms:	25,153	11,184	-	36,338
	Cost *:	$28,775	$12,794	$0	$41,571
Savings	Measured Fan Flow:	(19,232)	(4,636)	(1,206)	(25,074)
	Therms:	(32,694)	(7,881)	(2,050)	(42,626)
	Cost * (Savings):	($37,403)	($9,017)	($2,345)	($48,763)

aeroseal®

The Solution

Custom Airside Solution

- Program designed based on your buildings' unique set of needs
- Consultation and auditing helps identify the right mix of servicing and technologies
- Solution aimed at safeguarding against short- and long-term code changes
- Reduce energy-related operations expenses; avoid fines associated with new laws
- Low time commitment, low disruption, high confidence solution

Central Ventilation Restoration Designed Specifically for Your Building

Support provided through the full experience

Maximizing Your Investments

Aeroseal applications enhance performance of other energy investments

- HVAC upgrades – heat pumps, more efficient systems
- Building envelope improvements
- Automatic controls/energy monitoring systems: for lighting/hvac/building zones
- Renewable energy source installation – solar panels, geothermal
- Exhaust upgrades – new vents/regulators/dampers/fans
- Compartmentalization of units with Aeroseal Envelope – guaranteed to pass all blower testing door requirements.

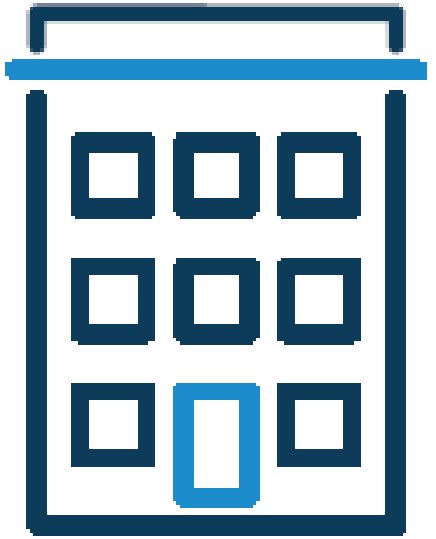
Further reducing loads and bringing your building to “electrification-ready”

Your Airside Solution:
Energy & GHG Reduction

- Reduce building energy use by tens of thousands of $$ per year
- Significantly cut building GHG emissions
- Proven solution that qualifies for Con Ed, local & NYS energy & GHG reduction incentives
- Avoid today's LL97 fines & start preparing for 2030 reduction targets

Your Airside Solution:
Building Performance

- Reduce lobby & elevator depressurization problems
- Improve poor apartment ventilation
- Better control odor transfer
- Resolve IAQ complaints (and fines)
- Viable as a stand-alone project and integrates well with longer-term electrification objectives



Next Steps

Transform your building

Achieve Dramatic Energy Savings, Comfort &
Quiet with Indow

If you asked your tenants about their windows, what would they say?

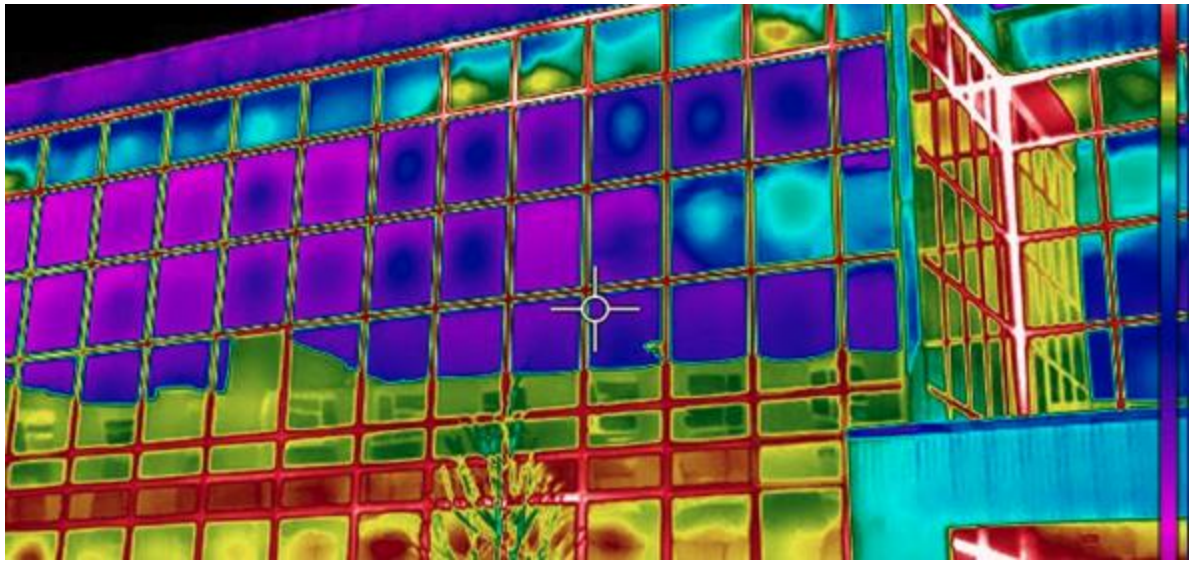
Discomfort

Noise

Energy bills

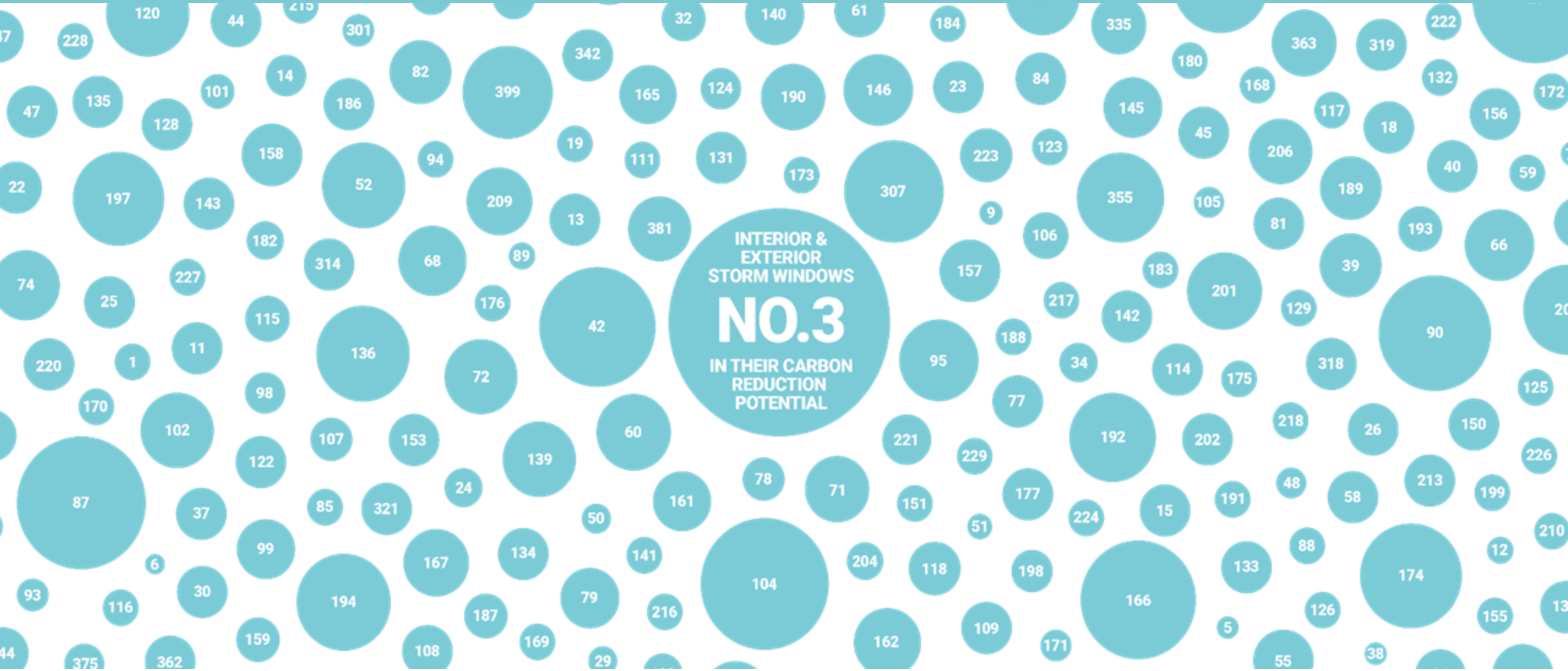
Window problems have been tough to fix

- Replacement is too expensive
- Doing nothing comes at a high cost.



With energy prices rising and LL97 on the horizon, solving your window challenges has never been more important.

We must solve the window problem!



Secondary glazing 3rd most important carbon reduction measure

We can help solve your window problem

The ‘Stackable’ option for operability

Easy window access & insert storage.

You & your tenants will gain
comfort, quiet, & energy savings

Block outside air
100%

Reduce noise
70%

Lower energy bills
20%

indow

25 Broad Street NYC
256 Panels

- Mullion system by Indow subdivided large windows with minimal sight impact
- Building has strict Landmark Preservation regulations
- Minimal tenant disruptions with quick installations

Tenants say they feel a drastic improvement on the drafts and the noise has died down significantly."

Joseph Casillo, Senior Project Manager, 25 Broad Street, New York, NY

RUPCO / Affordable Housing Concepts

- 37 Panels

Rural Ulster Preservation Company (RUPCO) worked in partnership with Affordable Housing Concepts to restore this building in Newberg to be turned into multi-family housing.

Introducing IndowPRO

World leading:

- Performance
- Cost-effectiveness
- Versatility

For fixed windows

- IndowPRO ships disassembled to reduce costs
- Snaps together and installs in minutes
- Once the IndowPRO frame is installed, you mount the advanced glazing ideal for your needs.

Get the benefits of high-end replacement windows without the expense & disruption.

Sleek, low-profile design

- Maintains a tight air seal even if your windows are out-of-square
- Blocks condensation, pollution, & noise
- Cost effective energy savings
  - Up to .058 U-Value / R-17
- Excellent noise reduction

3 big steps to LL97 compliance

You're getting closer to comfort and energy savings!

1. Measure your windows' width x height dimensions
2. Email or call Tyler Johnson tyler@indowwindows.com / 503-505-6380
3. Integrate Indow secondary glazing into your project!

Thank you!!

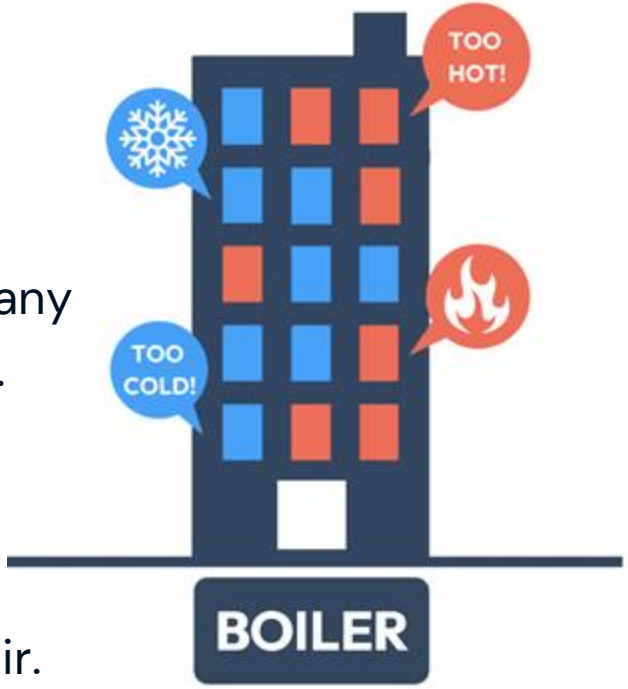
Kelvin

Decarbonizing the World’s Legacy Buildings

kel.vin

Radiator heating is a 19th Century technology

- Radiator buildings target coldest areas due to municipal guidelines.
- Causes overheating in many areas of legacy buildings.
- Many residents feel excessively hot.
- Windows constantly opened to bring in cold air.



Result: Hugely wasteful, expensive and uncomfortable.

Meet The Cozy. It brings radiator heating into the 21st Century. The Cozy provides comfort, control, and flexibility for building managers and residents

The Cozy ™

A proprietary insulated radiator cover that traps excess warm air inside

Onboard Controls

The Cozy enables tenants in radiator heated buildings to control their apartment temperature with the help of an App or manual buttons.

Analytics

Building managers get real-time data with proactive alerts and can control how heat is released into each apartment.

The Cozy, is a modular insulated radiator cover distributing heat with maximum efficiency.

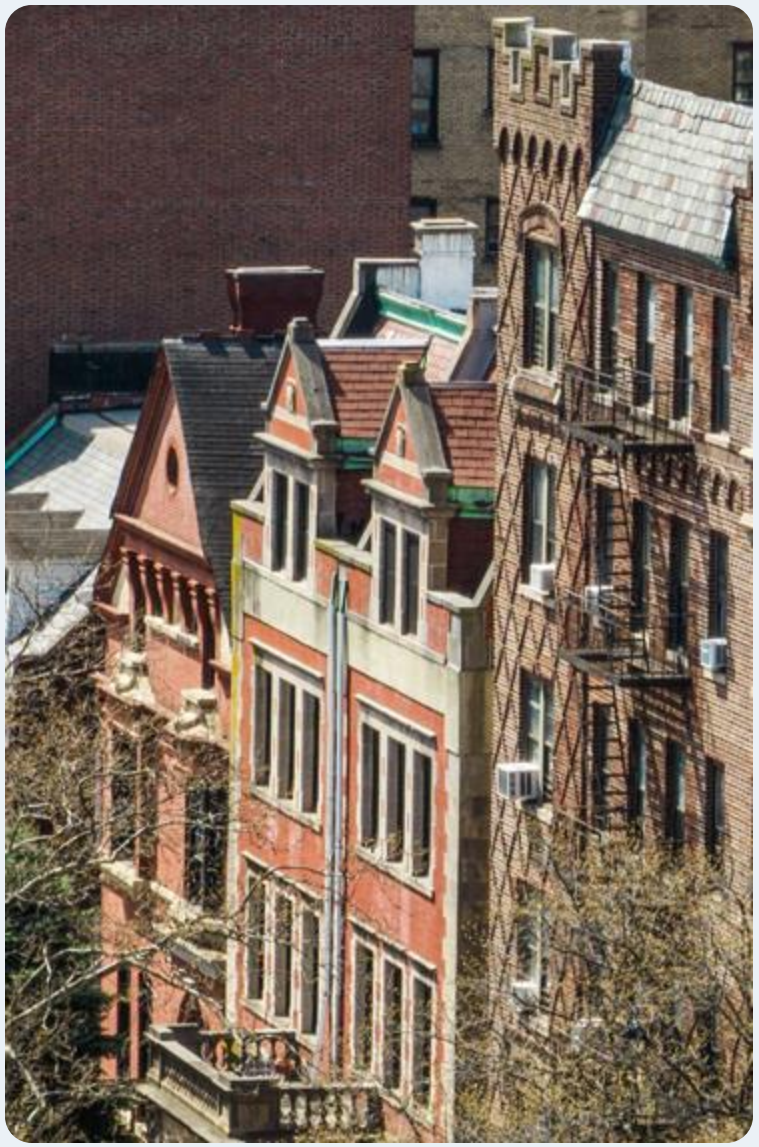
HOW THE TECHNOLOGY WORKS

The Cozy is an insulating enclosure that is installed over existing radiators and **traps warm air inside**

When the system senses that a **room needs heat**, a small fan turns on to **circulate warm air** through the room

When the **desired temperature** is reached, the fan turns off to **trap heat** and **prevent overheating**

The result: **comfortable** rooms, cost **savings**, and **reduced** building **emissions**



Customer results are unprecedented

25.5%

Average fuel savings

Other efficiency technologies like TRVs or Boiler Controllers, get <10% - 20%

*NYSERDA Report Number 18-12, May 2018, "A Focused Demonstration Project: The "Cozy" by Radiator Labs" (now Kelvin)

85%

Fewer maintenance calls made

Lowers building operating costs and increases overall tenant satisfaction

95%

Fewer heating complaints

Resulting in reduced tenant turnover

Rebates Available

conEdison

nationalgrid

NEW YORK STATE OF OPPORTUNITY. NYSERDA

Regulators have validated the Kelvin system

New York Technical Resource Manual

- One of two energy efficiency measures for steam heat buildings recognized by the NY TRM.*
- Largest savings solution in the 2019 TRM for HVAC control in the residential sector.

NYSERDA Independent Evaluation

- NYSERDA** validated 25.5% average billing savings through use of The Cozy.
- Savings are 3x-4x of next best alternative for steam-heated buildings.

*The Technical Resource Manual (TRM) is a standardized, fair and transparent approach approach to measure energy savings across New York State's energy efficiency programs.
**NYSERDA Report Number 18-12, May 2018, "A Focused Demonstration Project: The "Cozy" by Radiator Labs" (now Kelvin)

Varied payment options make our platform affordable for all building owners

	Option 1	Option 2
	Upfront	Subscription
Upfront Payment	$200-$300/Cozy after rebates Capital cost may be financed at ~8% APR. Immediate tax savings	No money down, No loans, liens, or encumbrances $15 - $20 /Apartment/Month
Annual Savings	15-45% reduction in annual gas bill (on average, 25.5%)	All energy savings (net subscription fee) goes to the customer
Payback	2-7 years	Instant

Paybacks do not include avoided carbon emissions fines and provide a hedge against rising energy prices

Case studies

Case Study

328 West 53rd Street / Single Pipe

Fairstead

328 West 53rd Street, New York

Projections:

- NYS TRM Savings Projection: **30.1%**
- Pre Retrofit Heating EUI: **15.4**
- Total Project Cost: **$85,000**
- Con Edison MFEEP Rebate: **$54,000**
- Customer Cost: **$26,000** / Payback: **3.01 Years**

GHG Emissions	Monthly	Annually
Cumulative Fuel Savings	$968	$11,620
GHG Emissions Reductions	3.9 tCO2	46.2 tCO2

Verified Actual Savings (2021/2022): 39.8%

Actual Payback: 2.23 Years

Case Study

The Clinton Hill Co-ops / Metro Steam

Bright Power, Clinton Hill Cooperative

The Clinton Hill Co-ops

Projections:

- TRM Projected Savings: **24%**

Actual Savings:

- Actual Savings (verified by Bright Power): **33%**

GHG Emissions	Monthly	Annually
Therms Saved	21,892	262,700
GHG Emissions Avoided	131 tCO2	1,580 tCO2
Cumulative Fuel Savings	$17,975	$215,400
Incentives Procured	-	**$818,700**

1,223 Unit, 12 building multifamily Campus Metro-Steam Distribution System

Hybrid Electrification

Pathway to Decarbonization

Hybrid Electrification in three simple steps…

Step 1
Install Cozy

Step 2
Install Window or Sleeve Heat Pumps and thermal batteries

Step 3
Integrate with Building Controls

Heat pumps, replacing window units, ensure year-round thermal regulation. Cozy-enabled radiators add heat based on external temperatures or demand response triggers

Hybrid electrification reduces emissions quickly and cost-effectively

Thermal Battery

Thermal Storage Solution for Decarbonizing Multifamily Residences

Seamlessly Interchangeable

Through advanced analytics, Cozy and heat pumps can seamlessly interchange, ensuring optimal energy distribution and efficiency, while the integrated battery system offers flexibility in energy storage and release.

Grid Services

Hybrid Electrification provides an opportunity to earn new revenue from gas and electric Demand Response and lower energy costs through time of use rates.

Heat Pump

A window or sleeve heat pump for cooling or heating above 32ºF

80%

GHG reductions

~10%

of the cost when compared to full electrification

Thank You

Evan Carberry

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Questions?

THANK YOU FOR TUNING IN

Contact Today's Speakers

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